The #1 Computer Game Magazine

Computer Gaming World

**MAY 1997
NO.154**

Loyd Case
On MMX Gaming

EXCLUSIVE!

StarCraft

Best **Strategy** Game **Yet!**

Never-before-seen screenshots,
secret designs, plus **hands-on** coverage of
Blizzard's stunning new Sci-Fi **mega-hit**

Game of the Year Awards
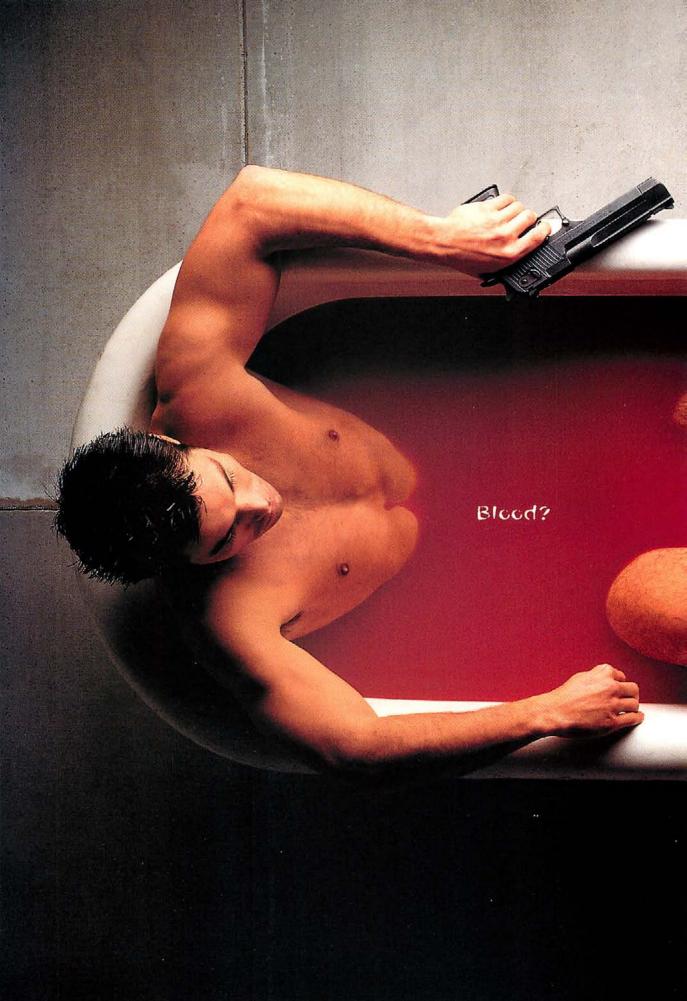
*Our **Premier Awards** And
Readers' Choice **Winners***

Which is the Best?

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LONGBOW

QUAKE

NBA LIVE 97

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What's On The CD?

And The winner is...

In addition to our regular lineup of interactive demos, this month's CG-ROM features the Premier Award winners. Look out for interactive demos, game highlights, or custom scenarios for the winners of the nine genres, along with three special achievement awards, and the Game of the Year.

Exclusive demos this month include EA Sports' NBA LIVE '97, and MEAT PUPPET by Playmates Interactive Entertainment. CGW contributor Patrick Miller presents part two of his historical Vietnam trilogy: the Armored Green Dragons scenario, for SSI's STEEL PANTHERS 2. DIABLO makes a return appearance with custom walk-throughs for two of its more difficult quests: The Black Mushroom and Archbishop Lazarus, created by CGW's own DIABLO-phile, Greg Fortune. And if you're still having trouble navigating the AH-64D LONGBOW cockpit (from Jane's Combat Simulations/EA), be sure to check out the tutorial created by CGW contributor Robin Kim.
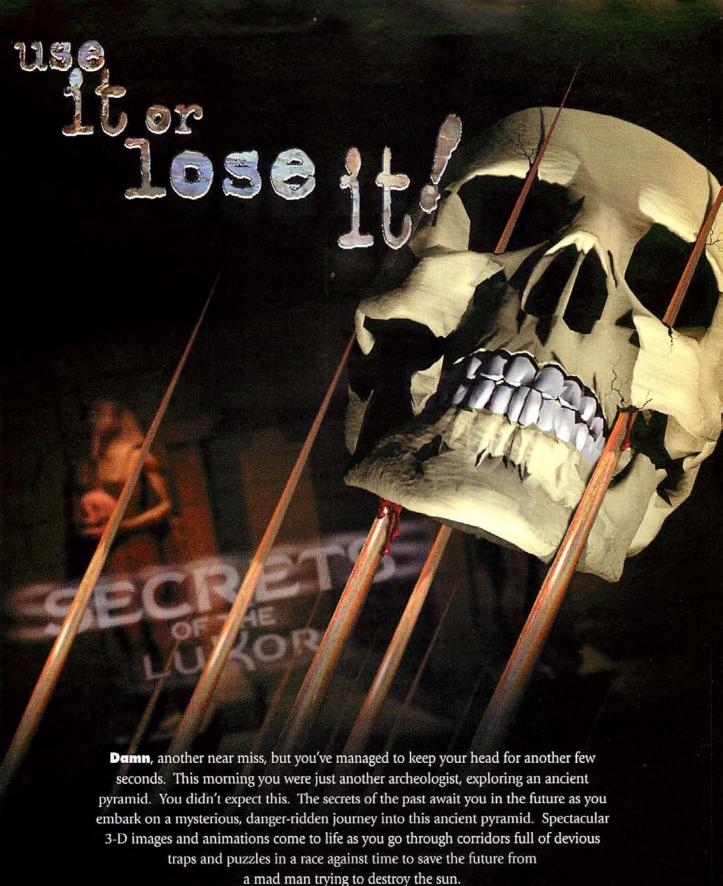
Other playable demos include: Sierra Online's 3D ULTRA MINIGOLF; BLOOD, the gruesome and bloody spawn from DUKE NUKEM creators; and the first esteemed interactive movie/game, THE PANDORA DIRECTIVE.

Now, let the ceremony begin!

How Do I Use It?

If you have Windows 95, installation is simple: The CD is Autoplay enabled—just lock-n-load. Otherwise, from Windows 3.x, select Run from the Program Manager menu, and type D:\RUN-ME (where D is the letter of your CD-ROM drive) to run it straight from the CD. Then type D:\INSTALL

GAMES AND GOODIES ON THE CG-ROM

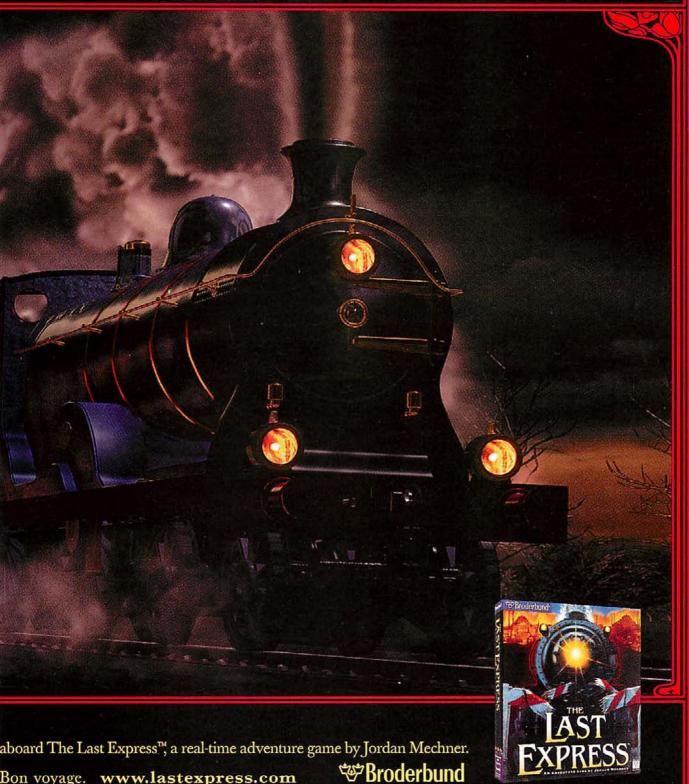| DEMOS AND STUFF	PLATFORM	DIRECTORY	EXECUTABLE
Aaron vs Ruth	95	AVRDEMO	AVRDEMO.EXE
AH-64D Longbow Walk-through	N/A	LONGBOW	via CD interface
AirWarrior 2 Online	95	AIRWAR2	AIRWAR2.EXE
Baku Baku	95	BAKU	SETUP.EXE
Battleground: Shiloh	WIN/95	BGS_DEMO	SETUP.EXE
Blood	DOS	BLOOD	INSTALL.EXE
Chasm	DOS	CHASM	CHASM.EXE
Civilization II: Jihad Scenario	95/DOS	JIHAD	N/A
Daggerfall	WIN/95	DAGGER	DAGGER.AVI
Diablo Quests	N/A	N/A	via CD interface
Engage Front-end	95	ENGAGE	ENGAGE.EXE
Kali	95	KALIW95	KALIW95.EXE
MDK	95/DOS or WIN	MDK	MDKZIP95.EXE or MDKZIP.EXE
Meat Puppet	95	MEAT	MEATPUPP/SETUP.EXE
MechWarrior 2: Mercenaries	95/DOS	MECH2	SETUP.EXE
NBA Live 97	95/DOS	LIVEDEMO	NBADEMO.EXE
Quake	95	via TEN	N/A
SimCopter	95	COPTER	SIMCOPTE.EXE
SpaceOrb 360	N/A	SPACEORB	N/A
Steel Panthers 2 scenario: Armored Green Dragons	N/A	S2SCEN	via CD interface
TEN Front-end	95	TEN	SETUP.EXE
The Neverhood	95	NEVERH2	NEVDEMO.EXE
The Pandora Directive	95/DOS	PANDORA	SETUP.EXE
Tigershark	95	TSHARK	GO.EXE
3D Ultra MiniGolf	95	MINIGOLF	SETUP.EXE
X-Car	95/DOS	XCARDEMO	INSTALL.BAT

use it or lose it!

Damn, another near miss, but you've managed to keep your head for another few seconds. This morning you were just another archeologist, exploring an ancient pyramid. You didn't expect this. The secrets of the past await you in the future as you embark on a mysterious, danger-ridden journey into this ancient pyramid. Spectacular 3-D images and animations come to life as you go through corridors full of devious traps and puzzles in a race against time to save the future from a mad man trying to destroy the sun.

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3D Ultra MiniGolf (Sierra Online)

Diablo (Blizzard)

Blood (GT Interactive)

MechWarrior 2: Mercenaries
(Activision)

to create a *CGW* program group on your Windows desktop. If you have installed previous versions of the CG-ROM, this disc will use the program group already on your desktop.

How Do I Play The Demos?

To view the demos, first click on Editors' Hot Picks, Special Features, or Product Demos. Then click on the title of interest. Each demo has its own instructions for installation.

How Do I Get The Patch Files?

Click on Patches under the *CGW* Features, and then read the text window that has instructions on copying the files to your hard drive. You can also access the patches from a DOS prompt by typing D:\PATCHES (where D: is the letter of your CD-ROM drive) and copying them directly to your hard drive. We strongly recommend that you back up any previously saved games before installing a patch, as this may overwrite your existing program.

How Can I Get The CG-ROM Delivered Each Month?

To subscribe to the CD-Rom version of the magazine, call (303) 665-8930, and specify that you want the CD-ROM version. Please note that if you already receive the magazine without the CD, you must wait until your current subscription expires before receiving the CD version.

If you subscribe to the CD version, but you have not received a disc with your magazine, contact us on our Web site at **www.zdnet. com/zdsubs/gaming/service**.

Where Can I Buy The CDs?

Copies of *CGW* with the CD are available in most major retailers where magazines are sold. If you can't find the magazine with the CD, encourage your retailer to carry it.

Unfortunately, we can not fulfill requests for back issues of CD-ROMs at this time.

Disclosure

As a matter of record, *CGW* voluntarily maintains a list of companies in which SoftBank, the parent company of Ziff-Davis Publishing Co., has an interest. It is available online at **www.computergaming.com/ disclaim.html** and is updated when we become aware of such investments.

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The Hot Rod Syndrome

Why Gamers Are Caught in the Upgrade Race

Sometimes, even the smartest people you know say the most ridiculous things. In a recent meeting with one of the smartest CEOs in computer gaming, I was dumbfounded by one of his comments. Confronted by a bug report, he protested that if we could give him a standard platform that would quit changing, he would put out a bug-free product. He complained that even my prediction, when I had espoused in 1995 how DirectX and Plug-n-Play would make life easier for gamers, was flawed. I had failed to anticipate how hardware manufacturers and programmers would deliberately make their products non-standard in order to be able to make claims that their technology was proprietary and superior to other products. His analogy was to the greed of Thomas Edison during the nasty "Patent Wars" of the early days of the motion picture industry. He lauded the concept of a standardized platform and seemed surprised when I went into cynical mode.

INDUSTRIAL EVOLUTION

The idea that we'll *ever* have a completely standardized platform seems counterintuitive to what I know of both high-tech competition and consumption. It reminds me of a lyric from a really old song that goes, "There will never be a portrait of my love, for nobody can paint a

dream." We almost need to write a parody of that lyric, "There will never be a standardized machine, for nobody can paint a dream."

The first and most obvious argument against a completely standardized platform is, of course, Moore's Law, coined by computer pioneer Gordon Moore. We've briefly referred to this postulate in the past, but it is vital to understand it in this context.

Moore's Law (which can be found at **www.intel.com/intel/museum/25anniv/html/hof/moore.htm**) states that since 1962, the logic density of silicon integrated circuits has closely followed a curve where $x = 2^{(t-1962)}$ (x = the number of bits per square inch of silicon and t = time in years since 1962). In terms an editor can understand, the amount of information you can put on the same size chip has almost doubled every year since silicon technology was invented.
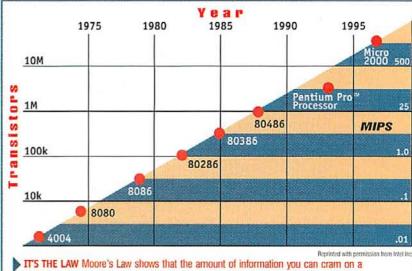
In 25 years, as Moore's Law predicted, the number of transistors on a chip has increased more than 2,300 times, from 2,300 on the 4004 in 1971 to 5.5 million on today's Pentium Pro processor.

"Okay," you may well say, "but what does that have to do

with the upgrade cycle?" There is a corollary to Moore's Law called Parkinson's Law of Data. This one follows the cynical economist/philosopher C. Northcote Parkinson in stating, "Data expands to fill the space available for storage." As the site for computer jargon on the Web (**www.fwi.uva.nl/~mes/jargon/p/ParkinsonsLawof Data.html**) observes, "Buying more memory encourages the use of more memory-intensive techniques. It has been observed over the last 10 years that the memory usage of evolving systems tends to double roughly once every 18 months. Fortunately, memory density available for constant dollars also tends to double about once every 12 months (see Moore's Law); unfortunately, the laws of

physics guarantee that the latter cannot continue indefinitely."

Now, let's add some Wilsonian cynicism to this. Note that the average computer game has a development cycle of 18–24 months. This means that the computer game developer is faced with the decision of choosing what baseline machine to support, with full knowledge that both memory capacity and processor intensity (what you expect the CPU to do with that memory capacity) will have doubled by the time the product is released. The developer is further faced with the reality that some developer, somewhere among his competitors, is going to go all out for that advanced machine and add features that he can't support with existing technology. Since the devel-

IT'S THE LAW Moore's Law shows that the amount of information you can cram on a computer chip doubles every year.

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oper knows from past experience that games which take advantage of new technology often have an edge in sales (just so that gamers can have bragging rights over these showcase features), he decides he can't risk letting his competitor get the jump on him. He raises his sights upon a new baseline machine—a higher standard which is not quite there, a moving target.

> ❝ **The idea that we'll *ever* have a standardized platform flies in the face of market reality.** ❞

RACING FOR PINKS

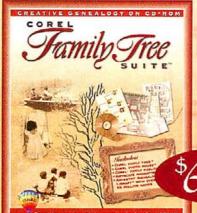Will the customer, the gamer, actually buy that upgraded technology? Past experience says "Yes." I am reminded of a meeting I attended with another CEO who shared that he had placed his Calloway automobile into the shop because the makers of the high-performance automobile had discovered a way to get another 30 horsepower out of the car. Now, I happen to be impressed enough with the baseline performance of a Calloway, but here's an individual who is willing to upgrade for power he will seldom be able to use. The average driver may insist that he is able to get a speeding ticket even without that horsepower, but it's worth it to the executive to know that the power is there when he wants it.

Apparently, computer owners want to know that it's there, also. They're willing to pay for performance. For years, the price pattern has been that the average price of a high-end computer was somewhere in the mid-$3,000 range and the bargain computer between $1,500 and $2,000. To be sure, the latest, greatest, processor was always somewhat higher, but as it moved up in price, the other processors came down and kept the average roughly the same.

Some gamers (and I think they all write to me) are fed up with the constant upgrade cycle. They complain vociferously that it isn't fair. Yet, look how much more they're getting for this year's $3,500 than the last $3,500 they paid (I know because I just bought a Micron Home MPC with Pentium 200 and Package B). I'm amazed at how much difference my new modem, larger monitor screen, 32MB of RAM, and Diamond Monster 3D card make for gaming enjoyment. I can tell you that the difference between my P-90 and this one is considerable. And yes, I'm dreading the expense of my next upgrade, but I'll probably bite the bullet easier because I'm so satisfied with this one. If we look at computer buying patterns, I'm not alone in this thinking.

THE COMPLEAT CURMUDGEON

The bottom line is that I don't believe we'll ever have *the* platform. Without *the* platform, we'll never have even a reasonable chance at bug-free games. So, we have, essentially, two options. We can either adopt the attitude that we will always be pioneers who are charting new realms of technological performance, or we can consider ourselves to be victims of the upgrade cycle, who are condemned to more and more bugs every year. Personally, I'd rather focus on the great graphics, fast frame rates, and marvelous sounds in today's games than the bugs we have to swat. ⚡

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History OF THE World

From the beginnings of recorded time despots have tried to rule the world. Many have come close only to be swept away by the tides of history. Are you the one to achieve world domination? We don't think so... but we dare you to try!

It's based on the top-selling multi-player board game with computer enhanced features like perpetual score keeping plus tips and help on demand. 1 to 7 players. Compete against friends or the game's crafty Artificial Intelligence.

You plan the strategy.

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• If you choose to be aggressive, which nations will you attempt to conquer?

• When do you deploy your secret weapons?

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ON THE CASE

A huge thank you to Loyd Case for his "Ultimate Gaming Machine Series," and, in particular, Part 4. I've subscribed to your magazine since 1993, and I am pleased to see the increase in hardware coverage of late. 1992 was also the last time I bought an entire computer system.

In my opinion, the only effective way to remain in this hobby is to gradually upgrade, one piece at a time. Otherwise, you spend half your time really happy (just after buying a new system) and the other half miserable (until you break down and buy a new system).

I'm well aware of how much work it takes to plan and implement an effective upgrade strategy. At times, I have wanted to consult a psychic. I subscribe to two other gaming magazines, as well as your two sister publications *PC Magazine* and *Computer Shopper*. While these two fill out part of the upgrade puzzle, they have been consistently biased towards the business user. On the other hand, I have never regretted following any of your hardware suggestions. My only complaint had been that they were few and far between. Things have greatly improved, but I would still like to see more coverage, and more frequently.

I would love to see a monthly upgrade column. Ideally it would have your recommendations of the month for each of the hardware categories covered in Mr. Case's latest article (motherboard, CPU, graphics board, etc.). There could be two recommendations for each category, one price-conscious and the other strictly performance-based, as with March's "turbo" and "nitro" distinctions. I'm not suggesting a new recommendation each month, but a list of the best product in each category at that point in time. If a reader decided it was time to upgrade a particular component, he or she could simply look up the recommendation for that component in the current month's issue. This would eliminate half the upgrade decision, leaving only "when" for the reader.

This is only a suggestion, but if it turns out to be feasible, it would be worth twice the cost of your magazine in itself, at least in my opinion.

In any case, keep up the good work. You have consistently been the best computer gaming magazine on the market hands down (in my opinion, and I would imagine many others').

Phil Romano
via the Internet

*We like your idea so much that we're planning to put it on our Web site with a brand new wrinkle. We hope it will be up and running by the time you read this in print. Check out **www.computergaming.com** for details.*

AD VIBES

I just wanted to write and let you know that I haved totally enjoyed your magazine up until the last year or so. The problem is not with the articles, since I believe that they are the best in any computer games magazine. I have tried them all since 1993 and still find the articles in your magazine to be the best.

The problem that I have is the sick and perverse advertisements that you have in the magazine. Like I said, I have been reading *CGW* since 1993 and I always found the advertisements that you used to have to be clean and tasteful. I do not find it necessary to show contraceptives or pages of blood just to sell a game. In fact, I have taken many of them and flushed them in the toilet, literally.

I ask you to please clean up the advertisements and make them on par with your articles. I do appreciate your articles which helped me out many times which are very honest, clear, and concise. Please make your advertisements the same.

Joseph N. Norris
Buffalo, NY

Surprisingly enough, we agree. Unfortunately, they're not "our" ads. We have no creative control over the advertisements. In fact, the editorial staff doesn't see the ads before they are printed in the magazine. The only way those types of ads will be stopped is when they don't work anymore. Then, they'll swing back toward normalcy.

BITTER BLUNDERLAND

I just read Terry Coleman's column ("Winter Wonderland," March '97) on the upcoming Talonsoft game, NAPOLEON IN RUSSIA, and I was disappointed. Mr. Coleman's reviews have been good previously, but this one is flawed. Computer wargames must not be reviewed for just the usual criteria of any computer game (playability, bugs, etc.) but for historical accuracy as well. I feel that Mr. Coleman must know this. Yet, there is a major gaffe here. The battle of Borodino was fought the 7th of September. This was not the winter, it was not even yet fall, but the tag end of summer, so why the title, "Winter Wonderland"? Why does, "The Russian winter affect...the troops quality ratings of both sides," and why is it that "Some creeks and streams are frozen"? Why, we even read that, "other areas are rendered impassable by the snows"! Yet it did not snow until the 15th of October.

Either Mr. Coleman is misled by a misunderstanding of the course of the 1812 Invasion of Russia, or Talonsoft's new game has serious historical flaws.

James D. Gray
via the Internet

NAPOLEON IN RUSSIA covers both the first Battle of Borodino, which took place in September, and the second Battle of Borodino, which took place in the dead of winter as Napoleon was retreating back from Moscow. We regret causing confusion by not spelling out that this is more than a random weather feature.

WARPED WARTHOG

I just read the review of A-10 CUBA! in the March issue, and I would like to point out that the A-10 cannot carry "50 percent more ordinance (sic) than a B-1." What's the point of printing half-baked "facts" like that? The B-1's maximum bomb-load is around 48,000 pounds, whereas the A-10's max ordnance loadout is 16,000 pounds—not even 50 percent of

that of the B-1 (this figure is reduced even further, to about 14,300 lbs, if the A-10 is carrying maximum internal fuel).

Mike Marunchak,
TSgt, USAF (Retd.)
Mountain View, CA

In the original article submitted by Robin G. Kim, that line read "50 percent more ordinance than a B-17." Given that the B-17 could carry only 6,000 pounds of bombs, even that's not giving the A-10 Hog quite enough credit. Somewhere in the editing process we lost a "7" and gained 42,000 pounds of bombload. We apologize for the confusion.

As for "ordinance," we can only plead that we do know the difference between an "ordinance" and "ordnance," but we missed that one due to our overreliance on spelling checkers. However, we've recently

added a top-notch copy editor to our staff, and we've passed an ordnance to keep such problems from happening again.

REMEMBER JOE-486 PACK

In these days of limbo for 486-playable games, it is interesting to note which games will actually run decently on a 486, and which will not. Surprisingly, the actual minimum system requirements do not often match the true minimum system requirements. This is a problem which works both ways. Some games which say they will run on a 486 do so only very poorly, while some games that supposedly require a Pentium will run just fine on a fast enough 486.

Cases-in-point: CRUSADER: NO REGRET is supposed to run on a 486/75, but it drips through a 486/100 system like sludge. On the other hand, PRIVATEER 2: THE DARKENING from the same publisher supposedly requires a Pentium 75, but in fact runs quite crisply on a 486/100.

Z is supposed to run on a 486/66, but it drips through a 486/100 like hardening concrete. This is a game which uses Direct X. On the other hand, TOMB RAIDER, another "Pentium only" game, gives a very smooth ride (at the lower resolution, yes, but full screen) on a 486/100.

Why do publishers provide erroneous or misleading system requirement information? In the case of those selling games that really don't perform on a 486, it seems obvious: the motivation must be greed. But why not list a 486 on top-notch games? I suspect this may have something to do with the laughable macho mentality of far too many PC gamers who like to claim, "My gaming rig is bigger and faster than your gaming rig." To such a crowd a "Minimum: 486" sticker might be like a

"G" rating in the movies.

Tangential to this: Direct X is death on a 486. Microsoft really pulled the wool over our eyes regarding the value of Windows 95 on a "low end" system, didn't they? Remember when we were told it would realize the 32-bit potential of the 486? In fact, Windows 95 might just as well be a Pentium-only game platform. For 486 owners, DOS is still the OS of choice.

We can run the demos off of a CD-ROM, such as yours, to see if a game is playable on a 486, but that doesn't always correspond to the released version of the game. It would help those of us who haven't yet upgraded if you could clue us in when a game will run on a 486. Since the two best games of this last quarter, PRIVATEER 2: THE DARKENING and TOMB RAIDER are 486 capable, there's still plenty of reason for 486 owners to be interested in what their systems can do, even if the publishers won't admit it.

Clyde Dodge
via the Internet

If you've read Johnny Wilson's editorial this month on "The Hot Rod Syndrome," you already know some of the causes of the speed race in computer games. You've already hinted at one reason a 486-capable game might be listed as Pentium only. Most likely, however, different gamers have different tolerance levels for different types of games. Neither the game publishers nor CGW know how to test tolerance levels fast and efficiently.

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– ELECTRONIC GAMING MONTHLY

THE WORLD WILL END IN 1999. THE

"One of the most innovative games ever created."
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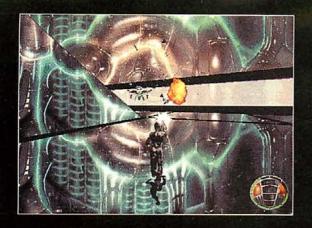
Your planet is being bulldozed by the ton. Alien controlled mobile mining cities are strip-mining the earth's surface overrunning and crushing anything in their path...Unless you can stop them.

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- Fully 3-D rendered graphics unlike anything you have ever before seen.
- Over 60 arenas spread out over 6 cities.
- Never before seen "sniper mode" that allows you to zoom in on the enemy and pick it off with astounding accuracy.
- The most sophisticated enemy artificial intelligence ever created. Fully reactive "smart enemies" think, listen, and communicate in a calculated assault on your life.
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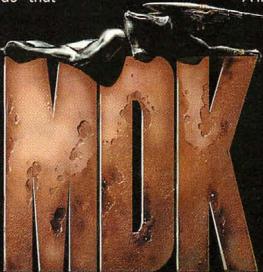
and equipment including:
- A helmet-mounted sniper rifle that targets enemies from over two miles away.
- A living polymer suit that protects from piercing projectiles.
- A high-tech reusable parachute.
- Bombs... decoys... homing sniper grenades... and many more.
- Two styles of adrenaline-pumping game dynamics featuring first and third person point of view.

MDK

IT THINKS. THEREFORE IT KILLS.

Man Behaving Relatively Well

"I've been successfully avoiding a day job for over 15 years now."

Not long ago, starring in a computer game seemed to be the last resort for fading has-beens desperately trying to hang-on to their stardom, but not any more. Suddenly it's respectable—positively hip, in fact—for a Hollywood celeb to delve into CD-ROM-dom.

"Men Behaving Badly" star Rob Schneider told us about his recent encounter with the technology in Any River's comedic Action/Adventure game A FORK IN THE TALE. Schneider provides the voice of the hero—the character that you, the gamer, will play.

Schneider's interest in the project was piqued when a couple of acquaintances, both comedy writers working on FORK, told him they'd never seen a really funny CD-ROM. "That's what made me want to hit it," he recalls.

Making the game was a gargantuan feat: Schneider had 6,000 lines and used 50 different voices throughout the game. In a movie, although he may think up five different ways to do a scene, only one will be used. But the nature of an interactive game allows all five versions to be used in the final product.

Schneider estimates a third of the material was improvised. "I was able to do all the things that I can do—a bunch of jokes, different characters, and a lot of different impressions."

Nonetheless, he describes the experience as a Herculean task. "I'll have to think twice about doing it again, because it demands a lot."

Schneider likens FORK IN THE TALE to a Bob Hope-Bing Crosby road movie. "It was perfect comedic fodder. The guy's kind of a coward, and wants to meet girls and stuff." He winds up hiding from bad guys, escaping from dungeons, and avoiding other terrifying fates—all in the name of saving the day. Along with giggles throughout the game, Schneider promises that if you dig around you'll uncover some really funny Easter eggs.

Of all his roles, Schneider admits his "Men Behaving Badly" character, Jamie, is the one he best relates to. He adds that unlike Jamie, he's made the turn from being a complete slacker, though he does confess to have "been successfully avoiding a day job for over 15 years."

Does technology play a part in Schneider's daily life? "My little hand calculator—that's about as complicated as I get. I'm the last of the dinosaurs," he jokes.

He doesn't even keep writing tools on hand. "If you have a pad around, then you write down anything, but if you have to run to get paper, and write it on a napkin, then it *has* to be funny," he quips. If the others involved in FORK IN THE TALE follow that same theory, we should be in for a lot of laughs.—*Charlotte Panther*

Raking in the Retail Dollar

Ever wondered who the high-rollers are in the wonderful world of retail game sales? This chart shows how well the top ten software companies fared from retail sales of their PC Games over last two years. These numbers represent revenue from retail sell-through only. They do not include any profit accumulated from direct sales (this accounts for id's low representation in 1995, and sudden percentage gain in 1996, when id began selling via retail outlets).—*Charlotte Panther*

Company	Gross Revenue 1996	Gross Revenue 1995	% Change
CUC / Davidson	192,108,725	131,034,169	+47%
Electronic Arts	120,766,140	76,043,480	+59%
GT Interactive	88,960,736	65,874,209	+35%
Microsoft	75,560,747	53,740,152	+40%
Virgin	66,696,538	44,079,149	+50%
LucasArts	56,869,969	78,376,720	−27%
Activision	47,737,720	26,016,449	+83%
Maxis	39,274,101	48,335,765	−18%
Broderbund	36,237,178	56,626,961	−30%
Id Software	13,158,207	2,215,300	+494%

Statistical information provided by PC Data

Mpath Announces Free Online Gaming

The growing number of online services battling to woo customers must account for Mpath Interactive's surprising announcement that access to their multiplayer Internet gaming service, Mplayer, is now available free of charge. The Mplayer Free Zone will allow gamers to enjoy unlimited access to games like QUAKE, MECHWARRIOR 2 and WARWIND. PANZER GENERAL will also be available, for a free 30-day trial period. Mpath will also offer Mplayer Plus, a premium zone, providing unique content, tournaments, competitions, as well as high profile games like DIABLO, COMMAND AND CONQUER, and RED ALERT, for just $29.95 per year.

Under a new advertiser-supported business model, Mpath has initially signed agreements with Intel and Intuit's Parsons Technologies, and is hoping to announce more mainstream advertisers in the near future. Check out Mplayer at **www.mplayer.com**.

—*Charlotte Panther*

Free-Fire Zone Gamers now get unlimited free access to QUAKE, WARWIND, and MECHWARRIOR 2 on Mplayer.

QUOTE OF THE MONTH

> **The current TV ratings system is a little bit like putting a sign up in front of shark-infested waters that says: 'Be careful when swimming.'**

—*Senator Joseph Lieberman, a Connecticut Democrat, complaining that the industry's new age-based television ratings system is ineffective—after endorsing the age-graded ESRB ratings system for computer games in 1996.*

DUKE IT OUT IN D.C.

The newest installment of the DUKE NUKEM line takes our hero to the nation's capital in another bid to quell alien invaders intent on taking over the Earth. This add-on pack for DUKE NUKEM 3D features 10 new levels that take you through various Washington landmarks, including the Washington Monument, the Capitol building, the F.B.I. headquarters, and the Smithsonian museum.

These levels feature the same aliens; interactive environments; amusing quips; and, somewhat disappointingly, the same weapons as the old DUKE—just wrapped in a different setting. Should be good fun for serious DUKE-heads.

—*Joe Vallina*

*WizardWorks/GT Interactive,
(800) 229-2714
PC-CD-ROM
Reader Service #: 302*

KOALA LUMPUR: JOURNEY TO THE EDGE

Searching for enlightenment, Koala Lumpur unwittingly utters an incantation that triggers the threat of the Comedy Apocalypse. As Koala's spirit guide, Fly, you'll travel to four puzzle-filled worlds in

Intel's Next MMX Chip Due Soon

Intel recently divulged the name of their next processor with MMX, and it's a doozy. The new name is—brace yourself—Pentium II. OK, so the name is about as flashy as day-old bread, but this new chip, internally code-named Klamath, will bring several interesting performance enhancements over current Pentium Pros, and because of less expensive manufacturing processes, Pentium II's price should dip below that of the Pro's fairly quickly. Guesstimates indicate the Pentium II will be available in late spring or early summer of this year.

Intel has reduced the part's cost by stripping out the onboard 256KB Level 2 (L2) cache, leaving system vendors free to decide how much L2 cache to put in their systems. In addition to having MMX support, Intel has also made some plumbing improvements to help its 16-bit performance, an area where the P-Pro initially disappointed.

Also new for Pentium II is its form factor. Rather than using a single socket, Pentium II will come on a "daughterboard" configuration that plugs into a slot on the motherboard. Top-end clock speeds for Pentium II are anticipated to be 266 MHz.—*Dave Salvator*

TOP 10 REJECTED NAMES FOR THE PENTIUM II CHIP:

10. **Intel's Next Soon-To-Be-Obsolescent Processor (TM)**
9. **Pentium Gigahauler**
8. **XJ-12**
7. **Monty Pentium**
6. **Pentium Envy**
5. **Intel 685.99999998**
4. **Front Page Sports Pentium Pro 97**
3. **8088 Version 6.0**
2. **Good and Plentium**

And the number one name Intel rejected for the Pentium II is...

1. **The Pentium Royale (with cheese)**

Putting MMX Into OverDrive

If you've been wanting to add MMX capability to your PC, you may have been frustrated by the fact that only the newest motherboards supply the dual voltages used by MMX processors. Intel has come to the rescue with the over-named Pentium OverDrive Processor with MMX Technology.

Designed to upgrade 75-, 90-, and 100MHz Pentiums (they can be used in faster machines if you're looking to add MMX), the MMX OverDrives feature a voltage regulator that adapts the 3.3v system voltage to the 2.8v required by the MMX chip; added capacitors to ensure compatibility with early, noise-sensitive motherboards; and a built-in fan and heat-sink. In addition to boosting the computer's clock
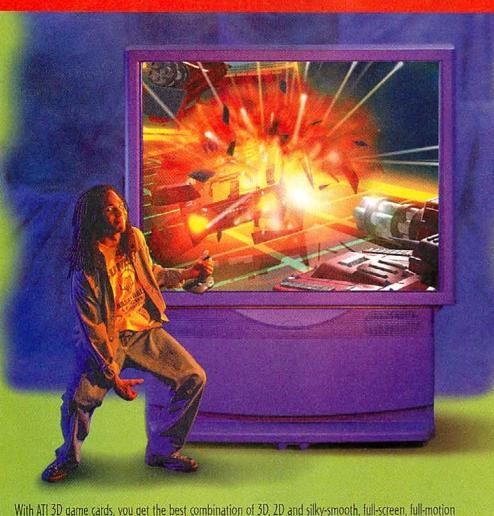
Original Processor	OverDrive Speed	Price	Availability
75MHz	125MHz	$399	Now
90MHz	150MHz	$399	Now
100MHz	166MHz	$499	Now
120MHz*	180MHz	TBA	2nd Half '97
133MHz*	200MHz	TBA	2nd Half '97

* These chips haven't yet been officially announced by Intel.

rate (see chart), the OverDrive chips also add the enhancements found in MMX Pentiums, including a larger 32K L1 cache. These provide a 10–15 percent speedup over standard Pentiums at the same clock rate on all applications, and up to 150 percent on some graphics applications. Our testing has shown great speedups on applications such as Photoshop, while the improvements in the first MMX games are less dramatic, consisting mainly of enhanced colored lighting, improved sound effects, and slightly faster Direct3D on systems without a 3D card.—*Denny Atkin*

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Armored Fist 2

The original ARMORED FIST was perhaps Novalogic's only truly disappointing title. The Voxel Space terrain that looked so good in the original COMANCHE fell apart at ground level, and the resulting blobby appearance made this action game a graphic disaster.

Don't let that first effort dissuade you from checking out ARMORED FIST 2, however. The improved Voxel Space

In the works 2 engine makes for extremely realistic terrain—I was very impressed by the sample areas provided in the Alpha version, which were by far the best-looking graphics I've seen in a ground combat sim. Translucent smoke and detailed 3D opponents heighten the sense of realism. The missions promise NovaLogic's trademark fast action, and I'm especially anxious to try out the eight-player network support. —Denny Atkin

PLAYING LATELY

CGW Survey*

	Last Month	Months on Chart
1. Diablo (Blizzard)	-	1
2. Red Alert (Westwood/Vigin)	4	2
3. Heroes II (New World Computing)	5	2
4. Daggerfall (Bethesda)	1	4
5. Civilization II (MicroProse)	2	12
6. Quake (id Software)	9	5
7. Duke Nukem 3D (3D Realms)	3	13
8. WarCraft II (Blizzard)	7	15
9. NASCAR 2 (Sierra)	-	1
10. MechWarrior 2 (Activision)	5	17

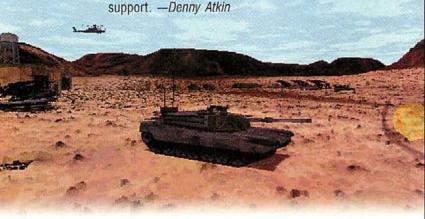* Check your mailbox: We mail a survey to 1,500 randomly-chosen subscribers each month. The results of Playing Lately indicate what games readers are blowing the most time on, as opposed to the reader's overall "quality ranking" in the Top 100.

PC Data Best-Sellers**

1. Diablo (Blizzard)	-
2. Myst (Broderbund)	1
3. Red Alert (Westwood/Virgin)	3
4. Microsoft Flight Simulator (Microsoft)	2
5. Quake (id Software)	6
6. WarCraft Battle Chest (Blizzard)	-
7. NASCAR 2 (Sierra On-Line)	7
8. Tomb Raider (Eidos)	-
9. Lords of the Realm II (Sierra)	-
10. Privateer 2 (EA/Origin)	-

** This list indicates what the top-selling PC games were, as calculated by PC Data, during January, 1997

search of the lost scroll pieces. You'll face a tribe of wild dogs, the "land of lost things," the lonely Annie Body, and one very bitter bunny, all in the name of saving the comic universe. KOALA'S most distinct feature is its cartoon-style graphics. Visually creative and unusual, the good aspects of the game are nearly nullified by its rather lame attempts at being much hipper and funnier than it actually is.—Dawn Jepsen
Broderbund (415) 382-4700
Windows CD-ROM
Reader Service #:303

THE VAMPIRE DIARIES

The second release from the American Laser Games' her Interactive division, THE VAMPIRE

DIARIES, is a vast improvement over their first effort, MC KENZIE & Co.

While THE VAMPIRE DIARIES features characters from the popular teen novels by the same name (author L. J. Smith also wrote the script), the plot takes a somewhat different tack. Popular high school student Elena must defeat the evil forces that are attacking children in her small Virginia town. While the catty dialog between Elena and her classmates is too tedious for adult players, the intended market will probably enjoy this creepy, starter-level adventure.
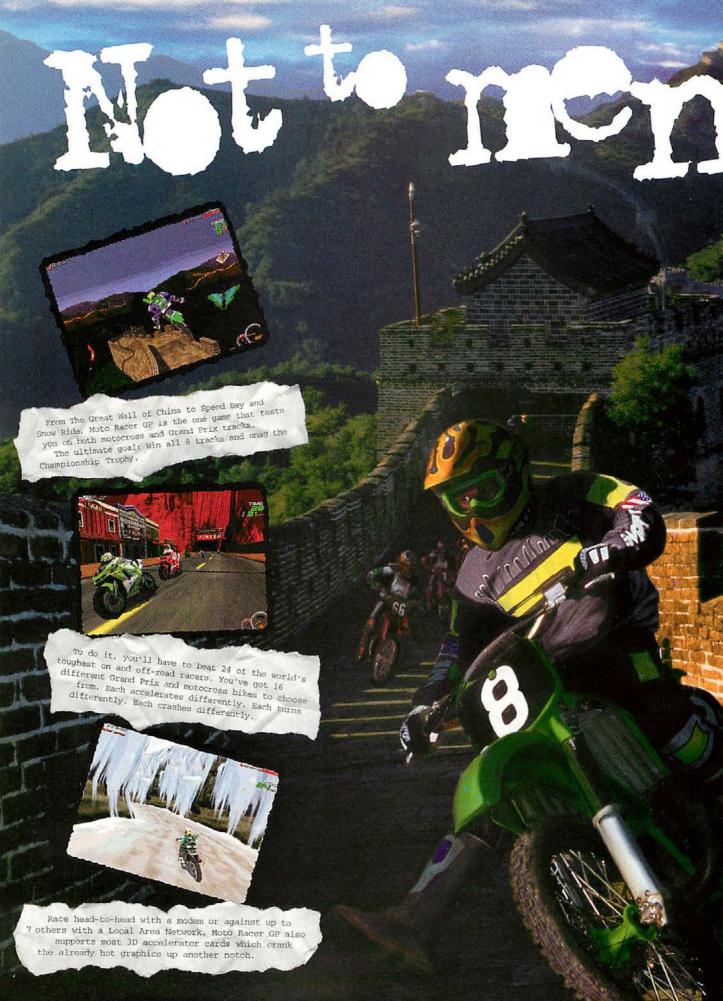
—Kate Hedstrom
her Interactive, (505) 880-1718
Win 95 CD-ROM
Reader Service #: 308

SCOURGE OF ARMAGON
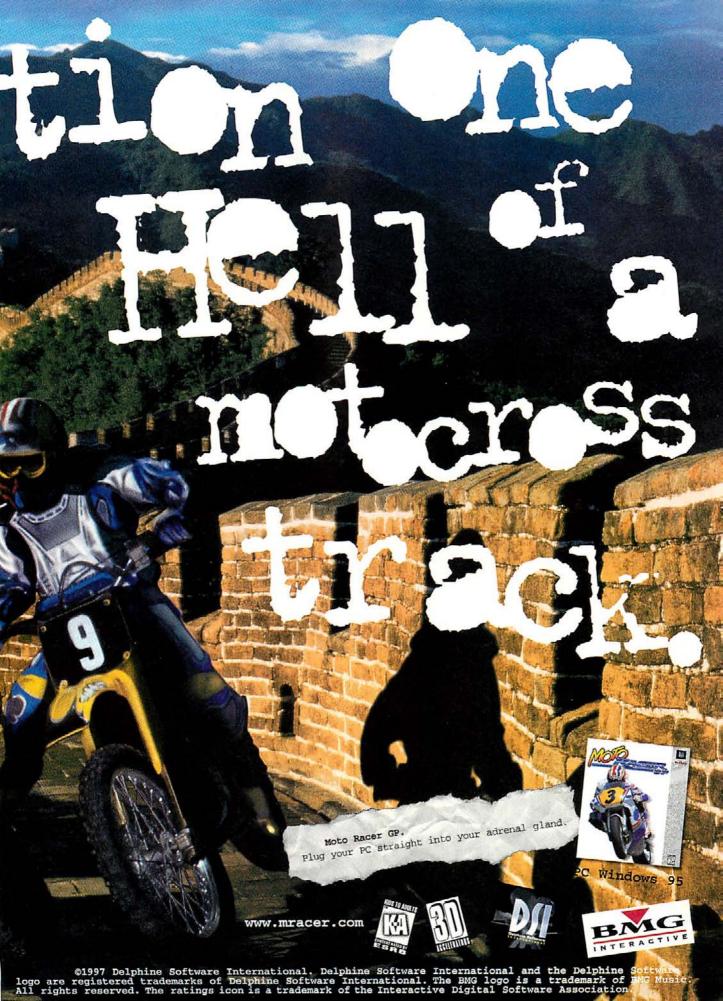
Hipnotic has given us another reason to keep Quakin'. Published by Activision, SCOURGE OF ARMAGON is the first of two new mission packs, and brings three new episodes, three new

The Great Wall of China.

At over 2,000 miles long, it stands as one of man's greatest architectural achievements.

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Race head-to-head with a modem or against up to 7 others with a Local Area Network. Moto Racer GP also supports most 3D accelerator cards which crank the already hot graphics up another notch.

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track.

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New 3D Iron in the Works

No one in the 3D world can afford to sit still, and we've just received pre-release versions of two new, very promising 3D-graphics accelerators. Internally code-named PCX 2, NEC/VideoLogic's second-generation PowerVR adds an important feature—bilinear filtering. VideoLogic is striving to make PCX 2 work smoothly with Microsoft's Direct3D Application Programming Interface (API), overcoming some compatibility issues the first-generation chip had. Like its predecessor, PCX 2 will ship with 4MB of SDRAM for texture storage, and will use your 2D board's frame buffer for rendering to screen. Pricing, at $199, will remain the same as the first-generation PowerVR boards.

Hercules is working on their Stingray 128/3D, a 2D/3D board based on 3Dfx's Voodoo Rush chipset, coupled with Alliance's AT3D chip which handles 2D chores. Shipping in a 6MB EDO DRAM configuration, this board offers 3Dfx's killer 3D performance, and what looks to be a pretty good 2D contender.

Pricing will be about $299 list.

We tried out CyberGladiators, Monster Truck Madness, a beta version of Terracide, and Hellbender (all Direct3D titles), and put the Hercules board through some 2D duties in both

Kalistos' ULTIM@TE RACE

Win 95 and DOS. The new PowerVR looked fairly solid overall, and ran all four titles with few snags (some are to be expected with beta drivers). The bilinear filtering is a welcome addition, improving overall image quality in all titles, all but eliminating the "sparkling" effect that point-sampled textures can produce.

ULTIM@TE RACE, a visually impressive racing title by Kalistos, is written to talk to PowerVR's SGL, a chip-specific API developers use to squeeze a little more performance out of PowerVR. This title, along with the PowerVR version of MechWarrior 2, also took advantage of bilinear filtering.

For its part, the Hercules Stingray 128/3D tore up the Direct3D titles we threw at it, with clean rendering and smooth frame rates. On the 3D side, this feature-rich board will support both OpenGL and 3Dfx's own Glide API, which has curried favor among game developers.

As for 2D, the Alliance chip turned in some encouraging numbers in both DOS and Win 95. For comparison, we pitted the Stingray 128/3D against its Hercules sibling, the Dynamite 128, a very able 2D performer based on Tseng Labs' ET-6000 chip.

In Winbench 97 tests, the Stingray's beta driver was not too far behind the Dynamite 128, at 1024x768 resolution with 16-bit color. In DOS, the Stingray was only about 3 frames per second behind the Dynamite in QUAKE's TimeDemo tests.—*Dave Salvator*

weapons, and two new foes—just for starters. Hipnotic has added environmental traps, like fall-away floors and exploding mines. On one level with a deep cavern, be careful or you'll find yourself "Jones-ed" (flattened by a huge, tumbling boulder).

Also included in this new mission pack is a wicked new DeathMatch level with scads of great sniper nooks, and large floor areas for closer combat. The high-quality level-design in Armagon should make for hours of macabre mirth.—*Dave Salvator*
Hipnotic/Activision, (800) 477-3650
PC CD-ROM
Reader Service #: 304

G-NOME

7th Level's attempt to win the crown of the giant robot genre implements some cool features, including the ability to get out of your "HAWC" and run around as a foot soldier. You can even steal enemy vehicles, then use them to kill their

rightful owners. Sadly, though, your cockpit view never lets you feel you're inside four stories of walking badness. Warped and pixelated textures, even in high-res, leave you feeling trapped in a bad cartoon, and the bungling AI has you wondering if you're fighting the Three Stooges. "Bot Jacking" is cool, but not cool enough to carry the rest of the game.—*Greg Fortune*
7th Level, (214) 437-4858
Win 95 CD-ROM
Reader Service #: 305

AIR WARRIOR II

Finally, a new World War II air combat game! AIR WARRIOR II is a stand-

Gamer's Paradise?

Gaming may not strike you as a particularly social activity, but GameWorks, the new entertainment venture from DreamWorks, Sega, and Universal Studios, plans to catapult gamers into a completely new dimension. Part upscale amusement center, part arcade, the first GameWorks site opened recently in Seattle. Other sites will open in Las Vegas and Ontario, Canada, later this year, with plans to build over 100 centers worldwide before 2002.

GameWorks has many Hollywood names behind it, but was largely inspired by Steven Spielberg's dream for an entertainment center unlike any other. Representatives at GameWorks are quick to point out how hands-on Spielberg is with the project, and from what I saw on my recent behind-the-scenes visit, this indeed seems to be the case.

Design and concept work is handled at GameWorks' self-proclaimed "skunkworks," on the Universal Studios' back lot. Each and every detail—lighting, music, game placement, viewing angles, and interior design—must be tested and approved here before being placed in a GameWorks center.

More than just your everyday arcade, GameWorks centers have the potential to be a pleasant place for social interaction; safe, sophisticated entertainment; and a unique competitive environment. Dubbed "Spielberg's Three-Ring Circus," each multi-million dollar center will feature three main zones, each with its own distinct look, sound, and feel. Zone 1, the Loading Dock, is an intense, competitive area featuring the latest coin-op games, designed to appeal to the twitch gamer. Zone 2 is the Arena, a high-energy area featuring several signature GameWorks games, including Vertical Reality, a 24-feet high four-player shooting game.

The last zone, The Loft, offers a relaxing environment with a variety of classic games (Pac Man, Pong, Asteroids, and the like), where players can cool down and meet other people, on-line or face-to-face. Eventually, players will be able to challenge people in GameWorks centers worldwide—in real time.

Will this revolutionary new entertainment environment take-off? Only time will tell if reality matches the excitement of the concept, but from what I've seen, GameWorks looks like a dream come true for gamers.—*Kelly Rickards*

alone version of the classic online flight sim. Over 300 solo missions are included, spanning from WWI to Korea, but the emphasis is on WWII combat, with campaigns included for both Allied and Axis forces. In addition to solo play, you can play head-to-head over modem, network, or TCP/IP, or against hundreds of other humans in the online arenas. Unfortunately, although the sim's engine is greatly improved over previous AIR WARRIOR releases, its graphic look is still very 1992.—*Denny Atkin*
Interactive Magic, (888) 232-5836
PC CD-ROM
Reader Service #: 306

STARGUNNER

From the clichéd side-scrolling action to the scrolling words at the beginning of every episode, STARGUNNER is, at most, a rehash of the side-scrolling shooters of old. Not long ago, Apogee released a modest little overhead shooter called RAPTOR. It seems that STARGUNNER is Apogee's next step in reviving an old genre. Though it sports a nice soundtrack and gives you the ability to buy and somewhat customize your ship, STARGUNNER has too much of a "been there, done that" feel to it. Unless you are really into side-scrolling shooters, STARGUNNER doesn't have enough to make a name for itself.
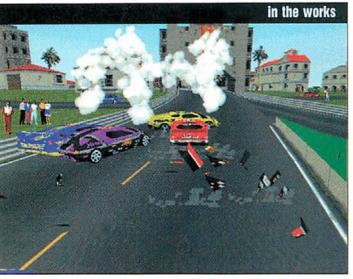
—*Thierry Nguyen*
Apogee/WizardWorks, (800) 229-2714
PC CD-ROM
Reader Service #: 307

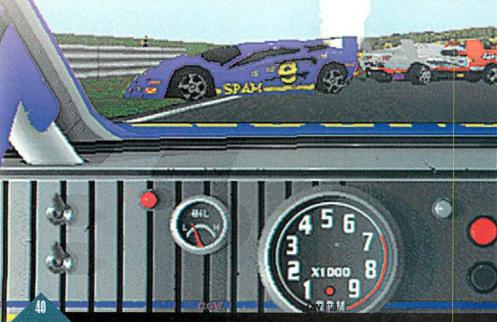# BETHESDA PUTS X-FACTOR INTO X-CAR: EXPERIMENTAL RACING

Whether you're solving for X in Algebra, watching "The X-Files" on television, or reading the *X-Men* comic book, X stands for that certain something—that X-factor—which hasn't quite been defined. Bethesda Softworks' X-CAR models 16 of the latest experimental racing cars on ten different tracks. Gamers will compete over five realistic tracks from test tracks to a detailed model of Seattle's highway system, as well as five fantasy tracks from the Mayan jungle to a twisting mountain road.

in the works

Even in SVGA 800x600 resolution, X-Car has a very fast frame rate, and it also features the most robust telemetry model I've ever seen. You race the car on the telemetry test track (a high-speed oval) or the skid pad, and record dozens of data points. These can be played back VCR-style and allow you to loosen or tighten the suspension, adjust the steering, swap out metal-metal for carbon-fiber brakes, or tune the engine.

Gamers not into the detailed physics model and elaborate car set-up routines can simply boot up the game and zoom around the tracks in a arcade mode. Finally, arcade gamers and sim fans alike should appreciate such details as the elaborate doppler effect heard when the powerful cars zoom through tunnels, and the nifty weather model that allows you to race in all types of conditions. Indeed, X-CAR may well rush past the current pole sitters in racing simulations and take the checkered flag. —*Johnny Wilson*

PIPELINE

10th Planet Bethesda	11/97
6300 2D/3D Chip Set Tseng Labs	Summer 97
Achtung: Spitfire! Avalon Hill	6/97
Agents of Justice MicroProse	Summer 97
Aide De Camp 2 HPS Simulations	Summer 97
Armored Fist 2 NovaLogic	6/97
Battle Spire Bethesda	9/97
Blade Runner Virgin/Westwood	10/97
Blood 3D Realms/GT	Spring 97
Boggle Hasbro Interactive	8/97
Buccaneer SSI	9/97
Demon Isle Sierra	10/97
Descent To Undermountain Interplay	8/97
Dungeon Keeper EA/Bullfrog	Summer 97
Ecstatica II Psygnosis	5/97
European Air War MicroProse	Fall 97
Fallout Interplay	Summer 97
Freedom 5600 Audio Adapter Diamond	Summer 97
Front Page Sports Baseball 97 Sierra	6/97
Front Page Sports Skiing Sierra	10/97
Flying Nightmares II Eidos	Summer 97
Flying Saucer EA/Any River	7/97
Golgotha crack.com	Fall 97
Grand Slam Virgin	Spring 97
Hardball 6 Accolade	7/97
iF22 Interactive Magic	6/97
Imperialism SSI	9/97
Interactive Gamepad (USB) Alps	Summer 97
Island of Dr. Moreau Psygnosis	8/97
Journeyman Project III Broderbund	Fall 97
Last Blitzkrieg SSI/SSG	6/97
MicroLeague Baseball 6.0 MicroLeague	6/97
Mig Alley Empire	Summer 97
Myst 2: Riven Broderbund	Summer 97
Napoleon In Russia Talonsoft	Spring 97
NFL Legends Accolade	9/97
Quarterback Club 98 Acclaim	Fall 97
Pacific General SSI	7/97
Panzer General II SSI	11/97
Pentium II Intel	Summer 97
Pictionary Hasbro Interactive	9/97
Pyramid 3D Accelerator Tritech	Spring 97
Reach for the Stars II SSG/Microsoft	Summer 97
Red Baron II Sierra	9/97
Redguard Bethesda	10/97
Return to Krondor 7th Level	Summer 97
Sabre Ace Virgin	9/97
Semper Fi Interactive Magic	9/97
Shadows of Riva Sir-Tech	Spring 97
Spider Man: Venom Factor Byron Preiss	Spring 97
StarCraft Blizzard	6/97
Starfleet Academy Interplay	Spring 97
Steel Panthers III SSI	11/97
TFX 3 DID	Summer 97
Thunder Truck Rally Psygnosis	6/97
Tone Rebellion Broderbund	Fall 97
Triple Play 98 EA Sports	Spring 97
Twinsen II Activision	6/97
Ultima On-Line Origin	Summer 97
Unreal Epic	5/97
VR Baseball VR Sports	Summer 97
War Inc. Interactive Magic	7/97
Warlords III SSG/Broderbund	7/97
Wes Craven...Fear Cyberdreams	10/97
X-Car Bethesda	Spring 97
X-COM: The Apocalypse MicroProse	Summer 97
Zork: Grand Inquisitor Activision	Fall 97

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Fallout on 'GURPS Fallout'

After weeks of haggling, Interplay finally made it official in mid-March: GURPS FALLOUT is dead. Long live FALLOUT.

For those just tuning in to the soap opera, here's the story: Interplay has spent the last three years working on a post-nucelar RPG based on Steve Jackson Games' GURPS (Generic Universal Role Playing System) pen-

and-paper role-playing system. This is a system widely admired by RPG fans for its rich complexity and flexibility, and FALLOUT was to be the first computer game to incorporate it.

After years of work, however, relations between the Interplay design team and Steve Jackson began to deteriorate earlier this year when Jackson began to veto some of the design decisions—a contractually allowable action that was nevertheless giving Interplay an industrial-strength migraine. So, in mid-February, Interplay announced that, due to "creative differences," they were forsaking the GURPS license and creating their own rule system for their upcoming FALLOUT.

Soon after, however, Steve Jackson comment-

ed on his Web site that he didn't consider GURPS FALLOUT to be dead yet, and Interplay affirmed that they were indeed still negotiating. In a phone interview conducted before Interplay gave GURPS the axe, Jackson told CGW that he felt that he had made many compromises with Interplay, and was anxious to see the project move forward, but was worried that "the decision to go on without GURPS has taken on a life of its own."

As it turns out, Jackson's worries were correct. Now Interplay must proceed with the game with a brand new system, created in-house, to replace GURPS. We took a look at the new system, dubbed "SPECIAL" by the Interplay team, and while it lacks some of GURPS' complexities, such as character disadvantages, it functions similarly enough that it should help keep the project interesting.

The sad thing is, all the parties involved seemed to *want* to make a GURPS product, but couldn't work out a decent compromise. FALLOUT project leader Tim Cain said (before the

final decision was made), "I was the one who wanted GURPS in the first place. I set out to make a GURPS game, so I don't want people to get the idea that I want to toss GURPS out."

Interplay also stressed to us that this turn of events does not necessarily mean that there won't be a future GURPS RPG coming from them, since they still have the license. Jackson, for his part, seemed far less convinced about the possibility.

"What would you do if you were me?" he asked. "I work on it with them for three years, and then they decide not to go with GURPS. Why would I want to go through that again?"
—Jeff Green

Meat Is Murder

MEAT PUPPET's Macabre, Violent Atmosphere Casts Its Shadow on CRUSADER

by Elliott Chin

Any time you get a blockbuster in the computer gaming industry, you're sure to see a flood of clones following in hot pursuit. We saw it when a dozen DOOM clones tried to cash in on the first-person shooting craze, and we're seeing it now with the deluge of real-time strategy games trying to mimic COMMAND & CONQUER's success.

We also saw a similar phenomenon when CRUSADER: No REMORSE seized the market. Here was an exciting departure from first-person shooters, with an isometric look and platform-style gaming. Sure enough, a raft of clones followed, including GENDER WARS, TOTAL MAYHEM, and BEDLAM—all of which flopped. Now, finally, we might actually see the first successful, fun CRUSADER clone grace the PC. Why will it be successful? Because it isn't a clone at all, but a well-designed, dark, over-the-top project that was actually started before CRUSADER even came out.

DARK NIGHTS
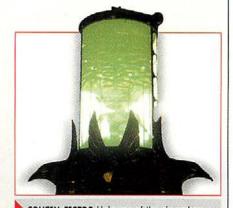
MEAT PUPPET is moody and filled with dark humor, like a computer game version of *Blade Runner*. In this universe, leaders of the world use assassins called Meat Puppet to murder their rivals. Once these killers complete their assignments, they are lobotomized and discarded. Our heroine, Lotos Abstraction, has been accidentally inducted as a Meat Puppet. Now, an evil entity called the Martinet is using her to slay six ambassadors of the world's leading embassies (the future's equivalent of ruling corporations). As Lotos says in the intro movie, "I don't want to kill anyone..." But she can't refuse the Martinet's dictums, because embedded in her skin are sacks of poisonous gel that the Martinet can release at will. So, she has to carry out

▲ LOTOS ABSTRACTION
Our heroine is an ass-kicking assassin who is trying to get even with her master, the Martinet, and end his mysterious reign of terror.

her evil master's whims. But as the game progresses, you soon discover that a friendly robotic companion, Dumaine, will help Lotos fight the Martinet. Together with Dumaine, she'll finish the Martinet's dirty work and then come back for him.
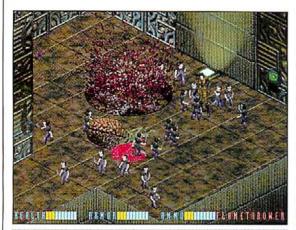
MEAT PUPPET will remind many of CRUSADER, as the perspective is an isometric, three-quarters view. However, the size of objects in the gameplay screen is much smaller than in CRUSADER, which means the main character and enemies aren't as large, but that you see more of the level.

Visually, MEAT PUPPET is more impressive than CRUSADER. Action moves smoothly, even at resolutions of 800x600 and 1024x768. Though the palette is sometimes dark, there is still incredible detail in the environment and creatures. Lotos moves beautifully, as do her enemies, as the game sports over 20,000 frames of character animation, and over 35,000 frames of object animation. If you sit in a corner, you'll see monsters fighting each other, nibbling on body parts, and engaging in real-life actions. This, combined with the game's lush graphics, breathes a life into the game that hasn't been seen in any CRUSADER clones.
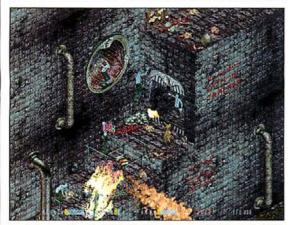
COUSIN CICERO He's one of the six ambassadors on your hit list. Actually, you'll have to extract information from him before tossing him into a meat grinder.

CEREBRAL CHALLENGE Not all the levels of MEAT PUPPET will be shooting sprees. In this level you push Cicero—the brain boy—into the meat grinder.

LIGHT MY FIRE The abominations are wandering zombies that feed on humans. Like the other enemies of MP, they all have their own personalities.

IT BURNS

Like CRUSADER, MEAT PUPPET offers highly combustible environments, and there will literally be hundreds of objects to manipulate and destroy. Adding to the mayhem is MEAT PUPPET's 360-degree globe of fire, which allows you to target any single pixel on the screen and fire at it. Basically, this means that anything you can see, regardless of elevation, can be targeted and attacked. However, only those objects that turn your targeting reticle red will have a satisfying animated explosion.

In addition to violent shootouts, gameplay consists of standard platform conventions. The levels are cleverly designed, with each one having a particular dark theme. In the Eugenics Clinic, for example, you'll see evil children playing while needle-hurling nannies round them up

for use as cannon fodder when you appear. Those same nannies, the Nurses Mucklewrath, are bitter spinsters who, if left alone, will start gossiping and smoking cigarettes while the children loiter.

The sewer levels, where near-mindless abominations dwell, is filled with grungy brick walls, dripping ceilings, pipes, and muddy water. It's here that you'll see these abominations feast on the torsos of bodies that were flushed down the upperworld's toilets, only to lay festering in the mutants' sewer homes. Sometimes, if you're quiet enough, you'll even see them play catch with the torsos they're munching on.

There are of course, many other levels, each with their own strange and menacing atmosphere and peculiar inhabitants. You can be sure though, that they will all be hostile.

The AI of the enemies in MEAT PUPPET will be varied and sophisticated, and they'll react to your actions. If you gun down one kid in the Eugenics level, the others will get scared and run away. But if they encounter their nanny, she'll round them up, give them a morale boost and send them towards you. In those cases, you'd want to kill the nanny and scatter the pesky kids. In the sewers, you might want to just blow up one abomination and then run away and then let them feast on each other's putrid flesh.

LOTOS POSITIONS

Gamers will also notice that Lotos has a lot of character. If you waste her gunfire and she runs out of ammo, she'll mumble, "Shit!" and then throw her hands up in frustration. When she enters the Eugenics level and sees all the knife wielding kids descending upon her, a loathsome "I hate kids" will escape her breath.

The enemies will likewise have personalities. In the Eugenics Clinic, one boss character you'll have to fight is Cousin Cicero, a huge-headed fetus whose head is so large he needs to be supported in a tank of fluid. When you shatter his tank, he'll spill out and start flopping around like a fish, pleading with you for mercy in his wimpy little voice.

Everything Kronos is doing with MEAT PUPPET seems to be geared towards creating a believable environment, as well as a fun, ultra-violent game. At one point, David Sears, producer for MEAT PUPPET, wanted to go for a dark and serious game, but when he saw just how extreme the game was in terms of bleakness and violence, he decided to take it one step further and make it outrageously silly. The look and feel of the game certainly achieves that goal, and the level designs and sophisticated AI appear extremely successful at creating a real world environment. Judging from the beta I played, I think you'll get a good glimpse at a dark world with some hilarious (and violent) action. ⅊

CYBER GHOST Dumaine is a tech puppeteer who will help you topple the Martinet. In certain levels, he'll help you open locked rooms and locate items.

Raptor Attack

Could This Be the First Serious Lightning II Simulator?

by Denny Atkin

Known by Lockheed as the Lightning II and nicknamed "Raptor" by the pilots who will fly it, the F-22 promises to redefine air combat. With stealth, the ability to cruise at supersonic speed without afterburner, and next-generation avionics that will take much of the workload off the pilot, the F-22 should help the U.S. regain a clear technological edge in the air combat arena.

It seems the software industry is a step ahead of the Air Force: By the time the first pre-production F-22 enters full-scale testing later this year, there will already be four F-22 simulators on the market. The first two, NovaLogic's F-22 LIGHTNING II and Mission Studios' JETFIGHTER III, which concentrate more on the action side of the spectrum, are already on the market. In a few months, sim owners will be treated to the more authentic TFX3, from DID, and IF-22 AIR SUPERIORITY FIGHTER (ASF), from Interactive Magic. While TFX3 is still under wraps, Interactive Magic recently supplied us with a late alpha version of IF-22 ASF. While this first home-grown sim from IM promises to keep the action fans happy, it also looks to have the right stuff to satisfy the serious sim pilot.

FULLY LOADED

Glancing at the specifications for ASF, it looks like a flight sim fan's laundry list: flight models ranging from arcade to realistic, authentic aircraft systems, three believable conflict theaters, 3D-card support, and a variety of viewing options. ASF should be as much a jump over previous jet sims as the real F-22 is over its predecessors.

Designed for Pentium 90 and faster machines (a P120 is preferred, with a P133 or faster listed as "ideal"), ASF features both single- and multiplayer missions. Solo mode offers instant action, single missions, and a dynamic campaign. You'll fly in four combat theaters: Fort Collins (used for training), Bosnia, the Persian Gulf, and Ukraine. The backstories for each of these conflicts are well done and convincing enough to draw you in.
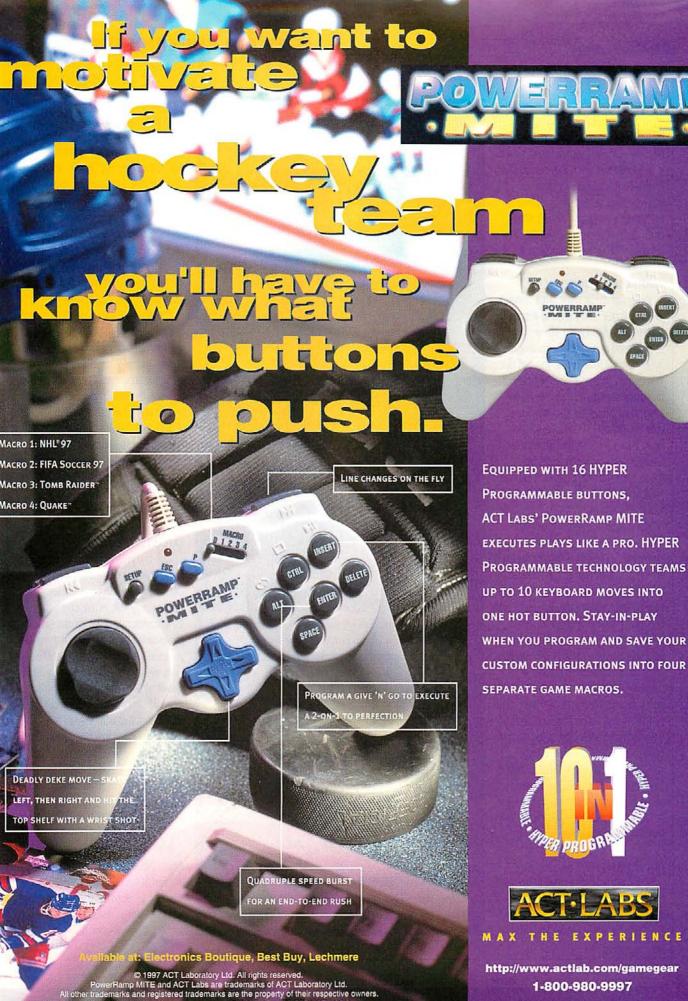
ASF has no canned missions—instead, the program has a situation generator that looks at the current state of the battlefield and dynamically creates a series of missions. In single mission mode, you're given a choice of 10 or so missions, ranging from combat air patrols to ground-support to suppression of enemy air defenses. While there's no greater campaign picture to worry about, your success does affect your pilot's status—you can earn promotions and awards or go MIA or die. Although the targets and mission objectives are fixed, you do have the ability to alter the weapons loadouts of aircraft in your flight, and to add or change waypoints to and from the target.

More intriguing is the campaign mode, which presents you with a similar set of missions, but where your success or failure has far-reaching consequences. Each mission influences the overall success of your country's forces, and targets that are destroyed remain down in future missions—at least until enough time has passed for the target to be repaired. Three conditions will conclude a campaign: if you push the enemy out of the combat area, survive long enough for peace negotiations to conclude the war with a stalemate, or are pushed out yourself by superior forces.

One innovative feature that I hope will become *de riguer* for simulations with dynamic campaign

GREEN ACRES The satellite-mapped imagery in IF-22 ASF looks great when you're flying at medium and high altitude, even without a 3D card.

generators is the ability to save individual missions—before or after flying them—for later play. If you're issued the strike mission from Hell, you can pass it on to your friends and see if *they* can survive it, or keep it around to replay when you're looking for a serious challenge. But, in the preliminary version, there doesn't seem to be a method for creating a mission entirely from scratch.

FORMATION FLYING

You're not alone in the skies, however. To excel at ASF, you'll need to engage the cooperation of wingmen, either computer-controlled or human. Communications are handled at three levels: you can talk to wingmen on a specific UHF channel, broadcast on a guard frequency monitored by all aircraft, or stealthily share data with friendly planes over your In-Flight Data Link (IFDL). In addition to typed chat messages in multiplayer mode, there are also a series of canned messages you can send in both single- and multiplayer missions.

ASF has three styles of multiplayer action. There's a simple free-for all dogfight mode, as well as a Capture the Flag scenario. In the latter scenario, players face off in two teams, with one airfield for the Red team, one for the Blue team, and one neutral airfield. Along with human pilots, each side has computer-controlled scramble aircraft and SAM/AAA defenses. The goal is to reduce your opponent's defensive capabilities to the point where your computer-controlled C-17 transport can safely land on his base and seize it. Both scenarios allow players (except the host) to enter and leave the mission at will. The final multiplayer mode of play is the cooperative mission. These are essentially the same as single missions in solo mode, except your flight is composed of human-controlled aircraft.

ALL SYSTEMS GO

ASF has the best re-creation I've seen so far of the F-22's advanced avionics systems. As in the real F-22, gone are the days of adjusting radar azimuth and

MiG ALERT The MiG-29 is no technological match for the F-22, but it's still a challenging opponent in a knife fight.

BUTTONED UP Forgot which key lowers the gear? All the relevant switches and buttons in the cockpit can be operated with the mouse.

TANK EATER You'll find a full complement of modern allied and Eastern Bloc aircraft in the skies, including the A-10 Warthog.

frequency, and of checking multiple displays to get a full picture of the combat zone. The F-22 has four Multi-Function Displays (MFDs) which give you an overview of defense, tactical, attack, and stores status. Although the "big picture" provided by these displays—often with 360-degree radar coverage—may seem unrealistically complete, it's not. In fact, the F-22's advanced capabilities portrayed here all mesh well with published information in journals such as *Aviation Week and Space Technology*.
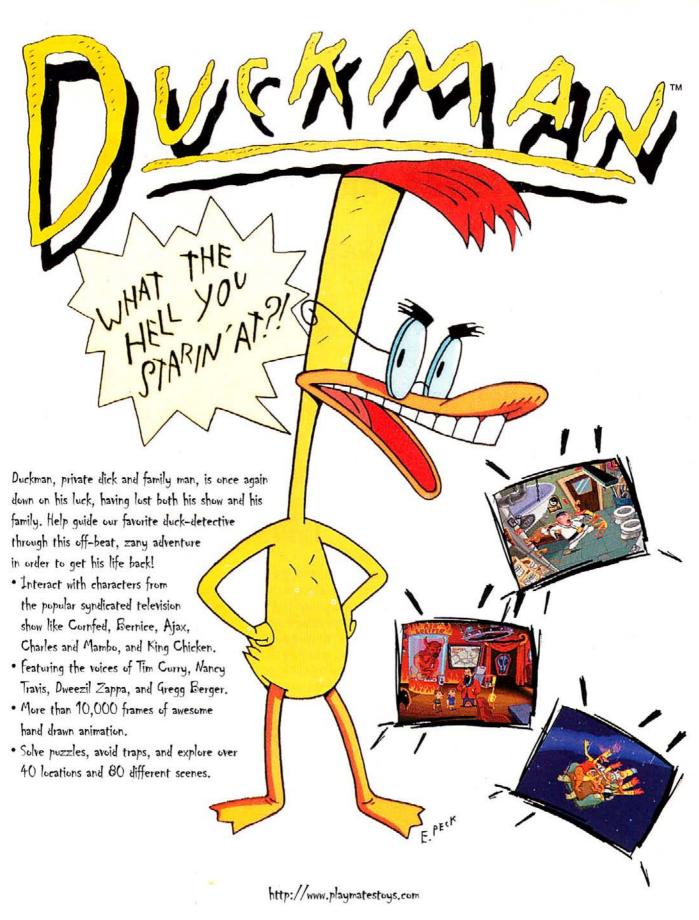
The real F-22's IFDL data link allows it to combine information from other fighters, AWACS, and ground stations on its status displays. This allows you to enter a combat zone without your active radar broadcasting your position. Stealth should play a big part of ASF missions.

This data link also works well for coordinating attacks with other aircraft. You can have your offensive systems create an automatic "shootlist" of the highest priority targets, and you can define a shootlist for your wingmen as well.

SATELLITE VIEW

This sim promises to be a real dazzler in the graphics department. The early alpha had quirky Direct 3D support, so we were only able to run it on a standard 2D graphics card. Even so, the satellite photo-based landscapes looked fantastic at altitude. And despite the level of detail, I was averaging nearly 30fps on a P166 system at 640x480 resolution in the alpha version—a nice change from other recent titles that bog down to 12fps or less on the same machine. Unfortunately, while the terrain looks fantastic at dogfight altitudes, the effect falls apart at ground level in the alpha version, degrading to a mess of big pixels. Hopefully the development team will be able to address this before the product ships.

IF-22 ASF looks to be an impressive effort, especially for a freshman entry in the sim arena. If all the parts come together as planned, this could be the first F-22 sim to really satisfy novice and expert pilots alike. ₲

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Sloshed in Space

Experience Close Encounters of the Weird Kind in Steve Meretsky's THE SPACE BAR

by Jeff Green

Over the past 14 years, game designer Steve Meretsky has created some of the funniest, most memorable, and most challenging adventure games of all time, including the classic text adventures HITCHHIKER'S GUIDE TO THE GALAXY, PLANETFALL, and LEATHER GODDESSES OF PHOBOS. Now he's back with a new adventure, THE SPACE BAR, which retains the goofy spirit of his older games but takes a quantum leap forward in the graphics department.

Meretsky and his company Boffo Games developed THE SPACE BAR with the resurgent Rocket Science, whose recent OBSIDIAN was one of the best adventure games of the year (see review in this issue). THE SPACE BAR's conceptual design is by Rocket Science visual designer Ron Cobb, best known for his legendary alien creatures in the Mos Eisley cantina scene in *Star Wars*. With an A-Team

of talent at work, the game, due for release this May, has the potential to be one of the year's strongest adventures.

STEP INTO MY SHOES

You play the role of Alias Node, a human detective on the planet Armpit VI, assigned by Amalgamated Vacuum to apprehend a shape-shifting alien fiend who has stolen secret government technology, murdered a fellow officer, and kidnapped your partner in the process. The killer has been tracked to a spaceport bar called The Thirsty Tentacle, where a host of interplanetary species are hanging out and whetting their whistles (or whatever it is that they have). You must discover which of the many aliens in the bar is the killer before he escapes the planet.
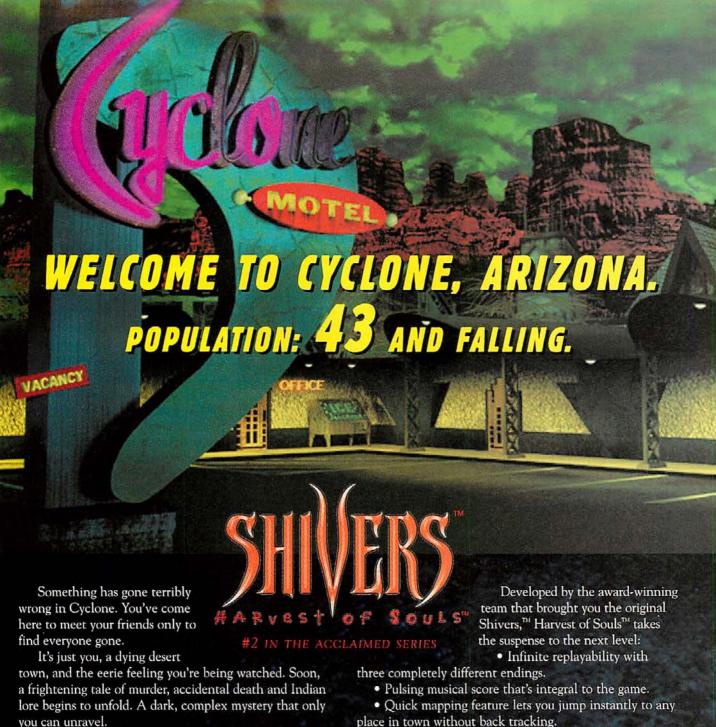
Catching a shape-shifting alien would be no easy task, but you possess a very special ability: You can mind-meld (or perform "empathy-telepathy") with other creatures. This allows you to enter into the brains and bodies of those you are interrogating, and flash back—from a first-person perspective—into events in their past; which will ultimately provide you with clues to the game's big mystery.

HOWDY, DUMBO This ugly fellow, known by the name of Click Snap Snap Rattle, is an Auditon, a creature who can only "see" things via his sense of hearing.

FLY BOY In one of the more challenging sections of THE SPACE BAR, you'll assume the first-person perspective of an insect-like creature called a Zzazzl, complete with more eyeballs than you'll know what to do with.

THE SPACE BAR contains eight of these flashback sections, in which you will inhabit the bodies and assume the perspective of eight wildly different alien races. Each section is effectively its own mini-adventure game, with its own unique look, goals, puzzle type, and structure. This ability to switch character perspectives has been done before, most recently in The Residents' under-appreciated BAD DAY ON THE MIDWAY, but THE SPACE BAR takes this idea to a much more radical and creative extreme. Meretsky and Cobb let their imaginations run wild to give gamers a series of challenging, witty, and totally unique gaming experiences.

For example, in one section of the game, you assume the persona of an alien called an Auditon, which is a sightless, bat-like creature that can only "see" things that make sounds. Thus, your screen remains totally black except for spots from which sounds emanate (where a clock would be, for example). In another section, you play a large insectoid creature called a Zzazzl, so your screen perspective looks like that

Cyclone MOTEL

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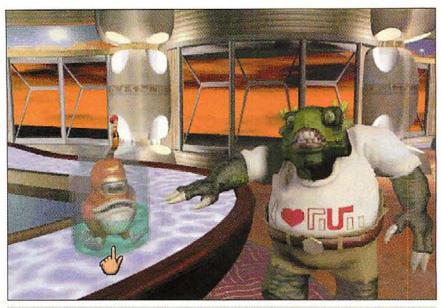
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I'M WITH STUPID Meet Fleebix (left) and Thud (right), the most co-dependent aliens you'll ever be likely to encounter. You'll inhabit both characters' bodies in the course of the game.

of a multi-eyeballed fly. Other forms you will take include that of a robot, a limbless alien who lives in a jar, a moron, and a potted plant. Yes, a potted plant. And you thought BAD MOJO was weird.

HELLO SAILOR

THE SPACE BAR is non-linear, so you can feel free to explore the bar and work on any of the flashback sections at will; getting stuck in one place won't stop the game completely. The non-linearity does have one drawback, though, at least on the beta I played: constant disc-swapping. It would be nice if the game could warn you ahead of time when a disc-swap would be necessary.

The game's 3D graphics, reminiscent of those in OBSIDIAN, are quite stunning. Ron Cobb's alien creations are as funny and weird as the ones he created for *Star Wars*, giving solid form to Meretsky's oddball ideas. The game also employs 360-degree panning, similar to ZORK NEMESIS, in order to create a deeply immersive environment.

Finally, whereas most adventure games these days leave gamers desperately clicking all over their screens in search of something to do, THE SPACE BAR is loaded with active areas to explore. Meretsky knows that gamers like, and will always try to do, stupid things just to see what happens. THE SPACE BAR encourages such behavior throughout. The game is crammed with gratuitous jokes, sight gags, useless information, and

weird gadgetry such as the Mister DrinkMaster 2000, a drink machine with no functional purpose in the game other than to let you order drinks that will kill you.

Interaction with the game's many characters is also refreshingly lighthearted. Along with standard actions to choose from (such as Examine or Chat), depending on who (or what) you're talking to, you might also get choices such as Smell or
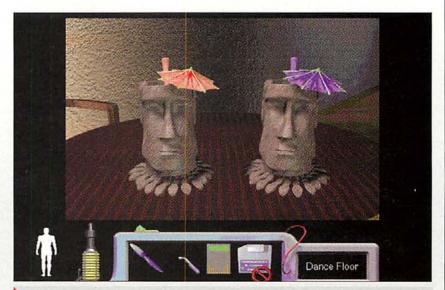
Pull Leg Off or Kick. Again, many of the lengthy dialog trees you can follow have no point other than to entertain. In this respect, the game is spiritually closer to the old text adventures than to modern adventure games, with an environment that rewards any action you take—whether brilliant or stupid—with some kind of humorous response.

BUT SERIOUSLY

Despite its lighthearted atmosphere, though, THE SPACE BAR is an extremely complicated and bizarre game that is likely to appeal best to hard-core adventurers used to a serious mental challenge. Newbies, faced with things like a multi-eyeballed screen, are likely to find themselves in over their heads very early on. Games tend to get a lot less funny when you can't figure out how to play them.

But I say bring it on. Ever since MYST, the adventure genre has been glutted with one pretentious, artsy-fartsy coffee table game after another. Fortunately, fans of humor-based adventure games have been getting a respite of sorts, with games like TOONSTRUCK, LEISURE SUIT LARRY 7, and DISCWORLD II. Now, with Steve Meretsky, one of the genre's masters, returning to the fold, it feels like we have a real renaissance on our hands.

If you're looking for an entertaining adventure game, belly up to THE SPACE BAR. From what I've seen, you should get a good buzz. ◗

DON'T DRINK THE WATER Though you might be tempted to take a drink here, be forewarned that this is actually Ambassador My and Ty, and they'll take such an act as a serious insult.
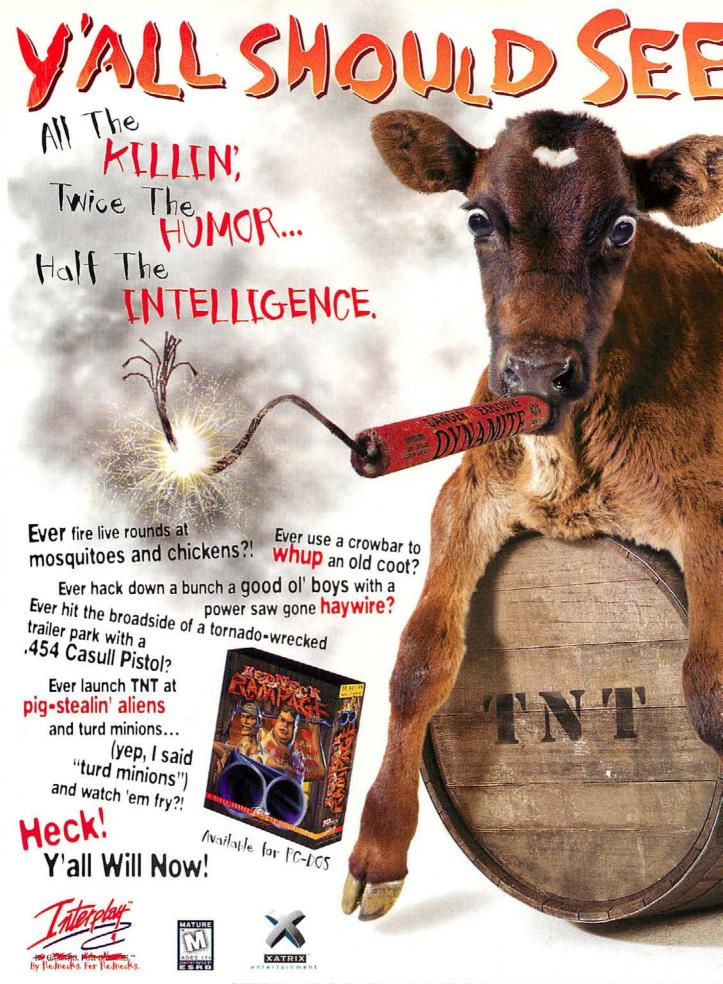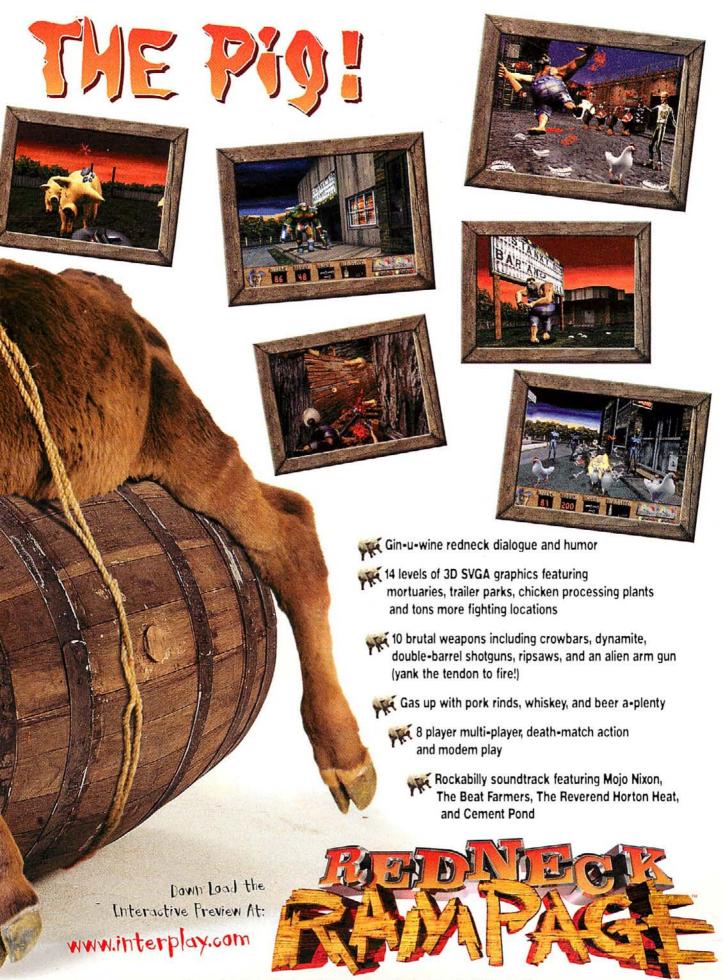
THE PIG!

- Gin-u-wine redneck dialogue and humor

- 14 levels of 3D SVGA graphics featuring mortuaries, trailer parks, chicken processing plants and tons more fighting locations

- 10 brutal weapons including crowbars, dynamite, double-barrel shotguns, ripsaws, and an alien arm gun (yank the tendon to fire!)

- Gas up with pork rinds, whiskey, and beer a-plenty

- 8 player multi-player, death-match action and modem play

- Rockabilly soundtrack featuring Mojo Nixon, The Beat Farmers, The Reverend Horton Heat, and Cement Pond

Down Load the Interactive Preview At:

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REDNECK RAMPAGE
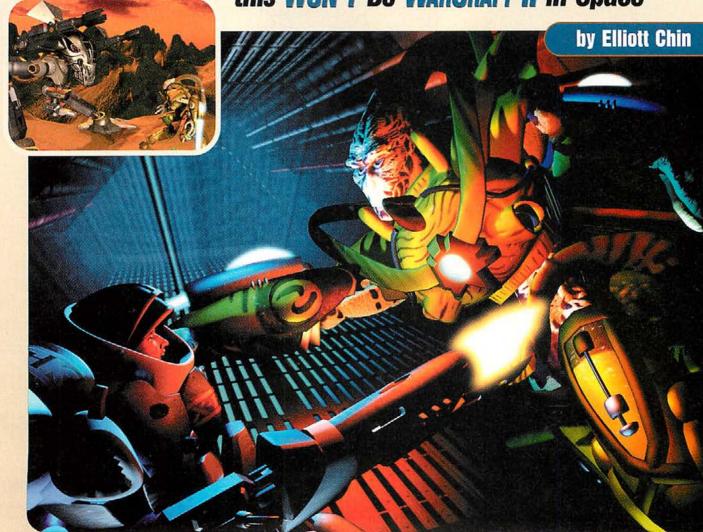
Reaching For The Stars

Blizzard's Strategy Blockbuster **STARCRAFT** Features a New Design, Incredible Artwork, and an All-New Engine— this **WON'T** Be **WARCRAFT II** in Space

by Elliott Chin

A

t last year's E3, Blizzard unveiled what it hopes will be its next real-time hit: STARCRAFT. The demo was hastily assembled, and it looked very much like WARCRAFT II with new art in an outer space setting. But Blizzard's designers didn't want the game to merely copy WARCRAFT II, and right after E3 they scrapped the demo and started work on a completely new engine and an all-new design. Now, most of the million-plus gamers eagerly awaiting STARCRAFT have come to realize that it will be *very* different from WARCRAFT II.

Craft Your Own Games

BLIZZARD INCLUDED A GREAT SCENARIO editor in WARCRAFT II, but they're doing even more for STARCRAFT, with the proposed inclusion of a campaign editor.

Not only will the editor have better functionality, but you'll also be able to create multiple scenarios and string them together into a mini-campaign. You'll be able to record your own mission briefings, create your own NPCs for recurring roles in each scenario and also record your own voices. Even better, you'll be able to define your own victory conditions, rather than just killing everyone.

S ome folks at Blizzard still worry that gamers will think of STARCRAFT as just "Orcs in space." Given the superficial previews in other game magazines, they have cause for concern. To overcome the misconceptions, Blizzard invited us to take an exclusive look at the project, and from what we've seen, we think you'll be blown away.

How big will STARCRAFT be? Blizzard wants to make STARCRAFT as big a leap over WARCRAFT II as WARCRAFT II was over the original WARCRAFT. They're adding better art, more special effects, more realism, revolutionary multiplayer options, and a laundry list of gameplay enhancements that many other real-time games still have yet to implement.

Alien Family Feud

Like other Blizzard titles, STARCRAFT has an intriguing story that brings the game to life. The game chronicles the conflict between the Protoss and the Zerg, two rival alien races genetically engineered to near-perfection by the same alien fathers.

LOST IN SPACE StarCraft will have a greater sense of scale (see the Protoss carrier versus the tiny interceptors), and cool special effects, such as the ships' ion trails.

Now, they're moving towards a final confrontation. Caught in the middle are the scattered nations of the Terrans, a nomadic people trying to scavenge their way to a meager living among the stars.

Here's Where You Come In

Unlike the WARCRAFT series, where the two campaigns were mirror images of each other, each of STARCRAFT's campaigns are unique and tell a single act of a three-part story.

LANDING GEAR This is one of the tilesets for STARCRAFT's ground scenarios. Notice the transparent water and detailed terrain.

STARCRAFT

First you'll play from the role of a Terran. When you finish that campaign, you'll understand their role in the story and get a glimpse of the larger story chronicling the Zerg-Protoss conflict. The second campaign is from the role of the Zerg, where you attempt to assimilate the Terrans and defeat the Protoss. After this campaign, more of the story will be revealed. After completing the third campaign as the Protoss, the story comes to a close.

Each campaign is slated for 10 scenarios, which will be a mixture of space, ground, and installation combat. Space combat will include asteroid land masses and wide stretches of outer space, ground combat will be similar in feel to WarCraft II scenarios, and installation scenarios will be fights in enclosed areas, such as space stations, similar to Luke and Han's rescue of Leia aboard the Death Star in *Star Wars*.

Visual Realism

The campaign and scenario design are the least of STARCRAFT's features. Where Blizzard is investing most of its resources is on art and gameplay. Blizzard is striving to create the most realistic environment ever seen in a real-time strategy game, so the look will be hi-tech, hi-res, and sophisticated. It has a more isometric perspective than WarCraft II in order to provide greater visual

The Races Of StarCraft

TERRAN

The Terrans will be the most familiar race for WarCraft II veterans, because they play like the humans from that game. Their biggest advantage will be their nomadic nature. Most major Terran facilities will be mobile, so you can actually pick up a Terran barracks or research lab and move it after you've built it. Not only can you confuse your enemies, you can also move your settlement after you deplete a mine. Terran facilities will also be upgradeable. Primary buildings will be able to host add-on buildings. The research lab, for example, might be able to house a genetics wing, which would allow new units or an upgrade. However, these additions won't be mobile, so you'll have to leave them behind if you move. If an enemy Terran flees an area and leaves behind building additions, you'll be able to swoop in and use the discarded add-on buildings.

Terrans will also be able to use alien wreckage as a secondary source of resources, so while the Zerg and Protoss will only be able to use mines, Terrans will be able to worm a few more crystals out of the wreckage they spot on the maps.
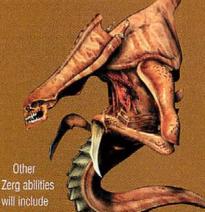
Blizzard is also discussing allowing Terrans to form industrial blocks so they can link structures to be more efficient than the constituent parts.

ZERG

The Zerg are being designed as an organic swarm of melee monsters. Though individually weak compared with Terran or Protoss units, Zerg

units will be the cheapest and most plentiful. To simulate the horde, you'll be able to group more Zerg units together than any other race. Zerg units also won't cast any light, so they'll often have the element of surprise, and they might even have the ability to burrow underground or through walls.

Zerg units will increase in size and strength as they age. The Zerg hydralisk, for example, would start with 120 hit points, but then add one additional hit point every few seconds to top out at 130.

Other Zerg abilities will include regeneration for all their units and buildings, as well as the ability to have premature births. So, if you're under sudden attack, you could just hatch that hydralisk even at only 50 percent completion. It will have reduced stats, but it will be available immediately.

The most interesting aspect of the Zerg is that they need a substance called the Creep to thrive. Each Zerg building, beginning with the hatchery (the Zerg town hall), will emanate a radius of Creep that coats the ground. Zerg buildings will

only be buildable adjacent to Creep, so it will thus become a necessity for Zerg territorial expansion. An added bonus will be that Protoss and Terrans won't be able to build where the Creep has taken hold.
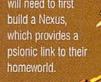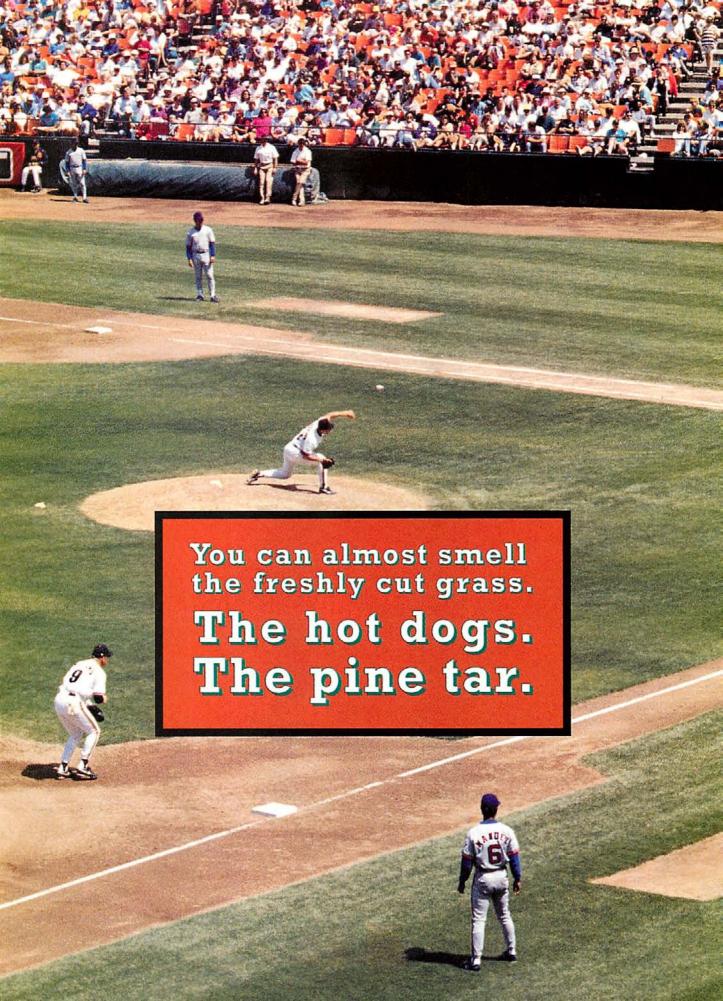
PROTOSS

The Protoss are the most advanced beings in STARCRAFT, born with incredible psionic powers. They will have the fewest units, but will have the strongest individual troops in the game. Most Protoss units will have shields, providing an extra layer of defense. The opposite of the Zerg, you might be able to group only half as many Protoss together.

The Protoss psionics will operate similar to WarCraft II spells. The list of psionics isn't complete yet, but Protoss should have the ability to teleport across the map, cloak their units, create illusionary units, and combine their troops to create a more powerful being. The Protoss templars, for example, will have the ability to merge into an Archon unit, the most powerful Protoss unit available. Grouped Protoss zealots might be able to channel all their energies into one of their number, giving that one unit bonus attributes (like a mega-bloodlust that's targeted at a single unit).

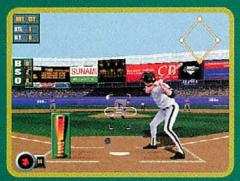Like the Zerg, the Protoss will also be restricted in their growth. The Protoss derive their psionic power from their homeworld. So, Protoss commanders will need to first build a Nexus, which provides a psionic link to their homeworld.

You can almost smell
the freshly cut grass.
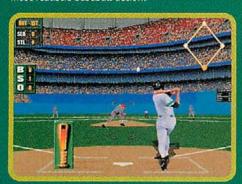The hot dogs.
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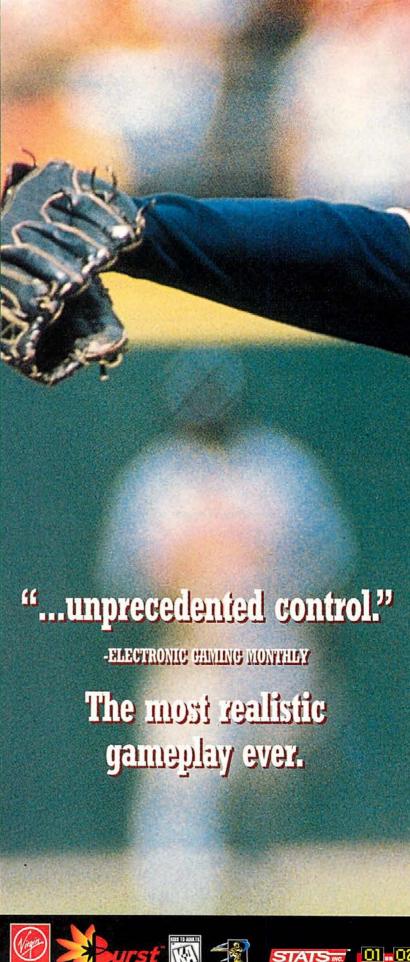

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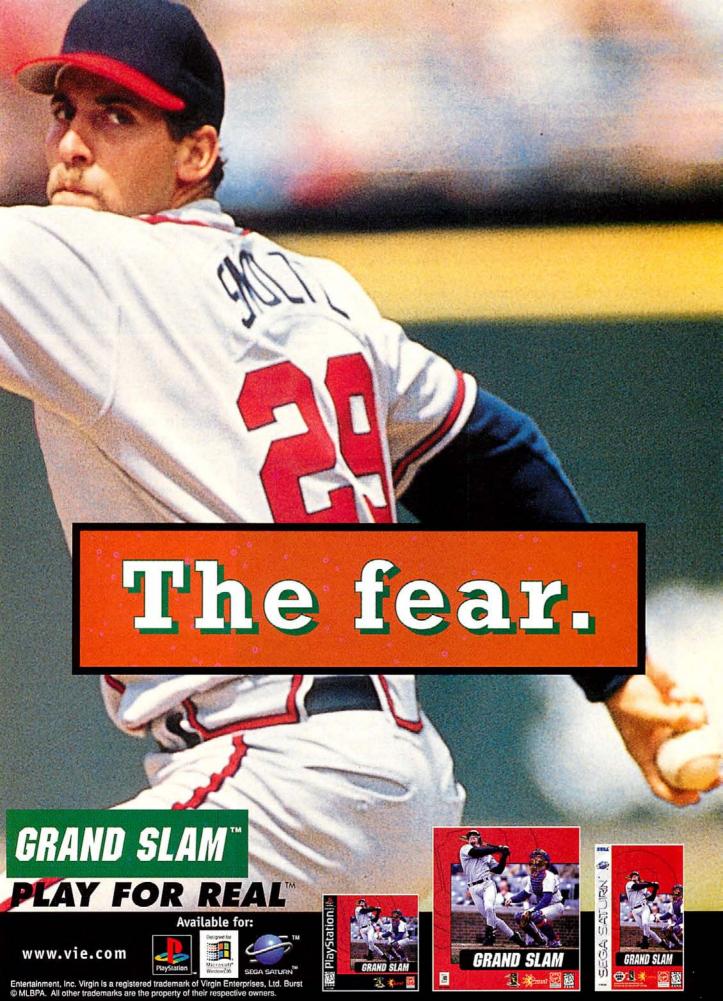

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STARCRAFT

depth and more animation in the buildings. For example, the Zerg hatchery has four tubes that pulse and spit out squirming larva. Units will also be animated, so you'll see the Zerg cocoon when it mutates, pulsing and wriggling ever more violently until a new lifeform bursts from the egg.

Expect more detail in the unit displays, as well. Every unit has a wireframe to indicate damage, as well as an outline for shielded units that changes color when damaged. Zerg units, being organic, have a heat outline that changes color when hurt.

Spectacular special effects are also in the works, including transparent smoke and translucent lighting. Some ships will have cloaking technology, which has a rippled effect when activated, similar to the alien's movement in *Predator*.

The lighting model features a slightly enhanced fog of war. Most units will have a light radius, so in most cases you'll be able to see a ship's head-

lights before you actually see the unit. This will give you the opportunity to create some interesting deception tactics.

You can also expect more visual realism in combat. For instance, when Terran robot units move to attack enemies laterally, their legs will move one way while their turret torsos swivel to face the enemy before firing. If it hits its Protoss target head-on, you'll see the Protoss front shields light up. If it gets hit in the back, you'll see the aft shields explode.

ALIEN ATTACK The Zerg are designed to be an overwhelming horde. While the Zerg will have the weakest ranged attacks, they will have the most powerful melee attacks of any race.

Terrain Day

Blizzard's quest for visual realism also extends to the terrain and environment. You'll see transparent water and lapping waves on the land, and many objects will be interactive, such as operable elevators and destructible pipes and barrels. Weather will also play a role. The designers are trying to include periodic storms, fog, and even nebulae in space combat. These environmental effects will probably affect gameplay, for example, by limiting visibility. There won't be any harmful effects, such as earthquakes or meteor showers, but having regular weather patterns will definitely add realism.

In addition, Blizzard will be adding more *tactical* realism to combat. In WARCRAFT II, elevation didn't affect battles. In STARCRAFT, though, if a ground unit is attacking a unit that has higher ground, he'll be at a disadvantage. The ground unit will still be able to fire, but its chances will be lessened since it's harder to hit something above you.

The computer will also take obstacles into affect in determining your hit percentage. With terrain being a factor, getting straight lines of sight and proper facing will be even more important in STARCRAFT than in other real-time games.

Combat debris will also affect gameplay. Debris will drift off into space, and ground-based combat will result in persistent debris that impedes movement. In the case of the scavenging Terrans, they'll even provide a few resource units for you to strip.

WarCraft: The Adventure Continues

GREAT NEWS FOR WARCRAFT FANS: the Orcish hordes are coming back for more. Blizzard's first project after STARCRAFT will bring gamers back once more to the lands of Azeroth and beyond—but in a different form than you might expect. Instead of WARCRAFT III, Blizzard is diving head-first into a completely different genre—adventure games—to continue their story.

WARCRAFT ADVENTURES: LORD OF THE CLANS is set in the time period immediately following the WARCRAFT II: BEYOND THE DARK PORTAL expansion set. The Orcs have now been beaten down twice, and, in the words of lead designer Chris Metzen, "are not doing very well." You are Thrall, a young Orc slave who's been raised by humans since infancy. Over the course of the game, Thrall will escape from his bondage and set upon a quest to relearn what it means to be an Orc, with the goal of reuniting the Orc clans and returning them to their former glory.

"One of the things we really wanted to do with the adventure title," said Director Bill Roper, "was take a good, long look at some of the things we've always known about the Orcs when writing the story lines for the [strategy] games but didn't explore."

Blizzard isn't ready to discuss actual gameplay yet, but said that it's being modeled after such LucasArts adventures as FULL THROTTLE and THE DIG. "Right now we're working the most on creating an enthralling story and continuing the WarCraft universe," said Roper. "We're making sure that anyone who played WarCraft will feel at home in the adventure game."

To tell the story, Blizzard has enlisted Clancy Brown (Lex Luthor on the animated "Superman" TV series) as Thrall, Peter Cullen (the voice of *Transformers*' Optimus Prime), and a host of others. Roper, the original Orc voice, has promised to contribute the occasional "zug zug" as well. Look for LORD OF THE CLANS this December.

STARCRAFT

Crafty Multiplay

ONE OF THE AREAS WHERE STARCRAFT will really blow away the competition is in its multiplayer support. STARCRAFT will have team play, allowing you and your teammates to combine armies, and more robust alliance options, giving you the ability to trade resources, units and information on fog of war.

MULTIPLAYER MAYHEM STARCRAFT will have increased battle.net support. See *CGW*'s Web site for more information.

Blizzard also plans to give the computer a more active role, with neutral outposts to defend and capture, pirates to fight, and AI opponents with whom you can negotiate.

Another great feature is handicapping, which allows novices to play experts by limiting tech levels, production, and resource gathering.

These are only some of STARCRAFT's multiplayer innovations. For more on Blizzard's multiplayer STARCRAFT plans, visit our Web site at **www.computergaming.com**.

Technically Speaking

Blizzard plans to make technology an integral part of STARCRAFT, allowing gamers near-limitless upgrades for weapons and armor. The designers want technology to play a larger role than it did in WARCRAFT II, where research really only occupies a short, albeit tense, portion of gameplay. After you've acquired certain technologies, you can upgrade all your units with the appropriate improvement. Because of the greater number and flexibility of upgrades, units will be more easily customized.

Though the number of upgrades will be greatly increased, you'll see diminishing returns with each upgrade. If you're five levels higher than your enemy, you won't necessarily be five times stronger.

A Dab of Diablo

Blizzard plans to make the worlds richer by populating areas with inhabitants, so you might have neutral trading outposts, as well as pirates that will attack any player—both human and artificial. Blizzard will also expand on the Legendary Heroes concept and add more unique hero units. Heroes will have the requisite pumped stats, and some will have recurring roles in all three campaigns.

There will also be specialized units in the game for use in specific missions. For example, you might have to access data from an enemy computer, but only a specific hero can operate the terminal. In these cases, you'll have to escort him with marines and then use him to complete the mission.

Every unit in STARCRAFT will have an inventory limited to one item. There will be loads of special items, some that will be the object of scenarios, and others that will be lying in alien wreckage about the map. Terrans will be able to strip the wreckage for these artifacts, but the Protoss and Zerg will have to blow up the wreckage to get at it. Some of these items will give hit points or weapons bonuses, while others might improve overall crystal mining. Special items won't die with their owner, so if you covet an enemy unit's artifact, you can kill him and take it.

What's Left?

Resource management is still to be determined. At this point, Blizzard only knows that there will be two types of resources and that all mines will either be full or collapsed. When a mine is full, it operates like a gold mine in WARCRAFT II. However, when it is depleted, it reaches a collapsed state, meaning it can still be mined, but will yield considerably less.

Unit cost is also unresolved. However, in keeping with each race's theme, Zerg will be the cheapest, Protoss will be the most expensive, and Terrans will straddle the middle line.

There were so many compelling features in STARCRAFT that the game was almost overwhelming.

PROTOSS JUICE The crystal spikes next to the Nexus are pylons, channeling psionic energy to all Protoss buildings. If destroyed, connected buildings will lose functionality.

But if anyone can pull off such an ambitious project, it would be Blizzard. As their presentation was wrapping up, I mulled over my first question when I initially sat down to see STARCRAFT. Will STARCRAFT simply be WARCRAFT II in space? The answer is no, it will be infinitely better. In fact, it looks as if STARCRAFT has the potential to revolutionize the crowded world of real-time gaming.

Controlling the Craft

STARCRAFT WILL BOAST SIGNIFICANTLY enhanced controls, the biggest being the ability to save groupings, up to a maximum of 10—just as in RED ALERT. Another addition will be waypoint movement. You'll also be able to create a production queue for your barracks and other buildings, so you can order several units at once and then move on to other tasks.

Blizzard will also allow gamers to hotkey buildings. If you want to jump to your barracks, press a key. If you use more than one, the hotkey will cycle through all your barracks.

STARCRAFT's minimap will also blink to signal events and messages. If you're being attacked, you'll see a rapid-red flashing on the minimap showing the location of that attack. If you complete construction of a unit, you'll get a white flash at your barrack's coordinates. You'll also have a hotkey to cycle through multiple event coordinates.

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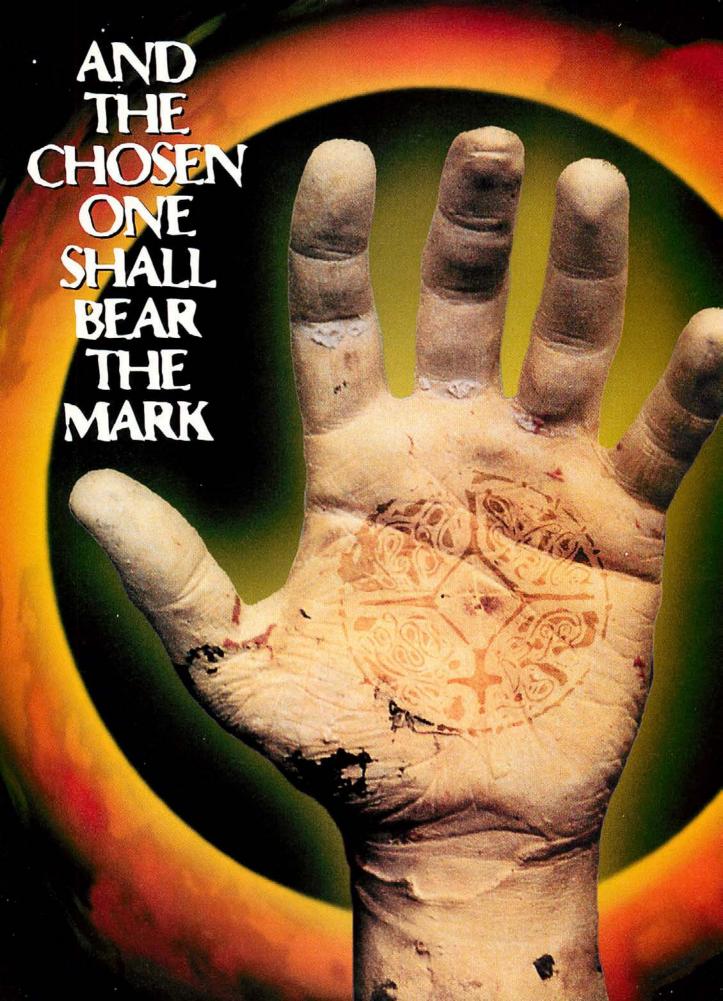
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Premier Awards

Each year, prior to the Electronic Entertainment Expo, our editors assemble for the daunting task of assessing the best games of the previous year. We're not alone. Our awards issue will hit between the Software Publishers Association's Codies (Excellence in Software Awards) and the awards from the Computer Game Developers Association.

Some will suggest that our awards are _____ (fill in the blank with "superfluous," "too political," or some other criticism of your own choosing). Frankly, we don't believe that our awards are superfluous in any way. We take seriously the task of determining the best in each game genre, not to mention the difficult task of choosing the Game of the Year—the one game in a given year that transcends any particular genre classification.

If nothing else, the awards process allows us to look at games from a different perspective and weigh them with more rigorous criteria than in our initial review. If you can honestly say that you never considered seeing a movie after it won attention at the Academy Awards, and that you never bought a science fiction novel based on a Hugo or Nebula nomination or award, then these awards are not for you. But if you want to know what our editors, with their widely differing tastes and expertise, believe are the great products from 1996, then read on.

PHOTOS BY JOHN PORRI FWFI I

Game of the Year
DIABLO

The 1997 Premier Game of the Year is Blizzard Entertainment's DIABLO, designed by Erich Schaefer and David Brevik. In a secret ballot vote held prior to any deliberation on the genre nominees, the editors selected DIABLO as the clear-cut Premier Game of the Year. As such, DIABLO is the perfect example of a game that transcends its genre. As a pure role-playing game, it offers limited interaction with non-player characters, extremely simple quests, and "Monte Haul" level advancement. As a great game in general, DIABLO offers a simple learning curve, an intuitive interface that never gets in the way, and near-perfect play balance with artificial opponents that get stronger, smarter, more active, and more organized as you progress through the game.

If you add to these accolades the fact that each of the three potential protagonists (warrior, sorcerer, or rogue) offers a distinctly different gaming experience (hand-to-hand, spellcasting, or ranged combat), you get an idea of how clever DIABLO's design really is. The skill, attribute, and level enhancement is just rapid enough to keep you coming back for more. The randomly spawned artifacts add spicy new wrinkles to each new level. The game looks great, with its beautifully rendered monsters (taken from Gothic archetypes) and its excellent use of light sources. Then, as if all this wasn't enough, Blizzard opened a free multiplayer environment called battle.net that has already set new records in online registration.

We firmly believe that DIABLO will become a major role-model for game design and implementation. For this year, DIABLO is the game that everyone will remember.

Go online for a *CGW* exclusive interview with Blizzard President Allen Adham at our Web site: www.computergaming.com

Action Game of the Year
QUAKE
id Software

T here were a number of good action titles this year, but none of them ushered in the future like id Software's QUAKE. No other game even came close to creating such a believable, immersive experience. The fully 3D, real-time engine was so good at recreating environments that when Shamblers came hurling lightning bolts at us, we actually dodged in our chairs.

It's not only the graphics and dark atmosphere that draw you into QUAKE, it's the use of 3D to create situations where you must react to enemies from all three planes. In other games, you can plod through a level knowing that all the enemies will be coming at you from eye level. But in QUAKE, many nasty surprises await you from overhead arches and dark crevices. And the all-encompassing action never lets up because QUAKE has surprises as a rule, not as an exception.

We could go on, but when you add the unparalleled multiplayer support (with Internet play and dynamic entry), and Quake C, the editable game code that lets you craft your own QUAKE games, you can see why QUAKE walked away from this contest as the undisputed winner.

T here were other contenders in this category, and **Tomb Raider** was a strong runner-up. A fresh change of pace with great 3D graphics, it gave us a strong female heroine in a game that reminded us of PRINCE OF PERSIA. Too bad TOMB RAIDER's pacing and minor technical problems kept this contest from being a closer race.

Readers' Choice: Quake

Adventure Game of the Year
THE PANDORA DIRECTIVE
Access Software

L ooking back on this year's adventure games, we see a genre drowning in uninspired MYST clones and dreadful "interactive movies," with little innovation or creative spark. It was enough to turn an adventure gamer to QUAKE.

This year's best adventures, while not particularly genre-busting, at least attempted to provide some new twists. And no game achieved as much as this year's Adventure Game of the Year, THE PANDORA DIRECTIVE. Access Software's sequel to UNDER A KILLING MOON improved on the original game in every way, offering gamers a thoroughly entertaining, well-written mystery with ample humor.

Along with a better script, better acting, and better puzzles than the first game, THE PANDORA DIRECTIVE is most notable for its depth of gameplay. It's a huge, generous game, with three different paths that lead to seven possible endings. Because your choices really affect how the game proceeds, this is, for once, an interactive movie that truly *is* interactive. And the coup de grâce is a great online hint system, which lets gamers of all types enjoy the game at whatever level of complexity they choose.

O bsidian, our runner-up, was a late-entry MYST clone from Rocket Science and SegaSoft—could anything sound less promising? But with a great story, clever puzzles, psychedelic graphics, and an irreverent sense of humor, this futuristic paranoid fantasy is an unexpected delight. See our review this issue.

Readers' Choice: Spycraft

Role-Playing Game of the Year
THE ELDER SCROLLS: DAGGERFALL

Bethesda Softworks

This year's Premier Role-Playing Game of the Year is not perfect, but it *is* revolutionary. Earlier computer role-playing games have had traces of what makes THE ELDER SCROLLS: DAGGERFALL great, but none have offered quite so much. Bethesda Softworks' DAGGERFALL, designed by Julian LeFay, Bruce Nesmith, and Ted Peterson, offers authentic replayability. You can randomly generate characters using a questionnaire or customize a character according to your wishes. Different character classes make for alternate routes of advancement and really make a difference in gameplay style. DAGGERFALL's first-person world also gives you visual cues for weather and time so that game time really matters. The game comes alive as non-player characters respond to you, quests become accessible, and memberships in guilds remain available to you based on your actions.

Though the game has an overarching plot, DAGGERFALL has enough imaginative mini-quests to keep devoted role-players going for a hundred hours or more without ever advancing within the main story. Even the dungeon designs are imaginative. There are curved walls, secret passages, stairways, ramps, caves complete with stalactites and stalagmites, ponds, and hidden doors galore. Each dungeon offers something different.

The runner-up in this category is, ironically, our Game of the Year. Although it doesn't offer the depth of DAGGERFALL, **Diablo** provides the most exceptional "hack and slash" role-playing ever and appeals to gamers outside the genre.

Readers' Choice: Diablo

Simulation Game of the Year
JANE'S AH-64D LONGBOW

Origin Systems

The best simulations must strike a balance between convincing realism and entertaining gameplay, between providing a rich environment to please the experts and making this environment accessible to new players. This year's winner, Jane's AH-64D LONGBOW, strikes that magic balance. Veteran designer Andy Hollis and his Origin Skunkworks team not only managed to create the first truly realistic combat helicopter simulation, but they also packed it so full of realism options and tutorial information that it should please fliers of all experience levels.

By itself, LONGBOW does a great job of modeling both the systems of an AH-64D and the combat environment it flies in. Top-notch graphics and sound, as well as fast-reacting enemies, will have you sweating as you enter combat zones.

The sim truly shines, though, with the FLASHPOINT KOREA expansion disc, which adds 140+ new missions, tougher enemies, individual soldiers, the ability to fly from the Co-Pilot/Gunner seat, and better avionics. LONGBOW GOLD includes both the game and the add-on disc.

This year's runner-up came as a surprise—Empire's **Flying Corps.** Previous efforts from Rowan, developers of this World War I sim, were heavy on graphics and light on realism. FLYING CORPS, on the other hand, sports perhaps the best flight models ever seen on a prop-based sim; only quirky views and steep performance requirements kept it from the crown.

Readers' Choice: AH-64D Longbow

Space Simulation Game of the Year
MECHWARRIOR 2: MERCENARIES
Activision

1996 won't be remembered as the heyday of space simulations. Our Premier Award winner and runner-up were also the only nominees. Few space combat sims were released, and most of the entries in the giant robot subgenre couldn't stand up to the 1996 winner MECHWARRIOR 2.

In fact, the sequel to that game, MECHWARRIOR 2: MERCENARIES, takes the Premier Award this year. Not revolutionary by any means, MERCENARIES takes the MECH 2 formula and fine-tunes it. Designers Tim Morten and Jack Mamais set this game in the BattleMech universe's Inner Sphere, putting you in the role of a mercenary pilot for whom profit is as big a concern as basic survival. New features include texture-mapped graphics, fine-tuned combat and AI, smarter "wingmen," and air support. Other additions, such as a half-hearted attempt to add a salvage element, don't quite succeed, but overall MERCENARIES is a more satisfying experience than MECH 2.

MERCENARIES is also notable as one of the first major games to support *free* Internet play, through its MERCNET module. Although it's not as accessible as Blizzard's DIABLO, it was a bold, customer-oriented move for Activision to make.

This year's runner up is **Wing Commander IV: The Price of Freedom.** While the between-mission video interaction has been heralded as the best attempt yet at creating a true "interactive movie," the space combat scenes felt too much like playing WING COMMANDER III for the game to take the crown.

Readers' Choice: MechWarrior 2: Mercenaries

Sports Game of the Year
NBA LIVE 97
EA Sports

The Yankees, the Green Bay Packers, the Bulls, Tiger Woods, the 100th Summer Olympics—it was a great year for sports fans. The same goes for the computer sports world, where a number of companies succeeded in delivering some of the best-looking, most realistic sports simulations we've ever seen.

EA Sports continues its dominance of this genre, and though this year's lineup was more flawed than usual, it did produce a couple of jewels, including our Sports Game of the Year, NBA LIVE 97. NBA LIVE 96 won the award last year, but the new version is actually more deserving. Rewritten from the ground up with astounding 3D graphics, a new interface, more believable stats, and—best of all—multiplayer gaming over modems and LANs, NBA LIVE 97 is an action-packed, crowd-pleasing hoops extravaganza. The game is too offense-oriented and it could use deeper player controls, but no other sports game this year (except, perhaps, NHL 97) came close to simulating the thrills of athletic competition in such an addictive and entertaining way.

Our runner up was Access Software's **Links LS,** which is the best-looking golf game we've seen. LINKS LS features three new courses and great new competitive options. Its screen redraws are very slow, but that didn't matter to most golf fans.

Readers' Choice: NASCAR 2

Strategy Game of the Year
CIVILIZATION II

MicroProse

With the success of COMMAND & CONQUER and WARCRAFT II, we expected a flood of real-time strategy games, and we got them. But with a few notable exceptions, the real-time games were tepid, silly, or downright boring. Ironically, it was the turn-based games that shone most brightly, with none more brilliant than the epic CIVILIZATION II.

It was more than the new SVGA graphics or the deft use of multimedia film clips that held us hostage: New Wonders of the World brought different challenges, maximizing trade became more than shuffling camels, new military units were balanced by greater diplomatic options,

Sid Meier and Brian Reynolds

and the AI was much better.

From the near-impossible Deity level to the numerous help functions and elegant interface, CIV II is that rarest of games: truly accessible to both the serious or casual gamer. It sets a new standard for how to do a sequel *right*.

The runner-up this year is **Heroes of Might & Magic II.** The simplicity of the KING'S BOUNTY-style tactical combat is the perfect counterpoint to the surprising depth of the strategic game, and unlike HEROES I, the campaign is much more satisfying. There are more troop classes, special artifacts, larger maps, and multiplayer support for Internet as well as modem/LAN play.

Readers' Choice: Command & Conquer: Red Alert

Wargame of the Year
BATTLEGROUND: SHILOH

Talonsoft

It wasn't long ago that serious wargames were supposedly in decline. Worse, games based on the 19th century were supposedly passé—not enough high-tech toys, you understand. It's a good thing that the folks at Talonsoft refused to jump into the sea with the rest of the lemmings, or we'd never have the joy of the BATTLEGROUND series, or this year's Wargame of the Year, BATTLEGROUND: SHILOH.

Sure, there's micromanaging. And yes, there's complexity, too. But the learning curve is justified, because this is simply the best 19th-century system ever designed for a wargame—realistic, challenging, and eminently replayable. An improvement from earlier games in the series, SHILOH is quintessential BATTLEGROUND. Note the exquisite model-

ing of terrain features to highlight tension, such as at the Hornet's Nest; the quirky but effective gunboats; and the confusion of sending green troops into battle. In one of the best years ever for wargames, the field ultimately belonged to Talonsoft, who almost single-handedly put Civil War gaming back on the map.

Charlie Moylan moves beyond his earlier FLIGHT COMMANDER 2 with runner-up **Over The Reich,** a superb recreation of WWII aerial combat. Despite some quirks, the turn-based system realistically shows the capabilities of each aircraft. Dogfights are fun, particularly over the Internet, but the real appeal of this game lies in the campaigns, where developing your individual pilots is almost a role-playing game in itself.
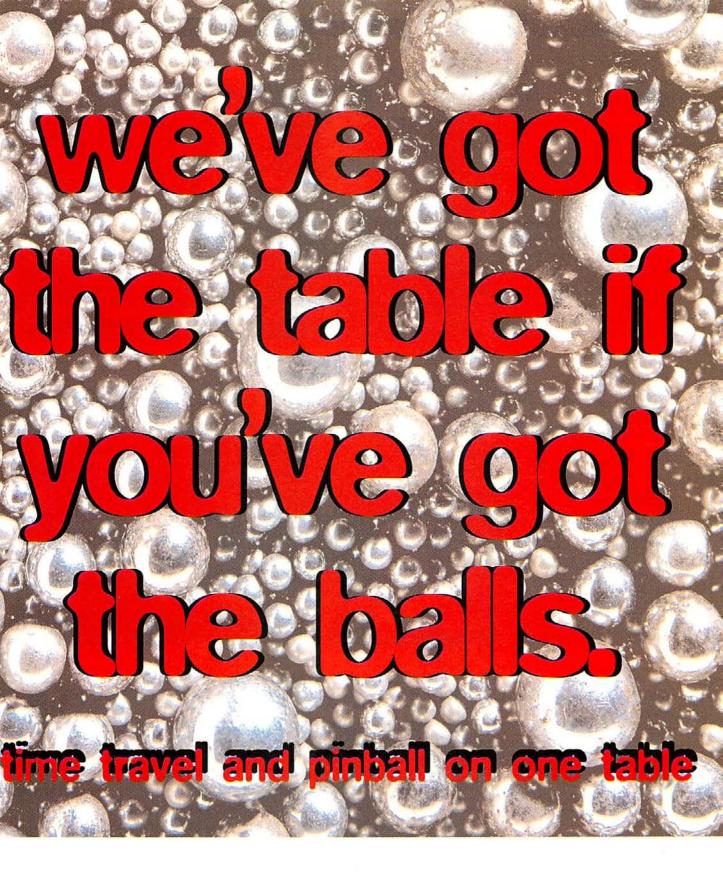
Readers' Choice: Age of Rifles

we've got the table if you've got the balls.

time travel and pinball on one table

PRO·PINBALL

(timeshock)

empire
INTER ACTIVE

Classic/Puzzle Game of the Year
BAKU BAKU
Sega

BAKU BAKU took a bite out of our productivity when it first arrived, and has managed to gobble several weekends since. The game has you frantically matching up clamoring animals with their favorite chow, thus clearing blocks off the board. Whatever you remove is then dumped on your opponent. Playing against the computer fine-tunes your skills, but nothing beats stomping all over your real-life buddies in two-player mode. BAKU BAKU gains points for reinventing a classic game (TETRIS), with an amusing new spin. The beauty of this game, however, lies in its ability to suck you in and keep you coming back for more and more. If you haven't already tried it, beware: BAKU BAKU *will* eat up your time.

Our runner up, Smart Games, Inc.'s **Smart Games Challenge #1,** is an inspired collection of every brain teaser imaginable. Puzzles include old favorites—word searches, anagrams, sliding tiles, and peg-jumping games—along with innovative word translation exercises and brain-busting IQ tests. The graphics, while not particularly flashy, do their job well, spicing up the oldies and adding originality to the whole package. SMART GAMES promises puzzle fans an excellent mental work-out.

Readers' Choice: Monty Python, Quest for the Holy Grail

Best Enhancement of an Existing Game
WARCRAFT II: BEYOND THE DARK PORTAL
Blizzard Entertainment

There were a number of excellent enhancements this year, but WARCRAFT II: BEYOND THE DARK PORTAL was the best. A million-plus WARCRAFT II fans wanted harder missions and more multiplayer maps, and Blizzard delivered with two entirely new campaigns, a slew of multiplayer scenarios, and the bonus Legendary Heroes. Blizzard even addressed the primary concerns of WARCRAFT veterans by making the two campaigns very different—and much harder. What really cinched it for us, though, were the Legendary Heroes, who added new strategies and excitement to the game.

MicroProse's **Civilization II Scenarios: Conflicts in Civilization** added some very challenging and exciting scenarios to this great strategy title, and offered even more flexible game options.

Hardware Achievement of the Year
(TIE) DIAMOND'S MONSTER 3D & ORCHID'S RIGHTEOUS 3D

In 1996 PC gaming hardware set new standards for graphic realism, in most cases surpassing the console versions of the same games. 3Dfx has been instrumental in taking 3D graphics to the next level, delivering both a well-rounded 3D rendering feature set and outstanding performance for a wide variety of gaming titles. Along with co-nominee Rendition, 3Dfx has set the standard by which all other 3D graphics hardware will be measured in 1997. For overall no-holds-barred blistering 3D performance, our award goes to the two graphics boards based on 3Dfx's Voodoo chipset—Diamond's Monster 3D and Orchid's Righteous 3D. These boards' superlative performance left us wowed.
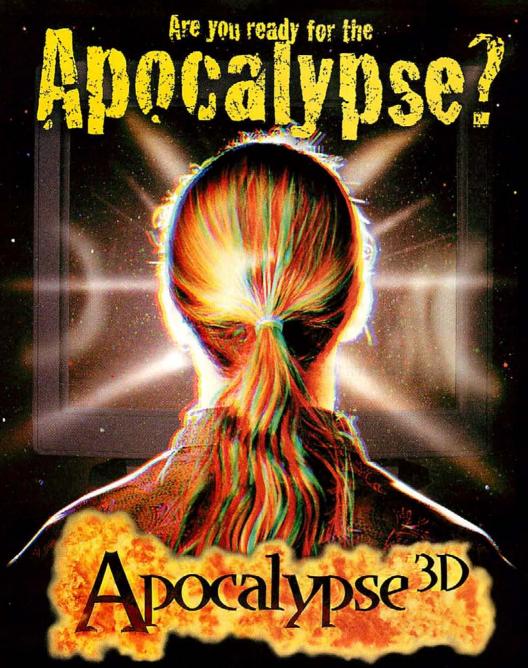
Force-feedback for game controllers was the other major hardware innovation of 1996. Our runner-up is the **CH Products Force F/X Joystick,** which brings yet another level of immersion to titles like WARBIRDS, AIR WARRIOR II, JETFIGHTER III, and NEED FOR SPEED SE.

Special Award for Artistic Achievement
THE NEVERHOOD
DreamWorks Interactive

The one game this year that we couldn't wait to show our friends and family was THE NEVERHOOD. Quite simply, this was the coolest-looking game of the year. Developed by Doug TenNapel (creator of EARTHWORM JIM) and The Neverhood design group, and published by DreamWorks Interactive, THE NEVERHOOD is a monumental artistic achievement—a wondrous, self-contained universe sculpted from more than three tons of clay. Clay! In a year when everyone in the industry was touting 3D realism, THE NEVERHOOD was a refreshing and charming change of pace—a game that reveled in its own exaggerated, fantastically goofy style, with no concession whatsoever to real life. Adding to the game's charm was one of the best musical scores of the year, a jazzy/bluesy soundtrack that perfectly complemented the game's graphic look. ¡Viva Klaymen!

Special Award for Online-Enabling Technology
KALI

It started as a little project to enable gamers to play DOOM over the Internet. It grew into Kali, perhaps the most significant milestone so far in the nascent online gaming industry. There are no services to sign up for, no monthly charges, no watching the clock during a game, and no searching for a service that has the games you want to play. Simply download the program from www.kali.net, pay a one-time $20 registration fee, and you can play most DOS and Windows 95 games that support local-area networks over the Internet. You're also entitled to a lifetime of free upgrades.

Of course, one of the big challenges in multiplayer gaming is finding someone to play with. Kali's chat interface makes the process simpler by letting you "talk" with potential allies and victims. KALI servers have popped up all over the world, many geared towards specific games such as MECHWARRIOR 2 or specific genres such as flight sims.

The technical aspects of Kali alone are enough to earn our award, but the low price, free upgrades, and unlimited play cement the decision. Hats off to creator Jay Cotton!

Special Award for Technological Achievement
QUAKE ENGINE
id Software

When you've written engines for WOLFENSTEIN 3D and DOOM, what do you do for an encore? Simple, you do QUAKE. The amazing complexity of QUAKE's engine is anything but simple, but not only did John Carmack and Mike Abrash deliver the most visually stunning first-person shooter ever, they wrote an engine whose extensibility seems limited only by the imagination of the hackers creating new levels, models, skins, and sounds for QUAKE. We've seen add-ons on the various QUAKE sites that have sprung up on the Web ranging from new diabolical weapons to an A-10 you can fly around in to pick off fellow DeathMatchers.

Mercenary hackers aren't the only ones to take the QUAKE engine to new places. Several companies including Raven, Rogue, Hipnotic and John Romero's Ion Storm have games in development based on QUAKE's engine.

The engine has also seen enhancements thanks to 3D hardware from Rendition and 3Dfx. Id's recent version of GLQUAKE has spectacular 3D graphics features.

John Carmack

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surrounding civil war. A history grander
than the Heavy Gear war machine.
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Don't look back. What lies ahead is
far too immense.
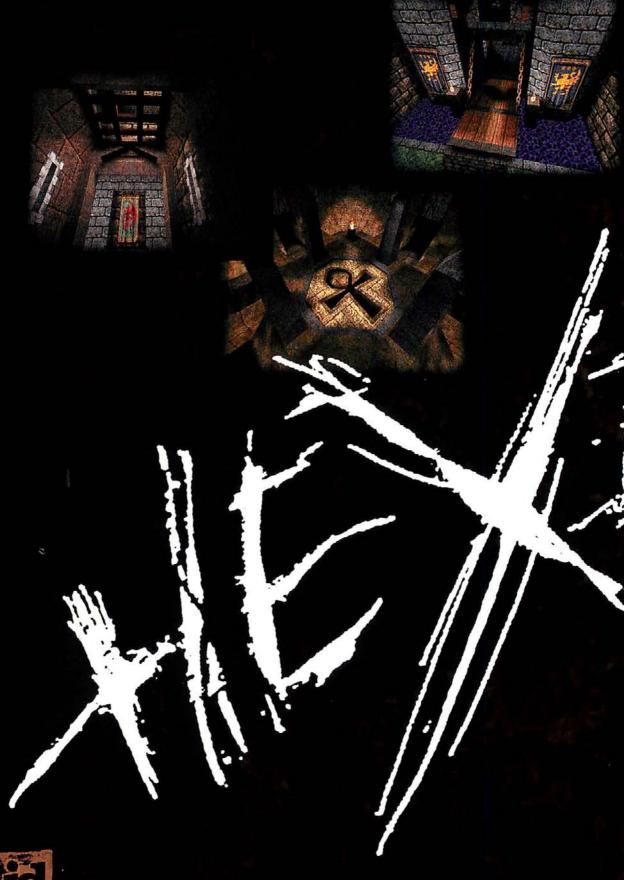
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built on all the power of Quake.®
Hexen II™.

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OF ZORK.

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I will...
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I will...
rule the skies.

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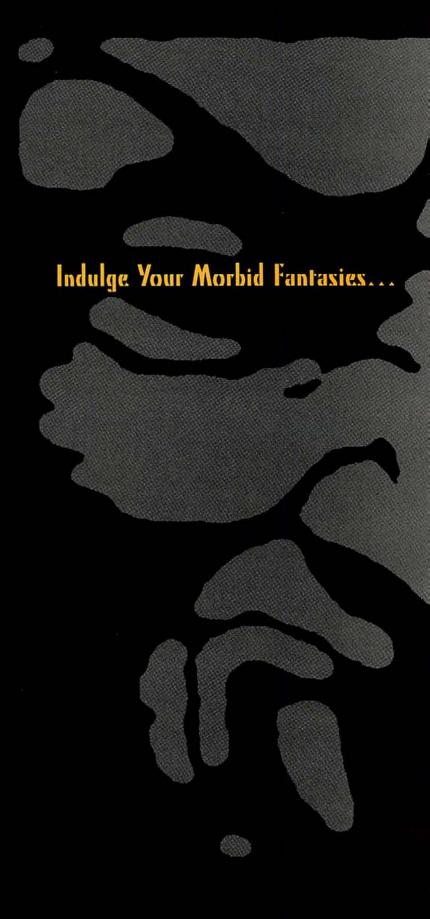
CONFRONT YOUR DEMONS THIS SUMMER.
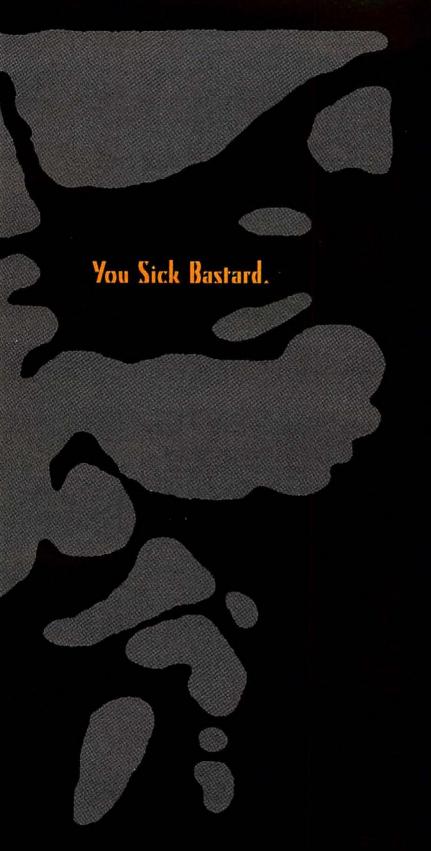
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blood. You are Kain. Your enemies
killed you in the ultimate act of treachery.
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you have returned…as a vampire. For
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of the living. For revenge, you will exact
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the hunger. Surrender to Blood Omen.

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CRYSTAL DYNAMICS

MMX: Stand and Deliver

Real Performance Gains Despite a Heap of Hype

by Loyd Case

I t's easy to become jaded and cynical when you hang around the technology game for a long time. Every year is the "year of the almighty hype," where something appears on the horizon with great fanfare, only to either be perpetually delayed or slink off into the Sargasso Sea of dead technology trends. Every now and then, though, I'm caught off guard and (pleasantly) surprised when something that's been launched with great expectations comes close to actually meeting them. One such technology is MMX.

GAMING FOR THE MASSES

There has been a lot of discussion, both positive and negative, about MMX. For hard-core gamers with lots of disposable income to spend on the latest and greatest hardware, MMX may not bring that much to the table. What's exciting to me, though, is what MMX does for the ordinary gamer. While I'm personally always pushing the edge of the envelope in my own systems, I also like to see really cool, high performance games with great graphics and effects run on your everyday, off-the-shelf PC. I've always thought that people such as my brother-in-law, who would blanch at the idea of opening his PC to install a 3D graphics accelerator, should still be able to have a good time with NASCAR 2. That's what MMX allows you to do.

NEW PLUMBING EXAMINED

Let's dive into some of the innards of an MMX processor and see just what makes it tick. The official moniker is the Pentium Processor with MMX Technology — quite a mouthful — so I usually refer to it by the Intel part code: P55C (the classic, pre-MMX Pentium Processor was the P54C). The P55C has 4.5 million transistors in a low-power, CMOS chip. The classic Pentium had 3.3 million transistors, and used a semiconductor technology called BiCMOS, which tends to run a bit warmer than CMOS.

The P55C is a split voltage CPU, meaning that it runs internally at 2.8 volts while the external connections run at 3.3 volts. Older Pentiums run at 3.3 volts inside and out (laptop CPUs are a bit different, but I'll ignore them here). This means that older motherboards won't support a P55C, even with a BIOS update. If you have an older motherboard, however, you're not out of luck, since Intel will be shipping MMX overdrive chips with built-in voltage regulation for older systems fairly soon.

But MMX aside, P55C offers several notable architectural enhancements which will help speed overall performance:

> " What's even more interesting about P55C is the overall performance improvement, not just the addition of MMX. "

Speed Freak

Because of its architectural enhancements, the P55C with MMX outpaces the P54C in CPU performance. It also delivers a favorable bump in 2D graphics performance. The P55C doubles the Level 1 cache from 16KB to 32KB, which keeps more data close at hand for faster access. It also adds another stage to the instruction pipeline, which allows an additional instruction to be pipelined for execution.

WinBench 97 High-End Graphics Winmark at 1024x768 — P54C/200 / P55C/200

Color Depth:
- 8-Bit: 25.6 / 31.9
- 16-Bit: 22.4 / 26.6

(Graphics WinMarks; scale 0–35)

WinBench 97 CPUMark Scores — P54C/200 / P55C/200

Processor:
- CPU Mark32: 379 / 418
- CPU Mark16: 383 / 424

(CPU Marks; scale 0–500)

The internal (also known as Level 1) cache size has been doubled to 32KB, from the previous size of 16KB. In addition, the instruction pipeline has been increased one step, which allows CPU instructions to line up, ready for execution, rather than having to be fetched from memory every time the next one is needed for use.

Deeper write buffers have also been added, which improve performance when writing to memory. Finally, the P55C has better branch prediction, meaning that it's better able to predict what the next instruction will be.

All of these changes have yielded improved performance when compared to the classic Pentium running at the same clock rate. Table 1 shows that CPUMark 16 and CPUMark 32 performance increases about 10 percent going from a P54C to a P55C. Graphics Winmarks are even more interesting, with Winbench 97 results boosted between 25–32 percent.

BUT WHAT DOES MMX DO FOR GAMES?

Intel has added 57 new instructions that make matrix math instruction much easier to use. Matrix math is often used in various multimedia applications, such as graphics, video, and audio. More importantly, though, is Intel's use of Single Instruction, Multiple Data, or SIMD (pronounced "sim-d"), which allows a single MMX instruction to operate on several pieces of data that are loaded in a packed format into the MMX registers. In order to speed up the process of bringing the P55C to market, Intel chose to have MMX instructions share the registers in the Pentium's floating point unit, which can theoretically cause delays when switching from MMX mode to floating point mode. But most game developers I spoke with who used both MMX and floating point code said the mode switch was a minor problem at worst.

I spoke with several developers about the process of developing MMX games.

On the issue of mixing floating point with MMX code, Neall Verheyde of Radical Games noted that a lot of floating point code is used in the 3D routines for THE DIVIDE's software reenderer, but then the data is converted to fixed point data and rendered using MMX — or standard Pentium instructions, if MMX isn't available. THE DIVIDE can use 3D hardware accelerators via Direct3D, and actually lets you specify which rendering engine to use in its setup program. So, I was able to check out performance and image quality between the various renderers. The P55C without 3D acceleration seemed to run quite well, with good frame rates during action scenes (although there wasn't a built-in frame rate counter). The image quality of the 3D accelerated version, using either a Rendition Vérité-based card or a 3Dfx accelerator, was much better, however.

One easily noticed difference in image quality was the use of bilinear filtering when using hardware acceleration.

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2D Speed
WINBENCH 97 Business Graphics Test 1024x768 @ 8 bit

Matrox Mystique*	92
Diamond Stealth 3D 2000XL	87
ATI 3D Xpression + PC2TV	77
Creative 3D Blaster PCI	65

Terracide
Terracide at 640x480 @ 16 bit (scores in frames per second)

Matrox Mystique*	33
Creative 3D Blaster PCI	24
ATI 3D Xpression + PC2TV	21
Diamond Stealth 3D 2000XL	13

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However, Servan Keondjian, Direct3D's chief architect, noted that in the future, the MMX renderer will be capable of bilinear filtering in software. In addition, the MMX Direct3D rendering algorithms allow support for 16-bit, RGB color, rather than the current software renderer's "ramp" mode, which doesn't handle color well.

The project leader for the science fiction racing game POD noted that MMX enabled them to do a whole host of additional effects in software. For example, all of the audio effects, including full Dolby Surround Sound, are done with MMX code. In addition, using MMX technology enabled the project group to squeeze a 20 percent faster frame rate out of their graphics engine.

Another MMX-enhanced game is Fenris Wolf's REBEL MOON RISING, a 3D shooter which handles 3D animation in much the style of DUKE NUKEM 3D and other DOOM-like games. On the P55C/200 system, we were seeing frame rates ranging from 14–24 frames per second (fps), depending on the action and scene complexity. However, when we turned off MMX support, the frame rate dropped down to 6–7 fps, making the game unplayable.

Theodore Beale, lead designer for REBEL MOON RISING, noted that, unlike DUKE and many other 3D action games, RMR uses full 16-bit color throughout, and runs at a minimum resolution of 640x400. Using 65,000 colors allowed the programmers to implement some dramat-

ic lighting effects. For example, an orange glow around a corner in the dark might indicate that an enemy using a jetpack was nearby. Implementing these kinds of effects in software without using 3D acceleration would have been impossible, as the non-MMX frame rates indicate. Fenris is also using MMX to add a new twist to RMR: speech recognition. You'll be able to speak basic commands into your sound card's microphone for weapons changes, level status, and other commands. Again, without MMX technology, this feature could well drag RMR's frame rate to a crawl.

Using MMX doesn't always buy increased performance, because the possible performance gain is dependent on what you're trying to accomplish. For example, TIGERSHARK is a 3D action game being ported from the PlayStation to the PC. Erik Dyke, project manager for TIGERSHARK, noted that they initially brought over 8-bit (256-color) graphics for the PC port. Porting the 256-color version to MMX code bought them no increase in frame rate, and seemed a waste of time. Then they redid their artwork in 16-bit color — and the frame rate stayed the same. In other words, they paid no performance penalty when increasing the color depth to get better looking graphics.

Tim Sweeney, chairman of Epic Megagames, noted that using MMX means programmers really need to rethink the way they write code. He noted that "An assembly programmer would rarely think of multiplying numbers, since adding is much faster. MMX changes all of that, because the MMX instructions are inherently both fast and complex. For example, PMULADD performs four multiplications and two additions, all in 1/2 clock cycle, if properly pipelined. The equivalent instruction sequence on a non-MMX machine would require almost 50 clock cycles."
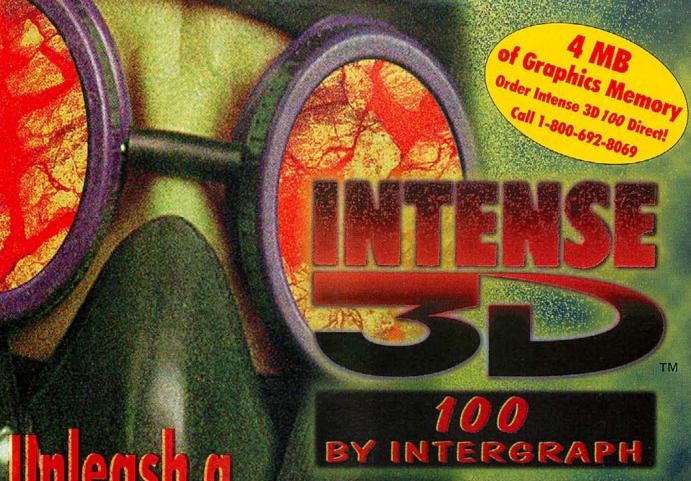
When asked to comment about the potential performance penalty when

mixing MMX and floating point code, Sweeney scoffed at the idea. "I am actually surprised about the amount of fuss over this issue, because MMX is a paradigm shift (scalar to SIMD programming) and developers should be exploring its new possibilities, rather than whining about it not supporting their favorite old programming tricks."

One area of confusion is 3D accelerators. Here's the word: Don't throw away that 3D accelerator. In the upcoming title from Epic, UNREAL, Tim Sweeney noted that the frame rates would be about 25-percent slower than the Rendition-based accelerators and about half the speed of a 3Dfx accelerator. However, he also suggested that the image quality of the software-only version would be nearly as good. Almost every game programmer I spoke with said that MMX would complement a good 3D accelerator.

RAISING THE BAR

My first look at these early games was encouraging in another respect: gameplay. While not all of the games using MMX technology are in genres I'm fond of, they seem to be well done and play pretty well. REBEL MOON RISING adds some innovative touches to the 3D shooter genre, with more complex missions (hostage rescue missions, escort missions, and defend area missions) than the classic if-it-moves-kill-it 3D shooter. POD's atmospheric effects make the game a reasonably entertaining racing game. THE DIVIDE takes a classic genre, the action side-scroller, and reformulates it in 3D, complete with moving camera and slick animation on the part of the 'Mech-style main character. These may not be the best of class in their respective genres, but they are at least solid efforts.

By the end of 1997, all new systems sold — ranging from laptops to multiprocessor Pentium Pros — will have MMX-technology embedded. On top of that, Intel's competition, in the form of Advanced Micro Devices (AMD) and Cyrix, will be building MMX into their next generation processors as well, all of which bodes well for gamers of every stripe and budget. ⚡

Clash of the Controllers

by Denny Atkin

Thrustmaster and CH Products Battle It Out for the Title of Best Flight Sim Controller. Find Out Who Sticks It to Whom.

If American pilots in World War II had been flying with the equipment many flight sim fans use, we'd all be eating Bratwurst for lunch and pledging allegiance to the Rising Sun. Because no matter how well trained they were, they'd invariably have been shot down as they fumbled for the correct keys on their plane's keyboard.

You'll be amazed at the difference the right equipment can make in your combat performance and situational awareness. If you're willing to suffer a fairly significant financial investment, you can even put together an authentic HOTAS (Hands On Throttle And Stick) setup that will allow you to handle virtually every aircraft function without touching the keyboard.

In this article, I consider top-quality controllers that are available in full HOTAS setups. Low-end controllers were covered in Loyd Case's "Control Fetish" feature last month, and we excluded solutions such as the newly resurrected Suncom's F-15 Eagle series joysticks, which don't have accompanying throttle components. This narrowed the consideration down to the two long-time market leaders, CH Products and Thrustmaster.

Joysticks
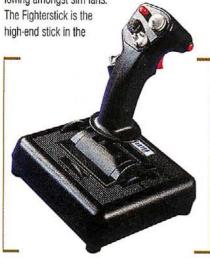
A programmable, multi-function joystick is a must-have for the serious sim pilot. With the ability to program 20 or more functions into the stick, you get instant access to every option you'll need in combat.

F-16 Fighterstick

CH Products' FlightStick was one of the first joysticks designed specifically as a flight controller, and thus the company has maintained a strong following amongst sim fans. The Fighterstick is the high-end stick in the

company's new F-16 series, which features a more authentic look and much-improved ergonomics.

The Fighterstick is also the company's first programmable stick. It sports one eight-way hat switch, three four-way hat switches, four fire buttons, and a throttle wheel. The design is similar to the company's non-programmable F-16

Combatstick, but with a heavier base and two of that stick's six buttons replaced by four-way hat switches. Unfortunately, the second fire button has been moved from the Combatstick's convenient thumb position to a difficult-to-reach position near the top of the stick (in CH's defense, this is where it's found on an actual F-16's stick). I usually program one of the thumb switch's positions to fire missiles to compensate for the difficulty in hitting the second button.

The Fighterstick is programmed using the fairly easy-to-use DOS utility. Unfortunately, this utility works only in exclusive MS-DOS mode, and won't function in a DOS box under Windows 95. A shortcut is provided which will exit Win 95, load the CHSetup utility in DOS mode, and then return to Win 95 when you've finished editing and downloading your custom stick file; this process is reliable enough, but it is time-consuming and inconvenient. Even if it remains a DOS application, the program could use a graphic makeover to simplify programming—for example, it's often difficult to remember if the hat position you want is button function 14 or 16.

Each button and hat switch position can be programmed to output a string of characters, a key being held down, or one of the four standard joystick buttons; they can also emulate the "chorded" extra buttons or hat switches found on earlier

CH joysticks. This is fine for basic replacement of keyboard functions, but gamers who want to create sophisticated macros with time delays or conditional output will have to look towards Thrustmaster's offerings.

Because the Fighterstick is capable of sending all the codes of earlier CH joysticks, it's easy to set up a default program file that emulates a Combatstick. This is handy for trying out programs without having to program configuration files for them first—most recent sims support the Combatstick, as does Windows 95. However, the Fighterstick eliminates the biggest gripe about the Combatstick—the inability to read simultaneous button presses. Because the standard IBM joystick interface includes the ability to read only four buttons and four joystick axes, earlier CH joysticks

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Throttles

If you fly sims without using a throttle control, you probably keep the engine firewalled and rely on stick movements for your survival. Varying your throttle can help keep you alive by keeping your plane at the speed where it turns best, but it's just too hard to do using a keyboard. Adding a throttle control not only gives you instant control over your plane's power, but also another set of programmable switches which, in conjunction with a programmable stick, can put nearly all your sim's controls at a finger's reach.

Throttle Quadrant System

Thrustmaster's Throttle Quadrant System (TQS) was designed as a companion for the F-16 FLCS joystick, and it requires that stick or the F-22 Pro to function. This replica of an actual F-16 throttle sports a unique combination of controls.

The throttle itself moves smoothly and has two detents (small notches) that signify when it has been moved to idle or afterburner settings. The

throttle can function in analog mode, or can send a series of keypresses for sims that don't have throttle support. There are two three-position switches, a four-direction radio switch, and two programmable dials. The dials can be used for any function that allows a range of settings—you might use them to change radio frequencies or control flap deployment.

The most innovative feature of the TQS, though, is the cursor control. Similar to the Trackpoint eraser-head pointers found on many laptops, this duplicates the functionality of your mouse (which continues to function normally), and is extremely handy for designating targets in BACK TO BAGHDAD or selecting fire zones in AH-64D LONGBOW.

Programming is handled by incorporating throttle-control statements in your FLCS or F-22 Pro files. The TQS has the same flexibility—and complexity—as the parent joystick.

had the hats send combinations of multiple buttons. This worked well enough, but prevented you from, for example, firing cannons and machine guns simultaneously in some sims. The Fighterstick can read simultaneous presses of combinations of buttons and hat switches.

On the base of the stick you'll find an analog throttle wheel (non-programmable) and a trim wheel for each access. Trim wheels are handy for fine-tuning joystick calibration, or for trimming aircraft in flight to deal with prop torque or tail-heaviness.

The F-16 Fighterstick provides good basic functionality for the type of user who shuns learning even simple macro languages, and the inclusion of a throttle wheel makes it a good all-in-one solution for gamers who don't need the added functionality of a separate throttle controller.

▶PROS: Easy to configure; comfortable feel; trim wheels allow fine centering adjustment; built-in throttle.
▶CONS: Win 95 users must drop back to DOS mode to download configuration files; very basic programmability compared to Thrustmaster's offerings.

F-22 Pro

Thrustmaster has a tradition of building sturdy, sophisticated controllers for the hard-core simulation crowd. The F-22 Pro, the company's latest offering, is very likely the most powerful, configurable controller ever offered by anyone to the consumer market.

At first glance the stick resembles the company's earlier F-16 FLCS joystick, but appearances can be deceiving. A heavy, metal base helps the F-22 Pro sit firmly planted on your desk. It's a good thing, because the controller's high-tension spring and gimbal system means you'll be using a lot of force to move the stick around. The light plastic handle used on the FLCS has been replaced by a sturdy glass-filled unit. I've seen controllers in real military jets that didn't look as sturdy as the F-22 Pro.

On the handle you'll find four four-way hat switches, three buttons, a pinky switch, and a

dual-stage trigger. The trigger can be programmed to output one command when pressed lightly and a different command when pulled all the way in. This is handy for many applications; for example, firing machine guns with a light press, and both machine guns and cannon with a full press.

Unlike the Fighterstick, the F-22 Pro has no built-in throttle. It also lacks trim adjustment controls—a problem endemic to all Thrustmaster joysticks. This can cause problems with sims that don't have an in-game centering function, as the center position drifts a bit on some systems after they heat up. Happily missing, though, is the FLCS's download switch—you can now transmit new programs to the stick automatically, without touching a thing.

Like CH, Thrustmaster includes a DOS programming interface with the F-22 Pro. However, Thrustmaster's Command and Control Center software runs fine in a DOS window under Win 95, and you won't have to reboot back to DOS to download a new set of commands to the stick (a Windows 95 programming interface is currently in the works).

The F-22 Pro sports unprecedented programmability. Of course, you can program simple keypresses, text strings, or button functions for each of the stick's functions. But that's just the start of it. You can also program delays, repeating characters, sophisticated macros, and multi-switch combinations. Various buttons can have multiple

FIRE CONTROL

The cursor control on the TQS lets you set Priority Fire Zones in AH-64D LONGBOW without reaching for the keyboard.

▶PROS: Realistic; comfortable; packs a unique set of controls; allows digital programming of rudder pedals. The innovative cursor control keeps you from having to reach for your mouse in combat.
▶CONS: Works only with the F-16 FLCS or F-22 Pro; same significant study required for programming as those sticks.

Pro Throttle

CH Products Pro Throttle isn't styled after an actual fighter jet throttle. Instead of the arcing movement found in the Thrustmaster throttles, it simply slides forward and back. Missing is an afterburner

detent, which makes precise control more difficult in jet sims. The throttle supports both analog and digital (keypress) output.

The Pro Throttle sports four four-way switches and four push buttons, for a total of 20 functions. Programming functionality and methodology is identical to the F-16 Fighterstick. Plus, you save both the joystick and throttle programming in the same file. In conjunction with the Pro Throttle, the less-expensive Combatstick is nearly as versatile as the Fighterstick, other than the lack of support for simultaneous button presses. The Pro Throttle isn't limited to working with

CH joysticks, although CH compatibility is necessary to take advantage of a stick's view hat.
▶PROS: Easy to program; works with third-party joysticks.
▶CONS: Only simple programming options offered; no afterburner detent.

Clash of the Controllers

Rudder Pedals

For jet sims, rudder pedals are a nice frill that come in handy for quick course corrections; but if you fly prop sims, they're a must-have. In WWI and WWII aircraft, the rudder is used for turning, for evasion, for fighting engine torque, for lining up shots, and for performing life-saving maneuvers such as snap rolls.

Pro Pedals

The CH Pro Pedals are made of heavy-duty plastic. Set only a few inches apart, they're very comfortable to use in a desk setting. Unlike the less expensive CH Pedals, which press down like a car accelerator and brake, the Pro Pedals realistically slide back and forth. The unit also features a toe brake capability, but while some sims such as FIGHTER DUEL support this option, nobody has released the special joystick card necessary to allow you to use this feature.

If you spend some of your sim time driving ground vehicles, you have the option of switching the pedals to driving mode, dropping in a couple of small plastic chocks and using the pedals as gas and brake pedals.

▶**PROS:** Comfortable pedal placement; can be used for racing sims as well.
▶**CONS:** The extra hardware you need to use the toe brake feature isn't readily available.

Rudder Control System

The Thrustmaster Rudder Control System (RCS) has a sturdy metal frame with plastic pedals. Set much farther apart than their CH counterparts, the RCS pedals are perhaps more realistic, but not as comfortable to use for long periods of time in a desk environment. The pedals feature extremely smooth movement. Used in conjunction with a TQS throttle, they can be programmed in digital mode.

Thrustmaster has announced an RCS Pro model which will include toe brakes and, possibly, a game card that enables the brakes.

▶**PROS:** Sturdy construction; smooth movement.
▶**CONS:** No support for driving sims; some may find pedal spacing a bit wide.

CH Force FX

CH Products' Force FX is the first consumer force-feedback joystick to hit the market, and early adopters won't be disappointed. The handle is the same F-16 handle used on the Combatstick, with two four-way hat switches and six fire buttons. The Combatstick's small base is replaced by a huge, heavy bottom with the motors used to provide the force feedback. You won't have to worry about the Force FX sliding around your desk, but you may have to worry about finding room for it.

In a force feedback-enabled game, the Force FX can provide feedback such as stick resistance when trying to maneuver at high speed, shaking when your plane nears a stall, bumps when you taxi over a rough surface, and jolts when you fire weapons. The Force FX uses Immersion's I-Force API, the current standard for force feedback (although Microsoft is planning to muck up the works with a standard of its own, called "Jolt"). A number of games, including WARBIRDS, AIR WARRIOR II, JETFIGHTER III, FIGHTER DUEL, and NEED FOR SPEED SE already support the Immersion API.

Because the Force FX omits a throttle, you'll want to use it in conjunction with a Pro Throttle; this also adds programmability. (Without the Pro Throttle, it emulates a Combatstick.) A switch on the bottom allows you to switch the buttons from chorded to discrete mode, allowing the stick to support simultaneous button presses when attached to a Pro Throttle. Trim wheels are included for both axes.

After using the Force FX, I'm convinced that Force Feedback is the wave of the future, and I imagine support will soon be mandatory in sims and driving games.

▶**PROS:** Force feedback effect makes sims much more immersive; easy to set up; includes drivers to add basic effects to games without force feedback support.
▶**CONS:** Bulky; no throttle; requires Pro Throttle for programmability.

CG CHOICE

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Executive Officer's Summary

Although some components can be mixed (both companies' rudder pedals work equally well with the other's joysticks, for instance), for the most part you'll want to stick with a single-company solution to get the most out of the controller set's capabilities.

CH Products

The CH Products combination (F-16 Fighterstick, Pro Throttle, and Pro Pedals) is the simplest set

to quickly get up and running, and can more easily be configured as a "generic" setup for use with sims you haven't yet programmed. Programming capabilities are somewhat limited, however, and you may be frustrated if you want to set up complicated control setups. The Fighterstick is very comfortable to use for long sim sessions, although some may find its easy movement a bit mushy. The Throttle is capable enough, but I wish it had an afterburner

detent. This combo is most appropriate for gamers who want to spend as much time in the air—and as little time programming—as possible. It's also the best choice if you can't afford the entire system initially, thanks to the throttle on the Fighterstick.

▶PROS: Easiest controller system to configure; lends itself to being purchased in steps.
▶CONS: Only basic programmability is offered; not as many support files out there as compared to Thrustmaster sticks.

Thrustmaster

The Thrustmaster setup (F-22 Pro, F-16 TQS, and RCS) is the clear choice for the hard-core sim pilot who'll take the time to learn a system in order to maximize the realism of the sim experience. The system looks and feels like it was ripped out of the cockpit of an F-16. The programming interface, while intimidating, opens up infinite possibilities for automating difficult combat operations. Plus

Thrustmaster support files are commonly found on program discs and the Web, helping to make up for the system's lack of generic configurability.

This is one of those cases where the sum is greater than the value of the individual parts. Alone, the F-22 Pro is lacking some basic capabilities, but when paired with the TQS, it makes for an amazingly flexible control setup.

▶PROS: Unmatched for realism and programmability; most sims ship with Thrustmaster configuration files right on the CD.
▶CONS: You'll want to purchase the F-22 Pro and TQS together (more expensive); it takes lots of time to get the most out of the devices.

CG RATED — CG CHOICE

functions depending on the states of other switches. You might switch to a left view when a hat switch is held left, or left and up if button three is also pressed.

The programming interface is intimidating at first, but extremely complete online help explains the syntax of each command as you type. Program files from the F-16 FLCS can be used with a few extremely minor changes. A number of sample files are included for various older sims, and most newer sims ship with sample program files for the FLCS or F-22 Pro. Definable macro names for various functions (ie: FIRECAN-NON) make it easy to alter files without diving back into your sim's manual.

Built like an A-10, and eminently programma-

ble, the F-22 Pro is a winner for the sim player who demands the ultimate in programmability. Because it lacks a throttle, though, you'll want to pair it with an F-16 TQS to get full HOTAS capability. Also, the stick throw is extremely stiff, and if you're prone to sore wrists you might want to go check out the F-22 Pro's lightweight cousin, the F-16 FLCS.

▶PROS: Unparalleled programmability; comfortable grip; built like a tank.
▶CONS: The stick's plethora of programming options means you won't be able to start using it without cracking the manual; no throttle wheel or trim adjustments.

CG RATED

PRICE LIST

CH Products
Vista, CA
(800) 624-5804
www.chproducts.com

Product	Retail	Street
F-16 Fighterstick	$190	$120
Pro Throttle	$190	$120
Pro Pedals	$140	$80
Force FX	$250	$180

Thrustmaster
Hillsboro, OR
(503) 615-3200
www.thrustmaster.com
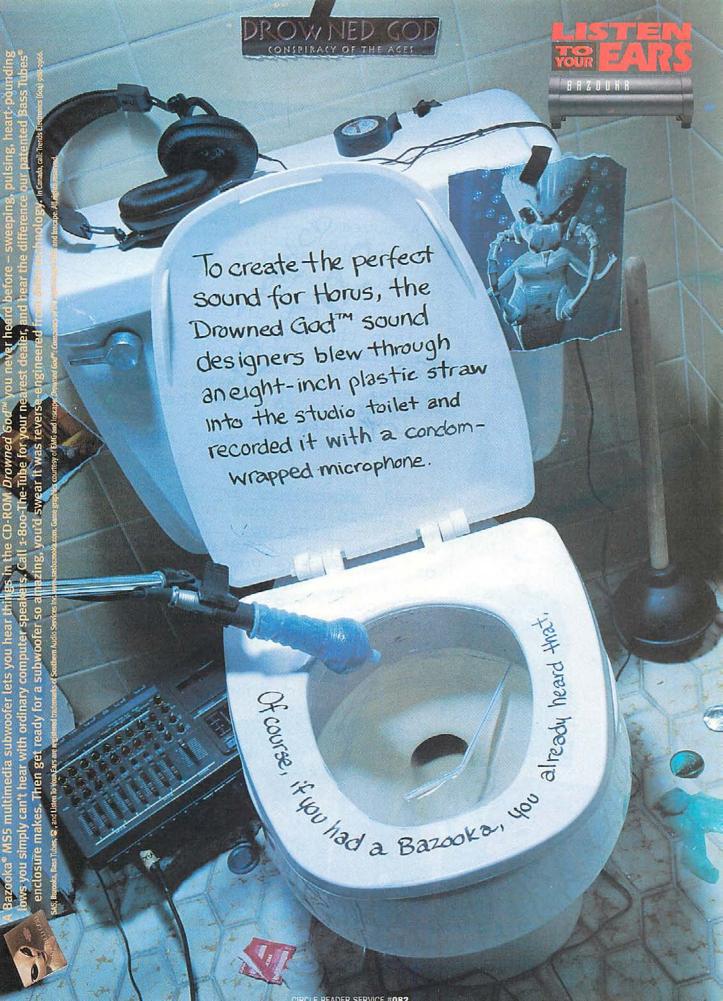
Product	Retail	Street
F-22 Pro	$220	$140
F-16 TQS	$200	$130
RCS	$150	$120

Street prices are approximate, and are included for general reference because the retail prices for these products don't reflect the actual prices you'll find at your local retailer.

MANIFESTO OF THE NEW
3D REALITY

A movement is brewing. And with its birth, the PowerVR architecture begins the awesome struggle against conventional 3D; and against the techno-bourgeoisie who attempt to enslave the gamer masses. These ~~manipulative~~ technologists are turning their machines of propaganda against GAMERS, desperately trying to make them believe that their 3D performance is good enough.

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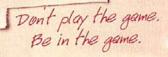
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Now Hear This…

New AWE64 Delivers Clean Sound and Some Cool Extras

by Dave Salvator

C reative Labs has been venturing into new territories pretty successfully over the last year or so, branching out to include 2D and 3D graphics, modems, and speakers. But with the AWE64 Gold, they've returned to their audio roots, delivering a sound card that makes significant improvements over its predecessor, the AWE32. Those improvements include a much cleaner and more realistic General MIDI patch set; SP/DIF (Sony Philips Digital Interface Format) digital audio output; accelerated 3D positional audio; and less noisy RCA (standard stereo patch cable) jacks for line-level output, which make connecting the AWE64 Gold to your home stereo a much easier task.

Creative has also shipped another version of this board called the AWE64 Value. Priced about $50 less, the AWE64 Value is built on a two-layer board (the Gold is a four-layer board), has 512KB of sample RAM (the Gold has 4MB), has a 4-watt amplifier for unpowered speakers, and lacks the Gold's RCA connectors and SP/DIF output. Though the Gold is a bit more expensive, with features that gamers may never use, it's still worth the $50 to go with Gold, both for its superior General MIDI patch set, and its somewhat cleaner overall output.

The 64 in the AWE64 Gold's name comes out of its 64-note polyphony (the number of notes that the AWE's synthesizer can play simultaneously). The AWE64 has basically the same E-mu 8000 synth engine as the AWE32, whose updated General MIDI patch set is much improved. To gain these extra 32 voices, the AWE64 uses Creative's software-based WaveSynth/WG synthesizer, which means that you can select either wavetable patches or WaveGuide patches.

NO MUSS, NO FUSS

Sound card installations used to be cruel and unusual punishment, but AWE64's PnP implementation makes the installation painless. Our test system, a P166 Gateway, detected the new board on startup; asked for AWE's driver CD; and, after pointing to the drivers directory, the drivers were installed and the board worked — sans reboot.

For DOS usage, Creative's Configuration Manager (CTCM) utility loads in the AUTOEXEC.BAT, though we had to manually copy it over to Win 95's DOSSTART.BAT (used when rebooting into MS-DOS mode). CTCM obtains the I/O resource settings and writes a Blaster environment string that DOS titles read when they first "talk" to a Sound Blaster-compatible card. CTCM leaves no memory footprint — a major improvement over the AWE32. Creative's documentation was thorough and will guide the novice through any needed details.

Some Creative sound cards in the past have suffered from excessive ambient hiss when sitting idle, the AWE64 Gold sounded very clean. When we cranked up the speakers and adjusted the mixer there was no discernible noise or crackling — even with all faders at maximum.

We took the AWE64 Gold for a spin through several DOS titles: EF2000, REDNECK RAMPAGE, and QUAKE, and the board never faltered in delivering clean audio. In EF2000's setup, which uses the Miles audio drivers, EF2000 detected AWE64's I/O resource settings without a hitch.

In Windows 95 we threw three DirectX games at AWE-64: HELLBENDER, MECHWARRIOR 2: MERCENARIES, and CYBERGLADIATORS. Again the AWE64 performed with aplomb, with clean audio and no setup problems. In addition to DirectSound support, AWE64 Gold also supports and accelerates DirectSound 3D, so game developers can add real-time 3D positional audio to games.

All told, the AWE64 Gold delivers the goods, though it's pricey and some features aren't aimed specifically at gamers, but rather at budding Beethovens. But if you have reached a point where snap, crackle, and pop are fine for breakfast — but not your PC audio — the AWE64 Gold is a strong candidate. ℃

▶APPEAL: Gamers who moonlight as musicians and need a single sound card for both jonses.

▶PROS: Versatile. Clean sound, very good General MIDI, no memory footprint in DOS mode, decent bundleware.

▶CONS: It's expensive, and some features may be extraneous for non-musician gamers.

CG RATED ★★★★

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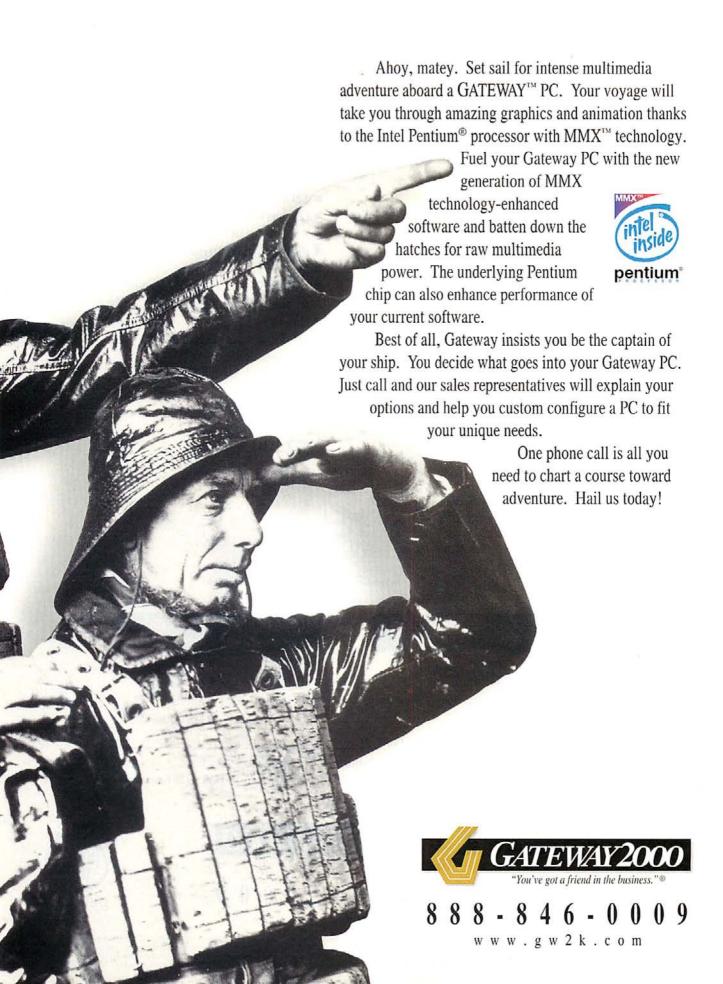
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COASTER OF THE MONTH

Clue

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CG Choice Games This Month:

REALMS OF THE HAUNTING

CG CHOICE

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DISCWORLD II: MORTALITY BYTES!

CG CHOICE

p. 183

READER QUOTES

PRIVATEER 2:

"To say the least, the game is a big letdown. The heavy English accent is sometimes impossible to understand. The videos are not consistent. Space combat is fair at best. The manual is garbage. Naturally, I found a good use for the game's three CDs: they make excellent coasters."
—MAX, via the Internet

HEROES OF MIGHT AND MAGIC II:

"HEROES II is a rich game with numerous undocumented secrets—certainly not a more-of-the-same sequel."—R. Jesser, Marietta GA

RPGs:

"I feel that role-playing games have begun to lose any sense of coherant plot. DAGGERFALL has thousands of towns, temples and dungeons, hundreds of spells, superb graphics—and a plot as thin as tissue paper. Perhaps companies like Bethesda and Blizzard should look to games like the Ultima series and BETRAYAL AT KRONDOR, which managed to combine an open ended-ness and freedom of gameplay with an intriguing and well-developed plot. Quantity of gameplay does not necessarily make a good game."
—Jason Rabin, via the Internet

CGW:

"Why don't game developers hire all you guys as consultants for their games? Your advice would be invaluable. It seems to me that you could do more good before a game comes out then reviewing it after it comes out."
—ZippyDan@aol.com

Review Quote Of the Month

"It's been too long since I could unreservedly recommend a game, but I can do it now."
—*Scorpia, reviewing DISCWORLD II*

Hey, you're right! The CGW editorial staff is now available to the highest bidder. What? Conflict of interest? Well, never mind.

HOW DO WE RATE?

We only review finished products, not pre-release versions. The ratings are as follows:

Outstanding: The rare game that gets it all right. The graphics, sound, and gameplay come together to form a Transcendent Gaming Experience. Our strongest buying recommendation.

Very Good: A high-quality game that succeeds in many areas. It may have minor problems, but is still worth your money, especially if you're interested in the subject matter or genre.

Average: A mixed bag. It can be a game that reaches for the stars, but falls short in several ways. It can also be a game that does what it does well, but lacks flair or originality.

Weak: A game with serious problems. Usually buggy, seriously lacking in play value, or just a poorly-conceived game design—you should think long and hard before buying it.

Abysmal: The rare game that gets it all wrong. This is reserved for those products so buggy, ill-conceived, or valueless that you wonder why they were ever released in the first place.

DIFFICULTY LEVEL
EASY
INTERMEDIATE
ADVANCED

Get Stoned

OBSIDIAN *Is a Flashback-Inducing, Skull-Busting Puzzlefest*

by Petra Schlunk

Obsidian is the latest in a growing line of adventure games that have evolved through the haze of Myst and The 7th Guest and focus more on puzzle-solving than plot development. But Obsidian pulls this off better than most of its ilk by hanging its gallery of puzzles in a series of truly bizarre universes, and by successfully instilling a sense of style and wit throughout the game, which should keep you amused even when the puzzles have you confounded.

The game takes place in the year 2066. Two researchers, Lilah and Max, concerned about the relentless decimation of the Earth's environment, have developed and launched a satellite called Ceres, which uses nanotechnology to scrub the pollution out of the Earth's atmosphere. Ceres has recently been switched to full machine control, allowing it to make its own decisions on what to clean up—and this is where the trouble begins.

A ROCK AND A HARD PLACE

The game opens in a forest where the researchers have gone for a vacation. Your character, Lilah, returns to the campsite, and spends some time reading her computer journal, which contains important information about the Ceres project, some bizarre dreams that she and Max have had, and—most ominously—reports on a strange, rapidly growing obsidian-based mountain that has mysteriously appeared near their campsite. Lilah hears a scream, and discovers that Max has disappeared into the Obsidian. Undaunted, she follows him

MEET THE NEW BOSS, SAME AS THE OLD BOSS Face to face with the bureau chief at long last, you're in for a lecture on playing by the rules!

in. The rest of the game involves Lilah's effort to rescue Max, discover and reach the force behind the Obsidian, and make a decision upon which depends the fate of the Earth. It's hardly just another vacation day.

The first world that Lilah enters is based on her recorded dream of a bureaucratic nightmare. This Escheresque world is a cube in which all sides function as both floor and wall. But finding a way to reorient the world (or oneself) is only one aspect of the puzzle-solving here. Lilah must reach the bureau chief, cutting through a myriad of red tape as she goes, to find out what has happened to Max. Because several of the puzzles in this area are very difficult to solve, it's a blessing that the game's manual comes with strong hints and solutions to this first part of the game.

The second world that Lilah enters is from Max's dream. Taking place in what appears to be an industrial complex, Lilah must animate a giant mechanical spider by collecting several elements

essential to its function. Each collection involves solving one or more complex and truly bizarre puzzles. As is true throughout the game, in this world it's as hard to figure out what each puzzle is about as it is to solve it once you know.

After traversing the two dream realms, Lilah must enter a realm of Ceres' own devising, which symbolizes and celebrates Ceres' birth of creativity. After traversing this world, Lilah will enter a realm where she can rescue Max and confront Ceres.

DAZED AND CONFUSED

Obsidian's point-and-click interface is simple to use and familiar to most adventure gamers. The cursor changes into an arrow when you can move somewhere, a double arrow when you can shift viewpoints, or a green diamond when you can interact with something. There are a few times when you will pick up an object and lug it around for some purpose, but there isn't an inventory as such—so don't expect to find the
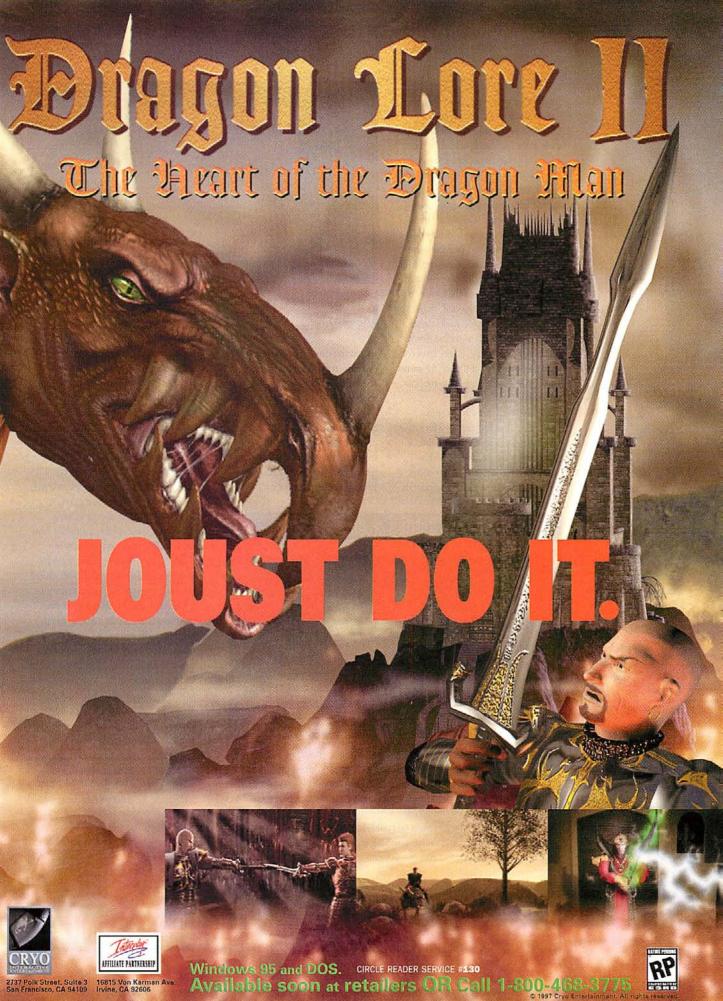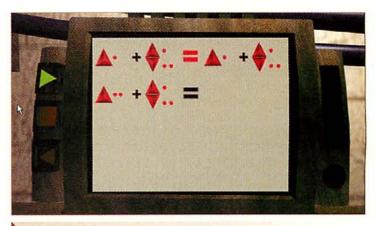
object-combination puzzles that litter many other adventure games.

One of the really eerie facets of OBSIDIAN is that you have no clue, especially at the beginning of each of the worlds, what you're supposed to do or where you're supposed to go. Along with this lack of direction, OBSIDIAN's graphics and first-person perspective contribute to a strongly surrealistic atmosphere. This atmosphere is enhanced (or needlessly overworked, depending on your viewpoint) by the inclusion of a lot of dead space — that is, many beautiful scenes and views where the gamer does nothing except move around. Traipsing through these otherwise useless areas, where every click of the mouse slowly displays another scene, is very time-consuming, and will wear thin on the gamer who just wants to get down to the business of solving puzzles.

While there is no way to die in OBSIDIAN, obviating the need for lots of saved game positions, you can save as many games as your hard drive has space for. I recommend that you save before tackling some of the big puzzles,

CHEMISTRY CLASS A basic lesson in weird science is necessary to solve this simple chemistry problem. OBSIDIAN's puzzles can get pretty intense.

so that you can restart and reset the pieces by reloading your game.
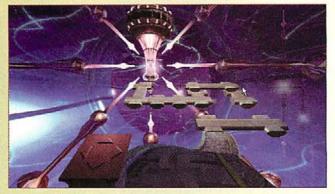
Also, the game has more than one ending, which is another nice feature.

STONE DEAF

OBSIDIAN's puzzles are about as challenging as they get in the adventure game genre — especially since it's often a struggle just to figure out what you're

supposed to do — and the game doesn't provide a lot of clues. Unfortunately, some of the clues and information that do exist are only delivered orally (from various characters or objects). For some reason, the sound in my game was choppy, and I frequently had difficulty understanding what was said. Since the game does not include any on-screen text, I often had to replay sections several times to figure out what was being said.

While OBSIDIAN does have a few drawbacks, most notably a surfeit of dead areas and the annoying necessity of changing the Windows display to 16-bit color (which isn't compatible with almost anything else you might wish to run), this game has many strong features. It contains approximately 20 interesting and original puzzles presented in a series of unusual and beautiful worlds; and it possesses a nice, edgy intelligence that's often lacking in games of this type. For gamers who enjoy puzzle-solving, OBSIDIAN should provide a similar level of enjoyment as do MYST or THE 7TH GUEST, and probably a greater level of challenge. ⬢

Getting a Clue

I n the second realm, when you're mixing colors, remember that you're trying to find something that will mix with green to make orange. In the church of the machine, make use of the symbols in the square loop at the bottom of the circuit so you can imprint the microchip at each of the three areas at the top of the circuit.

In the third dream realm, you'll be confronted with a strange board game. The objective in this game of hide-and-seek is to force "true inspiration" into the upper-right square. You can find this character by looking at the pieces on the board. "True inspiration" needs to have a place to hide or it cannot move. This board game is also the basis for the final puzzle in this area, in which you will try to reach the frame in the sky. When you follow your copilot's directions, punch D2 instead of B2 and then play the game you played on the board (flip up the covers to find the red light that you're chasing).

▶**APPEAL:** Fans of MYST-like games, and puzzle fans of all types.

▶**PROS:** An intuitive interface; difficult and original puzzles; and strong, surrealistic graphics.

▶**CONS:** Lots of dead space and lengthy transitions make movement through the game's worlds tedious. Some puzzling puzzles, indeed.

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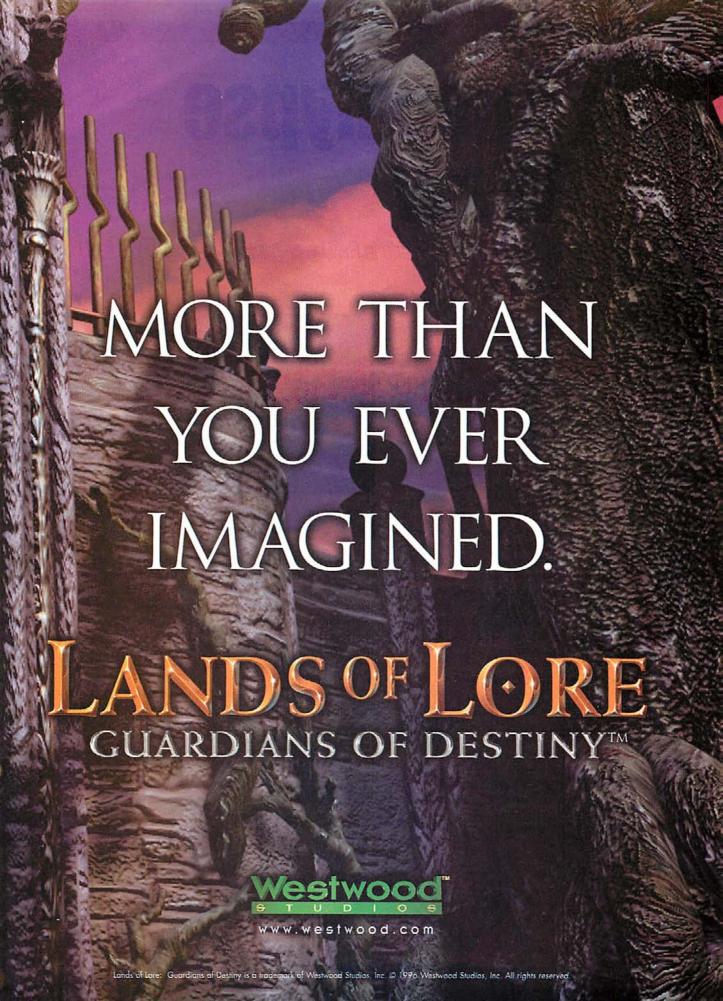
It's the End of the World in REALMS OF THE HAUNTING, and We Feel Fine

by Robert Coffey

Y ou never know what you're going to get when you combine two seemingly different things. Sometimes you succeed, as with Reese's Peanut Butter Cups; other times, you get something like Pat Boone's new marrow-curdling heavy metal album. Blending different gaming elements is no less risky, but REALMS OF THE HAUNTING (ROTH) is more than up to the task, deftly mixing first-person action with traditional adventure game problem-solving and exploration. With a compelling, complex plot; smooth-scrolling 3D graphics; and a bucketful of challenging puzzles and deadly monsters; ROTH covers all the bases, ably managing to be both a little bit country and a little bit rock 'n' roll — all the while forging a grim personality all its own.

DYNAMIC DUO Meet the Scully and Mulder of the Apocalypse, your heroes Adam Randall and Rebecca Trevisard.

FINAL COUNTDOWN

You play the role of Adam Randall, a twentysomething expatriate Englishman returning home after the sudden death of your father, pastor of a small Cornish village. Upon arrival, you meet a strange priest, who claims to be a friend of your father, and who hands you a box of shattered seals. When you arrive at your father's house, your trouble really begins. Eerie sigils glow on many of

the doors, enormous secret mausoleums and temples reveal a building much larger than the outside would lead you to believe, and a bunch of demons try to kill you. Plus, the ghost of you father appears and beseeches you to help free him from the torment he is enduring in the afterlife. Obviously, you've got your work cut out for you.

Fortunately, you are soon joined by Rebecca Trevisard, an attractive young psychic. Though you only control Adam, Rebecca is an invaluable asset, noticing and interpreting mystical
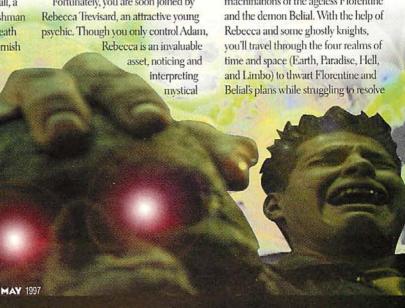
information that Adam misses or cannot comprehend. Together you begin to make sense of the myriad clues and mysteries that comprise the game's strong, intricate plot. While there are scarcely enough pages in this entire magazine to detail ROTH's epic story; in a nutshell, it concerns a centuries-old plot to loose chaos upon the earth through the evil machinations of the ageless Florentine and the demon Belial. With the help of Rebecca and some ghostly knights, you'll travel through the four realms of time and space (Earth, Paradise, Hell, and Limbo) to thwart Florentine and Belial's plans while struggling to resolve

Die. Die. Die.

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ADVENTURE

your prophesied role in the dawning of the Apocalypse.

Though much of the story is told through discovered journals, letters, and scrolls, the meat of it is revealed in full motion video sequences liberally interspersed throughout the game's 20 chapters. The acting in these sequences is simply some of the best I've ever seen in a computer game. Stately and believable, the actors bring a delicate gravity to the game that serves the story well.

BALANCING ACT

While games that try to offer both gun-slinging action and more ruminative puzzle-solving have mostly been heavily lopsided in favor of one or the other, this is not the case in ROTH. Both elements are exceptionally well-balanced and they

FLOOR SHOW Richly designed environments add to the immersive nature of REALMS OF THE HAUNTING. Check out the detail in the floor mosaic.

work to enhance the plot, as well as each other. Transitions from adventure gaming to action and back again are seamless.

The twitch-reflex components of the game should be familiar to veterans of any shooter. While the emphasis is definitely on killing the assorted demons, there are points where you'll need to successfully run and jump your way through the perils of the realms, such as fireball traps and floating platforms. If you're a die-hard adventure gamer who is leery of hot and heavy combat, ROTH offers four different skill levels for the action parts of the game, ranging from easy to very hard.

Similarly, the game has two difficulty settings for the puzzles. Since many of the puzzles are concerned with finding and using objects, the easy setting will auto-

matically put whatever item you need right in your hand, while playing the hard way forces you to figure it out yourself. All of the puzzles are plot- and game-related —even the logic puzzles, some of which are almost MYST-like in their reliance on your having to operate machinery.

While most of the puzzles are good, challenging fun, there are a few that...well...aren't. Most of these involve mazes. There's an annoying mirror maze that changes shape after you press a button; a maze made of changeable walls of light (which has an unpleasant number of variables); and, the worst of the lot, a huge, convoluted network of caverns where you must find 16 brains to put into a machine.

GOING THROUGH HELL

ROTH's game engine and interface make travel through the game world a fairly simple affair. You can move with either the keyboard or the mouse, but since mouse movement ceases whenever you happen upon clickable items, the keyboard is definitely the way to go. Opening doors and interacting with objects is handled via the mouse cursor. Highlights on the cursor indicate available actions: A green light denotes an object that can be picked up or used, a red light indicates a target, and a blue light appears when a usable object is under the cursor, but out of range. Additionally, an eyeball icon will appear when an object's description is available.

Movement is smooth-scrolling, with 360 degrees of freedom. In order to ensure that your journey through the realms isn't hampered by a slow, jerky frame rate, ROTH has screen setting options running from VGA at 320x200 to SVGA with a 640x480 resolution. While the game is very playable at the lower settings, I found that even at the highest settings the detail and beauty of many of the huge environments was remarkable. In comparison to ROTH, DAGGERFALL's world looks kind of grungy as it lopes by with its frequent disc reads.

The graphics aren't without their drawbacks, however. Most of the monsters quickly degenerate into jagged,

HATCHET MAN You'll need to sharpen both puzzle-solving and combat skills to beat the game. Now it's time for this axe-wielding demon to eat some fireball.

blurry figures at even medium range, and some of the underground environments are just too dark. I'm all for creating a creepy atmosphere, but not at the expense of my eyes.

The compartmentalized inventory system, while probably the best approach to dealing with the up to 155 inventory items, takes some getting used to and it can be awkward at times. The designers added an annoying extra step when you want to use an object: You must first place it in your right hand before exiting the inventory and then click where you want to use it. This can get tedious—especially when you've got sixteen soggy brains to dump into a machine—one at a time. Also, while most of the maps you find are helpful, it's definitely not helpful to have the opened map blot out the main part of the screen.

Still, these quibbles are hardly game-killers. With its deep plot, carefully balanced blending of action and adventure, and a well-designed, graphically rich game world, REALMS OF THE HAUNTING is a unique, immersive gaming experience. Interplay took a chance with this unusual hybrid title, and they've succeeded—in spades. ⑂

▶APPEAL: Action gamers looking for some adventure, adventure gamers ready for some action.

▶PROS: Compelling story, gameplay expertly balanced between action and adventure, good variety of quality puzzles.

▶CONS: Inventory system can be unwieldy, too many mazes, movement sometimes awkward.

ACTION

Ramses Reeks

Playmates' Egyptian Romp POWERSLAVE Is Just Another Bad Run-of-the-Crypt Shooter

by Robert Coffey

I f it only took novelty to make a good game, then all those shareware DOOM levels featuring Homer Simpson and Barney instead of demons would be enshrined in this magazine's Hall of Fame. They aren't, and I'm willing to bet POWERSLAVE won't be either, in spite of its Egypt-invaded-by-aliens motif. In a staggering display of boneheaded game design, POWERSLAVE manages to botch almost every aspect of gameplay through unwelcome "features," limp imitation, and an unexplainable inability to fully utilize DUKE NUKEM's outstanding Build engine.

THE GOMER PYLE OF SPACE MARINES

In case you haven't guessed, you're the lone, highly-trained killing machine that can save mankind from pyramid-snatching extraterrestrials. What you might not have guessed is that you have multiple personalities, including a foul-mouthed soldier, a Gomer Pyle soundalike that gurgles "See ya!," and a gargling ape. It's as if the governments of the world decided to send Sybil to deal with the enemy menace. Quips in DUKE added character to the game, but in POWERSLAVE they only befuddle.

Comparisons to DUKE are especially valid since POWERSLAVE uses that game's Build engine. Sure, there are dynamic lighting effects and the environments look good (if uninspired); but why wasn't the game engine fully utilized? Unlike DUKE, the game world is mostly non-interactive: Bullets leave walls unblemished, and grenade blasts don't touch ancient urns.

And where are the excellent map options from DUKE? The automap in

HAVE WE MET BEFORE? This boss is big, ugly, and very boring. Like all the other monsters, bosses are tepid creatures that hardly inspire fear or dread.

WHAT THE HELL ARE YOU? Monsters are so pixelated up close, you'll think you're blasting away at a jumble of twitching Legos.

POWERSLAVE is a skimpy tangle of lines that can barely be seen when superimposed over many of the game's complex environments.

To its credit, POWERSLAVE does have a number of intricate levels with truly challenging puzzles and obstacles, but thanks to the lousy save function, you'll end up repeating those puzzles until you scream in frustration. That's because you can't save the game anytime and anywhere you want. Instead, the game automatically saves only upon completion of a level. Waypoints in each level note your progress; and when you die, your game is restored at the last waypoint you reached...provided you haven't used up your limited number of lives. If you have, you start at the beginning of the level

with just one life. You can collect a few extra lives along the way, but many are secreted in areas that will kill you when you retrieve them. This, coupled with countless jumps over lethal lava and some ambushes guaranteed to kill you the first time you encounter them, make POWERSLAVE almost mean-spirited in its unforgiving nature.

TERROR OF THE NILE?

The recesses of Ramses' tomb are chock-full of hostile creatures that die with a satisfying wet crunch. Too bad they look better dead than alive. Boss monsters look silly and move like wind-up toys, and everything devolves into a jumbled mass of pixels when viewed up close. The only creature certain to inspire fear is the Omenwasp, which makes a sound so monumentally irritating you're assured a headache.

POWERSLAVE may have some value as a multiplayer game (when you've lost every other disc in your collection) but I don't see it topping DUKE or QUAKE. When you look at a game like REDNECK RAMPAGE, which uses the Build engine wonderfully, there is just no excuse for a game as bad as POWERSLAVE. ⌘

▶**APPEAL:** Action junkies who've never met a first person shooter they didn't like.

▶**PROS:** Huge, complex levels.

▶**CONS:** Miserable save game feature, bad use of the Build engine, ridiculous and annoying monsters, it's the kind of game that's been done a thousand times before and a thousand times better.

CG RATED ★★★

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Buzz Off

Fly Like a Butterfly and Sting Like a Bee in Grolier's Bug Simulator

by Scott A. May

Go ahead, admit it — you've always secretly wondered what it would be like to be a bug. Well, wonder no more. Grab your insect instincts and think small when you enter the world of BANZAI BUG, a unique blend of flight-sim action and arcade adventure.

A FLY ON THE WALL

As the ham-fisted, venom-spitting BANZAI BUG, you're trapped in what is surely insect hell: an exterminator's house. Your adventure begins innocently

BUG-EYED WORLD BANZAI BUG's environments are unrestricted 3D, but the flight model is a bit tough to master, and the gameplay gets a little repetitive.

MATCHING WITS Here Banzai retrieves a matchstick from Dad's workshop, one of many items needed to build the Stinkulator anti-human bomb.

enough in the garage, where your primary goal is to locate and consume pieces of food while punching and spitting your way past robotic insect guardians.

Succeed and you'll meet Poolio, a friendly little pest with a Cheech Marin accent and wisecracks galore. With Poolio as your guide, you'll soon join forces with a merry band of creepy crawlers, whose revolutionary idea is to build the "Stinkulator," an anti-human bomb. Your job is to retrieve bomb components while avoiding Mom's bug spray, Dad's robotic defense system, and little Bobby's sadistic, wing-tearing clutches.

The game features three skill settings and seven levels of increasing challenge, which are differentiated by the type of obstacles in each room, the number and tenacity of your enemies, and the difficulty in locating your target objects. However, gameplay is still basically a matter of hide and seek, defend and escape. As with most 3D shooters, it can get tedious over time.

A SURREAL DEAL

The game's main strength is its ability to immerse players in a surreal environment, where ventilation ducts become claustrophobic caverns, and everyday objects like tables, lamps, and chairs are part of the towering terrain. For the most part, movement throughout this 3D realm is unrestricted, allowing you to fly under or around most solid objects. The polygonal shapes are boxy, but nicely shaded, and drawn with a future-retro look (particularly in the case of your human adversaries). The overall effect gives you outlandishly large, cartoony objects which are still instantly recognizable.

BANZAI is played from a chase-view perspective, with a choice of two flight modes: plane and helicopter. A third mode — look around — allows you to pitch and rotate to scan your

surroundings. Grolier overplays the flight sim aspect of the game, jokingly comparing your aerial maneuvers to aircraft such as the Hornet, Cobra, and Tomcat. Truth be told, in this altered reality, BANZAI's aerobatics are more akin to his real-life insect brethren's — slightly spasmodic and disorienting. Although the learning curve for flight dynamics isn't particularly high, mastering the techniques required to swoop, hover, attack, and pick up objects can be frustrating, especially at higher levels when you're constantly under attack. It's easy to lose your bearings, fly upside-down, and mistake floors for ceilings.

A LITTLE BUGGY?

Hardware requirements are a little steep, but the game offers several options for customizing display details to increase the frame rate on slower systems. Although the game supports DirectX technology, it flatly refused to recognize my Rendition-based 3D Blaster video card. Neither the publisher's Web site nor their tech support line provided any solutions.

Despite the funky controls and slightly repetitive gameplay, BANZAI BUG has enough originality and offbeat style to be declared a winner. If you're looking for something out of the ordinary that has a bent sense of humor, this bug's for you.

▶**APPEAL:** Arcade buffs and 3D virtual world aficionados.

▶**PROS:** Surreal twists on everyday settings, offbeat humor and tasty sound, unique design.

▶**CONS:** Gameplay eventually becomes tedious and repetitive, the flight mechanics are a little (dare we say it) "buggy."

CG RATED

Price: $39.99
Minimum System Requirements: Pentium 90, 8MB RAM, 20MB hard drive space, 2x CD-ROM, Windows 95, mouse; supports all Win 95-compatible sound cards, joysticks, and some 3D accelerated video cards.
Multiplayer Support: None
Designers: Gravity, Inc.
Publisher: Grolier Interactive
Danbury, CT
(203) 797-3530
www.grolier.com
Reader Service #: 321

"3D shooter and graphic adventure fans should be equally impressed...Should clean up when it moseys into town..." –*PC Gamer*

"This may be the first 3D shooter with a real plot..." –*Computer Gaming World*

"LucasArts seems to have stacked the gaming deck in its favor...Outlaws appears to be yet another winning hand." –*Computer Player*

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ACTION

DIFFICULTY LEVEL: EASY · INTERMEDIATE · ADVANCED

Doomed Clone

Psygnosis' PlayStation Port Is a Bad Mix of DOOM and MECHWARRIOR 2

by Thierry Nguyen

Yet another console port strikes the PC platform. Straight from the Play Station comes KRAZY IVAN, a port that can be best described as yet another clone. And, like so many similar games, this is one clone you won't want to play.

ID4, RUSSIAN STYLE

KRAZY IVAN takes place in the year 2018, when the Earth is attacked by—you guessed it—menacing aliens. They've created gigantic energy fields in five locations around the world, and someone needs to dismantle these fields. Enter Krazy Ivan, a schizophrenic Russian soldier who happens to hallucinate about aliens on a daily basis.

Your role as Krazy Ivan is to pilot the Steel Cossack power suit, a not-so-mighty 'Mech-type robot. Throughout the game, you will battle three to five Sentients (mini-bosses), before you walk up to the power generator and take it out as well. The game is a mix of DOOM-type action and MECHWARRIOR 2-type sim, as you roam around each level with DOOM-style controls, while also contending with MECHWARRIOR 2-like characteristics such as shield strength and overheating.

FROM RUSSIA WITH LOVE

From the hammy acting and Boris and Natasha-style accents in the FMV intro to the actual game itself, IVAN shows itself to be yet another Playstation port that lost something in the journey to PC land. The terrain is bland, dotted with an occasional tree or shrub, and enemies always mysteriously appear out of thin air to harass you. You then have to wander around the level looking for

THE BIGGER THEY ARE... Here is a typical KRAZY IVAN moment, as you stare from your 'Mech-style HUD at a decent-looking enemy on the ultra-bland terrain.

some Sentients to fight. If you dawdle too long (about three minutes), the Black Knight—an uber-powersuit—will come by to hurry you along on your mission. You'll have to get him out of your face and resume your hunt for the Sentients, or else he'll appear in another three minutes (every time you kill a Sentient, the timer resets). I can see the desire to add a sense of urgency to the game, but it's never successfully conveyed. This game is so simple, you can find each Sentient

The Black Knight

The uber-powersuit arrives after I wait out my time limit. For those looking for 'MECH-type depth, there isn't any. Unlike in MECHWARRIOR 2, shooting this guy in the legs makes no difference at all.

in under three minutes, so the Black Knight really never shows up, and even when he does, he's nothing but another annoying Sentient.

Enemies are standard texture-mapped, low-res fare. They're not too bad looking, and they sure look a lot better than the terrain, which is nothing more than a jumble of badly-textured polygons. Even worse, it's the same bad looking jumble from level to level; the only difference between Saudi Arabia and Russia is that Russia has green ground, while Saudi Arabia has brown. Also, the box claims that you fight in 25 levels, but actually, you fight 25 Sentients in a mere five worlds.

KRAZY ENOUGH TO BUY?

In the end, KRAZY IVAN is simply another bad action game port. It brings almost nothing new to the genre (except for maybe showing how *not* to attempt to meld genres), and in fact has some serious weaknesses that hinder it. At most, it will be bought, laughed at (because of its unintended B-movie value), and then forgotten. ☘

> **APPEAL:** Action gamers who would like a little DOOM/MECHWARRIOR 2-type action (or just a good laugh).
>
> **PROS:** Easy to get into; hammy, yet amusing, FMV.
>
> **CONS:** Bland terrain, lack of real depth, lots of brainless shooting, Black Knight threat not threatening enough.

CG RATED ★★★☆☆

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CLASSICS & PUZZLES

DIFFICULTY LEVEL: EASY → INTERMEDIATE → ADVANCED

Clueless

Hasbro's Detective Game Holds Unsavory Surprises

by Charlotte Panther

Growing up in England, I spent many a summer staring dolefully out of the window, wondering if the rain would stop long enough for me to go outside. My frustration at being stuck indoors was somewhat appeased by the enjoyment I discovered playing *Cluedo*—or *Clue* to you Yanks. Having had a fine time with Hasbro's computer adaptations of SCRABBLE, MONOPOLY, and RISK, I expected CLUE CD-ROM to provide me with a pleasant bit of nostalgia. Sadly, once you get past the opening full-motion video sequences, the experience proves even more frustrating than being stranded in the house on a rainy day.

POINTLESS AND CLICK

Once you're inside the mansion, the idea is to search every room for clues, uncovering information that will automatically be recorded in your notebook. Playing against other people, you may complete two actions per turn (move into a room, question a witness, and so forth). Playing alone, you simply search, point, and click until you have enough information to make an accusation.

If you've played other detective/adventure games, you'll find CLUE's interface run-of-the-mill. Once you

ELEMENTARY, MY DEAR WATSON A detective's most important tool is his notebook.

enter a room, the first serious problem becomes apparent: Navigation is painfully slow. Moving within each room becomes a feat in itself: Click away at the directional arrow, and watch the screen pan, slowly and jerkily revealing new sections of the room. For best performance results, Hasbro suggests playing CLUE on a Pentium 75. I experienced severe speed deficiencies on my P90, so I reinstalled the game on a P166. It ran a little better but was still disappointing. The problem continues as you question suspects. Click on a character and you'll experience a two or three second delay before anything happens. The atmospheric music, while adding to the general ambiance of the game, appears to contribute to the speed problem, and unfortunately there is no option to turn it off. Although you can customize your install depending on your available hard drive space, players adhering to Hasbro's minimum hardware requirements (486/66 and 2x CD), will nonetheless be greatly disappointed.

Despite these setbacks, I continued on the trail of the murderer. Then, for no apparent reason, the game locked up. Not one to be beaten, I started again…and again…and again. I tested the game on different PCs but it just kept locking up. My frustration

reached its peak when the program crashed just as I was trying to save my current game.

So, is it worth persevering through these glitches? As a single-player detective game CLUE brings nothing new to the genre. And, while up to six players can hotseat, the game does not have Internet, LAN, or modem capabilities—a real

WHITE OUT How trustworthy is the late Mr. Body's faithful housekeeper, Mrs. White? Does anyone care, given the constant crashes?

shame, since an online chat feature could have added some spice to this dull game. You *can* huddle a bunch of friends around one computer for hotseat play, but you're better off playing the boardgame—it's a lot more fun. The game is designed to provide replay value—it has three different plots, each with four difficulty levels—but we have a feeling that if you make it through one game, you'll be too frustrated to care. ᴇ

▶APPEAL: Sleuths with the patience of a Saint.

▶PROS: Attractive FMV sequences.
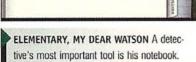
▶CONS: Constant crashes; poor performance (even on PCs way above the recommended requirements); no modem, LAN, or Internet play. Turns a classic boardgame into a bad adventure game.

CG RATED ★ ★☆☆☆

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Playing the Numbers

PRO LEAGUE BASEBALL '97: Serious Fun for Hardball Stat-Heads

by Jim Gindin

THE RIGHT STUFF? Choose between five pitches to set your game in motion, and then let 'er rip. Once the ball is in play, the computer takes over.

Baseball's numbers represent one of America's purest art forms. Batting averages, home runs, earned run averages, strikeouts, and on-base percentages meld into a system simple enough to attract small children, yet elaborate in all its relationships. People watch hockey, basketball, and football to see a sporting event. Baseball is more than that; it's a series of individual challenges that make up the framework of a season. The standings reflect the sport; the numbers underline individual achievements. Can Mark McGwire beat Roger Maris' 61-home run total? Can Greg Maddux finish with less than a 2.00 ERA, despite all the run-producing fireworks abundant in mid-90s baseball?

Dave Holt, founder of Micro Sports, is someone who loves those numbers as much as any statistical maven, and over the years, his PRO LEAGUE series of baseball simulations has allowed gamers to share in his love of the game. His latest work, PRO LEAGUE BASEBALL '97, is another fine effort.

SEASON'S GREETINGS

PRO LEAGUE BASEBALL's strength lies in its ability to simulate huge quantities of baseball games in a very short amount of time. To enhance this effort, every Major League team from 1904–95 is part of the roster database. There's also a set schedule available for each season. On a P75, PRO LEAGUE BASEBALL can simulate the 1934 season in less than three minutes. Only a couple of competitors even approach this speed, and they do so with much less accuracy.

In fact, Holt's algorithms give PLB a raw simulation accuracy close to that of the leaders in the genre, DIAMOND MIND BASEBALL and STRAT-O-MATIC BASEBALL. PLB is actually a little better in some areas, such as being able to simulate unusual performances. If a hitter has a high walk total along with a very low number of strikeouts, PLB handles his performance far more accurately than the competition. The simulation is also better at dealing with the differences between older generations and today's players. Pitchers from the '30s completed a third of their games, while last year's barely completed one-tenth. PLB has little trouble working with either time period.
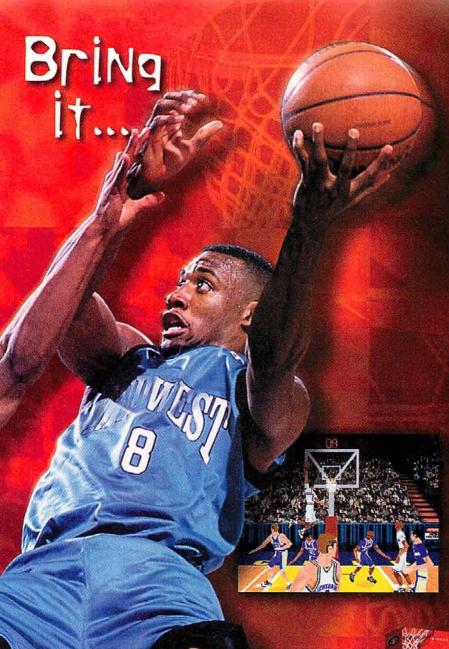
The simulation is a little less exact in other areas. Defense is handled in a more team-like manner, so putouts and assists are assigned after the simulation determines that an out has taken place. A good fielding team will perform much better than a poor fielding team, but individual assist and putout totals won't reflect those abilities. Shortstops, second basemen, and center fielders don't make nearly as many plays as they do in real life. Even though the core of any defense is the range of these players, excellence in those positions does not translate into an excellent fielding team. As a result, a team can get away with playing Albert Belle at shortstop and not face much of a penalty (especially since suspensions for abusing fans were not built into the game).

PRO LEAGUE BASEBALL also has a little trouble with extra base hits. Doubles and triples only appear at about 85 percent of their real-life rates, and home runs are a bit lower for the bottom-end players. This lowers league slugging percentage by about .020 and on-base percentage by about .010, and reduces offense a small amount from real life. It isn't, however, enough to ruin a good simulation.

HIT AND RUN

Other than the unusual approach to defense, PRO LEAGUE BASEBALL handles raw simulation as well as any stat-based game. Arcade games like HARDBALL and TONY LARUSSA BASEBALL aren't in the same ballpark, and despite its marketing, FRONT PAGE SPORTS: BASEBALL is less accurate than even the LaRussa game.

The strength of the other stat-based games, however, isn't just in statistical accuracy. With DIAMOND MIND, STRAT-O-MATIC, and Lance Haffner's games, you're able to configure each team according to your likes and dislikes. You have a lot of control over pitching rotations, relief pitching roles, batting orders, and platoons.

That control really doesn't exist in PRO LEAGUE BASEBALL. You only have one tool available to modify a season

regular starting rotation, but pitchers who started 15–25 games often end up throwing once every two weeks.

For head-to-head games, PLB offers a graphic interface, complete with multi-screen representations of every Major League ballpark. Even the Polo Grounds, with its unusual dimensions, is available, although someone needs to tell the artists that the team from Washington was known as the Senators rather than the Redskins. The players are well detailed, including some neat extras like old-style uniforms for the older teams and quite a bit of dirt-kicking and range of motion. The graphics, however, don't compete with the top arcade games.

There's also an arcade mode, though this isn't intended to rival the efforts of HARDBALL or TONY LARUSSA BASEBALL.

out of the strike zone, you'll miss the ball. Timing is a little more difficult because you have to watch both the bar and the zone, but after a short while, you'll be averaging one to two hits per inning.

LEAGUE LEADER
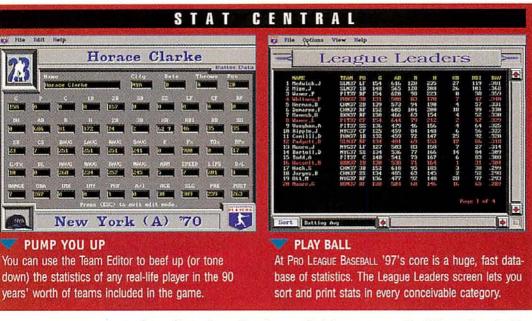
Overall, PRO LEAGUE BASEBALL '97 offers an interesting alternative to the statistic-based games, with more emphasis on user control, nice graphics, and speed. And I can't stress enough how nice it is to have every team from 1904–95 available for simulation.

However, the game is a little buggy. It often crashes in league management mode and during player drafts when the pool is out of a particular type of player, and you may experience some trouble if you're using a Sound Blaster 16 card.

There's also a problem with end-game management of head-to-head games that carries over to the simulation. In one case, the run scored from what should have been a game-ending 10th-inning single was completely ignored. Also, the losing pitcher will usually be incorrectly assigned if there was a pitching change in the middle of an inning when the lead run was scored.

There's work to be done, but this effort is far, far better than the initial 1994 release of PRO LEAGUE BASEBALL, which couldn't be recommend-

STAT CENTRAL

▼ **PUMP YOU UP**
You can use the Team Editor to beef up (or tone down) the statistics of any real-life player in the 90 years' worth of teams included in the game.

▼ **PLAY BALL**
At PRO LEAGUE BASEBALL '97's core is a huge, fast database of statistics. The League Leaders screen lets you sort and print stats in every conceivable category.

simulation: adjusting the number of games played at each position. If you want Belle to start half of Chicago's games at shortstop, you assign him 81 games played at that position. If you want Maddux to start one out of every five games Atlanta plays, assign him a 33 in the Games Started category. Relief pitching works in a similar manner, with closer situations allocated through a percentage of team saves a pitcher earned, and appearances allocated through a percentage of overall games pitched in relief. As a result, a pitcher who both starts and relieves will often appear as a reliever in one game, then a starter in the next game. There's an attempt to follow a

On defense, you can position fielders and throw one of five pitches. Select the pitch, choose a location, and then try to time the release based on a moving color bar, like a golf swing meter. If you're close to the target line when you release the ball, it's always a strike. Even if you throw the same fastball to the same location for nine straight innings, the computer has a lot of trouble scoring runs. And, once a ball is hit, everything's automatic.

On offense, you control a similar color bar when the pitch appears. There's a small strike zone at the bottom of the screen that indicates where the pitch will end up. If you swing at a pitch in the strike zone, you will make contact. If it's

ed under any circumstances. And it's certainly enough to make me look forward to Holt's next effort, MICROLEAGUE BASEBALL 6.0, due later this spring. ℰ

▶**APPEAL:** Statistical aficionados who want to play fast seasons without tweaking the lineups.

▶**PROS:** Excellent statistical accuracy, access to every Major League team from 1905–95.

▶**CONS:** Weak arcade mode, crashes in other modes, lack of flexibility in season simulation.

Sega Rally Championship.™
The arcade racing hit.
Now available on PC.

SPORTS

DIFFICULTY LEVEL: EASY / INTERMEDIATE / ADVANCED

Something Fishy

THE ART OF FLY FISHING Is Just All Wet

by Scott A. May
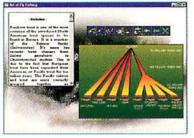
Sierra has proven that fishing simulations have become a lucrative gaming market with their best-selling TROPHY BASS series. Now Gametek adds an even more specialized outing, THE ART OF FLY FISHING. One part interactive game and two parts reference guide, this peculiar little title offers its share of rewards, but you'll have to be a hard-core angler to be lured by the game's bone-dry presentation.

Created by Britain's Arc Development, this game is billed as "Volume One" in a series. Whether we'll ever see subsequent volumes is a good question, though. Forget those exciting scenes from *A River Runs Through It*—if this game were any more laid back, gamers would literally be sleeping with the fishes.

HERE FISHY FISHY

It all begins promisingly enough. THE ART OF FLY FISHING provides access to three of the best fly-fishing rivers and streams in Great Britain: the Test, Spey, and Blackwater. In practice mode, you have a choice of six fishing hotspots on each river, typically located at scenic bends, where the current creates a series of shallows, ridges, and gullies. Most spots offer a choice of fishing positions, either on the bank or in the shallows. Where you stand helps determine your angle to several unseen factors lurking below the surface, such as eddies, vegetation, and other underwater habitats. An overhead view gives a clear indication of fish locations and traps to avoid.

The strategies and mechanics of fly fishing are much different than lake fishing in terms of equipment choice and casting styles. Although the game box boasts "hundreds of tips and techniques," most have to be pieced together by the player, who must read between the lines of the detailed online reference library. The skimpy manual traipses through the basics of gameplay, but is woefully short on tips for improving your skills.

Casting is a simple matter of targeting a spot on the river—either up- or downstream—followed by a dubious three-step process of moving and clicking the mouse in time with a bar-style casting meter. It's easy to pick up, but has absolutely no correlation with the actual act of casting. Once in the water, you must wait for a fish to swim by and admire your lure. This action, viewed in a little pop-up window, requires that you press the mouse button to initiate a strike. Timing is critical. After too many failed strikes, the fish get wise to your game and find other spots to swim. If you do land a fish, you have to play with it by applying and releasing line tension, slowly reeling it in close enough to net.

SORRY, CHARLIE

Fishing spots are displayed as static, augmented by some nice spot animation to suggest a flowing river. Other graphics are extremely simple (almost shareware quality). Options include choice of rod, line, and artificial flies (wet or dry). Fish alone or in competition with up to six computer-controlled or human anglers.

The only thing the manual and online reference guide do well is explain the significance of each lure. Otherwise, these guides are mostly a collection of superfluous information. You'll be hard-pressed to land any game-enhancing tips here.

Overall, THE ART OF FLY FISHING is somewhat engaging, but it's held back by its dull interface and lack of useful instructions. This one is definitely catch-and-release. ⛘

Price: $50.00
Minimum System Requirements: 486 DX4 (P90 recommended) 8MB RAM (16MB recommended), 16MB swap file, SVGA graphics, 4x CD-ROM, Windows 95 or 3.1, mouse; supports Sound Blaster 16-compatible sound cards.
Multiplayer Support: hotseat (1–6 players)
Designer: Arc Development
Publisher: Gametek Sausalito, CA (415) 289-0220 www.gametek.com
Reader Service #: 325

CATCH OF THE DAY Beautiful backgrounds help distract players from overly simple game mechanics.

FISH SCHOOL The online reference library contains almost everything you'd ever want to know about fish, except how to catch them.

▶**APPEAL:** Fly fishing fanatics.

▶**PROS:** Easy to learn, nice blend of high-res photography and spot animation, runs entirely from CD.

▶**CONS:** This game's presentation is so dry, it makes TROPHY BASS look like QUAKE.

CG RATED ★★☆☆☆

And hey, it's networkable.

You're sitting at your desk. And you're bored. Bored, bored, bored. Now imagine you're sitting at your desk taking hairpin turns through dirt and mud. Massive bumps send you flying into orbit. And you better anticipate the next curve or you're gonna get to know the side of a mountain a little too well. Ahhh... there's nothing quite like the off-road racing experience of Sega Rally Championship for the PC. There's even head-to-head network play. So, c'mon, you get a little time off for lunch - go find some buddies and let them eat your dust.

Check out our demo at www.sega.com/segapc

DIFFICULTY LEVEL
EASY
INTERMEDIATE
ADVANCED

Aces High

The New King of WWI Games, if You Have the Hardware Horsepower

by Robin G. Kim

Hark back to the dawn of military aviation — the war to end all wars. It was there, high above the battle-scarred fields of France, that the axioms of air combat were first conceived by resourceful men piloting fragile constructions of wood and fabric. Rowan Software and Empire Interactive take you back to this pioneering era with FLYING CORPS, a simulation whose impressive realism and level of detail mark a clear break from the companies' previous arcade-like sim offerings.

Eight instant-action missions help you get up to speed for four lengthy campaigns, which are the main focus of the game. Mission types vary widely and incorporate a random factor that keeps you on your toes. Some campaigns put you in charge of managing an entire squadron and let you to decide the number and type of planes to take up, who will fly in what formation, and the tactics pilots will use if engaged. Of the 19 aircraft types represented in the game, the 6 you can pilot are the French Spad XIII and Nieuport 28, British SE5a and Sopwith Camel, and German Albatros DIII and Fokker DrI Triplane.

FLYING COLORS

As squadron leader, you can have planes painted with unique designs to make identification easier — or just to show off your impeccable fashion sense. No matter how they're painted, the textured aircraft graphics are simply gorgeous. Surface detail is thankfully *not* shown for distant aircraft, resulting in sharp images that show a target's attitude at remarkably long ranges. FLYING CORPS also uses tex-

TANK BUSTING Ground attack missions offer a variety of target types, from ammo dumps to moving tanks and trucks.

ture mapping to good effect in rendering the subtly rolling French countryside. Roads, rivers, and other landmarks are shown in enough detail to enable visual navigation using the included paper maps, though an impenetrable haze restricts visibility to about 4km. While this distance is sufficient at low altitudes, the lack of a distinct horizon when higher

up can force you to use instruments just to keep straight and level.

Predictably, these eye-popping graphics do not come for free. At 640x480 resolution, I had to turn down some detail options to sustain 10 frames/second on my P5-166 running DOS; the Win 95 version included on the same CD runs even slower. Fortunately, the game supports any VESA resolution your video BIOS is capable of, from 320x240 up to 1600x1200. Dropping down to 512x384 or 400x300 should allow most PCs to attain a reasonable frame rate. Direct 3D

THE CAMPAIGNS
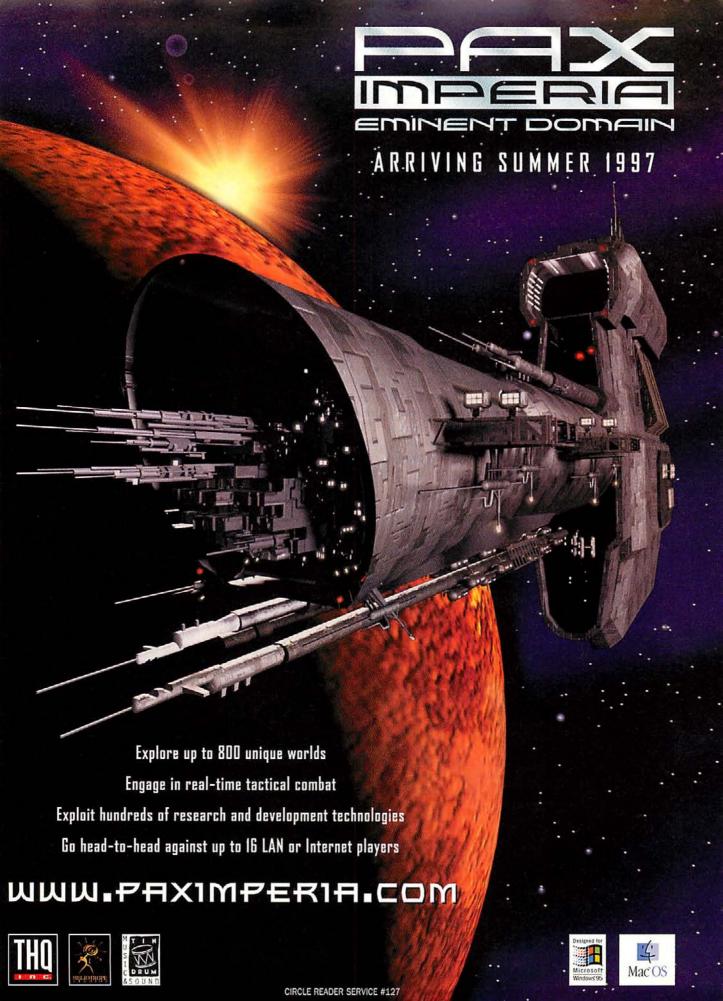
MISSION PLANNING Only the Tank Battle campaign allows you to alter your flight plan and choose targets. The planning map shows friendly casualties and the extent of the enemy advance.

Waypoint 1
Target: Tank Convoy
Action: Attack
Altitude: 3280ft

Four late-war (1917–18) campaigns are included in FLYING CORPS. Two have you flying for the German Air Service, one for the British Royal Flying Corps, and one for a newly formed American squadron. Differences between the campaigns extend

beyond just the setting, available equipment, and uniform of the enemy; each also offers a unique combination of mission types and leadership responsibilities. This variety helps keep every new campaign fresh, improving long-term playability.

The 1918 Spring Offensive campaign

STATUS CHECK If your situational awareness needs a boost, a 1–3 line status panel can be brought up at the top of the screen, with each line showing a successively greater level of information.

AERIAL MELEES Dogfights can involve dozens of planes in a chaotic, swirling mass; mid-air collisions are as threatening as enemy bullets.

ples are used throughout, with clever stereo effects telling you which way to look to find the plane that just whizzed by or the tanks trundling along below. In-flight music can be played, but it slows the game down and causes lockups on some machines.

THE BELL CURVE

Computer pilots in FLYING CORPS vary widely in skill level. Novices may panic and spin out of control when they see you, while more experienced adversaries coolly maneuver for advantage before engaging.

Your wingmen respond erratically to commands you issue, but that's understandable given that WWI scouts didn't carry radios. Very low-flying targets reveal the AI's biggest weakness: It's unable to attack such aircraft without inevitably augering in. Other than this one exploitable fault, computer pilots are fairly capable in both air-to-air and ground-attack roles. Those wanting to test their skills against human opponents will have to wait; a free Win 95-only multiplayer patch is still in the works.

Despite its flaws, FLYING CORPS does an outstanding job of capturing the visceral up-close-and-personal flavor of WWI air combat. This, in combination with the game's depth of realism and mission variety, yields an impressive package that's almost sure to please sim fans who have hardware fast enough to run it. ⚐

support has been promised for owners of 3D accelerator cards, and may be available in a patch by the time you read this.

In contrast to the excellent external graphics, the sim's cockpit view system is a disappointment. The only way to shift the view is to pan manually or to use one of several padlock modes which rotate to track objects automatically. Manual panning is less than effective because, depending on the panning speed you employ, it's either too slow to be useful in a fast-paced dogfight or too fast to control. Also, it leaves a huge blind spot extending from straight above to directly behind the pilot; this greatly reduces situ-

ational awareness. The padlock views are quirky, but would work well enough if they didn't suffer from a similar blind-spot problem. Empire has released an update that fixes the overly fast manual-panning mode and adds 14 fixed views, but it does nothing about the blind spots.

SNAP ROLLS AND MORE

One area that doesn't disappoint is the sim's exceptionally accurate flight model. Though options can be tweaked to tone things down for novices, hardcore sim pilots can treat themselves to a wide variety of realistic effects such as gyroscopic precession, adverse yaw, torque, and even snap rolls (rapid rolls that result when large elevator and rudder inputs cause one wing to stall while the other generates near-maximum lift).

Stall and overspeed buffeting contribute to an outstanding feeling of flight that varies convincingly from plane to plane. Handling remains believable even when an aircraft loses a wing or tail section to enemy fire—a common occurrence with the sim's detailed damage modeling.

Though some minor shortcomings do exist—planes sometimes get stuck in weird nose-high attitudes if abused, and stress failures from excessive Gs are not modeled—the flight model is surely the best that has ever been seen in a prop-plane air combat simulation.

Another area where FLYING CORPS rises above the pack is its wonderfully immersive sound effects. Authentic digitized sam-

THE CAMPAIGNS

starts you out as a rookie RFC pilot during a major German ground offensive. The better you do, the faster you will be promoted to positions of leadership. All missions are chosen for you, but do vary slightly over multiple playings. Your squadron's cumulative performance will determine the outcome of the battle.

Hat-in-the-Ring puts you in Eddie Rickenbacker's shoes as he strives to become America's Ace of Aces. Once promoted to squadron leader, you'll be able to choose among several mission types, such as balloon busting or escort duty.

As the Flying Circus campaign begins, Manfred von

Richthofen—the infamous Red Baron—is away on leave after putting you, his brother Lothar, in charge of the elite Jasta 11. Three mission choices are available for each flight.

By far the most elaborate and difficult campaign of the bunch, Tank Battle forces you to consider strategy as well as tactics as you manage your squadron of German pilots in a delaying action against a determined British assault. Any ground units destroyed in one mission are gone for the duration, so the outcome of each sortie has an immediate and lasting effect on the course of the battle.

▶**APPEAL:** WWI sim fans whose copies of RED BARON are becoming threadbare. Pentium owners looking for a fun and realistic prop plane sim that offers as much to experts as to novices.

▶**PROS:** Excellent flight model, good graphics and sound, a large variety of missions to fly, and plenty of gameplay tuning options.

▶**CONS:** Gamers must turn down resolution to achieve a good frame rate on today's PCs, clunky view system.

IN X-WING VS. TIE FIGHTER

YOU WILL BATTLE

HEAD-TO-HEAD AGAINST

AN ENEMY MORE RUTHLESS THAN

JABBA THE HUTT

AND MORE SINISTER THAN

DARTH VADER.

Today it's Floyd. Tomorrow, the greatest pilot in the *Star Wars*® universe could be a dentist in New Jersey. That's the beauty of **X-Wing vs. TIE Fighter**™. It allows you to engage in head-to-head combat against real people over modem, network and the internet . It's a real first, and it's in real time. The graphics have been galactically enhanced. The flight

(Floyd from Accounting.)

engine is phenomenal. The new missions are masterstrokes of space mayhem. There's even single player campaigns for an all-new explosive experience. No wonder *Computer Gaming World* proclaims **X-Wing vs. TIE Fighter** "number one on every space sim-er's wish list." And if you don't believe them, just ask Floyd. http://www.lucasarts.com

DIFFICULTY LEVEL
EASY
INTERMEDIATE
ADVANCED

Magic In The Fast Lane

Acclaim's Clumsy BATTLEMAGE Will Leave You With a Need for Less Speed

by Bob Proctor

Fans of the card game *Magic: The Gathering* have been waiting eagerly for a computer version ever since Microprose announced it over two years ago. After many delays, it looked like it would be out in time for Christmas. Then Acclaim appeared with their own *M:TG* title and confused everyone. Rumors and lawsuits flew, but the companies have since settled the confusion over their respective games. Amidst the legal entanglements, Acclaim has managed to ship their MAGIC game first. So while we'll have to wait a few more weeks for MicroProse's version of *Magic*, we can at least try out Acclaim's more loose translation, MAGIC THE GATHERING: BATTLEMAGE.

BATTLEMAGE is not the card game — it is a real-time strategy game using the *Magic* system for combat, with some role-playing elements added for good measure. All duels are done in real-time — which would seem to eliminate the complex timing issues that make the card game so complicated for beginners. Sounds like a great concept to me!

Sadly, the execution falls short. It fails in only one area, but that area is the heart of the game: the duel. The problems stem from a weak user interface and from a clock set so fast that it's hard to know what's happening. Every player I've talked to had the same first experience. They frantically tap the keys and click the mouse and their commands execute slowly or not at all. By the time they manage to summon one creature, the enemy has five or six on the attack.

WHAT'S UP, TEFERI? In the campaign, you'll meet other wizards. Depending on your attitude—which shouldn't always be nice—you could be gifted with some new spells.

SAY THREE NICE THINGS...

And yet, if you persevere, the game is not so bad. There is even a lot to like. The strategy game is simple and intuitive: You're striving for control over the continent of Corondor. The game is divided into 31 lands. Each player starts with control of a single land, and you attempt to spread your control over neighboring lands, which are populated by characters and creatures straight out of the cards. You can trade insults with an ogress, befriend an elf, or get the scavenging folk to do your laundry. The point of these encounters is to acquire new spells to make you a more powerful wizard. Success comes from being nice, pitiful, mean, and awe-inspiring at the right times. You will eventually enter a land already con-

trolled by another wizard and the dueling will begin.

The artists and programmers did a spectacular job on the BATTLEMAGE graphics. The screens are filled with rich textures and sparkling gems, each land is represented by an absolutely gorgeous picture, and the animation of wizards and creatures is clever and enormously varied. Grizzly bears rear up on their hind legs to fight, goblins swing their swords, the lightning bolt cloud slowly drifts over the victim before zapping him. Unfortunately, about the only time you can savor these gems is when you're waiting for that mammoth to trample the life out of you.

STRATEGY/WARGAMES

Where Is This Gathering, Anyway?

When *Magic: The Gathering* hit the shelves in the summer of 1993, it was the first collectible card game (CCG) and it remains, after three years, the most popular. The concept of a CCG was so successful that there are now dozens on the market.

In *Magic*, each card represents either a spell or a land (lands provide the points of mana that power the spells). There are five colors of magic and each has a certain flavor: Red does direct damage, green gives fast mana, blue counters your opponent's spells, black brings dead creatures back to life, and white is for healing and protection. Each player is a wizard who assembles a deck of 60 cards from the over 2000 available and challenges another wizard to a duel. Both wizards start with 20 points of life and the most basic way to win is to reduce your opponent to zero life.

What makes most CCGs different from other card games is the concept of deck design: Each duel has elements of luck (created by shuffling the cards), but a player can greatly influence chance by choosing which spells to include and which to leave out. Adding copies of a key spell greatly increases the odds of drawing it; leaving out spells that don't support your strategy is just as important. Different themes and strategies for winning are possible and the combinations of all these different decks give enormous variety. New cards come along three or four times a year so the process of discovering new combinations never stops.
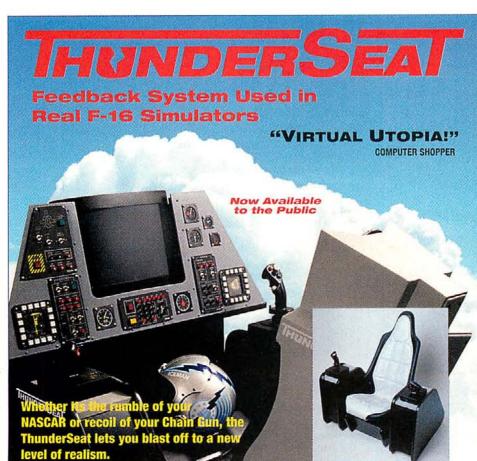
DUEL TO THE DEATH Here is a typical game where you duel with other wizards. The excessively fast pace and some interface problems keep this game from being fun.

...BEFORE SAYING ANYTHING CRITICAL

Duels are conducted on a map of one of the lands, viewed from overhead. The two wizards are never on the screen at the same time, and this means you have to constantly jump back and forth to see each one. One keystroke (W) does it, but if both wizards were onscreen at the same time, it would eliminate this hassle. Another problem with the layout is that you can only see your top card. You have to move each card to the top of the pile before you can cast it. So, you spend another great number of keystrokes cycling cards.

Timing problems cause even more confusion. There's an enormous irony in this because timing is the source of 90 percent of the questions and confusion in the card game. In realtime, if I'm quicker on the draw than you are, my spell resolves first. No more taking turns. In *M:TG*, spells are cast as a reaction. Your opponent tries to attack with a lion, you paralyze the lion.

LORD OF THE PIT Battlemage does have an archive where you can learn about all the cards, such as this Lord of the Pit card, but you can't refer to it when you're in gameplay.

She tries to fireball you, you counterspell the fireball. These reactions make the game much more interesting than just a race to get out the biggest or the most creatures. When you try to react in BATTLEMAGE, though, you discover that you don't know when to cast your spells. The computer announces spells after they are successfully cast, but by the time you hear that cue, it's already too late to counter. Your hands are already full trying

to cycle through cards and creatures. There just isn't enough time to watch your opponent too.

Although both players are casting simultaneously, BATTLEMAGE still has a limited version of turns. They are 10–15 seconds long and act as a restraint on actions which can only be done once per turn in the card game, like playing a land or attacking. When you play a land, the rest of the lands in your hand go dim and you can't play any more until the time limit elapses. One thing that would help this game a lot is a variable speed clock. A slower clock (longer turns) would make the game much easier for novices. The current setting seems to be too fast for normal people to play—it is often impossible to perform all legal actions within the time span of a single turn. But the computer, with reflexes measured in nanoseconds, doesn't seem to have trouble reacting to your spells.

A LACK OF MAGIC

One final frustration comes from the poor feedback you get after a duel—all you know is whether you have won or lost. In the campaign game, you start with about 40 cards, and if you lose some to a thief or another magician, you will run out of cards and lose quickly, even with 15 or 20 life left. *Magic* players may notice the lost cards, but there isn't a clue to help you if you don't know what to look for.

While veteran *Magic* players might want to sample Acclaim's offering, most of us will want to wait to see if Micro-Prose does a better job with their title. Ⓔ

▶**APPEAL:** *M:TG* fans who like real-time action.

▶**PROS:** Beautiful graphics, clever animation, good overall concept.

▶**CONS:** Clumsy interface and lack of time during turns lead to a high level of frustration, no variable speed clock.

CG RATED

YOU'RE AN ALIEN.

CONQUEST EARTH

You can play either
side in this intergalactic
war. Instantly morph
yourself into a weapon,
a battle tank, or even
take on human form.

Vary your strategy to keep
your opponents guessing.
Keep track by monitoring
them through your interface
portals. And with over 65,00
colors, the action will come
to life like never before.
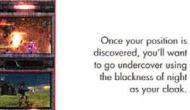
GET USED TO IT.

WHERE STRATEGY
TAKES ON
A NEW FORM

The intensity of
Conquest Earth will have
you using the first-ever
"direct-control" feature
which allows you to jump
right in and go head-to-head
against your opponents.

Once your position is
discovered, you'll want
to go undercover using
the blackness of night
as your cloak.

EIDOS

INTERACTIVE

STRATEGY/WARGAMES

DIFFICULTY LEVEL
EASY
INTERMEDIATE
ADVANCED

Taking It to the M.A.X.

Can M.A.X. Bridge the Gap Between Real-Time and Turn-Based Games?

by Patrick C. Miller

nterplay is stepping into the arena of turn-based and real-time strategy games with M.A.X, a sci-fi strategy game of inter-planetary exploration, conquest, and colonization. But this game has a new twist: It gives players the option of using either simultaneous turns or the traditional turn-based system. Although M.A.X. (MECHANIZED ASSAULT AND EXPLORATION) falls short of its lofty ideal of offering a choice of good turn-based or real-time play, it still offers an uncommonly high quality game with excellent gameplay; challenging artificial intelligence; and considerable depth, variety, and replay value.

The player steps into the role of a M.A.X. commander at a time in the future when machines do most of the fighting. To survive the rigors of hyperspace travel, your human brain has been removed, pickled, and placed in a robotic body. As commander of a mechanized army, you must establish colonies on far-off planets while defending your claims against other human clans. The game's victory conditions depend on establishing ecospheres (domed facilities that house your clan's population). Therefore, building friendly ecospheres and eliminating the enemy's is your primary objective.

INTERFACE OVERLOAD

The game's intuitive point-and-click interface is outstanding, providing instant access to a wealth of information, ranging from the status of individual units to total resource utilization and overall victory conditions. This is good because the manual is not as complete as it should be (for example, it fails to explain the difference between placing a unit in sentry, manual, or attack modes). At least the game's tutorial scenarios are useful; they give a step-by-step introduction to the game's basic features, as well as its more complex aspects.

The SVGA graphics are playable under DOS or Windows 95, and are well done. Plus, the sound effects are some of the best I've heard in a game of this type. The obligatory cut-scenes during the campaign game are excellent, but the maps are something of a disappointment. They use a square grid and, for the most part, are flat and featureless.

IF I ONLY HAD A... In M.A.X., your brain has been removed from your body and placed in a robot. In these battles, flesh is a liability.

Terrain is either blocked or unblocked and there are no differences in elevation. A wide range of zoom options is available for viewing the maps. The only glaring omission from the game is a scenario editor for players to create their own maps and missions.

TOYS A PLENTY

By far, the best part of M.A.X. is the 50-plus units available for construction and destruction. Air units include fighters, bombers, transports, and radar surveillance aircraft. Ground forces include tanks, scout vehicles, rocket launchers, assault guns, armored personnel carriers, anti-aircraft vehicles, and mines. Infantry includes conventional anti-tank troops and stealthy infiltrators, the latter of which are capable of penetrating enemy defenses to disable and steal weaponry.

At sea, there are escorts, corvettes, gunboats, submarines, missile cruisers, transports, mine layers, and mines. Engineers and constructors build the facilities necessary to create and sustain your war machine. Buildings include power plants, storage units, mines, factories, docks, hangers, and depots. Also available are facilities for living, training, and research. Bases can be protected with walls and static defensive weapons. Repair and supply vehicles provide

KISS 'EM GOODBYE The best tactics use the strengths of all your units. Here, infiltrators disable an enemy anti-aircraft unit, making it an easy target for scout vehicles. Airstrikes will follow shortly.

Price: $54.95
Minimum System Requirements: 486/66 (Pentium recommended), 8MB RAM (16MB recommended), 22MB hard disk space (64MB recommended), SVGA graphics, 2x CD-ROM (4x recommended), DOS 5.0 or higher (Windows 95 compatible), mouse; supports Sound Blaster-compatible sound cards.
Multiplayer Support: Hotseat (1-4), Direct Connect (1-2), Modem (1-2), LAN (1-4).
Designers: Ali Atabek, Paul Kellner, Gus Smedstad
Publisher: Interplay Irvine, CA (714) 553-6678 www.interplay.com
Reader Service #: 328

GOLD STANDARD Gold must be discovered, mined, and refined before it can be used to upgrade your units. Though expensive, those upgrades are vital to victory.

PLANE AND SIMPLE M.A.X. has a very friendly interface. To get the low-down on any friendly or enemy unit, right click for a unit status screen.

logistical support in the field. Specialized units include long-range mobile scanners and surveyors. These locate the gold, fuel, and raw materials needed to create, repair, power, and upgrade units.

Making M.A.X. Better

A s is the case with most new games, the initial version of M.A.X. contained a few bugs. The most notable problems were with the Matrox Mystique video card and connection failures during network and modem play. There was also a glitch that froze the timer at the end of a turn. To its credit, Interplay quickly released a patch that fixed these problems and updates the game to version 1.03.

Gamers' complaints about the AI's lack of aggressiveness in custom scenarios is also being addressed. By the time you read this, Interplay should have released version 1.04 which will solve the AI problem and additional gameplay issues.

Units are rated for attack, defense, weapon range, spotting range, ammunition, movement, and rate of fire. By mining gold and conducting research, unit upgrades can be purchased to improve these characteristics. For example, if you find that your tanks are too easily destroyed, you can significantly upgrade their defensive value. With enough R&D and money, you can make your scouts see farther and your artillery shoot longer distances. If you get too far behind the technology curve, you'll usually find that unit quantity comes in second best to quality.

MAKE WAR, NOT LOVE

Three styles of play are available. In addition to the 15 training scenarios, there are 24 individual scenarios and a linear campaign. Players can also create customized battles, selecting from four different planets with six maps per planet. In these battles, you can choose to play against 1–3 opponents. You start from scratch, with the bare essentials, and build your way up. In the preset battles, the game's AI, which can be set to six degrees of difficulty, provides worthy opposition. M.A.X. supports head-to-head play via modem and over a LAN (up to four players).

The choice of whether to play simultaneous turns or the more traditional sequential turns is a personal one. Against the computer, I found simultaneous play to be more than a little frustrating. Consider that the player must survey for minerals, allocate resources, build new facilities, repair and resupply units, manufacture new units and upgrade old ones, give standing orders, conduct fire, and maneuver during combat — all while keeping an eye on what the opposition is doing. There's simply too much for one person to do when facing a computer opponent who can accomplish these tasks in nanoseconds.

Inevitably, I would run out of time to do everything I wanted or forget to perform some key action that would cost me dearly. Only when I opted for turn-based play with no time limits did I really begin to appreciate M.A.X.'s AI and marvel at its tremendous depth and variety. In time, I might enjoy the challenge of simultaneous turns, but for now, even as a player who normally enjoys real-time games, I found them too intimidating.

MAXIMUM APPEAL

Can M.A.X. lure turn-based gamers into the real-time world? Probably not. Instead, M.A.X. is essentially a turn-based game with a good turn design for multiplayer gaming. With simultaneous turns, M.A.X. avoids the common pitfall of multiplayer turn-based games: requiring players to wait for each other to finish their moves. Simultaneous turns undoubtedly make more sense for multiplayer games than they do for solitary play.

Because M.A.X. offers a turn-based option, turn-based gaming fans can always fall back on that style of play. The larger question is if real-time gamers will find the optional simultaneous turn system an acceptable substitute for true real-time play. That's hard to say. The bottom line is that anyone who enjoys the intellectual challenge of a good strategy game will appreciate M.A.X.'s depth, complexity, variability, and successful integration of resource management with strategic planning and tactical warfare. ⛨

▶APPEAL: War and strategy gamers who don't mind adding some micro-management to their mechanized mayhem.

▶PROS: Great sound, nice graphics, exceptional interface, strong AI, multi-player capabilities, and a huge variety of units and facilities add up to an engrossing gaming experience.

▶CONS: Simultaneous turns overwhelming, micro-management may put off some gamers. Incomplete manual, no scenario editor, and no terrain features.

STRATEGY/WARGAMES

DIFFICULTY LEVEL
EASY
INTERMEDIATE
ADVANCED

Throne of Stars

SegaSoft Boldly Challenges MASTER OF ORION II for the Spaceploitation Crown

by Martin E. Cirulis

n the past six months there has been a renaissance in sci-fi strategy gaming. After nearly a two-year dry spell, during which we were offered only the weakest of games, spaceploitation is suddenly fashionable again—with nearly 10 titles released in the past eight months. Leading the pack is undoubtedly MOO II, but some think that the crew at SimTex didn't do quite enough with their flashy sequel...and so, despite the embarrassment of sci-fi riches, there is still a quiet yearning for a truly epic sci-fi strategy game that delivers complexity *and* playability in one great package.

THOU SHALT NOT RESEARCH The Church is a powerful influence that controls what you can and cannot learn. Research forbidden technology, and your scientists might get visited by the clergy.

> *"Despite the fact that I wouldn't recommend this to a single player without some serious patches to the AI and processor routines, I can't help liking EFS as a multiplayer game."*

Price: $49.99
Minimum System
Requirements:
486DX/66, 16MB
Memory, 40MB hard
drive space, 2x CD-
ROM, Windows 95,
directX-compatible
video and sound
cards.
Multiplayer Support:
Hotseat (1–5), Play-by-
email (1–5)
Designer: Holistic
Design
Publisher: SegaSoft
San Francisco, CA
(888) SEGASOFT
www.segasoft.com
Reader Service #: 329

Oddly enough, it's a company with the name Sega in the title that has delivered a possible underdog challenger to the MOO dynasty, giving us a moody, stylized spaceploitation game with a mouthful for a title: EMPEROR OF THE FADING SUNS (EFS). Once I looked inside this game, I realized

MULTI VS. SOLO PLAY EMPEROR OF THE FADING SUNS suffers some acute problems in single-player mode, and is best only as a multiplayer game.

that there might be good reason for the buzz surrounding it, especially since it embodies much of what I like to see in an sci-fi game. EFS is a successful design (no doubt owing much to Holistic's previous quirky hit MERCHANT PRINCE MACHIAVELLI), and its premise is actually based upon interesting source material (instead of the dubious writing talents of overworked programmers). In this case, the computer game is based upon the gothic sci-fi RPG of the same title. Unfortunately, despite all the promise and reputation, spending a long time with this game will reveal a couple of big cracks in the gem.

DARK SUNS, DARK AGES

EFS is undoubtedly the most stylish game to come out of the new spaceploitation

boom. It takes place in a future where humanity has fallen back into repressive religions, monarchy, and barbarism. Your job isn't so much exploring brave new worlds, but exploring old ones, bringing them back into the fold, and uniting them under your leadership until you can declare yourself emperor. Opposing your plans are four other noble houses (with much the same agenda) and the Holy Church, which has its own ideas about what technologies humanity should be using. Alien threats also loom: These include a mutant race called the Symbiots, who are bent on swallowing everything in sight, and the Vau, who are peaceful—until annoyed, that is.

Where some games decide to abstract ground combat in favor of space battles, or vice-versa, EFS covers both in a satisfying, if not exactly flashy, way. Players must build starships of various kinds to extend their will, but where games like MOO II treat planets as if they were single cities, EFS turns each of the 35 worlds in your little chunk of the galaxy into a virtual game of EMPIRE in and of itself. Worlds are entirely fleshed out, with separate cities that have single

Twinkle twinkle little star...

Can Shadow Warrior kick ass? Shuriken! The silent assassin will emerge from the shadows by the light of his Uzi. Bodies will drop like lotus blossoms. Spent cartridges will fall like ripe cherries from the tree. Flesh will return to Nothingness. The Yin of Death and the Yang of Life balanced in the hands of one sick ninja puppy. Meditate. Annihilate. Meditate. Mutilate. Meditate. Detonate. Shadow Warrior. Reach for the stars.
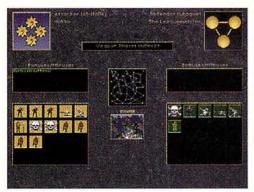
This one's a no-brainer.   4 barrel rampage in rooms-over-rooms.   Tanks. Joyride 'em or trash 'em!

WHAT DO YOU WANT? FADING SUNS' expansive gameplay includes a detailed model of political intrigue for dealing with other noble houses, aliens, and the ever-present Church.

STACKED Combat in EFS is resolved on the strategic level, but many factors go into deciding the outcome.

functions such as producing raw materials, constructing units, or researching forgotten technology. Terrain ranges from deserts to tundra to mountains, and everything in between — even ocean-based naval combat — is represented.

Combat itself is a relatively simple matter, and very much a traditional boardgaming affair, where units stacked together in a single hex attack other stacks. Not much effort is wasted on pretty graphics or cool animation. In fact, this game is downright primitive by today's SVGA standards. Instead, all the effort has been put into creating a huge collection of different land, sea, air, and space units; all with their own strengths and weaknesses. Combined arms is a complex reality in this game.

But despite all of these drawbacks, the one thing that EFS provides which nobody else even comes close to providing is an intricate and interesting political game. Since the five major houses are vying for control of the tattered remains

of an Empire, there is already a power structure in place, and players must cast their ballots every few years to decide who will be Regent for the next period. As Regent, you have the enviable job of handing out three powerful positions to yourself and the other houses, namely the Imperial Eye (the intelligence wing of government, which holds fortified areas on many worlds), the Fleet (giving a player access to a large supply of units based at the throne world) and the Stigmata forces (another large collection of units based in cities on various worlds, whose job is to stem the Symbiot tide). These powerful organizations are completely at the disposal of whoever is entrusted with command, and since you can only give yourself one post, politicking becomes a very real part of this game, in a way unparalleled by any other spaceploitation title seen yet.

"SHE CANNA' HOLD IT, CAP'N!"

The real problem with EFS is that it's almost too much game, not only for the players, but for the designers themselves. Given its land, space, and political theaters, EFS qualifies as a monster game — and sometimes it appears that the programmers really didn't realize how monstrous it could get.

There is no doubt that the artificial opponent, while adequate at times, is just not up to the task of running such a complex game. I suspect that most players will become fairly bored of watching the computer players squander their advantages, refuse to press attacks, make occasional oddball offensives, and generally pile up defensive units until they starve themselves to death. Without a human opponent, this game has little replay value. Fortunately, EFS provides for hotseating and PBEM. Even worse than the AI's stupidity, though, is its delays in completing a turn. By the time you're at turn 150, (which isn't much, considering it can take 30 or 40 turns to conquer a developed world) the computer can take up to 45 minutes on a PI50 to generate turns, simply because of the incredible number of units involved. A patch is desperately needed here, either to convince the computer players to build less and play more, or to provide a whole new movement algorithm, as most people don't have a spare computer they can walk away from for an hour at a time. Also, as turns get

longer, the chances of a complete crash somewhere during the process seem to increase, and it isn't any fun to realize that you are going to have to wait another hour to finish that same turn.

Another problem is that, despite its scope, the game can feel a bit cramped at times, especially when it comes to technology. Most EFS games will still be going strong after all the players have researched every tech the game has to offer, meaning their lab cities will sit around gathering dust. Also, most of the political intrigues in this game, such as appeasing church and state, only become truly relevant when you play at the highest skill levels. That means beginners might miss most of the cooler parts of this game, and may pack it all in before they discover all the meat.

Despite these problems, and the fact that I wouldn't recommend this to a single player without some serious patches to the AI and processor routines, I can't help liking EFS as a multiplayer game. Make no mistake: This is a no-frills, serious wargamer kind of experience, and should probably not be attempted by the newcomer. On the other hand, if you have a few Machiavellian friends, and I suggest at least three, then I would heartily recommend giving FADING SUNS another chance for glory. Even if this is not quite the end-all space wargame many of us have been waiting to sink our teeth into, at the very least, it is a big step in the right direction. ϛ
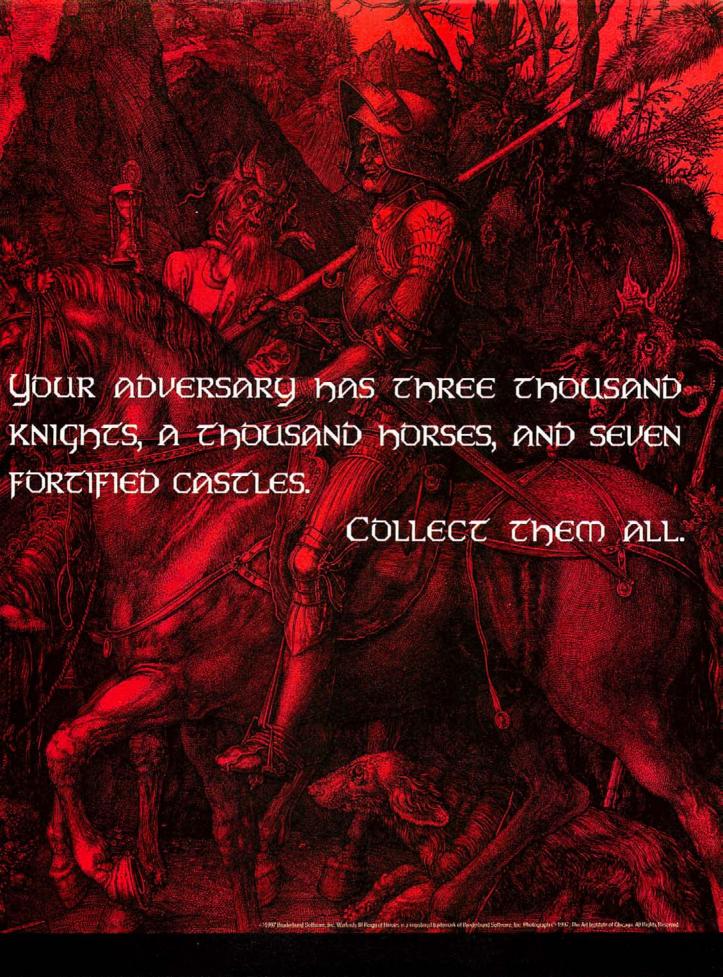
▶**APPEAL: Hard-core wargamers who want a complex multiplayer spaceploitation game that simulates everything from military intelligence to political intrigue.**

▶**PROS: A spaceploitation game that is large and complex enough to deserve the title. An extremely good backdrop, combined with political as well as strategic warfare, gives this game the feel of a real imperial struggle.**

▶**CONS: The AI, interface, and technology tree are not up to how large this game can get. Players on slower systems will be on life support before they reach turn 150. Annoying install program overwrites your drivers without asking.**

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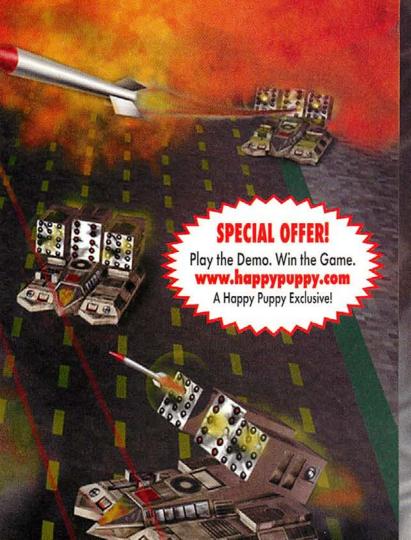
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ACTUAL

GAME

SHOTS

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Death and the Moron

Rincewind Returns in DISCWORLD II, a Funny, Challenging, Old-School Adventure

The first DISCWORLD, based on Terry Pratchett's humorous book series, was as zany as the novels, and a tough adventure besides.

Now we have DISCWORLD II: MORTALITY BYTES!, and it's cut from much the same cloth as the previous game. Once again, Rincewind, the inept wizard wannabe, is called upon to save the day, or rather, the dead. The dead are not really, *really* dead, just kinda sorta in a state of demise.

That's because Death himself, that spooky skeletal character with black robe and sharp scythe, has vanished. No one knows why, and no one knows where. Without him around to separate soul from body, those who die are stuck in a state of undeath, or maybe living death. The wizards know a spell to summon him back from wherever, but first, naturally, they need the ingredients, and guess who has to go get them. Right, our boy Rincewind.

It doesn't end there, of course; that's just Act I of a five-act game. Before long, our hero gets involved with making low-budget movies, traipsing after wise hermits in the desert, proving himself worthy to take Death's place, saving Death himself from, er, death (don't ask), and ending up with a gratuitous takeoff on a famous movie finale.

In between, there is much fun poking, both blatant and obscure, at various aspects of modern culture, physics, role-playing, Shakespeare, and the inanity of object-gathering and puzzle-solving (a running theme throughout the game). Rincewind is by no means unaware of the silliness of what he's forced to do, and takes the opportunity to say so on more than one occasion.

SPARKLING INTERFACE

As in the first version, game mechanics are fairly simple. The "sparkles" cursor is back, and acts as the main interface. Moving it around the screen lights up hot spots (items or people Rincewind can interact with in various ways). Clicking on

CRYSTAL BALL

KAIN

▶ As reported last month, Sierra is swearing off FMV adventure games, and this policy is being extended to the follow-up to *CGW*'s 1996 Game of the Year, GABRIEL KNIGHT 2: THE BEAST WITHIN. Jane Jensen has reportedly begun working on GABRIEL KNIGHT 3, which will be a non-linear, real-time 3D-polygon based affair. Full production begins in April with the production team of SHIVERS 2, and the game is currently slated for a summer or fall 1998 release.

▶ Killed everything in DIABLO twice over already? Activision is now working on a PC port of Crystal Dynamics' BLOOD OMEN: LEGACY OF KAIN, the popular Playstation action-oriented RPG. The game puts you in the role of Kain, a noble who is brutally murdered and then resurrected as a bloodthirsty vampire. In your quest for revenge, you'll have 13 spells and the ability to morph into a wolf, bat, or mist as you hunt down and kill bad guys and innocent victims alike. Look for it this summer.

> **"It's been too long since I could unreservedly recommend a game; I can do it now."**

an object takes it (if it can be taken), or uses it in some way, such as to open a door or pull a lever. Objects can also be combined. For example, you can put a hook and a rope together to make a grapple.

Clicking on people usually begins a conversation. To talk to another character, you click on different icons: a mouth for a general greeting, a jester's wand for a sarcastic remark, a question mark for a question, and a waving hand to say goodbye. In addition, there is a little thought balloon that represents Rincewind's own private thoughts. Other icons may appear as conversation topics, depending on what Rincewind has previously learned or done elsewhere in the game.

Moving Rincewind around is also simple; you just place the cursor where you want him to go, and click. It's important to walk around every scene, as most of them are larger than they first appear, and it's easy to miss something if you just stay in one spot.

Outdoors, you move around on maps of the overall area. Each map has several locations Rincewind can visit; clicking on one sends him there immediately. Some places are available only during certain portions of the game, while others may require some puzzle-solving before they appear. When a new area opens up, however, it is displayed right then on the map so that you know it's open—a nice touch.

SHOP TALK

Saving and restoring can be done at almost any time, and you have a generous 30 save game slots. While Rincewind isn't in much danger, and can't use items inappropriately, it's still a good idea to save often anyway. Some conversations or puzzle-solving can be lengthy, and you wouldn't want to redo them a second time if it can be avoided.

DISCWORLD II supports a variety of sound cards, but if yours isn't mentioned, don't despair. The game comes with text subtitles you can turn on (with or without

RINCEWIND REDUX Inept, cowardly Rincewind is back, and so is his magical walking luggage, to solve (and complain about) all those typical adventure game puzzles.

GET A HAIRCUT! You'll find the bellows you need in the High Energy Facility of Unseen University. Just don't ask the '60s leftovers inside too many questions—they won't shut up.

sound), so you won't miss much. However, if you can get sound, do put it on, as the conversations are a highlight of the game, and are much funnier with the voice-overs. The speech is very good, and comes through clearly. The voices—including ex-Monty Pythonite Eric Idle as Rincewind—are excellently done. This is one instance where voice adds a lot to the enjoyment of play.

The minimum specs say you need a DX-100, but I found the game ran acceptably on a 486/66 with 20MB RAM. I suspect the extra RAM helped, as the manual notes at least 8MB are required for playing under MS-DOS. You will also need 640x480 256 color SVGA. Should you have problems with that, the UNIVBE video driver is included on the CD. It works well with many brands of video cards (in fact, I use the registered version myself; it's quite good).

The game played cleanly from start to finish. No crashes, no bugs, no technical

problems of any kind surfaced, and that's with two complete playthroughs. This is definitely a tight product (although keep in mind that I played it under DOS; with Win 95, who knows what might happen).

THE WAY THINGS USED TO BE

In regard to the puzzles, DISCWORLD II might be a little bit easier than the first game, but not by too much. This is traditional adventuring, where the puzzles have object-oriented solutions. There are no "puzzle puzzles", such as solving four-color tile enigmas or playing variants of *Concentration*. I'd call it straightforward, but that's not a word to use in DISCWORLD (heh!). Still, it was good to get back to gaming as it used to be.

If I have any quarrels with the game, it's that some of the automated scenes went on longer than they should have. This was also true of some conversations, which seemed to drag on forever, and lost a good deal of their humor in the process. In those instances, the "less is more" principle really should have been applied.

Overall, though, DISCWORLD II was a treat to play: it was funny, clever, clean-running, and a good mental workout. It's been too long since I could unreservedly recommend a game, but I can do it now. If you need a break from serious adventures, if you yearn for traditional gaming, if you'd like to play something that won't be over in a couple of days, this is the one to get. 🦂

Fable update

In last month's issue, my review of FABLE noted that Sir-Tech was creating a new ending for the American version of the game, to replace the original atrocious conclusion. I have now played through the revised FABLE, and am happy to say that Sir-Tech lived up to their promise. The new ending is far more acceptable, and there is now no reason to avoid playing the game.

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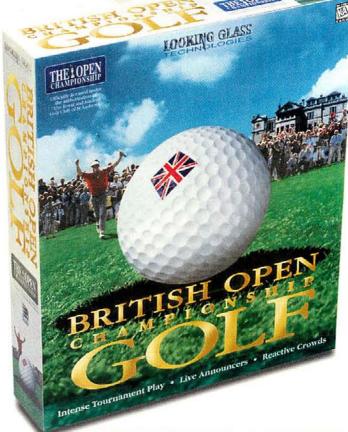
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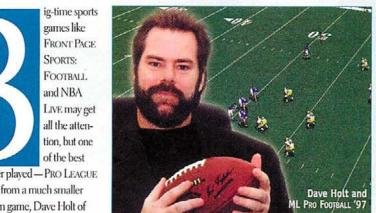
Pro League Prophet

An Exclusive Interview With Game Designer and Online Pioneer Dave Holt

Big-time sports games like FRONT PAGE SPORTS: FOOTBALL and NBA LIVE may get all the attention, but one of the best sports games I ever played — PRO LEAGUE FOOTBALL — was from a much smaller player in the design game, Dave Holt of Micro Sports. What wowed me five years ago — and still does today — was the game's groundbreaking modem play, which enabled you to dial up your buddies and play a not-so-friendly game of block and tackle. Ever since then, I've been a fan of Dave Holt and his football sims. In fact, PLF made my list of the Top 15 Sports Games of All Time in *CGWs* 15th Anniversary issue (November '96).

With MicroLeague Multimedia Inc.'s late-1996 purchase of Micro Sports, and their recent release of MICROLEAGUE PRO FOOTBALL '97 (reviewed last month) and MICROLEAGUE PRO BASEBALL '97 (see review this issue), Dave Holt is again at the forefront of sports gaming. And now that he no longer has to run Micro Sports, he enjoys life more too, since he gets to do more of what really excites him — create games.

"Things they are a-changing," Holt says. "It's hard to be the president of Micro Sports and find time to be putting in a lot of the code. Now I'm back to doing the games again."

A veteran designer and self-taught programmer, Holt got his start in 1984, when

Dave Holt and ML PRO FOOTBALL '97

he created MAC PRO FOOTBALL, which was published by Avalon Hill. His next game, in 1986, was MSFL PRO LEAGUE FOOTBALL, which he distributed from his home, mostly through word-of-mouth. "This was back when one person did everything — the box design, the manuals. My manuals were noted for having the most misspellings," he says with a grin.

Holt finally landed a distribution deal with Electronics Boutique that provided some steady cash flow. Then, in one of those lucky breaks that make careers, he made a contact at *USA Today*. The result became an annual feature in which "America's Paper" picks the Super Bowl winner using Holt's game.

"*USA Today* was running some stories about us," Holt recalls. "An investor read it, got excited, and decided to beef up the marketing effort. We got tied into the National Football League and the NFL Player's Association."

This led to the breakthrough 1991 version of NFL PRO LEAGUE FOOTBALL — a game that not only featured a solid computer opponent, but modem play and impressive multiplayer leagues via the now-defunct *USA Today* Sports Network.

"We were the first ones to really do online," He says. "We're getting back to that." His new partnership with MicroLeague is in good measure based around a major commitment to multi-player Internet gaming.

"That's where we had the most fun. Being able to play against a human opponent is the ultimate thing. The whole principal behind our games is for people to get together and have a good time."
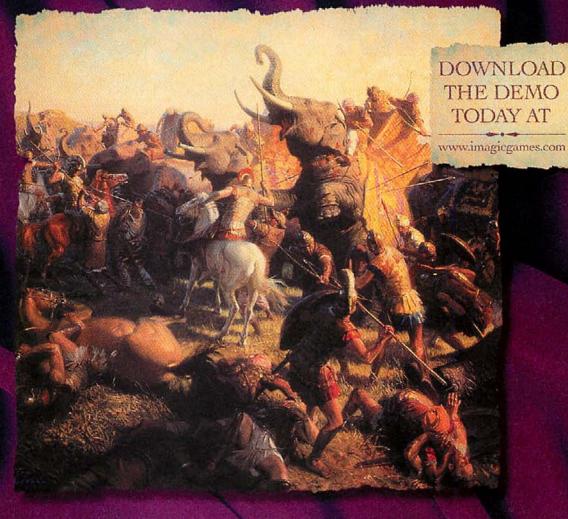
As we're speaking, Holt is tinkering with a career league for the long-anticipated MICROLEAGUE BASEBALL 6.0. Since it ran away with my Sports Vaporware Award for 1996, I'm eager to see what Holt has up his sleeve. He assures me that the game will arrive early in the '97 baseball season.

Perhaps history will record Dave Holt as a visionary. He certainly was the first to understand the excitement head-to-head play brings to sports gaming. In fact, he recalls the day his PLF crew got modem play working as one of the high points of his career. But for all his ups and downs, he hasn't lost sight of his mission. "I just try to create the best game I can," he says.

And whenever he finishes them, we'll be ready to play. **ℰ**

> **Holt was the first sports designer to understand the excitement of head-to-head play.**
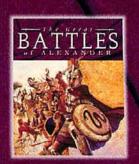
Living Targets

The Roadblocks to Multiplayer Simulation are Coming Down

Multiplayer simulation is all so much hype. Very few people have access to a local-area network where games are allowed, it's hard to find people to play against via modem, and if you do they're usually a long-distance call. Hooking up over the Internet is complex and expensive.

At least, that's how many gamers—including me—felt this time last year. It's amazing how quickly things change. Now it's easier than ever to set up virtual dogfights with multiple human players, and thanks to the Internet, you can even do so without incurring any kind of hourly charges—which is a big plus.

KALI AND KAHN

You've read about Kali in these pages before. This handy utility lets you take most games that support local area networks and play them over the Internet—it essentially fools the games into thinking that the Internet is a local IPX network. Once you download the program from **www.kali.net** and pay a $20 registration fee, you can play online with no hourly charge (other than what you pay your Internet provider), and you're entitled to free upgrades. Kali works very well with a number of flight sims, including A-10 CUBA!, ATF, EF2000, FIGHTER DUEL (with the free NET DUEL module), and SU-27 FLANKER. The original release of Kali was a DOS utility, but you'll find Kali 95, the Windows 95 version, is more flexible, easier to set up, and is compatible with all the above-listed sims except ATF and EF2000 (both of which refuse to run under Win 95).

Kali also addresses the other major obstacle to online gaming—it gives you a place to find other players. The Chat feature gives you a text window where you can talk to users and find other players interested in flying your sim of choice. Unfortunately, at times it can be difficult to find other sim players,

FREE KILLS As of version 1.11, WARBIRDS lets you battle a single friend over the Internet at no charge.
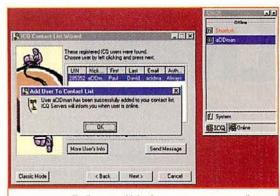
as many of the Kali server chatlines seem to be populated mostly with young "kewl doodz" looking for a quick DUKE NUKEM 3D fragfest. If you're having trouble finding sim players, try different Kali servers; Sim-Net, for instance, is a favorite of FIGHTER DUEL players. Some players also change their nickname to reflect their game of choice. Someone named "EF-Mitty" is probably looking for a game of EF2000.

Another method for avoiding the crowds is to try Kali's competitor, Kahn. This program is similar in functionality, but isn't yet as polished or full-featured as Kali. It's also not as well-known, so you don't find the chat-lines as crowded with cursing teenagers, but you will find many knowledgeable sim players haunting Kahn servers. It's especially popular with SU-27 FLANKER players. If this alternative interests you, check it out at www.teleport.com/~nbright/home.html.

> ❝ **It's never been this easy to reach out and shoot someone down...** ❞

NET GAINS The free patch to USNF 97 adds the ability to play remarkably warp-free over the Internet.

I SEEK YOU Finding out which of your opponents are online is a snap with the help of Mirabilis' ICQ.

IN THE NAVY

If you have Jane's US NAVY FIGHTERS 97, you won't even need Kali or Kahn for Internet play. EA has released a patch for the program (at **www.janes.ea.com**) that adds Internet connectivity. You can fly head-to-head scenarios created with the quick mission creator, built-in missions in competitive or cooperative mode, or mission-builder scenarios. Custom missions are transmitted on the fly as the mission starts, so your opponents don't have to download any files. I've flown missions with four human pilots from all across the country and the action was very smooth, with almost no warp in movement from Internet delays.

However, EA did omit one major feature—a program along the lines of the Westwood Chat module (included with RED ALERT) that makes it easy to find opponents. You could use Kali's chat feature to look for USNF 97 opponents, even though Kali isn't needed for the actual connection.

You can also find players by browsing the bulletin boards on the Jane's Combat Simulations Web pages, but then you need to email potential opponents and set up a time to meet them online. A better solution is to grab the neat new Internet utility called ICQ from **www.mirabilis. com**. Similar to AOL's Buddy Lists feature, ICQ will watch for members on a list of Internet friends (or potential combat enemies), and then send messages or chat requests to those people. For instance, last weekend I logged on to set up a four-player USNF 97 melee. I found Hangtime and Shortfork (who I'd added to my ICQ seek list) were online, and invited them into a chat. Hangtime spotted aCIDman, who was on his ICQ list, and brought him in as well. We then agreed on mission parameters, launched USNF 97, and flew Phantoms vs. MiGs.

FREE WARBIRDS

I've often recommended that gamers who want to learn to fly planes with realis-

tic flight models download a copy of Interactive Magic Online's WARBIRDS from **www.icigames.com**. Even if you have no desire to pay $2 an hour to fly in the multiplayer arena, you can always fly WARBIRDS offline and practice your flying and shooting techniques against invulnerable, sitting-duck drone aircraft.
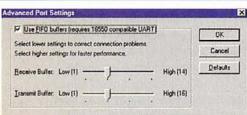
Plus, as of release 1.11, you can practice techniques against intelligent opponents without racking up online charges. The sim's front-end program now supports head-to-head play over a modem, network, or serial cable. You can dogfight head-to-head against a single opponent free of charge using the Internet or a local phone call (of course, the developers hope you'll get hooked and try the multiplayer arena).

You can enjoy the thrills of multiplayer air combat by paying $20 (Kali), downloading a patch to an existing program (USNF 97), or downloading a free online front end (WARBIRDS). If you have an Internet account (and who doesn't?) you no longer have any excuse for playing alone. ⚡

CONNECTION TIPS
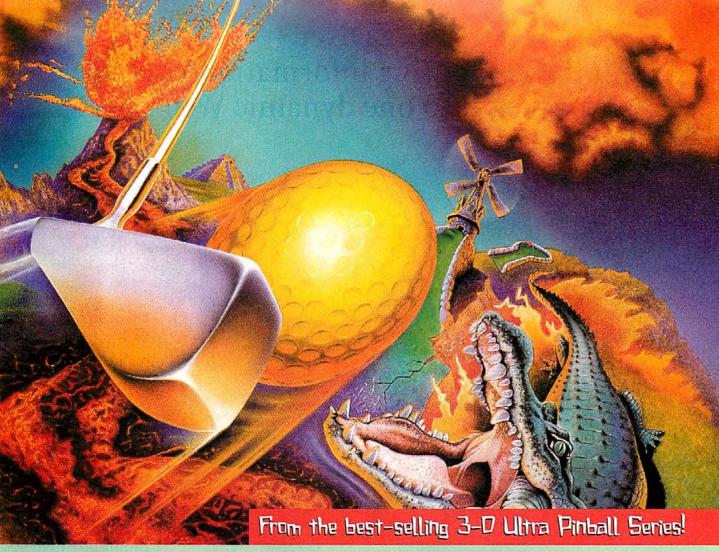
▶ If you find Internet play to be jerky on your Win 95 machine, set up a new Dial-Up Networking icon just for Internet play. Under the modem settings, click Configure, and under General set Maximum Speed to 38400. Then click Connection, then Port Settings, and move the Receive and

Transmit Buffer sliders to one notch away from the left-most setting. Click OK, then click Advanced, and be sure Error Control and Compress Data aren't checked, and that Hardware Flow Control is on.

▶ Some online games require you to know your IP Address, which identifies your location on the Internet. Depending on your Internet provider, this number may change each time you log on. To check your IP Address, click the Start button, choose Run, and type WINIPCFG. A window will pop up with information about your Internet connection, including the IP address.

The Golden Hex Awards

A Tribute to the Best and Worst Strategy/Wargames of '96

very year, as it has done for the past 15 years, *CGW* hands out awards to deserving games in every genre, along with special awards for technical achievement and artistic merit. While I participate in this awards process, and take my responsibilities therein seriously, I am also a columnist. So, for what it's worth, here are the first annual **Golden Hex** awards for those achievements—however notable, however dubious—that took place in strategy/ wargames, the genre that equally prizes innovation, depth, freshness, ease of play, complexity, and outright stodginess.

AND THE ENVELOPE PLEASE...

Most Tepid: It was the year of the COMMAND & CONQUER clone, and no

game summed up the essence of that already-tired sub-genre more than Virgin's Z. Instead of adding sophistication to real-time, it was too busy being vanilla. All the technical sophistication in the world doesn't help much when your maps are cookie-cutter and your scenarios are uninspired.

That said, the **Biggest Disappointment** of the year remains COMPUTER THIRD REICH. While the game *did* finally emerge from vaporware, the three-year process of translation from the paper classic left an overly cardboard aftertaste. This wouldn't have been so bad, except that the 1974-vintage boardgame is still more robust. Let's hope this setback doesn't prevent

Avalon Hill from bringing more of their classic tabletop games to the computer; they've learned a lot in the past year.

Which brings us to **Most Pleasant Surprise** of the year: WOODEN SHIPS & IRON MEN. This follow-up to 5th FLEET took over two years to develop, and could have easily sunk when leaving port. But the AI was solid, the scenarios were challenging, and the campaign game is random enough to make this very replayable. Easily the best game ever on the Age of Sail.

Best Revival of a Broadway Play: Let's give a big hand to TIGERS ON THE PROWL 2.0, which now boasts the graphics, interface improvements, and enhanced AI of PANTHERS IN THE SHADOWS. Many scenarios are well-balanced for email play, so no serious tread-head should be without it. **Honorable Mention**: HARPOON CLASSIC 97.

The **Good Things Come in Small Packages** award has no real contender other than ZULUWAR! While not up to the high standard set by Incredible Simulations' previous CUSTER'S LAST

JIHAD WARCRAFT II won the add-on war, but this CIV II scenario takes the battle.

COMMAND, ZULUWAR! strikes a nice balance between historicity, play balance, simplicity, and fun.

The **WinDoze** award goes to Interactive Magic's AMERICAN CIVIL WAR. ACW's still the only strategic-level Civil War game worth buying, but it's pretty sad when a turn-based 19th century game is the slowest Win 95 application I've seen this year. That's too much General McClellan emulation even for me.

In the opposite vein, the **Force-Feeding Gamers Win 95** award goes to Westwood

MOST PLEASANT SURPRISE Stanley Associates and AH scored a broadside with WS&IM.

Studios for their C&C: RED ALERT implementation. Running RED ALERT in Win 95 with SVGA graphics is a visual treat, and a most impressive programming achievement. But guys, did you really think we'd let you off the hook for that low-res DOS palette? Ugh.

The **Persistence Pays Off** award has a lot of competition, but Norm Koger gets the nod. After the uneven WARGAME CONSTRUCTION SET: TANKS, Norm hits the bull's-eye with ACE OF RIFLES. And while some might quibble over scale or the admittedly high casualty rates, there's little

argument over the comprehensiveness of the simulation. If you think winning the battle of Antietam was hard in ROBERT E. LEE, try surviving on the toughest AI level here!

Music isn't generally considered an integral part of strategy games, but SID MEIER'S CIVILIZATION II would win for the **Best Soundtrack** in any historical era. The old familiar CIV tunes are nicely remixed, and along with the new classically-tinged piano turns, cheesy organ tones, and a surprisingly good rendition of Northumbrian pipes, they add immeasurably to the gaming experience.

Decline of a Great Series award goes to STAR GENERAL, which, despite its seemingly ambitious design, leaves out basically everything that made PANZER GENERAL and FANTASY GENERAL great. Hopefully the improvements we've seen thus far for PACIFIC GENERAL will keep me from presenting a "Decline and Fall" award next year.

A lot of famous and not-so-famous game designers and programmers work for love as much as (or more than) money in this industry. But Brian Reynolds receives our medal for going **Beyond the Call of Duty** for his incredible support of SID MEIER'S CIVILIZATION II. Brian's name isn't even above the title, but he continued to put out patches and additions to the game well after he and Sid had moved on from MicroProse to Firaxis.

The dreaded **Vaporware** award goes to Spectrum HoloByte's MAGIC: THE GATHERING. It's been through so many design changes that Acclaim, of all companies, has managed to produce a game on the license in shorter time — and Acclaim's game is probably closer to the original *Wizards of the Coast* collectible card game in spirit, if not mechanics!

Talonsoft walked off with the big wargame award (see the Premier awards section in this issue), but it's hard to resist giving out another. BATTLEGROUND: WATERLOO is simply the **Best Napoleonic**

Game Ever. It took long enough, but somebody finally surpassed the venerable BATTLES OF NAPOLEON.

Although I heartily agree with *CGW*'s selection of the WARCRAFT II add-on pack as best overall of the year, the **Best Individual Scenario** nod goes to JIHAD from SID MEIER'S CIVILIZATION II SCENARIOS: CONFLICTS IN CIVILIZATION (which could also win for most unnecessarily long game title). Complete with mounted men-at-arms, religious fanatics, the rise of Islam, shaky alliances, and the always interesting political machinations of the Byzantine Empire, JIHAD offers a tense and intriguing campaign (cocky CIV-meisters are advised to try this at Deity level). Kudos to Mick Uhl and his team at MicroProse, who show why buying a few well-designed scenarios from the original publisher is often a better bargain than hundreds of canned scenarios from a third party.

SOME FINAL THOUGHTS

In the past year, the best of real-time and turn-based games offered better interfaces and tutorials, while at the same time improving game sophistication. You need look no farther than OVER THE REICH to see that a simple learning curve doesn't have to mean simplistic, limited play.

The worst example of a game that couldn't figure out what it wanted to be when it grew up, multiplayer or solitary, and winner of my award for **Will the Real Game Please Stand Up?** is none other than Accolade's DEADLOCK. This could have been SIMCITY meets CIV in space, but came close to matching neither classic because much of the single-player potential was stripped to make the game's pace more suitable for multiplayer play. Maybe with DEADLOCK II they'll bother to put everything in, and let us toggle off what we don't like.

Truth is, to reach the tantalizingly close Golden Era of strategy games, you still have to sort through a load of crap. Which brings me to my final award: **Coaster of the Year** for strategy games was bitterly contested, but ultimately goes to Interactive Magic's DESTINY, the most confused, incomplete design I've seen in a long, long time. Rest in peace. ⚡

It's a Whole New Ball Game

Intel MMX Technology Enhances the Multimedia Experience

If you've been waiting for technology to catch up with your vision of what a high-performance, multimedia home computer should be, your wait is over. Intel Corporation's new Pentium® processor with MMX™ technology—combined with new leading-edge software specifically designed for the technology—lets consumers experience the newest level in computing on desktop and mobile computers that provide a richer, more lifelike multimedia experience. And leading manufacturers are stepping up to the plate with the high-performance systems and the multimedia features you need—new systems based on the Pentium processor with MMX technology come bundled with

components such as large color monitors, stereo speakers, high-speed modems and CD-ROM drives, plenty of storage and memory, graphics accelerator cards, and videophone capability.

If you want to start experiencing superior video, graphics, sound, and communications without having to spend a lot of time installing cards and peripherals to realize your dream machine, MMX™ technology is real and it's here right now to see, hear, and experience.

A Happy New Year

The Pentium processor with MMX technology was announced in January 1997. With clock speeds of 166MHz and 200MHz for desktop systems and 150 and 166MHz for mobile computers, the Pentium processor with MMX technology is the highest performance Pentium processor available and the first Intel processor in more than a decade to offer a change of this significance.

The new microprocessor features 57 new instructions that allow software developers to optimize their multimedia applications. Yet even with the addition of these new instructions, the Pentium processor with MMX technology maintains complete compatibility with the Intel architecture and with widely used operating systems, such as Windows 95™, and applications software.

The idea for MMX technology and its eventual integration with the processor itself, arose several years ago in response to the growing use of multimedia in personal computing and its demand on processor performance in generating high-quality graphics, video, and sound. And as this trend of more media-intensive software accelerates, Intel plans to make MMX technology a part of every new processor design in the future.

Each generation of Intel processors has followed Moore's Law, which states that transistor density will double approximately every 18 months. The benefit of Moore's Law is simple: As users and the industry demand more and more capabilities, these capabilities can be added to speedier

The MMX Technology FAQ Sheet

What is the official name of this new Intel processor?
The "MMX processor" is called the Pentium processor with MMX technology.

What are its key benefits?
When combined with software designed for MMX technology, the Pentium processor with MMX technology improves multimedia and communications applications with high-speed performance; high-quality, full-color visuals; smoother video; and richer audio.* The new processor also provides higher performance for existing software because of a larger on-processor cache memory and certain other architectural improvements.

Do I really need MMX media enhancement technology?
If you use a computer in your home, you're in the market for one based on the Pentium processor with MMX technology. These computers make the dream of high-performance, easy-to-use multimedia systems a reality. They run existing applications faster, they run applications designed for MMX technology much faster, and they offer the highest-performance Pentium processor-based system on the market today.*

Why should I buy MMX media enhancement technology?
Multimedia applications place a much greater demand on PCs than word processors or spreadsheets do. Intel developed MMX technology to answer this challenge. With a Pentium processor with MMX technology powering your PC, you can explore a broader range of multimedia applications and enjoy a richer, higher-quality multimedia experience with no need for additional hardware.

Does this mean that the Pentium processor with MMX technology is faster than previous Pentium processors?
The Pentium Processor with MMX technology is the highest-performance Pentium processor available today.** The Pentium Processor with MMX technology is more than 60 percent faster on Intel's Media Benchmark, which measures MMX technology multimedia performance, and can also run existing software 10 to 20 percent faster as measured by industry-standard benchmarks.***

How many transistors are there in the Pentium processor with MMX technology?
This microprocessor is built with 4.5 million transistors on 0.35-micron CMOS technology.

Is MMX media enhancement technology a one-time release from Intel?
No, MMX technology will be integrated in all new Intel processor designs. It increases a PC's overall functionality today and provides a platform for tomorrow.

Is MMX technology available for mobile computers as well as desktop systems?
Yes, the technology is available in both desktop and mobile versions of the new processor. The initial desktop processors run at either 166MHz or 200MHz. The initial mobile processors run at either 150MHz or 166MHz.

Systems that are that fast use a lot of power, don't they?
No, the Pentium processor with MMX technology consumes less power than previous Pentium processors. The desktop processor's core draws only 2.8 volts, while the mobile processor draws 2.45 volts. The processors are rated at less than 15.7w maximum power on the desktop, 7.8w thermal design power for the mobile systems.
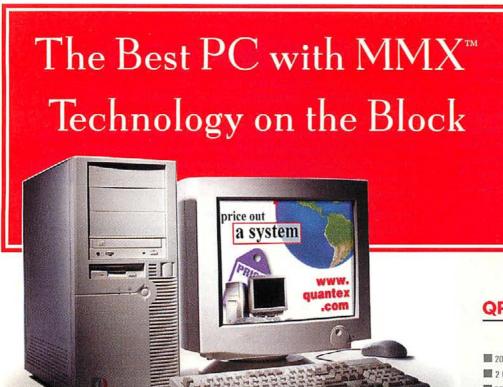
Do I have to wait for systems and software that take advantage of MMX media enhancement technology?
Many systems based on the Pentium processor with MMX technology are available now, and many exciting applications designed for Intel MMX technology to provide maximum performance are available bundled in these systems or for separate purchase at retailers.

Can I upgrade my current Pentium processor-based system to take advantage of MMX technology?
Intel recently introduced a Pentium Overdrive® processor with MMX technology, which, if your current system is upgradable, can provide both optimal performance on software designed for MMX technology, and a 10 to 15 percent performance boost on all existing software. Of course, as with any modification to your system, you should always contact the system manufacturer for details and complete information. ∎

The Best PC with MMX™ Technology on the Block

processors. As the use of multimedia functions in software grew and users came to expect a more sophisticated multimedia experience, Intel responded by making multimedia functions the next beneficiary of Moore's Law—just as it did with integrating the math coprocessor function in moving from the Intel i386™ to the Intel i486™ processor.

"We believe the combined capabilities of Intel MMX media enhancement technology will appeal to the broadest range of consumers yet," says Dennis Carter, Vice-President of Marketing at Intel. "The PC experience will be enhanced through a new wave of systems and software that provide lifelike color; full-screen, full-motion video and graphics; real-time animation and manipulation of images; and 3-D capabilities."

A New Generation of Software Emerges

When you run software applications designed for MMX technology on PCs powered by the Pentium® processor with MMX technology, you'll see a more than 60 percent performance boost for key types of complex multimedia data.* As a result, you'll be able to view more lifelike photos and smoother video, listen to enhanced audio, and experience 3-D games with better response times and arcade-quality graphics.

Broad support for Intel MMX media enhancement technology in the software community has led to the development of new educational, reference, game, and communications applications. The first of this new generation of software titles is available now; many more are expected to be announced throughout this year.

Developers are enthusiastic. "Ubi Soft [creator of pod™] wanted to create a product that was really focused on cutting-edge technology," says Ubi Soft Marketing Manager Carrie Tice. "MMX technology allows us to have redirected use of light and shadow effect, rich textures, high

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*As compared with a Pentium processor at same speed running Intel's Media Benchmark.

iCOMP Index 2.0 Ratings

frame rates, and surround sound." Her company and many others—including Intel and its Video Phone application—have created high-performance titles that deliver a truly lifelike multimedia PC experience without the need for additional hardware.

In addition to Ubi Soft, more than 100 software developers—including Microsoft, Adobe Systems, Yamaha and Intel itself—

have applications specifically designed for MMX technology. Many of these applications contain a built-in Internet connection, combining the capabilities of high-performance multimedia CD-ROMs with the breadth, immediacy, and communication benefits of the Internet.

Business professionals and students who use notebook computers can also benefit from new capabilities made possible by the Pentium processor with MMX

technology. For example, the space limitations of notebook computers had prevented the use of a lot of add-in hardware. MMX technology instructions can now handle many of these functions, so mobile users can have videoconferencing over standard telephone lines, software-based video, and high-quality 3-D graphics.

It's a Must-Have

Results of a new nationwide survey of U.S. adults and teenagers, sponsored by Intel Corp. and conducted by Yankelovich Partners Inc., show that Americans believe the personal computer is a "must-have" technology that plays a positive role in our everyday lives and helps us address broader social issues.

According to this survey, people are expecting new capabilities and opportunities from their personal computers, and they believe that we have only begun to tap computers' potential.

Survey respondents have ambitious goals for their systems, too. More than half indicate that they look to the computer to expand their capabilities and possibilities by helping them to accomplish new things rather than merely enabling them to do current things better. MMX technology meets these needs.

To satisfy the demand for MMX technology, Intel and leading industry hardware and software companies are executing one of the fastest product ramp-ups in the history of the personal computer industry. To make test-driving these new systems as easy as possible, computer buyers will find software designed for MMX technology available on demonstration models and promoted on displays and through special events in retail locations across the country. Consumers can obtain additional information about the new Pentium processor with MMX technology at Intel's site on the World Wide Web at URL http://mmx.com.

Consumers now have the opportunity like never before to see, hear, and experience firsthand the Pentium processor with MMX technology and software designed for MMX technology. ■

Catch a few rays of rich, brilliant color. And while you're at it, go for fuller sound, smoother video and faster graphics.* You can get it all from a PC that has a Pentium® processor with MMX™ technology. Combine it with software designed for MMX technology and you'll get the most from your multimedia experience. Intel's MMX media enhancement technology. It's the technical term for fun. ▶ www.intel.com

intel.
The Computer Inside.™

Need a little more color?

How It Works:
MMX Technology in Action

MMX™ technology uses high-performance "single instruction, multiple data" (SIMD) technology and incorporates 57 new instructions that were developed with multimedia applications in mind. The instructions assist in processing video, audio, and graphics more efficiently.

These instructions allow software developers to code for faster video frame rates, making for smoother, more realistic video. And they give them the ability to create more lifelike audio, thanks to improved noise reduction and music synthesis for compressed audio files. MMX technology also makes advanced applications such as videoconferencing, which previously required complex hardware add-ons, more practical and better looking on the PC.

MMX technology operates 64 bits at a time—general-purpose registers on Intel processors have only 32 bits—but maintains full compatibility with existing applications and software. The Pentium® processor with MMX technology also has a larger primary on-processor cache to boost performance on standard applications. This approach ensures compatibility while maximizing performance.

The Pentium processor with MMX technology is the latest example of how Intel continues to increase microprocessor performance by combining advanced manufacturing processes with innovative designs. In recent years the company has been able to shrink the width of the circuit lines on its processors to 0.35 microns—about 1/300 the width of a human hair. This means that more transistors, and new features such as MMX technology, can fit on each processor—there are more than 4.5 million transistors on each Pentium processor with MMX technology—at lower manufacturing costs.

The Proof Is in the Software

Because the 57 new instructions focus on multimedia, MMX technology keeps the central processor from getting bogged down. Normal housekeeping functions are performed more quickly than ever before, and new programs written specifically for MMX technology can perform at higher levels to ensure a great multimedia experience! Software developers can concentrate on delivering 24-bit true color; smoother video playback; more realistic 3-D graphics and animations; and clear, rich sound.

Intel has worked closely with leading software developers to clearly demonstrate and deliver the benefits of MMX technology. Many leading-edge, high-performance applications are now available for systems based on the Pentium processor with MMX technology (see "Software Completes the Multimedia Picture"), and the number will increase throughout the year as the Pentium processor with MMX technology becomes the standard for high-performance personal computing.

For people who want access to the latest game and education titles, surf the World Wide Web effectively, talk to family and friends using videophone technology, or perhaps design their dream home or compose the next great modern symphony, the Pentium processor with MMX technology delivers the performance they need—today and in the future. ■

Modem.

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Fax.

Call Grandpa.

When you're ready for a different computer.

like a 3D graphics accelerator. Plus, the new InTouch Module lets you jump between functions with the touch of a button. And Infinia has a wealth of expansion capabilities--including full-length PCI and ISA slots, three additional drive bays, and two universal serial bus ports for easy plug-and-play of peripherals. And Infinia is from Toshiba, the number one name in portable computers. To learn more, visit the Toshiba Web site at http://computers.toshiba.com or call 1-800-457-7777.

In Touch with Tomorrow
TOSHIBA

Guide to Computer Systems

Based on Pentium® Processor with MMX™ Media Enhancement Technology

When you're ready to purchase a system based on the Pentium processor with MMX technology, you have a wide choice from many vendors, including desktop and notebook models. The information in this section is designed to give you an overview of basic system configurations, as well as a few representative systems. Actual prices and configurations will vary. Your best source for a complete, updated list of desktop and notebook systems can be found at Intel's mmx.com Web site.

Look for this to know which computers have the Pentium processor with MMX technology inside.

Desktop Systems

Desktop systems are readily available at speeds of 166MHz or 200MHz, and have features and peripherals that, when combined with software designed for MMX technology, give you a compelling, lifelike multimedia PC experience enriched with enhanced imaging, video, audio, and graphics.

Although desktop prices range from slightly under $2,000 to nearly $4,000, what you get and what you pay are determined by processor speed, CD-ROM speed, memory size, sound quality, and other factors. Because these systems are designed to run multimedia applications, most offer these key features:

Large Monitors

Visually rich applications such as imaging programs and games require a broad canvas on which to paint and play. With few exceptions, Pentium processor with MMX technology desktop systems come with 17-inch displays that help pull you into the action onscreen.

Plenty of RAM

Today's sophisticated multimedia applications are not small in ambition or in memory requirements. With those requirements in mind, most Pentium processor with MMX technology desktop systems come standard with 32 megabytes of RAM and can be expanded. If you're serious about multimedia applications, you may want to avoid 16MB systems and start with a baseline of 32MB.

Large-Capacity Disk Drives

Just as multimedia applications require a lot of memory, the resulting images and files can quickly consume a lot of disk space storage. That's why most of these systems give you at least three gigabytes—that's 3,000MB—of storage space.

Ultra-fast CD-ROM Drives

CD-ROM-based games and other applications depend on fast response times to make the action lifelike and keep it moving. Depending on how fast you like your action, these systems offer drives from 8X all the way up to 16X.

Fast Modems

Whether you're downloading a favorite new program, playing games over a net-work with friends, or otherwise sending lots of data back and forth, a fast modem is a must, so all Pentium processor with MMX technology desktop systems offer 33.6Kbps data modems, with a few going up to 56Kbps.

Sound Systems

High-quality sound complements graphics, video, and images, so these systems feature speakers and other sound system components that enable the most sophisticated stereo soundscapes.

Telephony and Communications

In addition to useful telephone features such as PC-based dialing, faxing, and multiuser answering machine functions, many of the new Pentium processor with MMX technology-based systems come preloaded with Intel Video Phone capability to allow you to see as well as hear the person with whom you're talking.

On the Desktop

Compaq Presario Series

Compaq has added MMX technology to its Presario line of desktop computers, with configurations dependent on the target audience. The 4000 Series, for example, brings 3-D graphics, stereo sound, fast Internet access, videophone receiving capability, up to 16X CD-ROM drives, and Pentium processors to home PC users. Compaq notes that Presario models that incorporate the Intel Pentium processor with MMX technology offer up to a 20 percent performance advantage in traditional computing applications and will dramatically enhance the multimedia experience for software applications designed for MMX technology.

The Model 4764 Minitower features a 166MHz Pentium processor with MMX technology and the following capabilities:

- 24MB of RAM
- 2.5GB hard drive
- 16X CD-ROM drive
- JBL Pro speakers

Price: $1,899

The Model 4770 Minitower offers a 200MHz Pentium processor with MMX technology, 32MB of RAM, and 3.8GB hard drive. Price: $2,299.

The $2,399 Model 4784 Minitower also features a 200MHz Pentium processor with MMX technology.

The slightly more expensive Compaq Presario 8000 Series is designed for multimedia enthusiasts who demand state-of-the-art entertainment capabilities. The Minitower 8772 comes with:

- 48MB of RAM
- 6.5GB hard drive
- 16X CD-ROM drive
- 56Kbps upgradable modem
- Power VR Arcade 3-D Graphics
- 6MB of graphics memory.

Price: $2,999

Compaq has also released a line of notebook systems with MMX technology (see "On the Road").

The Pentium processor with MMX technology models include software titles such as POD and Ultimate Human Body II. The new models also feature comprehensive Internet and videophone communications, providing Internet access and videoconferencing capabilities over standard phone lines.

HP Pavilion 7370V

Hewlett-Packard's Pavilion 7370V minitower system is designed for true arcade-style gaming experience in your living room. Based on a 200MHz Pentium processor with MMX technology, the 7307V comes bundled with 50 software titles, including MechWarrior 2, Whiplash, Gremlin, TripMaker, Billboard Music Guide, and Blockbuster Entertainment Guide to Movies.

Other features include:

- 32MB of RAM
- 4GB hard drive
- 6MB of video memory for high-resolution graphics
- MPEG for full-screen, full-motion digital video
- 17-inch monitor
- 16X CD-ROM drive

Street Price: $3,550

IBM Aptiva Series

Designated by IBM as home computers, the Aptiva series features two models: the 166MHZ Aptiva S80 and the 200MHz Aptiva S90. IBM says that these models improve standard multimedia applications by 10 to 20 percent and boost pack-

ages designed for MMX technology packages by 40 percent. To ensure that you experience that performance boost, IBM bundles the following titles: POD, The Ultimate Human Body, and The Third Dimension (see "Software Completes the Multimedia Picture" for details). Both models come standard with:

- 32MB of RAM, expandable to 128MB
- Up to 3.2GB capacity hard drives
- 8X CD-ROM drive

As an added benefit for you game players, IBM bundles some Aptiva systems with an IBM joystick and a cordless mouse. The Aptiva series is built to support future technologies, including DVD and USB peripherals, to enable you to take advantage of future innovations in home multimedia computing.

List Prices: $2,399 to $2,599 (monitors sold separately)

Similar, slightly less expensive systems are PC 330 and PC 350.

Packard Bell Platinum™

Packard Bell features the powerful 200MHz version of Intel Pentium processor with MMX technology in its premium Platinum computer systems. And with the added value of hot new MMX technology software titles, these new products wow consumers with a total multimedia experience that puts more fun than ever into owning a new PC

Other features:
- 32MB of RAM
- 3.2GB capacity hard drive
- 16X CD-ROM drive
- 33.6Kbps modem

Approximate street price: $2,200

Mobile PCs

Mobile PCs featuring Pentium processors with MMX technology are available at speeds of 150 or 166MHz. Larger displays, fast CD-ROM drives, and MMX technology combine to make this new crop of mobile PCs impressive multimedia systems. These new capabilities enable richer

sound and smoother video in your persuasive presentations.

On the Road

The first Pentium processor with MMX technology-based notebooks to debut included the:

- Acer AcerNote Nuovo 975 (priced at $4,600)
- Digital HiNote VP 545 ($4,800)
- Gateway 2000 Solo 2100 P5-150MMX ($4,199)
- Micron TransPort XPE ($4,999)
- NEC Versa 6050MH ($4699)
- Toshiba Tecra 740CDT ($6,740). This system provides a first in display technology in this group, an XGA resolution screen that provides the same display space as a 15-inch CRT monitor. Even with this high-performance display, the Tecra manages more than three hours of battery time. The Tecra also offers built-in videoconferencing with data sharing and whiteboard capability that can be performed over a standard telephone line.

Compaq Presario 1080

This is the high end of the 1000 mobile PC series and the only system in that series to date to feature Pentium processor with MMX technology, the 166MHz version. Some of the features of this unit demonstrate how mobile PCs are catching up with desktops:

- 12-inch display
- 16MB of RAM
- 1.44GB hard drive
- 10X CD-ROM drive
- 33.6Kbps modem
- Stereo speakers with PremierSound Audio
- Joystick game port
- Integrated 16-bit stereo sound
- MPEG, specially tuned for MMX technology
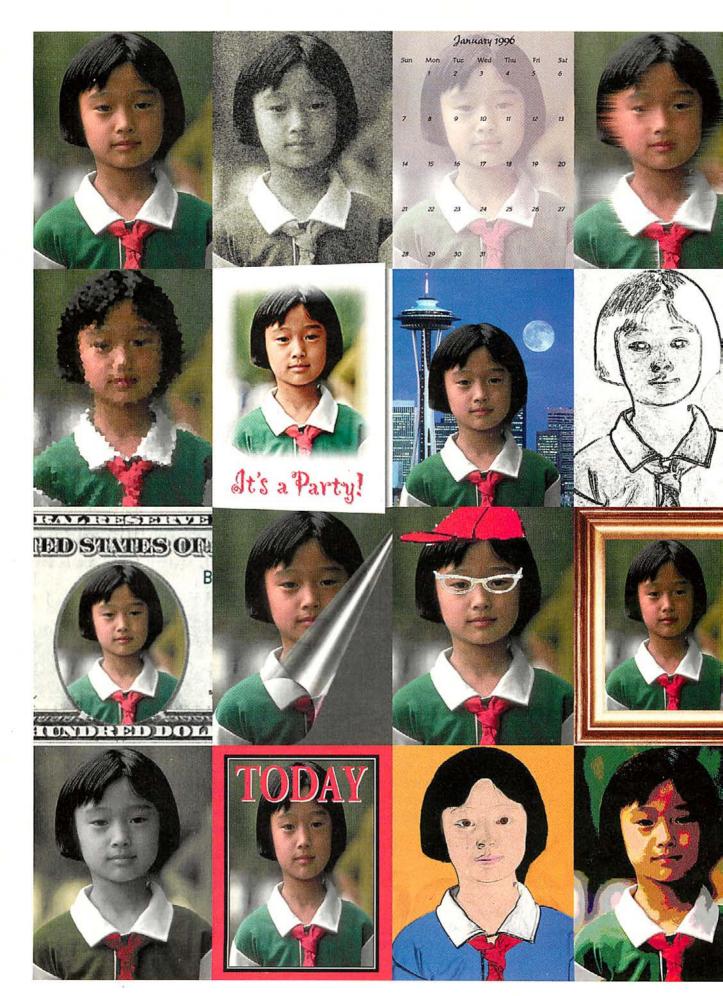
Price: $4,499

AMS Tech Travel Pro Series
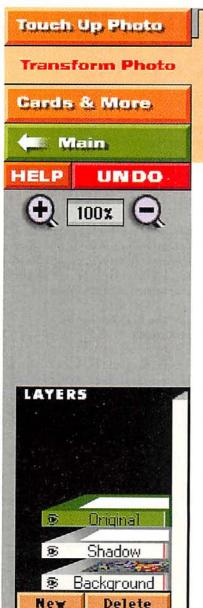
AMS's Travel Pro 188 and 2010 each feature the 166MHz version of the Pentium processor with MMX technology. The 188 model comes with:
- 16MB of RAM, expandable to 64MB
- 12-inch display
- 2GB hard drive
- Sound Blaster Pro-compatible sound and stereo speakers
- Up to 1.5MB of video RAM
- NeoMagic Accelerated Video
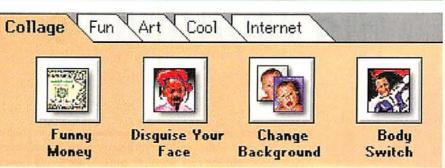
MMX technology adds a new dimension to the mobile PC experience at no substantial increase in price over traditional models. Because mobile PCs are more self-contained than desktop units, the number of configuration options is smaller. For complete, up-to-date information, check the mmx.com Web site. ■

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Software Completes the Multimedia Picture

Some things were made to go together, and that's the case with Pentium® processor with MMX™ technology and many of today's hot multimedia titles. Major software developers have recognized the benefits of MMX media enhancement technology and are now offering applications that take advantage of them.* This guide is just a partial listing of the software designed for MMX technology to help you select applications that exploit the power and features of your Pentium with MMX technology-based system.

Games/Entertainment

pod™
Ubi Soft Entertainment Inc.

pod is a real-time racing simulation game in which your challenge is to be the first to escape a planet where a deadly virus is rapidly destroying all life. Playable both locally and over the Internet, pod was designed to achieve amazing graphics, video, picture processing, and sound performance that heighten your overall experience of the game.

Rebel Moon Rising™
Fenris Wolf Ltd.

This multiplayer interactive action game pits you against earth forces in the First Lunar War. Twenty distinct levels of simulated combat, taking place in four different locales, provide a constant challenge. Maximizing the capabilities of Intel's MMX technology, Rebel Moon Rising features advanced color lighting to immerse you in a realistic environment.

Eraser-Turnabout™
Imagination Pilots Entertainment

In this interactive video sequel to the Arnold Schwarzenegger movie *Eraser,* you are an agent fighting the forces of corruption as you search for a traitor in your midst. Amid realistic, interactive settings and an array of characters played by professional actors, you must uncover who is working against you and why.

Cyber Troopers Virtual On™
Sega Entertainment Inc.

Choose from eight "Virtualoid" opponents as you charge into high-speed battle in this robot fighting game. To help you vanquish your foes, Intel MMX technology gives you 16-bit color at 30 frames per second, multiplayer network combat, and two-player split-screen mode.

G-NOME™
7th Level Inc.

G-NOME pushes real-time simulation over the edge with the clash of man and machine as you face the armored giant. G-NOME is a networked multiplayer game that combines fast action, brilliant images, sound, and graphics to give players an exhilarating multimedia experience.

Jonny Quest® The Real Adventures: Cover-Up at Roswell
Virgin™ Sound and Vision

Something has crash landed on Earth—a satellite, according to the government. But the Quest Team knows better. An alien craft, strange alien objects, and a dangerous quest all beckon you to come inside as you use cool techno-gadgets to solve the mystery.

Education

Visual Home™ Deluxe
Books That Work

Now you can visualize and experiment with home design by using the new Internet-enhanced version of Books That Work's home-design tool Visual Home. Use the 3-D rendering engine designed for Intel's MMX technology to experience fast walkthroughs of homes/models either alone or with someone else over through Internet-enabled design sharing.

The Timetables of Technology™
Byron Preiss Multimedia Company Inc.

Copublished with Simon & Schuster Interactive, The Timetables of Technology uses 3-D navigation to let you explore and view the history of technology by topic, eras, and years. Designed for MMX technology, this title features

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*Some applications come preinstalled on new systems, while others are available for separate purchase at retail. As always, make sure to check system requirements on the box before purchasing any software that is not preinstalled.

the latest in rendered 3-D spaces, a true 3-D audio environment and voice-over narration to all 1,460 of the timeline's entries.

The Ultimate Human Body 2.0™ with MMX™ Technology
DK Multimedia

Thanks to Intel's MMX technology, DK Multimedia's major upgrade of The Ultimate Human Body lets you look beneath the skin; take a guided tour of the structure, systems, and organs of the body; and learn about every part. View and manipulate fully textured and lit 3-D models of the skeleton and major body parts. To further improve your viewing experience, Intel's MMX technology provides full-screen video, smooth animation at 25 frames per second, and 16-bit color.

Space Station Simulator™
Maris Multimedia

Employing Intel's MMX technology, Space Station Simulator provides a 3-D world that lets you design, construct, and explore your own model of the International Space Station currently under construction by several countries. MMX technology gives you detailed, high-resolution views of the earth, advanced simulation, 16-bit color, and rich texture.

Logic Quest™
The Learning Company

This dynamic medieval adventure with challenging mazes, puzzles, and construction activities brings the past to life to help curious explorers develop thinking, problem-solving and creativity skills.

Frank Lloyd Wright's Fallingwater
Omniview® Studios

Roam the house and grounds of Fallingwater, the famous architect's masterpiece. No other tour, on video or through still photography, can offer the 360-degree in-depth coverage that Omniview's Photobubbles™ deliver. Intel's MMX technology gives you faster frame rates, smoother operation, and higher resolution.

Imaging

The Third Dimension™
Davidson & Associates

With this combination toy and tool, adults and kids alike can easily create and manipulate an endless variety of animated worlds. Innovative and entertaining tools allow you to import your own backgrounds, textures, and objects, or use those that come with the software. Graphics and audio libraries designed for Intel's MMX technology provide smooth animation and excellent sound.

Adobe® PhotoDeluxe™
Adobe Systems Inc.

PhotoDeluxe lets you customize photos and images by following either built-in activities or your imagination through the process of modifying, personalizing, and enhancing digital images. Intel's MMX technology improves your ability to add special effects to your photos, such as soft lighting and fog.

Kai's Photo Soap®
MetaTools Inc.

Kai's Photo Soap lets you clean up your digital photos, easily fixing common problems such as "red eye," color casts, scratches, and fuzziness. Soap will also remove wrinkles and scars and rotate and resize, all in real-time.

EasyPhoto™ Reader
Storm Technology

EasyPhoto Reader lets you store, organize, find, enhance, and use photos on your PC. Designed for MMX technology, built-in EasyPhoto software improves JPEG compression/decompression, greatly reducing wait times for opening, saving, using, or printing any size photo, even at high resolution. Photos can then be used in word-processing, imaging, creativity, and presentation applications.

Picture It!™
Microsoft Corp.

Picture It! imaging software lets you manipulate photos and create personalized cards, calendars, and other projects on your PC. Being the first FlashPix™ product designed for MMX technology and with built-in Internet capabilities, users will enjoy greater than 30 percent performance improvement in key imaging tasks.

MGI VideoWave®
MGI Software Corp.

VideoWave is a complete video publishing program featuring an intuitive design for easily capturing, editing, and creating full-motion video for home, office, and Internet use. VideoWave takes advantage of today's most advanced multimedia PC technologies including MPEG, QuickTime®, Intel Indeo, and Microsoft ActiveMovie™ and supports a variety of inputs sources including video cameras, VCRs, and video-capture boards.

Intel Video Phone with Proshare® Technology
Intel Corp.

Intel Video Phone technology, preconfigured on many newer systems, lets family and friends talk to and see each other over standard phone lines while they talk. MMX technology improves the viewing experience through better video signal compression, allowing you to present a smoother, clearer picture while maintaining overall system responsiveness.*

Intel Smart Video Recorder III and Indeo® Video Software
Intel Corp.

If seeing is believing, then nothing brings more power to communications than video. The Intel Smart Video Recorder III lets you create digital videos to enhance e-mail, or to include on your Web site. Anyone with a Pentium processor-based PC can play the videos back—without additional special hardware. Intel Indeo video software eliminates the need for add-on hardware by letting you play back video in software.

Sound

S-YXG™50C Software Wavetable Synthesizer
Yamaha Systems Technology Inc.

By combining Yamaha's synthesizer technology with Intel's MMX technology, you get an inexpensive, high-quality application that lets you compose and edit music on the desktop, without having to buy additional hardware. MMX technology makes it all possible by providing digital signal processing while still maintaining abundant processor bandwidth to play software synthesizer music.

Kurzweil Voice™ for Windows® Personal Edition Release 2.6
Kurzweil

Use voice input to create an easy and natural approach to personal computing. Using Intel MMX technology, advanced discrete speech recognition technology creates letters, reports, and e-mails more easily and efficiently by voice.

Other Cool Stuff

Director® 5 and Shockwave®
Macromedia Inc.

Director 5 is an authoring tool for multimedia and the Internet. Shockwave provides clickable animations, graphics, and audio from within Web browsers. Both applications have been designed for Intel's MMX technology.

Realistic Display MiXer (RDX) and Realistic Sound EXperience (RSX)
Intel Corp.

Realistic Display MiXer lets you quickly mix 2-D graphics, animation, and video with 8-bit or 16-bit color. Realistic Sound EXperience lets you create 3-D positional sound in software. ∎

*Performance may vary based on actual hardware and software configuration as well as quality of phone line connection.

STRATEGY & TIPS

MOO II

How to Make the Galactic Cream Rise to the Top

by Tim Carter

So, you'd like to be a galactic demagogue, but just can't seem to get your conquests off the ground. Or, perhaps your best-laid plans for universal tyranny consistently fall flat before you've dominated a paltry eight star systems. Like all good strategy games, MOO II takes planning to win, particularly at the higher levels of difficulty.

At the Impossible level of difficulty, your strategy will have to be dictated somewhat by the basic characteristics of the game. To begin with, fighting wars early in the game is a complete waste of time. Also, building a stable, prosperous empire requires investment in economics and research early on. These investments pay off quite a bit later in the game (and a lot later than in MOO I), but they are essential to winning consistently.

Because of the unique technology tree (see chart), players must tailor their economic, military, and research strategies to the rhythm of the game. A typical game of MOO II can be subdivided by the problems that confront aspiring emperors as their empire expands.

BUILDING AN INTERSTELLAR ECONOMY

When you begin, you are faced with a production and expansion problem: Your economy is simply too weak to build the number of colony ships

GO ON AND BUY IT Early on, you shouldn't wait the full 20 turns for colony ships and essential structures to be built before buying factories. This way you'll produce more in fewer turns.

you require, and too much shipbuilding will leave you with a stultified research effort and an underdeveloped economic infrastructure.

Once you overcome this problem, you may encounter some territorial difficulties, as

KLAK ON, KLAK OFF Picking your race is your first crucial step. If you plan to select a custom race, Subterran, Charismatic, and Creative are powerful bonuses to have.

few space empires tend to have nice straight borders, and those nasty computer opponents will be moving into your territory faster than a Silicoid swallows a granite sandwich.

Speaking of food, any fast-growing empire will either run out of food or spend far too much money and industry on freighters and farmers — unless you plan in advance, that is.

With these issues in mind, let's consider a few racial characteristics. Any race can win the game, and usually players will begin customizing their race early on. When customizing, remember that Genetic Mutation allows you to completely rework you race roughly halfway through the game. Thus, your initial characteristics should be tailored to your most immediate problems, rather than those you will face later. In general, it's a good idea to trade combat disadvantages for economic advantages.

How you approach this is mostly a question of personal preference. Only Charismatic is essential, as the diplomacy bonus is often crucial to peaceful relations with your neighbors, which you must maintain at all costs until the middle of the game. Personally, I like Subterran. The ability to raise your overall population by about a third is, after Creative — which is tantamount to cheating in my book — the single greatest advantage in the game.

After you have picked a race, you are ready to begin. To maximize production, I suggest selecting hydroponic farms for your first technology, as this will free up your population for work in the factories. Also, while engine speed and range are key start-up technologies, the sooner you get some industrial assistance, the sooner your economy can start growing.

For instance, an abundant planet with a single worker and no bonuses or penalties will generate three production points per turn. Buy an automated factory for this planet soon after colonizing it and this figure jumps to nine points per turn, effectively tripling your initial growth.

R&D'S THE LIFE FOR ME

Micromanagement is your friend. Research the right technology, then buy aggressively at the planetary level. Don't wait 20 turns for a colony ship to be finished before building that factory either. Switch production, buy the factory, then go to the ship. If you check the times on your building queue, you'll see that even though you switched back and forth, your colony ship will still be finished faster.

If you colonize a gaia planet early, buy freighters, switch several extra population units to the new colony, and have them all produce food. The extra harvest will free up population elsewhere to build ships.

On the exploration side, you obviously want to visit as many systems as possible as quickly as possible, and then colonize the best ones as quickly as you can build the ships. To ensure that you get the planets you want (and need), establish viable boundaries for your empire from the very start of the game. While black holes and long gaps between planets

GROWING PAINS Once cities get huge, you'll encounter food shortages. Make sure you research terraforming and subterranean farms early on in order to head off this disaster.

can act as buffers, you will need to aggressively use outposts to guarantee your fair share of space.

Outposts are cheap to build, and can secure a star system for you until your big planets can afford to build a colony ship. At the start of the game, build two or three outpost ships for every colony ship, and use them to stake out your territory. Computer opponents will generally leave systems you claim via outposts alone, at least until a war breaks out.

MOO II Technology Charts

USING THE CHART

All of the information presented here is also included in the instruction manual. We have recast it here in chart form to help any aspiring Ming the Merciless plan his galactic conquest. Unless your race has the Creative trait, you will have to choose between the options for each level of technology.

Two keys to optimum technology management are

effective trading and minimal investment in obsolescence. When trading, consider the following questions: whether or not you need a particular technology; and, if trading for this tech allow you to research another, equally important technology when you get to the next level. Use the chart to compare the tech level of what the computer opponent is offering against

		Construction		
		Path A	Path B	Path C
	1.	Colony Base	Star Base	Marine Barracks
	2.	Anti-Missile Rockets	Fighter Bays	Reinforced Hull
	3.	Automated Factories	Missile Base	Heavy Armor
Technology Level	4.	Battle Pods	Troops	Survival Pods
	5.	Spaceport	Armor Barracks	Fighter Garrison
	6.	Robo-Miner Plant	Battle Station	Powered Armor
	7.	Fast Missile Racks	Advanced Damage Control	Assault Shuttles
	8.	Titan Construction	Ground Batteries	Battleoids
	9.	Recylcotron	Automated Repair Unit	Artificial Planet Construction
	10.	Robotic Factory	Bomber Bays	
	11.	Deep Core Mine	Core Waste Dumps	
	12.	Star Fortress	Advanced City Planning	Heavy Fighters
	13.	Doom Star Construction	Artemis System Net	

		Power		
		Path A	Path B	Path C
Technology Level	1.	Nuclear Drive	Nuclear Bomb	
	2.	Colony Ship	Freighters	Outposts Transports
	3.	Fusion Drive	Fusion Bomb	Augmented Engines
	4.	Ion Drive	Ion Pulse Cannon	Shield Capacitator
	5.	Anti-Matter Drive	Anti-Matter Torpedo	Anti-Matter Bomb
	6.	Transporters	Food Replicators	
	7.	High-Energy Focus	Energy Absorber	Megafluxers
	8.	Proton Torpedos	Hyper Drive	Hyper X Capacitators
	9.	Interphased Drive	Plasma Torpedo	Neutronium Bomb

MOO II Technology Charts
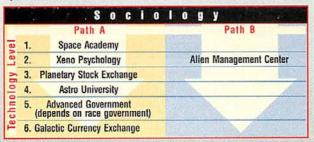
what it wants in return, and also to see if the trade will open up other research possibilities for your scientists in subsequent technology levels.

There is no point in researching a particular advance if you are going to research a superior advance in the same area before you need either one. For instance, unless

you are under attack and rely heavily on missile bases for defense, you may wish to avoid a few missile techs, and get economically useful advances instead. Also, nuclear missiles can be MIRVed on your ships, giving them a considerable shelf life. Similarly, if you are in a good cash position, you may wish to bypass the

Spaceport and wait until later to research the Currency Exchange and Stock Exchange to boost your revenue.

Finally, remember to plan ahead. Use the chart to plot three or four research choices ahead, so that you can be sure that you are meeting your empire's most important needs first.

Sociology

Technology Level		Path A	Path B
	1.	Space Academy	
	2.	Xeno Psychology	Alien Management Center
	3.	Planetary Stock Exchange	
	4.	Astro University	
	5.	Advanced Government (depends on race government)	
	6.	Galactic Currency Exchange	

Computers

Technology Level		Path A	Path B	Path C
	1.	Electronic Computer		
	2.	Research Laboratory	Optronic Computer	Dauntless Guidance System
	3.	Neural Scanner	Scout Lab	Security Stations
	4.	Positronic Computer	Planetary Supercomputer	Holo Simulator
	5.	Emissions Guidance System	Rangemaster Targeting System	Cyber Security Link
	6.	Cybertronic Computer	Autolab	Structural Analyzer
	7.	Android Farmers	Android Workers	Android Scientists
	8.	Virtual Reality Network	Galactic Cybernet	
	9.	Pleasure Dome	Moleculartronic Computer	Achilles Targeting Unit

Chemistry

Technology Level		Path A	Path B	Path C
	1.	Nuclear Missile	Standard Fuel Cell Titanium Armor	Extended Fuel Tanks
	2.	Deuterium Fuel Cell	Titanium Armor	
	3.	Merculite Missile	Pollution Processor	
	4.	Pulson Missile	Atmospheric Renewer	Iridium Fuel Cell
	5.	Nano Dissemblers	Microlite Construction	Zortium Armor
	6.	Zeon Missiles	Neutronium Armor	Uridium Fuel Cells
	7.	Thorium Fuel Cells	Adamantium Armor	

Biology

Technology Level		Path A	Path B	Path C
	1.	Hydroponic Farm	Biospheres	
	2.	Cloning Center	Soil Enrichment	Death Spores
	3.	Telepathic Training	Microbiotics	
	4.	Terraforming		
	5.	Subterranean Farms	Weather Controller	
	6.	Psionics	Heightened Intelligence	
	7.	Bio Terminator	Universal Antidote	
	8.	Biomorph Fungi	Gaia Transformation	Evolutionary Mutation

HELLO NEIGHBORS To keep in good graces with your neighbors, sign non-aggression pacts and then give them gifts, such as useless systems you can't colonize.

Once you have made contact with your neighbors, immediately begin to settle the outermost planets in your territory. If you build from the inside out you will give the computer a chance to snatch the systems that lie between you and it. If, on the other hand, you quickly occupy your "frontier," the computer will have to look in other directions to expand, leaving you to colonize the rest of your empire in relative peace.

Always put the outpost on the best planet in the system, as when you build a colony on top of an outpost you get a free marine barracks. It's one less building to buy, and can help your morale under some types of government.

Don't hesitate to build outposts in useless systems (no colonizable planets) either. Provided the system is not within the boundaries of your empire, you can later "give" it to a computer opponent as a gift. This costs you nothing, benefits your opponent nothing, and gains you considerable goodwill, which makes deals easier and helps you win votes in the election. Also, outposts can act as early warning posts, as the computer will generally attack them first during a war, giving you additional time to organize your defenses.

If you want to fry mutant zombies, you'd better know what buttons to push.

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PERFORM UNDERWATER STRAFE AND LAUNCH A SERIES OF ROCKETS

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MACRO 3: VIRTUA FIGHTER™ PC
MACRO 4: CyberGladiators™
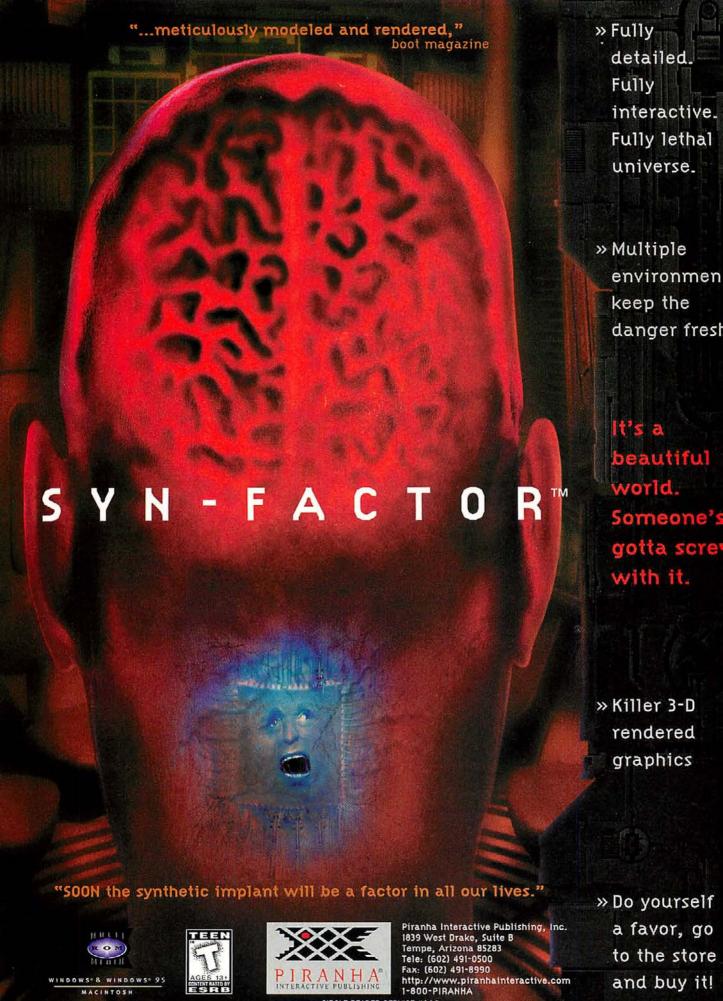
LOADED WITH 14 HYPER PROGRAMMABLE BUTTONS, THE POWERRAMP ARCADE STICK BRINGS THE ARCADE EXPERIENCE TO YOUR PC. ACT LABS' HYPER PROGRAMMABLE TECHNOLOGY FUSES UP TO 10 KEYBOARD COMMANDS INTO A SINGLE POWERFUL BUTTON. PROGRAM POWERRAMP WHILE YOU ARE IN YOUR GAME AND SAVE YOUR BUTTON SETTINGS INTO FOUR SEPARATE GAME MACROS.

10 IN 1

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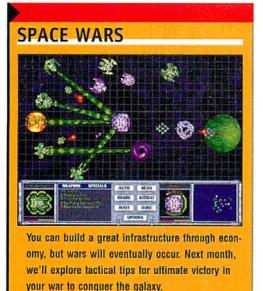
As you can't sustain a serious war in the early going, diplomacy is crucial. Make non-aggression pacts with everyone you can, and back them up with trade and research deals. When possible, it's a good idea to give gifts to the aliens as well as noted, useless systems are the best gifts. Never, ever, start a dispute with a computer opponent unless you are ready and willing to go to war.

SPACE WARS

You can build a great infrastructure through economy, but wars will eventually occur. Next month, we'll explore tactical tips for ultimate victory in your war to conquer the galaxy.

Early in the game everyone but you will engage in espionage. As spying is a good way to incite a war, I don't recommend it. However, it should free up your trading. After all, if the opposition is going to steal your technology anyway, you might as well see what you can get for it on the open market.

The computer will rarely offer you a fair deal for your technology, but don't let this deter you from making trades anyway. When deciding on an apparently lopsided trade, define the worth of a technology in terms of what it can do for you, not what it cost to research. For instance, the computer will typically offer missile base tech in return for, say, terraforming. While this seems unfair, terraforming won't really help the computer much because it tends to handle food inefficiently anyway, while

SCOUTING REPORT Expand quickly early on. But build outposts to secure your rights to a planet in case you can't (or don't want to) colonize it right away.

missile bases are crucial to defending your empire. Take the deal.

LET THEM EAT GREEN CHEESE

Eventually, you will end up with a food shortage. Because so many good planets cannot initially grow much, you must invest in biology technology early and often. Otherwise, your few fertile planets will end up being used for nothing but farming, and half your income will be going to pay for freighters.

Instead, get to terraforming and subterranean farms as quickly as possible—generally at the expense of most other technologies. These two technologies should remove the burden food supply places on your economy, and will have the added benefit of making most colonies starvation-proof in the event of a blockade. In the long run, farmers are a waste of population, and the sooner you can switch them more towards scientific or industrial roles the better.

TIMING IS EVERYTHING

Here is something to remember about technology: Keep your long-term strategy in mind when choosing which technology to select. If you are not going to fight early in the game—and I again strongly suggest that you shouldn't—

EXTREME *(ik-ˈstrēm) adj:* exceeding the ordinary, average or expected.

ASSAULT *(ə-ˈsolt) n:* a violent physical attack.

THE ARRIVAL

CD-ROM ADVENTURE

ACTUAL GAME PLAY

Stop

Watching

The Skies:...

Start

Watching

Your Back!

THE ARRIVAL
CD-ROM ADVENTURE
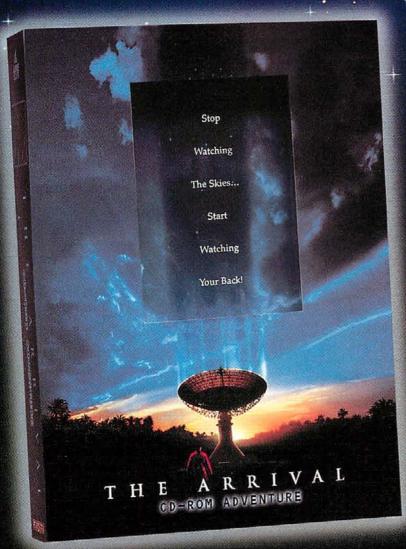
YOU'VE BEEN ABDUCTED!!! Your assignment is to escape without alien detection, so play a game of "cat and mouse" and work your way through the maze of the alien space station, moon base (mining colony) and three out stations.

As you explore intricate environments and challenging puzzles, you will encounter multiple routes with hundreds of variable story lines. Your mission is to decode the alien safeguards, take control of the alien space station, and find a way back to earth TO WARN THEM!!!

GAME FEATURES

- FIRST PERSON FULL 360° POV

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- THOUSANDS OF DETAILED SPRITE ANIMATIONS OF ALIENS, ROBOTS AND HUMANOIDS

- HIGHLY COMPLEX FULL SCREEN PUZZLES BASED ON ALIEN TECHNOLOGIES

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GAMER'S EDGE

TECHNICAL KNOW-HOW Early in the game, research hydroponic farms and other growth bonus sciences in order to maximize production.

put your effort into economic selections. Because many new inventions replace old technology, try to gauge *when* you will need *what*. For instance, most beam weapons are useless without a decent targeting computer. But, because you are not going to fight until late in the game anyway, you may want to skip the Optronic and Positronic computers—getting Research Labs and Supercomputers instead—and then research the Cybertronic computer when it will be of some use to you. Following the same logic, you may want to skip Battlestations in favor of Robo-miners and then rush straight to Star Fortresses.

In conclusion, remember that MOO II rewards long-term investment. The bonuses from morale, industrial building, and research facilities pay much higher dividends than a small, relatively powerless military force. While you are slowly amassing your own personal empire,

use diplomacy to keep your neighbors happy and build, build, build. Sure, in the beginning you'll be behind in technology and military power, but if you can keep pace in terms of buildings and population, you will be on the correct path to success, and you'll also be in store for much bigger rewards in the long run.

In next month's Gamer's Edge, we'll look at warfare in MOO II, and give specific information about how to build a fleet, how to fight and win tactical combat, and how to (ultimately) conquer the entire galaxy. So, until then, build up your infra-structure and get ready for war! ⚉

MOO II Technology Charts

Physics

	Path A	Path B	Path C
1.	Laser Cannon	Laser Rifle	Space Scanner
2.	Fusion Beam	Fusion Rifle	
3.	Tachyon Communications	Tachyon Scanner	Battle Scanner
4.	Neutron Blaster	Neutron Scanner	
5.	Tractor Beam	Graviton Beam	Planetary Gravity Generator
6.	Sub-space Communications	Jump Gate	
7.	Phasors	Phasor Rifle	Multi-phased Shields
8.	Plasma Cannon	Plasma Rifle	Plasma Web
9.	Disruptor Cannon	Dimensional Portal	
10.	Hyperspace Communications	Sensors	Mauler Device
11.	Time Warp Facilitator	Stellar Converter	Star Gate

Technology Level

Force Fields

	Path A	Path B	Path C
1.	Class I Shields	Mass Driver	ECM Jammer
2.	Anti-Grav Harness	Inertial Stabilizer	Gyro Destabilizer
3.	Class III Shields	Planetary Radiation Shield	Warp Dissipator
4.	Stealth Field	Personal Shield	Stealth Suit
5.	Pulsar	Warp Field Interdictor	Lightning Field
6.	Class V Shields	Multi-Wave ECM Jammer	Gauss Cannon
7.	Cloaking Device	Stasis Field	Hard Shields
8.	Class VII Shields	Planetary Flux Shield	Wide-Area Jammer
9.	Displacement Device	Subspace Teleporter	Inertial Nullifier
10.	Class X Shield	Planetary Barrier Shield	Phasing Cloak

Technology Level

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STRATEGY & TIPS

Diablo

Tips and Strategies for Defeating the Last Levels of Hell

by Elliott Chin and Greg Fortune

This month's strategy guide is the last single-player strategy for DIABLO, and it's a guided tour of the Lord of Terror's home plane: Hell. In these pages, we'll tell you how to defeat the different Hell-dwelling creatures, as well as give you some tips on spell use and equipment. We'll also reveal the solutions for the final six quests in the game, with three in these pages, and the rest on our CG-ROM and Web site (www.computergaming.com).

Balrog

The Hosts of Hell

The monsters in Hell are a much scarier lot than those found in the caves. The five Hell-class creatures are: succubi, black knights, counselors, cave vipers, and balrogs. These are simply the base creatures, and each base creature has three more variants that are stronger and deadlier than their parent. So, how do you win in brutal contests against these Hell creatures? That depends on who you're fighting.

The Heavy Hitters: Knights, Drakes, and Balrogs

The three melee monsters in Hell (those that engage in hand-to-hand combat), are the knights, drakes, and balrogs. Technically, the balrog variants have a ranged attack: the inferno spell which they employ as a breath weapon. But the range of this attack is short, and they almost always use it as a prelude to hand-to-hand combat.

Considering their awesome physical strength, you need to thin these melee monsters out and attack them one at a time. Letting them surround you is suicide. Unfortunately, in Hell, you can't dispatch monsters as they march through a door single-file, since there are no doors and the smallest corridor is at least four monsters wide. What you should do, though, is use a combination of retreat and magic to thin out the ranks of the melee hordes so you can fight with more even odds.

TOE TO TOE WITH THE WARRIOR

Assuming fast recovery and fast hit items, a warrior can probably hold his own when surrounded by up to three melee monsters. However, against more than three opponents, it's time to exercise the better part of valor (see the Running Away sidebar for details on the warrior's best retreat strategy).

Another tactic to consider in order to thin out the ranks of surrounding monsters is to use stone curse on the horde. With this spell, if surrounded, you can stone one or two monsters, run away, and just pick off the few that follow. If you want to stand your ground, stone all your attackers, and attack them freely, you had better have a fast attack weapon — stone curse has a very limited duration.

Running Away

In Hell, you'll often run into rooms filled with melee monsters and, sometimes, range-attack demons. In these cases, run away and go around a corner. The melee monsters will follow you but their ranks will thin out, as some monsters move faster than others.

Wait at the corner and start hacking the first monster that shows up. Because the monsters move at different speeds, one or two will come at you at a time, rather than surround you on eight sides. Repeat the run if you get surrounded again.

If you're a rogue or sorcerer, you should fall back several paces to leave ample space between you and the corner. If you hug the wall, the demons will tend to march up the wall single-file at you. This is a good way of lining them up for easy shots with bow and spells.

Quests, Quests, Quests!

Quest: Warlord of Blood

What is the object?
Kill the Warlord and rob the armories of Hell!

Where do I find him?
On level 13, the first level of Hell.

How do I kill the Warlord?
As you explore, you'll find the Steel Tome, which unlocks the Warlord of Blood's armory. If you have the telekinesis spell,

Blood Knight

you can walk around the outside of the armory and retrieve the weapons stored there before entering. Inside the armory are several blood knights and the Warlord of Blood. If you walk in front of the entrance while staying out of visual range of the Warlord, you can dis-

patch a few blood knights before dealing with their boss. The Warlord of Blood is immune to fire, magic, and lightning spells, but can be stone cursed. Golem also works against him; two should finish him off.

What do I get?
The armory con-

tains two sets of magic armor and four weapon racks. The Warlord will also drop a random magic weapon.

BLOODY HELL This is the Warlord of Blood's armory. You'll need to deal with his steel lord guards first. He is immune to magic, fire, and lightning, but not stone curse.

ROGUES AND SORCERERS

Rogues and sorcerers should never face more than two opponents in melee range. Using ranged attacks, always run away from monstrous hordes and pick off monsters as they thin out while they're in chase. The warrior's strategy of running away and waiting around the corner works well for rogues and sorcerers, too. Stone cursing members of a rushing horde also works.

If you're a sorcerer who has chain lightning and the monsters facing you are vulnerable to lightning, let the monsters surround you and then unleash a rapid succession of chain lightning spells. This spell can usually eliminate all of the surrounding creatures. This spell also works well for rogues. Rogues, and especially sorcerers, should *always* cast mana shield when entering each Hell level; it increases survivability.

The Warrior's Bane: Advocates and Succubi

The most annoying and difficult monsters to kill in DIABLO have to be the ranged monsters of Hell. They not only launch devastating attacks from afar, but they're also excruciatingly difficult to catch, much less kill.

THE ROGUE'S FIELD DAY

For the rogue, it's a simple matter to just fire arrows at these monsters and slay them. Succubi won't run away, even when hit by arrows, and neither will advocates. All the rogue needs to worry about is eliminating the melee monsters guarding ranged creatures before attacking them. To do that, use the corner retreat tactic. Then return to kill the ranged monsters. Rogues can also use fireballs and chain lightning to eliminate ranged monsters from afar.

SORCERERS SUPREME

It is likewise easy for the sorcerer to use ranged spells, namely fireball and chain lightning, to slay these demons. Just be mindful of their resistances

and be sure to fire the appropriate spells. The blast radius of fireball comes in handy for killing succubi, because all variants usually bunch together to attack. You can also use fire wave to clear out passages before marching into them, but that spell isn't as reliable as fireball. Magistrate variants are slightly deceptive in their immunities and resistances. See the Hell Monsters chart for their vulnerabilities.

THE WARRIOR'S HELL

Warriors are pretty much at a loss when to trying to engage ranged monsters in melee. Succubi will run before you get to them, and it is hard to catch up to them. Magistrates teleport away from you, and are just as hard to kill. *Never* simply click on a succubi and follow her in order to attack. She will always lead you to a room with more succubi, more magistrates, more black knights…you get the idea. For these kinds of creatures, you're better off using magic. Invest the money in fireball and chain lightning spellbooks, and keep an artifact of wizardry handy so you can equip it and fire off decently-powered spells when facing these vile creatures. In Hell, no one survives without using magic.

A FINAL WORD FOR THE HELL-BOUND

The monsters of Hell tend to attack with combined arms; when you traipse into a room, typically two classes of monsters, always requiring two different methods of attack, will converge on you. Always flee from those rooms that hold melee and ranged monsters. Deal with the melee monsters first and *then* re-enter those rooms to confront the ranged creatures. It's also a good idea to lay down a golem spell before you flee monster-infested rooms. Perhaps when you come back, those pesky advocates will have been eliminated by your magically-created friend.

We hope these tips help you in Hell. Next month, we'll be tackling multiplayer tips for gaming on battle.net.

Quests Galore

Quest: Lachdanan

What is the object?
Save Lachdanan's soul by finding the Golden Elixir and returning it to him.

Where do I find him?
Lachdanan is found in Hell, on level 14.

PLEASE, HELP HIM Lachdanan needs you to find his Golden Elixir or he will stay trapped in Hell. Free his soul and he'll give you his magic helmet.

What do I do for Lachdanan?
Lachdanan will not attack you. To save him, find the Golden Elixir, which will be randomly located on level 15, and return it to him. His soul will be saved and he'll leave you his helmet.

What do I get?
The Veil of Steel is Lachdanan's helmet. It has an AC of 18, adds +50% resist all, -20% light radius, +60% armor, -30 to mana, +15 to strength, and +15 to vitality. Griswold will buy it for 15,950 gold.

Advocate
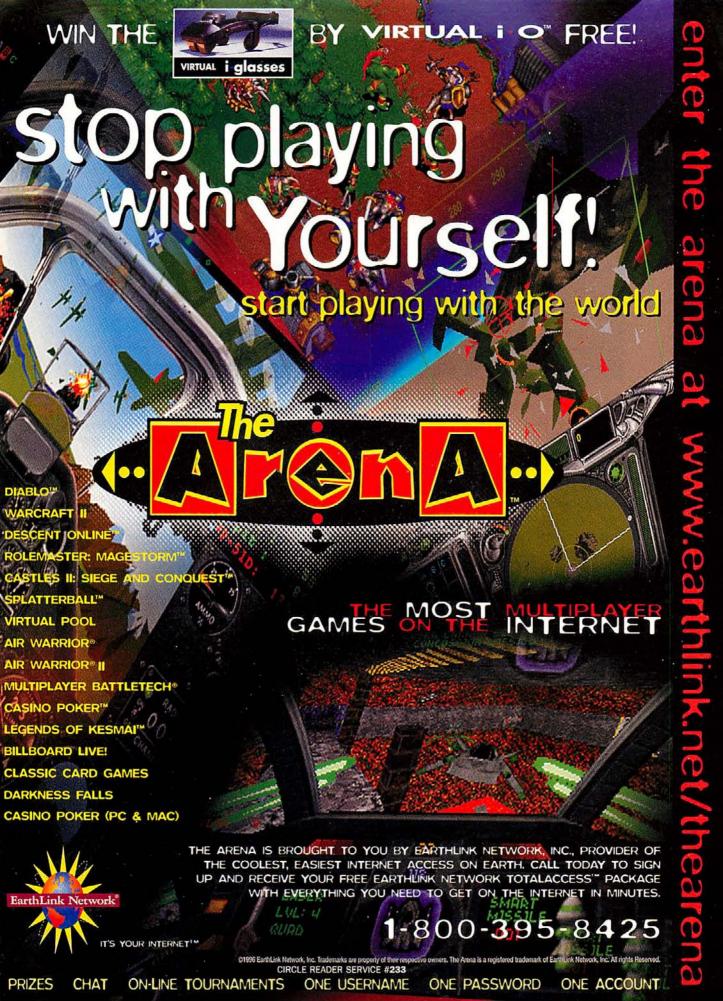
A HELL OF A LIST

The monsters of Hell are powerful custodians of evil, but they can be defeated. Here is a quick fact sheet on the vital statistics of your Hellish opponents.

Monster	Type	HP*	Resists	Immune	Notes
Cave Viper	Drake	50-75	none	M	—
Fire Drake	Drake	60-85	F	M	—
Gold Viper	Drake	70-90	L	M	—
Azure Drake	Drake	80-100	F, L	none	Kill with bloodstar
Black Knight	Knight	75	M, L	none	Kill with fireball (FB)
Doom Guard	Knight	82	M, F	none	Kill with chain lightning (CL)
Steel Lord	Knight	90	M, L	F	Kill with CL
Blood Knight	Knight	100	F	M, L	Kill with FB
Succubus	Succubi	60-75	M	none	Fire bloodstars, kill with FB
Snow Witch	Succubi	67-87	L	none	Fire bloodstars, kill with FB
Hellspawn	Succubi	75-100	M	L	Fire bloodstars, kill with FB
Soul Burner	Succubi	100-112	M, L	F	Fires bloodstars, kill with CL
Slayer	Balrog	60-70	M	F	Spit infernos, kill with CL
Guardian	Balrog	70-80	M	F	Spit infernos, kill with CL
Vortex Lord	Balrog	80-90	M, I	F	Spit infernos, kill with CL
Balrog	Balrog	90-100	M	F	Spit infernos, kill with CL
Counselor	Counselor	35	M, L, F	none	Casts firebolt, teleports
Magistrate	Counselor	42	M, L	F	Casts charged bolt, teleports, kill with CL
Cabalist	Counselor	60	M, F	L	Casts lightning, teleports, kill with FB
Advocate	Counselor	72	F	M, L	Casts fireball, teleports, kill with FB

M=Magic, F=Fire, L=Lightning   * hit points are doubled in normal multiplayer mode

The Final Quest: Diablo

What is the object?
Slay the big boss himself.
Where do I find him?
The entrance to Diablo's level is in the center of the huge, glowing pentagram on level 15.
How do I kill Diablo?
There are three chambers you'll have to clear out before you get to Diablo. You will find this level crawling with advocates and blood knights, so be careful. First, clear the top right corner of the level and pull the skeleton lever. Next is the lower right corner, which is a spiral structure with another switch at the center. That opens the third structure, which is in the top left corner of the level. Inside the third structure are two switches. Pull

LIGHTS OUT, HELL-BOY After you lure Diablo out from the protective watch of his advocates, let him have it with fireball, bow, or melee weapon.

both levers and head to the lower left corner of the level. Here, surrounded by advocates and knights, is Diablo. He is affected by fire- and lightning-based spells, but he cannot be stone cursed. Diablo has about 1,600 HP, and attacks you with the apocalypse spell.
What do I get?
You get to shove a crystal into your head! What more could you ask for, besides unique ending scenes for the different characters?

Proper Equipment is Half the Battle

Warriors must have the proper equipment to wander the halls of Hell. Because monsters strike fast in Hell, you need some form of armor of recovery and a weapon of fast attack. With these two items, you'll be able to strike faster than the monsters, sometimes killing them before they can even attack you, and you'll recover quickly anytime multiple monsters hit you (otherwise, you'll always be reeling).

For **rogues**, priority should be on getting a damage-enhancing bow, since normal bows do far less damage than melee weapons. Always go for bows that increase damage (such as Merciless Bows of Gore) over bows that enhance your to hit rate. Also, look for a bow that knocks your opponent back, such as a Bow of the Bear or the unique Windforce. In case you do get surrounded, wear armor of fast recovery. Since rogues will use magic frequently, including mana shield, acquire magic-enhancing rings and amulets.

For **sorcerers**, the first rule of Hell is to never engage in melee. Don't bother with weapons or armor that enhance your ability to stay and fight. Just make sure you wear as many items as possible that enhance your magic, mana, and armor class.

All classes should buy elixirs from Adria and Pepin to improve their strength, magic, and dexterity.

The Diablo Spell FAQ

How does spell resistance work? The number in your resistance entry is the percentage of damage you do *not* suffer. For example, if you have 50 percent resistance to lightning, you shrug off 50 percent and only suffer half damage from a lightning spell. According to Blizzard, all monsters with a resistance are considered to have the maximum score, which is 75 percent. So, anytime you face a creature in DIABLO that has a resistance to fire or lightning, it will only suf-

fer a quarter of the damage. If you do 240–320 damage with your fireball, and shoot one at a blood knight with fire resistance, you'll actually do 60–80 damage.

How Long Do Duration Spells Last?	
Spell	**Duration in seconds**
Wall of fire	10 + 10 per spell level
Infravision	99
Stone curse	6 + 1 per spell level
Guardian	Character level x 2 + 1 per spell level

Which spells count towards magic immunity? The following are spells that a monster would be immune to if it had magic immunity: flash, bloodstar, bone spirit, and telekinesis.
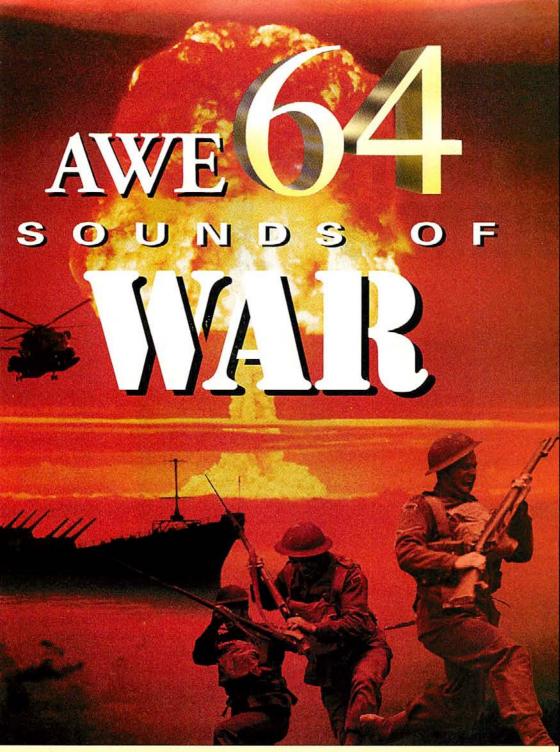
Who is immune to stone curse? No one is immune to stone curse, except for Diablo and other player characters. Even unique boss monsters, such as the Butcher, Skeleton King, and Warlord of Blood are vulnerable to stone curse. In most cases, it's the best way to kill those boss monsters.

What are the fourth level or fourth page spells? There are four fourth level spells you can learn and put in your spellbook: golem, teleport, bone spirit, and blood star. The two other fourth level spells, nova and apocalypse, are only available as scrolls or staves.

Mistakes Are Hell

In our March DIABLO strategy guide, we mistakenly reported that the Butcher was immune to fire and lightning and that the Skeleton King was immune to holy bolt. Both statements were untrue. Our strategies for both quests were thus incorrect. You *can* defeat the Butcher with fire spells, and a sorcerer's best bet is to stone curse him and then plant a fire wall on him. The Skeleton King's weakness is holy bolt, which will kill him easily. We apologize for the errors, and will work harder in the future to ensure that mistakes like that never happen again. For the full, corrected strategy guide, visit our Web site at **www.computergaming.com**. To all those reading these pages for our DIABLO tips, thanks for your vigilance.

Wizardry Nemesis

Trapped by the Tour Guide? Scorpia Charts the Paths Less Traveled

by Scorpia

Those of you who caught my recent column on NEMESIS know that I didn't exactly give this latest WIZARDRY adventure glowing accolades (ahem). Still, I know people will play it. And while the Tour Guide furnished by Sir-Tech is pretty good for the most part, it doesn't tell you everything. For instance, combat techniques and monsters are conspicuously absent from the text. Here are some tips to help you through some of the trickier parts of the game.

READ ANY GOOD BOOKS LATELY? I hope not, as they really don't help your cause. When in the library, search for the kris sword instead.

Hit-and-Run

The main principle of combat is to keep moving! Almost everything in this game hits harder than you do. If you stand still, you're toast. Of course, there will be times when movement is very restricted or impossible, but for the most part, you should be dancing around, not standing flat-footed.

That means learning how to maneuver with your off-hand, especially quick side-steps. Galican, at the start, is safe; take some time out to practice movement and combat strikes in the town square.

Ideally, combat should take place in an unobstructed 2x2 (or larger) area. This allows you to fight using the basic technique of swinging as the critter approaches, and then, whether or not you hit it, stepping away. The swing should begin before you see its hit point bar. By doing this, you can attack and retreat without taking hits in return — most of the time, at least.
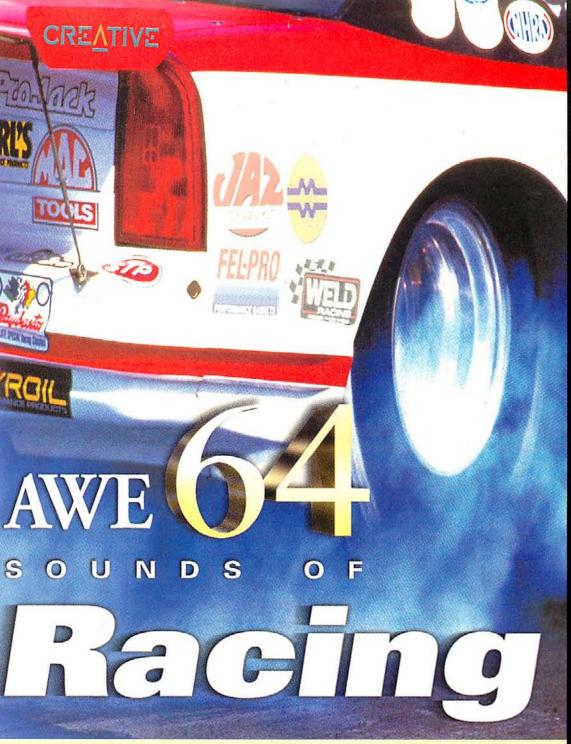
Some areas, like the sewers, don't allow enough room for waltzing. In places like that, you'll have to hope you've got room enough to back up after each attack, or enough distance to cast a spell. Otherwise, it's stand and duke it out, and hope you survive.

Before you go running off to any dungeons, I suggest spending some time in the forest, beating up on the Orcs to gain experience and hit points. It's dull work, but reaching level two before hitting the Hargani Underworld will be helpful in the long run. By the way, your life in the Underworld will be much easier if you don't collapse the bridge.

After you've been out of Galican for awhile, tread carefully when you return to town. Eventually, Shadow Beasts will start showing up there. They will also appear in all the dungeons, just to make your life happier (heh!). You really want room to deal with these things; the way they jump around in combat makes them hard to hit.

First Floor, Underworld Second Floor, Swimwear

For the first level of the Underworld, the Tour Guide is fairly thorough. It doesn't mention the bug creatures, though, and these are quite nasty. One type can throw a sort of spell at you, and the other kind can poison you. Avoid the first type as much as you can. If you must fight, get in close quickly to avoid the spells. Don't try dancing with these things.

On the second level, you'll run into merman-type critters. From these, you will finally get a decent sword. They have no distance attacks, so the Waltz of Death works well, when you have room.

The danger point here is the room with the magic mirror. If you linger too long, you'll end up fighting an endless stream of monsters, including Shadow Beasts. You'll want to move fast here. Step into the room; sidle left; go forward; then sidle right, to the mirror. Do what needs to be done,

GOT MY SWORD, AAA CARD, AND A POWER BAR

Proper inventory management is a must. Don't go grabbing everything you see. In Jaran's Keep, leave the runic tablet in the desk until the end game.

and retreat the same way. Don't go around by the right side, because that's where the monsters come from. Then repeat the process.

In the third level, you'll deal with alligators and mudmen. The alligators are standard, the mudmen aren't. Mudmen are tough because they only assemble when you step on their square, and fall apart when you step off of it. Thus, the only way to fight them is to do just that: step up, swing, and back off.

You will need to search all the barrels down here. Some have red leeches in them. These can be removed by sticking your arm into a barrel of salt. One treatment removes the leech. This will also keep any more leeches from bothering you.

One danger here is the Sword Destructica (which you do need). After figuring out the orbs and skull, be sure you are empty-handed when taking the sword. If you have any weapon equipped, even your amulet, the sword will kill you. Until the sword is uncursed, it's the only weapon you have.

Dancing with Dragons: To reach the dragon, you'll need to jam the Jaw Traps. Try the lower left side, about the second tooth in. This will take awhile. Before passing the second trap, turn right and sidle the rest of the way until you're facing the dragon. Then use the basic combat technique to take it out (this is a 2x2 area, so you shouldn't have much trouble, if you're careful).

Sewers: This is actually a small area. The four-armed fishmen are tough customers. Try to have room behind you when you fight them. The ceiling snakes can usually be avoided by just walking right by them. Before heading to the talisman area, you'll want to find the button that opens up a secret part of the sewers. You'll find some goodies there, as well as the fountain that shows you clues to the color lock at the sewer exit.

Jaran's Keep: This is a safe place, as long as you don't mess around with the skeleton. The runic tablet in the desk is for the end game, so you can leave it alone until then.

Swamp: A tiny area. You'll have to fight a couple of the plants for tentacles. In this case, slugging it out is the fastest method. Expect to be poisoned by this. Don't cure yourself right away, however, because the tentacles are poisonous, too. Run to the Keep quickly to de-poison them. If you have enough hit points, you can probably outlast the poison's effects. If not, heal yourself in the interim, and use cure poison later.

Crypts: The gargoyles are mean opponents. I found it best to dispatch them from a distance, using the crossbow. You can pick up the unbroken arrows and use them again, without getting close to these nasty critters.
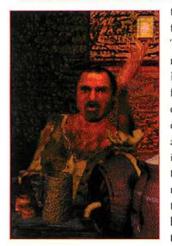
Inside, the only thing to worry about are the skeletons, but they're nasty. Like the mudmen, they assemble only when you step on their spots, and fall apart when you move away. Not only do they hit hard, they can leech your magic points and use those to heal themselves. Quick back and forth movements are the only way to deal with these things.

At the inner crypts, you'll have to fight Tas. He is very tough. I began by using up my remaining arrows. Fortunately, I had a lot of them, and they whittled him down to 28 hp's. The fight (back and forth) wasn't too bad, especially with Enhanced Attack active.

In the maze, just walk around while the walls change (every time Seldin's ghost appears) until the way to the room of bones opens up. Tedious stuff, but at least there's nothing to fight. However, expect a shadow critter to show up soon after you find Seldin's bones.

Burned to the Bone

Tower/Burned Bone Corridors: After descending through the tower in the swamp, you'll be in the Burned Bone Corridors. There is nothing to fight in the rooms until you get to the Minotaur, who easily makes up for the lack of monsters in the other rooms. You should not come here until after the crypts, as the Enhanced Protection spell is vital to surviving combat with the Minotaur. There is no room to move at all in here. Cast protection, using all your points, just before going in. It won't last for the whole fight, but with a little luck, you should be able to kill the Minotaur before he does you in.
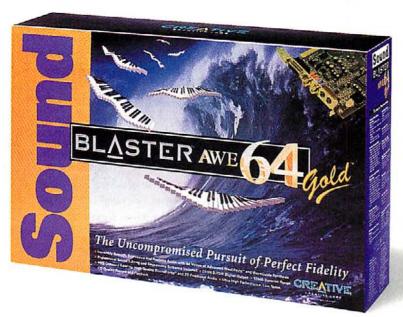
Fire/Mushroom Tunnels: Just get through these as quickly as you can. When you exit the Fire Tunnels, don't stop. Keep going forward to the end and turn right, to the Desolate Castle. Fighting the sorceresses is a losing proposition.

Desolate Castle: Except for one stair guardian, there is nothing to

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58. Direct sound hardware acceleration.
59. Vienna SoundFont Studio™ software.
60. Direct sound 3D hardware acceleration.
61. 32-level control for mixing recordings.
62. Talk over the Internet in real time.
63. 32-level control for mixing output.
64. MIDI Orchestrator Plus™ software.

fight. The guardian is easy to kill, as it doesn't move. On the second level, you must look at the book on the rickety table; it has the translations of the runes. Something else on this level will help you read the book without burning it. The runes are copied into your journal, so you don't have to do it by hand.

Ystalin's Lair: You can't get in here until you've spoken to Zalena. Go past the door, stand on the edge, and cast the appropriate spell (as indicated by the whispering voice). The gear door is simple, provided you have all the parts; don't overlook the desk area. For the puzzle door, the Tour Guide should be sufficient. And remember, smart adventurers don't take what isn't theirs (but it's okay to read the two notes).

Nithera: A nasty place, with four-armed demons (must be related to the sewer guys, heh!) and shadow beasts. Be sure you find the sextant before going inside the complex.

Dagger Room: You don't have to go here if you'd rather not. All you get are a couple of potions and a wand. The first time through, you must walk between the daggers; the control is at the altar, so you really have no other choice in the matter. The secret passage in this room is opened by the fountain; you want all three pedestals at the bottom.

OUT ON THE FRINGES When you enter an area with restricted movement—the Swamp or Forest, for example—cast healing and any close combat spells before entering combat.

Library: Be careful what books you read (you can get away without reading any of them, as they only provide background info). A cursed tome will bring your evil twin Skippy to fight you. There is another book that can help prevent that. The important thing to find here, if you want it, is the kris sword. Look for it on the upper level, where you find the book on the floor. When you come to the blue gate, I recommend using Enhanced Protection before passing through.

Fire Wall: This is the really important part. The control is downstairs in the main hall, not too far from the Horn (you can't do anything with the Horn). The Pentagram Door can indeed be opened with a spell; if your wits have deserted you, that's a good way to feel. Think about it. Just remember you have to be right up by the door for this to work.

CAST A SPELL ON ME Against tough opponents, especially the demon, it's best to use the amulet to whittle them down before charging in.

Once More, With Feeling

Dancing With Dragons, Part II: This dragon is much nastier than the other one. In the end, I opted for Enhanced Attack, ran right up into its face, and just smacked away until it was dead. It took more than one try. You may want to use the Massive Strength Talisman for this one, too, or maybe even Invulnerability.

End Game: Spelling out the right word on the rune tablet allows you to fiddle the skeleton's head and open the way below. There isn't much to find down there, aside from the key to the final door. The electric room and fog room just generate endless combat to no purpose.

Duking With Demons: The ridiculously easy way to get through here is to use the basilisk talisman, then immediately go through the door, bypass the cut scenes, and watch the demon die.

The hard way is to prepare first. Use Heal All to give yourself extra hit points. Cast Enhanced Protection, using all your energy. Use Restore Energy to bring magic points up to 255. Go through the door. Bypass the scenes. Get right up to the demon so he doesn't cast spells. Use the amulet to weaken him a bit. Use the amulet again to cast Ice Storm to the maximum. Then swing away. Good luck!

Until next time, happy adventuring! ℰ

CG TIPS!

Strategy/Wargames

Magic the Gathering: Battlemage

Here is a quick tip for those just beginning Acclaim's MAGIC THE GATHERING: BATTLEMAGE computer game. (Look for more tips in the full game review in this issue.)

Always use plenty of land. This is good advice for any *Magic* player, but is even more important in BATTLEMAGE, where you want to keep your hand from filling up. Unlike the card game, where you can choose your least valuable card to discard, BATTLEMAGE automatically selects a discard for you at random. And since you draw a card automatically every 10–15 seconds, your hand fills up quickly! Instead of the normal one-third rule, try making 40 percent of your cards land cards. Land cards are the quickest type of cards to put into play, so keep putting one in play as soon as they become bright again. This should also give you plenty of mana for spells.

Action

Powerslave

Although Playmates' POWERSLAVE isn't a game you'd want to spend much time on, some of you were unfortunate enough to purchase it. Here are a few cheats that will allow you to finish it quickly so you can move on to a better game. Just type these codes in at any time.

Lobocop	All weapons
Lobodeity	God mode
Loboswag	All items
Lobopick	All keys
Lobosphere	Entire map
Lobolite	Removes flash from explosions and gunfire
Loboxy	Displays coordinates
Holly	Calls up a taskbar that allows you to type the following cheats:
	Level (level #) Jumps you to any level
	Doors Activates all switches
	Exit Finish current level

Holly (continued)	
	Creature (Creature #) Places any of the following creatures at your location
0	Anubis
1	Spider
2	Mummy
3	Piranha
4	Basset
5	Magmantis
6	Am-nit
7	Set
8	Kilmatikhan
9	Alien Worker
10	Alien Worker
11	Omen Wasp

Battleground: Antietam

If you have trouble remembering that Col. Alfred Cumming is an E/C ranked leader in BATTLE-GROUND: ANTIETAM, help is no further away than Talonsoft's Web site (www.talonsoft.com). Glenn Saunders has created a complete BATTLEGROUND-style Order of Battle for both the Army of the Potomac and the Army of Northern Virginia. The file is zipped in Word for Windows format.

Simulation/Space

EF2000 Tactcom

There's a bug in the SmartView feature, which is supposed to let you view various hot spots in the WarGen war zone. If you set the filter to view Enemy or Neutral aircraft and there are no such aircraft in range, returning to the cockpit will crash the game to the DOS prompt. To avoid this problem, be sure to return the SmartView setting to All Aircraft before returning to the cockpit view.

Also, if you come across a particularly interesting mission using

SmartView, you can hit the H key to hold the view on the currently selected aircraft.

If you're having trouble getting a decent hit rate with long-range S225 and AMRAAM missiles, try the "shoot and run" tactic. Fire a missile at your target, and then make an immediate 180 degree course change. If you have plenty of altitude, roll inverted and pull back on the stick; if you're low to the ground, then pull up until you've reversed
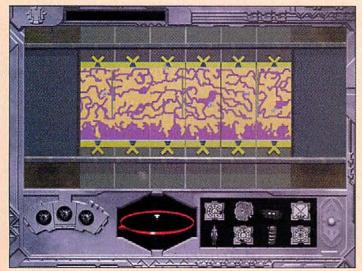
course and then roll out. Your missiles are more effective when tracking an enemy head-on than from the side, where doppler effect can affect tracking. By reversing course in the vertical plane, the enemy continues flying directly towards you, keeping its nose to you—and your missile. If you try to do a 180 by turning in the horizontal plane, the enemy's course will change and your missile is less likely to hit.

Adventure/RPG

RAMA
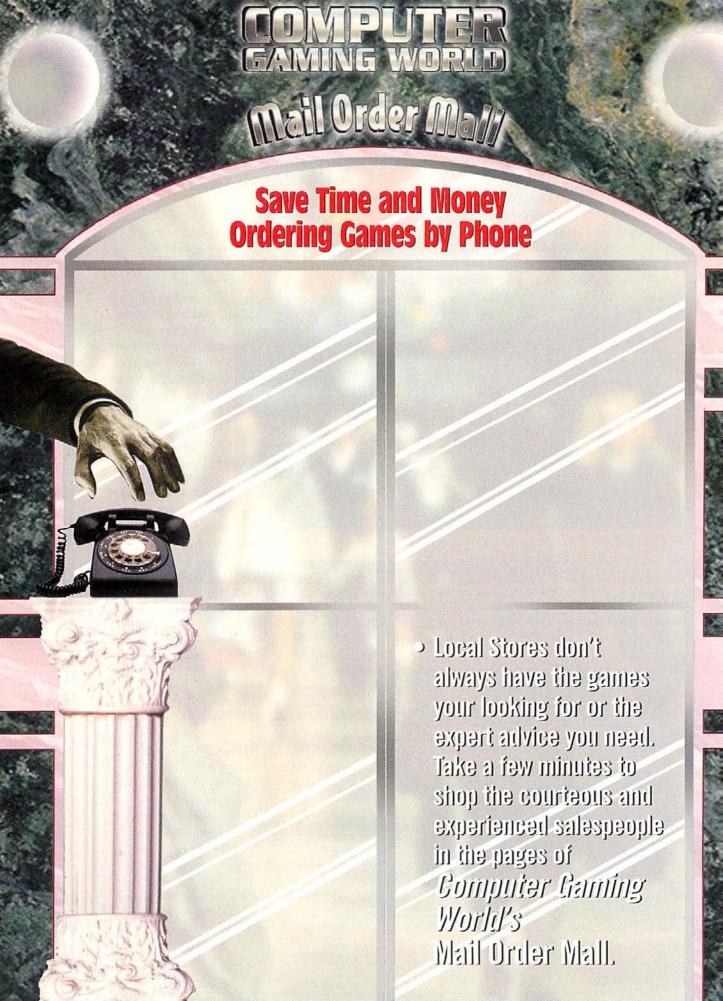
Sierra's RAMA is a pretty tough adventure game right from the start. If you find yourself stumped early on, the following tips should help set you on your way:

1. As soon as you descend into the base camp, the lights will go on. You might be tempted to go outside and explore—but don't. Instead, head back upstairs and go to the lockers, where you'll see a

ladder leading downward. Descend, and then grab the key ring hanging to the right of the "Inactive" sign, which hangs on the bomb-like device. This key will allow you to access a few crucial items still left in the lockers.

2. Once outside, travel to every region of the Central Plains, and scour each screen carefully for tiles and puzzle pieces laying around. You should be able to find seven puzzle pieces.

3. Go to the "London" area (at approximately 12 o'clock on your radar), get past the force field (it pauses after every nine pulses), and then insert the missing tile to get in the door. Once inside, hunt for five more puzzle pieces, and then press the yellow button on the RAMA display to open the two puzzle boards. The screen shot here shows the solution to the more difficult puzzle.

COMPUTER GAMES: SIMULATION

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688i Hunter Killer	NOW	$45	Falcon 4.0	08/97	$52	Monstr Trck Mdnss	NOW	$40	TFX EF2000	NOW	$3
AH-64D Longbow Gold	NOW	$46	Falcon Gold	NOW	$29	Muzzle Velocity	05/97	$48	TFX: X-22	NOW	$4
AH64 Flash Pnt Korea	NOW	$25	Fighter Duel 2 W95	08/97	$39	Mwarrior 2 Battlepk	NOW	$48	Team Apache	06/97	$4
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Golf	NOW	$34	Madden Football 97	NOW	$45	Solid Ice	NOW	$38	VR Soccer	NOW	S
Grand Slam '97 W95	NOW	$43	NBA Live 97	NOW	$45	Strange Golf W95	NOW	$39	World Hockey 95	NOW	S
Hardball 6	07/97	$42	NCAA Bball Final 4 97	NOW	$46	Ten Pin Alley W95	NOW	$40	World Series Baseball	NOW	S
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*MMX Section

Welcome to the Cooperstown of Computer Games. Here you'll find, raised upon pedestals, the games that broke the records, established the benchmarks, and held gamers in delighted trances for untold hours.

INDUCTION CEREMONY

Master of Magic
MicroProse, 1994

When SimTex followed up the Hall of Fame hit, MASTER OF ORION, with a 4X (explore, expand, exploit, and exterminate) game set in a fantasy environment, we were skeptical. We pictured a rehash of SSG's brilliant WARLORDS, but when we played MASTER OF MAGIC, what we experienced was a mixture of SID MEIER'S CIVILIZATION, MAGIC: THE GATHERING, and MOO, with a bit of a wargaming and role-playing thrown in. The map, exploration, and city construction sequences functioned like CIV's, so experienced gamers could jump right in. Creating a sorcerer was gratifying, and the development of the sorcerer's magical abilities was far more satisfying than most level advancement schemes in real role-playing games. Using and researching differing strands of magical studies made the game very replayable, as sorcerers built their spellbooks instead of using the card decks found in MAGIC: THE GATHERING. Plus, the research trees underlying the different schools of magic created enough interesting trade-offs that players felt their decisions really changed the way the game played. Tactical combat was clean, efficient, and colorful—with enough maneuverability to satisfy most wargamers. Both the art used for tactical combat units and the special effects for the spells were visually at the forefront, countering the slightly dated look of the strategic map and limited animation in some screens. Although MASTER OF MAGIC's original release regularly crashed, it was promptly patched and became a masterpiece of play balance, discovery, replayability, and gaming challenge.

Wing Commander III
Origin, 1994

Chris Roberts was the first designer to pull off the "interactive movie" concept with WING COMMANDER III. With previously unmatched cinematics wrapped around a groundbreaking 3D space sim, Origin managed to delicately balance gameplay and story. With a cadre of familiar actors including Mark Hamill *(Star Wars)*, Malcom McDowell *(Star Trek: Generations)*, and Ginger Lynn Allen *(On Golden Blonde)*, WING III's video sequences actually ranked up there with the best B-movie sci-fi. Sure, the Kilrathi suits looked a bit too cuddly, like Maine Coon Cats who'd had one can too many of Beef & Liver, but overall the movie sequences did a great job of pulling you into the story and giving you the feeling that you had a vested interest in winning the Kilrathi war. And unlike previous interactive movies, the gameplay didn't suffer in the name of "art." WING III's interactive space combat segments were unmatched—two years later there was still little room for improvement in WING IV. Fast, 3D space combat; good pilot AI; and crisp hi-res graphics made for some very intense missions. But the real key was the association of your performance in space combat with what was happening back on your ship—losing a wingman could have a significant effect on the storyline. WING COMMANDER III still holds its own against competing titles more than two years later—a testament to its top-notch production values.

Modern Inductees

ALONE IN THE DARK
(I-Motion, 1992)

BETRAYAL AT KRONDOR
(Dynamix, 1993)

DAY OF THE TENTACLE
(LucasArts, 1993)

DOOM
(id Software, 1993)

FALCON 3.0
(Spectrum HoloByte, 1991)

FRONT PAGE SPORTS FOOTBALL PRO
(Dynamix, 1993)

GUNSHIP
(MicroProse, 1989)

HARPOON
(Three-Sixty Pacific, 1989)

KING'S QUEST V
(Sierra On-Line, 1990)

LEMMINGS
(Psygnosis, 1991)

LINKS 386 PRO
(Access Software, 1992)

M-1 TANK PLATOON
(MicroProse, 1989)

MASTER OF ORION
(MicroProse, 1993)

RAILROAD TYCOON
(MicroProse, 1990)

RED BARON
(Dynamix, 1990)

SID MEIER'S CIVILIZATION
(MicroProse, 1991)

THEIR FINEST HOUR
(LucasArts, 1989)

THE SECRET OF MONKEY ISLAND
(LucasArts, 1990)

TIE FIGHTER
(LucasArts, 1994)

ULTIMA VI
(Origin Systems, 1990)

ULTIMA UNDERWORLD
(Origin Systems, 1992)

WING COMMANDER I & II
(Origin Systems, 1990-91)

WOLFENSTEIN 3-D
(id Software, 1992)

X-COM
(MicroProse, 1994)

Inductees Prior To 1989

BATTLE CHESS (Interplay Productions, 1988)
CHESSMASTER (The Software Toolworks, 1986)
DUNGEON MASTER (FTL SOFTWARE, 1987)
EARL WEAVER BASEBALL (Electronic Arts, 1986)
EMPIRE (Interstel, 1978)
F-19 STEALTH FIGHTER (MicroProse, 1988)
GETTYSBURG: THE TURNING POINT (SSI, 1986)
KAMPFGRUPPE (Strategic Simulations, 1985)
MECH BRIGADE (Strategic Simulations, 1985)
MIGHT & MAGIC (New World Computing, 1986)
M.U.L.E. (Electronic Arts, 1983)
PIRATES (MicroProse, 1987)
SIMCITY (Maxis, 1987)
STARFLIGHT (Electronic Arts, 1986)
THE BARD'S TALE (Electronic Arts, 1985)
ULTIMA III (Origin Systems, 1983)
ULTIMA IV (Origin Systems, 1985)
WAR IN RUSSIA (Strategic Simulations, 1984)
WASTELAND (Interplay Productions, 1986)
WIZARDRY (Sir-Tech Software, 1981)
ZORK (Infocom, 1981)

Computer game programs have grown so massive and the number of hardware configurations has become so huge that incompatibilities and glitches are frustratingly common.

Software fixes, or "patches," for buggy programs have become a necessary evil until we reach the golden age of standardized platforms and bug-free programs. New patches are in red.

1830 V1.4: Your rail empire will build more smoothly with enhanced AI (plus a truly "easy" option). The lesser memory requirements allow would-be Vanderbilts to run the program with a mere 4MB of RAM. Several new toggles enhance gameplay.

Age of Rifles V1.3: Commanders will find campaigning much facilitated by the variety of command control tweaks, scenario enhancements, and casualty rate adjustments, among other fixes. Be sure to reconnoiter the exhaustive READ.ME file.

Age of Sail V1.02: A host of improvements for Talonsoft's real-time wargame. Installing this patch should *not* overwrite your saved games.

Battleship V1.1: Hasbro's ship finally sails as it should have, with many of the multiplayer and timing issues solved by this patch.

Blood & Magic V1.01: As Aleric the Avenger on Level 3, you should no longer have a problem when the Brigand is attacked after the game is saved. Modem and Direct Link performance is improved as well.

Daggerfall V1.06.200: Installing a patch for Bethesda's acclaimed, but buggy, RPG is an adventure in itself, but this patch does correct many of the game's flaws.

Harpoon Classic 97 V1.62c: From clearer Caribbean-blue water to database additions, this patch fights hard to make a complex game more accessible.

Heroes of Might & Magic II: (DOS and Windows versions) This powerful patch spell adds a random map generator in the World Editor, fixes numerous small bugs, and clears up anomalies from the documentation.

Hind Win 95 Patch: New WSO operation modes, an audible undercarriage, optional wimp mode landing cushion, better keyboard controls, and provision for two-player R-60 flights are but a few of the welcome improvements to this popular sim.

Links LS V 1.30: Tee off without worrying about the ball flight bug, sound script bug, or match play bug. Use *only* if you have V 1.0—this patch is *not* for the European version!

Lord of the Realms 2: Milord, with this patched sword, you may slay the Internet Explorer scourge, without reinstalling yon Microsoft application.

MechWarrior 2 For Mac: Mac 'Mech-*meisters* now enjoy support for 603e and 604e processors and additional joysticks.

MOO II V 1.2: Just when you thought Antares was safe to conquer, intelligent aliens arrive bearing this patch, which promises many fixes.

NBA Full Court: Nets are animated on made shots, and the 24-second shot clock now resets correctly after all defensive fouls and illegal defenses. Alley-oop passes occur less frequently, and the AI is slightly improved.

Over the Reich V1.01: Gameplay hits a higher ceiling, with several adjustments to bomber defensive fire, frequency of reinforcements, angle of interceptions, high-G maneuvering, and banking.

Phantasmagoria 2: If you insist on finishing the game—and avoiding video lockups and other crashes—you'll need this patch. Be warned, however: this fix is *only* for DOS versions.

Risk: Finally, you can play the game hotseat!

Star General V1.01: Patches for both DOS and Win 95 are out, featuring a number of multiplayer and AI issues.

Steel Panthers V1.2: A compilation of updates from 1.1 to 1.19, featuring many clarifications, modifications and bug fixes for SSI's popular modern warfare game.

Tomb Raider: The 3DfX support patch is now final, and shows off Lara Croft's attributes in stunning high-resolution, complete with mip-mapping and more hotkeys.

Total Mayhem Patch: Improved walking in groups, revised map layouts, and a new SETTINGS.EXE file make for more mayhem, less frustration.

Wages of War 1.28: Several minor fixes for New World's mercenary strategy game.

War Wind V1.2: Multiplayer struggles for Yavaun are greatly enhanced by this upgrade, which works with both LAN and Internet. This patch has been tested for KALI compatibility as well. *Make sure* that you have DirectX 3.0 properly installed, and that *all players* are running the same version of WAR WIND. Also, saved games from earlier versions of WAR WIND will not work with V1.2

Wooden Ships & Iron Men V1.02: Sailing into battle with 8MB RAM is now a breeze.

▶ Check for new patches on the demo disc.

ZDNet

Patches can usually be downloaded from online networks (such as CompuServe and ZDNet), from *CGW*'s Web site (**www.computergaming.com**), or from the individual software publisher's Web site (see listing below).

Publisher Web Sites

Many patches are available from the publishers at the following sites:
Accolade: www.accolade.com
Activision: www.activision.com
Apogee/3d Realms: www.apogee1.com
Avalon Hill: www.avalonhill.com
Bethesda: /www.bethsoft.com
Blizzard: www.blizzard.com
Bullfrog: www.ea.com/bullfrog.html
Domark: www.domark.com
EA: www.ea.com
EA Sports: www.easports.com
Epic MegaGames: www.epicgames.com
id Software: /www.idsoftware.com
Interactive Magic: www.imagicgames.com
Interplay: www.interplay.com
LucasArts: www.lucasarts.com
MicroProse/Spectrum HoloByte: www.microprose.com
Microsoft: www.microsoft.com
New World Computing: www.nwcomputing.com
Ocean: www.ef2000.com
Origin: www.ea.com/origin
Papyrus: www.sierra.com/papyrus
Panasonic Interactive Media: www.panasonic.com/cool
Philips: www.aimla.com/games
Sierra On-Line: www.sierra.com
Spectrum HoloByte: www.microprose.com
SSI: www.ssionline.com
Take 2: www.take2games.com/main.html
Talonsoft: www.talonsoft.com
Virgin: www.vie.com

E ach 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 experience.

TOP ACTION GAMES

	GAME	COMPANY	SCORE
1	Tomb Raider	Eidos	8.54
2	Duke Nukem 3D	Apogee/3D Realms	8.53
3	Crusader: No Remorse	EA/Origin	8.25
4	The Need For Speed SE	EA	8.11
5	Quake	id Software	8.07
6	Crusader: No Regret	EA/Origin	7.99
7	The Need For Speed	EA	7.62
8	Descent II	Interplay	7.35
9	Syndicate Wars	Bullfrog	7.23
10	Magic Carpet 2	Bullfrog	7.22

TOP ADVENTURE GAMES

	GAME	COMPANY	SCORE
1	Pandora Directive	Access	8.36
2	Gabriel Knight 2	Sierra	8.36
3	Leisure Suit Larry 7	Sierra	8.12
4	The Neverhood	DreamWorks	8.11
5	Phantasmagoria 2	Sierra	7.81
6	Spycraft	Activision	7.73
7	Lighthouse	Sierra	7.63
8	Full Throttle	LucasArts	7.54
9	Titanic	GTE Entertainment	7.41
10	Under A Killing Moon	Access	7.31

TOP CLASSIC/PUZZLE GAMES

	GAME	COMPANY	SCORE
1	You Don't Know Jack	Berkeley Systems	8.14
2	Incredible Toons	Sierra	7.25
3	Incredible Machine 2	Sierra	7.10
4	Monopoly	Virgin/Westwood	6.86
5	Risk	Hasbro	6.55
6	Baku Baku	Sega	6.15
7	Battleship	Hasbro	6.14
8	Mind Grind	Microforum	6.00
9	—		
10	—		

TOP SIMULATION/SPACE COMBAT GAMES

	GAME	COMPANY	SCORE
1	Wing Commander IV	EA/Origin	8.52
2	MechWarrior 2	Activision	8.29
3	AH-64 Longbow	EA/Origin	8.15
4	EF2000	Ocean	7.95
5	U.S. Marine Fighters	EA	7.92
6	Silent Hunter	SSI	7.91
7	Privateer 2	EA/Origin	7.90
8	Advanced Tactical Fighters	EA	7.69
9	F-22 Lightning	NovaLogic	7.66
10	U.S. Navy Fighters	EA	7.63

TOP SPORTS GAMES

	GAME	COMPANY	SCORE
1	Links LS	Access	8.79
2	Nascar 2	Sierra	8.75
3	NHL '97	EA Sports	8.48
4	Grand Prix 2	MicroProse	8.31
5	FPS Football Pro '97	Sierra	7.73
	Nascar Racing	Sierra	7.73
7	FPS Football Pro '96	Sierra	7.68
8	Triple Play '97	EA Sports	7.66
9	NBA Live '96	EA Sports	7.63
10	NHL Hockey '96	EA Sports	7.61

TOP STRATEGY GAMES

	GAME	COMPANY	SCORE
1	WarCraft II Expansion Disk	Blizzard	9.05
2	WarCraft II	Blizzard	8.92
3	Red Alert	Virgin/Westwood	8.91
4	Heroes II	New World Computing	8.81
	Civilization II	MicroProse	8.81
6	C&C: Covert Operations	Virgin/Westwood	8.48
7	Command & Conquer	Virgin/Westwood	8.41
8	Heroes Of Might & Magic	New World Computing	7.98
9	Jagged Alliance: Deadly Games	Sir-Tech	7.94
10	Lords Of The Realm II	Sierra	7.85

TOP ROLE-PLAYING GAMES

	GAME	COMPANY	SCORE
1	Diablo	Blizzard	8.91
2	Daggerfall	Bethesda	7.65
3	Anvil Of Dawn	New World Computing	7.31
4	Stonekeep	Interplay	6.94
5	Albion	Blue Byte	6.28
6	—		
7	—		
8	—		
9	—		
10	—		

TOP WARGAMES

	GAME	COMPANY	SCORE
1	Steel Panthers Campaign Disk	SSI	8.71
2	Steel Panthers	SSI	8.50
3	Panzer General	SSI	8.31
4	Battleground: Shiloh	TalonSoft	8.13
5	Battleground: Antietam	TalonSoft	8.11
6	Battleground: Waterloo	TalonSoft	7.76
7	Robert E. Lee: Civil War General	Sierra	7.53
8	Battleground: Gettysburg	TalonSoft	7.47
9	Age Of Sail	TalonSoft	7.04
10	Harpoon Classic 97	Interactive Magic	7.04

	GAME	COMPANY	TYPE	SCORE
★ 1	WarCraft II Expansion Disk	Blizzard	ST	9.05
2	WarCraft II	Blizzard	ST	8.92
3	Red Alert	Virgin/Westwood	ST	8.91
★	Diablo	Blizzard	RP	8.91
5	Heroes II	New World Computing	ST	8.81
	Civilization II	MicroProse	ST	8.81
★ 7	Links LS	Access	SP	8.79
8	Nascar 2	Sierra	SP	8.75
★ 9	Steel Panthers Campaign Disk	SSI	WG	8.71
★ 10	Tomb Raider	Eidos	AC	8.54
11	Duke Nukem 3D	Apogee/3D Realms	AC	8.53
★ 12	Wing Commander IV	EA/Origin	SI	8.52
13	Steel Panthers	SSI	WG	8.50
14	NHL '97	EA Sports	SP	8.48
	C&C: Covert Operations	Virgin/Westwood	ST	8.48
16	Command & Conquer	Virgin/Westwood	ST	8.41
★ 17	Pandora Directive	Access	AD	8.36
★	Gabriel Knight 2	Sierra	AD	8.36
19	Panzer General	SSI	WG	8.31
	Grand Prix 2	MicroProse	SP	8.31
21	MechWarrior 2	Activision	SI	8.29
22	Crusader: No Remorse	EA/Origin	AC	8.25
23	AH-64 Longbow	EA/Origin	SI	8.15
★ 24	You Don't Know Jack	Berkeley Systems	CP	8.14
25	Battleground: Shiloh	TalonSoft	WG	8.13
26	Leisure Suit Larry 7	Sierra	AD	8.12
27	The Neverhood	DreamWorks	AD	8.11
	Battleground: Antietam	TalonSoft	WG	8.11
	The Need For Speed SE	EA	AC	8.11
30	Quake	id Software	AC	8.07
31	Crusader: No Regret	EA/Origin	AC	7.99
32	Heroes Of Might & Magic	New World Computing	ST	7.98
33	EF2000	Ocean	SI	7.95
34	Jagged Alliance: Deadly Games	Sir-Tech	ST	7.94
35	U.S. Marine Fighters	EA	SI	7.92
36	Silent Hunter	SSI	SI	7.91
37	Privateer 2	EA/Origin	SI	7.90
38	Lords Of The Realm II	Sierra	ST	7.85
39	Phantasmagoria 2	Sierra	AD	7.81
40	Battleground: Waterloo	TalonSoft	WG	7.76
41	WarCraft	Blizzard	ST	7.74
42	Nascar Racing	Sierra	SP	7.73
	FPS Football Pro '97	Sierra	SP	7.73
	Spycraft	Activision	AD	7.73
45	Warlords II Deluxe	SSG	ST	7.72
	Jagged Alliance	Sir-Tech	ST	7.72
47	Advanced Tactical Fighters	EA	SI	7.69
48	FPS Football Pro '96	Sierra	SP	7.68
49	Triple Play '97	EA Sports	SP	7.66
	F-22 Lightning	NovaLogic	SI	7.66

	GAME	COMPANY	TYPE	SCORE
51	Daggerfall	Bethesda	RP	7.65
52	NBA Live '96	EA Sports	SP	7.63
	Lighthouse	Sierra	AD	7.63
	U.S. Navy Fighters	EA	SI	7.63
55	The Need For Speed	EA	AC	7.62
56	NHL Hockey '96	EA Sports	SP	7.61
57	Fantasy General	Sierra	ST	7.56
58	Full Throttle	LucasArts	AD	7.54
	NBA Live '95	EA Sports	SP	7.54
60	Robert E. Lee: Civil War General	Sierra	WG	7.53
61	PGA Tour Golf 486	EA Sports	SP	7.51
62	CivNet	MicroProse	ST	7.49
63	Battleground: Gettysburg	TalonSoft	WG	7.47
64	Jetfighter III	Mission Studios	SI	7.44
65	FIFA '97	EA Sports	SP	7.43
66	Titanic	GTE Entertainment	AD	7.41
67	Tony LaRussa 3 '96	Stormfront Studios	SP	7.37
68	FPS Football '95	Sierra	SP	7.36
69	Descent II	Interplay	AC	7.35
70	MissionForce Cyberstorm	Sierra	ST	7.34
71	Sim City CD-ROM	Maxis	ST	7.32
72	Under A Killing Moon	Access	AD	7.31
	Anvil Of Dawn	New World Computing	RP	7.31
74	Zork Nemesis	Activision	AD	7.28
75	Incredible Toons	Sierra	CP	7.25
76	Virtual Pool	Interplay	SP	7.24
77	Syndicate Wars	Bullfrog	AC	7.23
78	Magic Carpet 2	Bullfrog	AC	7.22
79	Hexen	id/raven	AC	7.21
	Madden '97	EA Sports	SP	7.21
81	Phantasmagoria	Sierra	AD	7.20
	NHL Powerplay	Virgin	SP	7.20
83	Hind	Interactive Magic	SI	7.19
84	Terra Nova: Strike Force Centauri	Looking Glass	AC	7.17
85	Virtua Squad	Sega	AC	7.13
86	Relentless	EA	AD	7.12
87	Star Control 3	Accolade	AD	7.10
	Legends Of Kyrandia 3	Virgin/Westwood	AD	7.10
	Incredible Machine 2	Sierra	CP	7.10
90	System Shock	EA/Origin	AC	7.09
	Flight Unlimited	Looking Glass	SI	7.09
92	Hyper 3D Pinball	Virgin	AC	7.06
93	Age Of Sail	TalonSoft	WG	7.04
	Star Trek: TNG, Final Unity	Spectrum Holobyte	AD	7.04
	Harpoon Classic 97	Interactive Magic	WG	7.04
96	The Dig	LucasArts	AD	7.01
97	Road Rash	EA	AC	6.99
98	Caesar II	Sierra	ST	6.98
99	Hardball 5	Accolade	SP	6.97
100	Virtua Fighter PC	Sega	AC	6.96

Games on unnumbered lines are tied with game on line above. ★ = Top game of type. 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.

What's The Deal With... Psycho Geeks?

If you aren't interested in playing online games, then you can skip this column—it will be another episode of "Martin of Omaha's Wild Netscape." Today I'll be stalking and tagging the new pest that currently grips the online world: the dreaded Psycho-Geek.

Yes folks, this virulent and malefic mutation of the NetWit strain (the Net brings great power with *no* responsibility) has found a large and fertile hunting ground in the explosion of Web-based multiplayer gaming arenas. And, while tormenting the socially inept is always good for a laugh in my book, there is a slightly more serious aspect to these bitter loners of the online world. Now, I am not talking about the annoying 12-year-olds who keep using Caps Lock in the chat rooms, or the insecure guy who ties up C&C by sending inane gloats every time he kills a rifleman. No, these two types are titans of maturity and consideration when compared to the newest member of the Internet's Dysfunctional Freak Show: the Game Wrecker.

These are wretches so pathetic that winning—or even sheer obnoxiousness—doesn't quite deliver that shred of importance they seem to need. They can only have fun by making sure nobody else can. This virtual version of kicking over sand castles seems to manifest itself in three variations on the theme: Crashers, Cheats, and Killers.

The Crasher looks to be some kind of pathetic descendant of the Evil Hacker, and for some reason gets great pleasure in joining online

> **" A few pathetic freaks are turning online gaming into a serial-killer pre-school. "**

games, usually complex multiplayer strat games like DEADLOCK, CIVNET, or MOO II, and then deliberately doing things to crash the game after a few minutes or half an hour. Often, this seems to be precipitated by somebody daring to outplay them; crashing the game is some sort of pout—going home and taking the game with them, so to speak. Their revenge for being beaten is to make sure nobody finishes the game and all are left in awe of their magnificent computer knowledge. The more serious and annoying variety of Crashers are

the little freaks who can't just wreck one game at a time, they actually devote their energy to bringing down entire servers at once, so that dozens of us can appreciate their talents.

Then there is the Cheater. The online gaming Cheater isn't much different from his board-gaming counterpart, but since most of the mechanics of a computer game are not apparent, the use of cheating hacks in the online arena seems both more mysterious and immoral. They would be relatively easy to ignore, except for the fact that designers of online games seem to expend a disproportionate amount of time countering them, and creating all sorts of silliness like the annoying watchdog system in VGAPLANETS or STARS!, or the silly lack of a "save dungeon" ability in multiplayer DIABLO. The designer of *Monopoly* didn't waste his effort trying to make sure there was no way the banker could skim money from the tray; he just assumed you would notice sooner or later and reach across the board to smack your sibling upside the head. There has to be an analogous act for the online services to perform as well.

The final (and most psychologically disturbing) Psycho-Geek is the Killer. This junior-league misanthrope takes great pleasure in creaming newbies in combat games, or, even worse, he stalks normally cooperative games like MUDs with the sole intent of killing off fellow players—the weak-

er the better. It was one thing to watch pathetic wretches sneak up on new players in MERIDIAN 59 and then gloat about it as if they were doing anything except embarrassing the human race, but when I heard about freaks signing into DIABLO on BattleNet so they can kill other players, grab their stuff and exit the game, I finally had enough. What motivates a little freak like this? Is this behavior some sort of compensation for being utterly powerless in real life, or is it some kind of serial-killer preschool for those specimens so pitiful that pulling the wings off of flies seems too close to a fair fight? Only Mrs. Bates knows for sure, I guess.

Some of you out there reading this must be Psycho-Geeks—so c'mon, grab your crayons and let us know what the rationale is. Why do you get pumped doing this, and why do you lack the human faculty to be embarrassed by your own behavior? You are supposedly sentient beings, so tell us how you feel in the dark of the night, when you tell yourself that you are so un-likable that being hated is preferable to being ignored.

In the meantime, now that I have established the existence and behavior patterns of this annoying species, I will spend the next month figuring out some of the serious implications they have for online game design, and what, if anything, needs to be done about them. &

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This image is of the 3rd Green at Country Club of the South. The left half of the image is from the Course Designer; the right half of the image is an actual photo.

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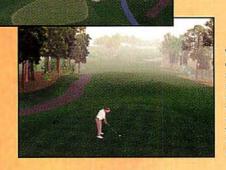

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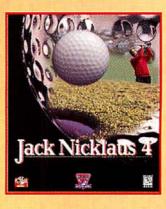
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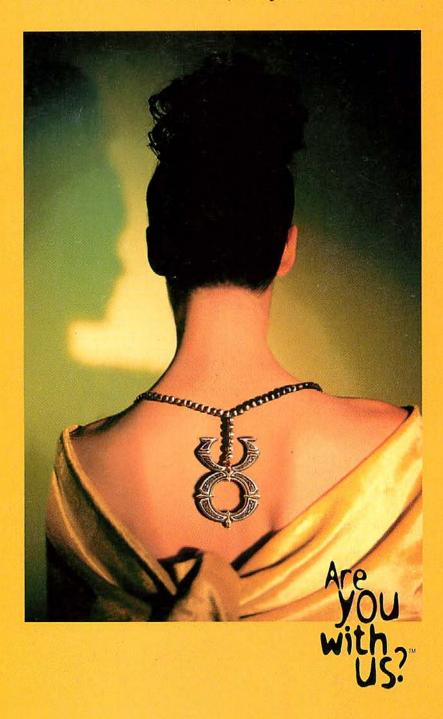*Call 1–800–245–7744 to order direct*

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