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Computer Gaming World

FEBRUARY 1998
NO. 103

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Praise for Jack Nicklaus

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NEW 10 courses! More than any other golf game including Lake Las Vegas, Ireland's Mt. Juliet and the exotic Hualalai.

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NEW Gary McCord. Hear the sharp and often hilarious commentary of this renowned CBS sportscaster.

NEW Lifelike 3D golfers modeled using the most advanced motion-capture technology for incredibly accurate swings.

NEW Artificially Intelligent computer golfers challenge you on the links. Play against opponents who will try to beat you every time you tee up.

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NEW The course designer is more powerful than ever. Import your own graphics and design custom courses.

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NEW Game physics now allow for uneven and hillside lies as well as ball drop feature.

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What better cure for the winter blues than the red-hot fires of this sequel to CGW’s 1996 Game of the Year?

Our own Dark Elf, Elliott Chin, descends into Hell’s Kitchen to find out how Blizzard plans to add more RPG elements, while keeping the action as fast and furious as the original.

BUILD YOUR DREAM MACHINE

Diablo fans aren’t the only ones condemned to hell. We all face the nightmarish prospect of upgrading our rigs every few years. This month we offer three different paths to peak performance. Regardless of your budget, we’ll show you how to build a gaming dynamo, whether you’re upgrading or starting from scratch.

PC SPORTS SPECIAL SECTION

Whether your sports fantasies consist of robbing Wayne Gretzky of a sure goal, slamming on Shaq, or even gambling on 4th-and-goal against the Steel Curtain, you’re sure to find some satisfaction here. Join coach Jeff Green and his all-star team as they separate the contenders from the pretenders in PC sports.

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ATI All-in-Wonder Pro

Creative Labs DVD Kit

KDS VS-19 Monitor

SC&T Force Feedback Wheel

GAMER'S EDGE

Jedi Knight

Fallout

Abe’s Oddysee

Age of Empires

Total Annihilation

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Scorpi

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[Our other columnists are on holiday this month.]

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ACT LOCALLY - KILL KAME:

NAME: Douglas McClure
HOMETOWN: Kokomo, IN
RANK IN NET FIGHTER: 1st
DEGREES EARNED: 235,000, traded 27,500 to buy Quake™ in the HEAT store

"I used to smile and hand people their French fries, secretly imagining a giant target on each one's chest as they walked to the ketchup stand. After I played others on HEAT.NET's Net Fighter, I felt better and suddenly all the targets disappeared!"

HEAT USER NAME: reniu
TOURNAMENT RECORD: 12-2
FAVORITE SPECIAL MOVE: swinging knife decapitation
TRASH TALK EXCERPT: "Now that's what you call a super-close shave!"

OTHER FAVORITE GAMES ON HEAT.NET:
Quake™, Hexen II™, Outlaws™, Diablo™, WarCraft II™

LOCALLY—get the HEAT Internet game network box at your local computer store! GLOBALLY— you can divert your anger off the streets and onto the net against real, live people.
NAME: Bill Shultz
HOMETOWN: Portsmouth, VA
RANK IN NET FIGHTER: 2nd
DEGREES EARNED: 197,500, traded
17,500 to buy Scud: Industrial
Evolution™ in the HEAT store

"I used to take out my
bullets, and on each one I
would write the name of each
person on my bus. Then a
friend showed me I could
purge my violent urges in
NET FIGHTER ON HEAT.NET
against other people. Thanks
to HEAT, the people on my bus
will never know how close
they came!"

HEAT USER NAME: thunderhammer
TOURNAMENT RECORD: 9-3
FAVORITE SPECIAL MOVE:
forked lightning kick
TRASH TALK EXCERPT: "Stop hitting
like a sissy girl!"
OTHER FAVORITE GAMES ON HEAT.NET:
Blood," Duke Nukem," Total Annihilation,
Shadow Warrior," Postal"
ANCIENT TREASURES.

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The first PC CD-ROM game featuring Video Reality,™ the all-immersive technology that puts you in the game.
War Is Heaven
SSG and Red Orb Team Up for a Fantastic Return to the Warlords Universe
by Tim Carter

War the Critical enters a dark and mysterious dungeon. He encounters an army of zombie programmers, and is victorious! He feasts a gem. A big fat gem, in fact—one that will keep him happy for oh, much more time than he has available.

Warlords III, brainchild of the crew at SSG and marketed through Broderbund/Red Orb, is a winner from the minute your fingers hit the floppy wrap. Based on one of the few strategy game designs that deserves the accolade "classic," Warlords III brings vastly improved depth, replayability, and variance to an already successful and enjoyable game.

Warlords III follows the basic turn-based system of its predecessors for solo/multiplay, but offers simultaneous turns for those with a hankering for multiplayer mayhem with human opponents. It runs smoothly and rapidly on my Pentium 120 and was fully functional in Windows 95.

REIGN OF HEROES
True to the original, gameplay in Warlords III revolves around the control of fortified cities. Individual units have a dizzying variety of attributes and abilities, and up to eight units may be grouped to form an army. Heroes may explore ruins for treasure or magical items, perform quests for similar rewards, and bestow a number of important combat bonuses to armies that march under their banner.

The command structure, which was pretty clean in Warlords II, remains quite impressive. Moving around the game will be simple even for someone unfamiliar with the interface.

Little, if anything, seemed to have been left out of previous versions, but quite a bit has been added here. For instance, some of your heroes, depending on their class, may now use magic to augment their abilities, which further depend on the race you are playing.

Unlike past versions of Warlords, individual cities no longer produce distinct units. Each race now has a pool of set unit types to draw on, consistent with that race's basic characteristics and attitudes. Any given race may have eight regular troop types, three mercenary types, four hero classes, four magical allies, and one boat unit.

The first time I played this system, I felt a tiny twinge of disappointment. The more limited armies tend to be a bit dull after a while, and battles over cities aren't as massive in proportion. But after only a few games, I could clearly see the wisdom of this design decision. By limiting armies to a consistent and fixed set of troops, the designers have greatly extended Warlords III's replay value. A game on the same map but with a different race is, functionally, an entirely different game. Moreover, within each game, each of the different races you fight present a somewhat different threat, based on the strengths and weaknesses of their core units.

WARLORDS CUBED
For those who love to mix and match, the scenario setup screen lets you create your own race using any of the preexisting units. You are limited only by the total number of different unit types per race.

The setup screen offers a huge number of options that bold replay value as well—including a predilection on map design (an important issue when playing against human opponents), an option that allows neutral cities to grow in power if attacked, and a random placement of starting cities.

In addition to the twelve preset scenarios, the game comes with a random scenario generator and—to surprise—an entire campaign game.

As just one example of the replay value in Warlords III, the classic thirteen map from the original game is included in one of the preset scenarios. This map constituted the entire game in Warlords II, but in Warlords III, the game is still a separate campaign.
MIGHTY TIM: Heroes play an important role in Warlords since they can hunt for treasure, embark on quests, cast spells, and bestow bonuses on your troops. Without many of the options and variations available in previous games, Warlords III constitutes a tiny fraction of the core game. Having spent a dozen or so hours on the Illium map already, I can say with some certainty that gamers will not only run out of things to do with Warlords III.

ALL TO ARMS

What you do in Warlords III, of course, is fight. A lot. The core Warlords combat system hasn't changed in structure, but a wide range of modifying factors has been added, giving gamers more options when building your armies or taking on the enemy. For instance, individual leaders or units may contribute positive (to your side) or negative (to your opponent's side) modifiers, while many units also have special attributes or abilities such as assassination attacks, archery attacks, poisons, and disease.

A major asset of past Warlords games was the strength of the AI. Warlords III is no slouch in this department, although I found the "Psycho" level somewhat easier than I would have expected for the most difficult level. While the computer still fails to manage its heroes properly (not picking up treasure lying on the ground when an enemy hero is killed, and ignoring some units), it has become much more adept at knocking off your heroes, particularly if you leave them exposed. I was especially impressed when the AI, during the fifth or sixth scenario of the campaign, made a systematic effort to kill off the heroes. I had been carefully nurturing my powerful higher level paladins and mages. The computer will also raid your home territory frequently and is not averse to scorched-earth tactics if it starts to lose.

According to the manual (generally well done and useful for learning the game and for reference), the diplomatic system has been tweaked considerably from earlier versions. I must admit that I didn't find much functional difference in the new nations. The computer players tended to fight amongst themselves until I had become the biggest single power on the map, at which point they ganged up on me.

FRIENDS AND FOES

Along with the campaign game, the greatest addition to Warlords III is the multiplayer option. Playing via the Internet or a LAN, up to six players can compete in a real-time/simultaneous turns mix. Joining down enemy heroes and deciding the order in which to move—and saving reserves to enact at the last second—are new key decisions when playing against five opponents.

This game has little to dislike. If the premise doesn't interest you, you may do better shopping elsewhere, but for fans of fantasy and strategy, and just strategy for that matter, Warlords III is a winner from the freshest even start to its Solitaire elephant shock cavalry.

APPEALS: Anyone who likes strategy games.

PROS: Fun, ultra-clean; tons of replay value; great campaign; multiplayer support.

CONS: We're still looking.

Campaigning for Warlords

New to the Warzone system, the campaign game brings together a series of scenarios around a plot that has you lead the Solitaires against the evil forces of the undead Lord Ban. Ban has at least one primary ally, and even the powers that are supposedly in your union of good are as likely to send their armies against you as against the principal foe.

The campaign allows you to carry your top heroes and a limited number of magical items from one scenario to the next, which becomes useful as your heroes grow in power. Be careful, though, as the computer becomes quite adept at picking off unguarded high-level heroes left floating too near the front lines.

After each scenario you get the option of upgrading some of your core military units. I found this almost as attractive as carrying heroes forward. Being able to give your heavy infantry more movement and a better attack factor constitutes a major bonus over the course of multiple scenarios.

I also found the scenarios in the campaign—which can't be played separately—to be among the more challenging preset games. In many, your enemies get natural advantages from terrain, the placement of natural cities, or the starting disposition of forces. This makes a nice change of pace from scenarios in which each side starts out equal.

FOR THE SOLLITAIRES A welcome addition is the campaign in Warzone III, in which you battle the undead forces of Lord Ban. A welcome addition is the campaign in Warzone III, in which you battle the undead forces of Lord Ban.
Don’t Myth It

The Hottest Sports and Strategy Games, Plus a Host of Other Goodies on This Month’s CD

Str ategy and sports gamers, it’s your lucky day! This month’s CD-ROM is chock-full of your favorite game-types. The definitive hot pick is our exclusive Myth demo, featuring a special scenario and unit not available anywhere else. If you’re still wondering whether or not to buy Activision’s Dark Reign, our latest demo of this real-time strategy game should help you to make up your mind.

For sports fans, there are demos of both the hockey pinnacle, NHL 98, and the promising basketball upstart, NBA Action 98. For baseball fans, we’ve bundled a set of utilities that promise to breathe some new life into the Tony LaRussa series and Old Time Baseball. And if you’re a fan of arcade racing, be sure to check out Daytona USA Deluxe. Golfers, be sure to check out Empire’s The Golf Pro, starring Gary Player.

We’ve also included a demo of the fast-paced pirate game, Shipwreckers! and Sir Tech’s new action-adventure, Excalibur 2555. TEN has given us a selection of its online games, and for puzzle fans, we have both You Don’t Know Jack 3 and You Don’t Know Jack TV. So what are you waiting for? Get started!

How To Use the Disc

The CD is Autoplay-enabled and should begin when you load it into the CD-ROM drive. Otherwise, select Run from the Program Manager in Windows 3.x, or Start Menu in Windows 95, and type D:RUN-ME (where D is the letter of your CD-ROM drive) to run it from this CD. You may type D:INSTALL to create a CGW program group on your Windows desktop for future use. Many demos require the disc to be in the drive to run; therefore, we recommend installing the demos from our disc.
999,999 people now have the ability to wipe you out in your sleep.
Of course, they have to sleep sometime too.
Good morning neighbor: Welcome to your new home — an energy-rich planetoid that has just entered our solar system. With its arrival comes your opportunity to claim an unspoiled plot of land. You own it. You mine it. You defend it. And if you do not heed the warnings that follow, you may be forced to surrender it.

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Are you in HEAT? You should be! For more information on the game network where you can play all your favorite games against live competition for free, check out www.heat.net.

10Six
**Praise from the media:**

"... a sharp 3D engine that looks like it could go head to head with Quake*." "It’s like Rebel Assault* with real game play."

"... brilliant graphics." - PC Gamer

"... a thinking man’s Descent." - Gamespot

"Action gamers take note!" - Computer Gaming World

"Defiance seems destined to achieve noteworthy status." - Computer Game Entertainment

**Game Features:**

- First person combat simulator, Battles with 18 powerful enemies
- Direct 3D enhanced, MMX* ready
- TruFlow™ technology for lag-free motion
- Gun firepower with LaserLok™ twin-beam targeting system
- Awesome sound on 8 original sound tracks, 4 professional voice actors and over 200 spoken lines of story dialogue
- Death Match play for up to 8 players in 9 challenging levels

*Trademarks of their respective owners.

**High Praise for ACHTUNG SPITFIRE...**

"Achtung Spitfire™ is a wargamer’s dream: dozens of scenarios, an excellent AI, a scaleable skill system, intuitive interface, multiplayer capabilities, and the list goes on. Throw in gameplay that makes you sweat bullets and causes you to think in terms beyond odd columns, and you have a fantastic game." - Gamespot.com

*Computer Gaming World* magazine’s headline announced, “Avalon Hill’s Finest Hour. This Battle of Britain Mixes Real-Time Strategy With Turn-based Tactics.” The reviewer went on to say, “For any gamer fascinated by the complexities of many-on-many air combat tactics, or the Battle of Britain in particular, ACHTUNG SPITFIRE’s blend of depth, variety, and long-term replayability is sure to please.”

CG Choice Award; Rating: *****

More great praise from *Computer Games Strategy Plus* magazine. Commenting on the player's ability to control each plane’s actions, “This strategic element provides the game with that ‘up until 2:00 a.m.’ dimension that all great wargames possess.” “Highly recommended.” Stamp of Approval Award; Rating: *****1/2

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Death of the Dream

Are Game Publishers Becoming More Market-Savvy or Just Plain Greedy?

The following quotations are taken from the charter of an established computer game publisher. See if you can identify which one. "The work that we publish will be work that appeals to the imagination, as opposed to instincts for gratuitous destruction... Not only will we adhere to these values in our own work, but we will also support the efforts of others working toward the same end. Above all, we will work with an overriding concern for quality, integrity, and the unimpeded process of imagination."

My personal favorite happens to be, "Most businesses today are founded on the idea of making the greatest possible profit in the least possible time. We are not. We are founded on the idea of accomplishing great things."

Of course, this is the same company in which a well-placed executive once said he would sell dog manure to the customers if he had the right box. It's the same company in which a respected producer asked, "Who cares about the customer, anyway?" Another respected producer once described the company's culture as "enforced mediocrity—the Macintosh mindset."

Fortunately, the company wisely sacked the award-winning producer who allowed an Amiga game to languish until the machine was nearly dead and begged, "Can we please just ship this [expletive deleted]?"

Ironically, the company just did what the sacked producer essentially wanted to do. They rushed a high profile product out the door like a Casanare section, but went...

"A well-placed executive said he could sell dog manure to customers if he had the right box."

Then, when that game began to increase the earnings expectations of those new "stars," the companies started deemphasizing the names of the designers and developers on both game boxes and game documentation. More than one company has made the pledge that it was going to hold games until they were finished and ready for release, only to reverse itself when the end of the fiscal quarter drew near. More than one company has pledged that it would support the consumer by adding such features as network play or scenario editors (free of charge) in later patches, only to double-cross gamers with retail add-on packages that were required in order to actually get those same promised features.

Naturally, many savvy readers in the industry are going to glance at this editorial and ask questions that seem, on the surface, to be fair. "Do you think companies can really stay in business while ignoring the profit motive?" "Do you believe for one moment that we could share technology with our competitors without losing our edge?" "Are you saying that we've reduced our commitment to quality?" (My answers—by the way—are no, yes, and yes.)

The truth is that I believe that quality will lead to profit. Shortcuts to quick profits are a negative investment. Gamers may buy one crappy, unfinished product from your company, but they aren't likely to buy two. Yet publishers continue to cut their customer service staffs, reduce the time to play-test their games, and overwork their quality assurance staffs. Why? Because those are cost centers instead of profit centers. This bodies ill for the industry's future.

Further, sharing technology instead of constantly trying to fragile out some circumspect solution that fights emerging industry standards (and ends up doing one thing better while it does two or three things worse) would advance the industry instead of setting it back. If, as the dreamers in our industry wish, we had standardization, we could reach more potential gamers through ease-of-use and lower costs (for both developers and consumers). Let the wars be fought on the design front, not on the technology front.

Now, I'm enough of a realist to know that we can't always be faithful to our ideals. Changing circumstances force us to compromise, whether we like it or not. Still, once in a while, it helps to go back and look at what we want to be in order to make a course correction and get there. If, of course, we ever believed in the ideals we proclaimed in the first place."

FEBRUARY 1998
HALF-

Voted Best Action Game at this year’s E3
“Half-Life may very well redefine the standard for action games.”
—PC Games

“The best first-person shooter we’ve seen.”
—Gamespot

“Half-Life has some of the best adversaries in the entire action game genre...[it] eclipses the enemy AI in any other action game to date.”
—Computer Gaming World

“Gorgeous dynamic textures and intricate levels.”
—PC Games

“Valve’s skeletal animation system provides gamers with some of the most eerily life-like opponents they’ve ever seen.”
—Computer and Net Player
LETTERS

BLADE BUMMER

There was one game noticeably absent from your Holiday Hot 100 Buyer's Guide: BLADE RUNNER. I was wondering if there was any reason why it didn't even make the "honorable mention" section.

Jeremy Jones
from the Internet

ULTIMA OVERLOOKED?

Your December Buyer's Guide had no mention of ULTIMA ONLINE! I have been a reader of CGW for several years and had the Buyer's Guide a valuable tool for keeping me aware of the games that are worth purchasing, but I am surprised to have missed mentioning one of the biggest advances in gaming technology in a long time.

Steve Wetzel
from the Internet

There's no question that ULTIMA ONLINE is breaking new ground and is worthy of coverage. Indeed, we have written about the game numerous times over the course of its development. However, our Buyer's Guide was strictly for games we could wholeheartedly recommend. ULTIMA ONLINE, in the version we played, was so unstable, buggy, and unbalanced, that — despite its potential — we simply could not recommend it. For a better description of the problems, see our review in this issue.

LETTER OF THE MONTH

APACHE UPRISING

I just finished reading the November 1997 issue of CGW, and it was a little upset with a comment made in the "Longbow Restrung" article.

Before I continue, let me address the history of rivalry between the different aircraft associated with the United States Army. Ever since the Vietnam conflict, when the Army realized that it needed different aircraft for different missions, pilots of each type of aircraft have claimed to be the "best" Army pilot, regardless of aircraft or mission.

Since I am an MH-60A Apache pilot recently back from a tour in Bosnia, I took some offense to the comment that the Kiowa Warrior was more suited to recon than an AH-64. It was claimed that "because it has a nose-mounted TADS, the Longbow must be completely exposed to the system."

As all Apache pilots and, I'm sure, many computer gamers know, employing your equipment to exploit its strength is integral to winning the battle. The easy method of laterally unmasking prevents exposing the entire aircraft. Simply put, poke the nose of the aircraft out from behind some tree perpendicular to where you wish to see, then orient the TADS 90 degrees to either side and take a look for you. This method exposes only the nose of the aircraft, which isn't much more than a TADS on a Kiowa.

As with most equipment, whether computer-generated or real, knowing it intimately is key to employing it properly.

Brian C. Stehle
Cpt., U.S. Army

FEBRUARY 1998
There's a crime wave in the city of Freeport and it's linked to the unholy drug named U-4. People are disappearing, and mutants are taking over the streets. Sources say that SinTEK Industries and its lethally gorgeous CEO, Elexis Sinclaire, are connected to the madness. As a top security professional, it's up to you, Colonel John R. Blade, to discover who or what is behind this sinful plague.
Over-the-Top Action
blast your way through complex levels of unholy terror as you investigate the secret source of the crime epidemic plaguing the city.

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Walk, run, swim, and even drive through six distinct worlds enriched with beautiful graphic detail and a rich interwoven story line.

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Your arsenal includes laser-sighting sniper rifles, remote-control detonation devices and extreme weapons so powerful they will rip you apart.

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look at it.
ARCADIAN INQUEST

I am unable to remember what game compilation you mentioned in your magazine that included Port, Position. Can you help?

Nancy Darnell
Round Mountains, NV

Sure, we'll answer your letter together with this next one.

I am looking for arcade games from the early/ mid-1980s. I have seen the two Microsoft Arcade packages, but also would like to know if there are other games from that era available. Specifically, I am looking for games such as DONKEY KONG, DEFENDER, TRON, and GALAXIA.

Tiedl Williamson

We can't help you much with those particular titles. There is a version of GALAXIA on the Web (www.fs.com/people/minsky/foma2/calgala.html), but as with many games on the Web, it could be shut down by the trademark holder at any time. For the benefit of others who may be looking for these classics, here are the lists for five different compilations:

Atari 2600 Action Pack 2 for Windows (Activision) BATTLEZONE and TRAPSEY

Return of Microsoft Arcade: DIG-DUG, GALAXIA, PAC-MAN, and PORT, POSITION

HOLLYWOOD COMMANDER

I have always enjoyed the WING COMMANDER series. I recently saw the movie Starship Troopers and was wondering if Origin plans to come out with a WING COMMANDER movie.

Calvin Ng
from the Internet

FIRING LINE

We prefer that you email us at one of these addresses: CompuServe: 76703,622 Internet: 76703,622@com- puserve.com

Or write to the following address: CCW, Letters to the Editors, 135 Main Street, 14th Floor, San Francisco, CA 94105

We reserve the right to edit all letters for space or clarity.
Some Say Role Playing Is Dead...
Experience the
NEW WORLD COMPUTING
A DIVISION OF THE 3PO COMPANY
Rebirth of a Legend.

The Ironfist Dynasty toters on the brink of destruction. Embark on a perilous adventure to save Prince Nikola’s kingdom from total ruin. From the depths of the deepest dungeons to the intrigues of the royal court you will lead a band of adventurers on an amazing journey of depth and intelligence.

Control your own destiny in a non-linear fantasy world where nothing is preordained.

Choose whether to play in real-time or turn-based combat mode.

Engage in hundreds of entertaining mini-quests that branch off from the main saga.

Experience breathtaking 16-bit, 65,000-color graphics in a smooth-scrolling, high-res environment.

Might and Magic VI
The Mandate of Heaven

www.3do.com  800-251-9563
Jacksonville Wins Super Bowl

CGW Sims the Big Game So You Don’t Have to Watch

Another boring Super Bowl party? Don’t waste your time! Using Sierra’s Front Page Sports: Football Pro 98, CGW has already determined that the Jacksonville Jaguars, behind lefty QB Mark Brunell (who throws right-handed in FPS 98, by the way) will dump Steve Young and the 49ers by the rather unusual score of 12–8.

This year’s Super Snooze Fest will be led by Jacksonville’s Natrone Means, who will run over and around the Niners defense for 104 yards. Now that you know, you don’t have to blow Super Bowl Sunday in front of your television. Blow it in front of your computer instead, playing some of the season’s hot new games.

How did we make our predictions? Simple. First we downloaded the mid-season player ratings from Gridiron Flashback, an excellent Web site (http://www.courant.infi.net/~mpfi/lpsf.htm) devoted to the Front Page series. Then, using our newly updated rosters, we played the season from Week 13 onward with FPS 98’s Fast Sim feature. We cheated a little by starting with the NFL teams’ actual records through Week 12. Although there were a few surprises (the Broncos choked in the playoffs again, for example), the teams that made it to the Super Bowl certainly seemed plausible. For the big dance, we played a standard Front Page game, with the CPU controlling both teams and using the regular physics-based model. Obviously, the Jags had better physics than the Niners.

—Dennis McCauley

PLAYOFFS

AFC Championship

Miami at Jacksonville

Jacksonville 26–17

NFC Championship

Green Bay at San Francisco

San Francisco 20–9

Super Bowl

San Francisco 49ers vs. Jacksonville Jaguars

Jacksonville 12–8
I-'76 Funks You Again

The '70s are back and bigger than ever. Intersate '76 is also coming back for a second go-round in the form of a multimission expansion pack—Intersate '76 Nitro Pack: The Vigilante Files. This game has a long name and a long list of enhancements for the original game.

The Nitro Pack is a pseudo prequel. It's a collection of stand-alone missions that take place before the events of Intersate '76. There is no campaign or running story, but the missions all have the same informative, colorful voiceovers and goals. You'll be able to play several missions as Taurus, Skeeter, or Jade.

The Nitro Pack has 3D support right out of the box for the 3DFx, Rendition, and STB Nitro cards, as well as force feedback support. The graphics for the Nitro Pack are a treat, and the gameplay is boosted with the inclusion of nine new cars and several new weapons. Multiplay is also enhanced with capture-the-flag and traditional racing scenarios.

Best of all, the Nitro Pack does not require a copy of the original game. The Vigilante Files should be available in stores by March 1998. —Elliott Chin

The visual experience is enhanced, while the great gameplay of the original I-'76 remains intact. The Nitro Pack offers new vehicles such as an Army Jeep, a limousine, an ice cream truck, and a hearse.
**PLAYING LATERALLY**

**CGW Survey**

<table>
<thead>
<tr>
<th>Game</th>
<th>Weeks on Chart</th>
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</thead>
<tbody>
<tr>
<td>1. Diablo (Blizzard/CEC)</td>
<td>10</td>
</tr>
<tr>
<td>2. Quake (id Software)</td>
<td>14</td>
</tr>
<tr>
<td>3. Civilization II (MicroProse)</td>
<td>21</td>
</tr>
<tr>
<td>4. Red Alert (Westwood/Virgin)</td>
<td>11</td>
</tr>
<tr>
<td>5. Dungeon Keeper (Bullfrog/EA)</td>
<td>3</td>
</tr>
<tr>
<td>6. Heroes II: POL (New World Computing)</td>
<td>9</td>
</tr>
<tr>
<td>7. Duke Nukem 3D (3D Realms)</td>
<td>7</td>
</tr>
<tr>
<td>8. X-COM: Apocalypse (MicroProse)</td>
<td>3</td>
</tr>
<tr>
<td>9. Heroes II (New World Computing)</td>
<td>10</td>
</tr>
<tr>
<td>10. Tomb Raider (Eidos)</td>
<td>7</td>
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*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 readers overall "quality ranking" in the Top 100.

**PC Data Best-Sellers**

<table>
<thead>
<tr>
<th>Game</th>
<th>Weeks on Chart</th>
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<tbody>
<tr>
<td>1. Microsoft Flight Simulator 98 (Microsoft)</td>
<td>1</td>
</tr>
<tr>
<td>2. Age of Empires (Microsoft)</td>
<td>31</td>
</tr>
<tr>
<td>3. Myst (Broderbund)</td>
<td>5</td>
</tr>
<tr>
<td>4. The Sailing Ship (Mind)</td>
<td>4</td>
</tr>
<tr>
<td>5. Lego Island (Mindscapes)</td>
<td>2</td>
</tr>
<tr>
<td>6. C&amp;C: Counterstrike (Westwood-Virgin)</td>
<td>6</td>
</tr>
<tr>
<td>7. Civilization II (MicroProse)</td>
<td>21</td>
</tr>
<tr>
<td>8. Age of Empires (Microsoft)</td>
<td>31</td>
</tr>
<tr>
<td>9. The Sailing Ship (Mind)</td>
<td>4</td>
</tr>
<tr>
<td>10. NHL Hockey '98 (EA Sports)</td>
<td>2</td>
</tr>
</tbody>
</table>

*This week's data was compiled by sales and distributors as featured in PC Data during December 1997.

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**Low-priced Software, No Mumbo Chumbo**

The holidays are over and you're broke, but there are tons of games out there that Santa didn't bring you. Well now there's a way to get your mitts on all the hot titles, right when you want them, without giving your bank manager an embargo.

Following in the footsteps of companies like Amazon.com and Barnes and Noble online, Chumbo Corporation recently made its debut in the world of e-commerce. Instead of selling books, however, Chumbo is offering software—with all the hottest games available at an extra-low price. Chumbo claims that because it is conducting business via the Internet, which requires less overhead than a regular business, it is able to pass on the savings directly to the customer. Chumbo has established a partnership with the Point Group, a company that specializes in creating bundles of software, who will put together exclusive packages, providing added value for users.

Chumbo has also teamed up with software distributor Mersel to ensure the availability of software as soon as a customer places an order. Gamers can also place advance orders to be guaranteed a copy of an eagerly anticipated title the day it ships.

According to Chumbo's founder and president, David Praat, the more a gamer uses the site, the more personal the experience will become. Chumbo will watch and analyze the behavior of individual shoppers, pinpointing their interests and presenting them with special offers in line with their specific needs. Should customers request it, Chumbo's Push technology will automatically download demos, reviews, and news to the person's machine when it is not in use. The site will also feature game reviews and tips provided by ZoNet. Ready to shop?

Head over to www.chumbo.com and you're sure to pick up a bargain. —Charlotte Panther

---

**Short Takes on Games and Hardware Released Just Prior to Press Time.**

**Blade Runner**

*Il Curse of Monkey Island* represents the pinnacle of old-school adventure gaming. *Blade Runner* does the same for new-school adventuring. Though it may not be a true 3D real-time adventure, it's still an excellent game. The beautiful pre-rendered backgrounds and the stunning sound effects borrow elements from both the film and the novel to create a tactile atmosphere. The game is nonlinear, and gameplay involves randomly deciding who is, and who is not, a Replicant. Though the player characters are extremely pixelated (a disappointment after seeing the cutscenes), there are some interface issues, the overall product is superb. —Thierry Nguyen

*Westwood Entertainment, (800) 874-4607*

www.westwood.com
Win 95 CD-ROM

**Virtual Pool 2**

Interplay/VR Sport's Virtual Pool 2 has some cool new features, including 3D hardware accelerator support (via Direct3D), greatly enhanced graphics, and a better cue-control system. One frustrating thing VP2 does on install is make you sit through a trailer for an upcoming Interplay Star Trek title. After that annoyance, however, VP2 is terrific, offering a wide variety of billiards games, including nine-ball.
Action Guys & Dolls

Nothing beats the movie business for merchandise tie-ins, but if more software companies follow the example of GT Interactive and Eidos, it might not be long before fast-food vendors are touting five-inch miniatures of your favorite computer-game character with your cheeseburger.

GT has joined forces with toy maker ReSaurus to develop a line of Duke Nukem action figures, based upon the smart-mouthed antihero of Apogee/3D Realms's Duke Nukem game series. Available now, Duke comes armed with a two-handed Devastator, two Uzis, and a bloody knife. If you buy over the Internet, [www.resaurus.com/dukepage1.html](http://www.resaurus.com/dukepage1.html) your purchase will include a Duke Nukem Shareware CD plus a limited-production Freeze Thrower, for $12.99. The retail version ($7.99) will not include the CD, and only 1 out of 12 units sold in stores will include the special-edition weapon. ReSaurus has three other Duke 3D characters currently in development—Pigcop, Battlelord Boss, and Dabrain. Action figures based upon the upcoming Duke Nukem Forever characters are also in the works, and will be ready in time for the release of the game.

Move over Barbie—Lara Croft is now gracing toy store shelves, too, Roy Bu, the creators of Marvel's The Amazing Spiderman, The Incredible Hulk, and X-Men action figures recently teamed up with Eidos to create an action figure of the sassy Tomb Raider heroine. Lara comes armed with an assortment of weapons from the game, and the toy line also takes into account the enhancements Lara received in Tomb Raider II. At press time, the action figure's exact price had not been determined, but Eidos did confirm that it would retail for less than $10. —Charlotte Panther

Summer Sim Sweepstakes Winners

You may remember that way, way back in August, we held our Summer Sim Sweepstakes Competition. Well, the good news is that we have three lucky winners. The bad news is that not all of the games in our prize deluxe flight sim package have been released yet. But, what the heck? We've kept you in suspense long enough. So, now, the moment you've all been waiting for...

Grand Prize: Roderick LeVina of Rock Hill, SC

Roderick wins the Threshold Technologies Thunderstruck: a Cirrus Products Focus FX joystick, a larvae instinct module, and the deluxe flight sim package.

1st Prize: Fred Wickman of Farfield, CA

Fred wins a Flight Interactive's EazyMax joystick, a Spacewar! Powerpack Grouped and the deluxe flight sim package.

2nd Prize: Dwane Warden of Houston, TX

Duane wins our deluxe flight sim package, which includes one of the best flight sim sound packs.

The Curse of Monkey Island

After six long years, Guybrush Threewood finally makes his triumphant return in the latest installment of the Monkey Island series. While other companies were busy cloning Myst, LucasArts stuck to its guns, learned from its mistakes, and created a new adventure game in the old school style.

Featuring lush, colorful graphics, decent voiceovers, and witty dialogue that zings back and forth between Guybrush and the other characters, Curse of Monkey Island shows that you can still make a great adventure game the old-fashioned way. This, along with Zork Grand Inquisition, could mark the beginning of an adventure game renaissance.

—Thierry Nguyen

LucasArts Entertainment,
(800) 985-8227
www.lucasarts.com
Win 95 CD-ROM

News Flash

**Origin** has granted an option to acquire the live-action feature film and television rights to its Win-Commander game series. The rights were granted to Digital Anvil, the company led by Video Commander creator Chris Roberts. The film will be based on characters, storylines, and themes from titles one through four of the Win-Commander series, which were developed by Origin over the past eight years.

**After daring to tear apart great American institutions such as Star Wars and The X-Files, Parody Interactive is back, and this time its unfortunate victim is a certain Mr. Gates' entitled Microsoft Winetwist.** Parody's product poke fun at Microsoft—the company, the software, and the man who made it all possible. Bill's Personal Outlook allows you to snoop through Mr. Gates' "do" list, small, and journal. In the board game The Roll Ahead, players can "Be Like Bill" acquiring corporations and investing millions. Winblox! Exploder lets you shoot your way through a virtual complex of computer bugs and error messages. Our favorite, though, is the Billagotchi—a cyberpet that thrives if you feed it lots of money, but will throw tantrums if you don't give it the attention it deserves.

**Speaking of cyberpets**, Tamagotchis creator, Bandai, has developed a CD ROM version of the lovable little alias, available for about the same price as the key chain pet. The CD ROM includes a couple of extra features, the best of which is a day care center where you can dispose of your pet, without feeling guilty, whenever other duties call. For more information head to www.bandai.com.
Discover a new horizon in classic AD&D® role playing.

Baldur's Gate is set in the exotic FORGOTTEN REALMS® on a visually dazzling, real-time RPG experience. This wondrous place, where true role playing on a grand scale first began, now comes alive in stunning graphic detail. Your quest? Lead a party of adventurers on a journey to save the Sword Coast region from a sinister plot that involves impending war, dark prophecies, betrayed alliances...even your own soul.

- Huge game world - 5 CDs filled with nearly 10,000 game screens in striking SVGA, all rendered in glorious 16-bit color
- Incredibly detailed structures and environments; dynamic lighting, day/night, rain, snow, fog, and lightning effects
- Authentic AD&D® characters, each represented accurately on-screen down to individual class, race, gender, skin and hair color, armor and weaponry
- Manage up to a 6-character party on a gripping, non-linear adventure spanning seven chapters with multiple twisting subplots

Baldur's Gate

Arriving Spring, 1998
We’re Not Dead Yet!

But Recent Moves Suggest That 7th Level is in Need of Some Life Support

7th Level shocked the gaming industry recently with the announcement that its highly successful Monty Python game line was in the selling block. The news came just a few months after it had acquired the Monty Python’s Life of Brian and the upcoming 3D shooter Space Bunnies Must Die. The two companies have merged management and operations to form a new company called P7 Solutions. P7 will no longer publish games, and will instead focus on Internet solutions.

So what about the games? Well, Take 2 Interactive, publishers of Ripper, the upcoming Black Dahlia, and the Jet Fighter series, acquired distribution rights to all the Monty Python titles, then immediately sold all American distribution rights to Panasonic Interactive. Take 2 retains the European distribution rights. The latest title in the Monty Python series, The Meaning of Life, a strategy/adventure game containing previously unreleased film footage and new dialogue from all the original cast members, is still scheduled for a December release. As for the Pulse titles, the members of the Space Bunnies Must Die production team have formed a new company, Jinx, and will continue to work on the product. According to Jinx CEO Vinny Carrella, Ripcord (a division of Panasonic Interactive Media) and P7, which are both minority shareholders in Jinx, have been very supportive in helping the company get off the ground. Carrella is enthusiastic about the new move: “It’s like moving out of your parents’ house for the first time—it’s really scary, but it’s also really exciting.” Plans for Ripcord to publish Space Bunnies are still going ahead, and the game is set to meet its summer 1998 schedule.

And, in a surprise move, Sierra announced that it had acquired PyroTechnix from 7th Level, bringing the Kromon series back into the fold. Sierra Northwest, the company’s Seattle-based development division, is working with Raymond Feist and PyroTechnix, and the company anticipates a late 1998 release for the game.

—Charlotte Panther
The next time you’re feeling a little bit nostalgic, break out the 8-track, slip into something terrycloth and fire up any of the real-time strategy games released last fall.
DOMINION: REAL TIME, REAL STRATEGY.
- 4 races
- 60 missions
- 44 vehicles
- Over 95,000 frames of animation
- 4 resolutions: 640x480 to 1280x1024 - All at 32 fps
- 8-player multiplayer with deathmatching and cooperative
- The most sophisticated AI ever in a real-time strategy game
RULES MUST BE BROKEN. CATEGORIES MUST BE ERASED. EMPERORS MUST BE OVERTHROWN. THE STATUS QUO MUST BE SPANKED. AND CONTENTMENT MUST BE ROUTINELY TAKEN OUTSIDE AND SMACKED UP SIDE THE HEAD. IT'S A DIRTY JOB, BUT SOMEBODY HAS TO DO IT, AND WE'RE ALL READY TO APPLY FOR THE POSITION.

WE'RE ION STORM, A BUNCH OF MISFIT, ZEALOT FREAKS WHO TRIED TO REST ON OUR PAST SUCCESSES BUT JUST DIDN'T FIND IT COMFORTABLE. THERE WAS A GAP OUT THERE, A BIG FAT VOID, AND WE WERE HELL-BENT ON FILLING IT. WE HAD ALL LIVED ON THE EDGE, BUT WE WERE READY TO JUMP OFF. SO HERE WE ARE. NEW NAME, NEW IDENTITY. NEW GAMES RATTLING THEIR CAGES, WAITING TO BE LET OUT.

JOHN ROMERO: LONG-HAIRED SMART-ASS KNOWN FOR HIS FAST FERRARI AND HIS UNCANNY ABILITY TO SING THE THEME SONG TO THE SPIDERMAN CARTOON REALLY, REALLY WELL. OH YEAH, THERE WAS ALSO THAT DOOM AND QUAKE THING.

TOM HALL: A FUNNY GUY WHO WANTS TO GET ALL TOUCHY-FEELY WITH HIS GAMES. HAS SOME SILLY IDEA THAT COMPUTER GAMES HAVE TO BE STUFFED FULL OF PERSONALITY, INTERESTING CHARACTERS AND INTERACTIVITY. IN A PAST LIFE, HE CO-CREATED WOLFENSTEIN 3D, DOOM AND RISE OF THE TRIAD, AND WAS ONE OF THE ORIGINAL FOUNDERS OF SOME SMALL COMPANY CALLED IO.

JERRY O'FLAHERTY: HIGHLY TALENTED PAINT MONKEY WHO GETS INTO EVERYTHING: ART, Filmmaking, 3-D MODELING AND ANIMATION. NOT TO MENTION A BUNCH OF STUFF HE KEEPS UNDER HIS BED AND WON'T SHOW ANYBODY. HIS JOB DESCRIPTION NOW SAYS HE'S IN CHARGE OF ALL ART, SO IF ANY OF YOU OUT THERE ARE DOING ANYTHING EVEN SLIGHTLY ARTISTIC IT NEEDS TO BE SUBMITTED TO JERRY FOR HIS APPROVAL.

N STORM
Bob "Popular" Wright: A Token Gray-Hair Given the title Chief Operating Officer to make him feel important. Known around the office as "The Finisher" and as "The Guy Who Gets Things Done." Big in the market. Huge in Europe.

In the future, all games will be Chrono Nexus.

"Who wants to Revolutionize the gaming industry if nobody's watching?"

Cat Daddy/Lizard King/CEO Mike Wilson: Maniacal bastard who made it possible for all Americans to buy Quake and a Slurpee in the same place. Rumored to be a presidential candidate for the year 2000 but not likely to live more than another year; he believes that all the best people die when they're 27.

Todd Porter: A mandolin-playing, natty, GQ type who thinks games should be as stylish as he is. Goes around saying things like "In the gaming industry, there is no tomorrow." Then turns around and designs that way. Dangerous with a Hammered Dulcimer when he's been out drinking.
Man the cockpit of the legendary DeHaviland Beaver Seaplane and experience something you can’t with any other flight sim—land on water.

Battle torrential rains and heavy crosswinds. Fly through the most hazardous, realistic weather conditions.

Test your skills attempting to evade a pair of F-16s that are trying to blast your butt out of restricted airspace.

Take off and land from any one of 48 different Bay Area airports.

Flight Unlimited II immerses you in the sheer thrill of flying like nothing you’ve ever experienced. Pull mind-bending G’s in your quicksilver P51-D Mustang. Play chicken with F-16s. Get on the horn with Air Traffic Control as you pick your way through skies filled with aircraft. Hurtle under the Golden Gate Bridge and around the TransAmerica tower. With Flight Unlimited II, you’re not just flying, you’re really flying.

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Shrouded in secrecy, the U.S.'s JSF program delivers the most advanced stealth technology ever seen in a fighter. And with a mind-numbing complement of classified weapons systems, this is one fight you won't want to miss.

*Too bad. Didn't hear it come in!*

*The Joint Strike Fighter is the airpower of the future.*

**FIRST-EVER**

To feature the two prototypes for the Pentagon's new Joint Strike Fighter: Boeing's X-32 and Lockheed Martin's X-35 jet fighters.

**FIRST-EVER**

To feature the revolutionary ISF™ graphics that enable fluid redraws in color resolutions up to 1024x768x16 with no pixellation and at a playable frame rate.

**FIRST-EVER**

To model over 10 million square miles of beautifully rendered terrain—the largest and most realistic terrain ever seen in a flight simulator.

**FIRST-EVER**

To reveal the future of high-tech weaponry, including the AGM-154 Joint Stand Off Weapon and the Lockheed Martin Wind Corrected Munitions Dispenser.
“Never before a game has flown as high as the JSF,”

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Home - The really big

world of flying at 1000 km an

ONLINE GAMING

REVIEW

(COMPUTER PLAYER)

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Full strategy wargame

65,000 color, high-resolution graphics

Supports up to 16 players

Fly both Harriers and Cobras
EXPLOSIVE BREAKTHROUGH IN FLIGHT SIMS.

It’s challenging enough to create a realistic air battle. But when your intent is to create a full-scale, immersive war experience, you need an element of strategy as well.

For this reason, Eidos developed Commandant™, a real-time strategy engine designed specifically for integration into flight sims. Commandant™ increases the level of immersion and challenge for the intelligent gamer.

Adding to FN2’s sense of immersion is the most sophisticated multi-player technology ever seen in a flight sim. It allows for unprecedented levels of communication and coordination between players. You’ll be in air battles with up to 16 flight jocks while treeing your troops from danger below. The end result? An immersive war experience sure to blow you away.

www.fn2.com
1:30 PM,

BRISTOL, ENGLAND -- As Conal Wilmot explains it, "I see her everywhere...

in the pub, the shops and once, right there

next to me in the loo. But then, I turn my head

and she's gone." Conal's mom thinks he's "plain barking mao." His best buooy mick just wishes it would happen to him.
Tea time becomes TRII time.
Fly America's stealthy new secret weapon.

Ancient wisdom says it rocks.

Dark, dungeonous epic fantasy.

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You've been warned.

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There’s only one thing more torturous than playing Deathtrap Dungeon.
Eat me. Whip me. Just don't hit that Quit button. Consider it your battle cry. Then bring on the skeletal warriors, zombies and over 30 other undead denizens. Each one is a chance to slice and dice like a Ginsu knife gone bad. An opportunity to master the 13 death implements.
Not playing it.

www.deathtrapdungeon.com

EIDOS
INTERACTIVE
You've been warned.

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...your disposal. Or play the PC version and leave the other on-line players crying for more. Because in these 10 cavernous levels of evil traps, it's all about blurring that fine line between pleasure and pain. And just when you think you can't take it any longer, consider the alternative.
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Take You Out of the Tunnels and into the Vast Wonders of Space.

Introducing Descent: Freespace — The Great War

Coming this Spring

©1998 Parallax Software Corporation. All Rights Reserved. Volition and the Volition logo are trademarks of Interplay Productions. All Rights Reserved. Descent, Descent: Freespace and The Great War are trademarks of Volition, Inc. All Rights Reserved.
Myst, and its sequel, Riven, have sold a combined total of more than 3 million copies worldwide, and have tapped into the casual gaming market in a way that no other game series has ever done. However, they have also been criticized for their lack of a detailed plot.

Cyan (Myst's developer) has instead let the story be told in a series of novels published by Hyperion Books. But what of the promised comics from Dark Horse? Cyan and Dark Horse confirm that Myst: The Book of the Black Ships will not be continued beyond the first issue, which was published in August. "There were communication problems between the two companies. It didn't turn out the way we expected," says Bonnie Staub, spokesperson for Cyan. Dark Horse agrees that the comic book medium isn't the best format for what Cyan was trying to accomplish. There are no plans to approach other comic book publishers with the story, which falls chronologically between the first novel and Myst. But, says Staub, that doesn't mean more novels won't appear sometime in the future. "They made up this whole backstory for the first game so there wouldn't be any holes, and it just grew and grew," she says. "Now I think they just want to take some time off." - Kate Hedstrom

**Same Game, New Name**

Racing fans be warned. Papyrus' recently released CART Racing— not to be confused with Microsoft's CART Precision Racing—is actually a rerelease of 1995's Indy Car Racing II. Papyrus was forced to rename an old product as a result of the splitting of the CART and the Indy Racing League. CART Racing does include some upgrades, however, including Rendition 3D support and a 200-page strategy guide. —Matthew Schafer

**Nightmare Ned**

Armed only with a spitfire yo yo and his own wits and cunning, a young man faces his deepest, darkest fears in Disney's Nightmare Ned. It's all in the spirit of fun, however. Part strategy and part arcade, the game features five nightmare worlds for young players to visit and explore. There's the graveyard, the school, the infirmary, the attic, the basement, and the bathroom. Each realm features its own brand of traps, passages, and demons. Then there are the Shadow Creatures, each of which occupies a nightmare and gradually reveals itself as its world is explored. Reveal all five creatures to win the game. —Allen Greenberg

Disney Interactive, (800) 237-5751
PC CD-ROM
www.disneyinteractive.com

**Command & Conquer™**

**Dark Reign™**

**Uprising™**

**Total Annihilation™**

What Do These Games Have In Common?
Get inside Babylon 5

Set course with Captain John Sheridan, Ambassador Delenn and the dwellers of Babylon 5 for a tour unlike any other. Created with J. Michael Straczynski and Babylonian Productions, this interactive reference guide is loaded with hundreds of photos, sound and video clips - from the inner workings of the space station to the outer reaches of the galaxy. You'll learn so much about the ships, weapons, inhabitants and history of "Babylon 5", that you'll be ready to sign on for a tour of duty.

Available NOW! Mac & PC
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The Official Guide to J. Michael Straczynski's Babylon 5
BONUS! Includes an enhanced "Best of Babylon 5" music CD by Christopher Franke!
Your Worst Nightmare

What do you get if you combine Virtua Fighter 2, Tomb Raider, and Jack the Ripper’s hometown? Probably something very much like Activision’s Nightmare.

Nightmare Creatures, a third-person action game in which gamers fight zombies, werewolves, and demons in ferocious hand-to-hand combat on the rain-slicked streets of early 19th-century London.

Nightmare Creatures wants to take full advantage of gamers’ rapid adoption of 3D cards, but, unfortunately, the early build I played hadn’t quite worked out its personal problems with the 3Dfx chipset. Still, what I saw was encouraging. Drifting fog, dynamic lighting effects, wicked explosions, and more all help create a mood of appropriately gothic menace. A brooding sound track further enhances the sense of impending danger.

Both the living and undead are rendered in Gouraud shaded, full 3D graphics. Gamers can square off against the gruesome assortment of monsters as one of two characters, a muscle-bound priest or a l ADS, sword-wielding female student.

Multipoint collision detection allows gamers to lop off heads, slash creatures in half, and enjoy the happy glow that comes from blowing a demon’s arms off and watching him lurch back for more. More saving opportunities would be welcome, but Nightmare Creatures looks as though it could be a pulse-pounding dream come true — Robert Coffey

In the Works

Creatures is a third-person action game in which gamers fight zombies, werewolves, and demons in ferocious hand-to-hand combat on the rain-slicked streets of early 19th-century London.

Nightmare Creatures wants to take full advantage of gamers’ rapid adoption of 3D cards, but, unfortunately, the early build I played hadn’t quite worked out its personal problems with the 3Dfx chipset. Still, what I saw was encouraging. Drifting fog, dynamic lighting effects, wicked explosions, and more all help create a mood of appropriately gothic menace. A brooding sound track further enhances the sense of impending danger.

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3D Performance Comparison - ZD 3D Winbench96

<table>
<thead>
<tr>
<th>Product</th>
<th>Score</th>
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</thead>
<tbody>
<tr>
<td>Diamond Viper 330</td>
<td>994</td>
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<tr>
<td>Diamond Monster 3D</td>
<td>994</td>
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<tr>
<td>Hercules Stingray 128</td>
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<td>Matrox Mystique 220</td>
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<td>Matrox Millennium II</td>
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<tr>
<td>Creative Labs Graphics Blaster</td>
<td>994</td>
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Empire Joins the Golf Wars With a Strong Contender

Empire Interactive has devised a new way for PC golfers to whack their balls. Dubbed the MouseDrive, Empire's star creation promises a more natural, real-time alternative to the genre's traditional double- or triple-click-swing meter.

In fact, Empire is so convinced that you'll love the MouseDrive, they've purposely omitted a swing meter alternative—a move they may regret if players don't take to the new swing mechanic.

To use MouseDrive, players simply pull back on the mouse for backswing, then push forward for the drive. Sideways movement on the followthrough creates hooks or slices. According to Empire, the real-time interactivity of the MouseDrive makes it possible to achieve highly technical shots, from low drives into strong winds to draws, fades, and deep bunker explosions. The free-form mechanics of MouseDrive also require the use of 12,000 frames of animation to represent more than 90 possible swing variations. Practice greens and an interactive tutorial hosted by Gary Player are available to help newcomers master these advanced techniques.

Two 18-hole courses ship with the game. South Carolina's Hilton Head National, and the Jack Nicklaus designed St. Michael's International in Cornwall, England. Every inch of each course was surveyed, then height-mapped with SGI workstations. The game incorporates actual turf, trees, and hazards into the course design. The results are extremely photorealistic when viewed at 640x480 at 256 colors. The courses are further enhanced with light source shading and detailed texture-mapping.

The digithead golfers are also exceptionally well drawn. Video captured at an incredible 200 frames per second, the onscreen animation is fluid and lifelike. Most amazing, however, is the golfers' realistic interaction with the course graphics. In most other sims, golfers stand flat-footed, regardless of the terrain. In Golf Pro, onscreen golfers strike a more realistic stance that is determined by the lay of the ball in relation to turf inclines or proximity to course obstacles. For example, a ball played on the edge of a steep bunker might require that the golfer stand with one leg higher and knee bent. This is one of those small details that you never miss until you see it implemented for the first time.

Game styles include match, stroke, and tournament play, with a progressive handicapping system that automatically adjusts as your play improves. Though it's not clear from the prerelease information, Empire hints that you can also compete with professionals such as Player, Nicklaus, and Tom Watson in recorded play from actual tournaments. Other features not available for preview include a 5,000 word shot-by-shot commentary and "Play with the Pro," an interactive analysis of your golfing techniques, coached by Player. Multiplayer games support up to eight players via modem, network, or play by-email.

It should be interesting to see if sim-golfers embrace Empire's MouseDrive. Even without such innovation, The Golf Pro looks to be another strong contender in this red hot sports genre. —Scott Mayo
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Diablo's gothic images of perdition masterfully condemned gamers to its dark, rich mythological world. They gladly "sold their souls" to the tune of more than a million copies. We editors even named it Computer Gaming World's 1996 Game of the Year.

Yet, there were those who weighed this rare game in the balance and found it wanting. Some claimed it to be a dumbed-down role-playing game. Others dismissed it as a mere sophisticated action game, a new Rogue or Gauntlet. Though it reinvigorated the role-playing market, many criticized it for not being a true RPG. Others objected to Blizzard's lack of foresight regarding cheating on battle.net.

To the multiplayer fans, Blizzard has promised to fix the cheating problem in Diablo II. To those who complain about Diablo's lack of RPG purity, the design team offers no quarter. Says Blizzard's David Brevik, "We didn't make an RPG, we made Diablo."

For the sequel, the Blizzard team hopes to keep Diablo's fun hack-and-slash experience while expanding and improving the game. They don't want to appease hard-core RPG fans by adding artificial NPC interactions—they want to maintain the flavor of the original—but they also don't want Diablo II to be just more of the same.

After talking to the Blizzard team, it's clear that they're determined to create a more immersive
experience with new characters, monsters, spells, and locations while producing a true sequel with a twist.

Diabolical Plan
The twist is that the story is told and experienced from a new hero's perspective. None of the heroes from Diablo return, and at the start of the game, even Diablo's whereabouts are unknown.

The hero from the first game, after containing Diablo's spirit and journeying to the East, succumbed to the more powerful will of the Lord of Terror. Now, Diablo is free from his entrapment below Tristram and has assumed his original appearance, but with much greater power. As the game begins, he is somewhere in the East, raising an army to conquer not just one city, but a whole game world.

Building Character

There are no rogues, warriors, or sorcerers to play in Diablo II. The Lord of Terror is mightier than ever, and the previous game's heroes simply aren't up to the challenge. So Blizzard has created five new character classes. One, the Amazon, is a cross between the rogue and warrior, with superior melee and range attacks. Her main attacks make use of either the bow or spear. She will have five levels of abilities, each more powerful than the last. You can see some of the proposed abilities in the box below. These aren't all of her abilities, and in fact, she won't be able to learn all of them. You'll have to pick from among the total number, meaning that gamers will be able to customize unique characters. You might specialize in the spear, while your friend specializes in the bow. For other characters' abilities, see the sidebar on page 81.

The Amazon's Special Abilities

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<tr>
<th>Ability</th>
<th>Description</th>
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<tbody>
<tr>
<td>1 Vital shot (bow)</td>
<td>Slower but more damaging shot</td>
</tr>
<tr>
<td>2 Tera shot (bow)</td>
<td>More accurate, but slower shot</td>
</tr>
<tr>
<td>3 Gale shot (bow)</td>
<td>Longer range; hits multiple targets</td>
</tr>
<tr>
<td>4 Dodge</td>
<td>Instantly dodge an attack</td>
</tr>
<tr>
<td>5 Impale (spear)</td>
<td>Deals damage but chance of destroying spear</td>
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The action in Diablo II proceeds through four acts, with each act comprising a town and its accompanying dungeons. Each act will also tell a little more about Diablo’s origins and plans, which include freeing his brothers, Baal and Mephisto. (Together they form the triumvirate known as the Prime Evils.) As the game’s hero, you will have to track Diablo through each act and town and try to prevent him from raising his army.

Your hero comes into the game as a powerful adventurer who has heard of the Lord of Terror’s renewed rampage. No one from the original Diablo can help you. Since the heroes of the first game were too weak to defeat Diablo completely, the sequel calls for all-new adventurers.

As a character from one of the new classes, you start out in the mountains at the Sisters of the Sightless Eye monastery. Diablo fans will recall that the rogue character belonged to the Sisters order. Blizzard envisions new players beginning the game here, where they’ll discover that the monastery has been taken over by a tremendous evil power. The Lesser Evil Andariel, a demon from Hell, is hoping to curry favor with Diablo by conscripting the rogues into her evil army.

Andariel soon corrupts all the captured rogues, but a small band of survivors forms around the monastery, creating a makeshift camp and Diablo II’s first town. You’ll need to uncover Andariel’s hand in the fall of the monastery and free the Sisters. When you defeat Andariel in the town’s final dungeon level, you’ll move on to subsequent acts and locales in the East.

**Will It Be a True RPG?**

One of CGW’s criticisms of Diablo was that the town and nonplayer characters (NPCs) seemed too artificial and static. The streams never moved in Tristram; the NPCs were nailed to the floor; they “gave” you items by hurling them to the ground; and there were no ambient noises or background action. In addition, the role-playing experiences for each character class weren’t very distinct.

Although Brevik says that Blizzard never set out to make Diablo a hard-core role-playing game, they do want to make Diablo II a better role-playing experience. The development team recognizes that the characters in the original game were too much alike, distinguished only by their weapons and character attributes. In light of this, the team is endeavoring to strengthen the game’s RPG qualities in three ways: They want to make the towns more alive, integrate the NPCs further into the quests and story, and make the playing experience for each character class very different.

To make the towns more realistic, the Blizzard team plans to add plenty of animation, including moving water in streams, occasional flocks of birds, and NPCs walking in the background. Each town will have a unique cast of supporting NPCs, and these NPCs will have a wider range of motions. You’ll see them moving about,

---

**ANDARIEL**

The most powerful of the Lesser Evils, Andariel hopes to gain the “Three’s Favor” by enslaving the monastery residents and making them her army.

---

**Hell’s Kitchen**

We caught up with David Brevik, the president of Blizzard North, to ask about the changes coming to Diablo II. Here, we’ve excerpted a few questions from our interview. But if you want to hear more from Brevik—including his thoughts on Diablo’s place as a “real” RPG, nonhuman characters in Diablo II, and cheating—read the full interview at www.computergaming.com.

**CGW:** How is Diablo II different from the first game?

**Brevik:** Diablo II is a ground-up reinvention of Diablo. From a technical standpoint, we have restructured the game to run more efficiently, with better lighting and special effects. And, of course, we’ve addressed the cheating issue. From a gameplay standpoint,
we have made the Diablo universe much larger, with more varied experiences for the players. We want the players to feel totally immersed in the world of Diablo, which means more varied tasks, more interesting NPCs, smarter fees, and more options for the player.

CGW: Will you meet any rogues, sorcerers, or warriors in Diablo II?

Previk: Players will encounter rogues, sorcerers, and warriors during the same game as NPCs and hired characters.

CGW: Why is Blizzard North remaking everything—from character classes to monsters—in Diablo II?

Previk: We wanted to give players an all-new experience. We will keep a few of the monsters, such as skeletons and zombies, in some form, but they will have new AI, abilities, and weapons. I would say players can expect to see maybe 5 or 10 percent of the monsters from Diablo. In regard to spells, we will keep probably about 10 percent of the spells. Some, like town portal, we’ll keep out of necessity; others, like lightning, we’ll keep because everyone liked them.

acting like real people, doing things that you’d expect of them. That means the blacksmith could come out of his shop periodically to greet you (unfortunately, Blizzard doesn’t plan to allow entry into buildings). I’ve been assured that when NPCs give you an item, they’ll hand it to you, just as a person in real life would.

NPCs will also have a larger role in the game. You won’t go to them only when you need healing or some new items. Instead, you’ll be able to team spells and special fighting abilities from them, probably in exchange for the completion of a quest. They’ll also be more useful in providing background for the game’s story.

The most exciting NPC development is that you will be able to hire NPCs to join you on your adventures. They won’t follow you through the entire game, but they will accompany you temporarily, perhaps through one act. You will be able to hire only one NPC at a time, and they’ll have their own personalities and agenda. You won’t control them, but they’ll fight on your behalf. Some NPCs will join you simply for money; others might join if you complete a certain quest. The Blizzard team is varying the NPCs and their backgrounds, and assures that those who join you will fit into the quest and story structure of the game.

Finally, although Diablo II will be an all-new game, some of your favorite NPCs will return. At this point, Deckard Cain and Wirt are slated for cameos.

Just Questing

For the actual quests, the Blizzard team is creating more special-location quests, similar to the Bone Chamber, Poisoned Water Supply, and King Leon’s Tomb in Diablo. That means more quests will be in separate locations, accessible through the dungeon yet taking place in self-contained environments.

And since the sequel contains four towns instead of Diablo’s one, you can expect a lot more quests. Quests will not change depending on your character class, but they will still be randomized. How you acquire quests won’t be very different, but Blizzard says they’ll be better integrated into the story and your character’s development. Completed quests in Diablo II will reveal more of the backstory, free NPCs to join your party, or allow you to learn new fighting techniques.

All the quests will be available in both single- and multiplayer games. The idea is to allow multiple gamers to play through the entire game together.

The folks at Blizzard showed us tour of the proposed quests for the first act. Two of these, the Den of Evil and the Forgotten Tower, involve rooting out infested buildings and questing for treasure. The other two, Field of Stones and Sisters Burial Ground, deal more with the act’s main storyline. In Field of Stones, you’ll have to revive a decaying circle of mystic stones, which ancient
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images once used to teleport to far-off realms. Restoring the stones could give you the ability to visit Tristram or enlist the aid of Deckard Cain, the storyteller from Diablo. In the Sisters Burial Ground quest, you’ll go to the monastery’s burial grounds, where you’ll find that dead rogues have been resurrected by Andariel’s magic.

**Going to Town**

Diablo II will boast a far greater scope than Diablo. This time, you’re questing to save an entire world, not just a town. Each of Diablo II’s four towns will have one main dungeon, several subdungeons, and a surrounding wilderness area that can be fully explored. And, according to codesigner Eric Schaefer, each town will have as much gameplay as all of Diablo.

Towns will be arrayed in linear fashion, meaning that you’ll have to finish one town before you can move on to the next. But, once you finish clearing a town, you can return to it later. Certain quests will span several towns, requiring you to travel back and forth, probably by caravan or teleport.

---

**Diablo II**

**Multiplayer Changes**

Diablo II was named the 1996 Game of the Year in part because of its seamless Internet play and multiplayer support. While the multiplayer was good, it was overshadowed by incessant cheating.

Blizzard says it is committed to addressing the problem, and codesigner Eric Schaefer promises, “We will solve the cheating.” Schaefer won’t reveal details though, partly because the team is still working on solutions and partly because they don’t want to give away their plans to prospective cheaters.

Blizzard says it will increase the maximum number of players, possibly up to eight. Most important, the entire game will be available in multiplayer games. Every quest will be playable in single- and multiplayer modes. Difficulty levels will be taken out of the multiplayer game. Since each successive town gets progressively harder, Blizzard sees no need to add difficulty levels.
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Although Blizzard is being coy about the three other towns, they will say that each has a unique flavor and environment. One act will take place in the desert, possibly in a Horadrim town, with a few resident sorcerers. Another act will take place in a jungle environment.

Each town will also have a powerful end boss. Andariel will be the main villain in the monastery town and Diablo will be the final boss, but who are the other two? Blizzard wants that to be a surprise.

**Fantastic Five**

Like the settings, the character classes will be more diverse this time around. There will now be five classes—two spell-casters, two fighters, and one hybrid—and each will play differently. The attributes list will stay the same, but combat will change. While spell-casters will have a melee weapon and a range of spells, fighters will have a repertoire of fighting moves that will rival the mage spells for diversity. These moves will, in effect, replace spells for these melee characters. (The fighters will be able to cast a few spells, but only through the use of scrolls or staves.) The hybrid class should have a mix of spells and fighting moves.

By giving each class a wide range of fighting abilities and spells that no other class can use, Blizzard hopes to make the playing experience for each character different. Each class will also be customizable, because not every player will be able to master the fighting moves of every class. Two players could thus create characters of the same class but with very different fighting abilities (see the two character sidebars, pages 69 and 81).

**Altered States**

Aside from making high-concept changes, Blizzard’s development team is also overhauling the engine and interface. The new engine is already running, and it looks better than the original. There was some talk of a new 3D engine, but that was scrapped in favor of the more familiar 2D engine. While the perspective remains the
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Character Class Spells and Abilities

Here's a sampling of the new spells that some classes will possess:

- Whirlwind: Wind attack that strikes all squares around character
- Zealotry: Lowers speed, but boosts attack strength and hit points
- Enchant: Makes target sword flame, and makes other weapons magical
- Glacial Spike: A cold spike that freezes target
- Summon Blood Golem: Blood golem fights to the death for you
- Wall of Bone: An impassable wall with tough hit points
- Control Monster: Temporarily turns a monster into an ally

Gamers’ cries and will add a “Run” feature to your character’s movement options.

Hell to Raise

There are still some things that Blizzard is keeping secret. Of course, this early in the development cycle, there is much that still hasn’t been finalized. As more details are revealed, we’ll bring you updates. For now, the Blizzard team is working hard on the first act, and promises that each successive act will only get better. They’re also mindful of the shipping pains of Diablo and have built in plenty of months for play-testing. At this point, they’ve got great ideas and an impressive looking engine and first dungeon. The rest remains to be seen, but the folks at Blizzard have never let us down before. I doubt they’ll start with Diablo II.

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Plutonium-Powered PCs

Big Budget, Low Budget, or No Budget—Here's What You Need to Build a Gaming Dynamo
Technology is the supercharged element of computer gaming. Two years ago, CGW's first "Ultimate Game Machine" was a Pentium 133MHz, and the Pentium 166 was just around the corner. This year's UGM has more than twice the clock speed and fast, beautiful graphics—the kind that could only be seen on workstations two years ago. Not only that, but today we can build a budget system that nearly doubles the performance of that 1995 Ultimate System for less than half the price. Clearly, our kind of heavy metal has a one-year half-life.

That being the case, we offer this series for those who need to make changes to keep up with the latest game releases. Our goal for this year's build-your-own segment was fourfold. First, we wanted to build the ultimate game machine with money being no object. Hey, this is a gaming magazine, so why not have some fun? Second, we wanted to build a screamer box for a price point of $2,500 (we do, after all, live in the real world). Third, we wanted to offer a low-budget alternative with respectable performance for less than $1,500. Finally, for those who don't want or need to build a new system, we wanted to offer upgrade strategies to improve your components.

You may not agree with all of our selections. Even so, they are best-of-breed components—and they would be good candidates for upgrading any system. Still, let us know what your favorite choices are, because we'll be updating the Ultimate Game Machine components each month online. Let's get nuclear...
Imagine, for a moment, that you hide deep pockets, and could indulge your every whim in building a thermonuclear gaming rig. What would it look like?

We like to keep the perspective on gaming. For example, several people suggested that we pick the Fujitsu Plasmavision 42-inch, flat-panel display. We considered it, but there are problems with flat-panel displays for gaming. For one thing, switching resolutions tends to result in either shrunken or ugly images. This is, after all, the Ultimate Game Machine, not the ultimate workstation or the ultimate home theater.

The Core

There are six components that make up the core of a PC: the processor, the motherboard, the memory, the case and power supply, the CD-ROM drive, and the floppy drive. We'll give you a quick update on developments in each area, and then explain our choices. For the purposes of this article, we'll call the high end system the Meltdown and the midrange system Heavy Metal. (The $1,500 system follows in a sidebar on page 112.)

Processor

In the last few months, we took a look at a lot of CPU alternatives. Cyrix was out, even on the budget box. It just didn't deliver the goods for high-performance gaming. There's a myth that having a fast 3D accelerator neutralizes the Pentium II's floating-point advantage, but it's just that: a myth. You still need to generate the polygons and do the lighting transforms and the geometry—and that takes serious floating-point performance. AMD was a more interesting choice, but we didn't have a chance to look at one of the new VIA equipped AGP Socket 7 motherboards, so it's also out. The AMD chip is more of a consideration if your budget is very, very tight, although it's still not as good a floating-point performer as the Intel line (as our 3D WinBench tests last summer indicated).

For the Meltdown machine, the CPU choice was a no-brainer: the 300MHz Pentium II. The Heavy Metal's CPU proved more of a dilemma. Luckily, we were able to take advantage of some lowered prices, so the Heavy Metal is still a Pentium II, but at 233MHz.

Motherboards

Motherboards are a critical part of any system. Low-ball motherboards can actually hurt system performance—or result in flaky behavior. Nothing ruins an immersive experience more than getting dumped out of the game with a "blue screen o' death" error.

Motherboard technology is rapidly evolving. Microsoft, Intel, and Compaq are busy getting out the PC 98 specification, which will completely reshape PC systems, and the use of FireWire (IEEE 1394) for mass storage and USB for keyboards, mice, and controllers will reshape the way systems are configured. Until then, though, systems integration is still something of a puzzle.

For once, we were able to ride the technology curve on our motherboard choices. Both systems use ATX-formatted, AGP boards using Intel's 440LX chipset. When moving to ATX format motherboards, you'll have the ability to shut down your

ONE FAST MOTHER: Board, that is. The Supermicro P6DLS' second Slot 1 CPU interface leaves your machine with room to grow.
whole system from Windows. Although it cuts the slot count to seven, ATX has pretty much become the standard. It offers better cooling and good support for full-sized expansion cards. The new LX chipset is somewhat faster than the older 440FX chipset and it supports SDRAM and UltraDMA/33 hard drives.

The Meltdown uses Supermicro's P6DLS motherboard, which is actually a dual-processor board, but we used just a single CPU, since Windows 95 can use only one processor. However, when NT 5.0 ships, with full DirectX and multiprocessor support, we can add a second CPU. The Supermicro board is a little rough around the edges—documentation is pretty skimpy—but it's kind of like the difference between a Dodge Viper and a Mustang 5.0 liter. We know which one's faster.

The Heavy Metal uses the very nice, easy to set up, ASUS P2L97 AGP motherboard. This puppy has one AGP slot, five PCI slots (yes five), and a pair of ISA slots (one ISA/PCI pair is shared). The Pentium II slides neatly into the Slot 1 socket on the board. Early versions of this board had the ability to set the CPU clock in the BIOS, but alas, the new versions have returned to jumpers for speed setting. One minor downside to this board is that the location of the connector strip for the power switch and reset button prevents you from installing a long ISA card in the last slot, defeating (in part) the advantage of the ATX format.

**Memory**

One surprise you'll run into when configuring memory is that the form factor is changing once again. All of the new motherboards we looked at had only DIMM sockets. All those 72-pin SIMMs you've invested in can now be used to mark your place in the 6880 manual. Most DIMMs these days are SDRAM, although you can find EDO DIMMs. Unless you have a burning need for parity modules, SDRAM seems to be the way to go. We've heard rumors of parity SDRAM, but haven't seen it yet. As for ECC (error-correcting) memory modules, don't bother unless you're doing something mission critical. ECC actually results in a minor performance hit.

The rule of thumb for memory is this: Get what you can afford. Since we didn't have a budget for the Meltdown, we dropped in 64MB of Crucial Technologies 10 nanosecond (ns) SDRAM—more than enough memory for just about any gameing need today. The 10ns speed of the SDRAM isn't fully used by the 440LX chipset, which still only runs a 66MHz system clock. Sometime in early to mid-1999, expect to see systems with 100MHz system clocks as a matter of course.

The Heavy Metal uses a single 32MB SDRAM DIMM, leaving two empty slots for future memory expansion.

**If One CPU Is Good...**

![Image of a computer component with a yellow arrow pointing to it]

**Point of Fact**

Windows 95 can support only a single CPU, but DirectX is also migrating to Windows NT, which supports multiple CPUs, it can't hurt to have an extra slot.

Many people are thinking about multiprocessing these days. In fact, this year's Ultimate Game Machine has a dual CPU motherboard, although it uses only a single CPU (for the time being).

Windows 95 is part of the problem. Windows 95 (and Windows 98, for that matter) will support only a single CPU. Adding another one would be a waste. However, DirectX 6.0 will be fully integrated into Windows NT 5.0, and NT has supported multiprocessing for several revisions now—the thought of a pair of 300MHz processors has our mouths watering in the most Pavlovian sense.

But there's a downside to using any version of NT. Older Win 95 games may not run, even with DirectX support, and DOS games almost certainly won't run. For the most obsessive gamer, the solution is to have a dual-boot NT 5.0/Windows 98 setup. This will probably be the hot ticket for the high-end gamer by the end of '98. After all, it's only disk space.

**The Pentium Flares**

In our tests we used the 150MHz processor, but the Meltdown ships with a 133MHz CPU. We've heard that the 150MHz version of the Pentium II is a bit faster with some games, but not all. The important point is that the clock rate is going to be more crucial with Windows NT than it is with Windows 95.
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Case and Power Supply

The power supply is PC Power & Cooling's Turbocool 300 ATX, which delivers rock solid power and reliably high current loads. The Meltdown's case comes from the folks at JDR Microdevices. About an inch taller than last year's case, it has the removable motherboard tray and lots of internal expansion. It also has slots to install a muffin fan that can blow air across the hard drive—essential cooling for the drives we chose.

We found a caselower power supply combo for the Heavy Metal at a local clone shop for only $79. It has a 230-watt power supply and a slide-out motherboard tray. It's even slightly larger than most midsize towers. The shop couldn't tell us the manufacturer, but these kinds of cases are widely available; we recommend you get an ATX case with at least 230 watts of power.

CD-ROM Drives

At the high end, once again, there's no contest. Plextor is now shipping a 32x CAV CD-ROM drive with an Ultra-SCSI.

Continued on page 98

Hard Drive: Speed Without Compromise

For the Meltdown, we wanted speed without compromise. The obvious choice here was Seagate's Cheetah 10,000RPM, Ultra-SCSI hard drive. It then occurred to us that if one Cheetah is good, two must be better. Scouting around, we came across Mylex's Flashpoint DW, which is an Ultra-SCSI, dual-channel, SCSI host adapter with built-in support for RAID 0 and RAID 1. RAID 1 is of no interest for gaming—who needs redundant data storage for Lotus 1-2-3? But if you've ever waited for F-22 to load, a speedy hard drive seems less of a luxury and more of a necessity. So we used the Flashpoint host adapter and a pair of 4.5GB Cheetahs to create a single RAID 0 volume, which stripes data across two drives (in 64KB increments, in our case). In effect, you're using two drives as a single drive, doubling the width of the data path. It doesn't really double throughput, but it does speed things up a lot. For example, a single Cheetah gets around 1,700 on WinBench 97's Business Disk WinMark, whereas the dual Cheetahs configured as a RAID 0 device punch the result to a shade over 2,000. Two Cheetahs run a tad warm. Okay, they're hotter than a nuclear rod—but that's why we have a case that has a cooling fan blowing right across the hard-drive slots. Another downside is that if one drive fails, you lose everything.

The hard drive for the Heavy Metal is slightly more conservative. Seagate's new 7,200RPM UltraDMA/33. This baby is backward compatible with EIDE, but the 7,200RPM rotational speed really kicks in with UltraDMA/33's 33MB/sec burst-transfer rate. It also sports an access time of under 10ms. With a whopping 6.4GB of storage, it's no slouch in the capacity department, either. It uses technologies such as magnetoresistive heads to cram data into as few platters as possible. You gotta love that.

PLEX YOUR GAMING MUSCLE

Plextor comes out on top again here with its 32x CAV CD-ROM.
How We Tested

This year, we tested the roll-your-own systems in much the same way that we tested the off-the-shelf systems. These tests included WinBench 97, 3D WinBench 97, CBench, and a slew of games. To test 3D performance, we used Flight Simulator 98, GL Quake, Wipeout XL and Moto Racer. We tested Windows DirectDraw performance by running WinQuake with the -nowindirect option. For DOS games, we used Quake and Duke Nukem 3D.

We enabled Flight Simulator 98's frame-rate counter by pressing the Shift key and the letter Z twice in succession (Shift-ZZ). We captured the frame rate at the start of the built-in FS98 features video, but it's best to watch the whole playback. FS98 is finicky about MIP-mapping, so you can see all kinds of interesting behavior with some cards. You can enable Wipeout XL's frame-rate counter by typing

Benchmark Tests

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* GL Drivers Not Available at Press Time

1 The Falcon Mach V is as tested in our December issue: Pentium II 300MHz with 128MB of RAM with a list price of $8,495.
2 The Dell XPS D233 is as tested in our January issue: Pentium II 233MHz with 32MB of RAM with a list price of $2,379.
"framerate" at the race screen. Moto Racer is more complex. You need to have the Delphine-manufactured version (blue CD), not the Electronics Arts-manufactured version (white CD). Enable the frame counter by starting the game from a DOS window and typing "moto\nmopen". When in a race screen, hit Shift-F1 (function key 1). The frame rate we published was at the opening of the default race.

We took all the Quake numbers by averaging the results of TimeDemos 1, 2, and 3. We set the resolution to 640x480, with the status bar visible, but the screen otherwise maximized. We ran Duke Nukem 3D by typing "duke3d -m -3 -11" at the DOS prompt, then typing DNRATE after Duke's ship crashes.

Noticably absent this year are any tests at a standard 320x200 VGA-graphics resolution. The last games I can recall that required this were Daggerfall and the DOS version of Red Alert.
gave the STB card the nod for our big rig. The RIVA 128 chip on the Velocity 12B is CPU-constrained. Even a 300MHz CPU can’t deliver enough polygons to stress the RIVA’s rendering ability. But the RIVA 12B chip isn’t enough. There are still a lot of games written only for 3Dfx. Since money was no object, we picked a Quantum 3D Obsidian 100SB, which is a 3Dfx board. The 100SB is a new version of the two-board setup used in Falcon Northwest’s premier Mach V system.

With the lower cost rig, we still wanted a really hot graphics subsystem—and, surprisingly, we didn’t have to compromise much. The primary (AGP) card is the ASUS 3DexPlorer. Although we gave it only 3.5 stars in last month’s review, ASUS has since released new drivers that seem pretty solid, and the 3DexPlorer now has a software control panel! Nonetheless, we still wanted a 3Dfx card, and that was an easy choice, the Canopus Pure3D.

One of the interesting points of the 440LX chipset was supposed to be its improved throughput. This may well be, but the DOS graphics performance we saw initially looked weak, despite the strong VGA graphics core of the RIVA 128. The issue with the Pentium II, as with last year’s Pentium Pro, is throughput. The Pentium II is capable of write posting, linear frame-buffer (LFB) write combining, and banked VGA-graphics write combining. These features enable the Pentium II to pump VGA-graphics data over the PCI bus in big bursts, rather than in small dribbles. Unfortunately, the ASUS motherboard has no way of turning on these features, so we had to resort to that old standby, FastVid. The AMI BIOS on the Supermicro board is a tweaker’s delight. All the features needed to boost DOS graphics performance could be set in the BIOS.

1-2 PUNCH ASUS’ 3DexPlorer and Canopus’ Pure3D are a very hard combination to beat.
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Monitor

Of course, you need a monitor to be able to see the games. This was one of our toughest choices. At first, flat-panel options seemed intriguing, but we discarded that idea after determining that all of them still have a fixed pixel count. If you’ve ever seen a 1024x768 flat panel display interpolate pixels to handle a 640x480 game, you know what we mean. “Ugly” doesn’t begin to cover it. A flat panel needs to be built with a fixed number of pixels. If you have a flat panel that can handle high resolutions (1024x768, say), then one of two things will happen when it shifts to 640x480. Either you’ll get a very small 640x480 image in the center of the flat panel, or it will sum real pixels to make ugly, large ones.

The next option we looked at was one of those really big CRTs, such as the Mitsubishi 37-inch. This was pretty intriguing, but we sit close to the monitor with keyboard, mouse, and controllers when we play. Sit down a foot away from one of these big screens and it feels like you are craning your neck the whole time. We then went to a conventional 21-inch monitor. Here, there are several choices. We opted briefly with the Mitsubishi 91TXW. It’s a very nice, aperture grill monitor with a 28-inch stripe pitch. But we then saw a 24-inch (22.5-inch displayable) Sony GDM W900.

Backup

Games don’t need to be backed up, but backing up your Windows system and any other useful data is a very good idea. Tape backup is tedious at best, so we popped in Syquest’s Syljet 1.5, a 1.5GB, removable hard-drive that makes backups a snap.

The W900 is really designed for CAD or desktop publishing. It has a 16:10 aspect ratio, meaning that it’s wider than a conventional monitor (HDTV is 16:9; normal computer CRTs are 4:3). At first, we were still a little reluctant. There’s a visible blank area on either side of the picture when running at standard resolutions (kind of a letterbox effect). The display area is still a little larger than 21 inches, but not enormously so. It also costs $4,500, which is, by itself, the cost of a good computer. Moto Racer has a 16:9 option for its gameplay, but it really doesn’t look that great. I’m aware of no other game that supports 16:9 or 16:10. We were about to drop the W900 from our list, when a friend came over and sat in front of the screen. “I want this monitor!” he exclaimed in an awestruck voice.

That was all the justification we needed. As for our Heavy Metal rig, we really wanted to get a 17-inch monitor, and so we settled on the Optiquest Q71 (Optiquest is Viewsonic’s budget line). It’s a nice monitor, though the clicking of the electro-mechanical relay when it’s switching resolutions is a little disconcerting. The picture is sharp, but the onscreen controls are not very intuitive. Still, it’s fairly bright, has a 28mm dot pitch and costs only $450.

Sound

Some of the coolest moments in computer gaming are in the game audio. Hearing the sound effects in LucasArts’ Test Flights: Hour was incredible. Audio is one of the three cornerstone technologies that enable a great gaming experience (along with fast processors and great graphics).

The Future of Performance

Systems Performance

This is a delicate, shifting balance that never remains constant. Last year, the bottleneck was the graphics system. This year, it’s the CPU. Even a 300MHz Pentium II can’t saturate a Radeon 128 card. Next year, as developers begin upping their budget for texture maps, bandwidth over the bus may become the bottleneck. One potential solution is to move some geometry calculations, such as lighting transforms, onto the graphics card. However, DirectX 6.0 doesn’t look as if it will support hardware acceleration of geometry at this stage. OpenGL certainly is capable of this, but whether consumer-level cards will arrive that can accelerate geometry is, as yet, unknown.

CPU Performance

CPU performance will soon be open to reexamination as well. Unfortunately, it’s looking as if market fragmentation may well happen. AMD has announced the K6 3D CPU, which is scheduled to ship around mid-1998. It adds a lot of performance-enhancing features and an improved floating-point unit. However, the “3D” in the name refers to a set of proprietary extensions designed to speed up 3D transforms. Integrated Device Technology (IDT) surprised everyone with its Centaur C6 CPU. The C6 is a poor floating-point performer, but IDT is feverishly working on a C6+ that speeds up floating-point and adds its own spin on speeding up 3D. Of course, Intel is working on MMX2 (just don’t ask the folks at Intel about it). Current MMX instructions are 16-bit in nature, and MMX2 is rumored to be a full 32-bit instruction set. It’s interesting to see how all these companies are attaching a great deal of importance to 3D graphics.

Also on the Intel Front

There will likely be a new Pentium II coming out that will support a 100MHz system clock and run at 350- and 400MHz. On the chipset side, Intel’s 440BX chipset is supposed to also support a 100MHz bus clock. VIA has added a new chipset that enables Socket 7 boards to have AGP, but whether this will really offer any performance boost is open to question. Also on the horizon is 4x AGP, which is theoretically capable of moving data to the graphics card from memory at up to 1GB/sec. This begs the question of memory bandwidth. Even SDRAM might have trouble keeping up. By then, though, Intel will begin implementing RAMBUS technology in mainstream systems. RAMBUS is a patented RAM technology licensed by a lot of DRAM vendors that enables very-high-speed memory transfers, but won’t see system memory duty until sometime in 1999. And when the first IA-64 CPU (code-named Mercct) debuts that same year, all bets are off.
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Upgrade Strategies

You may be reading all this and saying, "I'm just not ready to get a whole new system," or "I could get a whole new system... or I could stay married." The good news is that upgrading a component here and there can breathe life into your existing system; and with a well-thought-out upgrade strategy, you can go three to five years—or maybe longer—before buying an entirely new system.

The key word here is triage, a technique doctors use to treat wounded soldiers. It's a fairly simple idea: treat the most critically wounded patient first, and take care of the lighter injuries later. The same strategy can be applied to upgrading your machine. Take a look at our Upgrade Table here, and see where your system components rate. They're listed in order of importance.

For killer game performance, upgrading the most ailing component among your CPU, memory, and graphics will deliver the most immediate increase in gaming performance. A couple of notes here. If you're running a 166MHz Pentium or better, you should consider upgrading your 2D/3D graphics first to get more out of your rig, since CPUs of this horsepower or better still have a good bit of life left in them. If you're happy with your current 2D board, and it has 4MB of onboard memory, consider a 3D-only board using the 3Dix Voodoo chipset, though a PowerVR-based board isn't a bad choice for gamers on a tighter budget. In purchasing a 2D/3D board, 4MB of onboard memory is an absolute minimum, and given that Diamond's Stealth II costs only about $120, there's no reason to skimp here.

Moving to the storage components, if you've outgrown your current hard drive, that's a pretty obvious reason to upgrade to a bigger one. Disk storage space has never been cheaper: For under $400, you can pack 6.4GB of storage into your box, and for around $200, Seagate has a 3.2GB drive, though it doesn't support UltraDMA/33. We recommend drives that support UltraDMA/33, even if your current motherboard doesn't support it, so that when you do get a new motherboard, you can get some improvement in hard drive performance as well.

A faster CD-ROM drive can certainly speed up game installs and scene loads, but it's less of a critical system component. In addition to faster performance, many CD-ROM drives ship with a bus-mastering driver that cuts down on CPU usage, which can help overall game performance. However, unless you're CD-ROM is really gasping, upgrade other components first.

If you're not into online multiplayer gaming, faster data communications may not be an issue. A modem upgrade will make Web browsing less painful, and as our recent tests showed, the 56K modems have somewhat lower latency numbers than 28.8 V.34 modems. ISDN is the medium of choice for online gaming, but its associated costs may make it less appealing.

Upgrading won't always bring you the across-the-board speed-up that an entirely new system will, but it can certainly add life to aging systems. And after you've bought enough upgrades, you'll basically have wound up with a new system, but on a much more manageable payment plan. —Dave Salvador

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**Upgrade Chart**

<table>
<thead>
<tr>
<th>Component</th>
<th>If You Have</th>
<th>Budget Upgrade</th>
<th>Performance Upgrade</th>
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<tr>
<td>CPU</td>
<td>Pentium 120MHz or slower</td>
<td>MMX OverDrive</td>
<td>Pentium II 300</td>
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<td>200MHz (budget)*</td>
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<td>8-16MB</td>
<td>32MB EDD DRAM (If your system can run SDRAM)</td>
<td>64MB SDRAM</td>
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<td>None installed</td>
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<tr>
<td>2D Graphics</td>
<td>Card with 1-2MB local memory</td>
<td>Diamond Stealth II</td>
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<td>Hard Drive</td>
<td>1GB drive or less</td>
<td>Seagate 6.4GB UltraDMA/33</td>
<td>Seagate 4.6GB Cheetah Ultra-Wide SCSI</td>
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<td>Communications</td>
<td>14.4K or 2B.BK modem</td>
<td>Global Village (X2 56K) or Diamond SupraExpress (N66Flex 56K)</td>
<td>Diamond NetCommander (ISDN)</td>
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<td>CD-ROM</td>
<td>2-4x drive</td>
<td>EIDE Goldstar CR-B241B</td>
<td>U/W SCSI Plextor 32x CAV</td>
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*Note: if your motherboard won't accept an upgrade CPU, go with a new LX-based motherboard with a P-II 233MHz. Even though it's an AGP motherboard, your PCI cards will work fine.*
Weaponry through the Ages

Panther

Panther XL
The first complete 3D combat controller! Everything the Panther offers... plus a premium flight stick, built-in throttle and 17 programmable buttons.
Team Madcatz presents the Panther and Panther XL. Made from the finest ingredients the science of War has to offer. Don’t ask how we did it... ask what it can do for you. Because in 3D combat, as in controller design, there's only one philosophy: By any means necessary.
Sound Cards

The Meltdown needed something a little out of the ordinary. We started with a stock Diamond Monster Sound. Then we ripped out the tiny wavetable card that’s attached. (WARNING: If you do this, it will probably void your warranty.) The little connector on the Monster Sound is, in fact, WaveBlaster-compatible. We then added a Roland SCD-15 Sound Canvas daughtercard, securing it to the Monster Sound with ordinary rubber bands. The MIDI music quality that results is quite a bit better than Monster’s stock 2MB wavetable.

The cool thing about the Monster Sound, of course, is its use of Aureal Technologies’ 3D positional audio, which definitely adds to the experience in a game like Jedi Knight. Using HRTF (head-related transfer functions) to simulate positional audio, Aureal achieves its positional 3D-audio effect through a set of mathematical functions that simulate the delays and positional cues that your ears use to locate sound.

Just for the sake of DOS games, we popped a Creative Labs AWE-64 Gold into a free ISA slot. We’re hoping that the AWE is the last ISA sound card we have to deal with. Still, it’s a good, clean-sounding card and has always been trouble-free.

The Heavy Metal has a stock AWE-64 Value Edition. The Value Edition is a nice buy at $95. It’s a little noisier than the Gold and doesn’t have as much onboard RAM (512KB versus 4MB), but the price is right. It sounds fine and it’s compatible.

JURY-RIGGED Two ordinary rubber bands hold this Roland SCD-15 Sound Canvas daughtercard to this Monster Sound part.

Supersaver Rig

Let’s say that even $2,500 is too rich for your blood. Can you build a hot-rod gaming box for $1,500? Sure you can. Incidentally, we realize there are various Pentium systems advertised for $1,000 or less. The difference between those systems and this one hinges on the quality of the components, the amount of RAM, and, perhaps, even the presence of a monitor. Mostly, it’s a matter of different components. You get what you pay for, and it’s always better to know what you’re getting.

Start with a 233MHz Pentium with MMX technology. Pop it onto an Asus TX97-XE motherboard. Add 32MB of generic, 60ns EDD DRAM. Pick up an inexpensive case with a slide-out motherboard tray, and a 230-watt power supply. You now have the core of the system.

Good quality graphics hardware is hard to find in this price range, but the Diamond Stealth II is a real deal. It has the speedy Rendition V2100 chip and 4MB of 12ns SGRAM, all for $120. The Optiquest DS1 is a decent 15-inch monitor. For a hard drive, the Quantum Fireball ST3.2 can be found for around $220. The same Goldstar CD ROM unit we used in the Heavy Metal machine works, too, at only $80. Add an AWE-64 Value Edition and a set of Cambridge SoundWorks PC Works, and things begin to cook.

Of course, you need input devices; you can get a decent Keytronic keyboard for $25. Toss in the Logitech 4-button mouse and there’s your data input. A standard 1.44MB floppy drive rounds things out.

Performance is pretty good. The Stealth II gets around 119 3D WinBench 97 WinMarks on a P55C/233. The disk is fairly fast. Overall, this is a solid system. We couldn’t squeeze in a 3Dfx card at this price, but all the other components are actually pretty good. This system would have seemed otherwise two years ago. Now you can have it for $1,500.
WHERE OTHER STRATEGY GAMES LEFT OFF...
MANAGE, BUILD AND DEFEND THE LARGEST PLAYING FIELD IN THE UNIVERSE COMPRISED OF THREE DIFFERENT AREAS—LAND, SPACE AND INTERGALACTIC—at once!

Think you’re up to it? Can you repopulate your annihilated race, research the technologies, explore multiple universes, and defend your space colony from marauding alien races—on land and space simultaneously?

It’s never been done before. And with a playing field this enormous, you could be trying till the cows come home.
Speakers  Good sound cards deserve great speakers.  For the Meltdown, we went with Eminent Technologies' LFT-11.  It has two flat-panel linear field transducers and a hefty bass section.  Eminent Technologies supplies an Optimus 15 watts-per-channel receiver as an option; it's small, so it doesn't take up much space.  These speakers stack up well against some very high-end, home-audio speakers.  The only downside we've found to these babies (other than their $700 price tag) is that they are quite directional; but this is usually not a problem when you're sitting in front of a computer.

For the Heavy Metal system, the Cambridge SoundWorks PC Works is the obvious choice.  These are the best $100 speakers we've ever heard.  The quality of their sound is mind-boggling.

Input Devices

We've tried various mouse alternatives over the years, but the mouse and the keyboard are still our mainstays.  Here at CGW, we do a lot of writing, so our choice for keyboard is the Microsoft Natural Keyboard for both systems.

A mouse is a mouse is a mouse—until you see the new Logitech mice.  For the Meltdown, we use a Logitech Mousermate Plus, which has a unique, contoured shape that's easy on the hand.  It has four buttons (right and a scrolling wheel.  To shave off 10 bucks, we went with the four-button (no wheel) version for the Heavy Metal rig.  Rounding out all this is a Gel eez mouse pad from Case Logic, which has a comfortable, gel-filled wrist rest.

Game Controllers

Controllers are perhaps the most personal of all game hardware.  We tend to gravitate to different controllers, but for the ultimate setup, we prefer the new Saitek X-36 stick/throttle combo, paired with a set of CH Pro Pedals (you can deactivate the rudder gizmo on the X-36 throttle).  For more casual gaming, we often plug in a CH Jane's Combat Stick in "F-16 Combat Stick Mode" for last game sessions.

After using FLIGHT SIMULATOR 98 for testing, we've dusted off our venerable CH Pro Throttle.  We haven't yet found a force-feedback device that interests us; they don't feel realistic.  Actually, they all seem to be just joysticks with motors.  For less money, one interesting stick is Microsoft's new SideWinder Precision Pro.  It's a relatively low-cost, all-in-one controller, though it won't win any awards for looking or feeling realistic.

For driving, our favorite wheel is the ThrustMaster NASCAR Pro Wheel (called the Formula One Pro Wheel in Europe).  We like the quick release clamps and instant disconnect for the cable.  However, our sim driving is pretty light.  If you're a hard core CART racer, check out the Thomas Super Wheel (TSW).  It looks somewhat industrial, but is built like an M1 tank.  A force-feedback wheel intrigues us much more than a force-feedback...

Continued on page 120
### MELTDOWN

<table>
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<th>Component</th>
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<td>Supermicro</td>
<td>P6DLS PII/300</td>
<td>$550</td>
<td>(408) 895 2000</td>
<td><a href="http://www.supermicro.com">www.supermicro.com</a></td>
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<tr>
<td>CPU</td>
<td>Intel</td>
<td>P4500</td>
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<td>(600) 525 6566</td>
<td><a href="http://www.intel.com">www.intel.com</a></td>
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<tr>
<td>Memory</td>
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<td>64MB SDRAM</td>
<td>$350</td>
<td>(336) 269 6600</td>
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<tr>
<td>Display</td>
<td>Sony</td>
<td>ST40 Velocity 128</td>
<td>$450</td>
<td>(972) 234 8750</td>
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<td>Hard drive</td>
<td>Seagate</td>
<td>W900</td>
<td>$850</td>
<td>(800) 910 6993</td>
<td><a href="http://www.seagate.com">www.seagate.com</a></td>
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<tr>
<td>Hard drive control</td>
<td>Mylex Flashpoint</td>
<td>DW</td>
<td>$375</td>
<td>(408) 439 2659</td>
<td><a href="http://www.mylex.com">www.mylex.com</a></td>
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<tr>
<td>Floppy</td>
<td>Iomega</td>
<td>Maxtor</td>
<td>$300</td>
<td>(212) 792 0230</td>
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<td>Removable Case</td>
<td>Teac</td>
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<td>$125</td>
<td>(512) 226 5386</td>
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<td>Teac</td>
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<td>$125</td>
<td>(800) 722 6555</td>
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<tr>
<td>Sound Card (1)</td>
<td>Sony</td>
<td>Cheetah</td>
<td>$375</td>
<td>(408) 496 0920</td>
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<tr>
<td>Sound Card (2)</td>
<td>Sony</td>
<td>W900</td>
<td>$300</td>
<td>(212) 792 0230</td>
<td><a href="http://www.teac.com">www.teac.com</a></td>
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<tr>
<td>Speakers</td>
<td>Logitech</td>
<td>Microphones Plus</td>
<td>$89</td>
<td>(800) 231 7717</td>
<td><a href="http://www.logitech.com">www.logitech.com</a></td>
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<tr>
<td>CD ROM</td>
<td>Plextor</td>
<td>UltraPlex</td>
<td>$125</td>
<td>(800) 789 5277</td>
<td><a href="http://www.plextor.com">www.plextor.com</a></td>
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**TOTAL:** $11,004

### HEAVY METAL

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<td>Motherboard</td>
<td>ASUS</td>
<td>P4.17</td>
<td>$270</td>
<td>(408) 474 0587</td>
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<tr>
<td>CPU</td>
<td>Intel</td>
<td>P4233</td>
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<td>(800) 628 8686</td>
<td><a href="http://www.asus.com.tw">www.asus.com.tw</a></td>
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<td>Memory</td>
<td>Geonics</td>
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<td>Display</td>
<td>Asus</td>
<td>3DExplorer</td>
<td>$200</td>
<td>(408) 474 0587</td>
<td><a href="http://www.asus.com.tw">www.asus.com.tw</a></td>
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<tr>
<td>Hard drive</td>
<td>Canopus</td>
<td>Pure3D</td>
<td>$179</td>
<td>(408) 954 4500</td>
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**TOTAL:** $4,500

**Web URL**
- www.supermicro.com
- www.intel.com
- www.micron.com
- wwwslb.com
- www.quantum3d.com
- www.sony.com
- www.seagate.com
- www.mylex.com
- www.teac.com
- www.teac.com
- www.pcpowercooling.com
- www.microsoft.com
- www.logitech.com
- www.soundblaster.com
- www.diamond Multimedia.com
- www.eminent.com
- www.pcpowercooling.com
- www.asus.com.tw
- n/a
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<td>Motherboard</td>
<td>ASUS</td>
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<td>$150</td>
<td>(408) 474 0567 x236</td>
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<tr>
<td>Memory</td>
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<td>(800) 488 5846</td>
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<tr>
<td>Graphics (Primary)</td>
<td>Diamond Multimedia</td>
<td>Stealth II</td>
<td>$120</td>
<td>(909) 869 7976</td>
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<td>Graphics (Secondary)</td>
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<td>Optiquest 511</td>
<td>$230</td>
<td>(213) 726 9303</td>
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<tr>
<td>Display</td>
<td>N/A</td>
<td>Quantum Fireball ST3 2</td>
<td>$220</td>
<td>(800) 324 7415</td>
<td><a href="http://www.quantum.com">www.quantum.com</a></td>
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<tr>
<td>Hard drive controller</td>
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<td>Power Supply</td>
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<td>$25</td>
<td>(800) 231 7717</td>
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<td>(800) 231 7717</td>
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<td>Mouse</td>
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<td>$95</td>
<td>(800) 367 4434</td>
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<td>(800) 243 0000</td>
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TOTAL: $2,480
joystick, but we didn’t have the chance to try one out for this year’s rig.

We’re not big on gamepads, but the ThrustMaster Rage 3D (not to be confused with the ATI Rage graphics accelerator) feels very nice, indeed. You can connect up to four pads for multiplayer action. It’s a major improvement over Thrusty’s old pad.

One other gadget we sometimes use is Satel’s PC Dash. The PC Dash is a nifty little programmable touchpad that can be configured however you wish.

**Network Hardware**

Single-player gaming still occupies three-quarters of our game time, but every now and then, friends drop in with their computer for a network game session. We still like the 3Com Etherlink XL 10/100. It’s very easy to set up and we’ve never had any hardware conflicts with the XL. We have a Net Gear FE-106, 6 port, 100M bit hub. There’s no problem with lag time in this setup.

Setting up a LAN is not necessarily a simple matter, although Windows 95 makes it much easier than DOS does, even for most DOS games. Playing networked Warcraft 2, a DOS title, is much easier using Windows 95. While IPX-compatible protocol is still the most common way for connecting games over a LAN, some games behave better using TCP/IP. One unfortunate side effect of the way Windows 95 handles TCP/IP is how it handles TCP/IP addresses. If you don’t specify a specific address (a common thing with many ISP connections), the system will periodically pause and search for a source of TCP/IP addresses on the LAN (called a DHCP server). The solution is to hard code IP addresses for the LAN connection (not your dial-up connection). There are actually blocks of IP addresses reserved for private, internal-only networks. Here’s the list:

10.0.0.0 - 10.255.255.255,
172.16.0.0 - 172.31.255.255,
and 192.168.0.0 - 192.168.255.255.

Pick a set of numbers from these ranges for your own internal network.

Our engine of choice for connectivity is ISDN (living in California is a blessing for this reason, at least). Cable modems haven’t filtered into our area yet. ISDN is a little pricey for the Heavy Metal, but for the Meltdown, the Diamond Net Commander ISDN serves nicely. If you need to use a standard office setup, a good second choice is the 3Com Impact IQ external—but it’s a little slower than the Diamond.

However, it does have two phone jacks and is always on. Sticking with Diamond, we went with the Supra 65a external 56k modem (K56Flex) or Global Village’s TelePort X2 modem, which supports USR’s X2 standard. With a good ISP, lag times are much reduced, yet not as low as with ISDN.

**Fusion**

If you’ve glanced at the price list, you’ve seen that the Meltdown comes in at around $11,000. However, our Heavy Metal rig is perhaps more noteworthy. It’s no slouch in performance, and has a lot of solid components. We might spend a few bucks more on another 32MB of RAM, but overall, it’s a very decent system. It certainly would provide a good springboard for future upgrading, and it’s a great system for those of us who aren’t quite so obsessive about performance.

Looking back on our first ultimate rig article, it’s mind-blowing that $2,500 now buys you a 233MHz, 32-bit processor with MMX technology, a 7,200RPM hard drive, speedy (and gorgeous-looking) 3D acceleration, and a 17-inch monitor. This was the high end, folks. Technology marches on.

The Meltdown is the ultimate dream machine. But it also requires a lot more pampering than does the Heavy Metal. There’s a lot of bleeding-edge stuff in it, and it requires a little extra TLC to keep it running smoothly. As is the case with a Dodge Viper, it’s a bit uncivilized—but it is one fast puppy when speed is what you need. However, if this year’s $2,500 system is any indication, then what you see here will probably be the mainstream in two years.

We hope you find the information helpful, and we’re sure you’ll get the performance you expect. Until next month, may all your hardware live happily together.��
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Comdex Sightings

If you want to see how big the computer industry is, spend a few hours at Comdex. This year about 250,000 people made the pilgrimage to Las Vegas for what is now the largest trade show in the world. With 10,000 products on display, it's impossible to see everything, so you have to pick your targets. After surviving the thronging crowds, here's what I have to report.

I saw several new 32x-IDE CD-ROM drives that looked promising, but I didn't see any UltraATA drives. Wandering through the Creative Labs booth, I noticed 3DFx's software chief intentlyTreeView users' reactions to Creative's Voodoo 2 demo. And speaking of Voodoo 2, there were demos in a number of places, mostly running Turrican and a couple of racing games. The Quake II demo was oddly absent. Creative Labs showed some other interesting stuff, including a DVD-RAM drive (though the standard is still up in the air) and a — gasp! — PCI sound card. It looks as if 1998 will be the end of the ISA sound card. (And there will be much rejoicing.)

Other graphics sightings included Intel's new 2D/3D accelerator, the i740 (code-named Autumn; see 3D IronWorks), a Pentium II laptop (no, it doesn't use Slot 1, it's the next-generation chip), and several USB mice. Logitech showed a wireless keyboard/mouse combo that will be sold as a bundle. It uses Logitech's radio technology, so no line-of-sight is needed to an IR receiver.

Several companies, including 3C and Diamond, showed technology using modems that can be paired together to deliver an aggregate throughput of 112Kbps. Of course, this technology requires two phone lines, but unlike ISDN, much of the technology for supporting these dual-line connections is already in place (pill those that use Ascend routers). I also got a peek at 3Com's new cable modems. One problem with cable modems is that most cable companies aren't equipped for two-way traffic. 3Com's newly acquired U.S. Robotics division solved that problem by using standard V34 modems to handle upstream traffic, potentially opening up much more of the country to cable modem technology. This might be great for Web browsing, but I expressed my concerns to 3Com about potential latency problems. The good news is that the company will check out the issue in its lab.

New mass-storage options abounded. Syquest had a couple of interesting items, the first one being their new 1GB removable hard-drive. Dubbed the Sparq, it will retail for $199 (with cartridges for only $33). This looks like a killer piece of gear. Another interesting product is the company's not-yet-shipping 47GB removable drive. It will cost closer to $600, but a 47GB cartridge will cost less than $200. Seagate showed its new Cheetah II. As with the earlier Cheetah (which we selected for our Ultimate Game Machine), it spins at 10,000RPM, but the access time is down to 52 milliseconds, and it runs much cooler than the original part.

On the processor front, we caught a glimpse of the capabilities of the AMD K6 3D chip. The K6 adds additional instructions that don't exist in Intel processors to help speed up mathematical operations used in 3D graphics. Cleverly, AMD has developed a HAL for Direct3D, so programmers can use the additional instructions in a standard way. For example, we saw 3D WinBench run faster on a prototype K6 3D/300 than on an identically configured Pentium II/300. What's more, we saw a demo of Dreamworks' upcoming Trespasser: Jurassic Park that looked better on the K6 3D than on the Pentium II. The frame rate was the same on both CPUs, but the Pentium II ran at 320x200 while the K6 ran at 512x384. Oh, and the K6 version had translucent water and filtered textures. — Lloyd Case

HARDWARE PIPELINE

<table>
<thead>
<tr>
<th>Product</th>
<th>E.T.A.</th>
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<tbody>
<tr>
<td>Octochip (400MHz Pentium II)</td>
<td>Q1 '98</td>
</tr>
<tr>
<td>440BX chipset (supports 100MHz system clock, 4 CPUs)</td>
<td>Q1 '98</td>
</tr>
<tr>
<td>3Dfx Voodoo 2</td>
<td>Q1 '98</td>
</tr>
<tr>
<td>S3 Virge GX3</td>
<td>Q2 '98</td>
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New High-End Intel Accelerator

For more than a year Intel has been working on a project to bring Lockheed Martin’s high-end 3D technology to the PC market. Until now, there’s been very little information about the Intel project, code-named Auburn. At the Comdex computer show, I managed to play with a prototype of the 2D/3D board, called the i740, and I have some numbers to report. Bear in mind that both hardware and software were beta, so these numbers will most likely change. But even for a beta, this part looks promising.

I ran 3D WinBench 98 to take a close look at the feature-set supported by the i740. One immediately noticeable result was image quality, which was quite good—especially MIP-mapping. The i740 did not support the higher-end MIP-mapping features (for example, linear/mipmap/linear in 3D WinBench 98 parlance) but the more common MIP-mapping modes showed none of the odd streaking or artifacting visible in RIVA 128 cards. The chip also supports antialiasing, though this feature didn’t seem to be turned on in a way that 3D WinBench was able to recognize.

The i740 delivered impressive performance. The card was AGP-based with 4MB of video memory, running on a 266MHz Pentium II. This beta version of the i740 came in with a score of 460, placing it between the 3Dx-equipped Monster3D—which gets around 370—and the RIVA 128 cards, which come in around 490. Given the overall image quality—quite good—this isn’t a bad score at all.

The real issue is what impact the i740 will have on the overall graphics chip market. If Intel can deliver a chip at a relatively low cost with reasonable 2D and 3D performance, some of the more marginal players may be muscled out of the way.

I wasn’t able to check out 2D performance or real games. But I’m cautiously impressed, particularly if the price point is right.

—Loyd Case

ACRONYM OF THE MONTH

DSiAM: Digital Subscriber Line Access Multiplexer

A piece of networking hardware used for increasing throughput in DSL connections.

Driver Ed

Or, What a Difference a Driver Makes

Graphics cards used to be easy. After running through more than 30 graphics cards in the last few months, I dug into my archives to reread the video card review in the September 1994 Computer Gaming World. Back then, the only real game we used for testing was FLIGHT SIMULATOR 3.0a. One of our test mainstays was a DOS benchmark called 3DBench DirecX wasn’t even a twinkle in Microsoft’s eye at the time, and Windows 95 was still called “Chicago.” Almost every game shipping ran under DOS. We tested on two systems, a “mainstream” 486/66 VESA local-bus system and a “high-end” Pentium 90.

My, how times have changed.

THE ART OF PERFORMANCE

In 1994, performance in gaming was defined by how many pixels you could push through the video card. There was only one game (FLIGHT SIM TOOLKIT) that used the 2D acceleration features of certain graphics cards, and no mainstream title used 3D acceleration—though Matrox had a couple of technology demos on their high-end CAD-oriented cards. We ran WinBench 2D WinMarks almost as an afterthought.

Today, it’s much more complicated. You not only have to worry about Windows 2D performance (since many of us, willingly or unwillingly, live and work in the Windows environment), but now you also have to deal with DirectX, Direct3D, and OpenGL.

The graphics cards themselves, though much simpler in appearance, are more complex than ever. Feature sets for 3D accelerators vary so

Continued on pg 124
much, you wonder how any game can possibly run successfully on all of them—and few actually do.

Driver writers are the unsung heroes (and villains, for that matter) in today’s complex driver environment. A good driver writer can wring out that last ounce of performance and turn a mediocre graphics card into a good one—or a good one into a great one. In the past few months, I’ve tested more than 30 graphics cards. Time after time, I’ve been surprised by a new driver’s increase in performance or newly added feature.

One good example of this is the RIVA 128 chip. The PCI version of the STB Velocity 128 fell just a little short of the Diamond Viper in our October review. By the time we tested the AGP versions for last month’s reviews, STB had been aggressively incorporating new updates from NVIDIA. Early Velocity 128 drivers didn’t have fog-table support enabled, but the most recent drivers included it. All of a sudden, I could run Shadows of the Empire with the STB card and have full fog effects. Diamond has since upgraded its drivers as well, but it’s interesting to note how drivers can affect a card’s performance.

Another interesting case in point is the ATI Rage Pro. The Xpert@play and All-in-Wonder Pro use this chip for 3D acceleration. Our early testing indicated that the Rage Pro was far better than its predecessor, the Rage II+. Nonetheless, it fell far short of the performance of the RIVA 128 cards or 3Dfx boards. Over the next several months, each subsequent beta driver from ATI improved performance by 25 percent (at least in 3D WinBench).

**IMAGE QUALITY**

Which brings us to the issue of image quality and 3D graphics. Flight Simulator 98’s default VCR replay is an interesting test, as it demonstrates some of the sins of new features. Pay close attention to the Paris scenery near the end of the replay. On some cards, the textures annoyingly flash in and out. Flight Simulator 98 seems to be a bit finicky about MIP-mapping (the flashing textures are different level-of-detail terrain textures being swapped in and out too quickly). The Rage Pro has this problem (although the driver wizards at ATI are busy working on this fix). If you run the same VCR replay on the Canopus Pure3D, you don’t see any flickering—but the textures look a little too filtered, which is one of the hallmarks of 3Dfx boards.

The RIVA 128 boards don’t escape our scrutiny, either. Occasional texture cracking (when you can see between polygon seams) was one of the problems with the drivers we reviewed in our graphics card showdown.

Image quality also tends to be a relative thing. Unlike 2D scenes, there are myriad subtle ways to render a 3D scene. Once you get a 3D card and live with it for a while, another card’s rendering of the same game will look different to you. Since humans tend to favor the familiar, different often translates to “bad.” In some cases, the differences are a matter of lower quality (just look at the rendering quality of one of the original Laguna 3D boards, such as the Graphics Blaster). In other cases, the differences are simply a matter of taste (witness the bashing that goes on between opposing devotees of 3Dfx and Rendition chips, for example).

**PLATFORM BLUES**

Standard APIs are wonderful things—in theory. Once you have one or two standard APIs, everyone can write to them and stop worrying about designing their own 3D-rendering engines. But standard APIs can become a “least common denominator” that will exclude

---

**C-TECH TIPS**

▶ **WHO’S ON FIRST?**

If you have more than one 3D accelerator in your system, it’s not always obvious which card is being used by a particular Direct3D game. We found a cool utility called 3DCC (3D Control Center) on Videologic’s Web site.

▶ **TURN BACK THE CLOCK**

I’m not an advocate of overclocking your Voodoo Graphics card, but if you are interested in doing it, you should practice *safe* overclocking. One way is to add a fan to your 3Dfx card. We came across a handy fan designed for just that purpose, the 3DfxCool. It’s a simple device that can help you keep your 3D texture processor stay cool when you jack it up to 60MHz. But don’t tell 3Dfx I wrote this!

You can check out the 3DfxCool at www.3dfxcool.com. Make sure you tell them which 3Dfx board you have.
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technologies that don't quite behave the way the API expects. The PowerVR chip from NEC and Videologic is a good example. If you've seen GL QUAKE on a PowerVR accelerator, you know it looks pretty good. You can quibble about differences in image quality between the 3Dx PowerVR versions, but GL QUAKE on the PowerVR chip nonetheless looks very nice. But Direct3D and the PowerVR don't always get along very well. Performance can vary radically from one 3D title to the next. These quirky interactions also have an adverse impact on how 3D WinBench "sees" the card. With OpenGL, there's a method for adding extensions in a standard way. (That's right, you can add nonstandard features in a standard way, think about that for a moment. It's a powerful idea.) Direct3D doesn't really have this now, though DirectX 6.0 will have a mechanism for talking directly to the hardware.

CHEATING

There's not much difference in real-world performance between a card that gets a 2D WinBench 97 score of 85 and one that gets 100. But the difference sells cards, and card manufacturers look for anything that gives them an edge in marketing. One method is called GDI bypass. GDI (Graphics Display Interface) is the standard way Windows renders regular, 2D, Windows-related, non-game graphics. GDI is what the programmers use when they want to have a window opened, a menu pulled down, or a bitmap painted. Several years ago, graphics card makers discovered they could substitute their own methods for doing these functions and bypass GDI. The result was a dubious increase in real-world performance, but boy, did those benchmark scores suddenly jump.

The problem with GDI bypass is the potential for compatibility problems. In stepped Microsoft, using its muscle in a positive way. Now, graphics drivers go through a certification process managed by Microsoft's WHQL (Windows Hardware Quality Lab). If a driver turns on GDI bypass by default, it can't get a WHQL certification. So check to see if your graphics hardware has a WHQL-certified driver. This doesn't mean that a driver won't have bugs—it just means that it's written to conform to Microsoft guidelines.

CHECK YOUR DRIVERS

Graphics drivers are critical. Check your driver rev numbers, and make sure that you get the latest updates. It can make a big difference in performance and image quality.

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**Plextor Delivers**

by Loyd Case

When we reviewed Plextor’s I2/20 SCSI CD-ROM drive (CGW#158, September 1997), we said it was the last CD-ROM drive you would ever need. That assessment is probably still accurate. However, if you have a slower CD-ROM drive, which means anything except a I2/20, consider Plextor’s newest offering, the UltraPlex.

The UltraPlex is a CAV (constant angular velocity) CD-ROM unit that is rated from 4x on the outer tracks to a full 32x on the inner tracks. This is an Ultra-SCSI device, so it only handles the fire hose-sized flood of data this drive can pour into your system. If you have a SCSI host adapter capable of Ultra-SCSI speeds, the UltraPlex can handle burst data transfer rates of up to 20MB/sec. Using WinBench 98, CD-ROM test, the UltraPlex cranked out a stellar 1670 CD WinMarks, with only 3.8 percent CPU utilization. The host adapter was an Adaptec 29400UW. WinBench 98 also measured an average access time of 95 milliseconds.

This drive supports just about any CD-ROM format you can imagine, including the new CD-RW discs. It also has a neat feature for audio buffs—the capability of extracting CD Audio (red-book) data across the SCSI bus at full speed. This is far in excess of the old SPDIF connector’s 1x speed. The UltraPlex comes in both easy and tray models; ealixies were reintroduced with the UltraPlex due to customer demand (the easy’tlets protect CDs that are being passed around offices).

The UltraPlex can be purchased as an external or internal drive; optional SCSI host adapters are also available, but they’ll cost you more. A floppy disk with some handy control utilities (including audio extraction) comes with the drive.

If you want a CD-ROM drive that’s incredibly fast, well-mannered, and easy on your CPU, take a good look at the UltraPlex.

| APPEAL: Anyone who wants the ultimate CD-ROM drive. |
| PROS: A CD-ROM drive that behaves almost like a hard drive; cool digital audio extraction; supports all CD formats. |
| CONS: A little pricey; needs SCSI host adapter. |

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**A Media Geek’s Delight**

by Loyd Case

I've never been very interested in convergence—that warm, fuzzy term that suggests a melting between interactive and passive media technologies. That was until I popped the All-in-Wonder Pro (AIWP) ACP card into my system and became hooked.

I admit it. Beyond Babylon 5, I watch almost no television. With the AIWP, though, I find myself watching TV in the background, if only to be able to check out CNN occasionally. The TV Tuner is pretty amazing, too. It can search for specific channels, put up little thumbnails of numerous channels on your screen, and perform keyword searches on closed-captioning text.

The video capture features look interesting as well, although AIWP uses software-only compression. Another upside: The All-in-Wonder Pro’s NTSC output is very clean, and produces solid image-quality when running through a television.

Ultimately, though, I'm a game player, so I needed to be convince of the All-in-Wonder’s 3D and 2D graphics capabilities. I ran the AI card in an ACP-equipped, 266MHz Pentium II (alongside a Diamond Monster 3D). Using 3D WinBench 98’s extensive new quality tests, I was able to really wring out the Direct3D performance of the All-in-Wonder Pro. The Pro supports an impressive set of features, about the only things lacking are antialiasing and proper MIP-mapping. The 3D WinBench 98 aggregate frame-rate came in at 346 (This number was for an 8MB card, a 4MB card might not get a score quite this high.) This compares quite favorably to the Monster 3D’s 349. Still, there are a few image-quality problems in Direct3D games, such as the severe texture flashing in Microsoft Flight Simulator 98, Moto Racer and Wipeout XL looked pretty good, though. DOS and Windows 2D numbers were good, if not at the top of the heap.

Overall, the All-in-Wonder Pro is a terrific card if you want to have TV tuner and video capabilities tightly integrated with your system. It’s no slouch as a 3D accelerator, either, although we’re eagerly awaiting ATIS new driver releases, which promise even better performance and fixes for some of the image-quality issues.

Those caveats aside, this card is worth a look.

| APPEAL: Anyone who wants a solid 2D/3D accelerator coupled with a TV tuner. |
| PROS: Great TV management; solid 2D- and 3D-performance. |
| CONS: Expensive; needs a cable TV connection for full effect. |

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Little Big Screen

Creative Labs Breaks the $400 Barrier

by Dave Salvator

DVD represents a major paradigm shift in storage, content distribution, and media presentation. Or something. The marketing of DVD has been a study in hyperbole. But like it or not, DVD is here to stay, and will eventually supplant conventional CD-ROM drives in PCs. So what does this mean for gamers? Two words: bigger hit-bucket! Yes, you'll also get MPEG-2 video playback and Dolby Digital (AC-3) 6-channel audio for movies, but very few games make effective use of full-motion video in actual gameplay. So DVDs main contribution for gamers will be gobs of storage space—from 7 to more than 25 times that of a traditional CD-ROM. This bigger hit-bucket translates into more detailed graphics, higher quality sounds, and better-looking trailers.

One major roadblock to DVD has been the price of the kits, which usually range from $600 to $800. But Creative Labs brings in its new PC-DVD Encore DX2R for under $400. The kit includes an EIDE 2x DVD-ROM drive and an MPEG-2 decoder board. The firmware includes DVD versions of Wing Commander IV and that oldie but goodie, Dragon's Lair. Other notables: S-video output from the MPEG-2 decoder board, and SPDIF digital audio output to route to a Dolby AC-3 enabled amplifier.

Installation proves fairly painless, though by its nature, it's a somewhat involved process. You'll need an available 5-1/4 inch drive bay and a free PCI-slot. The DVD-ROM drive comes preconfigured as an IDE slave device and can be placed on either your primary or secondary IDE controller. Just to make the decoder board installation a little more interesting, I installed it into a system that already had a 3Dfx-based 3D-only board to see if that would give PC-DVD Encore any trouble. It didn't. Once both devices were physically in place, I fired up the system. The DVD-ROM drive was detected on POST, and when Windows 95 came up, I felt it a driver disk for the detected DVD decoder board, and the unit's drivers were installed. Next, I installed Creative's PC-DVD Player for playing DVD titles, and the unit was good to go. Though not enabled by default, the DVD-ROM drive supports EIDE bus-mastering, which lowers CPU usage during transfers. Another note: This second-generation DVD-ROM drive can read CD-R media, something first-generation drives couldn't do.

Although DVD-ROM will play an increasingly important role in PCs, its performance as a CD-ROM drive, though improved, still falls short of traditional drives. Creative rates the PC-DVD drive as a 20x CD-ROM drive, but in WinBench 98's CD-ROM WinMark test, Creative's DVD-ROM turned in a score of 961, compared to a 1,250 by the test system's installed 2x Toshiba drive—making the drive only about three-quarters as fast as the CD-ROM drive. Other performance news is mixed; While the DVD-ROM's CPU usage came in at 3.6 percent, compared to the CD-ROM's 5.3 percent, its access time was 148 milliseconds, versus the CD-ROM's 111. So if you're hell-bent on having a DVD-ROM unit in your rig, you'd do well to hold on to your existing CD-ROM drive, and run both.

I also ran a wide variety of DVD movie content on the PC-DVD Encore, and the results were, by and large, impressive. At 800x600x16-bit color, image quality was smooth—both in a window and full-screen—thanks to Encore's bilinear interpolation filtering. This type of filtering smooths pixelation when the playback image is scaled up, but will sometimes cause a blurry effect if not done well. Blaming was minimal, even on credits. When I upped the resolution to 1024x768 and 1280x1024, image quality headed south somewhat, with some visible deinterlacing that produced jaggies on vertical lines. The Encore's bundled DVD player features a remote-control-like interface, and is readily navigated for playing DVD content. The player can also play MPEG-1 and VideoCD content.

Creative's second-generation DVD kit gets a lot right, including the price. But DVD-DRAM drives—which let you write data as well as read it—should ship by the end of 1998. And while DVD-based games will begin to ship in 1998, there's no pressing need yet to have DVD in a gaming box. But if you just have to have DVD, this part warrants a look.

Appeal: Gamers who must have DVD in their rig.
Pros: Easy hardware installation; aggressively priced.
Cons: DVD's throughput performance still can't match a typical CD-ROM drive; some installation headaches; a few configuration problems with DVD player.

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Livin’ Large

by Dave Salvator

When it comes to displays, bigger is usually better. Of course, with CRT monitors, a bigger picture usually equates to a smaller desk, especially when you move into the behemoth 21-inch and 24-inch range. KDS’ new VS-19 monitor—which is actually a 20-inch monitor—does take up a fair amount of desk real estate, but the bigger picture may be worth the sacrifice.

The VS-19 has fairly well detailed on-screen display (OSD) controls that let you tweak contrast, brightness, geometry (vertical/horizontal, sizing/position), and color temperature settings. Getting into the controls is pretty easy, though I didn’t find a way to back completely out, and instead waited for the control panel to time-out and disappear. Setup is straightforward, since the VS-19 is a Plug-and-Play monitor, though the lack of a monitor-specific INF file (which lists the monitor’s top-end refresh rates) is annoying, because it makes tweaking refresh rates more difficult. The good news here is that the VS-19 supports up to 75Hz vertical refresh at 1600x1200.

Once setup is complete, the rest of the news is, for the most part, good. When I put the VS-19 through its paces with EA’s NBA Live 98, its image quality was bright, and colors looked rich and full. And as someone who normally works on a 17-inch monitor, the difference in screen size is appreciable.

One noticeable curiosity: the VS-19’s front glass has a much more pronounced convex curve to it than most monitors, resulting in some image “warping” in the screen’s four corners. And while the effect was pretty evident when I ran test patterns, it didn’t detract much from image quality during gameplay.

All in all, the VS-19 is a good monitor offering larger size and good image quality for under $1,000. The lack of a specific INF file is an annoyance, and for gamers who also do a lot of full-screen image editing, the VS-19’s curved front glass might curve the corners of images somewhat. Still, in gameplay, this distortion isn’t really palatable, and if you’re looking for a bigger screen size and don’t mind giving up some desk space in the bargain, take a look at the VS-19.

[CG LABS RATED] 4/5

APPEAL: 15-inch monitor owners looking for a bigger picture.

PROS: Big, bright picture; good OSD controls.

CONS: Curved glass slightly distorts corners of display image; no INF file included.

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Button Overkill

by Loyd Case

The ThrustMaster NASCAR Pro Racing Wheel represents an attempt at capturing realism in a driving controller, then SC&T's Performer Racing Wheel is pure fantasy. It's certainly not a believable steering wheel.

The first thing you notice are the gaudy decals that are meant to look like a dashboard. Speed Racer's dashboard may look like this, but I much prefer the spare appearance of the ThrustMaster wheel — after all, most racing games I've driven, the dashboard shows up on the screen.

The next thing you notice are the buttons. There are a lot of them. 15 in all. To its credit, SC&T ships a pair of DirectInput drivers that work with the wheel in either 4-button mode (supporting most games) or 15-button mode (for games that allow controls to be reconfigured). Too bad the 15-button mode doesn't work well. I could never get the hat-pad guzzmo to work properly, despite repeated calibration attempts.

After getting past the wheel, I moved on to the pedals, which need to be plugged into a special connection on the wheel. I actually liked the pedals quite a bit. For one thing, they're large, with a big platform that allows easy foot placement (there is even a heel rest) and prevents the pedals from sliding around on a carpeted surface. Other makers of driving controls could learn from SC&T pedals.

Once I got past the installation hurdles, gameplay commenced. I ran through parts of Need for Speed II and 1-76 with the Performer. This wheel doesn't feel as light as the CH wheel, but it's not as stiff as the Thrustmaster either. It autocenters nicely, but the placement of the buttons generates a lot of confusion when you're actually playing. There are no programming tools; you must count on the game having reconfigurable controls. The base is big, so you need a lot of desk space. Also, the suction cups tend to pop out of the base during gameplay. Maybe a little superglue is in order?

The SC&T Performer isn't a bad wheel, but it's certainly not a standout. If you can live with the poor button placement and driver headaches, then this could be a lower-cost alternative to the NASCAR Pro Wheel — if realism isn't your bag.

APPEAL: Someone looking for a low-cost wheel with a lot of buttons.

PROS: Nice foot-pedal design; light, yet precise, autocentering.

CONS: Buttons here, buttons there, buttons everywhere; DirectInput driver is buggy.

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Morgana: listen! the dragon is close

Sir. Trent: what spells do you have left?

Morgana: NONE -- I used my last on the stairs

Sir. Trent: then all we have is a sword . . .

I'll go alone

Morgana: no! Sir. Trent!!
"People who fly everywhere in their homes need jumping platforms and vanishing bridges like a snake needs wheels."

—Scorpio, reviewing LANDS OF LORE: GUARDIANS OF DESTINY

HOW DO WE RATE?

We review only finished products, not prerelease versions. The ratings are as follows:

**Outstanding:** The rare game that gets it all right. 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.
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★ Lightning Fast, Real-Time Adventure Game with Dramatic Multiple Endings
★ 3D SGI Art by world famous artist Gil Bruvel; if game screens were paintings it
would sell for over $10 million dollars
★ Stunning 3D 360 scrolling environment
★ Absorbing level-based game created by Cliff Johnson, creator of Temple Thank
★ Post-Apocalyptic soundtrack by the MF'ers
★ Immersive CD surround sound
★ Experience the Seven Deadly Sins while you can!

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Actual scenes from game

Interplay

Interplay

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The Odd Squad
A Charming New Cast of Characters Arrives on the PC
by Ken Brown

It's easy to fall in love with Abe's ODYSSEY, but don't go running off to get married without a second look. Yes, it's beautiful, funny, and full of personality, but be prepared to have to prove your worth over and over again before getting any special privileges. Like the ability to save, for instance. More on that later.

If you haven't seen it, Abe's ODYSSEY is a side-scrolling platform game with several innovative twists. Tired of stereotypical heroes? You play a skinny little wretch named Abe, a Mudokon slave at the Rupture Farms meat processing plant. To add insult to injury, Abe's mouth is sewn shut. In the introductory animation, he makes a horrifying discovery. Rupture Farms will soon be turning Mudokons into packaged food treats. As you might expect, Abe's work ethic tapers off pretty dramatically at that point.

The intro segues perfectly to the start of the game. Throughout, the designers have succeeded in integrating the cut-scenes almost seamlessly with the gameplay sequences, which goes a long way toward preserving the consistency of the game world.

As the game begins, Abe is on the lam, trying to escape from Rupture Farms while rescuing as many of his fellow Mudokons as possible. You control Abe with the usual complement of platform moves such as running, jumping, crouching, and rolling. My favorite move is sneaking, which lets Abe creep by guards without being noticed—a great tactic and a real treat to watch.

**GAMESPEAK**

Abe can also talk, which is a pretty exciting innovation in this kind of game. He's not a chatterbox, but his vocabulary is just large enough to give him a kind of personality. The designers call this feature GameSpeak, and they provide an interface to help you practice his abilities.

Sligs are funny-looking robotic guards with bad tempers and nasty machine guns. When Abe possesses one, the Slig cries out "Ow!" runs around feebly, and then falls under Abe's command. At that point you can control the Slig for as long as you like, experimenting with his amusing vocabulary and using him to ventilate all his friends.

As with Abe, the Slig's speech isn't just for fun. Sometimes you'll need the Slig to yell "Watch out!" to nearby Mudokons, or they'll die in the ensuing firefight. At other times, you'll have to repeat a supervisor's speech into a console before the supervisor will detonate an electric field. But the most fun I had was while making a Slig search for his Slog (guard dog). You force the Slig to walk around yelling, "Here, boy, here, boy!" and when the Slig finally appears, you punch him with lead and make the

**SLIG BOMBING** After picking up some grenades from the "Boom" machine, Abe lob's one onto an unsuspecting Slig below

Slig laugh. Then you walk the Slig over a cliff and make Abe laugh. Now that's entertainment.

**HOW ODD**

Oddworld—the game environment—is an exquisitely detailed and organically consistent virtual world. The world has been painstakingly designed and rendered, and although you navigate Abe along a 2D plane, the environment's depth isn't totally lost, as in most platform games. At various points a cinematic cut-scene changes the field of view, bringing distant features into focus as the new plane of action. At other times the action can occur on more than
one plane along the z-axis. Oddworld Inhabitants (the developers) obviously spent a lot of time rendering a realistic-looking world. The company intends to reuse it in the Oddworld "Quintology," the five-game series of which Oddyssey is the first part.

There are seven distinct environments here, each offering different challenges. You'll have to overcome a variety of objects, such as bombs, motion sensors, meat saws, and falling debris, all while fending off attacks from bizarre creatures. You'll die frequently, but the game restores Abe automatically to a recent screen.

The puzzles are easy at first but become refreshingly clever and more complicated. (See our tips for winning in this month's Gamer's Edge.) The only actual weapon Abe will ever have, apart from a gun-toting Slig, is a hand grenade. Most of the time Abe has to work with it in a rock or a piece of meat, and you have to figure out how to use them to defeat your enemies. The puzzles are not only challenging, they're also thoroughly consistent with the game world.

Fortunately, Abe isn't entirely alone in his mission. He has the occasional support of allies throughout the game to confer special knowledge or power to him. There are Mudokons, a powerful shaman known as Bigface, and a special creature called Elum. Elum ("male" spelled backward) is an endearing beak who responds to Abe's voice commands and allows Abe to ride him, which comes in handy for making big jumps. The only liability Elum poses is that he's prone to distraction when eating honey. This becomes a puzzle in itself as you try to separate him from his favorite food. Fortunately, where there's honey, there are also bees...

At Odds

I've covered only a few of the game's many terrific qualities. As you can tell, I was charmed and delighted by its personality and wonderful sense of humor. I'd love to recommend Abe's Oddesy to anyone—but I can't. You see, the game has a terrible secret.

Oddyssey was designed by people who love console games. And most console games are designed to make you play all the way through a level before saving. You have to finish the entire level, then you get a code, then you advance. Only trouble is, computer gamers have different expectations and tolerance levels. Rather than forcing ourselves through a Quake or Jedi Knight level all at once, we like to save the game after particularly difficult parts to minimize repetition. In Oddyssey, you can save at any time, but the actual save points are at predetermined locations in the game. This means that you might save near the end of a difficult level, but if the game's nearest predetermined save location is at the beginning of that level, you'll have to play through the whole thing again anyway. Since the interval between these points is usually several screens long, the game requires that you perfectly execute up to 10 puzzle-filled screens before being able to advance to the next save point. Failure means repeating the process, ad nauseum, until you get it right. To make matters worse, some of these puzzles won't just be physical moves, they'll be speech puzzles. So you'll have to hear and repeat back a series of whistles and farts dozens of times until you're able to progress beyond a certain sequence. I had to repeat the most difficult sequences more than 100 times, and though I may be slower than you, I wouldn't recommend buying Abe's Oddyssey unless you can tolerate repetition and have plenty of time on your hands.

If it wasn't for this major flaw, I would recommend Abe's Oddyssey to any action or adventure gamer. Its loaded with humor, personality, and charm, and the story and puzzles are enough for experienced gamers to sink their teeth into. If the designers provide a more versatile save feature for the next four editions in the series, I see a bright future for Abe and his Oddworld friends.

**Appeal:** Anyone who prefers puzzle-solving to fast, violent action.

**Pros:** Beautiful graphics and design; interesting characters; wonderful sense of humor; GameSpeak.

**Cons:** Extremely repetitive play; save-game feature is restricted to certain areas; cannot load from the Escape screen.

odd_6914_353.txt
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Take Away the Controversy and You Have a Mediocre Game

by Scott A. May

here there’s smoke, there’s usually fire. Pre-release hype for Ripcord’s debut game, POSTAL, blew plenty of smoke at both consumers and the press, hoping to fuel a firestorm of controversy. So far, it’s worked. Once you get past the hype, though, the game reveals itself to be lukewarm at best.

The game’s backstory is purposely left to the player’s own twisted imagination. You assume the role of a disgruntled citizen known as Postal Dude, who pops a cork after being evicted from his house. Your heavily armed character then lets out his frustrations on the entire town—he “goes postal.”

RAMPAGE

The game unfolds in an isometric perspective as you wreak havoc across 16 increasingly hostile locations. Settings include peaceful neighborhoods, downtown paradises, trailer parks, train stations, urban ghettos, and industrial parks. If your Kevlar vest holds out, the game culminates in a rather shocking showdown at an Air Force base.

Gameplay is delightfully demented at first, as you are victims who die screaming, often begging for mercy. “Kill me now!” or “I can’t breathe” they wail. In a twist of sick compassion, you can actually stand over their reddened flesh and pump a few last mercy shots into their heads. Likewise, when you can’t take anymore, you can always insert the barrel into your own mouth.

BEYOND POOR TASTE

Designed with juvenile delight by Running With Scissors, POSTAL is both a parody of video-game violence and an excellent example of our desensitized perception of entertainment. Some will find POSTAL hilarious, others will find it downright sickening. Give Ripcord some credit for chutzpah—the company doesn’t just push our moral hot button, it smashes it to smithereens. The game dares us to find pleasure in the cold-blooded murder of innocent people.

PROTEST THIS

In a parody of Postal’s real-life controversy, protesters of video-game violence outside the Running With Scissors office are “greeted” by Postal Dude.

From a pure gameplay standpoint, however, POSTAL holds only limited play value. Visual designs are imaginative, and the weapon selection—including machine guns, shotguns, spray cannons, heat-seeking missiles, napalm, and flame throwers—are well implemented. But in the long haul, even the most played arcade game freak will find the game repetitive and dull.

The game does its best to ensure long-term playability, with a host of single-player variations, such as timed levels, body count goals, checkpoints, and capture-the-flag scenarios. Multiplayer games—over modem, IPX, or the Internet—also help liven things up. But when all is said and done, the simple-minded carnage at the heart of the game becomes a worn-out novelty.

PUZZLING GRAPHICS

Graphics are good and bad. On the plus side, the game’s hand-drawn backdrops are varied and elaborate. Artistically, however, these watercolor-style backdrops look like the classroom doodlings of a bored seventh-grader.

Character animations are simplistic and sketched crudely above the 2D framework. Character interaction with the environment is almost nonexistent. Fires that burn in one scene are instantly extinguished when scrolled out of camera view. Had the designers let players interactively vent their rage on structures in the game world, the game would have had more appeal.

The game does have its share of sadistic eye candy, such as victims who spew arterial blood while clanging the ground in agony. Players with DirectX-compatible video cards will also enjoy transparency effects in explosions, fire, and smoke.

Overall, the only envelope POSTAL pushes is that of good taste. Otherwise, it’s merely a routine shooter designed to delight the commonly morbid minds of preteen boys.

CARRIAGE

The game is a simple (in the best sense of the word) take on the cartoonish tone of the real game. It’s a putrid, dumb, and dumbbell version of the best note from the classic "The Smell of the Game."
YARMOOR (YELLOW) DEFEATS FLATLINER (BLACK) IN A SANCTIONED MATCH ON SOLARIS...

Stone -GrpW-> -----: Where did DW's Banshee go?

JT Chance -GrpW-> -----: It shredded my gyro!

I'm out! DEAD!

Stone -GrpW-> -----: I'm gonna need help

- who's left?

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Awards Our Games Have Won:
Poor Man's Quake

by Mark Clarkson

The format is familiar; the plot, as usual, is irrelevant. **Chasm: The Rift** is a first-person shooter that covers plenty of stock territory. There are monsters everywhere, and it's your job to clean house with the customary mix of weapons: chain-guns, grenades, mines, and the occasional lightning-firing superweapon. As usual, you'll find health, weapons, and ammo lying around on the floor.

Where **Chasm** distinguishes itself is in its 3D polygonal monsters—they are the best I've seen in a 3D shooter. They are well-animated, moving as if they actually have mass. More striking, though, is the way they take damage.

With careful aim, you can blow off a monster's arm. That may slow him down, but it won't stop him. He'll still punch you with the other hand. Shoot his other arm off and he'll start kicking until you put one in his brain.

While the monsters are state of the art, the rest of **Chasm** feels dated. The levels are Wonderfully textured and fairly interactive—you can shoot out lights and windows—but very 2D. There are no rooms on top of rooms. The sound and mouse controls are a bit flaky, but the frame-rate is smooth on a P33 or P266.

**Chasm** supports network play in either deathmatch or cooperative mode, but cooperative play prevents you from actually working through the levels together. The level design is solid, though not terribly original—just like the entire game.

### STRADDLING THE MIDDLE

**Chasm** uses 3D for its cool monsters, but adheres to a dated 2D look for its levels.

---

Wizard of Blahs

by Robert Coffey

**Mageslayer** is typically unoriginal; plot boils down to killing everything in sight while dodging various traps. Basically, **Take No Prisoners** with some half-baked fantasy, it's a top-down shooter that rehashes the genre's worst elements.

You can play as one of four characters, but gameplay is unaffected by your choice. Visually, **Mageslayer** is crisp and smooth, provided you have a 3Dfx card. Even with one, there's a slight but noticeable hit in frame rate when large unanimated objects fill the game screen.

Unlike **TNP**, **Mageslayer** is stunningly stumpy in variety. All five game worlds are populated by the same few monsters, mostly the tired giant scorpion, spider, and rat types. It gets worse. Each character has one measly melee attack and three ranged spells, all of which have an indistinguishable "powered" version.

Like other subpar games, **Mageslayer** makes the mistake of confusing lots of enemies with challenging gameplay. Monsters attack in huge hordes that, though easy to kill, force you into tedious mouse-clicking.

**Mageslayer** is filled with traps you've seen a thousand times. To be fair, the game does go beyond the traditional power-up caches by offering some entire gauntlet-running secret levels.

Ultimately, **Mageslayer** is a study in limitations, unredeemed by the tacked-on multiplayer options.

### APPEAL:

**Take No Prisoners** fans who don't mind a much less interesting game.

**PROS:** Crisp, smooth graphics with 3Dfx card; lots to kill; secret levels.

**CONS:** Incredibly repetitive gameplay; no variety or originality in characters, game worlds, traps, melee attacks, and gameplay.

---

**Price:** $34.99
**Minimum System Requirements:** 486 DX4/100, Windows 95 or OS/2 5.0, 16MB RAM
**Multiplayer Support:** Modem (2 players), LAN.
**Publisher:** GT Interactive
**Publisher:** (612) 559-5301
www.chasm3d.com

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**Price:** $44.95
**Minimum System Requirements:** Pentium 90, Win 95, 16MB RAM
**Multiplayer Support:** Modem, null modem (2 players), LAN (2-16 players).
**Publisher:** GT Interactive
**Publisher:** (716) 871-6646
www.gtinteractive.com

---

**THE GANG'S ALL HERE**

**Mageslayer**, with its paltry and uninspired five worlds, is even less fun than its cousin, **Take No Prisoners**.

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**FEBRUARY 1998**

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**CGW**
We took a perfectly good strategy game and threw in a few curves.

Go ahead and stare. You've never seen anything like *Guardians: Agents of Justice*! Never before has a game so expertly mixed resource management and intense superheroic battle. Never before has the army in a strategy game been a handful of mutant, superbuff enforcers out to save tomorrow's planet from its own scum. And never before have there been such shapely superheroes, as easy on the eyes as they are rough on the rib cage. *Guardians: Agents of Justice* is the superhero strategy game where you call the shots. You can even customize your own mighty saviors, in case ours fail to meet your needs. (Somehow, we doubt it.)
Rising Fun

A Lot of Action and Only a Little Strategy

by Robert Coffey

Forget 3DO's claim that UPRISING is another entry in the real-time strategy wars—it's an action title, pure and simple, with the merest smattering of strategy. But who cares? With its challenging missions and absorbing gameplay, UPRISING is a real treat.

HI-TECH Slugfest

While UPRISING has customizable quick-start missions and an excellent tutorial, the heart of the game is its bruiser campaign mode, which casts gamers as part of a rebel faction battling the evil intergalactic Imperium. Piloting a moving command center/uber-tank, called a Wraith, you'll seize control of power-rich "hot zones" in order to build citadels, unit buildings, and defenses.

While you can call in units to do your dirty work, deft use of the Wraith's impressive destructive capabilities is the key to success in UPRISING. In addition, you can jump between your Wraith and the nearest citadel to seize the citadel's guns and take on invaders. Regrettably, you cannot seize control of any of your other units.

BEST LAID PLANS

RED ALERT base-building guns, lured by empty promises of a strategy game, are bound to be let down by the paucity of units and command options. There are only four types of units, and an inability to direct them beyond the basic "Shoot that" command further restricts strategy. If UPRISING has a strategy element, it's in forcing gamers to adjust their approaches in order to defeat the Imperium on a mission-by-mission basis. Some planets emphasize defense, some require swift brutal attacks, and others reward a methodical approach. Dealing with the distinctive terrain of each planet heightens the challenge. You'll face lakes of lava; treacherous, sheer cliffs, and rolling hills that conceal blasters containing punishing turrets.

Battles are teeth-gnashing spectacles of utter mayhem. Throw in the fact that your own bases may get attacked right when you're in the middle of an onslaught elsewhere—which forces you to manage multiple battles while dodging Imperium missiles—and keeping plates spinning starts to look easy.

UPRISING FALLS DOWN

As enjoyable as UPRISING is, it has some significant shortcomings. A game this tough should have a way to adjust the difficulty of the missions. The inability to customize the joystick controls is a shame, considering that the default controls of mouse and keyboard are awkward. In the overhead satellite view, the cursor is so tiny you can't find it (especially during a battle), and a few missions have a tendency to lock up your computer. Oh, and good luck trying to play a friend via a direct connection or the Internet—both are plagued with player-dropping bugs. Internet play also has latency problems.

Finally, most of the mission objectives are the same—take over all the citadels. They're tough, but they get repetitive. Why are there no night missions? What about defensive or infestation missions? Still, UPRISING is a blast. If Cyclone Studios had only thrown in the strategy they promised, UPRISING could have been a ground-breaker.

APPEAL: Action gamers with a taste for some very light strategy.

PROS: Mix of bruising action and challenging missions make for great gameplay; dynamic game worlds that affect play; much bigger scope than that of other shooters.

CONS: May be too hard for some; no strategic depth; mission goals seldom vary; clumsy controls; buggy modern and Internet play.

Price: $49.95
Minimum System Requirements: Pentium 90 (Pentium 133 recommended), Windows 95, 16MB RAM (32MB recommended), 100MB free hard-drive space, 2x CD-ROM drive (4x recommended), SVGA video card, Sound Blaster-compatible sound card, Microsoft-compatible 2-button mouse; 3Dfx accelerator card strongly recommended.

Multiplayer Support: Direct connect, modem (2 players), LAN, Internet (2-4 players)

Designer: Cyclone Studios
Publisher: 3DO

Redwood City, CA
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www.3do.com

THE BIG PICTURE You'll do all your base building and management from this satellite view.
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HiTech: i'm done -- bingoammo

GunJam: run low -- i'll cover you home

HiTech: roger that -- p51 closing fast!

GunJam: pull left! PULL LEFT!

GunJam: HiTech!?!
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GO TO #099 © www.computer gaming.com/infolink
All-American Blast
by Rusel DeMaria

If you're feeling destructive, yet morally upright, NUCLEAR STRIKE will let you land a blow for the good of all democratic nations while causing an ungodly amount of destruction to evil world-dictators.

You'll pilot a variety of well-armed choppers and a few destructive ground vehicles, such as the hovercraft and the Abrams battle tank. The World War III storyline unfolds nicely as you are at identified targets and some unexpected enemies. You'll also fly over hidden enemy encampments or hostile boats on the rivers and oceans. From the moment you boot up the game, you'll find there is plenty to do.

The beauty of NUCLEAR STRIKE is its ability to combine resource management, strategy, and a sense of a realistically unfolding adventure with a challenging action product. In regard to graphics, the game is satisfying. While your enemies often look cartoony and cartoonlike, the various enemy vehicles and gun emplacements are more realistic—they inspire dread as you watch their targets swinging around to point your way.

The story is presented in quick cut-scenes and short video sequences. For the most part, the game gives more than adequate feedback and allows enough customization to make it satisfying for players of all skill levels.

In the end, NUCLEAR STRIKE manages to be a fascinating, challenging, and varied experience with plenty of gameplay to justify the price of admission.

APPEAL: Action fans, especially followers of the Smite series, who like some story and strategy.

PROS: Great graphics that simulate a 3D landscape; nonstop action; combination of compelling story and high-intensity action.

CONS: Objectives sometimes confusing; story can be sometimes unclear.

Price: $49.95
Minimum System Requirements: Pentium 133 (P90 with 3Dfx), Windows 95, 16MB RAM
Multiplayer Support: None
Publisher: Electronic Arts
(415) 571-7171
www.ea.com

A Pirate's Life for PC
by Matthew Schaefer

High on the seven seas, the scaly pirate Blowfish has wreaked his homicides for far too long. As a real pirate with a thirst for adventure, you must capture this renegade and take his treasure and glory from him.

The world of SHIPWRECKERS!, however, is not a serious one. It offers light-hearted shooting action with plenty of humor. Most of the gameplay consists of navigating through inlets, spits, and locks in pursuit of floating bottles that open up new map areas. This introduces a puzzle element to the game.

You'll blow through ships, flame-throwers, and bomb-dropping parrots on your way to raising the Jolly Roger over enemy ports. Your galleon can also be transformed into an airship, get trapped in giant air bubbles, become a speedy steamship, and gain a number of extra weapons—such as surface-to-air missiles—to supplement your cannons.

SHIPWRECKERS! also requires the use of a 3D accelerator, but the graphics are impressive. Although the camera angle is movable, the default isometric view provides the best shots of the action.

The only annoying aspect of SHIPWRECKERS! is the console-style game saving. Players start with three ships (lives), but can save only after completing a level. This limited save option tried my patience, as I had to replay levels again and again.

Despite this, SHIPWRECKERS! provides console-style gaming with a refreshing dose of wackiness. SHIPWRECKERS! can provide you with seafaring excitement as few other games can.

APPEAL: Action fans and would-be pirates who want some humor in their swashbuckling.

PROS: Interesting puzzles and challenging enemies; imaginative power-ups and ship transformations; good-looking 3D graphics; humorous atmosphere.

CONS: Annoying save-game feature necessitates saving replay of levels.

Price: $50
Minimum System Requirements: P133/Win 95, 16MB RAM, 3D accel.card
Multiplayer Support: Limited joystick/gamepad (2-5 players)
Publisher: Psygnosis
(800) 438-7794
www.psygnosis.com

FEBRUARY 1997
CGW 159
Fun-Defying Action

Avalon Hill’s Action Premiere Descends Into the Clone Caverns

by Thierry Nguyen

It's hard to break into the action game genre. You either have a product with the requisite revolutionary feature or you have a derivative product that disappears into mediocrity. Avalon Hill’s first action game, Defiance, falls into the latter category. While the game has some good ideas and features, a few factors pull it down from the tier of innovation and reduce it to nothing more than a Descent clone.

ALIEN WAR MACHINE

Defiance’s plot is an attempt at sci-fi mystery. You are a test pilot for an experimental fighter craft to be used in an intergalactic war. When your base is attacked, you have to root out the culprits and punish them. Most of the game is spent unraveling the mystery of the base attackers. Once you do, the game becomes a simple matter of saving yourself by destroying all enemies.

The plot moves along via voiceovers and cut-scenes between the B levels. The cut-scenes aren’t very impressive, but I like the use of voiceovers to further the plot. Though the technique is a carryover from the FMV in Jedi Knight, it’s a definite step beyond the text treatment used in other games.

ROBOTS VS. ROBOTIC CRITTERS

Though Defiance is like Descent, the main difference between the two is that in Defiance your ship doesn’t naturally defy gravity. There is no rolling or hovering; you have to use vertical thrust to “hop” around. It felt as if I was controlling a robot rather than a spacecraft. The weapons are divided into guns and missiles — most of which are stock shooter-fare.

The enemies — all biomechanical monstrosities — boast nice animation, but are themselves unimpressive. Their colors are monotonous, and they always seem to use the simple AI routine of “guns from a distance, headbutt when close.”

NO X TO MARK THE SPOT HERE

The level design resembles real locations, such as cityscapes and laboratories, which are better than the confusing, claustrophobic mines of Descent. The flip side to this, though, is the lack of a map. This is aggravating, especially because the levels are huge and are composed of many similar-looking twists and tunnels.

Also, the graphics aren’t terribly impressive. The use of Direct3D seems to be more for boosting frame rate than for adding visual effects — the graphics seem closer to the original Descent than to today’s visually impressive games.

The save-game feature is odd; the game allows you to save only at certain computer consoles scattered throughout the levels. While that’s not quite as bad as in Dark Forces, it strikes me as stupid — especially considering that there’s a cheat described in the README file that allows you to save whenever you want. Why should saving be a cheat, rather than an option?

In the end, Defiance is an adequate start for Avalon Hill’s new Visceral Productions action line. Some elements, such as the story-driving voiceovers, are nice, but the lack of a map, the less-than-stellar graphics, and the save-game feature end up making it just another Descent clone.

Price: $49.99
Minimum System Requirements:
- Pentium 90, 16MB RAM, Windows 95
- 40MB hard drive space, 2x CD-ROM, VGA graphics card, Windows 95-compatible sound cards
- Multiplayer Support: modem, serial (2 players), LAN (2-8 players)
- Designer: Logigware
- Publisher: Visceral Productions/Avalon Hill
- Baltimore, MD (800) 999-3222
- www.avalenhill.com

APPEAL: Gamers who dig Descent, but want something less claustrophobic and more mysterious.

PROS: Good attempt at using voiceovers to tie the plot together; good enemy animation.

CONS: Lack of automation; odd save-game feature; unimpressive graphics.
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Uh-Oh

Origin's Epic Online Game Is Snared by Bugs and Design Problems

by Thierry Nguyen

It was perhaps the simplest, yet grandest design spec of any game to be released this year. To create a virtual world based on the world of Britannia, not content with the simple online monster-thwacking of Diablo, Lord British set out to create a virtual community with Ultima Online. The vision involved creating a dynamic game world in which players were free to live their virtual lives, whether they be bakers or dragon-slayers. Essentially, Ultima Online was to be a grand-scale, graphical multiuser dungeon (MUD). Unfortunately, despite the grandiose and well-meaning intentions, there are many factors that pull Ultima Online down.

MULTIPLE AVATARS

Ultima Online opens with a typically well-done Origin cut-scene that portrays the slaying of Mondain and the shattering of the Gem of Immortality. In each shard of the gem is a perfect replica of Sosaria, the game world of Ultima Online. Basically, this use of the "shards of Sosaria" plot is used to explain the multiple servers. As of this writing, there were six servers; five serving the various regions and one Test Server in which Origin experiments with proposed changes. When you sign up for an Ultima Online account, you pay $9.95 a month to use up to five characters per server.

Character generation is a pretty quick affair. You select the three skills in which you want to excel, modify your stats, and then alter your appearance with options such as hair color, facial hair style, and skin tone. Then, you give yourself a name and optional password, pick a town and run to start it, and enter Britannia.

You start the game with 100 gold pieces and some basic equipment (based on which primary skills you selected). After that, you're on your own. There's no overarching goal, no Foil to vanquish, no treasure to seek. Just enter the world and play your character as you see fit.

SUPER AVATAR BROTHERS, AGAIN?

At first glance, the game engine looks a lot like an SVGA graphics version of the Ultima VIII engine. You get the 3/4 slanted view of the landscape, as in Ultima VIII or Crusader, rather than the more aerial perspective used in earlier Ultimas. You still have the staple movement interface of Ultima VII and beyond, in which you hold down the right button to walk about and double-left-click on items to use them. Thankfully, unlike Ultima VIII, there are no contorted platform-game-style puzzles. What we end up with is the graphically enhanced version of the Ultima VIII engine, only using the Ultima VIII interface.

Ultima Online is a skills-based game, which means that you improve your skills and stats by practicing. You can either receive training from NPCs or just take the time to practice your skill over and over again until it improves.

As of now, combat is also a clicking-affair, though it's not quite as frantic as Diablos's combat. To fight something, you need to enter "combat" mode, and then double-click on your target. The

DEATH BECOMES ME

When you die and comes back as a ghost, the world goes black and white, and you're forced to wander the Earth until someone resurrects you.
various skills at play will be checked against each other, and you'll be notified on whether or not you made contact. Origin also wants to give the player an autonomous option, with which the player will select a predefined fighting style and the computer will then carry out combat, though this feature is not implemented yet.

THE LAG Daemon STRIKETH

So, after leaving these essentials, you just need to sign on and go have yourself an adventure-filled virtual life, right? Not quite. Unfortunately, Ultima Online has a host of problems and setbacks.

First, this article gives you just a bit less than what the game's documentation tells you. When you open the box, the first thing you notice is the lack of a real manual. Yes, you get a decent reference card and install guide, but no meaty manual. The only options for a manual are an online document on Origin's Web site or the strategy guide, which you have to buy separately.

When you install the game, you'll have to devote 26 MB to the minimum install. Unfortunately, this runs quite slow. For smoother gameplay, you're going to have to give the game half a gig (so that the game runs off the hard drive instead of the CD).

Once you log on, you will invariably encounter the principle problem with the game: bugs. Origin is busy making patches and makes you download them when you sign on; it seemed that every time I logged on, I watched the "downloading/applying patch" screen do its work.

The bugs are perpetual, as every time some are fixed, new ones will pop up. For example, as of press time, Notoriety is still buggy. This means that I could kill an Ore that threatened to kill Lord British; mother, only to be marked as a "Dread Lord," yet I could gain the title of "Noble," by giving fish away. Other bugs include the ability to generate large amounts of money via cloning and the inability to become an Instant Grandmaster by paying an NPC to train you.

The other huge obstacle in this game is lag time. The smoothest gameplay came for me when I was playing in the wee hours of the night (about 2-3 a.m. PST). Whenever I played in the afternoon, the server was clogged, and not only did the lag time make my character teleport around the area, but it also booted me off with numerous server crashes.

DUMB AND DUMPER

There are some other game issues, as well. The NPCs are extremely monotonous, as they will offer you quests and then forget about them moments later ("Go kill Sir Davus," you'll be told. You then ask, "Where is Sir Davus?" The response: "I know not of what you speaketh, knave.")

Also, the economy is thrown off balance, due to the fact that everyone who has come before you has already killed all the creatures and baked the NPCs out of their money. The only way you can thrash some creatures is to wait for a creature to respawn or to move to a less populated area.

Practicing skills takes hours upon hours of clicking. If you thought Diablo was a time-killer, you haven't tried improving your swordmanship by attacking practice dummies for three hours. And finally, player-killing ("PKing") is rampant. While PKing is actually a legitimate form of role-playing, the reason so many people do it is because it's much more fun than playing UO "the real way," in which you must do a series of monotonous repetitive tasks in order to be strong enough to kill anything larger than a pig.

Ultima Online is a game with untapped potential. The game has great aspirations, but is plagued by bugs, horrible lag-time, and some design issues. As of now, you should get Ultima Online only if you are willing to put up with a whole lot of grief, all the time. If you simply want to go out and thrash creatures with friends, stick to Diablo. If you have the patience to put up with the numerous changes and pitfalls of Ultima Online, and would like to try living a "virtual" life, go ahead and try. As for me, I'll stick to real life for now!

Reviewing an Online Game

Ultima Online is a hard game to review simply because it is constantly evolving. Because it is online, it is forever changing, both for better and for worse. There will always be bugs, and patches to fix those bugs, which create further bugs, and so on. By the time you read this issue, the game may have undergone a radical makeover.

As it stands now, based on what's in the box, the game's flaws outweigh its features. Yet there is so much potential that Ultima Online could become a truly great game. But we can't review potential, we can only review concrete product. As of this writing, this is our position on Ultima Online. Should the game go through a major overhaul and become a great online game, it will be addressed again later. You can count on CGW to keep you posted, should any monumental changes occur.

> APPEAL: Patient gamers interested in graphical MUDs, or a "virtual community."
> PROS: It played correctly, it can be a real role-playing experience; decent graphics.
> CONS: Numerous and never-ending bugs; horrible lag-time; design issues lead to repetitive and time-consuming activities; unbalanced economy; ridiculously high system requirements.
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MUD Fight!

Online Warfare Gets Deeper With MERIDIAN 59 REVELATION

by Barry Brenesal

Rising on your laurels is dangerous. They can easily turn into poison ivy, with painful results. With no serious competition, 3DO's popular MERIDIAN 59 has been doing just that as the preeminent graphical multiplayer dungeon (MUD) for the last year. Now, with Ultima Online out, and looming threats from Microsoft's Asheron's Call and Sony's Everquest, 3DO's producers have turned their attention back to MERIDIAN 59. But can their new Revolution upgrade — and the promise of another soon to come — save MERIDIAN 59 from a MUDslide in popularity toward newer online games?

BODY SHOP

MERIDIAN 59 is set in a pseudo-medieval fantasy universe. You use magic and muscle to battle monsters. Along the way, you gather treasure, meet friends, and find fame; of course, occasionally you die.

Your character begins in the town of Raza, in a small, safe area set aside for new arrivals to learn the command set. MERIDIAN 59 lets you customize your character's appearance in regard to hair style, mouth shape, eye color, skin color, and gender. Finally, you apply 50 points against stats in six categories: might, intellect, stamina, agility, mysticism, and arm.

Unlike most of its competition, MERIDIAN 59 does not supply a mix of fantasy races and professions, so don't expect to unveil that Dark Elven Sorcerer you always wanted to be in your black heart of hearts. You customize your character by seeking out one of six schools, each of which offers unique benefits to the initiate who, over time, fulfills its numerous quests. The Temple of Shai'ille teaches healing, blessing, and protection spells, for instance, while the Temple of Poor instructs you in hard-to-control attack spells.

When your character eventually learns all the spells in a single school, you can choose another and follow a similar questing path, but the learning curve for new spells or improved weapons skills increases dramatically with each successive school you choose to affiliate with. While this admittedly prevents the development of supernormals, it also places a ceiling on training, which can frustrate players who like aiming for that next spell or obscure talent that lies just over the magical horizon.

KILLING TIME

To PK or not to PK, that is the next question. MERIDIAN 59 has a reputation as a player-killer's paradise, and it's not without reason. The game's structure of clublike guilds encourages player conflict. With only 4 guild allowed at any given time, many guild-wanna-bees organize infiltrations and assaults upon guild halls. The benefits of successful takeovers are too sweet to ignore: a private communications channel between all guild members, a building closed to all nonmembers (except by permission), a body of friends to provide instant rescue or support, and a guild chest to hold your surplus goods and keep them safe from low, which usually occurs when you die.

Players who want to engage in a more sportsman-like, one-on-one duel to the death typically frequent the combat-sanctioned zone of the Arena, but there's also a goodly share of nonessential PKing in MERIDIAN 59. The game's Dungeon Masters give this activity free reign outside a few safe areas, such as towns, since murdered players spawn Revenants, powerful AI-controlled critters that stalk their killers relentlessly until either the murderer or the Revenant dies. Since a murderer and his pals can band together to kill a Revenant, however, this isn't always an effective solution.

This MUD is not just about combat and death, though. MERIDIAN 59 offers a social atmosphere, with many critics

Price: $9.95 retail (with a week's worth of free sessions) or free download from 300's Web site (with no free sessions). Online charges: $2.49/day, $7.50/week (based on 4 days free after playing 3 days/week).

Minimum System Requirements: Windows 95, 486/66 or higher, 64 MB RAM, 30MB hard-drive space, 2x CD-ROM drive, 14 4Kbps modem, SVGA-graphics monitor, SLIP/PPP Net connection

Multiplayer Support: Chat, Designers/Publisher: Cthulhu

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FEBRUARY 1998 CGW
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More PK'ing Ahead

The next Meridian 59 upgrade, titled Renaissance, is expected in the second quarter of '98. It will apply the improved graphical capabilities of Ko'catan to Meridian 59's two major cities, Tos and Raza. The engine that assigns quests to players will also be revised to permit on-the-fly changes. Expect a much greater diversity of quests, as well as penalties associated with timed quests that aren't completed on schedule.

Renaissance will primarily focus on expanding the game's player-killing aspect. The discovery of a new region controlled by an evil, magically inclined Queen permits characters to become Necromancers, who gain powerful spells but need to kill other players regularly. Of course, evil spawns its opposite, and players will also be offered the choice of becoming Hunters, who have enhanced weapons and tracking skills—and are the destroyers of Necromancers.

Critter AI is improved, as well. Though we've yet to see anything in a multiplayer environment to match Dragon Realms' AI (in which monsters make intelligent battle decisions based upon such factors as spell capability), certain deserves mention: Tame. Use it on an unintelligent monster you're fighting, and you may gain a large pet to follow you and fight your battles.

Overall, the changes made to Meridian 59 in Revelation—a larger world, significantly improved graphics, more varied quests and spells—really make a difference. On the eve of several important graphical multiplayer releases, this MUD provides competition that cannot be ignored. In the final analysis, Meridian 59's social and role-playing aspects are given less structural emphasis than combat, and it's for combat that you should turn to this game. There are better MUD venues for role-playing and socializing, but few multiplayer games deliver as many well-structured opportunities for restless adventurers who want to work out their aggressions as does Meridian 59.

---

**APPEAL:** Online multiplayer gamers, particularly combat-oriented ones.

**PROS:** Lots of spells to learn and critters to fight; a great quest system; large environment to explore; excellent interface; light on computer resources.

**CONS:** Strong PK (player-killer) element; online costs can sneak up on you.
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The Bitter End
A Great Action/Adventure Hybrid—Until the Terrible Endgame
by Robert Coffey

While there have been action/adventure game hybrids since the days of IT CAME FROM THE DESERT, the last year has seen a boom in this niche. With games such as REALMS OF THE HAUNTING, TWINSEN’S ODYSSEY, and THE LAST EXPRESS, action/adventure hybrids seem to have come of age, and it’s about time. Done right, the introduction of action elements to an adventure game only draws the player deeper into the story. The life and death struggles add an immediate, frequently lacking in traditional adventures. DARK EARTH is the latest entry into this burgeoning genre, and it’s a winner—until a truly boneheaded endgame spoils it all.

WHO TURNED OUT THE LIGHTS?
DARK EARTH takes place in the aftermath of an apocalypse 300 years in Earth’s future. According to the backstory, a gigantic comet passed too close to the planet, resulting in global declination (courtesy of fiery meteors). A thick pall of black dust immediately filled the air, plunging the world into constant, choking darkness. The few survivors wandered the planet for generations, battling fearsome creatures born of the perpetual night. They finally discovered a precious few islands where shafts of light cut through the smog. These raised cities, or stolites, became oases for mankind.

Thus saved, mankind started worshiping the sun as a god, led by holy Sunseers who were protected and aided by their militia, the Guardians of Fire.

You are cast as Arkhan, a member of the Guardians of Fire, and the son of one of the Sunseers. While saving the holiest Sunseer of Sparta from an assassination attempt, you are poisoned by a Konkolite. The very essence of the bitter darkness now courses through your veins, corrupting your body, mind, and soul. As the game hits its stride, you must find a cure while fighting the forces of darkness in order to save the planet.

The story in DARK EARTH is rich and compelling. Filled with betrayals, tragedy, and heroism, the plot twists gallops along, introducing new characters and side plots as it drives the game forward. There is a sense of urgency in everything Arkhan does, abetted in no small part by the creeping progress of his disease, which worsens in realtime. It’s an interesting combination—as game events are triggered by game actions, Arkhan’s deterioration worsens. Fortunately, the disease moves slowly, and while it does keep you moving, it doesn’t prevent you from completing the game.

WORLD OF RUIN
The world of DARK EARTH is an intriguing assortment of dystotomies. The regal splendor of Sparta stands in sharp contrast to the poverty of the Lower City. The primitive and scientific coexist. For instance, most weapons are swords and...
daggars, yet there are simple guns to be found (although they are steam-powered).

The unique game world is beautifully rendered in screen after gorgeous screen. DARK EARTH's environments are lush and detailed, even in 256-color mode. More than mere candy, the game's rich design paints an imaginatively conceived reality that encompasses dark sewers, eerie underwater ruins, and the towering majesty of Sparta's temple. While there's some simple movement in the environments, the world is predominantly static and noninteractive.

DARK EARTH's animated cut-scenes are similarly outstanding. While not visually groundbreaking, these cut-scenes are easily the most exciting I've seen in a game. They push the action forward instead of just serving as a simple reward for a solved puzzle. The only problem I had with the cut-scenes is that they occasionally caused the game to crash.

Arkhan and the numerous NPCs he meets are polygonal 3D characters in a 2D world. While not as sharply drawn as their surroundings, the characters don't look glaringly out of place, although their movements occasionally seem awkward, particularly when characters go up or down stairs (they hover about an inch above every step). Also, Arkhan has a fairly large "tangle zone." He gets hung up on the edges of objects and walls rather easily.

GETTING AROUND SPARTA

Arkhan can freely explore the world, with all movement options handled by an easy-to-master, though noncustomizable, combination of Shift, Ctrl, and arrow keys. A gamepad may also be used, though it also can't be customized. DARK EARTH's inventory system is simple and intuitive and allows you to assign numbers to up to nine weapons.

Saving games may be a sticking point for some gamers. Only nine games can be saved, they can't be named, and they can be saved only at certain locations. However, save points are literally scattered about the game world, and gamers shouldn't find themselves replaying huge segments of the game if they save wisely and often.

Interacting with objects is a simple matter of maneuvering Arkhan to the desired object and hitting the space bar. Kalisto has added a twist though, with a "mood" meter that can be tagged between Arkhan's light (normal) and dark (contaminated) natures. Some things may be "accomplished only if Arkhan is appropriately nasty, particularly when it comes to finding some objects. If searching a room is frustratingly fruitless, give in to the dark side and start angrily searching the place—odds are you'll find something.

DARK EARTH's gameplay is as effortless as its controls. In fact, the game zips over backward to keep things from getting too difficult. While gamers can control Arkhan in combat, simply holding down the Ctrl key in combat mode will let the computer do all your dirty work.

The puzzles in the game are generally inventory-based, logical, and tied into the story. The game keeps things simple by solving the more complicated puzzles for you. The game automatically assembles inventory items into new, necessary objects. It's great for beginning gamers, but annoying for gamers looking for more of a challenge.

THE BIG PROBLEM

So, if DARK EARTH is such an enjoyable, solid game, why are we giving it only 3.5 stars? Because the end of the game flat-out sucks! Kalisto really dropped the ball here. After the final save point, you have to work your way through a maze bristling with spinning blades, then fight a monster you can stun but not kill, all the while desperately trying to move some levers in some secret manner to get to the end of the game. Negotiating the maze is tough, if only because nothing in the game prepares you for the space bar's sudden ability to make Arkhan duck— I died a lot before finding out that one.

Also, the game needs a saving opportunity after the maze, since the boss at the end will kill you scores of times, which forces you to go through the maze again and again. And any game that expects you to figure out the correct sequence to pull some levers (without even an obscure hint) while some inanimate beast pounds on your head has just failed. Game Design 101. It's so frustratingly difficult that it ruins the game.

DARK EARTH has a lot going for it. It looks good, it sounds good, the story is great, and it's not too tough—perfect for beginners. But the ending is so disappointing you'll need lots of forgiveness in your heart to get over it.

APPEAL: Veteran gamers looking for a good story, beginning gamers looking for a good introduction, all with a saintlike ability to deal with the horrible ending.

PROS: Great plot and stunning graphics create an outstanding game world; easy controls; fantastic cut-scenes; smooth blend of adventure and action gaming.

CONS: Experienced gamers may find it too easy; sporadic crashes; steep system requirements for all features; the endgame may damage your monitor (when your fist goes through it).
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History Mixes With Murder for an Intriguing Adventure

by Allen Greenberg

Strategically located near the Black Sea at the crossroads between Europe and Asia, Istanbul has enjoyed a colorful and often tempestuous history. It is that history, viewed through the eye of modern technology, which is the subject of **BYZANTINE: THE BETRAYAL**. A Discovery Channel Multimedia release, this intriguing adventure combines computer-generated graphics and live action.

You play a reporter known for your keen eye and journalistic acumen, who becomes caught up in an investigation of stolen artifacts from historic sites in Istanbul. The game was "filmed" largely on location, and thus includes many of these sites. However, the live action forms only part of the game. The investigation leads you to an amazing computer simulation of some of the sites as they appeared several hundred years earlier. For example, there is a visit to the palace of Solayman I, who ruled from 1520-66.

However, someone has sabotaged these simulations, possibly to hide the theft of hidden antiques. To repair the simulations, you "scan" the real sites as they exist today. The scans are then uploaded to a computer. You use the computer to sort them and assign them to their proper place as you visit a computer-generated fantasyland. Once the simulation has been repaired, you are free to explore the mazes and puzzles within. Remember, however, that someone else has already explored this simulated territory and removed the treasures that you will uncover. Your job is to find that person or persons. And, of course, while all of this is happening, a mysterious assassin is after your blood.

CHECK YOUR REFLEXES

The puzzles in **BYZANTINE** are not particularly difficult, although there are moments in the game when quick action is called for in order to escape death. However, a convenient built-in function automatically saves your game just before the critical moment. You can then replay it until you get it right. There are moments, particularly in the endgame, when a bit more time to accomplish certain tasks would have been appropriate. Also, the view is inconsistent as you move from place to place, which can leave you disoriented and unsure of which way you're facing.

Hints as to what to try next are also built into the game. They won't tell you everything, but they can be helpful at times. The plot is essentially linear, but there are many places to explore, and people to talk to in the real world. Each time someone mentions a new location in Istanbul, that place appears on your map of the city. Before long, your map becomes quite full and you can visit any location on the map simply by clicking on it.

TROUBLE BOUND

Unfortunately, the game did not always run smoothly. At a certain point, key people in the story simply didn't show up—which essentially froze the game. Discovery insisted that **BYZANTINE** had been extensively tested, and it even provided saved games that circumvented the problem. Users should beware, however, that the potential for trouble exists.

**BYZANTINE** is not a classic game, and it has a few minor problems, but it should provide adventure lovers with some enjoyable hours before its conclusion.

ISTANBUL (NOT CONSTANTINOPLE) Byzantine: The Betrayal features beautiful scenes of modern-day Istanbul.

WAY-BACK MACHINE Interspersed with your travels through modern Istanbul are virtual re-creations of historic sites in the region's past.

**APPEAL:** Traditional adventure gamers, history buffs.

**PROS:** Intriguing story; skillful mixture of real life and computer-generated graphics.

**CONS:** Inconsistent views when moving from one place to another; some game bugs midway through game.
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And the gloves are off!

It's been a long wait, but EA Sports' all-dominant NHL HOCKEY series finally has some worthy competition in the battle for Lord Stanley's Digital Mug. It comes in the form of Virgin Interactive's NHL POWERPLAY '98, the second installment of the title designed by Radical Entertainment (BRETT HULL HOCKEY 95).

Radical has gone the 3D route this time around, adding some glossy oomph to the lovely artificial intelligence of their first effort, last year's NHL POWERPLAY 96. Meanwhile, EA's hot-off-the-press NHL 98 exhibits revamped AI and a marginal reworking of its already superb graphic engine. There's no doubt whatsoever that this pair sits atop the PC hockey world and it's probably no coincidence that both are developed in and around hockey-mad Vancouver, Canada.

But that's not to say there aren't other alternatives. Lovers of silly sports may find solace in GT Interactive's NHL OPEN ICE, and that's covered here too. Then there's the also-rans, recent titles you should still find in the minor leagues (er...discount bins)—Time Warner's WAYNE GRETZKY AND THE NHLPA ALL-STARS and Empire Interactive's SOLID ICE come to mind. In any case, Acclaim's NHL BREAKAWAY 98, due by year-end, will have to work out its rookie jitters amongst the company of two very strong players.
Net Gains
Visually, Radical programmers have introduced motion-captured players and a 3D environment. They’ve also offered up no less than five roving cameras, and if you gloss over the small stuff or choose a distant perspective the overall appearance is pretty close to state-of-the-art.

But up close you’ll see curiously angular players that look even more un-rounded from certain perspectives, become awfully skinny from the side, and turn into static little blockmen when they hit the bench. Ice surfaces and crowds sometimes ‘ripple’ as they approach the forefront, pucks may momentarily disappear in the corners, and skaters appear a bit too large for the ice surface.

If you’re anything like me, you’ll finally settle on the relatively distant Overhead cam. Here, you won’t get quite the same sensaion of 3D, but you will see enough of the ice surface to get a good read on what everybody’s doing and lose all of the nitpicky irritants addressed above.

The original POWERPLAY featured gameplay options galore, and nothing has been lost in this version. Including defensive and offensive positioning, player trades, the ability modify or switch off virtually every major real-life rule, and much more. After each contest, you’ll be greeted with a battery of stats and a three-star selection with real player headshots. Season lengths are variable, as are playoff rounds.

POWERPLAY’s entire menu system is gamepad-driven, which I found quite inconvenient, with an annoying and constant involuntary scroll that had me “exiting” instead of “starting” and consistently ending up where I didn’t want to be. I tried three more controllers and the situation never cleared up.

Real realism
And that brings us to the most important topic of all—how your charges behave in the heat of competition. Those of you brought up on a diet of EA SPORTS hockey will notice right off that POWERPLAY takes a far subtler approach. Speed bursts, for instance, may well stall your selected player with some mighty fast skates, but they won’t force him to hit warp speed.

The same thing applies to just about every facet of the game. Collisions can be rough, often brutal enough to lay an unfortunate player out for a spell, but they won’t send human missiles rocketing about the ice. Players hook, hold, and grapple in a constant flurry not unlike the NHL, and even shots and passes that seem a bit retarded at first begin to feel within the range of realistic human limitations the more you play.

Aside from an authentic pace, POWERPLAY is a wonderful judge of what should bulge the old twine and what should stay out. A good goal scorer left unchecked in the deep slot always stands a great chance, but wild melees with several defenders checking do not. Breakaways, rare though they are in this game (as they should be), often result in a goal, while “1 on 2” opportunities probably won’t. That is, of course, unless the single offensive player happens to possess the shot of a John LeClair or the moves of a Salo Kivu.

As in the EA games, teams go through very definite hot and cold streaks, sometimes confined to a few fleeting minutes, sometimes lasting an entire contest. Thankfully, it feels less pre-ordained in this context. In NHL HOCKEY, for instance, a “team on the skids” will still generate a bevy of chances yet somehow fail to bury the biscuit—extremely frustrating. In POWERPLAY, a rough patch might be typified with some missed checks, off-the-mark shots, and the same sort of general malaise that would permeate a real-life cold streak.

When your team is flying, however, POWERPLAY lets you pull off some truly skilled maneuvers beyond the regular advanced fare of fake shots, one-timers, defkes and the like. As the manual explains, deflections, hooking, double-tap dumps and sliding blocks are all within the reach of a well-versed player with a 4-plus button gamepad.

And that brings me to something else I really like about POWERPLAY, the arrangement of gamepad controls. You’ll soon find you won’t be able to slap the puck then mow down a couple of defenders all with the same button, simply because the game won’t allow you to do it. This little development should effectively slow anyone who doesn’t know his controls.

The gray lining on this silver cloud? Just a few things really, but enough to be at least slightly disconcerting. Pull your goalie and the CPU team will do their best to miss your net, perhaps taking a penalty instead. Dump the puck in from your own end and the CPU goalie may freeze it with absolutely nobody in the offensive zone. Get caught on a “2 on 0” and the CPU team will often
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completely squander their opportunity, perhaps going by the net entirely. To make matters worse, watching any of the above for a second time means dealing with the frightfully brief replay component, one that does not sport a save capability.

At The Buzzer

Nevertheless, the factors critical to long-term intrigue are present and accounted for. More simulation than game, NHL POWERPLAY is actually what it claims to be, namely "the most realistic hockey game ever created." I found that winning games was a bit too easy, and it is less a complete sensory "experience" than EA's NHL 98, but, then again, EA's been doing the hockey thing twice as long, haven't they?

NHL 98

MINIMUM SYSTEM REQUIREMENTS:
Pentium 90, 16MB RAM, Windows 95, 4X CD-ROM drive using 32-bit Windows 95 CD-ROM driver, HI Color-capable 1 MB PCI video card with DirectDraw support, DirectX 5 (included on game CD), 30 MB hard disk space.

DESIGNER/PUBLISHER: EA Sports
San Mateo, CA
800-245-4525
www.easports.com

The beast is back.

EA Sports' swaggering NHL HOCKEY series has indeed returned for its annual rite of passage, and as usual it's a thing of wondrous beauty that no PC hockey player should ignore. Even better for serious hockey fans, EA has finally put the emphasis on upgraded artificial intelligence rather than the absolute latest in graphical wizardry.

It's no secret that AI has long been the Achilles heel of what otherwise has been one of the most amazing and complete PC sports experiences there is. Now, with Virgin Interactive's smart NHL POWERPLAY 98 descending on the marketplace, EA has made some moves in what would appear to be the right direction. Ain't competition grand?

I remember not so fondly the frustrating oddities of NHL HOCKEY in the past (to this day my garbage can harbors a grudge from one particularly savage beating), and am happy to report that several have been corrected. Breakaways, for starters, an all too common occurrence in earlier efforts, are much harder to get and much tougher to capitalize upon. Ditto for "one-timers," a phrase I swear was dreamed up by an EA designer in the first place. At one time practically the only way to score a goal, successful one-timers now take hard work, pinpoint timing and exacting precision.

Another hole EA has covered nicely is CPU team line changes. You can forget about taking advantage of those ill-timed and horribly slow changes that left the ice wide open for seconds at a time in NHL 97, simply because they don't do it that way anymore. Nor will Lindros and LeClair opt to hit the bench as they break in on a 2-on-0, another ridiculous state of affairs from last year's game.

The Fix Is In

Yet all is not perfect. I've said it before and I'll say it again until I'm done saying it, but the NHL HOCKEY series seems to go out of its way to see a given team wins a given game. Why? I just don't know, but it's obviously and quite purposely instilled in the heart of the program.

Granted, a given team will sometimes out-chance and out-shoot another on a given night and still fall victim to bad luck, bad karma, or whatever—and that's the way it should be. But when you pump more than quadruple the shots at the opposition net—in one case, 83-21—you should not lose 5-1. Ever. And players should not miss open nets from just outside the goal crease or score on weak backhanders from just inside the blueline in order to preserve what the program feels is right. But it happens in NHL 98, far more than real life good or bad luck would permit.

Otherwise, players generally head in the direction they should be heading and position themselves correctly. I said generally. At this stage in the game's development, there's no excuse for power-play pointmen who refuse to pick up easy backpasses at the blueline. There's also no excuse for goalies venturing from their nets to corral cleared pucks before their defensemen get a chance at an icing call. And finally, there's no excuse for entire penalty-killing units hugging in so close to their own net that they won't even venture into a corner to pick up a loose puck.

Chrome Job

EA hasn't confined their NHL 98 modifications strictly to gameplay. In keeping with previous installments, the revamped opening sequence is a thing of riveting enormity, and that's just the start. Up in the press box, real life Vancouver Canucks' play-by-play man Jim Hughson has been complemented with a color commentator, and their banter, though sometimes quite generic, certainly helps "sell" the game.

On the ice, NHL 98 is still the smoothest thing on blades, again mimicking a high-tech television broadcast. Player movement is truly spectacular.
now, especially when compared to any other PC hockey game. This includes skaters who sport a seemingly infinite variety of maneuvers, not just between whistles but during play stoppages too, when they'll tap their sticks on the ice, test their shooting motions and mill about as real players do. Both audio and video can be a bit over the top at times, but EA can be forgiven for leaving realism behind when the results are this exciting.

Multiple cameras are again part of the package, as is the best replay component to grace any sports game. New for '98 are PIP displays of the penalty box as players get set to exit, disallowed goals attributed to crease violations, and a Coaching Strategies utility. Remember though, NHL 98 is first and foremost a test of reflexes and timing. Good coaching will take you only so far.

In a perfect world, the folks at EA Sports would join forces with the crowd from Radical, take the best from NHL 98 and NHL Powerplay '98, and concoct the perfect game. It really wouldn't take much because the pieces are already there. In the meantime however, and even though I've bestowed identical ratings to both, NHL 98 gets a marginal nod because nothing immerses you in the overall PC hockey show, and nothing is as flat out invigorating as this veteran performer.

**NHL Open Ice**

**$22.55**

**MINIMUM SYSTEM REQUIREMENTS:**

Windows 95, DirectX enabled 75MHz Pentium, 8MB RAM, 1MB PCI video card, 1X CD-ROM drive.

**DESIGNER:** Midway Games

**PUBLISHER:** GT Interactive

New York, New York
800-469-5961
www.gtinteractive.com

**Insanity On Ice**

See funny man with big head. Ha. Ha. See other man. He do flip way up in air. This fun. Make me pee pants. It warm. Mmm. . .

Alright, so GT Interactive's NHL OPEN ICE isn't my cup of tea. But arcade-reared sports-loving kids are probably gonna eat this thing up because 1) it's got their hockey heroes playing outlandish maneuvers and, 2) it's an exacting replica of the coin-op beast. The rest of you? Well, you might find it a hoot too, for a few moments anyway.

But enough of the snide remarks. NHL OPEN ICE, curiously licensed by the same two professional hockey organizations who lent their name to the genre's more serious titles, isn't a simulation and wasn't meant to be. As a matter of fact, it's about as far removed from the National Hockey League as pro wrestling is from the Olympic variety.

From the stereotypically cheesy coin-op front end, players are taken through game setup screens where minimalist game options such as period length, "super" or "normal" goalies and difficulty levels are established. With cheerleaders urging them on, they'll also have a few seconds to enter in a power-up code or two, then it's game time.

On the ice, it mayhem all the way as your two skaters and goalie battle with computerized or human opposition. And if you've happened across certain codes beforehand or hit the right button combinations while playing, there's no telling what mutations or bizarro activities you might see. Tiny Teemu Selanne's with mammoth heads, 12-foot tall Steve Yzermans with puny noggin's, and puck's the size of goalies are just the start.

Think the real life Pavel Bure is deceptive? Yeah? Betcha he can't do a triple spin-o-rama 30 feet above ice level or launch a blast of such magnitude that both puck and net end up in flames. The fact that he can here doesn't seem so incredible once you've been playing awhile, and neither do momentary yet stupefying boosts in speed, checking, shooting and puck-handling. Just make sure your "turbo meter" is cranked—you know, like Scotty Bowman did before he sent Shanahan onto the ice in last year's Cup final.

With four human players, each of you can take on a single on-ice persona and the game will admittedly get a tad exciting. Go ahead, embark on what is a nutso ride through the dark recesses of the minds of programmers gone mad. I double dare ya. ~

**RATED**

**APPEAL:** Hockey aficionados who appreciate the subtleties of the real thing. NHL HOCKEY fans willing to put up with a bit less gravy for a bit more meat.

**PROS:** Superb artificial intelligence and team management component. Lots of gameplay options and a generally successful conversion from 2 to 3D.

**CONS:** Some minor AI inconsistencies, 3D quirks, and questionable player to rink scaling.

**RATED**

**APPEAL:** Uh...sub-adults who feel hockey is but a bump on the road to zany wackiness. Children of the arcade and fans of power-up codes.

**PROS:** 4-player support, fast-paced action, ridiculous but nifty animations, relaxed system requirements and low pricing.

**CONS:** 3-man squads, virtually no rules, and ragged, low resolution 3D graphics. Anyone over the mental age of ten will find gameplay heavy on the pandemonium and horribly rapid in comparison to the Virgin or EA Sports titles.
What are you willing to SACRIFICE for the ride of your life?

Jump into one of 16 tricked-out-megahorse-power-street-cars and lay down some significant rubber. You and up to 18 other uncivilized drivers now can race on dozens of random and twisting city streets, desert terrain, and country tracks. Sure, the weather conditions change on you from thunderstorms to dense fog, but don...
If that ruin your Sunday afternoon drive. Because if you're feeling a little reckless, you can always enter the ultimate destruction arena and experience balls-to-the-wall action (see above). So, put your head between your legs and kiss your assorted auto parts goodbye, because Ultimate Race Pro is one hell of a raucous ride.
Football coaches know that when the Xs and Ds just aren't working, the first casualty is usually the game plan. It's one thing to diagram a sweep on a blackboard, but quite another when your halfback turns the corner only to find Derrick Thomas or Bryan Cox waiting to separate him from his chin strap. The same principle applies to prognosticating football sims.

Make all the predictions you want, but you can never really separate the games from the hype until the final versions are released. In CGW's first Sports Supplement (Nov 97) we previewed this season's crop of football games, offering best guess-fimates on which titles would run to daylight and which would face fourth-and-long. How did we do against the spread?

Let's just say I won't be heading to Las Vegas any time soon. Seriously, though, with one major exception, our previews were fairly close to the mark. Hotly anticipated LEGENDS 98, our choice for second place, was the season's surprise flop, engendering a virulent reaction among gamers of the sort usually reserved for morning breath. Among other new releases, MADDEN 98 was not as good as expected, while MONDAY NIGHT FOOTBALL 98 rebounded from a mediocre rookie season to capture first place.

MNF98 achieved not only critical success, but emerged as the clear cut sim of choice among serious football gamers. Driven by a smooth play-calling interface that allows on-the-fly adjustments in formations and assignments, MNF '98 also pumped up the player graphics and A.I. that hampered last year's debut edition. The player sprites were twice as large this time around, much crispier looking, and displayed jersey numbers. The crew at OF Sports obviously decided the game's artificial intelligence back to school in the off-season, as this year's computer opponent is much more challenging than the original. MNF 98 really shines in head-to-head play, with options for Internet, modem, serial, and local two player action. Internet games are limited to coach-only mode, which is MNF 98's strength. Will my 3 wide receiver formation flood your zone? If I blitz will you burn me with a screen pass? Hard-core football choices like these drive every play in MNF 98, making it perhaps the most intense head-to-head sports sim ever.

A surprising second place finisher was EA Sports' action-oriented college sim NCAA FOOTBALL. While MADDEN grabbed most of the preseason attention, when release time came along NCAA was the EA product that ultimately turned gamers' heads.

Despite pixelated, less than state-of-the-art graphics, the player motion in NCAA is perhaps the most fluid and realistic yet seen in a computer football game. A ball carrier slammed to the turf by a hard tackle, for example, will bounce or slide a few feet further, rather than dropping like a rock as in most sims.

College football fanatics will enjoy NCAA's season play, which simulates the weekly rankings. It's a blast to command your favorite team and guide it in a quest for the national championship. NCAA provides officially licensed rights to 112 Division I-A schools and four major post-season bowl games.

On the down side, there's only one view, an elevated, behind-the-quarterback look that makes throwing to outside receivers an exercise in faith, since they can't be seen unless your QB rolls out to that side.

More disappointing is the lack of a planned career mode which would feature recruitment and graduation. Maybe next year.

The preview edition EA Sports privately screened at E3 last summer seemed to ensure MADDEN the top spot among this season's football sims. However, like a promising first-round draft pick that never quite makes the grade, something happened to MADDEN 98 along the way.

What happened? It doesn't take Vince Lombardi to figure this one out. Consider that the game's release date was moved up from January to late October. When do games ever ship ahead of schedule? Why would that happen? And how do you get a game out the door three months early? Who made
BALL SIM SUPERBOWL

gw's sports columnist looks back at his '97 football predictions

by Dennis McCauley

that decision? The answers are, in order; never; Christmas shopping season; cut back on features; and marketing weenies.

So we're left with an undercooked MADDEN that's a good game, but not what it could have been. Still primarily an action-oriented title, MADDEN nevertheless is creeping into sim territory with roster management features that include a rudimentary trading module. Unfortunately, the game's stats, once you locate them, still lag behind the presentation found in the hardcore sims. Gameplay-wise, certain gadget plays, such as the Hall Mary, succeed far too often to maintain any sense of true simulation. And numerous bugs serious hamper the action.

The bottom line on MADDEN 98 is that it's a hot property that was unfortunately pushed out the door before it was fully baked. EA Sports obviously knows this and is completing patches that address some of the key issues (at press time, a 3D fix patch was nearing release). It's an enjoyable game, but it has a lot of warts.

FRONT PAGE SPORTS: FOOTBALL PRO 98

Predicted Finish 7 Actual Finish 4

As predicted, Sierra's FRONT PAGE SPORTS: FOOTBALL PRO 98 is essentially last year's game with a few cosmetic changes layered on. That's not necessarily a bad thing, since the '97 version was a prime-time player that copped a 4.5 star review in CGW. In fact, the entire FPS FOOTBALL series has been evolving incrementally over the last four years. This year, unfortunately, there's little substantive reason to recommend the game over its ancestors, especially since Sierra and developer Synergistics are known to be gearing up for a ground-up rebuilding of FRONT PAGE for '99.

So, what's new this time around? Keeping up with the Joneses (and the MADDENs), Sierra has added lackluster play-by-play commentary from CBS Radio broadcaster Howard David. In the pointless eye candy department you'll find 3D renderings of all 30 NFL stadiums displayed briefly at the beginning of the game. But the in-game views are just generic gray backdrops. The game interface has changed as well, making navigation much more intuitive than in past editions. Commissioners of the plentiful FPS online leagues will appreciate the ability to generate HTML output of league files.

If you don't own a previous edition in the series, by all means, grab this one. FPS '98 is a steal at its $29.99 list price (Sierra's tacit admission that the game is just an upgrade), and it still includes almost all the great features that have made FRONT PAGE the decade's dominant gridiron simulation.

HEROES OF THE GRIDIRON

Predicted Finish 5 Actual Finish 5

Since HEROES OF THE GRIDIRON is basically MNF '98 with college teams, it may surprise some that it ranks this low. However, while HEROES is a good stand-alone game, one can't help but have the feeling that it should have been just an MNF '98 module. HEROES employs only 32 of the better-known college teams, and uses nostalgic rosters of past players. Unfortunately, a disproportionately large number of the players seem to be from the 1970's and later, apparently due to licensing difficulties with players who were not NFLPA members. The small number of teams and fairly recent run of players sadly detract from the game's sought-after nostalgic feel. Fortunately, all of MNF's good points apply to Heroes, with the exception of the ABC TV atmosphere, which is super low-key in the college version. Can someone check Keith Jackson for a pulse?

NFL QUARTERBACK CLUB 98

Predicted Finish 6 Actual Finish 0

One of last year's sleepers was Acclaim's NFL QUARTERBACK CLUB 97 and arcade sports gamers were hotly anticipating the sequel. Unfortunately the targeted release date in October came and went, and a contact at Acclaim recently informed CGW that the PC edition would not be released this year because it did not measure up to the Nintendo 64 version.

LEGENDS FOOTBALL 98

Predicted Finish 2 Actual Finish 7

And then there's LEGENDS 98, probably the only sports game in history to lose to a vaporware title. Yes, LEGENDS is so bad you're better off with no game. And to add insult to injury, LEGENDS had the coolest concept of any sports game this year.

As an NFL junkie, I was completely ga-ga over the chance to pit cross-era pro teams against one another. I imagined Emmitt Smith crashing helmets with Dick Butkus, and Sammy Baugh trying to throw the deep post against Deion Sanders. Instead, what Acclaim unleashed was a buggy game with meaningless player ratings, bad AI, and rampant scoring.

Accolade needs to seriously question the design decisions that went into this game. The list is long and undistinguished, but here's just a few of the more vexing issues: How can you release a Win95 product with no mouse support? How is it that it was the season's only game without jersey numbers? How do you release a graphics-oriented sim into today's market with no 3D support? And finally, since it was scheduled for 1997, how can a game be this bad with an extra year of work? The larger question is, can Accolade recover from this disaster and regain the confidence of the average gamer?
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GUNMETAL
it's amazing that EA Sports' NBA LIVE franchise has been allowed to go four years without competition, especially when you consider how readily game publishers jump on the bandwagon at the first sign of a successful title. Fortunately, NBA LIVE steadily improved from season to season, even without competition. But Sega's new NBA ACTION 98 is a surprise rookie, showing some good moves that even EA's veteran would be wise to learn.

Both games have terrific 3D engines, with texture-mapped players' faces and the like. But NBA LIVE 98, with its years alone in the marketplace, is still good enough to take on any newcomer, even if NBA ACTION 98 gives it a good game.

**The Veteran Returns**

Like many computer gamers, I always hope for vast improvements in every sequel to my favorite game. As a fanatical sports gamer, that means I have huge expectations each season for all of my favorites. Now, I understand that it's a lot to ask for a developer to improve their product in leaps and bounds each year, especially if the game is already a pretty good one.

NBA LIVE 98 does not leap or even bound over last year's version, but there are a few features that I've been asking for a long time—and received.

First and foremost is the additional control options. Some of the welcome new moves you can make on offense are crossover dribble, a shoulder-lowering drive, and a pivot or spin move. When shooting, you can do a leaner or fadeaway by shooting while pushing the directional pad towards or away from the basket, and a hook shot by turning 90 degrees from the basket before you shoot. There's also a direct pass option that lets you pass directly to any player, and a direct shoot button that lets you decide what kind of shot to take from a choice of four, including a high-flying dunk or an easy layup.

The best part of the new controls might be what you can now do on defense. There's a button for stealing and one for hand-checking, so you can control what the player does when he's playing the ballhandler closely.

Continued on page 196a
NBA Action 98

$50.00

MINIMUM SYSTEM REQUIREMENTS:
Windows 95, P90, 16MB RAM, 2x CD-ROM drive, SVGA graphics with 8-bit color, Sound Blaster 16 or compatible card.

MULTIPLAYER SUPPORT: hot seat (2-5 players on one computer)

DEVELOPER: Visual Concepts

PUBLISHER: Sega Entertainment
Redwood City, Calif.
(888) sega-sales
www.sega.com

Rookie of the Year

Even though NBA LIVE is a great game, there's nothing wrong with a little healthy competition. And besides, all Sega's development team really had to do was look at NBA LIVE, an already successful product, and imitate the good and improve the bad. But that's easier said than done.

If you are already familiar with NBA LIVE you will find your way around NBA ACTION with little difficulty. Although the front-end interface design is less polished and glitzy than EA's multimedia extravaganza, it is functional and easy to use nevertheless.

What's surprising about NBA ACTION is how well the 3D polygonal players are rendered and animated for an inaugural release. They almost look and move as good as they do in NBA LIVE, a title with a few more years to work out the kinks in their men. It's all there: the texture-mapped faces, sharp uniform details, realistic height and girth, and so on. There's still a little work to be done to get their feet planted firmly on the hardwood, however, as players sometimes seem to float through their surroundings—a problem that often plagues 3D games.

There's also the problem of speed consistency. It seems to take too long for a player to set up for a shot, especially dunks, and usually gives the defense enough time to collapse on the player to block his shot. For instance, to prepare for a mean dunk, the player squats down for added spring and then leaps in the air, which, admittedly, is more realistic than just jumping straight up. The problem is it takes him too long to get through the whole routine. The same applies to jump shots if the player is not already square to the basket—he takes a step or two to get set, then shoots.

The speed of the game needs some adjusting too. Even if your machine can maintain a decent frame rate with some of the graphics turned down, the speed of the game itself might be too slow, though you can adjust it slightly. My P133 gives me a decent frame rate with the game set at 640x480 with 8-bit color, but in contrast to it running at 320x240, it's a bit too slow and loses some excitement. The same also seems to affect the game clock, as a twelve-minute

Continued on page 196b
Continued from page 194
(previously, the defender would automatically swat at the ball when he was close enough, resulting in unwanted fouls). There’s even a direct switch option that, like direct pass, lets you switch to a specific player on your team. But the best thing of all is that you can now face up the player you’re guarding: When you hold down this button, your player sets up in a proper defensive stance and always faces the player your defending no matter which you move. He’ll slide laterally and backpedal to cut off the ballhandler, preventing him from driving to the basket.

Balancing Act
The offense in NBA LIVE 98 still has an unmistakable advantage over the defense, as it always has, and the unusually high scores reflect that. The reason for this is two-fold. On the one hand, it’s still really difficult to block a shot or even cause an opponent to miss, or to steal the ball. Many computer teams shoot the lights out at the highest difficulty levels, while your team goes cold at the other end. Which leads to the next problem: the disparity among the difficulty settings. The rookie level is too easy offensively, as you can sink just about everything you throw up, most of which are dunks, while any difficulty level higher than that means the same for your opponent, while your seven-foot center sometimes misses easy put-backs. There needs to be a setting where both teams play at even keel.

One way to balance the scales a little is to bump up the frequency of defensive fouls a bit, but you’ll also have to play defense more cautiously to avoid the wrath of the whistle-happy referees.

At The Buzzer
Although it perpetuates the series’ lingering problem of court awareness by computer-controlled players—who step out of bounds needlessly, shoot from behind the backboard, or get called for three-seconds in the key—NBA LIVE 98 continues to improve on an already solid game. With more coaching and strategy options (you can assign a play to all of the buttons on the gamepad and call them from on the court), it’s now a deeper game—but it could still get a few pointers from NBA ACTION 98.

Continued from page 195
quarter goes by unusually slow.
Slower court play is made even duller by the play-by-play announcing by Chick Hearn—he sounds like those announcers of old, calling a game circa 1950 or 60. He gets excited sometimes, but doesn’t add the extra exclamation you might expect from a NBA game, especially a computer one.

Play Calling
Off the court, NBA ACTION contains an interesting array of coaching strategies and features. A number of slide bars are used to adjust tempo and crash boards on offense. You can assign plays to three buttons, with two more—alley oop and double team—that can’t be changed. On defense, you can also pick one opposing player to double team. All of these settings can be combined into one of three sets that can be called from the court, giving you a lot of combinations to try.

Like NBA LIVE, there is a faceup button on defense (called a step modifier), which doesn’t work as well since the defender doesn’t face his man. That means you have to let up on the step modifier a lot to correct the direction he’s facing. There’s also no illegal defense call whatsoever.

But playing defense in NBA ACTION is better in many ways than in NBA LIVE. You really have to work to get an open shot or you’ll get rejected. Although it might be a bit too easy to block a shot in NBA ACTION, at least you can do it with dependable regularity. And you’ll have to be extra careful about getting your own shots blocked—the shooting animation doesn’t end when the ball is released. It will take your man a second or two to recover from taking a shot before he can go after his own loose ball after the block.

Finally, NBA ACTION has the distinct advantage of being far easier on system requirements than NBA LIVE, making it a better choice for those who haven’t upgraded their rig to the latest and greatest Pentium with 3D acceleration—a must for getting the full enjoyment out of EA’s title.

Final Score
NBA ACTION 98 is a solid and promising contender that should enjoy a good rookie season, but it’s going to have to do a little tweaking and adjusting to its game to play at the same level as NBA LIVE. Watch for this player next year, but for now, the veteran is still the one to beat.
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<th>GAME</th>
<th>PUBLISHER</th>
<th>REVIEW</th>
<th>RATING</th>
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<tr>
<td><strong>Baseball</strong></td>
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<tr>
<td>Baseball Mogul</td>
<td>Infinite Monkey Systems</td>
<td>Nov 97</td>
<td>★★★★★</td>
<td>Very good, unique, clever baseball GM sim.</td>
</tr>
<tr>
<td>FPS: Baseball 98</td>
<td>Sierra</td>
<td>Dct. 97</td>
<td>★★★★☆</td>
<td>Better than last year's catastrophe, but this still has a long way to go.</td>
</tr>
<tr>
<td>Grand Slam</td>
<td>Virgin Interactive</td>
<td>Dct. 97</td>
<td>★★★★☆</td>
<td>Looks and feels like a bad console game. Awkward interface, weak stats and trade Al.</td>
</tr>
<tr>
<td>Triple Play 98</td>
<td>EA Sports</td>
<td>Sept. 97</td>
<td>★★★★★</td>
<td>Entertaining 3D arcade action, but light on statistical accuracy.</td>
</tr>
<tr>
<td>Tony La Russa 4</td>
<td>Maxis Sports</td>
<td>Oct 97</td>
<td>★★★★☆</td>
<td>Disastrous step backward for one of the great PC baseball sims. Stick with Tony 3.</td>
</tr>
<tr>
<td><strong>Football</strong></td>
<td></td>
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<tr>
<td>ABC's Monday Night Football '98</td>
<td>OT Sports</td>
<td>Dec 97</td>
<td>★★★★★</td>
<td>Second season of this newbie football sim turns out to be a winner, with better AI, graphics.</td>
</tr>
<tr>
<td>Legends Football '98</td>
<td>Accolade</td>
<td>Dec 97</td>
<td>★★☆☆☆</td>
<td>By far the year's biggest disappointment. A failed attempt at cross-era football action.</td>
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<tr>
<td><strong>Basketball</strong></td>
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<td>NCAA Basketball Final Four 97</td>
<td>Mindscape</td>
<td>July 97</td>
<td>★★★★☆</td>
<td>Mediocre college hoops with dated graphics, limited options, and confused layout.</td>
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<tr>
<td><strong>Golf</strong></td>
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<tr>
<td>FPS: Golf</td>
<td>Sierra</td>
<td>Sept 97</td>
<td>★★★★★</td>
<td>Superb graphics and interface; good multiplayer options. TrueSwing is good alternative to swing meter.</td>
</tr>
<tr>
<td>British Open Championship Golf</td>
<td>Looking Glass</td>
<td>Aug 97</td>
<td>★★★★★</td>
<td>Realistic and intelligent golf action, but difficult mechanics and no multiplayer.</td>
</tr>
<tr>
<td>Links LS 1998</td>
<td>Access Software</td>
<td>Nov 97</td>
<td>★★★★★</td>
<td>World's best golf sim gets better, with quicker screen redraws and Internet play.</td>
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<tr>
<td>PGA Tour Pro</td>
<td>EA Sports</td>
<td>Dct 97</td>
<td>★★★★★</td>
<td>Good update of a good series, with multiple courses and great multiplayer options.</td>
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<tr>
<td><strong>Racing</strong></td>
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<tr>
<td>X-Car: Experimental Racing</td>
<td>Bethesda Softworks</td>
<td>Dec 97</td>
<td>★★★★★</td>
<td>Deep, intense driving sim that's marred only by being too difficult at times.</td>
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<tr>
<td><strong>Soccer</strong></td>
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<tr>
<td>Kickoff 97</td>
<td>Maxis Sports</td>
<td>Dct 97</td>
<td>★★★★★</td>
<td>First U.S. version of ANCO's soccer sim is the best of the class, with great gameplay and challenging AI.</td>
</tr>
<tr>
<td><strong>Misc</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Tennis Elbow</td>
<td>GOTO Software</td>
<td>Nov 97</td>
<td>★★★★★</td>
<td>Decent tennis simulation, not groundbreaking, but good enough for die-hards.</td>
</tr>
</tbody>
</table>

Cover photo (page 179) by Andy Hayt courtesy of Sega Entertainment. Special thanks to Eddie Lee (art direction/design) and Ruth Liebman (design/production) of Two Design, San Francisco, CA for their hard work on this feature.
PGL™
OFFICIAL NEWS UPDATE

The first online pro sports league for the computer gaming crowd

DONKA, DEEP BLUE AMONG THOSE Vying FOR FIRST SEASON CROWN
Second PGL Season Signups Now Taking Place on www.PGL.net Web site

At 18, DONKA (aka Ridget Fitzagerald), has a lot on her mind—and her hands. Qualifying for the inaugural season of the GL hasn't been easy for one of the leading ladies in Quake. Connecting and playing from the dormitory at the prestigious Hilliard School, where she major's in viola, was an accomplishment in itself.

"If I'm lucky enough to win any money playing in the PGL, I'd probably give it toward a new viola, though an ISDN or T1 line would be my second choice," she lauds.

DONKA is just one of the many competing for the Quake crown in the first season of the AMD Professional Gamers' League. As of November 6th, Azrael3 led the qualifying rounds, scoring the kill-crazy ruck through an uncanny ability to survive, and a powerful Kill-Per-Minute ratio of 2.03.

Mental Fast-twitch gaming isn't for everyone; some like to think as well as play. David Magro, aka DeepBlue, is one such gamer. Known as one of the premier strategists of Westwood Studio's Command & Conquer and Red Alert", DeepBlue is competing to qualify for the Command & Conquer: Red Alert finals in the PGL's first season.

"Most online games have you blasting away at your opponent. Command & Conquer: Red Alert requires a lot more thought than that," noted Magro.

Offering more than $250,000 in cash and prizes to winners in its first year, the AMD PGL has attracted thousands of the world's best gamers, and hordes of spectators online and on TV (see story below).

Signups for the second season of the PGL, which begins in February, are taking place now on the PGL web site, located at www.pgl.net.

PGL STANDINGS AS OF NOVEMBER 20, 1997

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<tr>
<th>QUAKE</th>
<th>Rank/Name</th>
<th>Score</th>
<th>Kills</th>
<th>Deaths</th>
<th>SuI</th>
<th>Avg%</th>
<th>KPM</th>
<th>Play Time</th>
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<td>198</td>
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<td>frick</td>
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<th>Soviet (W/L)</th>
<th>Total (W/L)</th>
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<td>33/3</td>
<td>47/4</td>
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<td>1880</td>
<td>57/19</td>
<td>42/14</td>
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<td>Havocs</td>
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<td>32/16</td>
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<td>55/15</td>
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<td>96/40</td>
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<td>47/13</td>
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<td>65/16</td>
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<td>69/18</td>
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<td>6/0</td>
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<td>21/3</td>
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WATCH THE PGL ON THE WEB AND TV

If you haven't been able to catch the clips of the PGL that appeared on CNN Headline News, ABC World News This Morning, CNET, CN8C, or Computer Chronicles, don't worry...live action coverage of PGL games is as close as the nearest PC or TV.

With the new "WATCH ONLY" mode for PGL Quake, observing league play is as exciting as competing! Official league matches will allow a dozen spectators to enter each 1-on-1 game and see the action unfold live. Choose any camera angle anywhere in the game. "Ride the shoulders" of one player and instantly jump to the opponent's perspective or fly through the game like a ghost hovering wherever a SingleClick of the mouse allows.

You can even record the action! Check out www.pgl.net for details.

In The PGL and You Could See Yourself on TV!

Beginning in mid-December, the AMD PGL will be featured bi-weekly on the nationally syndicated television show TV.COM. TV.COM is the #1 show dedicated to computers and the Internet produced by NET and distributed by IMG'S TWI division. Check out www.pgl.net for your local station and air time.

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Aces Low
This Sabre Needs Sharpening

by Robin G. Kim

In air combat—real or simulated—there’s no kill like a gun kill. Why is it, then, that the Korean War era, which showcased some of the hottest missile-deprived gunfighters ever to see combat, has been almost totally neglected by sim developers? Whatever the reason, newcomer Eagle Interactive has—at last—filled this mysterious void with Sabre Ace: Conflict Over Korea.

At first glance, Sabre Ace seems to have all the makings of a real winner. It has a novel setting, you can fly several plane types on either side, the aircraft renderings are gorgeous, and it supports just about every 3D accelerator card known to man. Alas, the game’s promise does not hold up quite so well under closer examination. While its strong points demonstrate how much gaming potential exists in this era, spotty execution in key areas denies Sabre Ace any chance of becoming a flight-sim classic.

FROM PROPS TO JETS

Play options include instant action, customizable dogfights with up to four planes per side, multiplayer dogfights, training missions, and a career mode. A career plays out as a series of independent canned missions. There are 25 if you choose to fight for the USAF in support of South Korea, or 20 if you fly as a USSR pilot unofficially aiding the North Koreans. Americans start out with an F-51 Mustang, with an eventual transition to the F-80 Shooting Star, then fight out the war in the hotdog F-86 Sabre. Soviet pilots begin similarly with a Yak-9 propdriven fighter, then graduate to the Sabre’s legendary opponent, the MiG-15. The prospect of upcoming aircraft upgrades provides plenty of motivation to progress through the missions, and the added variety of planes helps keep gameplay fresh.

missions aren’t dynamically generated, but they are interesting and diverse, with a good mix of realistic air-to-air and air-to-ground assignments. Each sortie is preceded by a briefing, which is accessed through a clunky, but atmospheric, interface. Even details such as ADF (automatic direction finder) beacons, dive airfields, and safe bailout zones are covered, but the flight plan is carved in stone—no changes are allowed.

Most of the game’s flights include some amount of peripheral air activity, but they still suffer from a somewhat sterile feel. This may be historically accurate, however, and occasional surprises, such as wingmen who turn back because of engine trouble or distress calls from besieged allies serve to liven things up. Both time compression and an option to jump to the next stage of the mission are provided for those who prefer to skip over the boring parts. Curiously, there is no corresponding way to avoid having to land at the end of a flight (unless you bail out) and still progress to the next mission in the sequence.

Up to seven wingmen can accompany you on every flight. Since you don’t lead most missions, this gives plenty of opportunities to practice formation flying (or to use the special formation autopilot). Approximately timed digitized radio chatter lends the sim some welcome atmosphere; the terse, rapid-fire acknowledgments of wingmen checking in are particularly well done. The few wingman commands you have available when you are leading a section are not very effective, but it is still wise to stick close to your breifmen so they can distract bandits you want to attack or elude.

Price: $44.99
Minimum System Requirements:

Pentium 133, 16MB RAM, 2MB video card, DirectX-compatible sound card, 4x CD-ROM
Multiple Player Support:
Modem, null modem, TCP/IP network (6 players, 1 CD per player)
Designer: Eagle Interactive
Publisher: Virgin Interactive
Irvine, CA
(888) VIE-COM1
(714) 833-1999
www.vie.com

BRIDGE OUT

The need to arm specific weapons and adjust sights for ground-attack runs may seem like busywork to some, but it captures some of the atmosphere of the cockpit as well.

BONUS

You will dominate the skies once you graduate to the F-86 Sabre (on the USAF side)
the design resulted from a pitched battle between realism nuts and action-game fans. The planes have a pleasantly fluid feel, with suitably mushy low-speed handling, and do bleed airspeed in turns, but the program artificially limits control inputs to prevent stalls. All aircraft are overpowered in climbs and can maintain ridiculously steep pitch angles indefinitely. Prop fighters demonstrate no torque effects, though lift is appropriately enhanced at higher throttle settings. Turn performance is fairly accurate for them, but becomes unrealistically good once you get to fly the F-86 or MiG-15. This problem is exacerbated by the absence of blackout/redout modelling.

Casual gamers will not mind these deviations from reality, of course, and even serious simmers might find the furbals satisfactory if they refrain from exploiting loopholes in the flight model. What casual gamers may have a problem with is the sim's difficulty, which cannot be adjusted. The AI pilots vary wildly in skill. While the dumber ones are easy marks, the aces can give even experienced sim vets headaches. Kills are especially hard to come by in the later prop-fighter missions, when most of your opponents are flying vastly superior jets. Fortunately, evasion and escape is usually an option. Also, you need not succeed at a mission to proceed to the next.

NO JOY

Part of what makes dogfights in Sabre Ace so tough is the sim's awful cockpit view system. Only 10 fixed-view directions are provided, plus a GCI tracking mode that automatically snaps between the two in an attempt to keep a selected target in sight. "Attempt" is the operative word here—there are large gaps between views that should rightfully overlap. An enormous blind spot also exists upward, at the sides and rear. Combining the GCI view with peeks at the target information displayed on the dash is workable once you have learned some of the AI behavior patterns, until then, prepare to be frustrated. Blind spots also make finding targets annoyingly difficult.

Except for some stunning aircraft renderings, the visuals are pretty, not jaw-dropping. Ground detail is coarse except near cities, yielding a poor sense of your height above ground. However, visibility limits are high, and Sabre Ace boasts impressively fast frame rates with full terrain texturing—if you have a 3D video accelerator card, that is. Non-accelerated graphics are too choppy to be playable on an average Pentium unless you turn the detail all the way down. Even the accelerated graphics can bog down when the view fills with too many aircraft or flak bursts. Be warned that a few buyers have encountered installation problems on systems equipped with 3D cards.

Sabre Ace shows much promise, but is ultimately flawed. Even if you can accept the flight-model simplifications, the game's otherwise immersive gameplay is still marred by its deficient, playability-sapping cockpit view system. This may be the best Korean War sim released in many years, but right now, that's not saying much.

Back to School

Although Sabre Ace's combat training missions are nothing special, the extensive takeoff, landing, and routine navigation tutorials are exceptionally well done. You get to fly real trainer aircraft: the T-6 and Yak-18, respectively, for USAF and USSR primary training. The T-33 or MiG-15UTI follow only after you have mastered the prop trainer and are deemed ready to strap on a jet.

The virtual flight instructor who talks you through the lessons watches you like a hawk, monitoring and critiquing everything: your speed, altitude, heading, even the direction you are looking (he gets really annoyed when you turn around to look at him in the back seat). If the instructor thinks the plane is about to crash, he will scold you as he takes back the controls. Fighting for control of the plane at that point will only get you more verbal grief. This interactivity makes the training immersive and fun—even humorous at times—as well as effective. Though you don't have to work through it, training is a high point of the game.

> APPEAL: Anyone who has been anxiously waiting for someone to release a Korean War sim; experienced sim fans willing to overlook flight-model inaccuracies; novices seeking an accessible, yet challenging, first sim.

> PROS: Outstanding flight-training segment; high 3D-accelerated frame rates; beautiful aircraft graphics; good atmosphere; Korean War setting.

> CONS: Limited number of canned missions and no mission builder; terrible view system; simplified flight model; poor performance without a 3D card; no multiplayer chat; may be too difficult for novices.
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The pilots.
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THE FLIGHT SIM WITH A STORY.

MISSION STUDIOS
Two Too Many
NovaLogic Takes Another Shot...and Tanks
by Patrick C. Miller

Do we really need a sequel to NovaLogic’s Armored Fist? Three years ago, many gamers were turned off by its blotchy graphics and lack of realism. While Armored Fist 2 sports better graphics, sound, and multiplayer capabilities than its predecessor, it’s still an action game dressed up as a simulation.

Armored Fist 2 puts players in the role of a U.S. Marine Corps tank commander participating in United Nations peacekeeping efforts in various hotspots around the world. You begin your career at the Marine training center at 29 Palms, California, where tutorial missions provide basic combat training. There are four campaigns of increasing complexity, with eight scenarios per campaign. Missions take place in Africa, the former Soviet Union, and the Middle East. The missions can be played in any order. Results don’t carry over from one mission to the next, but statistics are kept on your tank commander’s career.

Although Armored Fist 2 is a DOS game, it installs easily and can be played under Windows 95. The manual adequately covers the game’s mechanics, but provides no information on vehicles or weapons in the game—other than the M1A2, and even that is minimal. A keyboard command overlay and quick-reference card are provided.

All Buttoned Up
You control each tank through a combination of joystick and keyboard commands, and you can choose from four stations: tank commander buttoned (known in the M1A2 as the commander’s independent thermal viewer, or CVTV), tank commander unbuttoned, gunner, and driver. There are also four external views and a map screen portraying the M1A2’s intervehicular information system (IVIS). From this screen, you can maneuver units under your command by assigning waypoints. You can also issue orders to units within your platoon, instructing them to change formation, spacing, and to a limited extent, targeting priorities.

Weapons available in the M1A2 are the 120mm gun, the 7.62mm coaxial machine gun, and the 50-caliber machine gun on the turret’s top. The main gun fires Sabot (armor-piercing), HEAT (high-explosive, antitank) and STAFF (smart target-activated fire-and-forget) rounds. Depending on the mission, you can call on an A-10 ground-attack aircraft, AH-64 Apache helicopters, and rocket artillery for additional support. M2 Bradley infantry fighting vehicles tag along on some missions. Opponents include T-72 and T-80 tanks, BMP infantry fighting vehicles, BRDM armored cars, Tunguska antiaircraft vehicles, Mi-24 Hind gunships and Su-25 Frogfoot ground-attack aircraft.

Steel Off Target
When it comes to realism in first-person simulations, I’m no fanatic. I can overlook quite a bit as long as the game at least feels somewhat real. But with Armored Fist 2, my credulity is stretched beyond its limits. From the commander’s station, I can order my tank to speed up, slow down, and stop, but I can’t order it to back up. I can shoot down helicopters and jets with armor-piercing rounds from the 120mm gun.

Attack helicopters—both friendly and enemy—fly directly into enemy positions and are usually quickly shot down. Artillery is called in from the gunner’s

Price: $44.95
Minimum System Requirements:
Pentium 120, Windows 95 or DOS, 16MB RAM, SVGA graphics, 4x CD-ROM; supports most major joysticks and all Sound Blaster-compatible sound cards
Multiplayer Support:
Modem or serial connection (2 players); LAN or Internet (2–8 players)
Designer: Sherwood “Kent” Simon
Publisher: NovaLogic
Carabasas, CA (818) 878-0325
www.novalogic.com

Drive yourself crazy! The only way you can back up your tank is to drive it yourself.
SIGHT SEEING
By choosing the realistic play option and leaving autolock targeting turned off, you can acquire targets on your own through the gunner's primary sight. Successfully painting the target with the laser rangefinder will automatically make gun barrel adjustments for the ammo type that you load. After that, just squeeze the trigger and fire. If the rounds misses, make adjustments until a hit is scored. Unfortunately, poor design decisions add needless complexity to manual gunnery, ruining this aspect of the game. Although I eventually became proficient at manual gunnery, I found that as I played more complex scenarios in which my tank had to rapidly engage multiple targets, I needed to turn the autolock feature back on. Menu targeting was too slow and too unwieldy. Playing from the driver's position with the autolock option enabled is the best way to win the more difficult missions. But most armor sim fans would prefer to spend their time shooting the 120mm gun than driving.

A View of Two Abrams:
Armored Fist 2 vs. iM1A2 Abrams

NovaLogic's Armored Fist 2 joins Interactive Magic's iM1A2 Abrams as the second tank sim on the market featuring the US Army's M1A2 battle tank. How do the two games stack up against each other?

For pure gizmo through the use of graphics, music, sound effects, and full-motion video, Armored Fist 2 is the hands-down winner. But for those who want a more realistic experience without the requirement of a speedy, RAM-crammed MMX Pentium, iM1A2 is the clear choice.

The gunnery model of iM1A2 is far more accurate than that in Armored Fist 2. Real-world tactics actually work. And although iM1A2's AI isn't the greatest, it makes the AI in Armored Fist 2 look pathetic. iM1A2 includes dynamic campaigns, infantry, and greater unit variety, and it handles air and artillery support far better.

Armored Fist 2's strength lies in its ease of play and terrain modeling. Surprisingly, I liked Armored Fist 2's commander's station better than iM1A2's, because it was easier to spot and designate targets for my gunner. Armored Fist 2 is for gamers who want to jump into an Abrams and drive around the battlefield admiring the pyrotechnics they create.

TURKEY IN YOUR TANK
The game severely lacks in the AI department. Some units are totally passive as you pick them off one by one, while others act as if they're intent on ramming your tank. Mission complexity and difficulty is achieved by adding more and more enemy units to destroy while forcing you to control more and more brainless friendly units. I also experienced problems with game crashes and an apparent bug that causes units to become confused by their waypoint orders.

Anyone hoping that Armored Fist 2 might be a worthy successor to M1 Tank Platoon, the MicroProse classic released back in 1989, will be disappointed. The good news for armor fans is that tank simulations, which have been neglected by game publishers for years, are suddenly in style. At least there's hope that a new tank-sim champion will emerge in the near future.

APPEAL: Gamers who are looking for an unrealistic, but easy-to-play tank simulation.

PROS: Rolling terrain; great sound effects; multi-player capability.

CONS: Clueless AI; utter lack of realism; crash problems; limited replay value.
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The Plot Thickens
What This Sim Lacks in Flash and Dazzle It Makes Up For in Storyline
by Thierry Nguyen

Developments in the space sim genre have seemed more focused on looks and movies than an innovation. *The Darklight Conflict* had a very pretty engine that was attached to a very mediocre game. *X-Wing vs. TIE Fighter* was heavy on the eye-candy, but light on the game-quality. And *Wing Commander IV* was more moive than game. *Forced Alliance* has the opposite problem. It has quite good gameplay, but dated graphics. However, if you've been aching for a space experience that's not devoid of storyline, you might want to overlook *Forced Alliance*'s plain appearance.

**SPACE TRUST**

*Forced Alliance* starts out as a simple, straightforward "us versus them" type of space war, but things get a bit more complicated as the game progresses. In the beginning, there are only three sides: Humans, the enemy Vorganloids, and the neutral Marauders. But as the game goes on, more races are thrown into the mix and the plot shifts so that you don't know who your friends really are—some enemies could turn out to be your staunchest allies.

Your decisions and actions help determine how the story flows. Many times, you'll be given dialog choices that will determine your options, and other times your actions in combat will determine what happens next. Even when you start the game at the lowest rank of pilot, there are missions that affect your interstellar relationships. One overarching plot will always play out, but your actions can alter the alliances between the humans and the various races. In one string of missions, I flew as a pilot for the human forces, when I replayed those particular missions, I allowed myself to be captured by the enemy and flew as a P.O.W. The basic mission goals stayed the same, but the missions were different simply because of perspective.

Later, when you are promoted to commander or captain, you have a more direct impact on the game's flow. As a commander, you will be consulted on important decisions, such as whom to ally with and which missions to accept, as a captain you will make the actual decisions. There is one "best" ending, but to reach it will require that you know how to properly handle each race.

Because you can ally with the different factions, there are certain points in the game in which you fly your ships. Each race's ships handle differently, and each features one unique ability. Some of the races have two ship types, but the difference within those two ships is negligible.

Combat is quite good, as the enemy AI will properly use the each ship's advantages. One aspect of combat you might find frustrating is that only one race can counterattack against missiles, while everyone else has to dodge them by sight. Orbital is supposedly developing a patch that will let all ships counterattack missiles.

**GRAPHICS SCHMGRAPHICS**

The main drawback of this game is its lackluster graphics. Even when using 3DFX-acceleration, the graphics engine reminds me more of *Star Rangers* and *Star Crusader* than anything that came out within the past year. Hardware makes slight adjustments to the textures on the ships, gets rid of pixelation, and boosts the frame-rate.

For those of you who were disappointed with the lack ofsingle-player in *X-Wing vs. TIE Fighter*, *Wing Commander IV* and can bear with the dated graphics and lack of multiplayer games, *Forced Alliance* is a good buy. I hope that *Forced Alliance* is a sign that mean single-player campaigns and stories are returning to space simas.

**APPEAL**

Space-simmers who value interesting single-player campaigns and control of their character's destiny over flashy graphics.

**PROS**

Excellent single-player campaign; variety of ships with unique handling; complex branching storyline.

**CONS**

Dated graphics, even with hardware acceleration; ship variety cries out for multi-player support.

---

Price: $29.95
Minimum System Requirements: 486DX-100 or better, 16MB RAM, Windows 95, 40MB hard-drive space, 2x CD-ROM, VGA graphics card, Windows 95-compatible sound cards
Multiplayer Support: None
Designer: Orbital Studios
Publisher: Ripcord Games
Santa Clara, CA (888) 797-5887
www.ripcordgames.com
Build and

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—Computer Games Strategy Plus

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—Computer Gaming World, Five-Star Review

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Bloody Good Time

This Is Not Your Kid's Real-time Strategy Game

by Greg Fortune

Bungie's latest game, Myth: The Fallen Lords, is not for the weak of spirit... or stomach. It is, however, a victory for all of us who love the combat aspects of games like Age of Empires and Warcraft, but could do without the endless gathering and building. Featuring a physics-based 3D engine and spectacular graphic violence, Myth strips the standard real-time strategy game to the bone. What it leaves behind is brutal and bloody combat that is engaging, addictive, and hinting at more violence than a sunny afternoon.

TELL ME A STORY

The premise of Myth is pretty standard. An army of the undead is ravaging your homeland, and you must drive them out or be destroyed. Ordinarily, a premise this tired would choke the originality out of a product, but Myth's story stands out because it is detailed, original, and well-integrated into the game. The prologue, cut-scenes, and unfolding plot combine to involve you in the conflict at a deeper level than a shallow back-story ever could. You get an actual sense of unease as you face the dark times ahead.

In creating the characters for Myth, Bungie wisely decided to mix a few familiar fantasy staples with some new creations of its own. You will immediately recognize the dwarves, foot soldiers, and archers. The unfamiliar elements come in the form of the walking dead: granthale thralls, spirit spearmen known (appropriately) as soulless, exploding gas-filled corpses called wights, and others.

Each unit, friend or foe, has a unique name and a unique history. As the men under your command gain experience, they become more effective and more valuable. An archer with 10 kills will fire faster and more accurately than an archer who has never seen action. As you progress through the missions, veterans that have survived previous battles will occupy the positions that would otherwise be filled by raw recruits.

TALK ABOUT A CONTROL FETISH!

You observe and control your units from an overhead perspective. Not only can you move your point of view forward, back, left, and right, but you can rotate your perspective based on two separate...
GET IN LINE! Myth is a difficult game that demands excellent strategy and unit control. Placing troops in 1 of 10 formations is a key to victory.

DANCE OF THE DEAD

Most games offer you a few easy beginning scenarios before getting to the meat of the game. Myth does not. Make no mistake; this game is difficult.

The most surprising thing about the gameplay is the degree of strategy required to win any given scenario. You begin each mission with a set number of units, and unless you find additional troops wandering around the level (or fighting for their lives), that's all you have to work with. Myth allows you to arrange your units in a variety of formations. Surprisingly, these formations actually work. From vanguards to staggered lines, how you arrange your forces affects your strategy and your chances for survival. If you want to have any veterans left for the next scenario, you will need to figure out an effective way of deploying your troops based on their number and composition. You also need to factor in the environment and the makeup of your opponent. Leave a flank exposed and you'll soon find a couple of aye-like goblins hacking apart your archers with their scythes. Fail to take the high ground and you'll be showered with spears as the soulless come over the rise. Let the wights get too close and those rolling bombs will shred your ranks with waves of earth-shaking explosions. In short, you need to think ahead to win.

YOU LOOK GOOD IN RED

The action happens in a beautifully rendered world. Arrows and bombs are gracefully toward their targets, blood stains the ground where it falls, and freshly removed heads roll slowly downhill. The dwarves' explosives blanket the earth and the remains of corpses lie in heaps on the ground. Seasons, and weather change, bringing rain and snow that affects the performance of your troops. Wind blows arrows off course, and rain dampens the fuses of dwarven bombs.

The 3Dx's rendering is marvelous, but there is a catch—the game shipped with a bug in the Voodoo Rush routines that sometimes crashes the game while loading levels. It's disappointing that Bungie would put so much effort into this game and then ship it with game-crashing bugs. There is a patch available online, but that doesn't excuse the fact that the retail version isn't a fully working product.

But Myth kicks some serious butt. Not since Diablo has a game so captured my attention and waking hours. With its blend of in-your-face combat, realistic terrain and weather, and entertaining characters, Myth is a winner.

APPEAL: Anyone who loves graphical tactical combat but could do without the building and harvesting that usually goes with it.

PROS: Outstanding engine, gameplay, story, and environment; addictive gameplay.

CONS: View system needs elevation controls; game has crash bug; no modem-to-modem or direct-cable support; no map editor.
FALCON 4.0 IS NOW CLEARED FOR FINAL APPROACH COMING SOON
Frontal Assault

TalonSoft's Reach Exceeds Its Latest Engine's Grasp

by Loyd Case

East Front — an ambitious game that depicts small-unit actions in detail during the immense struggle for Mother Russia during World War II—seems to be a wargamer's dream title. The new game engine (though still turn-based) is now fully 32-bit and Windows 95-optimized. The maps are dynamically generated using a terrain tiling system in the campaign, and as you play through the game you run into quite a variety of terrain and weather. There are 49 historical scenarios (including a siege-oriented scenario created by veteran game designer Jim Dunnigan) and three tutorial scenarios. Despite all this, however, the East Front experience falls short of being that of a great game.

GROGNARD LITE

The interface in East Front is quite similar to the one used in TalonSoft's Battleground series, but now there's a nifty database of unit types that you access by the use of hotkeys. There's also a new toolbar at the bottom of the screen that's less intimidating than that of earlier TalonSoft games. The only issue I have with the interface is the use of a modal switch between fire and movement. You learn quickly to hold the Ctrl key down to enter fire mode, it's altogether too easy to press the "next turn" button, which is adjacent to the move/fire mode button on the toolbar.

Each unit represents a platoon or battery of artillery. You must call in both direct artillery fire and air strikes to turn a turn, and you have a limited number of air strikes available in a given battle. Movement of all unit types is pretty straightforward, whether you use the mouse or the keyboard. There are quite a few hotkey equivalents, which are conveniently printed on the back of the manual.

Speaking of the manual, it's very thin, and barely scratches the surface of how to play the game. For example, supply is handled through the use of HQ units, yet there's almost no discussion of how these rules work. The README file contains some additional information, as do the tutorials. Still, there's far too little information, especially when you contrast East Front's manual with the one included in Close Combat 2, another recent WWII small-unit game (see the review elsewhere in this section).

There are some troubling design features as well. If you thought infantry was useless in Steel Panthers, be prepared for the opposite problem in East Front. The German infantry in particular is so extraordinary tough as to be quite unrealistic. Several times I attempted assaults with multiple armor platoons on single, often severely damaged, German infantry units in open terrain, only to get a bloody nose in the process.
Certainly the quality of Russian units early in the war may have been questionable, but this occurred even with the Soviet Guards armored units in the 1944 scenarios.

The use of leaders is also interesting, but the implementation is flawed. It is great that leaders can rally disrupted units, but leaders alone in clear terrain shouldn't be able to fend off multiple SMC platoons.

A SCENARIO FOR ALL SEASONS

The real strength of EAST FRONT lies in its numerous historical scenarios. The timetable ranges from the opening of Barbarossa through Operation Citadel (Kursk) up to the desperate retreats of 1944. Since the scenarios are precreated, the starting positions tend to follow the historical deployments.

Some of the battles are big. Dead End on the Road to Kursk, for example, is a 30-turn scenario with hundreds of units. When I played the Germans, it took the AI 35 minutes to complete the opening turn on a 266MHz Pentium II with 64MB of RAM! Even when playing smaller scenarios, you should plan on having something else to do when the computer is moving, as it does "think" for quite a while.

Overall, EAST FRONT is a mixed bag. It's a very ambitious and interesting title that was simply shipped too soon. It's probably worth getting for the historical scenarios, but the campaign engine needs work (see the sidebar). There are other nice touches, such as the oversized heroes, in which you can actually see all of the "stacked" units—which makes the job of searching for specific unit types in a large firefight much easier. The use of Action Points makes the issue of artificial overrun rules moot. Each unit has 100 action points (which get used at different rates by different unit types). As long as the active unit has sufficient action points it can continue to move, fire, or assault.

EAST FRONT also ships with a terrific scenario editor. You can edit existing scenarios or create your own (including maps). It's one of the most flexible and easy-to-use editors I've seen in some time. Finally, there are extensive two-player options.

Still, all of the good things about EAST FRONT can't hide its many problems. As of press time, TalonSoft has released two patches and additional documentation that fix some of the problems, but seems to have created others. If, like me, you are captivated enough by the historical period to try EAST FRONT despite its shortcomings, be aware that the game is still very much a work in progress.

APPEAL: Aficionados of WWII tactical combat who have a lot of patience.

PROS: Gorgeous graphics, numerous historical scenarios; a great scenario editor.

CONS: Flawed campaign battle-generator; ubermensch infantry; incredible amount of time for Ai moves; weak manual.

Campaign Follies

The limited campaign battle-generator is a little薄弱, but overall, EAST FRONT is a solid and ambitious game with a potential. It's a shame the marketing department and work ethics were so off the wall. You don't need to get a command-and-control map, you just need to get a command-and-control unit. However, the leaders are too strong in the middle of the board. I've found that when the AI has a good leader the whole campaign gets out of hand. One symptom is that the AI attacks your units with massive formations, losing one at a time. Finally, there is a lot of hidden game play. The editor has some neat things to explore, such as the "token" and "troop" types, which can be sized up to 100,000 units. The leaders and troop types are often placed near the important areas of the map, which can make the campaign very easy or very hard.
Off to Market

Real-time Wargaming Comes of Age

by Patrick C. Miller

CLOSE COMBAT: A BRIDGE TOO FAR isn't a game to be played so much as experienced. You experience disappointment when an attack bogs down for lack of armor support, frustration when troops under fire refuse to obey orders, and remorse when heroes of earlier battles are mercilessly cut down by enemy machine-gun fire. Yet you also have feelings of elation when victory is achieved against insurmountable odds, satisfaction as tactics start to click, and accomplishment after completing a difficult campaign.

RIPCORD AWAY!

Based on Operation Market Garden during World War II, this game delivers the pressure, tension, and drama of tactical warfare at close range. Plus, it's all done on extraordinarily detailed maps, in 16-bit color. Real-time gameplay combines with an emphasis on troop morale, physical and mental states, and battle experience to propel A BRIDGE TOO FAR into the realm of realistic combat simulation. Although turn-based wargames will always be popular, they can't compete with A BRIDGE TOO FAR in providing a sense of what it must be like to command individual soldiers in combat.

Price: $54.95
Minimum System Requirements: Pentium 90, Windows 95 or better, 16MB RAM, 45MB hard-drive space, SVGA graphics with 800x600 high-color (16-bit) resolution, 4x CD-ROM drive, mouse, supports Win 95-compatible sound cards
Macintosh: Power PC, System 7.5, 16MB RAM, 40MB hard-drive space, 800x600 graphics, 4x CD-ROM, mouse
Multiplayer Support: TCP/IP, LAN, or 28.8Kbps modem (2 players). Note: Internet Gaming Zone available for Win 95/Windows NT users only
Designer: Atomic Games
Publisher: Microsoft Corporation
Redmond, WA (206) 882-8080
www.microsoft.com

TOY SOLDIERS Unlike the original Close Combat, even the zoomed-in view of A Bridge Too Far is useful. Check out the detail of the infantry and tanks!
LOGISTIC LOGIC In the campaign game, you must decide which sectors of the operation are the most crucial and should receive the greatest amount of supplies.

When Microsoft released CLOSE COMBAT more than a year ago, there was nothing quite like it on the market. The designers at Atomic Games have now raised that standard even further by smoothing CLOSE COMBAT's rough edges. This time, the company has included features that not only add variety and improve gameplay, but also provide a significant amount of long-term replay value — one of the original game's greatest shortcomings.

From a gameplay perspective, A BRIDGE TOO FAR isn't all that different from CLOSE COMBAT. The emphasis remains on tactical engagements between infantry sections and individual vehicles. However, many of the changes implemented in the sequel have made what was a good game outstanding. The interface is more responsive and intuitive. Map scrolling is smoother. There are more units and more missions (and greater mission variety). You can edit missions with the Battlemaker feature to design new scenarios (although there is no way to create additional maps). The game's stronger strategic element provides more depth to the dynamic campaign, and modern-to-modern play has been added. Also, network play is more stable than before.

The game comes with 33 battles, which can be played separately or as part of 12 multibattle operations. There are three campaigns, based on battles in the Eindhoven, Nijmegen, and Arnhem sectors. The ultimate challenge is the grand campaign that requires players to manage units and allocate resources in all three sectors. When you play as the Allies, the key is to capitalize on the element of surprise and then defend supply zones and bridges until 30th Corps arrives. The Germans must make the enemy paras jump high price for their initial gains while minimizing their own losses until an armored counterattack can be launched. As was the case historically, the strategic situation favors the Germans.

HITTING THE DIRT

The game isn't that difficult to play, but it is tough to master. There are only seven commands: move, move fast, sneak, fire, fire smoke, hide, and defend. Giving unit orders is fairly simple; you use either a mouse-activated menu or keyboard commands. Some players have a hard time getting used to the combat stress psychological model that causes units to act on their own initiative. Occasionally, this results in hero behavior, but more often, self-preservation instinct prevails. Players must also develop effective tactics and small-unit strategies to have any hope for success when playing at the higher degrees of realism.

Not all changes were for the better, nor is the game without some minor flaws. Because soldiers are larger, buildings no longer have the interior walls that sometimes made for interesting indoor firefight. The game replay feature is gone, as is the ability to give units orders to defend or face in a specific direction. Although some buildings in the game are designed to allow vehicles to enter them, there are bugs in the game that sometimes enable a tank or antitank gun to get the benefit of being on top of a multilevel building. Tanks sometimes have problems deciding which way to face. As a result, a tank's hull sometimes appears to be doing the running with its turret.

Fans of turn-based wargames might be inclined to write off A BRIDGE TOO FAR as a simplistic real-time quicksand or yet another effort that sacrifices gameplay for eye candy. But they would be very wrong in that assessment, for A BRIDGE TOO FAR is an engrossing affair, one in which you can easily become immersed for hours. No other game can touch it for conveying the sights, sounds, and feel of combat at the bitter end of a rifle.

LINE OF FRIGHT While line-of-sight to a target isn't always visually obvious, the game's intuitive interface makes it a snap to determine
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“MicroProse’s game offers weeks to months of gameplay.”
Computer Gaming World, June '97

“Magic: The Gathering is just what the Samite Healer ordered.”
Computer Games Strategy Plus, June '97

“Magic: The Gathering is a near-perfect translation of the card game.”
PC Magazine, June '97

“...hard-core gamers will appreciate the flexibility offered in the computer version.”
Newsweek, April '97
as any intergalactic traveler will tell you, a key element of space exploration is communication, the creation and management of a consistent flow of information. Pax Imperia 2, the long-awaited sequel to the popular Macintosh product, gives gamers virtually everything they could ask for in a space-based strategy game—except decent communication. The designers have left out or obfuscated the flow of information within the game’s interface to the point that it seriously hampers your ability to enjoy the game.

**NEW FRONTIERS**

Pax Imperia 2 offers a package of options and challenges similar to that of Master of Orion 2, with the addition of a real-time interface. Frankly, I’m not sure that realtime works well for a grand strategy game. Why should a galactic emperor be rushed, when turns are measured in years rather than minutes? Also, with many things going on in disparate parts of the galaxy, it’s easy to miss an important event or activity—to the detriment of your empire.

Which brings up the question of information. Pax Imperia 2 has many interesting features: a decent technology tree, some good economic options, and many more espionage and “black ops” opportunities than in similar games. Most of these features, however, are poorly explained and are difficult to use properly.

The manual is so sparse that you will be left guessing about many aspects of gameplay. Further, no list of technology, ship design, or colony-building is provided.

Also, there is little opportunity to cross-reference information. For instance, zooming in on a planet allows you to pull up a menu of the buildings available for construction. Unfortunately, it doesn’t tell you what any of them do. To get that information, you have to go back to the technology-management screen, then go back to the planet in question to give your orders.

**Exploration is generally predetermined by the map. Yet, the random setup does not include a basic algorithm for separating players at the beginning of the game.**

Once in a while, this “feature” worked to my advantage by pitting AI races against each other early on, and giving me relatively unchecked reign over other parts of the galaxy. Tactical combat, supposedly a major part of the game, is actually quite dull. If you have the night number of superiors, you’ll win. If you don’t, you’ll lose. As defensive technologies progress faster than offensive technologies, the middle-game often plays out like World War I: lots of pointless attacks, little progress.

Many of these problems could be fixed through a tighter interface and better documentation. Right now, Pax Imperia 2 feels like an unfinished product with considerable potential but little polish. It looks and sounds good, but can’t deliver a consistently enjoyable gaming experience.

**THE GOOD AND BAD**

While Pax has plenty of options and depth, it’s skimpy on information and requires far too much micromanagement.

**Tedium Ad Infinitum**

The game’s interface makes your development other tedious (if you micromanage it) or boring (if you let the computer handle things). Defensive installations are also a drag, as they cannot be ordered in advance. You must return to each planet after each construction to give new orders. As you aren’t prompted when each installation is finished, you have to check regularly— lest your hitherto colonies revert to economically lean production.

If a planet has all of the buildings available at your current technology level, it will do nothing unless specifically ordered to do something—even if there are orbital systems available for construction.

Another problem stems from the random setup. Because the map consists of a relatively small set (the default is 20) of interconnected planets, with only a few wormholes between them, your initial exploration is generally predetermined by the map. Yet, the random setup does not include a basic algorithm for separating players at the beginning of the game.

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**APPEAL: Strategy gamers looking for depth who don’t mind a rude awakening to realtime.**

**PROS:** Good depth; lots of options; good espionage system.

**CONS:** Appallingly bad information management; hard AI; weak tactical system; realtime seems pointless.

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**Price:** $49.95

**Minimum System Requirements:**

- 486DX/100 (P133 recommended), 16MB RAM, Windows 95
- 155MB hard-drive space, 2x CD-ROM drive (6x recommended), Windows 95-compatible sound card and mouse

**Multiplayer Support:**

- Modern (2 players)
- LAN, Internet (2–16 players)

**Publisher:** THQ

**Price:** Heliotrope Studios

**Publish:** (818) 581-1310

**www.thq.com**
Mind Your Own Business

Wanna Be the Next Bill Gates? Here's Your Chance

by Scott A. May

A

h, the life of a computer company CEO. What could be easier? Brain surgery, for starters. If you've ever wondered whether you've got what it takes to become the next Bill Gates or Steve Jobs, let Stardock's ENTREPRENEUR be your proving ground.

But be warned: The job ain't what it's cracked up to be.

In a nutshell, ENTREPRENEUR is a game of global economic domination, much like I-Magek CAPITALISM or Tsunami FREE ENTERPRISE. Believe it or not, Stardock Systems—until now premier OS/2 game designers—actually licensed the game to Electronic Arts' legendary M.U.L.E. The difference is in the game's focus.

In ENTREPRENEUR, you're the CEO of a multinational computer manufacturer, competing against up to eight similar high-tech companies for worldwide market share. Although a PC product line is your only option at present, Stardock promises to add more diverse markets in the future. But for now, you'll have your hands full just learning to survive in the cutthroat world of high-tech high finances.

STARTUP ENTERPRISES

You begin the game by choosing your area of expertise: manufacturing, marketing, or research. The choice you make essentially doubles your potential advantage in that area. You then pick names for your company and CEO. By default, you compete against three computer-controlled companies with sanitised names such as Microsoft, LaST, and tty Bitty Machines (IBM). It's a big world, but three competitors is plenty for starters. As you gain experience and become bored with winning, you can increase the number of competing companies to a maximum of seven. Other factors determine the game's overall challenge, including five difficulty levels, seven game speeds, and the ability to adjust your initial startup funds. Finally, the game offers a choice of 12 different worlds in which to compete, ranging from the entire globe to only the United States. Plus, several fictitious maps are thrown in for good measure.

LEARNING THE ROPEs

The game unfolds on a scrolling global map, which is divided into regions with button bars for the top and right side of the screen, providing instant access to market share, demographic data (both global and regional), bar graphs, and pie charts. A color-coded overview menu and winning bar lets you see at a glance how well your company is faring. Market news periodically flashes across the top of the screen, while a status bar at the bottom tracks your current assets and time line.

The gameplay is in accelerated realtime. Basic tasks include researching regional demographics, manufacturing your product, and tweaking several of its...
attributes: reliability, aesthetics, ease of use, performance, and prestige. If customers aren't clamoring for your product, you create demand by using a variety of marketing tools. If demand is high, you must step up production by hiring more employees and building bigger factories. When consumers become dissatisfied with your product, you must invest money into research to improve your PC's key components and match consumer desires.

All the while, you have to keep a sharp eye on the bottom line to assure that you're not spending more than you're making. It's a nonstop balancing act and, despite the game's placid outward demeanor, it can be totally nerve-racking. Consumer confidence slips, employee morale nose-dives, careless expansion prevents you from upgrading existing facilities, markets fluctuate or tumble, and so on. There are so many factors to juggle, you'll be as bald and ulcer-ridden as a real-life CEO in no time. Welcome to the big leagues.

THAT'S NOT ALL!

Direct Action Cards represent the dark side of corporate strategy. Players earn cards based on their accumulated resource pool. The primary purpose of these cards is to trump your opponents when they've grown too powerful. If your chief competitor is gaining market share, you can play a card that announces a legal suit over copyright infringements and watch consumer confidence in their product tumble. Or you can use a card to lure a key executive away from the competition. Dirty tricks? You bet. This is war, after all.

In single-player mode, the game is constantly challenging, thanks to an aggressive, take-no-prisoners AI. Subtle and merciless, the AI will relentlessly blast you with marketing FUD (fear, uncertainty, and doubt). And just when you think you have your computer opponent on the ropes, it will arm a campaign at your strongest regions. As in real life, market volatility means the tide can turn repeatedly throughout a single game. Multiplayer mode is even more fun. Up to eight would-be tycoons can compete via LAN connection or over the Internet (using Stardock.net).

Logging on and creating an online game is a breeze.

THE EXTRAS

Game graphics are clean, yet extremely simplistic (almost shareware quality). Beyond the map's animated water and the constantly updated market data, most game screens are static, with little or no ambient sound. Unfortunately, this is exactly the kind of game that needs some multimedia window dressing to liven things up and draw new players into the action. Navigating the game's numerous production, marketing, and research screens also takes time to master, but after several games, it becomes second nature.

Despite its share of grammatical and factual errors, the game's documentation is well-written and personable. The designers obviously live and breathe this stuff, because the manual for the game continues to pitch the product, even though you've already purchased it.

In addition to point-by-point descriptions of each game element, the manual also includes a nice walkthrough, which takes great strides to acclimate newcomers to the gaming system. Although the basics of gameplay are not terribly complicated, the learning curve here is still substantially steep. In many ways, it's almost better if you have no economic background. That way, you aren't attempting to apply real-world economics to the game's slightly skewed, simplified model.

In the end, ENTREPRENEUR is much more fun than a spreadsheet, but it takes almost as long to fully learn. Patience is definitely a virtue here, but tenacious gamers will be rewarded with a fun inside peek at the sink-or-swim world of business strategy.

APPEAL: Real-time strategy fans with a flair for corporate economics.

PROS: Outstanding computer AI; addictive gameplay; effortless multiplayer setup; good sense of humor.

CONS: Graphics are bone dry; steep learning curve; interface could use a bit of tweaking.

BUSINESS AS USUAL. ENTREPRENEUR's graphics are serviceable, but could have used some multimedia seasoning to lure potential CEOs.

FUD SLINGING. You can launch sometimes distasteful campaigns to discredit your opponents or erode consumer confidence in their products.
Winds of Change

Stormy Combat Game Brings New Energy to Real-Time Strategy

by Tahsin Shamma

A discussion of the recent weather forecast may be fine for small talk, but find a room filled with real-time gamers and any talk of NetStorm is likely to bring more than just plain chitchat. NetStorm is a game like no other. It invigorates a genre that some feel is becoming too repetitive. Yet its originality raises alternating real-time gamers who are just settling into the traditional Warcraft 2 game design.

A word of advice: NetStorm can intrigue and enthral you, if you're willing to accept the fact that real-time strategy games are not all the same. The only game that I can recall with a similar feel was Mark's Rampart (an arcade game of castle-building and cannon-firing).

STORM OVER NIMBUS

NetStorm takes place in the mythical world of Nimbus. The world is divided into three "spheres" of interaction the Serensphere, a heaven in which players match up for Net battles; the Pyrosphere, the island-laden arena in which players engage in combat, and the Decosphere, the lowest realm, from which the Furies hurl Storm Geyser to fuel the battles above. Of these spheres, players will enter only the first two, the third, where the Furies of Wind, Rain, and Thunder battle, is an imaginary realm whose sole purpose is to provide atmosphere and backstory.

Players begin on floating islands in the Pyrosphere and must construct bridges to launch assaults against others. This may seem like an unnecessary addition to the gameplay, but it enhances strategic thinking, as no two bridges may overlap. Thus, it is possible to cripple an enemy just by cutting off his avenues of construction. If enemy bridges surround a player, he can't extend his own bridges to attack other players.

RESOURCES AND CONSTRUCTION

Players have the ability to harvest the energy brought up in Storm Geyser as Storm Crystals. The crystals provide Storm Power that is used to construct weapons, buildings, and units, as well as to cast spells. Players use their Storm Power through the single High Priest, an avatar-like unit in gameplay. The High Priest is the only unit capable of constructing buildings—including the all-important temple, which allows players to harness Storm Power and radiates the necessary power for building units. The fact that only priests can construct buildings might seem as if it would hinder construction, but there are really only two buildings that need to be built to start any game.

Once players build a temple, the workshop fills the role of the traditional "barracks" site. The workshop offers various unit types, including "generator" units that allow you to extend the range of your temple's Storm Power.

HOLY DEFENSES, BATMAN! This altar is well defended by Wind Towers and Crossbows. The goal of each mission is to sacrifice enemy Priests here.

What Does This Do?

Crossbow: Due to its wide field of fire and rapid reloading, the crossbow is great as an assault weapon or a defensive post to fend off aerial attackers.

Aerial Attack Units: These units are the "bombers" of Netstorm. Their extremely long range and medium attack strength help soften up defenses.

Cannons: The Ice cannons and Thunder cannons have great power but fixed facing. This makes the weaker, but more versatile, Sun cannon more useful.

Price: $46.95
Minimum System Requirements: Pentium 90, Windows 95, 16MB RAM, 15MB hard-drive space, 2x CD-ROM drive, SVGA (VIB or PCI video card with 1MB RAM), Sound Blaster-compatible sound card, Microsoft-compatible mouse.
Multiplayer Support: Modem (2 players), LAN, Internet (2-8 players).
Designer: Titanic Entertainment
Publisher: Activision
Los Angeles, CA
(800) 477-3650
www.activision.com
COMBAT IN THE CLOUDS

In NetStorm, placement is the supreme factor when deciding what to build and how to attack an opponent. In other games, a mobile unit is built and ordered around. But in this game, every combat unit is autonomous, with the exception of transports. If you place a weapon on the ground, it attacks a target in its own way, without waiting for instruction. So in effect, the placement of units determines how successful they are. The ultimate goal is to capture the opponent's priest and sacrifice him on an altar. Once you kill him, you will gain the dead priest's knowledge and Storm Power. In this way, you increase your own Priest's skills.

For those who are willing to brave the unique gameplay and keep their minds open to a new version of real-time gaming, NetStorm is quite a find. But this creative brainstorm still lacks some simple elements.

The biggest drawback is the absence of a save-game feature for the single-player campaign. The campaign proceeds in three parts, in addition to a tutorial that instructs players in placing units and gathering Storm Power. The early missions in the campaign are fast enough that you don't notice the lack of a save feature, but the later missions, some of which last two hours, practically demand it. Combine this oversight with a lack of difficulty settings, and campaigns become a do-or-die feat.

There are a few other unrealistic elements in the gameplay as well. If a section of an extended bridge between land and an attached unit is destroyed, the rest of the bridge hangs in midair, along with any units attached to it. The selection of bridge tiles is also too random for my tastes. In strategy games, you want as few variables as possible when targeting opponents. The randomized selection of bridge pieces sometimes makes you feel as if you are playing Tetris.

All in all, NetStorm is a good game and deserves high marks for demonstrating that all real-time games don't have to be alike. The drawbacks—especially the lack of a save-game feature—are annoying, but, on the whole, the game brings welcome new energy to a genre that is crowded with clones.

> **PROS:**
> Real-time strategy games are fun.
> Innovative combat style that demands new levels of strategic thinking.

> **CONS:**
> No save-game feature or difficulty settings in single-player mode.
A Pale Shadow

Despite Grant and Sherman, This Battle Is Much Less Than Expected

by Jim Cobb

Robert E. Lee, Civil War General, tried to ride that general's coat tails through a Panzer General-style branching campaign, complete with simple combat mechanics and an emphasis on leadership. While it sold reasonably well, its attention to detail and graphic polish were lackluster compared to the award-winning Talonsoft BATTLEGROUNDS series CIVIL WAR GENERALS 2 (CWG2), despite the addition of Grant and Sherman, is anything but an improvement.

HOME BEFORE THE LEAVES TURN

CWG2's strengths lie in its campaigns. 17 of them, linking 45 different Civil War engagements cover every aspect of the Eastern and Western theaters from both Union and Confederate perspectives. Depending on the degree of victory or defeat, you move from one conflict to the next, sometimes fighting alternatives to the historical battles. In Robert E. Lee, you can dispatch inept leaders and reequip your units with the spoils of war, also. Unit and leader qualities improve as they gain experience.

For all their drama, however, the campaigns have some problems. Sometimes an alternate battle occurs within hours of the first. How can leaders be dismissed and units be reequipped and brought back to full strength so quickly? Worse, some orders of battle are questionable in historical accuracy, such as the Iron Brigade being present at First Bull Run. While some of the regiments were there, the Iron Brigade, as such, didn't exist until 1862.

The combat system, too, has its ups and downs. Unit capabilities are a function of organization, health (strength), and morale. As the unit moves and fights, these values drop; adequate rest, supplies, and digging in improve them. Regimental and brigade leaders have ratings for health, initiative, organization, and ability to inspire loyalty. Divisional, corps, and army commanders can positively or negatively modify subordinate leaders' ratings. All in all, CWG2 does a good job of showing the intangibles of Civil War combat, and the variety of weapon systems—while less detailed to a target and attempt to close. The sequence of "attacker fires, defender morale check, defender fire, attacker morale check, close combat" works fine for a charge, but at 200 yards, units should be able to shoot without closing.

The variety of units in CWG2 is wasted, because nothing works as it should. Artillery, for example, employs ranged fire. But it can fire only once per turn, it can't support friendly units, and it can't both move and fire in a 30-minute turn. Likewise, the lack of skirmishers is a problem in this scale, and you can't fake it by using your sharpshooters in a skirmish role, because of the odd stacking rules.

The battles themselves are less conflicts of lines advancing or standing than they are unsupported units that simply charge ahead. The AI's propensity for making piecemeal attacks aggravates this feeling of a brawl. Thus, the combat system makes it impossible to win using historically authentic tactics. In passing, it's only fair to mention that CWG2 does come with an easy-to-use scenario maker and a nice CD history of the war. It's a pity that these elements are wasted on a completely broken combat system and a dated game engine.

NOT SO SHARP SHOOTERS

It's a real shock, then, that CWG2's combat mechanics impede themselves on their own simplicity. Thirty minutes per turn at 200 yards per hex is a workable scale, but not when you have limited stacking. Only field artillery units can stack with other unit types. Thus, leaders are not only vulnerable but actually block movement; small numbers of sharpshooters handle like brigades, diminished regiments can't shelter with stronger units. Worse, infantry units don't have ranged fire, but must be adjuvants to a target and attempt to close.

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>Appeal: Those who want to play Grant and Sherman, as well as Lee.

>Pros: Branching campaign with interesting "alternate history" battles; nice scenario editor.

>Cons: Tactical system bears only a vague resemblance to Civil War combat; dated engine; battles themselves aren't very interesting.
STAR COMMAND DELUXE

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Artificial Insanity

Anark’s Evolution in Platform Games Will Drive You Crazy

by Mark Clarkson

GALAPAGOS is absolutely maddening. Even after all the hours I’ve spent playing the game, I’m hard-pressed to know what to make of it. The second most maddening thing about GALAPAGOS is its star, Mendel. Guiding Mendel through a level is like herding a blind cat through a booby-trapped maze with gentle words of encouragement—that is, it’s just this side of impossible.

The gimmick is this: Mendel has a mind of his own. A nudge from the mouse may turn Mendel one direction or the other, but only if he is in the mood.

Now, most games have AI of some kind, but it is typically in the form of hard-coded instructions. Mendel’s smarts, on the other hand, derive from a special kind of adaptive artificial intelligence called nonstationary entropic reduction mapping (NERM). He isn’t programmed to do anything in particular; he learns from his environment.

Exactly what Mendel is learning is far from clear, but being repeatedly electrocuted or dropped into freezing lakes of liquid nitrogen by his own hands, players will certainly make him nervous. Soon, he’ll refuse to go where you want him to go. He’ll instead wander in hesitant circles, meowing plaintively and ignoring your frantic nudges.

IT’S UP TO YOU

Mendel isn’t called upon to solve the game’s puzzles by himself—the real work is up to you. You must manipulate Mendel’s 3D environment—think Super Escher World—and lead him to safety. To make a path, you might extrude platforms from a wall or synchronize flying blocks.

Clicking on some platforms pops Mendel upward, trampoline-style, while clicking on other platforms whisks him from floor to floor as if he were on flying elevators. Hidden shortcuts allow you to bypass clumps of the puzzle by performing especially intricate sequences of moves. And there are always assorted electrifying fields, crushing blocks, freezing lakes, and fatal falls awaiting Mendel. Items deadly to Mendel are often out of sight until the instant they kill him, which brings us to GALAPAGOS’ most maddening feature: the damned swooping camera.

The camera follows Mendel through the level, tagging along behind for a while, then flying past him, or shooting heavenward for a different angle. Since you have no control over the camera (and precious little control over Mendel), you’re pretty much restricted to seeing only what’s shown to you.

Clicking on a switch may be a simple task, but getting Mendel into position so that you can see the switch in the first place is often quite a trick. And even if that switch is holding still in the game world, your view is circling. Hitting hotspots as they plunge madly across your screen can be a real challenge. This is purposely by design, but it may limit the appeal of this game, as many who might be attracted to GALAPAGOS’ puzzles could be put off by this emphasis on eye/mouse coordination.

Those souls brave enough to try it will find that GALAPAGOS is a lovely and innovative game. It made good use of my Intense 3D Voodoo Rush card, with scrolling textures and nifty effects. And while I’ll admit that GALAPAGOS frequently made me scream out loud in frustration, I also found the game so addictive that I couldn’t stop playing it.

APPEAL: Fans of fast-action puzzle games looking for something different.

PROS: Nifty 3D graphics; novel AI; addictive, challenging gameplay.

CONS: Swooping camera requires better than average eye/mouse coordination; very frustrating at times.

Price: $29.95
Minimum System Requirements: Pentium 90, Windows 95, 16MB RAM, 10MB hard-drive space, DirectX 5.0-compatible video card supporting 640x480 and 256 colors, 2x CD-ROM, mouse; supports Direct3D 5.0-compatible sound cards.
Macintosh: Power PC 90, System 7, 16MB RAM, 10MB hard-drive space, 640x480 and 256-color graphics, 2x CD-ROM, mouse.
Multiplayer Support: None.
Designer: Anark Game Studios
Publisher: Electronic Arts
San Mateo, CA
(800) 245-4525
www.ena.com
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Hasbro Adapts Another Classic for CD-ROM
by Charlotte Panther

Are you looking for a way to spice up those monotonous family gatherings? Need to inject a little competitive energy into your workplace? Maybe you just want an outlet to show off your superior spelling skills? Whatever the reason, any wordsmith will find himself instantly addicted to Hasbro’s adaptation of the classic word game, Boggle.

The game follows the same premise as the original Boggle: The idea is to find as many words as possible in a limited time-period by connecting letters diagonally, vertically, or horizontally across a grid of letters. This time, though, there are five variations on the classic theme from which to choose.

The first one, Classic Boggle, plays exactly like the original game. You can compete against up to three other players, either by hotseat, LAN, or Internet. The latter two work really well — all of the contestants are able to work out their words concurrently, without worrying about which words the other players are forming. At the end of the round, the computer subtracts any duplicate words from players’ lists and adds up the final score to declare a winner.

Hotseat should be the perfect way to play this game — four crazy people vying to come up with the best word. The fact that everyone crowds around one computer certainly adds to the atmosphere, but there is one major flaw. If you repeat a word that has already been used, both you and the originator of the word lose points. This would be fine in a situation where you couldn’t see your opponents making their moves, but it makes little sense in hotseat play, in which half the fun is screaming about what your rival just did. If one player makes a particularly high-scoring word, there’s nothing (short of blindfolding everyone) to stop the next player from raising the same word and voiding both players’ points

MIND-BOGGLING
The four alternative versions of the game include Breakaway Boggle, which consists of a 4x4 cube that you can rotate to help create longer words. As you use each letter, it disappears, until words can no longer be made (or you run out of time).

In Your Face Boggle, one of the two single-player-only games, is best described as the wordsmith’s Tetris. The idea is to score as many words as possible as the clock counts down. Every 20 to 30 seconds the blocks of letters creep one step closer toward you. The game ends when the letters are so close to you that they’re... well... in your face.

In Space Boggle, you form words by clicking on individual letters that float toward you like asteroids. Space Boggle shouts out for a multiplayer mode. This really would have been great as a fast-paced check-in round — sort of like YOU DON’T KNOW JACK’s Jack Attack — a race to form the words before your opponent can.

Last, and, unfortunately, least, is Battle Boggle. In this two-player round, you and your opponent strategically place individual letters onto a grid, in an order that allows for the most possible words to be created. The layout of the grid makes it frustratingly difficult to drop letters into their intended squares, and if you do misplace a letter, there is no undo feature.

Graphically, Boggle is functional, rather than inspired, and lacks the pizzaz of some of Hasbro’s earlier titles, such as SCRABBLE and Risk. Despite its faults, though, this is still a better than average game — particularly when played multiplayer. It features a customizable dictionary, offers plenty of variety within each game-type, includes two levels of difficulty, and is devilishly addictive. Word-puzzle fans will not be disappointed.

APPEAL: Wordsmiths who want to expand (or show off) their vocabulary.

PROS: Competitive multiplayer modes; good variation; customizable dictionary.

CONS: Easy to cheat at Classic Boggle when playing hotseat; two of the game types lack multiplayer mode; interface of Battle Boggle is frustrating.
Bad Lands

Scorpia Gets Her Claws on Lands of Lore: Guardians of Destiny, and She's Not Happy

Lands of Lore: Guardians of Destiny is Westwood's long-delayed sequel to its popular adventure/RPG of 1994. It's the story of Luther, son of Scotia, whom we dispatched in the first L0RE. Luther has several problems. For one, he's cursed by random transformations into other forms. Without warning, he may become either a beast or a lizard. The beast form is slow, ponderous, and nonmagical. It is, however, a formidable fighter of great power. The lizard form is small, weak, and not a fighting critter. On the other hand, it is extremely fast and can cast magic spells. The problem is that Luther has no control over these forms, and he can morph into them at any time.

His other problem is that the Gladstone guards are after him to put him back in prison. As the game begins, Luther has just made his escape and is on the run to consult the Dracul about ridding himself of the curse. It will be a long and difficult trail before he is able to do that.

SOLO MIO

Guardians of Destiny is a single-person, real-time, 3D game. There is no party of characters, nor does anyone join Luther, even temporarily. It's strictly a solo adventure.

In the lower-right corner is a portrait of Luther, plus icons for your weapon and current spell, along with a blue bar for mana and a red one for health. Clicking on the portrait brings up the inventory box, which displays everything you're carrying, as well as which weapons, armor, and miscellaneous items you have.

At the top right of the inventory screen are four bars that measure your fighting strength and armor protection. As your abilities improve over time, these bars become longer. Various equipped items can affect these stats, making them better or worse. Clicking on the bars switches them with the level gain bars, one for magic, and one for combat. All these stats are visual only — as in the first LANDS OF LORE, no actual numbers are used for strength, mana, or hit points.

Combat is a simple procedure. Luther faces his foe, and you click either the weapon icon (to swing or shoot missiles) or the magic icon (to cast a spell). The spells come in sets of four, when Luther learns a spell, he gets the whole set at once. To cast a spell beyond the first, you can hit 2–4 on the number keys, or target the opponent with the mouse and hold the right mouse button until the desired spell is reached.

Conversation in the game is extremely limited. Typically, as Luther approaches someone with something to say, talking begins automatically. There are no choices to make; everything said by both parties is entirely prerecorded.

Guardians has an excellent automap. As usual, it fills in as you go along, and you can bring it up for viewing at any time with the Tab key. Some important locations will be noted automatically on the map. Others you can mark with note “spikes.” You can click on a placed spike to reread your notes or add to them, or both.

You can zoom in very close on the map to view a section in detail, or zoom out to see the general layout; this is a very handy feature.

Wild Goose Chase

And that, unfortunately, is about the last good thing I
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immunity. You go to the citadel of the Ruloi because they have the Dreamstone you need to raise the Ancient City. To reach the stone, you have to leap up the side of a structure, from platform to ledge to platform. The jumps are actually easy, and not especially dangerous, but they all have to be done:

At the top, you'll find our old friend from PACAN, the disappearing bridge. It's a timed run—and I do mean run—to get across safely. What's stupid about this is that the Ruloi fly people who fly everywhere in their home need jumping platforms and vanishing bridges the way a snake needs wheels.

The list could go on and on, but I don't have enough room, and you don't have enough time, for the whole catalog. Suffice it to say that this is what you go through for much of the game, only some of it is worse than the above example. The basic rule for solving puzzles is this: If the answer isn't blatantly obvious, try the stupidest, most idiotic, illogical, or outrageous thing you can think of—it will probably work.

ENDGAME, AT LAST

But enough of that, let's talk about the Big Event, the showdown with Belial, which is what this all leads up to:

It's very difficult, and very frustrating. It took me many tries to figure out the trick, and how to work it. (That pool is important! I was just glad I'd been lucky enough to have a supply of stone cubes with me at the time; without those, I don't know if it would have been possible to solve this puzzle.

If you actually play and get this far, be sure to have some cubes with you.

Finally, it was over. Belial dropped to his knees and keeled over dead. My reaction was (among others), "It's about time!" and I sat back for the ending sequences. Going by the earlier FMVs, it was sure to be something spectacular.

The scene changes to a hallway with doors. The Draculec comes in, opens one, and looks in on a bedroom where Luther and Dawn are having a romp under the blankets. I kid you not, this is the ending of the game. Not quite the type of climax we were expecting. This may be satisfying for Luther, but not for anyone who persevered to the end.

Overall, LANDS OF LOR: GUARDIANS OF DESTINY is a disaster from start to finish. It combines the worst aspects of PACAN ("Mario the Avatar") and THUNDERSCAPE ("the game without end"), along with some of the most nonsensical "puzzles" since LEGEND OF KIROANDA. GUARDIANS is not an RPG nor an adventure nor an action game, but a patchwork of all three, and a threadbare one at that. For any RPG-starved gamer, this one is a disappointment beyond words.

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The hunter is back and has a bone to pick with your delicate LOSE 2 TURNS

A mad scientist gives you a wicked brain cramp. LOSE A TURN

You match wits with a gorilla. Odds are slightly in your favor AHEAD 1/2

You bravely cross the Crash of Death, despite having just eaten 2 meals. AHEAD 3

You discover an ingenious solution to an ancient Aztec mystery. AHEAD 1

Unfortunately, you left it back at the office. BACK 1

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This month, we’ll reveal the exact locations of all the secrets on disc one, which will earn you 13 Force stars.

1: Double-Cross on Nar Shadda

**Secret One:** After passing the first fan, you’ll be walking down a hallway where you can see a Gran on a ledge to your right. Descend to the ledge, and then jump onto the slanted ramp next to the ledge. You’ll then find yourself in a passage that will take you to the top of the fan.

**Secret Two:** Shortly after another fan, you’ll find yourself on a bridge. Swing your head to the right, and you’ll see a Gran on a ledge. Jump down to that ledge.

**Secret Three:** When you’re ascending the first 45-degree lift, make a pit stop on the little alcove to the right.

**Secret Four:** When you reach the bridge that the TIE Bomber flies over, turn around and walk back to the previous bridge.

2: The Return Home to Sulon

**Secret One:** The secret is right behind the start location; turn around and shoot the dark wall.

**Secret Two:** On the hill that is on the left side of the house, there is another weak wall buried in the back. Shoot it.

**Secret Three:** Follow the plank down where it collapses. When you kill the Tusken Raider, you should be near a weak wall. Shoot it.

**Secret Four:** When you reach the green area that requires the red key, go to the cave-in where Kyle utters a comment. Shoot the wall on the left.

**Secret Five:** After opening the red door, make your way to the hall with the Tusken and the cubbyhole. Go to the second cubbyhole and shoot the dark wall behind it.

**Secret Six:** When you dive into the waterfall, you can go up a ramp back to where you started. Along this ramp, there is a hidden alcove; use your field light to
4: The Jedi’s Lightsaber

Secret One: When you’ve reached the flowing water, go against the current until you reach a grate; cut it open with your lightsaber and pop into the first secret.

Secret Two: Follow the water and get onto the platform suspended above the water. Advance along the right path of the platform. You’ll see a hole in the ceiling, which is the actual secret. To get there, you’ll need to get a running start (or use Force Speed) and jump across the waterfall into the alcove opposite you.

Secret Three: When going down the water ducts, you’ll notice a bit of ground underneath the pipers. Descend down into this area to find the third secret area.

Secret Four: After walking through Secret Three, you’ll automatically pop into Secret Four.

Secret Five: When you reach the water duct outside of the purification plant, don’t go in it just yet. Jump onto the edge of a duct, get rid of the Tusken, and you should spot a platform that has a hole in it. Make your way to the hole for this secret.

Secret Six: When you reach the pool with the four water eyes, take the underwater tunnel to the last secret.

2: The Lost Disk

Secret One: After making your way through the ventilation system, you’ll walk down a hall where you can see a ship engine out the window. Walk to the window that gives you a straight view of the engine, then look down. Jump to that tiny little ledge

you reach the top, then jump to the opposite stack of boxes.

Secret Five: When you reach the room that has the two elevators with the conveyor belt between them, save, because this area is secret-rich. For Secret Five, take the first elevator and make your way to the window ledge on the right, which should lead to the underside of the conveyor belt.

Secret Six: Go up the second elevator, and along the way, jump into the area above the glowing red force field.

Secret Seven: Take the second elevator again, but this time, get off at the ledge just below the elevator’s destination, walking along the ledge is the seventh secret.

Secret Eight: Right before you make it to the rendezvous point, follow the ledge along the left wall. Follow this until you can jump to the ramp leading up to the final secret.

Secret Two: After opening the door with the red keycard, you’ll enter a room with a couple of boxes and a ramp leading up. Walk up the ramp, but jump onto the red box. From there, jump onto the ledge across from the box.

Secret Three: When navigating the three giant fords, you’ll notice a ledge embedded in the side off a wall. That’s the third secret.

Secret Four: When you reach another cargo room, scale the set of boxes on the left until you reach the top, then jump to the opposite stack of boxes.

Secret Five: When you reach the room that has the two elevators with the conveyor belt between them, save, because this area is secret-rich. For Secret Five, take the first elevator and make your way to the window ledge on the right, which should lead to the underside of the conveyor belt.

Secret Six: Go up the second elevator, and along the way, jump into the area above the glowing red force field.

Secret Seven: Take the second elevator again, but this time, get off at the ledge just below the elevator’s destination, walking along the ledge is the seventh secret.

Secret Eight: Right before you make it to the rendezvous point, follow the ledge along the left wall. Follow this until you can jump to the ramp leading up to the final secret.

WATERSHOUND LEAP
In Level four, jump across the waterfall to enter the alcove on the other side. Inside is a secret area in the ceiling above you.
6: Into the Dark Palace

Secret: There's only one secret here. When you reach the ramps leading down into some water, flip on your field light. Go down into the water, but instead of going straight, take a left turn, going down even further. You’ll surface in a room with a hole in the upper corner; going into that hole will net you aRail gun and the sole secret in this level.

7: Yun—The Dark Youth

Since this is a duel, there are no secrets on this level. Good luck taking him down.

8: Palace Escape

Secret One:
When the elevator at the beginning goes all the way down, step off and follow the left side of the room. You’ll find a little passage on the left for the first secret.

Secret Two:
When you enter the ventilation shaft, there is a section of cracked floor, between the two entrances. Shoot this cracked floor.

Secret Three: In the ventilation shaft, before you reach the grate leading outward, there’s a weak wall on the left side. Shoot it.

Secret Four: When you reach the first wind tunnel, go in it and allow yourself to be blown upward. You should see a small cubbyhole, which you can enter with a carefully timed jump.

Secret Five: When you use the wind tunnel to propel yourself across a chasm, creep alongside the ledge near your destination. The ledge continues to the other side of the building, where there is a grille on a wall. Chop it down with your lightsaber.

If you’ve made it this far, you’ve escaped Jerec’s Tower, and can now pursue 888 to the Fuel Station. Next month, we’ll reveal the secrets in the rest of the levels, and we’ll school you in the ways of The Force. You’ll need all the help you can get to defeat Jerec and his disciples, whether you lean to the Light Side or the Dark Side of The Force. ❅

5: Baron’s Hed: The Fallen City

Secret One: In the center of the pool in the very beginning of the level is the tunnel leading down to this secret.

Secret Two: In the first building you enter in the city, take the stairs to the room on the left. Use a thermal detonator on the cracked wall.

Secret Three: A little beyond the first bridge is a building with an awning on the door. Behind the counter is another cracked wall, which you can blow away with a thermal detonator.

Secret Four: In the courtyard, you’ll see a board propped up against the door. Move the board out of the way and go into the little alcove.

Secret Five: When you make your way to the top of the main building, go through the window into the bar. Make your way onto the stage, and then use your thermal detonator again on another cracked wall.

Secret Six: After traversing the rooftops to get around the barrier surrounding Jerec’s Tower, you’ll run into two ramps with a chair on them. On top of the ramp is a door into the secret, which is accessible if you perfectly time a Force-Speed enhanced jump.
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The good news for gamers is that Interplay's Fallout provides a great role-playing experience, with choices and solutions to quests that are consistent with how you wish to play. The bad news is that the wide breadth of options makes it impossible for one article to cover all solutions for all the quests. Instead, we'll look at the major quests and some others that often stump players. There are many spoilers; so be careful not to peek unless you really need the help.

### Vault 15
Stop in Shady Sands before going here and get some rope from Seth. Use the rope to repair an elevator in the vault. Find more rope in the vault and repair the second elevator. On the last level, go to the southeast corner and discover you can't reach the water chip. Doh!

### Shady Sands
To eliminate the radscorpions, have Seth take you to their cave. Kill the radscorpions or dynamite the entrance (look for a weakened wall). Later, you may rescue fans; from some raiders southeast of town by fighting for her. Trading for her or killing the raiders. If you're nice to Ian, he might join you in your quest, giving you some added, welcome firepower.

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**SAY YOUR PRAYERS** This computer activates a nuclear warhead to blow up the Cathedral.

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### Junktown
After you help get rid of Killian's would-be assassin, you can help the sheriff get Gizmo. Either plant the bug on Gizmo using the steal skill or wear the wetsuit while you agree to kill the sheriff for him. Then return to Killian. To bust the Skulz, the most reliable way (accessible to all characters) is to watch a fight in the Skum Pitt and then talk to the Skulz and steal an urn to join them. After they tell you about their plans to kill Neal, talk to Lars.

### The Hub
There are lots of quests in this little town, and most have obvious solutions. Definitely talk to Butch at Fir Go Traders and agree to investigate the missing caravan. Then, speak with Rutger and Beth and visit Harold and Slappy in Old Town. Go to the deathclaw cave, kill the deathclaw (this is tough), and get the holodisk from the dying mutant. Visit the Water Merchants to learn where to find a water chip. Necropolis. While you are here, you can also gain a hundred days for your water-chip quest.

### Necropolis
Top into the sewers and find the underground ghoul leader. Go north and leave the sewers to reach the Water Shed. Reenter the sewers using the manholes on the street to find the missing part (junk) of the water pump. To reach the water pump and the water chip, you'll have to make it past some mutants. You can fool them, fight them, or get past them by other means. Fix the water pump by using the junk on it. Enter the sewers in the same building to find the water chip.

### Vault 13
Give the water chip to the Overseer. You'll get your second objective: Get rid of the mutants' source! If you return to the vault before getting the water chip, calm the rebellion by talking with Teresa or by using force at her 5:00 meetings. You can catch a water thief by hanging out in the supply room around midnight.
The Glow
Agree to the Brotherhood's initiate quest. Take three or four Rad-X pills, several Rad-Aways, rope, and a Geiger counter along to the Glow. Stop just before reaching the Glow and pop a couple Rad-Xs. Use the rope on a beam by the crane to enter. Don't dawdle; your Rad-Xs won't last forever and you can die if you get too radiated. Search the buttresses on the first level to find a yellow key and the Brotherhood holodisk.

Deactivate the elevator traps using color-coded keys you find. On Level Six, repair the generator by the computer and turn on the main power so you can go to Level Five.

Save before leaving. If you are seriously radiated, take some Rad-Aways before leaving. If you get sick, take more and keep going.

Brotherhood
Take the deck from the Glow to the Brotherhood. Perform a quest for Talos or fix some armor in the repair shop to get Power Armor. Talk to General Masson and the elders to get a quest to scout for a military base.

Military Base
The Military Base is far north and a bit west from the Brotherhood. There are several ways to get past the guards outside. Regardless of your method, you need a holodisk from the guard at the door to enter. To temporarily disrupt the yellow force fields, use explosives or "repair" their emitters. Or, hack into the computer on the east side of the first floor. Use science and then a radio on the computer to create something that will toggle the force fields.

On the third level, kill the prison guard or let him take you to his leader. If you go with him, kill the leader and his friends. Retrieve a decryption holodisk from the leader and a strange-looking key from a locker nearby. On the fourth floor, get past the last force field with explosives or by using Mr. Handy (after fixing him). Save your game. Access the computer and try to hack the security codes. Set the self-destruct for 300 seconds. Run like hell.

Cathedral
If you haven't recruited any Followers, you can sneak around here wearing a purple cloak. Unlock the door to the stairs (Laura can unlock this if you've talked to the Follower's leader).

Go up and kill Morpheus. Get his black key and purple cloak if you don't have one yet. Go downstairs and open the door at the back (use the black key or pick the lock). In the basement, you may find a door you can't open from this side; wait for someone to open it. If you want to meet the Master, first get a psychic nullifier from a prisoner in the northwest of the second level.

On the third floor you have two choices:
- Go east to meet the Master and then run out of the Cathedral and off the grid before it blows up, or go west through some locked doors to an elevator leading to a nuclear warhead. Activate the nuke using science or the strange key from the military base. Then beat it out of there.
- Once you've killed the Master and destroyed the Military Base, you've completed the game. Sit back and see how well you did saving the world.

I Got Skills
It's hard to go wrong creating a character, since Fallout allows for many ways to solve problems. However, the following skills are quite important or useful: small guns (early in the game); energy weapons (for later); lockpick; and, secondarily, speech, science, and repair. You will find several books for improving science and repair, so there is little need to tag these skills.
Abe's Oddysee

An Abbreviated Mudokon's Handbook

by Rusel DeMaria

Taking Abe, the hero of Abe's Oddysee, through his escape and return to Rapture Farms is no easy task. Every few screens you'll encounter a new puzzle or situation, some of which will take as much brain as twitch to solve. You don't have to tackle the tougher ones, but if you want to get the best ending in the game, you'll need to find a lot of the game's trickiest secret areas and save a lot of Mudokons.

Escape from Rupture Farms

Before I lead you to the secret areas and captured Mudokons, you need to know how to identify screens in the game. When you press the pause key, you'll see a list of options. At the bottom of the screen is an alphanumeric code (for example, R1P02C03). Breaking this down, we get R1, which is the area of the game you're in, P02 is the section you're in, and C03 is the specific screen 1 will use these screen designations to identify places in the game throughout the rest of this article.

Finding secret areas is not usually difficult, although a few are very well hidden. Looking behind barrels and under trapdoors is a good bet. In fact, in the very first screen of the game (R1P15C01), there's a secret! Lower Abe behind the barrel to enter it. Here are some basic instructions for completing this first secret area.

R1P15C15: Jump from the ledge to the lower path, then lower yourself to the screen below.
R1P15C16: Sneak to within one step of the edge of the platform you're on. Jump and remain in a hanging position until the Slig walks off its platform, then boost yourself up. Pull the lever to make the Slig fall into the trapdoor and return to the previous screen.
R1P15C15: Walk under the left-hand saw. Pull the lever to turn off the electricity and return under the saw again. Tell the first Mudokon to follow you. To get him to jump off the ledge, tell him to follow again while standing on the opposite side of the gap. Pull the right-hand lever to change the cycle of the saws and the electrical barriers, and bring the second Mudokon under the first saw. Pull the lever again, and then take him under the second saw and down to the next screen. Follow the Mudokon down.

R1P15C16: Chant to free all three Mudokons. Then return to the top and climb to the main path again.

Now that you've completed the first secret area and saved three Mudokons, you'll save Mudokons, you'll go on your way. You'll also find secret areas in R1P15C03, R1P15C04, R1P15C06, and R1P16C03. To find some areas, you must open a trapdoor and run in while it is still open. There is one last secret area in the beginning of the game. To find it, you must make your way onto the Slig's platform in R1P20C03.

There are some tricks to completing the secret area in R1P15C04. The Security Orb prevents you from chanting, but if you just blow it up you shouldn't have a problem.

The Stockyards

Let's move to the next section of the game: the Stockyards. Want to play the game perfectly? Don't miss the hidden Mudokon in E1P06C01. You'll find six secret areas in the

BOMBS AWAY! Throw a grenade to blow up the Security Orb to get to the secret area in screen R1P15C04.
Stockyards: You'll find the first by entering a door on E1P06C02.

The keys to secret areas in E1P01C02 and E1P01C03 are sneaking and hiding in the shadows.

In E1P01C05, there's a secret area. This one is a bit tricky, so I'll give you some tips on how to complete it. When you enter and head past the gate, you'll appear on E1P01C08.

E1P01C08: As soon as you appear, jump and remain hanging on the ledge ahead. Wait until both Slgs have started to walk away, then sneak behind him to the next screen.

E1P01C09: This is tricky! You have to sneak behind the Sliq, then, at the last moment, run and jump across the gap. You need to take off in your jump a little early so that you land in a hanging position instead of right in their way. Remain hanging until both Slgs have left the screen. Quickly jump up onto the upper path and run to the left. Stop before you enter the next screen and start sneaking.

If your timing is really good, you can say "Hello" to one of the Mudokons and tell him to follow you before moving to the next screen.

E1P01C08: Now, sneak to the narrow shadow area and stop there. From here, it's a matter of getting both Mudokons to follow you to the shadow and telling them to wait.

There's no way to finish this area quickly, so you'll have to be patient.

Moving on, you'll arrive at another tricky secret area. This one has two entrances, and for the best results, you'll want to use both of them.

E1P02C01: Climb carefully down the cliff face, avoiding the hats. Drop to the screen below.

E1P02C05: When you land, the sleeping Sliq will wake up and walk away. Jump the gap and follow him to the next screen. Run/jump to the high platform and chant immediately to open the gate. Then, when the Sliq goes away again, jump down and through the gate. Possess the Sliq in E1P02C10 and take him down to E1P02C08. Make the Sliq shout "Look out!" in order to cause the Mudokons to duck, then shoot the Sliq into the Mudokons. Destroy the Sliq and climb down to E1P02C08 and release the two Mudokons. Walk to the left and chant to open the exit gate. Jump through and return to the Stockyards.

But wait! There are two Mudokons still back there. You'll need to go back, but first make your way to E1P02C03 and get the necks from the suck on the lower path. From E1P02C03, climb down to E1P02C02, chant, and then return to the secret area.

Make your way to the bottom path in E1P02C08. Stand about one step to either side of the mine on the upper path and throw a rock, holding the direction key in the opposite direction from the one you're facing. This makes the rock go almost straight up. It will detonate the mine.

Now you can get each of the remaining Mudokons and lead them to the bottom path in E1P02C08, where you can set them free.

That's it. Return to E1P02C07 and use the exit gate.

That's all the room we have for Abe's Oddysee tips, but visit our Web site at www.computergaming.com for even more cool hints, including more secret area walkthroughs and special control tips.

Ruse DeMata, CGW's online editor-at-large, is a game designer and strategy-book author. He's written Prima Publishing's Abe's Oddysee: The Official Strategy Guide &
**Age of Empires**

Be the First to Enter the Iron Age and Dominate Your Opponents

by Elliott Chin

**Age of Empires** is a wonderful game that has grabbed us as few games have. Although it certainly has its share of problems, there is no denying its addictive and fun gameplay. The game is at its best, though, when you are winning. And winning really isn't that difficult if you follow the strategies in this guide. My strategies definitely aren't the only approaches to victory, but they work convincingly for me when I compete with my fellow editors. There is a lot to cover, so this month, I'll explore how to get started and how to advance to each age as quickly as possible. I'll also provide a few more general tips. Next month, I'll let you in on more military strategies—including how, when, and where to fight—as well as tips on how to protect your Wonder and what to do if your enemy has you on the ropes.

**Age Advancement**

Once you've specified scenario parameters, it's time to start building an empire. Let's assume you all start in the Stone Age. The key is to advance through the ages as quickly as possible.

**Stone Age**: First, have one villager build two houses, then the other villagers to find wood and food, and start cranking out half a dozen villagers. You should have a population of 8-10 and have two of them chopping wood and the rest gathering food. Make sure you build your granary next to the berry bushes, and your storage pit next to the trees and stone. It isn't necessary to build a barracks as your first building. It is unlikely that your opponents will be able to mount an offensive this early in the game, and you want to devote your energies to advancing as quickly as possible.

If you are playing on an island map, build a granary and dock first. Build two fishing boats to supplement your workforce and start fishing.

**Pick Your Fights**

The first thing to do when playing Age of Empires with others is to decide the game parameters. Some gamers like the full tech-tree option because it allows you the breadth of the game's research and building options. However, this option eliminates all racial bonuses, and really takes some of the strategy out of the game. The next major considerations are the size and land-to-sea ratio of the map. These two factors will define your strategies for the entire game. Choosing either a huge or large maps will allow you to build in relative peace, far away from potential enemies, and will offer many resources. Smaller maps will start you closer to your enemies, which translates to more frequent enemy engagements and less plentiful resources. If you like the luxury of building, choose large maps. If you want to eliminate your enemies quickly with military forces, pick a small map.

Island scenarios might seem like a good starting map for beginners, but that isn't the case. It's harder to reach your opponent on an island map, which might seem like a benefit for beginners who want to escape detection. However,
By building boats to gather food, you won't have to divert food to build villagers.

If you concentrate on food, you should have the necessary stockpile in under 10 minutes to advance to the Tool Age.

**Tool Age:** Once in the Tool Age, it's time to beef up your infrastructure. Immediately build a market and a stable. You'll probably need to have two villages stop farming and start chopping wood, for a total of four woodcutters. Once the market is finished, have the remaining foragers build farms. You should have 6-9 farms. It's important to not build haphazardly. You need to construct an efficient town that minimizes the distance a villager has to walk from a farm to a granary. Farmers deposit their food in a granary or town center, so ring either building with farms, building them one or two tiles apart from each other and the depository. During the Tool Age, you want to build two to three more houses and start cranking out a dozen more villagers to start gathering wood, stone, and gold. At this time, food should still be your first priority among resources, with wood, stone, and gold following, respectively. Even as you concentrate on your economy, it's essential now to build scouts and explore the land. Not only do you want to gain the most points for exploration, but you also want to find out where your opponents are and keep tabs on their progress. Scouts also help alert you when an enemy approaches. At the same time, you are scouting, you should be researching walls and towers at the granary. I wouldn't recommend spending food on many troops at this juncture of the game, so towers make the most sense for providing protection for your building empire. Place towers next to all your resource-rich areas to protect your resources and villagers.

If you are playing with experts, they will find a way onto your island. In contrast, it will be hard for you to mount a sea offense and transport troops to an expert enemy's island, something you may have to do if he builds a Wonder. My advice is to keep things simple for beginners and play with inland maps. Assuming equal skill among all opponents, though, inland maps are best for those players who want to attack early. Lastly, know your opponent and adjust your strategies accordingly. If you know that your human opponents like to play defensively and build huge economies, attack them early and cripple their empire during the Bronze or Tool Age. This will surprise and thwart them. If they play offensively, and attack early, then you will have to build towers early and keep a few infantry handy even during the Tool Age.

### Top 10 Tips

1. **Food is vital to advancing through the ages, so make it your economic priority.** To the Stone Age, 75 percent of your villagers should gather food while the rest gather wood. In subsequent ages, make sure you have at least six farms (nine is optimal).

2. **Build scouts or scout ships early, as soon as you advance to the Tool Age.** You want to explore the map, not only for points, but also to find out where your opponents are.

3. **Upgrade your units as soon as possible, but not at the expense of age advancement.** Usually it's best to upgrade weapons and armor for only your most plentiful unit type, saving the rest of the food for advancement. Once you hit the Bronze Age, you can start to upgrade your units more frequently.

4. **Engage your opponents early. Do not create a big army and attack.** Instead, create small skirmish forces of three to four units (preferably swift cavalry), and harass enemy camps on a regular basis. You'll only increase your points by racking up kills, you'll also gauge your opponent's military strength, set him back a little in production by killing his villagers, and force him to divert resources and villagers away from age advancement to military defense.

5. **If you choose not to attack early, at least maintain adequate defenses so that you don't get overrun.** Build towers to protect your vital resource areas, and wall off your settlement. Begin these defensive maneuvers as early as the Tool Age. As with all things, you need to exercise discretion so you don't divert too many farmers to stone mining.

6. **Check the achievement tab frequently to see the breakdown of your opponents' scores and to see where you need to improve your points.** If you find yourself losing points in economy because
your enemy has the villainer high bonus, you can just create enough villagers to steal the bonus away. Or, if your opponent has the exploration bonus, you can see just how much more of the map you need to explore to take away that bonus as well. Not only will you increase your points, but you’ll also gain a stronger work force and more intelligence, respectively. Checking the achievements tab and compensating for your point deficiencies will help you and hurt the game’s current leader.

7. Take advantage of the user controls. Assuming that you have smart opponents, speed becomes the deciding factor in determining who wins the game and who loses. Use waypoints and assign numbers to your troops for better coordination, and use the hot-keys to jump to buildings and create units.

8. Don’t clump all your buildings together, and separate buildings by type. It’s best to have the military buildings on the outskirts of your town, and build your farms and granary away from the barracks. Houses should be buried in the back of your town, away from where enemies would approach. Leave at least one- or two-space paths between buildings so villagers won’t get caught walking between buildings.

9. When you build structures, assign additional villagers to the task to speed up the construction. Two villagers will build twice as fast, three will build three times as fast, and so on.

10. Three words: Food, food, food.

INTO THE UNKNOWN Knowledge is power, so scout early to explore the map and find your opponents, and check the achievements to keep tabs on them.

HARASS ‘EM Even though it will slow your advancement schedule, you should harass your enemies during the Bronze Age to stunt their progress.

It might seem difficult to conduct all these actions at the same time, but during kils in the game, such as when you are waiting for villagers to finish building towers, you can upgrade your weapons at the storage pat and your villagers at the market. Don’t get too upgrade-happy because you don’t want to drain your food surplus too much and delay advancement to the Bronze Age. I recommend researching woodworking for better wood-gathering, tool-working, and armor for your scouts.

During the Tool Age, you simply want to amass enough food to advance yet another age. For both ages, your strategy should still be very food-oriented, meaning that you must concentrate on stockpiling food for eventual advancement to the Bronze Age.

Bronze Age: Once you hit the Bronze Age, you shouldn’t relax your pace of farming, but you should balance your focus.

During the Bronze Age, if you haven’t adjusted your work force, you should have about 20 villagers, with nine farming, and the rest split evenly among gathering gold, wood, and stone. You might want to build a few more villages and apply them to gold-mining so you can advance to the Iron Age quickly.

Build a minimum of buildings again, so you don’t have to divert villagers away from food and gold gathering to cut wood. I recommend building the Government Center and either a Temple or an Academy.

OUR EMPIRE’S MONUMENT On huge and large maps it’s easiest to win with a Wonder: Assign your entire workforce to the effort and you’ll have it built quickly.
During this age, it's important to begin upgrading more frequently, starting with Market upgrades, like gold mining, stone mining, domestication, plow, wheel, and artanship. You also want to upgrade your units at the Storage Pit in anticipation of either offensive maneuvers or defensive commitments.

During this age, different players will begin to manifest different strategies. Defensive players will now want to wall off their entire empire and crank out villagers to maximize resource gathering for the Iron Age and eventual Wonder building. Offensive players will shift their focus to the military and start building troops to harass the enemy.

If you choose to remain defensive and continue on the economic route, you will advance quickly, but you can bet your enemies will also be entering the Bronze or Iron Age soon. My strategy, rather than allowing my enemies to match my pace, is to go on the offensive and harass them to slow their progress, while beefing up my villagers production to compensate for the war effort. If you embark on the harassment strategy, you obviously won't advance as swiftly as you would have if you remained isolated. However, the trade-off is worth it, since you will set your opponent back.

Whatever your focus, though, don't lose sight of the Iron Age. Whoever advances first to this last age will maintain the advantage.

Iron Age: Finally, you've reached the pinnacle of civilization. Don't let up. If you don't have 12 houses by now, make sure you build them. Then, make sure you have a village population approaching 30. You can now relax your food production and apply your villagers as needed.

Build the rest of the Bronze and Iron Age buildings, and spread your villagers evenly among wood, stone, food, and gold. If you want to build a Wonder, divert half your farmers and add them evenly to the work forces gathering wood, stone, and gold. Once you start building your Wonder, devote your entire work force to the effort. It will significantly speed up the process.

If you choose a military route to victory, delete whatever villagers you need to make room for troops.

Whether you attempt to achieve victory militarily or economically, your previous efforts will be the key. Always maintain the strongest infrastructure possible, and victory will follow.

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### Understanding Villagers

**Villager Base Work Rate**

This table shows how many resource units a villager gathers per second, as well as the base carry capacity without any upgrades.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Work Rate</th>
<th>Base Carry Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmer</td>
<td>0.40</td>
<td>10</td>
</tr>
<tr>
<td>Fisherman</td>
<td>0.80</td>
<td>10</td>
</tr>
<tr>
<td>Fishing Boat</td>
<td>0.40</td>
<td>15</td>
</tr>
<tr>
<td>Forager</td>
<td>0.45</td>
<td>10</td>
</tr>
<tr>
<td>Gold Miner</td>
<td>0.45</td>
<td>10</td>
</tr>
<tr>
<td>Hunter</td>
<td>0.45</td>
<td>10</td>
</tr>
<tr>
<td>Lumberjack</td>
<td>0.55</td>
<td>10</td>
</tr>
<tr>
<td>Stone Miner</td>
<td>0.45</td>
<td>10</td>
</tr>
</tbody>
</table>

**Discovery Modifiers**

<table>
<thead>
<tr>
<th>Modifier</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artisan</td>
<td>+2 to lumberjack carry capacity, +0.20 to lumberjack work rate</td>
</tr>
<tr>
<td>Babylonian Civ.</td>
<td>+3 to stone miner carry capacity, +0.30 to stone miner work rate</td>
</tr>
<tr>
<td>Colnego</td>
<td>+0.25 gold to all gold gathered (i.e. gathering 10 gold would now yield 12.5 gold)</td>
</tr>
<tr>
<td>Craftsmanship</td>
<td>+2 to lumberjack carry capacity, +0.20 to lumberjack work rate</td>
</tr>
<tr>
<td>Egyptian Civ.</td>
<td>+2 to gold miner carry capacity, +0.20 to gold miner work rate</td>
</tr>
<tr>
<td>Fishing Ship Upgrade</td>
<td>+5 to fishing boat carry capacity</td>
</tr>
<tr>
<td>Gold Mining</td>
<td>+3 to gold miner carry capacity, +0.30 to gold miner work rate</td>
</tr>
<tr>
<td>Jihad</td>
<td>-0.8 to all villager carrying capacities</td>
</tr>
<tr>
<td>Persian Civ.</td>
<td>+3 to hunter carry capacity, +0.30 to hunter work rate</td>
</tr>
<tr>
<td>Phoenician Civ.</td>
<td>+3 to lumberjack carry capacity, +0.30 to lumberjack work rate</td>
</tr>
<tr>
<td>Siegecraft</td>
<td>+3 to stone miner carry capacity, +0.30 to stone miner work rate</td>
</tr>
<tr>
<td>Stone Mining</td>
<td>+3 to stone miner carry capacity, +0.30 to stone miner work rate</td>
</tr>
<tr>
<td>Woodworking</td>
<td>+2 to lumberjack carry capacity, +0.20 to lumberjack work rate</td>
</tr>
</tbody>
</table>

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**ALL MINE** During the Tool Age, start building walls and towers to protect valuable gold mines and stone quarries.
Total Annihilation

A Guide to Full Metal Mayhem

by Martin E. Cirulis

It's been a long time since any wargame—turn-based or real-time—has offered the tactical and strategic choices that confront you during an average game of Total Annihilation. There are dozens of units and defensive installations from which to choose, and each of them has its own strengths and weaknesses.

I could fill half of this magazine with tactical analysis of the ground vehicles alone. Instead, I'll concentrate on some helpful initial tricks and tactics, along with some of the best and worst building choices available.

While it still takes a lot of practice to make you a master of Total Annihilation, the advice and observations presented here should give you an advantage, not only in the single-player campaigns, but also in Net games with your fellow gamers.

Since the CORE and ARM have an abundance of analogous units with similar, if not identical, firepower, most references here are to types of vehicles (for instance, amphibious tank means both the ARM Triton and the CORE Croc).

Success Begins at Home

As with most real-time games, it's hard to carve a victory out of the chaos of Total Annihilation if you don't spend some time and thought building the near-perfect base. Your initial concerns should almost always be resources and defense.

Build two or three solar plants, followed by mines on any metal site within safe reach. While the temptation to wander far afield scouting for...
more metal may be strong, try and avoid it until your defenses have been built up, as nothing attracts unwanted enemy attention like a premature scouting mission. Since energy is so vital in the production of the strongest units and fortifications, you might want to consider building an energy storage bin alongside your initial solar collectors, in order to save up as much of that early energy surplus as possible. Once you have a trickle of power and metal coming in, you can throw up your first factory. Producing either Kbots or vehicles is good, although the Kbot factory was out if you expect air patrols fairly soon or if the terrain makes ground vehicles slow, easy targets.

Your initial defensive setup depends on whether you are fighting the computer or your fellow bloodthirsty humans. In games versus the computer, the early danger is almost always from aircraft, so quickly get that initial Kbot factory built and start pumping out those light antiaircraft mechs. Don't bother with the slow-turning laser towers unless you have good reason to believe you will have enemy ground forces in to lunch—the light laser towers are too ineffectual against fast scout or fighter aircraft to warrant early deployment. On the other hand, the greatest danger from human opponents is a quick hnnm rush, usually of light Kbots. In this instance, one or two light laser towers can be a lifesaver, so throw them up as soon as your initial power and metal production is established. In sea games, any static defense should be close to the shoreline. This will serve as a fast-ditch punch, should your sea-based defenses go down.

While I realize that space in which to build is at a premium on most maps, try to avoid the temptation to place your power production (or mines on CORE prime maps) in nice tight bunches, as those make delightful targets for bombers. Try to arrange your structures in a loose jumble that not only allows for easy passage of combat units, but also makes those long bomber runs as non-optimal as possible.

One final construction tip is to make sure you have multiple colors up and running (with overlapping fields). The worst thing that can happen is to be blinded by a surgical air strike right before a big enemy rush. By the time you put up another tower it could be all over.

**One if by Land**

Land warfare in TOTL is fast and bloody, and victory usually goes to he who applies the most concentrated firepower while making his own units difficult targets. As you play this game, the use of mobile artillery and screens of heavy units becomes obvious (the CORE Can is the best screening unit money and metal can buy), but one lesson you need to learn early is to seize the high ground—and know what to do with it once you have it.

As in real life, most battles for high ground, no matter how ferocious, are worth the price. This is true whether you really need the base, or if the battle is simply serving to tie down enemy forces while you get to work someplace else. If you do manage to seize the hill, your first task is to fortify it. If you have the time to keep a close eye on things, send in your Commander (he is very vulnerable on hills, so if he starts to take fire, immediately yank him down the safe side of the hill) to put up the first

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**GAMER'S EDGE**

**HIGH GROUND** With TOTL's enhanced terrain realism, it is essential to capture the high ground and fortify your position there.

**THE HIGH SEAS** For naval defenses, keep your towers close to shore in case the enemy gets through your shore defense vessels.

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**recipe for disaster in this game. The reality is that these units are underwater sitting ducks for any enemy with torpedo or depth charge capability. One sub or torpedo launcher can destroy a half-dozen amphibious tanks as they crawl by. Use only if you have complete sea superiority and your opponent's air defenses are just too strong for you to obliterate him the easy way.**

**Aircraft Carriers:** These monstrosities are a floating metal-donation waiting to be delivered to your opponent. Since aircraft have unlimited range, and can patrol open ocean indefinitely, there is little reason to provide them with a large, under-gunned, and vulnerable platform from which to operate. The aircraft repair ability is nice, but in contested airspace, your jets will usually be blasted to bits the moment they slow down to land. Build them only if you really, really need the supplemental radar and power abilities, and then keep them surrounded by subs.
GAMER’S EDGE

STRATEGY & TIPS: TOTAL ANNihilation

AMBUSH Hiding a gun tower against the back of a hillside protects it from air attack and allows you to ambush enemy units.

Two if by Sea

TOTAL ANNihilation was careful to make naval conflict almost as difficult and expensive as it is in real life. With the exception of scout ships (you should always have at least a half-dozen of these on hand for anti-aircraft and harassment purposes), the metal and energy cost of even mediocre naval units means a haphazard commitment of forces is fatal unless you have an absolutely incredible infrastructure.

The submarine is your best friend — and greatest enemy. Build subs in droves until you have achieved sea superiority, and only then start to worry about bombardment monsters like cruisers and battleships. To be honest, the Level 2 subs are not that much of an improvement, given their cost. When in doubt, stick to the initial Lurker and Strike units. If you have long-range radar, missile ships come to the forefront as an excellent long-range bombardment platform. Just make sure to guard them well behind a sub screen and a couple of patrolling fighters.

While computer-opponents may shrug off an occasional missile fall, human opponents tend to get annoyed and look to sink the offender immediately with subs and bombers.

Don’t neglect your sonar buoys! They are crucial in screening enemy subs before they get close enough to your capitals.

HAMMER TIME If you can handle control of multiple air-strike forces and coordinate a simultaneous attack, you can claim a swift victory.

SUBMERGED An unprotected capital ship is just dog meat to a sub wolf pack.

And Just Panic if by Air

In this game, a well-coordinated air strike, especially early on, can win the war all by itself. While most opponents will be wise enough to set up fierce defenses consisting of missile/laser towers, AA Bots, missile tanks, and fighter CAP (especially CORE players, whose fighters have the edge in maneuverability), if you have the time, you can construct an airborne hammer and anvil that can crush even the best base.

You prepare the hammer by first building your sacrificial distraction flight of recon aircraft. Fly your bombers out in groups of two or three to safe spots away from the enemy base, far enough away from each other to create several attack vectors when they come in. Send up your fighters to orbit just outside enemy AA range to try to draw off enemy CAP before the attack. The tricky part is keeping all of these groups on separate Ctrl keys, so you can take control and redirect them quickly. This will be the anvil.

The hammer is composed of four to six gunships, all waiting on the deck for the attack to begin. When your initial bomber rush — with fighter cover and decoy screen of recon planes — begins its first pass, take control of your gunships and hit the enemy base hard and fast. Hose down every defense tower in sight, one after another, with the gunships’ incredible firepower. With a lot of skill and a bit of luck, you can ravage the enemy base defenses before your bombers come back for a second pass.

Once the big guns are down, use your remaining gunships to destroy anything under construction before moving onto the construction facilities themselves. Even if your big air strike is eventually destroyed, the damage it does will leave things wide open for your ground units — which are now rushing forward, because you are a tactical genius.
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ACHTUNG SPITFIRE

An aircraft’s ability to turn is closely related to its airspeed. Fly too fast or too slow, and turn rate suffers. Unfortunately, the “snap turn” statistics shown in the ACHTUNG SPITFIRE aircraft database give no indication of this relationship between speed and turn performance.

Knowing an aircraft’s corner speed, the speed at which its turn rate is maximized, is much more useful in a dogfight. The following table lists the corner speeds for all fighters included in the game. Where two numbers are shown, the first is the lowest speed at which the plane can pull 6g, and the second is the minimum speed for 8g’s “Max” means corner speed is higher than the plane’s maximum level-speed at the given altitude.

It is usually wise to stay near corner speed in a turning fight, but be aware that not one of these planes is powerful enough to maintain a maximum rate turn in level flight without decelerating. Unless your plane is blessed with a high thrust-to-weight ratio coupled with a low “sustained turn drag” rating, save that high-g potential for when you really need it. — Robin Kim

<table>
<thead>
<tr>
<th>Airplane Model</th>
<th>Corner Speed @ 5,000 ft. (mph)</th>
<th>Corner Speed @ 15,000 ft. (mph)</th>
<th>Corner Speed @ 25,000 ft. (mph)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spitfire IV</td>
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Atomic Bomberman

**OFFENSIVE TIPS**

1. Credited kills. Watch for opponents going for power-ups in short halls with one way in and no corners to hide behind. When an enemy goes for the power-up, seal him in with a single bomb.

2. When an opponent stops to wait for a bomb to go off, he may be vulnerable. Gauge how much time remains before the bomb explodes, and act as though you are trying to get out of the bomb’s path by turning toward your opponent (who has stopped moving). Then surround him with bombs before he realizes that you are attacking and not hiding.

3. Got lots of flame enhancements? Players on one side of the screen may not pay any mind to bombs dropped on the other side, and may risk moving in the bombs’ path. Works great with the orange flame power-up.

4. Jolly bombs make everyone nervous. Nobody knows exactly when, or more importantly, where they are going to blow.

5. The timer is the best power-up in the game. Not just because you can set it off when people walk past it, but also because you can use it to set off other players’ bombs before they are safely out of the way. Note this example: Two players are at a standoff and repeatedly run up to each other, drop a bomb, and then hide around a corner. If one has a timer, he can set his bomb off the second he is out of the way, setting the other player’s bomb off early. When used with the kick, this works even better. Finally, when used with the boxing glove or the blue hand, the timer can set off a bomb where everyone least expects it.

**DEFENSIVE TIPS**

1. Even if you are in a direct line from a bomb and have no way out, still run as far away as possible, you never know exactly how far the bomb’s reach will be.

2. When you’re sealed in by multiple bombs on two or more sides, move next to the one dropped last. If the bombs aren’t connected — and you hide from the blast of the first one — you may be able to get out of the way of the second by escaping down the path previously blocked by the first.

3. See a power-up you want? If it is in an easily scaled area, put a bomb in a place that will block off the area from other players, but won’t seal you in at the same time. Then pick up the power-up and wait for your own bomb to go off.

4. Plenty of obstacles between you and the nearest opponent? Sometimes you’re better off blowing away your side of the screen (looking for power-ups) than charging straight for the nearest enemy.

5. Just starting out? Always look for the spot where your bombs can hit the most blocks. Linking bombs (so the flames from one bomb set off another bomb) also helps clear away large areas quickly — this is very dangerous with four or more bombs.

---

**Simulations/Space**

**IF-16**

> A target for a laser-guided weapon can be selected either directly, with LANTIRN, or indirectly, by using the F-16’s ground radar modes. Because it presents more information, radar is invariably faster and easier to use. The biggest problem with using radar is that if the target moves off the radar scope, the weapon, which requires target illumination all the way till impact, will lose lock. The best solution is to first designate the desired target on radar, then bring up the LANTIRN FLIR MFD mode and deactivate your radar. With radar on standby, LANTIRN’s laser designator will remain trained on the correct target — even after you have overflown it.

> Cluster bombs are excellent weapons for dealing with groups of ground vehicles, but only when used correctly. Your goal should be to generate a broad pattern of bomblets that is dense enough to kill almost everything within the target area. First, don’t fly too fast (350–400 knots is about right) or the pattern will be too long, producing many gaps in the coverage. Second, don’t trust the bombing system — it will almost always tell you to drop too early, resulting in the bomblet storm either barely reaching or even falling short of the aim point. Practice until you learn how much lead-time is necessary.

> Gun kills in IF-16 are surprisingly easy once you learn to trust the EGGS funnel. Put a fighter-sized target near the small end in a stable turn for just a second, then hold down the trigger as you pull the bandit through the bottom of the funnel. It works every time, even well outside the gun’s nominal range limit. —Danny Atlan
**GAMEPLAY: STRATEGY**

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<td>19-21</td>
</tr>
<tr>
<td>267</td>
<td>Sega Soft</td>
<td>Heat</td>
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<tr>
<td>372</td>
<td>Sierra On-Line</td>
<td>Babylon 5</td>
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<tr>
<td>156</td>
<td>Sierra On-Line</td>
<td>Half Life</td>
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<td>Sony Interactive Studios,Amer</td>
<td>War Hawk</td>
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<td>236</td>
<td>SouthPeak Interactive</td>
<td>Murin Black</td>
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<td>237</td>
<td>SouthPeak Interactive</td>
<td>Terrain</td>
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</tr>
<tr>
<td>239</td>
<td>Strategic Simulations, Inc.</td>
<td>Parase General</td>
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<tr>
<td>236</td>
<td>Strategic Simulations, Inc.</td>
<td>Impetuation</td>
<td>211</td>
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<td>240</td>
<td>Strategic Simulations, Inc.</td>
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<td>254</td>
<td>Take 2 Interactive Software</td>
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<td>107</td>
<td>Take 2 Interactive Software</td>
<td>Jet Fighter Full Burn</td>
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<td>243</td>
<td>Talosoft</td>
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<td>Telemedia Computer Systems</td>
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<td>ThunderSeat</td>
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<td>PCL</td>
<td>190</td>
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<td>199</td>
<td>Virgin Interactive Entertainment</td>
<td>Blade Runner</td>
<td>74-75</td>
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<td>201</td>
<td>WizardWorks, Inc.</td>
<td>XMen</td>
<td>161</td>
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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 hours untold.

<table>
<thead>
<tr>
<th>Alone in the Dark (Eidos, 1992)</th>
<th>King’s Quest V (Sierra On-Line, 1990)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lovecraftian horror goes 3D, with shifting camera angles adding to the eerie atmosphere.</td>
<td>Reinvented the graphic adventure with no-load-based parser and VGA graphics.</td>
</tr>
<tr>
<td>The Franklin Mint of computer chess games with violent and funny animation disguising a solid chess engine.</td>
<td>The lovable cartoon Liliputians were real-time hits on every platform.</td>
</tr>
<tr>
<td>As rich and imaginative as Raymond Feist’s world itself, its 3D perspective was fresh.</td>
<td>Topped the leader board in graphics and realism for its era.</td>
</tr>
<tr>
<td>Chessmaster (Software Toolworks, 1988)</td>
<td>M-1 Tank Platoon (MicroProse, 1989)</td>
</tr>
<tr>
<td>The Camel’s of drafting, this chess masterpiece gets better with each version.</td>
<td>Realistic sim that properly focused on armored formations rather than single vehicles, good mission designs.</td>
</tr>
<tr>
<td>Fundamentally graphics, digitized sound, and good hook and slash from a decade ago.</td>
<td>The atmosphere and variety of Magic: The Gathering in the sophistication of Civilization.</td>
</tr>
<tr>
<td>Offbeat sequel to Maniac Mansion, the narrative equivalent of a classic Chuck Jones cartoon.</td>
<td>Remarkable diplomacy AI, deep and varied technology tree, ships required radically different playing styles.</td>
</tr>
<tr>
<td>Doom (id Software, 1993)</td>
<td>Mech Brigade (SSI, 1985)</td>
</tr>
<tr>
<td>Revolutionized PC action games and network gaming, surpassed in techology but not gameplay.</td>
<td>Modern armored battle with improved X-COM series system and more realism.</td>
</tr>
<tr>
<td>Earl Weaver Baseball (EA, 1986)</td>
<td>Mighty &amp; Magic (New World Computing, 1985)</td>
</tr>
<tr>
<td>Revolutionarily physically-based baseball game that pleased both action and statistics fans.</td>
<td>First person, maze-based RPG with huge environment and tough tactical combat.</td>
</tr>
<tr>
<td>W32 in space, this worldwide transplant brought deep mechanisms, depth, and uniqueness to quality in the PC.</td>
<td>A landmark multiplayer strategy game that had no weapons of destruction, just cutthroat competition that made economics fun.</td>
</tr>
<tr>
<td>A “thinking man’s” sim, with great missions, in which sneaky big bag around is as fun as dogfighting.</td>
<td>A truly fun wargame with an elegant interface, great campaigns, strong AI, good graphics, and impressive sound.</td>
</tr>
<tr>
<td>Falcon 3.0 (Spectrum Holobyte, 1991)</td>
<td>Red Baron (Dynamix, 1990)</td>
</tr>
<tr>
<td>Tough, detailed jet sim with ambitious AI, graphics, and control perspective to match its realism.</td>
<td>WWII air combat with great graphics, incredible realism, and a versatile reality feature.</td>
</tr>
<tr>
<td>Physical based system, good AI, and unmatched career play made this the ultimate pigskin play.</td>
<td>CGW’s #1 rated game of all time, indescriminately addictive world conquest exploration game.</td>
</tr>
<tr>
<td>Gettysburg: The Turning Point (SSI, 1986)</td>
<td>Sid Meier’s Pirates (MicroProse, 1987)</td>
</tr>
<tr>
<td>First variable order of battle changed the look of all American Civil War games on the PC.</td>
<td>Combines pirate adventure, action, RPG, and strategy to make the most successful hybrid of all time.</td>
</tr>
<tr>
<td>Guiseppe (MicroProse, 1989)</td>
<td>Sid Meier’s Railroad Tycoon (MicroProse, 1990)</td>
</tr>
<tr>
<td>Great character continuity, R&amp;F for fatigued pilots, and even sick leave, best strategy game until Jane’s Lutador.</td>
<td>SimCity meets 1830 with rubber barons for emphasis.</td>
</tr>
<tr>
<td>Harpoon (3DO Pacific, 1989)</td>
<td>SimCity (Maxis, 1989)</td>
</tr>
<tr>
<td>In depth modern naval battles in real time, based on Cold War fears.</td>
<td>Urban planning with fascinating consequences and challenges, the first great strategy toy.</td>
</tr>
<tr>
<td>Kampfgruppe (SSI, 1985)</td>
<td>Starflight (EA, 1986)</td>
</tr>
<tr>
<td>Armored warfare on WW2’s Eastern Front, offered engaging battles on multiple platforms.</td>
<td>Depth, great characters, and a good sci-fi storyline set early standards for RPGs.</td>
</tr>
<tr>
<td>The Bard’s Tale (EA, 1985)</td>
<td>Their Finest Hour (LucasArts, 1989)</td>
</tr>
<tr>
<td>Pioneered three-dimensional animation, 3D color mixes, and automapping.</td>
<td>WWII sim with great campaigns and crew member options.</td>
</tr>
<tr>
<td>Tie Fighter (LucasArts, 1994)</td>
<td>Ultima III (Origin Systems, 1983)</td>
</tr>
<tr>
<td>Most satisfying Star Wars space combat game to date lets you live on the dark side.</td>
<td>Coherence and surprising subtly emphasized role playing, and set the tone for later Ultimas.</td>
</tr>
<tr>
<td>High-concept RPGs explored meaning of virtue and put the ROLE in role-playing.</td>
<td>This RPG as moral play paved way for Ultima Online’s realistic environments and objects.</td>
</tr>
<tr>
<td>Ultima Underworld (Origin Systems, 1992)</td>
<td>War In Russia (SSI, 1984)</td>
</tr>
<tr>
<td>The first truly 3D RPG, and still the most convincing, to dungeon walls were really “painted” with texture mapped graphics.</td>
<td>More realistic than Eastern Front, it captured the essence of the largest land campaign in history.</td>
</tr>
<tr>
<td>Derived from Mike Stackpole’s Mercenaries, Spies, and Private Eyes, this is the definitive postapocalyptic RPG.</td>
<td>A hot spaceflight engine, unfolding story path, and great characust.</td>
</tr>
<tr>
<td>Darker story, grittier feel, sound card advances, and tougher AI made this a sequel of sequels.</td>
<td>Surprisingly satisfying F1MW space opera didn’t lose the essence of the space combat genre.</td>
</tr>
<tr>
<td>Smoothly scrolling action flight-based closely updated the original, and put shamans back on the map.</td>
<td>Outlined the computer RPG with mouse-based viewpoint and atmospheric spell names.</td>
</tr>
<tr>
<td>Premier tactical squad-based engine combined with alien tech research and pop culture for a sci-fi game merely as table top is not.</td>
<td>The progenitor of adventure games on the PC, its humor and challenging puzzles seem timeless.</td>
</tr>
</tbody>
</table>
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## TOP ACTION GAMES

<table>
<thead>
<tr>
<th>Game</th>
<th>Company</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quake Pack 2: Dissolution of Eternity</td>
<td>id Software/RAiGue</td>
<td>9.01</td>
</tr>
<tr>
<td>Quake Pack 1: Scourge of Arrogance</td>
<td>id Software/RaiGue</td>
<td>8.95</td>
</tr>
<tr>
<td>Dune: Nexus BD</td>
<td>3D Realms</td>
<td>8.28</td>
</tr>
<tr>
<td>Tomb Raider</td>
<td>Ides</td>
<td>8.25</td>
</tr>
<tr>
<td>Crusader: No Remorse</td>
<td>EA/Origin</td>
<td>8.07</td>
</tr>
<tr>
<td>Quake</td>
<td>id Software</td>
<td>8.02</td>
</tr>
<tr>
<td>The Need for Speed SE</td>
<td>EA</td>
<td>7.97</td>
</tr>
<tr>
<td>Crusader: No Regret</td>
<td>EA/Origin</td>
<td>7.75</td>
</tr>
<tr>
<td>Moto Racer</td>
<td>EA</td>
<td>7.65</td>
</tr>
<tr>
<td>MX</td>
<td>Playmates/Shiny</td>
<td>7.54</td>
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</table>

## TOP ADVENTURE GAMES

<table>
<thead>
<tr>
<th>Game</th>
<th>Company</th>
<th>Score</th>
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</thead>
<tbody>
<tr>
<td>Gabriel Knight 2</td>
<td>Sierra</td>
<td>8.21</td>
</tr>
<tr>
<td>The Pandemic Directive</td>
<td>Access</td>
<td>8.19</td>
</tr>
<tr>
<td>Indiana's Odyssey</td>
<td>Activision</td>
<td>7.87</td>
</tr>
<tr>
<td>Rms</td>
<td>Sierra</td>
<td>7.79</td>
</tr>
<tr>
<td>The Neverhood</td>
<td>DreamWorks</td>
<td>7.69</td>
</tr>
<tr>
<td>Heims of the Mounting</td>
<td>Interplay</td>
<td>7.62</td>
</tr>
<tr>
<td>Spycraft</td>
<td>Activision</td>
<td>7.47</td>
</tr>
<tr>
<td>Circle of Blood</td>
<td>Virgin</td>
<td>7.46</td>
</tr>
<tr>
<td>Full Throttle</td>
<td>LucasArts</td>
<td>7.42</td>
</tr>
<tr>
<td>Leisure Sard Lavey 7</td>
<td>Sierra</td>
<td>7.32</td>
</tr>
</tbody>
</table>

## TOP CLASSIC/PUZZLE GAMES

<table>
<thead>
<tr>
<th>Game</th>
<th>Company</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>You Don't Know Jack II</td>
<td>Berkeley Systems</td>
<td>8.54</td>
</tr>
<tr>
<td>You Don't Know Jack</td>
<td>Berkeley Systems</td>
<td>8.21</td>
</tr>
<tr>
<td>You Don't Know Jack Movies</td>
<td>Berkeley Systems</td>
<td>7.06</td>
</tr>
<tr>
<td>You Don't Know Jack Sports</td>
<td>Sierra</td>
<td>7.72</td>
</tr>
<tr>
<td>Power Chess</td>
<td>Sierra</td>
<td>7.32</td>
</tr>
<tr>
<td>Incredible Toons</td>
<td>Sierra</td>
<td>7.21</td>
</tr>
<tr>
<td>Monopoly</td>
<td>Virgin/Westwood</td>
<td>6.84</td>
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<tr>
<td>Sierra Poker</td>
<td>Sierra</td>
<td>6.77</td>
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<tr>
<td>Mind Grid</td>
<td>Microforum</td>
<td>6.73</td>
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<tr>
<td>Daku Daku</td>
<td>Sega</td>
<td>6.54</td>
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## TOP SIMULATION/SPACE COMBAT GAMES

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<th>Game</th>
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<tbody>
<tr>
<td>Wing Commander IV</td>
<td>EA/Origin</td>
<td>8.31</td>
</tr>
<tr>
<td>AR-64 Lynx</td>
<td>EA/Origin</td>
<td>8.12</td>
</tr>
<tr>
<td>MechWarrior 2</td>
<td>Activision</td>
<td>8.06</td>
</tr>
<tr>
<td>MechWarrior 2: Mercenaries</td>
<td>Activision</td>
<td>8.04</td>
</tr>
<tr>
<td>Silent Runner</td>
<td>SSI</td>
<td>7.85</td>
</tr>
<tr>
<td>U.S. Marine Fighters</td>
<td>EA</td>
<td>7.82</td>
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<tr>
<td>EF2000</td>
<td>Ocean</td>
<td>7.62</td>
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<tr>
<td>U.S. Navy Fighters</td>
<td>EA</td>
<td>7.53</td>
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<tr>
<td>Advanced Tactical Fighters</td>
<td>EA</td>
<td>7.42</td>
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<tr>
<td>X-Wing vs. TIE Fighter</td>
<td>LucasArts</td>
<td>7.39</td>
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## TOP SPORTS GAMES

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<tr>
<td>Line 115</td>
<td>Access</td>
<td>8.66</td>
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<tr>
<td>NASCAR Racing 2</td>
<td>Sierra</td>
<td>8.54</td>
</tr>
<tr>
<td>NHL 97</td>
<td>EA Sports</td>
<td>8.10</td>
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<tr>
<td>Grand Prix 2</td>
<td>MicroProse</td>
<td>8.01</td>
</tr>
<tr>
<td>NBA Live 97</td>
<td>EA Sports</td>
<td>7.95</td>
</tr>
<tr>
<td>Jack Nicklaus 4</td>
<td>Acocolade</td>
<td>7.80</td>
</tr>
<tr>
<td>Tripodplay 98</td>
<td>EA Sports</td>
<td>7.75</td>
</tr>
<tr>
<td>NASCAR Racing</td>
<td>Sierra</td>
<td>7.57</td>
</tr>
<tr>
<td>NHL Hockey 96</td>
<td>EA Sports</td>
<td>7.47</td>
</tr>
<tr>
<td>Tripodplay 97</td>
<td>EA Sports</td>
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</table>

## TOP STRATEGY GAMES

<table>
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<tr>
<th>Game</th>
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<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dune II: Price of Loyalty</td>
<td>New World Computing</td>
<td>9.18</td>
</tr>
<tr>
<td>WarCraft II Expansion Disk</td>
<td>Blizzard</td>
<td>8.65</td>
</tr>
<tr>
<td>WarCraft II</td>
<td>Blizzard</td>
<td>8.75</td>
</tr>
<tr>
<td>Red Alert</td>
<td>Virgin/Westwood</td>
<td>8.74</td>
</tr>
<tr>
<td>Heroes II</td>
<td>New World Computing</td>
<td>8.73</td>
</tr>
<tr>
<td>Civilization</td>
<td>MicroProse</td>
<td>8.71</td>
</tr>
<tr>
<td>Red Alert: Counterstrike</td>
<td>Virgin/Westwood</td>
<td>8.38</td>
</tr>
<tr>
<td>Command &amp; Conquer</td>
<td>Virgin/Westwood</td>
<td>8.24</td>
</tr>
<tr>
<td>C&amp;C: Convent Operations</td>
<td>Virgin/Westwood</td>
<td>8.23</td>
</tr>
<tr>
<td>Civilization II: Scenarii</td>
<td>MicroProse</td>
<td>8.18</td>
</tr>
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</table>

## TOP ROLE-PLAYING GAMES

<table>
<thead>
<tr>
<th>Game</th>
<th>Company</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diablo</td>
<td>Blizzard</td>
<td>8.70</td>
</tr>
<tr>
<td>Daggerfall</td>
<td>Bethesda</td>
<td>7.58</td>
</tr>
<tr>
<td>Anvil of Dawn</td>
<td>New World Computing</td>
<td>7.12</td>
</tr>
<tr>
<td>Albion</td>
<td>Blue Byte</td>
<td>6.10</td>
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## TOP WARGAMES

<table>
<thead>
<tr>
<th>Game</th>
<th>Company</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel Panthers II Campaign Disk</td>
<td>SSI</td>
<td>8.80</td>
</tr>
<tr>
<td>Steel Panthers II</td>
<td>SSI</td>
<td>8.68</td>
</tr>
<tr>
<td>Steel Panthers II</td>
<td>SSI</td>
<td>8.38</td>
</tr>
<tr>
<td>Steel Panthers</td>
<td>SSI</td>
<td>8.37</td>
</tr>
<tr>
<td>Battleground: Shiloh</td>
<td>TalonSoft</td>
<td>8.13</td>
</tr>
<tr>
<td>Battleground: Bull Run</td>
<td>TalonSoft</td>
<td>8.12</td>
</tr>
<tr>
<td>Battleground: Napoleon in Russia</td>
<td>TalonSoft</td>
<td>8.06</td>
</tr>
<tr>
<td>Titania on the Pravol II</td>
<td>HPS</td>
<td>8.02</td>
</tr>
<tr>
<td>Battleground: Antietam</td>
<td>TalonSoft</td>
<td>7.98</td>
</tr>
<tr>
<td>Battleground: Waterloo</td>
<td>TalonSoft</td>
<td>7.73</td>
</tr>
</tbody>
</table>

CGW FEBRUARY 1998
<table>
<thead>
<tr>
<th>GAME</th>
<th>COMPANY</th>
<th>TYPE</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heroes II: Price of Loyalty</td>
<td>New World Comp.</td>
<td>ST</td>
<td>9.10</td>
</tr>
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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...the Wrong Lessons?

We’re reveling in the traditional fall quarter frenzy as I write this, with title after title vying to be the hot new thing, or, more accurately, trying to successfully clone what made last year’s hit the hot thing it was. While it’s useless to bemoan the lack of originality in computer games (or movies, books, or cars) in this demographically driven society, what never ceases to amaze me is the utter inability of some portions of this industry to buy a clue, even when the truth is staring them in the face.

Just look at the Doom bandwagon-jumping. I mean, Ooow was huge for pretty much two reasons: multiplayer capability and creepy game environments. Now, it’s pretty safe to say that the industry has gotten the message about network and Internet capability—even LucasArts has added it to Jef Kiner’s (though by ignoring co-op multiplayer they stubbornly refuse to complete the picture). But the real genius of Ooow was shown in its moody atmosphere (who can forget their first sight of those four demon lords stalked to the walls? You just knew some serious sad mojo was about to go down…), its coherent sound (the heavy breathing of monsters just on the other side of the door), and its truly chaotic battlefields (with less that would go blood crazy and kill everything in their path). But what’s really laughable is that executives, and even some designers, looked at that genius and the lesson they learned was “Duh…gamers want more blood and more Satan.”

The result is no surprise: a horde of forgettable games that did little except generate some really stupid ads. If it weren’t for games such as Hexen, which tried to improve upon the game environment, I would have sworn that the fellows O-D-O-M created some sort of lobotomizing neurological feedback in anybody high up enough in a game company to make design calls.

The wackiness doesn’t end there. What lesson did the industry get from Tomb Raider? “Gamers wanna see big, 3D breasts!”

What lesson did the industry get from Tomb Raider?

‘Gamers wanna see big, 3D breasts!’

Another great “wrong answer” making its way through the industry is that the huge sales numbers for console games have nothing to do with the fact that the game systems cost less than $200. Instead, the powers that be have decided that it must be because cartridge games are pretty and simple...that must be what gamers want! They assume that if they have a computer game that is indistinguishable from a cartridge game, and does away with all that annoying potential a keyboard can give you, it will sell the same number of copies as the cartridge game. Of course, it doesn’t occur to any of them that when you have just spent $3,000 on a rig, you are looking for something a little more in-depth than jumping for coins. (Those of us who actually paid money for Ultima VIII, feel free to mutter bitterly at this point.)

This whole “PC gamers crave simplicity” delusion is staging a strong battle on the real-time front as well. I cannot believe that the guys at SSI (who gave the okay for Dark Colony) could have come away from Command & Conquer thinking, “That’s it! The key to real-time wargaming is a limited number of units, no-brainer base building, and some really incoherent and violent animated cut-scenes!” Nobody says your designs have to embody originality every time a new one hits the page, but for the love of Xerox, at least try to clone the good parts. I can only pray that somebody out there is busy right now picking out the best aspects of Dark Reign, Total Annihilation, and the whole research design engine from Wrekz Inc. Unfortunately, I suspect that, instead, somebody in a sharp suit is showing a screenshot from Conquest Earth to a roomful of horrified programmers while saying, “This is the direction we need to go on this project.”

And of course, there isn’t even a point in going into all the wrong answers that game companies brought away from the whole Myst experience. Are salaries paid in inverse proportion to competency in this industry? Maybe it’s our fault. C’mon, own up to it out there! Are you secretly turning in feedback cards, written in crayon, that say “Orgo not like game… make brain hurt with complexity and my guy not punch out spleens”? After all, there has to be some reason that companies keep learning the wrong lessons from the right games.
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