

The #1 Computer Game Magazine

Computer Gaming World

JULY 1997
NO. 156

275+
Packed Pages!

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Jane's Amazing**

F-15!



FALCON 4.0




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COMING FALL 1997



COMING SPRING 1998



COMING FALL 1998

Computer Gaming

World

COVER STORY



Jane's F-15

80 For the last year, the world's foremost flight sim producer, Andy Hollis, has been guiding a team at Origin Skunkworks in creating a highly advanced flight sim for the PC. By using data from the Air Force and NASA, and consulting with military pilots, they've managed to replicate the most minute details of the U.S. military's top fighter. Simulations Editor Denny Atkin traveled to the company's secret East Coast office for an exclusive first look at JANE's F-15. What he saw there will amaze you.

Air Combat Summer Part One

92 Heads up, fly-boys—there's a squadron of flight sims headed your way this year. Beginning this issue (and continuing next month), we'll preview all of the top guns taking to the skies in '97. Strap in and get ready for take-off.



HARDWARE



Screamin' Sound Cards

124 A quality sound card is a necessity for every serious gamer—especially those that like to turn it up to 11. This month, Loyd Case blasts out with five new sound cards and separates the live from the live.

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PLAN TO DOMINATE THE

1. UTILIZE UNSURPASSED TERRAIN ADVANTAGES



Launch underground ambush

Hide spider bikes in ravine

2. LAUNCH ADVANCED ARTIFICIAL INTELLIGENCE



Harass enemy troops

Order units to retreat when hit

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Add lava pit to bolster defensive front

Acquire enemy resources to end missions

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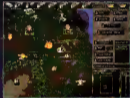
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CIRCLE READER SERVICE #348



ock. Then it's bye-bye until tomorrow. When I crush them in my monster truck.

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I play:

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Microsoft® Golf

NE . c o m



I play:

Monster Truck Madness™

X-WING® T5, THE FIGHTER™

blasts like spit because I like to go all out on everything. Except my wallet.



A Game for All Seasons

How 4th Quarter Syndrome Is Endangering Future Computer Games

Take a 250ml beaker and pour in a 12 ounce can of Coca-Cola. Now, pour in the same amount of Pepsi-Cola and RC Cola. What

do you have? More than one-half liter of mixed cola drinks all over your lab table. Not a very pretty picture and not a very positive result.

Yet, this alleged science experiment isn't far from what is happening in the computer game industry. Too much of a product mix in an inadequate container is going to cause spillage. For years within the computer game industry, we've heard the laments about how difficult shelf space is to obtain. Yet, software publishers currently seem to be playing chicken with each other in that very limited retail space. Most have latched onto the market research which indicates that more dollars are spent on computer games in the fourth quarter than in any other, and have decided to hold more products than ever for the holiday season. On the face of it, that's like saying that it's best to go fishing when the fish are biting. The problem is...there are only so many fish.

This strategy for putting the bulk of the product line out at during the Christmas season means that there will be more titles vying for the same amount of shelf space. This means that not all of the titles slated

for retail in the fourth quarter will actually hit the shelves, and that distributors and retailers will once again be able to demand exacting tribute from the publishers in the form of cooperative advertising and marketing development funds. This

“**How many worthy products get buried under the holiday retail avalanche?**”

will further cut profit margins, continue to reduce the viability of smaller game companies, and obfuscate the cash flow picture.

The film industry encounters this type of destructive market cycle every few years. As entertainment attorney Mark Litwak explains in his book on Hollywood, *Red Power*:

"The cycle begins when distributors become prosperous and start to produce more films, eventually glutting the marketplace. In such a buyer's market, exhibitors can obtain better terms, increasing their share of box office revenues at the expense of the distributors. Production cutbacks follow, creating

a seller's market, in which exhibitor clout wanes. Distributors can then get better terms, eventually becoming prosperous and beginning the cycle anew." (p. 256)

The consolidation taking place in the game industry is already causing many worthy projects to languish. The Fourth Quarter syndrome merely accelerates the trend. Research tells us that the average CGW subscriber buys two games per month (out of the approximately 20-25 new titles released each month). Even if the CGW subscriber, the elite customer, was to double his purchasing pattern during the holiday season, that would mean only four games versus the more than 100 expected in that time frame. In even an optimistic scenario, seasonality alone means a reduction in the percentage of new game titles hard-core gamers purchase from roughly 10 percent to roughly 4 percent in a given month. Such a quick and dirty calculation shows that seasonality isn't automatically positive for holiday-season releases.

Frankly, I don't think I'm the only gamer who is frustrated by the periods where "all the good games come out at once." Sure, there is some positive spin. Good games often have a cocktail effect on the other games which are on the shelves at the same time. Yet, I can't help but feel that successful games like *Duress* and *Intersave '76* received a boost from being the only major releases in their timeframe. *Duress*, of course, barely

missed Christmas, but set sales records. *Intersave '76* might have been lost in a holiday season. It's a Spring Break concept of pure action released during Spring Break and it received extra online attention because it was the standout release.

How many worthy products get buried during the holiday retail avalanche? Companies would surely benefit from staggering their release schedules slightly, but E3 reduces the odds of this happening. Everyone wants to showcase their "A" titles at E3, so buyers can snatch them up for the holiday season (and, so the press can provide the games with a big pre-holiday publicity buzz), which means the majority of titles are getting pushed to the end of the year. This can't possibly help production cycles, marketing plans, retail strategies, or cash flow on either side of the fence.

What can we do? Pray for product slippage? That will happen regardless. Start a new trade show? It wouldn't be supported. Boycott products at Christmas? We'd only hurt ourselves. The best thing we can do to break this destructive cycle is to support the good products released at odd times and make sure that we register them, recommend them to our friends, and talk about them online. In that way, we might be able to break up the seasonal cycle enough to guarantee the regular flow of good product. ☺



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CIRCLE READER SERVICE #166

Take to the Skies With This Month's Demo Disc



As part of our special Air Combat issue, we have included demos of some of the hottest flight sims currently available, as well as a complete, playable version of one of the best flight sims of all time, *Red Baron*. Whether you are an experienced virtual pilot or you're new to the simulated skies, whether your interests lie in man-to-man biplane dogfights or computer-assisted high-tech jet battles, you'll find plenty of air-combat action here.

Red Baron

Considered by many gamers to be the best flight simulation of all time, this game did nearly everything right. Intelligent enemies and good flight models (for its day) kept the experienced pilots enthralled, and a wide variety of difficulty levels helped thousands of inexperienced gamers take to the skies and learn the ropes. To help get you in the mood for the upcoming *Red Baron II*, we've included the entire original *Red Baron* on the CG-ROM this month.

Air Warrior II

Air Warrior was the first experience many of us had with multiplayer gaming. Years before the first wave of Internet gaming hype hit the shores, thousands of users spent hundreds of dollars a month on GENie playing an



Warrior. Now the program is available in a new version that includes not only online missions, but also hundreds of stand-alone solo missions. The demo version on this month's CG-ROM will get you started on online play.

A-10 Cuba!

A-10 Cuba! puts you in the cockpit of the A-10 Warthog, the Air Force's deadly ground-attack plane. This demo version includes a full mission from the commercial release of the game. Even after you complete that mission, you'll still find plenty of entertaining gameplay just experimenting with the sim's fantastic

physics model. Break off part of the A-10's wing and see how it flies, or see if you can bend the landing gear without breaking the plane.

F/A-18 Hornet 3.0

Hornet may look deceptively simple with its basic polygon graphics, but that graphic simplicity lets you experience smooth air combat at resolutions up to 1024x768. And very little about *F/A-18 Hornet 3.0* is simple. It has one of the most complete avionics setups around, and you won't find a magic radar here. Be sure to check out the ReadMe file for full information on operating the



F/A-18 Hornet Graphics Simulations

jet's systems. Of course, if you can't wait to take to the skies you can ignore the instrument panel and just tour the Pearl Harbor area.

Flying Corps

Empire's biplane sim puts you in the cockpit of the famous Allied and Axis aces' planes, and lets you fly over authentic European terrain and battle both air and ground forces. No radar or fast-climbing planes here—combat was pure pilot vs. pilot in those days. The aircraft are beautiful, but the game uses a lot of horsepower, and is best on a Pentium 133 or faster.



Flying Corps Empire Interactive



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Revolve has never been more satisfying—or fun. Activision's *INTERSTATE '76* takes you across the border into a parallel universe where '70s muscle cars come specially equipped with 50-caliber M6 machine guns and flame throwers. The game, which uses the stripped-down and rebuilt Mech 2 engine, will appeal to action and sim fans alike. The non-rail based 3D environment allows you to leave the road for intense vigilante combat, while the realistic driving physics give it that true racing feel. For those searching for an adrenaline rush, a dose of addictive Multiplayer action via modem, LAN, or Internet is highly recommended. The missions are intense, the action is fast, and the funk is straight from those 8-track days.

INTERSTATE '76



BATTLECRUISER 3000

After many months of patches, the intantous *BattleCruiser 3000AD* is almost complete (and debugged). But is the finished *BC3000AD* a fun game? Check out our exclusive demo—a fully functional, one-solar-system version of the program with the latest patches incorporated.



Outpost 2

Sigma Online has completely regenerated the code for *Outpost 2*, scrapping the original engine and rebuilding the new game from scratch. A vast improvement over the first *Outpost*, this real-time strategy game combines the unpredictable forces of nature and karmic consequence for aggressive action with traditional resource management technology. The plot has also been revamped for *Outpost 2*. Your attempts at a new beginning on the previous planet went awry and your group has now touched down on a new planet. However, you'll soon discover that the world isn't as hospitable as you first believed. You'll raise new bases and colonies, and you will have to fend off the attacks of a rival colony somewhere on the planet. Equal emphasis is placed on building and production. Prepare to test your combat and production skills in real-time in our demo.

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- GameSpot

Role-Playing Game of the Year

- Computer & Net Player

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- Computer Games Strategy Plus

Editors' Choice Award

- PC Gamer

"A" Rating

- PC Games



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How To Use the Disc

If you have Windows 95, the CD is Autoplay enabled—just lock 'n' load. Otherwise, select Run from the Program Manager in Windows 3.x, and type D:\RUN-ME (where D is the letter of your CD-ROM drive) to run it straight from the CD. You may type D:\INSTALL to create a CGW program group on your Windows desktop. Many demos require the disc to be in the CD-ROM drive in order to run; therefore, we recommend installing the demos from our disc.

How To Access Patch Files

Click on Patches under the CGW Features. The text window has instructions on copying the files to your hard drive. You can also access the patches from a DOS prompt by typing D:\PATCHES and copying them directly to your hard drive. We strongly recommend that you back up any previously saved games before



installing a patch, as this may overwrite your existing program.

To Subscribe

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JULY CG-ROM TITLES

TITLE	PLATFORM	DIRECTORY	EXECUTABLE
A-10 Guba!	95	A10DEMO	SETUP.EXE
AirWarrior 2 Online	95	AIRWAR2	AW2ONLN
Baseball Mogul	95	BJM000L	SETUP.EXE
BattleCruiser 3000AD	DOS/95	D:\BC3K	INSTALL.EXE
Constructor	WIN	CONSTRCT	CONSTRAP.MOV
DirectX 3	95	D:\DIRECTX	DXSETUP.EXE
FIA: IR Home! 3.0	95/NT	IRHMET	HOME1.EXE
Flying Corps	DOS	FCORPS	INSTALL.BAT
Interstate '76	95	I76	SETUP.EXE
Madara Age Electronic Strat Guides	95	EBODKS	SETUP.EXE
Object 2	95	OP2_DEMO	SETUP.EXE
Patches	ala	PATCHES	ala
Red Baron	DOS via 95	RB1	SETUP.BAT
Ten Pin Alley	95	TENPIN	SETUP.EXE
Time Warriors	95	EDMO_MAG	INSTTIME.BAT
Versalis 1685	DOS/95	DEMO_US	INSTALL.BAT
X-Com: Apocalypse	DOS/95	XCOM	INSTALL.EXE
You Don't Know Jack Movies	WIN/95	JACK	SETUP.EXE

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FREAKING OUT

Martin Ciriak's column on *Psycho-Geeks* certainly hit nerves on both sides of the question. Here is a sampling of the ton of mail we received on the issue.

I just received the May issue of *CGW*, and as always, you guys have done a great job. While initially skimming the issue, I hastily roused the last page and read Martin Ciriak's monthly article. I agree with many of Martin's points concerning those who make it a goal to ruin other's online fun. I've quit playing *DAWNO* myself because of the rampant cheating, and I completely agree that anyone who sets out to crush a game is extremely immature.

However, I have to take issue with Martin's opinions of PKs (Player Killers to you newbies). To call a PK a "little freak" seems a bit harsh, considering the fact that in a game like *DAWNO* one of the most intriguing aspects is the danger involved, not only from rampaging demons, but from "evil" players. In fact (still using *DAWNO* as an example), if you read *Bleed*'s Web forums, you will find that *Bleed* has no plan to remove the ability to PK, as they consider it part of the game. Remember, this is *CGW*'s game of the year we are talking about. If the designers of said game felt that PKing was detrimental to the



entertainment and mystery, they would have removed the feature long ago. Don't get me wrong, cheating sucks, as does crashing servers, but PKing is something we are all going to have to live with in the online gaming world. Not all who kill other players are "sick little freaks." Some of us actually like to play the "bad guy." Admit it, you can kill ten thousand Storm Lords in *DAWNO*, but your adrenaline pumps like never before when a 49th level magt leech loses a fireball in your direction. So you fight. Maybe you live; maybe you die. If you live, you have a sense of pride. If you die, you lose an ear and some gold,

but now you have an enemy worth hunting. No offense to anyone intended here, I just want to set the record straight that not every PK is a 12-year-old fool. And for those of you yet to get online, trust me, playing against humans is worth it.

James H. Parkinson
ecorshade@aol.com

As a victim of a Psycho Geek, I fully understand [Martin Ciriak's] feelings. My experience was in *DAWNO*—before the fiasco in place to prevent players from killing and robbing other players in town. However, the blow was lessened

by the timely intervention of another player, who, upon hearing of the attack, took the time to hunt down the PK. He (or she, I never did find out) returned with my stuff, the gecko's car, and the gecko's belongings. In addition to in-game action, I know some folks on AOL, who have been able to have geeks banned from the system. All it took was some proof and about three minutes under the scrutiny of a guide.

The point of all this, Mr. Ciriak, is to let you know you are not alone, and to say: PSYCHO GEEKS BEWARE! Some folks do not take kindly to annoyance, just like in real life. The net is not as safe as it appears.

Matt Drew
via the Internet

LETTER OF THE MONTH

COMPUTER GAMING VOID

I did a fun little Web page for fans of *Computer Gaming World*. If you want to look at it, the URL is http://ourworld.compuserve.com/homepages/temple_wtda

Bob Millard
Compuserve Subscriber

Since the staff here at the real *CGW* got several chuckles out of your *Computer Gaming Void* Web site, we'll pass the URL along to our readers as well. Good job!



CGV ONLINE Bob Millard's amusing Web parody of *CGW* includes a column from "Scornia," a rant from "Morton Curnish," and a sneak preview of *GORE*.

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Only one thing to say: RIGHT ON! You have summed up the main reason I don't play on the Internet. The creators of the games had the right idea in bringing all the fans of their games together on the Internet, but it only takes one "Psycho Geek" to ruin the whole thing. The biggest problem with them is that they might end up giving someone who really wants to enjoy the game such a bad experience that they won't ever try again. I wish I had a solution for the problem, but I don't. The solution I created for myself is not practical for everyone. I am in the process of setting up a small server for myself and some of my close friends to enjoy multi-player games with each other. That way at least I know who is on the other end, and I don't have to put up with a problem that will surely just get bigger as online memberships continue to grow.

Clay Moore
via the Internet

HARD CHOICES

I have been a faithful reader of your magazine for several years now. Each issue is more enjoyable than the last. I get a kick out of the letters you publish that people send in about things that are really insignificant that happen to show up in your magazine. The use of a word that is heard everywhere, but when printed it now becomes taboo. The advertisements that offend readers, yet prime-time TV shows more blood, sex, and even advertises contraceptives. TV has a much larger viewing base and much higher editing standards than a magazine. So, don't you pay any mind to those who have trouble turning a page rather than staring at it till their blood boils. If it were TV, they would just turn the channel. So, let them turn the page instead.

I think you're doing just fine. Well, all except for one thing that does bother me. Why is it when you review hardware you can't come right out and choose the one you think is best? Surely your opinion would be helpful due to the fact you have the time to try each product, whereas we the readers can't buy one of each and return the ones we don't like.

I have been wanting to buy a 3D-gaming card for sometime now and have been wanting to see more reviews but haven't seen any yet. Surely with the recent release of many new

cards with updated chips you could check them out again and pick an overall winner.

David A. Hono
via the Internet

This month we review two new 3D-gaming cards, which you'll find in our Hardware section. We're planning to do another major round-up of 3D cards in an upcoming issue. You may also note that every round-up now has a CC Choice. This means that this is a card with a price-to-performance ratio which we can recommend. Of course, some gamers may have different criteria than we do, so we try to point as much information as possible about all the hardware we test. This enables you to have the best of both worlds, data to make your own choice and our recommendations. Believe it or not, we've had hardware manufacturers tell us that a half-star difference in rating hardware means a significant decline in sales. We just call 'em like we test 'em.

NOT-SO HOT ROD SYNDROME

I've just finished reading "The Hot Rod Syndrome," Johnny Wilson's May editorial. In it, he argues that gamers are caught in an endless and expensive race to stay on the cutting edge of technology. I find this argument both compelling and well-reasoned. However, as a long-time gamer, I have personally followed a different strategy—I have opted to stay on the lagging edge. For the last five or six years, I have routinely upgraded the "bottleneck" component in my system to the best replacement available at a commodity price (read "cheap").

I believe this approach offers several benefits. First, I can save some serious money. Rather than spending \$2,500 every two or three years for the latest ByteWhacker 3000, I spend about \$400 a year on whatever buys the biggest performance payoff. Second, I find relatively few bugs or conflicts in "seasoned" hardware and software. When I do find a problem, the patches or workarounds are readily available. Third, I am able to use the humor stories of the "early-adopters" as well as CCW's ongoing coverage to weed out the real lemons. And finally, I am always within shooting distance of "current" technology. There are very few games I cannot play at a reasonable level of performance. I

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heartily recommend this approach to your readers.

*H Modanily
Austin, TX*

We loved CCW's hardware coverage provided results for "early adopters." We hadn't realized how useful we were to the "lagging edge." Thanks for sharing your strategy for building less Austin-titans gaming associates.

AWARDS: RIGHT OR WRONG?

Your choice of **DIABLO** over **QUAKE** for Game of the Year is totally wrong. You would choose a game where you look down upon the action instead of the intense, truly 3D world of **QUAKE**? **QUAKE** undoubtedly advanced computer gaming tremendously. What other game can you play with up to 32 people at one time for FREE? You all should wake up and wipe yourself off. If you would clear the brown film off your eyes you would see the error in your way!

QUAKE RULES!

*Anton "BUC" Stronka
via the Internet*

*I think, guess we know where you read CCW. Doesn't the ink smudge? Well, not so those of you who didn't approve of **DIABLO** as Game of the Year know that the opposition isn't unwelcome, here's another point of view:*

Received the April issue in the mail yesterday (mail to Caram is sometimes

slow), saw that you were going to be voting for the CCW Premier Awards and thought I would jump online to give you my two cents worth. Turns out you've already voted and what a great choice. I was going to make a pitch for **DIABLO**, but as it turns out, you have excellent taste. I, too, believe it is a stellar game — destined for the Hall of Fame.

Blizzard outdid themselves this time. The multiplayer options are great and battle net is the best. I can't say enough good things about the game. By the way, I have played several of the other games on your list so I am comparing evaluating here. Keep up the great work. I subscribe to several magazines but yours is the only one I read cover-to-cover (usually the moment it arrives). Thank you for your time.

*Mike Smith
Carm*

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Lara Croft, gaming's #1 covergirl.

WING COMMANDER

Origin Gets Back To Basics

It's fashionable these days to dismiss games published before the days of SVGA graphics, full-motion video, and Internet play. But if we did, even hall-of-fame games such as *Wing Commander* would be little more than museum pieces. Obviously, the staff at Origin doesn't subscribe to such a revisionist view, because the latest in the series, *Wing Commander: Prophecy*, resembles nothing so much as the first *Wing Commander*.

Don't panic; this doesn't mean that Origin has returned to MCGA graphics or a predictable enemy pilot AI. Just take a look at these CGW-exclusive screen shots, and you'll see that Origin is pushing the technological envelope as usual. The game will be Windows 95 native, but don't expect a performance decline from previous *Wing Commanders*. Origin's proprietary software rendering technology is most impressive: I saw ships moving around at about 15fps faster than under Direct 3D; Origin will probably support the Microsoft standard as well, using a series of hardware tests similar to *Wings IV* to determine which is better-suited to your system. Jeff Griles, the programming wizard who developed the robust 3D-engine for a planned adventure/RPG game now on hiatus, added

platform-independent code that will allow you to utilize 3D cards whether or not you use Origin's software rendering (theoretically, this would work on the Mac as well, if it ever gets true 3D card support).

But for all of the technical sophistication of the engine and graphics, the real star of *Prophecy* should be the gameplay. The design team spent months on the script, which sounds typical for a recent *Wing*



The mysterious alien Manta.

Wing Commander product. But instead of building the game around the full-motion-video sequences and then adding the space combat, they designed the missions first. So, the end result will be less of an interactive movie and more of a true gaming experience.

Senior Producer Billy Cain explains that, "Our goal was to return to the essence of *Wing Commander I* and II, where the gameplay and the cinematic style were integrated into a really addictive experience, even though those games used animation instead of FMV." Not that the design team were scoffing at the

MCContinued on pg 30

THIS JUST IN

Short takes on games and hardware released just prior to press time.

MDK

Play MDK for a few hours and you'll suddenly see what all the hype is about. Sure, it's a third-person shooter, but gameplay is different and refreshing. Emphasis is on cautious movement. You can't run full-tilt through the levels, because at critical junctures you'll have to stop, put on your sniping helmet and take down far-off enemies. The enemy AI is also good; they'll taunt you, run away, and even cry if you hurt them badly. And, if gameplay isn't enough to entice you to play, maybe you'll do it to just save the Earth from the menacing



alien invasion.—Edott Chin
Playmates Interactive, (714) 562-1743
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QUOTE OF THE MONTH

“No polygonal animals were harmed during the making of this product.”



—INTERSTATE 76 disclaimer, as stated in the 1976 Auto Vigilante Compendium.

A Parody Far, Far Away

After polluting the peaceful island of *Myra* in their parody *Prst*, the people at Palladium are ready to despoil another entertainment institution: *Star Wars*. Barring legal entanglements, Palladium hopes to release *Star Wars* at the end of May. Unlike *Prst*, *Star Wars* will be a collection of mini games, rather than a side-show. Among them are a fighting game between Luke and Leia, a trivia game called *U Don't No Jedi*, an Ewok-bashing shooter called *Whack! The Ewok*,



An Ewok ripe for the killing

Luke and Leia battle it out

and an Astrobuck knock-off where you shoot all incoming space debris, from space ships to floating Ewoks. We don't know if Lucas will take this good-natured ribbing in stride, but we sure think it's funny. Let's just hope the lawyers don't get to this parody before we do. —Eliot Chin

News Flash

▶▶▶ **Panasonic** recently announced a new line of desktop CD-R/DW drives with a 24X transfer rate, theoretically the fastest spin rate to date. The line includes two new internal models, both of which should be in stores now. The LK-MC 686BP ATAPI drive has an estimated street price of \$199, while the LKMC606BP SCSI drive will set you back \$209. *CGW* will test the 24X CD-R/DW drives and report the results in an upcoming issue.

▶▶▶ In a move that would make NFL draft day experts envious, Jim Degbey recently snatched two high-profile free agents for **Arsenal Publishing**. Frank Chadwick, former head of **Game Designers' Workshop** and award-winning designer of over 100 board wargames, signed to do a computer version of his *Command Decision* miniatures rules. Major Gary "Mo" Morgan (*3c AK Flight Leader*), will evidently be doing a modern era wargame.

▶▶▶ **Microsoft** recently announced that it has signed an agreement to acquire **Web TV Networks** for approximately \$425,000,000 in stock and cash. The acquisition would allow Web TV to take full advantage of Microsoft's Windows CE and Internet Explorer technologies. Johnny Wilson ponders what the acquisition will mean for both parties and what effect it will have on the industry in general at www.computergaming.com.

ABIT IT5H MOTHERBOARD

Enter with motherboards the way some people adjust valve timings on their British sports cars. Motherboards are



all much the same, but now and then, a new twist on an old theme arrives, in this case, the Intel 430MX chipset-based ABIT IT5H. The really unique thing about this board is the complete absence of jumpers. If you've ever wondered how parameters like CPU speed and bus clock are set, it's incredibly simple—you set all your CPU timings in the BIOS. In fact, you can set all kinds of interesting timings, including boosting the bus clock to 75 MHz (the 2.0 rev will take 69 MHz timings), suitable for Cynix P200+ processors. It even comes with a PS/2 mouse connector. In other ways, it's a pretty typical AT board: 4 ISA slots, 4 PCI slots (one pair shared) and the usual collection of serial and parallel ports. Performance is pretty good, generating a CPUMark16 of 431 and CPUMark32 of 424 with a P55C MMX Pentium (all bus timings at 66 MHz).

The manual is probably the best I've seen, although it's still not for the technically-challenged. If you're yearning to install a new motherboard, and aren't afraid to tweak the low-level inner-workings, check this one out.—Lloyd Case
Abit Computer Corp
www.abit.com.tw
PC Motherboard
Reader Service #: 302

THUNDERPAD DIGITAL

Every gamepad these days comes with a ton of preset programming for various games, and this gamepad from Logitech doesn't disappoint. The response is better in digital mode than analog, and the most pads these



WING COMMANDER PROPHECY

Continued from pg 28

success, both critical and in terms of sales, of *Wing Commanders III* or *IV*. From talking to them, however, it's obvious that, as much as they respect Chris Roberts, they fall: the later games in the series crossed a little on the uncomfortable side of that fine line between game and movie.



An early sketch and a rendered model of the Confederation Vampire. Notice the pivoting engines.



As for the plot? We promised that we wouldn't give away any big secrets here, but some of the rumors you've heard are true. Even though the emphasis on video has been out back, many of your favorite characters are scheduled to return, with some contract negotiations still going on as of press time. In any case, the biggest change from earlier *Wing Commanders* is that you no longer play Blair, but a young, cocky space pilot right out of training.

The Kiltrathi do return, after a fashion, but there won't be any big kitties serving aboard a Confederation carrier. According to team members, "after what happened with Hobbes, another Kiltrathi defector just wouldn't have any credibility." The sons of Kiltrah aren't exactly the Big Bad Guys this time either. That honor goes to a mysterious alien race, who have come to view the Terrans and Kiltrathi as dangerous, and as a result, decide to take both races out. Whereas the

Kiltrathi and Confederation were pretty evenly matched, the exotic technology of the aliens means that you must come up with new tactics—a big plus for what has always been one of the most innovative space combat games.

It's a given that *Wing Commander: Prophecy* will be one of the major gaming events of the year. And while details are largely classified now, our agents are already on the case, because loyal Confederation citizens (and CGW readers) have a need to know. So stay tuned for further developments. —Terry Coleman



A formation of Pinthars.

THIS JUST IN



days, it works better in Win 95 than DOS. The pad is sleek, as advertised, and fairly ergonomic, but it also feels a bit small. More importantly, it lacks the excellent daisy-chain link-up ability of the Microsoft gamepad. A good pad, especially for action-oriented sports games, but not up to the standard set by the Gravis GriP line.

—Terry Coleman

Logitech, Inc., (800) 213-7717
PC Gamepad
Reader Service # 303

THE CITY OF LOST CHILDREN

Based on the surreal French film of the same name, *The City of Lost Children* is standard adventure fare wrapped up in a beautiful package. Sadly though, the package is empty, bereft both of story and gameplay. The breathtaking graphics are wasted, and the game fails to fully utilize its



characters, which include evil Siamese twins and a madman who steals the dreams of orphaned children. A cumbersome interface and short playing time only add to the disappointment. *The City of Lost Children* could have, should have, been so much more.

—Robert Coffey

Psychosis, (800) 439-7794
DOS CD-ROM
Reader Service #: 304

THEME HOSPITAL

In this pseudo-sequel to Bullfrog's *Theve Park*, you design, build, and run your own twisted hospital. As the administrator, you must cure various goofy ailments, maintain a healthy profit and



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HOT off the Arcade

Sega Brings Strong Arcade Lineup to the PC

Whether you think of Sega and its less-than-stellar console system, Saturn (believe me, the thoughts aren't pretty around here), you cannot deny its incredible arcade prowess. Sega dominates the arcades with top-rated games in the fighting, racing, and shooting genres. Sensing that the gaming landscape now makes single system loyalty untenable, Sega has chosen to port many of its arcade titles to the PC. So far, we've only seen the older generation, such as *Virtua Fighter 1* and *Virtua Cop 1*. This year, we're still not getting the latest from Sega, such as racing game *Siren GT* or *Virtua Fighter 3*, but we are being brought more up to speed. Here are some of the titles being ported to the PC:



Akira
from the
Virtua
Fighter
series

Virtua Fighter 2: This was Sega's premier fighting game, until the stunning VF 3 last season, and it will hit PCs in August. The game features two new fighters, more moves, and better graphics, along with LAN, modem, and internet play.

Virtua On: This is a robot fighting game with unrestricted movement in full 3D arenas. You can choose from eight robots, and duke it out against friends in split-screen, modem, LAN, or Internet play. In the arcades, the game used a dual joystick for

control, which Sega will soon bring to the PC. This MMX-only game should be available, direct from Sega, by the time you read this article.

Virtua Squad 2: Known as *Cor 2* in the arcades, gameplay is a little better this time with different tracks to choose from, more enemies, and better graphics. Sega will support PC light guns for this September release.

Daytona Deluxe: *Daytona USA* on the PC was a disaster, with terrible

graphics, no multiplayer capabilities, and a ton of console conventions still left in the code. This time, Sega will try a more sincere port, with improved graphics and multiplayer support, as well as additional new tracks and cars. *Deluxe* will ship in September.

Max TT: Based on England's Isle of Man Race, *Max TT*, Sega's motorcycle racing game, should hit desktops in July. In the arcades, you actually ride on a motorcycle prop and lean left and right to maneuver. On the PC, you won't have that immersive control, but Sega is hoping to convert as much of the fun as possible. Like every other Sega title this year, there will be multiplayer support. You'll have eight bikes to choose from, but only three tracks to race.

Last Bronx: Another fighting game, this one is set in the rough-and-tumble inner cities where police and thugs duke it out with billy-clubs and fists. It should arrive by year's end.

Young Gun: This is another racing game, with even less forgiving and more realistic handling and physics than *Daytona*. It's also due out by the end of December.—EW/Chin



Virtua Fighter 2

THIS JUST IN

reputation, and manage a staff with bizarre hobbies. There's little time to review bank



accounts and pie charts when your hospital is hit with vomit waves and you're still working on a cure for bloaty head. *THEME HOSPITAL* gives those Hillary wannabes who've been saying they could do health care better the

chance to prove it.—Dawn Jepsen
BuYing/Electronic Arts, (800) 245-4525

PC CD-ROM

Reader Service #: 305

SHIVERS TWO— HARVEST OF SOULS

The second of Sierra's puzzle adventure series aimed at older teens takes place in a desolate Southwestern backwater with more secrets and oddities than *Two Pranks*. You've come to town to investigate the disappearance of your friends in nearby Devil's Mouth Canyon, a place of legendary evil. Along with the standard sliding tile fare, *Harvest of Souls* allows players to



redesign puzzles and email them to friends.

And, if you have PPP Internet access, you can chat with other players while you play.

—Kate Redmond

Sierra On-Line, (800) 757-7707

Windows CD-ROM

Reader Service #: 306

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- Solve puzzles, avoid traps, and explore over 40 locations and 60 different scenes.



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PC CD-ROM

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CIRCLE READER SERVICE #137

The Black Onyx

Blue Planet Software is a startup gaming company that you've never heard of, but they have an adventure game in the works that is promising enough to keep an eye on. Called *The Black Onyx*, the game tells the familiar tale of a lone adventurer on a heroic quest to save the world. What promises to set this game apart from the rest of the pack is that the game's world is being designed by none other than Roger Dean, the world-famous artist whose psychedelic album covers for the bands Yes and Asia are some of the best ever created. Look for more coverage of *The Black Onyx* in an upcoming issue of *CGW*—Jeff Green



PLAYING LATELY

CGW Survey*

	Last Month	Months on Chart
1. <i>Diablo</i> (Blizzard)	1	3
2. <i>Civilization II</i> (MicroProse)	4	14
3. <i>Red Alert</i> (Westwood/Virgin)	2	4
4. <i>Duke Nukem 3D</i> (3D Realms)	3	15
5. <i>Heroes II</i> (New World Computing)	5	4
6. <i>Quake</i> (id Software)	6	7
7. <i>Privateer 2</i> (Origin)	-	1
8. <i>WarCraft II</i> (Blizzard)	7	17
9. <i>Tomb Raider</i> (Eidos)	8	2
10. <i>Daggerfall</i> (Bethesda)	9	6

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

PC Data Best-Sellers**

1. <i>Diablo</i> (Blizzard)	1
2. <i>Microsoft Flight Simulator</i> (Microsoft)	2
3. <i>Red Alert</i> (Westwood/Virgin)	3
4. <i>Myst</i> (Broderbund)	4
5. <i>Barbie Fashion Designer</i> (Mattel)	-
6. <i>NASCAR II</i> (Sierra On-Line)	5
7. <i>Magic: The Gathering</i> (MicroProse)	-
8. <i>Monopoly Multimedia</i> (Hasbro)	-
9. <i>Quake</i> (id software / GT Interactive)	6
10. <i>Tomb Raider</i> (Eidos)	7

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

THIS JUST IN



ATF GOLD

ATF Gold is yet another refresh of the creaky US Navy Fighters sim engine.

This time we're treating to a Windows 95 version of *Aerowar Tactics Fighters* and its NATO Fighters add-on. But unlike USNF 97, which



added a Vietnam campaign, all that's new here is the internet, multiplayer feature (which is, to be fair, a blast). If you already own ATF and NATO and play over the Net using MUI, there's little reason to shell out for the update. But if you missed these the first time around, what they lack in technology, they make up for in fun.—Denny Aikin

Join's Combat Simulations, (800) 245-4525

Win 95 CD-ROM

Reader Service # 307

POD

This futuristic, graphics-intensive racing game is one of the best racing games I've played in a while. The high-speed, head-to-head action (both



against the AI and other human drivers) is really exhilarating, and the 16 different tracks all provide a level of vehicular madness sorely lacking in lately-recent racing games. The cars can be fully customized, and the game has two



damage options that keep you from just crashing your way around the courses. This one's definitely worth your time.—Joe Valina

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IndyCar II with SVGA Graphics

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IndyCar II with Intense 3D 100 Graphics

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Might and Magic

SECRET OF THE INNER SANCTUM

COMPUTER ROLE PLAYING GAME OF THE YEAR - 1986

Might and Magic II

GATES TO ANOTHER WORLD

COMPUTER ROLE PLAYING GAME OF THE YEAR - 1988

Might and Magic III

ISLES OF TERRA

COMPUTER ROLE PLAYING GAME OF THE YEAR - 1991

Might and Magic IV

CLOUDS OF XEEN

COMPUTER ROLE PLAYING GAME OF THE YEAR - 1992

Might and Magic V

DARKSIDE OF XEEN

COMPUTER ROLE PLAYING GAME OF THE YEAR - 1993



Might and Magic VI

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CIRCLE READER SERVICE #344

3D Iron in the Works

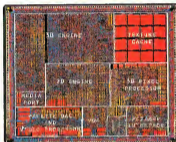
NEW-GENERATION 3D CHIPS BATTLE FOR THE CROWN



This edition of The Works has some very interesting things in the forge indeed, with Rendition, NVIDIA, and 3Dfx (among others) all preparing new chips that will be on boards later this year. And while the term "3Dfx-killer" has become the moniker du jour, it remains to be seen who's truly up to the task. That being said, let's see who's doing what!

NVIDIA has been showing an early version of its new RIVA 128, a 128-bit 2D/3D accelerator which is a complete departure from the first-generation NV1, an early arrival on the 3D hardware scene that proved to be something of a disappointment. NVIDIA is intently focused now on 2D- and 3D performance, having purloined audio functionality from the design, but RIVA 128 will also handle DVD video playback, and is both PCI and AGP ready. **STB** has announced plans to do a board based on RIVA 128. Early reports about this chip's performance have been very encouraging. We'll have a reference board in-house soon, so we can give you the early low-down.

Both **3S** and **ATI** have announced AGP parts as well, releasing details on the GX2 and 3D Rage Pro, respectively. Of the two, ATI appears to have a more complete package, offering a 3D-rasterization setup engine and a faster RAMDAC, that comes in at 230MHz, versus GX2's 170MHz. ATI will ship 3D Rage Pro boards later this year, and **Diamond Number Nine** and STB have announced plans to ship GX2-based boards later this year.



Block diagram of NVIDIA's RIVA 128-bit 3D accelerator.

Tritech Microelectronics, a relative new-comer on the 3D scene, is working on their Pyramid3D, a full-featured 3D-only chip that will also offer radiosity and specular lighting support, as well as a new kind of texture map effect called bump-mapping. The early demo I saw was very impressive, and this could be one to watch.

Rendition has their second-generation Verité V2000 family of chips up and running. One notable short-coming of the first-generation V1000 chip was a bandwidth problem when Z-buffering was enabled. Rendition has solved this problem in their new V2200, and is expecting a 2X performance increase in both 2D- and 3D performance over the V1000. Additionally, the V2200 works on either the PCI bus or on AGP, and the chip's clock speed has been increased to 100MHz (from the V1000's 60MHz). **Microsoft's** next version of Direct3D in DirectX 5 (currently in beta) will support DMA, which will benefit the

V2200's DMA-intensive rendering engine.

3Dfx has two chipsets in the works, though details were sketchy at press time: One of them, named Banshee, will likely show up both in PC boards and in Sega's next generation console box, code-named Black Belt.

Look out for the official 3D Iron Works logo in READ.ME every month to find out the very latest on all the new 3D cards and chipsets—Dave Salvatore

Ulti Soft, (415) 547-0028

PC CD-ROM

Reader Service # 308

NBA JAM EXTREME

In an era when even the real-life NBA slam-dunk contests are predictable and boring, it comes as little surprise that this isn't exactly a revelation in PC hoops entertainment. Takin' the rock to the hole would be much more fun if NBA Jam Extreme didn't require a P133 to look about the same as NBA Live 95 on a 486-33—especially considering that there are only four players on the floor instead of ten. The sluggish controls might be OK if you were simulating 1940s-era contests, but for today's fast-paced game? Dr. J,



TEN PIN ALLEY

Attempting to recreate the whole bowling alley experience, Ten Pin Alley allows players to control the bowler's attributes, ball weight, and material, and even lets them create a desirable ambiance for the game. Choose between modern rock 'n' roll alleys or cheery refs from the 60s (with accompanying

where are you when we need you?—Bry Coleman Acclaim Entertainment, (516) 759-7500 PC CD-ROM Reader Service # 309



lounge music). Turns are decided by clicking on the bowling meter to decide the power spin, and release of the ball. Although the system works, it soon becomes repetitive, and is no match for the precision of the computer's AI.

Almost all of bowling's nuances seem lost in the mouse. —Matthew Schaefer

ASC Games, (203) 655-0032

Win 95 CD-ROM

Reader Service # 310



AWE 64

SOUNDS OF

WAR

1. Kiboom!
2. Grenades.
3. Deafening Silence.
4. 60mm Shells.
5. The Creak Of Uzi Fire
6. "Incoming!"
7. "That Was A Close One."
8. Random Gunfire.
9. "Private Curtis Jones, 51st Airborne"
10. Anti-Tank Guns.
11. The Clink Of An Aluminum Mess Kit.
12. Dangling Dog Tags.
13. Ricocheting Bullets.
14. Sigh Of Relief.
15. A Harmonica Playing Yankee Doodle.
16. Give peace a chance.
17. Flight Of The Valkyrie.
18. Shovels Diggin Trenches.
19. Prayer.
20. Dirty Jokes.
21. "Sniffle."
22. Nervous Laughter.
23. Letters From Children.
24. Bombs bursting in air.
25. Battle Plans.
26. "Over The Top, Boys!"
27. The Battle Hymn Of The Republic.
28. Bullets Whizzing Past Your Helmet.
29. Random Snipers.
30. Surface To Air Missiles.
31. Anti-Aircraft Fire.
32. The Doors Playing "The End."
33. The Whistle Of Tracers.
34. "Medi Medi!"
35. The Star Spangled Banner.
36. The Thunder Of An Air Strike.
37. "Hi The Det."
38. A Rain Of Debris Landing All Around 'Ya.
39. Taps.
40. "Ummpp!"
41. Low Flying Sidewinders.
42. Straling From The Air.
43. A1-47 Assault Rifles.
44. Standard Issue M-16's.
45. The Sharpening Of Bayonets.
46. The Hiss Of Mustard Gas.
47. A Declaration Of Peace.
48. Rain.
49. Howitzers.
50. The Cheer Of Victory.
51. Oulet.
52. The Low Rumble Of Bombs In The Distance.
53. The Squawk Of A Radio Call For Help.
54. Com chatter.
55. "Summerr Now!"
56. Troops Marching.
57. Jungle Animals.
58. "The Bleasts In The Army, They Say Are Mighty Fine."
59. The Angry Creak Of Your Commander.
60. A Tropical Storm.
61. A Blazing Oil Well Fire.
62. Unrolling Adhesive Bandages.
63. "Light!"
64. "I Wanna Go Home."

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Commanding Conquest

Eidos Is Hopeful About Its Real-time Contender

It seems that after *Total Annihilation*, everything Eidos is peddling is supposed to be a sure-fire hit.

That's a lot of hyperbole, but their real-time title, *CONQUEST EARTH*, has some interesting features that could at least elevate it above the rabble.

Like many other games in this genre, *CONQUEST EARTH* features aliens as the villains. You can play either the humans or the inhabitants of Mars. The two sides will not only have different units and

buildings, they'll also have completely different interfaces. The humans will have a very hi-tech interface, while the aliens' interface will be organic. When their monitors open, you'll see membranes pull apart to reveal a screen; when the monitor shuts off, the membranes will close like eyelids.

CONQUEST EARTH will also feature some technical advancements, such as being able to show FMV within gameplay windows. When a barracks is destroyed, a live-feed will pipe through one of your monitors, and you'll watch full-motion video of the barracks being destroyed. You could even have multiple FMV sequences playing in several monitors on the side of the interface while the action is still raging on the game screen.

Whereas other games are trying to downplay



Concept art of one of the aliens in *CONQUEST EARTH*.

the action aspect of real-time games, *CONQUEST EARTH* is embracing it. You'll actually be able to seize control of individual units and control them, as in action shooters. This action will still take place from the top-down perspective, but it allows the twitchy gamers to take an even more active role in the combat.

CONQUEST EARTH is slated for release this summer. A mission editor will come with the game, and Eidos promises many grotesque cut-scenes to, er, flesh out the alien invasion storyline.

—ELOY CHIU



Other Eidos Titles to Look for in the Coming Months:

For those of you having Lara withdrawal symptoms, do not fear: The lovely lassie will return at the end of the year in *Total Annihilation 2*. Miss Croft will be showing off her latest weapons and exercising some new abilities as she battles it out with more bad guys. If that seems a long time away, check out the *Total Annihilation: Unfinished Business* expansion pack, available now.

FORSAKEN, Eidos' new single-player adventure/RPG has you battling with monsters, dragons, and wraiths in your efforts to overcome evil. Banished to a lonely island, you must persuade the other exiles to join in your efforts to vanquish the wicked Warlord. Available early 1998.

DEATHTRAP DUNGEON, Eidos' 3D action/combat game (based upon Ian Livingstone's fighting fantasy game-book series), offers ten levels of hack-'n'-slash conflict, set within the confines of a dark and ghostly dungeon. The game has multiplayer capabilities (up to four players via network or internet) and should be available in October.



Eidos' *FORMULA ONE* racing game, based on the 1995 season using the official Fuji license, features 13 teams, 17 circuits and a new networking system that allows up to 26 people to player against each other.

DAIKATANA, the first game from John Romero's new development company, Ion Storm, is a first-person 3D action/RPG that uses the Duke engine. The player travels through time in search of the mythical Daitatana, an ancient Japanese sword. Frag-fans do not fear: the game also holds lots of opportunity for multiplayer deathmatch action. *DAIKATANA* is slated for a November release.

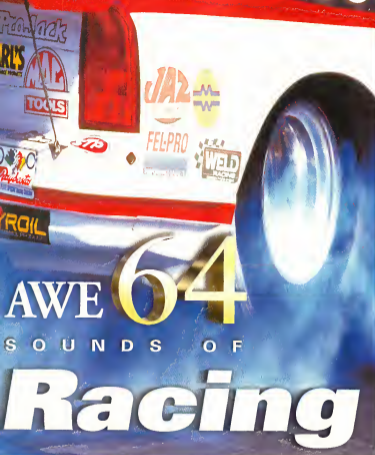
Eidos' flight sim line-up includes *FLYING NIGHTMARES 2*, *CONFUSED KID*, *JOINT STRIKE FIGHTER*, and *TEAM AMCHIE*, all of which will be covered next month in our Flight Sim Roundup. Eidos' Plus, *FLIGHT UNKNOWN II* is featured in this month's Flight Sim feature. —Charlotte Panther



Death Trap Dungeon

Locke, one of the characters in *FORSAKEN*.

CREATIVE



AWE 64 SOUNDS OF Racing

1. Cars Taking Off.
2. Brakes Screaming.
3. Hubcaps Scraping.
4. Crowd Cheering.
5. "Place Your Bets!"
6. Engine Sizzling.
7. Hears Pounding.
8. Refueling.
9. Wheels Peeling.
10. Breaths Of Anticipation.
11. "That Was A Close Shave."
12. Cars Colliding.
13. Backfires.
14. Engines Revving.
15. The Roar Of A Crowd.
16. Fiery Explosions.
17. Skidding Into The Pit.
18. Engine Problems.
19. Shrieks Of Excitement.
20. Vroomooooom.
21. "Low Fuel."
22. Jamming On The Brakes.
23. Gears Shifting.
24. Ambulance Siren.
25. Sighs Of Relief.
26. Engines Restarting.
27. Traction Of Bald Tires.
28. Crowd Going Wild.
29. "Last Lap!"
30. Starting Gun Fling.
31. Hubcaps Flying Across The Track.
32. Tires Blowing.
33. "Hurry! Fill 'Er Up!"
34. Engines Choking.
35. Tires Being Changed.
36. Nuts And Bolts Flying.
37. Grandstand Cheering.
38. Gears Grinding.
39. Slamming On The Brakes.
40. Turning Swifty.
41. Pile-Ups.
42. Tires Rolling Off.
43. Skidding Uncontrollably.
44. Loud Screams.
45. Crowds Felling Silent.
46. Collision.
47. Thunderous Booms.
48. Deafening Ooies.
49. Quick Turns.
50. Sudden Stops.
51. Reflex Braking.
52. "Danklemon, Start Your Engines!"
53. Engines Sputtering.
54. Drop Of The Checkered Flag.
55. Head Gasket Exploding.
56. Hitting The Wall On Turn 3.
57. Cheering A Winner's Name.
58. Creaking Of The Chassis.
59. Radio Static.
60. Looching Your Hood.
61. Accelerating Past The Finish Line.
62. Champagne Cork Popping.
63. Congratulatory Slaps.
64. Wizzing Past.



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THE HEAT Is On

SegaSoft Prepares to
Join the Online
Gaming Ranks

With scores of
companies jump-

ing aboard the online gaming bandwagon, the necessity for original and eye-catching content is greater than ever. SegaSoft is the latest contender to strut its stuff in cyber space with its new Internet gaming network, HEAT.net.

HEAT will offer a free area where players can access most of the games and chat rooms, and a premium area with exclusive games, tournaments, and special events, which will be available for a minimal fee (SegaSoft anticipates the service will cost between \$40-\$50 per year). HEAT

will also be supported by advertising, and the company plans to make viewing an ad worth your while. Clicking on an ad buys you frequent player points, which can be exchanged for goodies at online stores, or used to buy power-ups in games.

HEAT uses Mpath's low latency technology and also supports IPX-technology allowing gamers to play third-party games like Quake over HEAT. SegaSoft is developing a selection of exclusive titles for HEAT, the most interesting of which could be NetFischer, the first fighting game created specifically for Internet play. SegaSoft hopes that the animated action sequence as each character moves will help counter the latency issue. What we've seen so far—well-rendered characters each with their own distinct fighting style—is impressive, but only



Who's That Girl? Valkyrie's Nikki could give Lara Croft a run for her money.

hands on gameplay will tell if the latency problem has truly been resolved. We'll keep you posted.

Other games include Solo, a fast action, multiplayer shooting game filled with a host of power-ups and special weapons; Alien Race, an action/strategy game which allows three teams of ten people to compete against each other in an attempt to protect their own alien territory; and Heat/War, an eight-player search and destroy strategy game.

SegaSoft will also release Valkyrie, an action/adventure game with a Mission impossible-type story in which you play one of eight members of an anti-terrorist group. Using the photo realistic AnyWorld Dynamic 3D engine, the game boasts stunning lighting and real-time transparency effects. It will support LAN and Internet (over HEAT) play.

SegaSoft's fast paced 3D adventure game, Swiss, is set in persistent universes where each mythical character will visibly age as they gain experience. Playable over HEAT, this floating world will accommodate thousands of inhabitants including Angels—both good and dark—Demons, Dragons, and Griffins.

And, for those who still feel intimidated by Internet play, SegaSoft has something else to offer. Later this year, it will release Lose Your Marbles, an addictive and well-thought out Tetris clone. Available as a retail-only product, Lose Your Marbles can be played against the computer or against a real-life opponent (either on the same keyboard or via LAN). —Charlotte Panther

PIPELINE

Admin vs. Bull	MicroPro	7/97	
Action: Spindrift	Avan Hill	7/97	
Agents of Justice	MicroPro	Fall 97	
Battle Spire	Bohemia	9/97	
Black Dahlia	Isle 2	Fall 97	
Buccanor	SSI	9/97	
Byzantium: The Betrayal	Discovery Channel	Summer 97	
Carnage	SSI	Summer 97	
College Football II	MicroPro	9/97	
Creatures	Mindscape	7/97	
Demons	SSI	10/97	
Decisive Battles of WWI	SSI/SSG	7/97	
Dink	Isle Storm	12/97	
Die by the Sword	Interplay	Summer 97	
Earthshaker	SSI	late 97	
Epic Warhammer 40K: Redemption	SSI	early 98	
European Air War	MicroPro	late 97	
Evolution	Discovery Channel	Summer 97	
Falco	4.0 MicroPro	late 97	
Fallout	Interplay	Summer 97	
FPS Football	98 Sega	10/97	
Front Page Sports	Skiing Sega	10/97	
Flyin' Highways II	Edco	7/97	
Gothic	cock.com	Fall 97	
Hammer	6 Acclaim	7/97	
Heavy Gear	Activision	Summer 97	
Home II	Activision	7/97	
Imperialism	SSI	9/97	
Island of Dr. Morano	Psychosis	8/97	
King's Quest: Mask of Eternity	Sierra	12/97	
Miss of War	Sabery First	Summer 97	
Mig Alley	Empire	Fall 97	
Myat 2: River	Boulder	Fall 97	
NFL Legends	Acclaim	9/97	
NHL Powerplay	DS	9/97	
Quarterback Club	98 Acclaim	Fall 97	
Pacific General	SSI	7/97	
Pacific Tide	SSI	Fall 97	
Panic	General II SSI	11/97	
Pendium II	Inter	Summer 97	
Pendium III	EA/Bandai	10/97	
Prey	Apogee/3D Realms	Spring 98	
Quake III	id	12/97	
Rebellion	LucasArts	Summer 97	
Red Baron II	Sierra	9/97	
Redguard	Bohemia	10/97	
Return to Krondor	7th Level	Summer 97	
Sabre Ace	Virgin	9/97	
Scramble	Demands Activision	Fall 97	
Secret of Valkyrie	Fury Interplay	Xmas 97	
Summer FI	Intermedia	May 97	
Sin	Activision	3/98	
SODA 98	Road Racers	Parsons	Fall 97
StarCraft	Blizzard	8/97	
Steel Panthers III	SSI	11/97	
TFX 3	id	late 97	
Tony	Rebellion	Boulder	Fall 97
Trespasser	Jurassic Park	DreamWorks	12/97
Turk	Dinosaur Hunter	Softdisk	Spring 98
Ultima On-Line	Origin	Summer 97	
Unreal	id	10/97	
WarBroods	Boulder	Fall 97	
WarCraft	Activision	Blizzard	10/97
X-Fighter	Sierra	late 97	
Zork: Grand Inquisitor	Activision	10/97	

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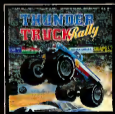
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Live From CGDC...

...With second and third generation 3D chips at CGDC all showing marked improvements over the first generation chips, it looks like by early 1998, we'll see the quality of even the average 3D chipsets shooting up. For the full story, check out 3D Iron Works.

...If you're looking for fun toys, **Microsoft** and **Logitech** will both be introducing Force Feedback joysticks. We were impressed with the initial feel, but we'll reserve judgment until we see how they affect actual gameplay.

...For those who require total immersion, **Interactive 100** is developing a virtual reality cockpit simulator. Gamers will be able to play their favorite PC flight sims from inside a realistic cockpit. This peripheral interfaces to the PC through the standard joystick port. For racing fans, Interactive 100's model JD Virtual Vehicle is already available.

...Despite the sudden flourish of real-time strategy games, six out of the seven developers we spoke with said that they are working on turn-based projects. Why? They'd rather be one amongst a dozen turn-based games than be one of the hundred real-time C&C clones being produced this year.

...CGDC's annual Spotlight Awards Ceremony produced some interesting winners: **Duke Nukem** won Best Action Game, beating out **Mario 64** and, more surprisingly, **Quake**, while **Mario 64** achieved the coveted title of Best Game of 1996, winning over **Quake**, **Tom Racer**, and **Civ II**.

...**3D Realms** announced that the next Duke project, **Duke Forever**, will use the Quake engine. And, in related news, a new level for **Duke Nukem 3D** was recently announced. In **Penhouse Pwnage**, Duke comes to the rescue again. This time he'll be saving **Penhouse Pets** from aliens. And no doubt getting a little lovin' in return.

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Computer Gaming World to Report Live From E3

Want to know about the latest game news as it happens? On June 13, 1997, our E3 News site will come to life as a preview for what will be the most exhaustive daily

coverage of the gaming event of the year—the Electronic Entertainment Expo (June 19–21). We'll be going live at 12:01 a.m., on June 19, with breaking news, interviews, features, and analysis—all constantly updated and posted directly from our private press room located on the show floor in Atlanta.

More than 50 editors and reporters—the staffs of *Computer Gaming World*, *GameSpot*, *News*, *PC GameSpot*, *VideoGameSpot*,

Electronic Gaming Monthly, *EGM2* and *P.S.X.*—will combine forces to create an up-to-the-minute real-time news service.

Our team will produce hundreds of stories over the three days of E3, including previews of games, breaking coverage of announcements, and exclusives such as the full story of the much-anticipated new title from game legend Sid Meier, the creator of *Civilization*. Get ready to bookmark our Web site at www.e3news.com.



CGW Helps Launch First 3D Benchmark

Ziff Davis Benchmark Operations (ZDBOp) and CGW unveiled the much-awaited 3D WinBench at the recent Computer Games Developers Conference. 3D WinBench is the most complete Direct3D benchmark available, and will be a staple in CGW's testing arsenal to evaluate all new 3D graphics hardware. Written using Direct3D's Immediate Mode (the same mode Direct3D games use), 3D WinBench provides not only a single 3D WinMark score, but also breaks down performance, showing where specific tasks were executed (by the 3D accelerator or by the CPU). To download your copy of 3D WinBench, check out www.zdbop.com.

In addition to WinBench 3D, we're also introducing LivePlay, a new game-based testing method that uses fixed controller input to DirectInput. What this means for you is that we'll be able to give you the low-down on real game-play performance with all the gaming ingredients live: physics, audio, AI, and controller input.

We'll also be testing with the hottest new titles as they ship, so you'll know how the latest 3D hardware accelerates the latest titles. We'll be making this tool available on the Web at www.computergaming.com, so watch for it in the coming weeks.—Dave Salvaor

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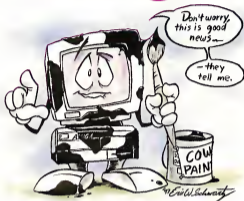
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Amooga



Cartoon: Eric W. Schwartz

The death of the Amiga is often lamented by hundreds of thousands of former users (and a number of *CSW* editors) who fondly remember the machine smoothly doing things in 512K of RAM back in 1985 that are still clunky on a 32MB Pentium Pro today.

Well, to paraphrase Twain, the reports of the Amiga's demise may be exaggerated. Although Escom, the German company who purchased the rights to the Amiga, followed Commodore into bankruptcy, the machine has been rescued again, this time by Gateway 2000. The company was slated to announce the machine's future at a press conference at the World of Amiga show in London in mid-May.

And Amiga pundits may yet get their wish—the Amiga could still become the world's most popular computer. A Chinese company has purchased the rights to build an updated version of the Amiga CD32+ console (68030 processor, CD-ROM drive, and a modem) for the Chinese market. Although targeted mainly to play CD movies (which sell for \$1 each in China due to the lack of copyright protection), if you plug in a PC-compatible keyboard, you have a full-blown computer at a fifth of the price that an IBM-compatible sells for in that country. With China's huge population, the Amiga platform may yet gain the success it missed the first time around.—Darryl Atkin



Die-hard Quake fans, pack your bags and prepare to hit Dallas: The second annual Quake Convention will take place July 16 through July 23 (as of press time, a specific location had not been confirmed). Organizers expect the five-day fest to attract players from as far afield as Australia. At last year's convention, industry veterans, including members of *id* and *Hypnotic*, showed up to *Deathmatch* alongside fans. This year's sponsors will include John Romero and the *IDN Storm* gang. For up to the minute information about this year's event, check out www.quakecon.org. —Charlotte Panther

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CIRCLE READER SERVICE #373

Activision Reveals Gear and Weapon Specifics for HEAVY GEAR



The Grizzly is the backbone of the Northern Guard's gears. It has sophisticated armament and 70mm armor.



Gamers who prefer joining the Southern MILICIA may end up piloting this medium tank from the Southern arsenal.



LIGHT PARTICLE ACCELERATOR



RAPID-FIRE BAZOOKA

In an exclusive to *Computer Gaming World*, Activision has revealed two of the gears (giant robotic fighting machines), and two of the heavy weapons to be featured in their upcoming *Heavy Gear* combat simulation.

As expected, the Northern Guard will be represented by the Grizzly model gear. The Grizzly is equipped with 70mm armor, as well as the following weapons: M225 Heavy Autocannon, GH-8 Rocket Pods, GU-10 Galling Gun, M25 Pack Gun, TD-76 Morlar Unit, and the HW-1 Vibroknife. It has a running speed of up to 40 kph and a rotating speed of up to 65 kph.

The Southern MILICIA will feature the versatile medium-class gear known as the Mamba. The Mamba is equipped with 56mm armor, as well as a PR-55 Autocannon, Vogel-8 Rocket Pod, two GL-01 Grenade Launchers, VU-11 Vibromachete, and HG-C4 Hand Grenade. It runs at up to 55.4 kph, and glides at a top rolling speed of 84 kph. It is also rumored that the Southern MILICIA will rely more upon the King Cobra gears than the basic Spitting Cobra gears as their heavy units.

Both sides will have a variety of weapon modules with which to equip their gears. As of press time, CGW had secured images for two basic weapons: the Light Particle Accelerator and the Rapid-Fire Bazooka. As in the original sourcebook, the Light Particle Accelerator will have an effective range of 400 meters, and can penetrate up to 100mm of armor. It's a good thing that it takes a heavy unit like the grizzly to handle one of these weapons, since the weapon is not only capable of penetrating the heaviest gear's armor, but doing electrical damage to said armor once it penetrates. We haven't seen an image for a Heavy Particle Accelerator yet, but this heavy weapon is expected to be used only with Strider vehicles—huge support artillery. The *Heavy Gear* design team has not confirmed this, however.

Technically known as the Paxton RFL-2 Soothsayer, the Rapid-Fire Bazooka may be the most versatile weapon in the arsenal. It has the same 400-meter range as the Light Particle Accelerator, but a higher level of penetration (200mm of armor). Think of it as a burst-firing rocket launcher that can be used by any size gear.

These are the first definitive specifications and images received on the gears and weapons themselves, though we saw Hunters, Grizzlies, and Mambas when we played the prototype for our recent cover story (April, 1997). More will be posted on our Web site (www.computergaming.com) as we get closer to fall. —Johnny Wilson

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WE SWEAT THE DETAILS Technical Editor Dave Salvatore, a former lab-man from ZD Labs, and Contributing Technical Editor Loyd Case prepare to evaluate some poultryware.

CG LABS GOES LIVE

The editors of CGW are proud to announce the opening of CG Labs, the most reliable source for computer game hardware testing. Our new hardware lab is designed to evaluate all manner of gaming gizmos, from CPUs to modems to joysticks. We've got a variety of systems, ranging from a garden-variety P133 all the way up through 200 MHz MMX Pentium boxes to see how components (and games) perform on a variety of CPUs. These systems talk to each other over a LAN, where we can test games' playability over IPX (LAN protocol) and TCP/IP, the Internet's protocol, in putting together our top-notch networking hardware,

we partnered with ZD Labs, Ziff-Davis' big labrums testing facility.

We'll be using our usual arsenal of testing tools, which include WinBench 97 and the new 3D WinBench (the first definitive 3D benchmark). We'll also test performance with actual DOS and Win 95 games to see how the latest, and supposedly greatest, fare. In Windows 95 games testing, we'll be using our new LivePlay testing, where we'll use pre-recorded input scripts to navigate real gaming environments, and get repeatable, apples-to-apples comparisons of how different hardware stacks up. These test results will reflect games-based performance with all cylinders firing: audio, AI, joystick input, physics, even multiplayer processing. Soon, you'll be able to download our actual CG Lab test scripts from our Web site, so you can put your own system to the test and see how it does. We'll have downloadable test scripts for graphics boards (2D & 3D), sound cards, CD-ROM drives, hard-drives, game controllers, and entire systems. They should be available late this summer, so stay tuned.

Look for the CGW/CG Labs-Approved seal for our top picks in hardware products throughout the magazine. 

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CIRCLE READER SERVICE #064



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CIRCLE READER SERVICE #141

Target Release Date: October, 1997

Developer: Activision

Publisher: Activision

A Whole Grue World

The Great Underground Empire Rises Again in a Brand New Zork Trilogy

by Jeff Green

On May 25, 1977, *Star Wars* was released to the world, and a universe was born. Eight days later, so the legend goes, a group of MIT programmers, including Dave Lebling, Marc Blank, and Tim Anderson, created a universe of their own. The result was *Dungeon*, a text-based fantasy adventure game that ran on mainframe computers. This game eventually evolved into one of the first text adventures—and one of the best games, period—ever to appear on a personal computer: *Zork*.

As with *Star Wars*, the first *Zork* game was only the beginning. For the next 20 years, over the course of ten games, the story expanded, encompassing roughly 750 years in the history of the Great Underground Empire, a land inhabited by evil sorcerers, dimwitted kings, man-eat-

ing grues, and you—the quick-thinking adventurer. Along the way, the *Zork* series set a standard for humorous, yet brain-busting, gameplay that few other adventure games have ever come close to matching.

THE NEW ZORK

Now, exactly 20 years after *Dungeon* was conceived, Activision is embarking on the most ambitious *Zork* project to date: *Zork Grand Inquisitor*, due this October, is the first in a trilogy of games that will fill in another huge chunk in the *Zork* timeline, and will take gamers back to visit some of the series' most legendary characters and locations.

Zork Grand Inquisitor begins in the year 1057.

The Great Underground Empire has fallen on hard times ever since the end of the Age of Magic in 966 (as recounted in *Beyond Zork* and *Spellbreaker*). Since then, the evil Mr. Yanick has seized control of the Empire through his mastery of



HONEY, I SHRUNK THE GAMER The Grand Inquisitor's totem, where those who practice magic are cut down to size.

technology and, to ensure his domination, has dubbed himself the "Grand Inquisitor" and forever banished the practice of magic.

As the game opens, you, the anonymous adventurer, have arrived in Port Fizzle, where you discover a lantern containing the trapped, disembodied spirit of the Dungeon Master, who, in the game's opening cut scene, had been obliterated by Yanick. You grab the lantern, descend into the Great Underground Empire via a secret entrance, and embark on an epic adventure to save your friend, restore magic to the world, and defeat the Grand Inquisitor once and for all. To accomplish your tasks, you'll need to travel back in time to recover three legendary treasures: the Coconut of Quendor (from *Beyond Zork*), a Cube of Foundation (from *Spellbreaker*), and the skull of Yorik (a character in *Zork Nemesis*). Along the way, you'll visit some of the most famous spots in the *Zork* universe, such as G.U.E. Tech and



TWICE THE FUN An artist's rendition of the two-headed beast guarding the Gate of Hades. You'll need to figure out a way to get past this bad boy.

the legendary white house, and meet with some of its most famous characters, including everyone's favorite sorcerer, Belboz.

ZORKER THAN THE REST

Since transforming from text into graphic adventures in 1993, the Zork series has been a mixed bag. The first effort, *Return To Zork*, was a bit cheesy, and suffered from an incomprehensible interface. The second, last year's *Zork Nemesis*, was a very popular game, but was a departure for the series in many ways. Activision Microsofted the Zork universe with undeniably beautiful graphics and a dark, portentous storyline, but came up short on the humor that had always been a hallmark of the series. Of all the games in the series, *Nemesis* was the least Zorky Zork.

With *Zork Golem* in house, Activision is wholeheartedly embracing the Zork legacy while restoring the sophisticated look of *Nemesis*. ZGI employs the same "Z-Vison" engine created for *Nemesis*, which allows 360-degree panoramic scrolling within each scene, but the graphics themselves have taken on a lighter, less austere tone to match the game's more comic approach. Activision is also promising more interactivity with the environment (rather than just one or two hotspots per pretty picture), as well as a more populated world—consisting of both live-action and computer-generated characters—to help give the game the kind of vibrancy that made the old text adventures so great. Other refinements include a new inventory system, which will let you store, examine, and combine objects, as well as a dynamic map, which fills in as you explore the world and allows you to quickly move between places you've previously visited.

The biggest (and most welcome) change, however, is the incorporation of a spellbook, given to you at the beginning of the game by the enchantress Y'Gael (from *Beyond Zork*). As you progress through the game, you'll learn a total of 18 spells, which are divided into three classes: High Magic (the power to create or destroy), Middle Magic (knowledge-based; allowing you to see and comprehend concepts), and Deep Magic (the power to transform and use alchemy). Some of the spells, like *resort*, will be familiar to fans of the *Enchanter* trilogy, while others were newly created for this game. Many of the puzzles in ZGI directly involve the use of spellcasting, which ties in to the game's main storyline of restoring magic to the world of Zork.

THE REST OF THE STORY

Finally, you should know that *Zork Golem* is just the beginning of the story. Activision recently revealed to us that ZGI is the first ad in a planned trilogy of games, which will tell the entire tale of the fifth-century struggle between the forces of magic and technology. The second game, scheduled for



TOOLS OF THE TRADE Behind the glass lies your map and your sword. Take them first, and then break the glass.



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Christmas, 1998, will place you in the role of the Dungeon Master, who must protect the Great Underground Empire and stave off a rebellion led by the Grand Inquisitor's ghost. The third game, projected for Christmas, 1999, will conclude the story with a battle between the forces of the Eastlands, including the Dungeon Master (you again) and the evil forces of the Westlands.

If Activision stays with this program, *Zork* fans have a lot to look forward to, which is good news indeed. Just remember to keep your elvish sword armed and that lantern burning bright—it looks like we'll be on the lookout for grubs for years to come.

From The Beginning

0
Enchanter
founds
Kingdom of
Quendor

730
Lord Darnit
flithes founds
Great Underground
Empire

948
ZORK I-III (1981-83)
Anonymous adventurer replaces
original Dungeon Master after find-
ing 20 treasures and defeating
Wizard of Frobozz.

952
ENCHANTER (1984)
Defeat of warlock kills by
amateur Enchanter, who
is promoted to rank of
Sorcerer.

966
BEYOND ZORK (1987),
SPELLBREAKER (1983)
Rebuilding of universe
and end of Age of Magic.
Coconut of Quendor
recovered from the
Implementers.

1047
RETURN TO ZORK
(1993)
Disappearance of
East Shambler. Defeat
of Morpheus by
adventurer.

666
Duncanbrax dis-
covers under-
ground tunnels.

883
ZORK ZERO (1987)
Collapse of Great
Underground
Empire.

949
ZORK NEMESIS (1996)
Actions of four rogue alchemists
spawns the Nemesis, who
haunts the Forbidden Lands.

957
SORCERER (1984)
Defeat of daemon Javar by
Sorcerer. He replaces Belboz as
head of Circle of Enchanters.

1067
ZORK GRAND INQUISITOR (1997)
Grand Inquisitor outlaws the practice
of magic and tortures anyone who
disobeys his wishes.



WITVEN



Target Release Date: July, 1997

Developer: Origin

Publisher: Electronic Arts

Ultima Unbound

Lord British's Dream World Becomes a Virtual Reality

by Terry Coleman

Ultima Online is no mere dungeon romp to be blitzed through in an afternoon. Like *Duress*, it manages to capture the flavor of the live *Dungeons & Dragons* games we enjoyed in high school. But unlike *Duress*, this game has the depth of a traditional RPG. After a hands-on look, I'm convinced that *Ultima Online* is the most ambitious role-playing game ever attempted on paper or silicon.

Mondain, the great Foezie in *Ultima I* (and *Ultima II*), had his soul corrupted by powerful magic, causing him to twist the Gem of Immortality to his evil will. When the hero (this is before Avatarhood, folks) finally overcame Mondain, the intermediate evil was ended. But the Gem of Immortality was

shattered into thousands of pieces, each containing a mirror-image of Sosaria.

This back story allows for multiple worlds, which is a good thing, because it's doubtful that if 20,000 people want to play *Ultima Online* on the same weekend, they're all going to fit in a single game world. When you want to switch from one *Ultima Online* world to another, you can't take your worldly possessions, such as a building that you own, with you. This has engendered consternation in some *Ultima* fans: I'm all for having control of your gaming environment, but if you move from Boston to Milwaukee, you can't take your house with you, so what's the problem? In any case, you should be able to keep your character stats intact, so most players shouldn't have a problem exploring strange new worlds as they open up for business in the *Ultima Online* universe.

BUT HOW DOES IT PLAY?

The environment is intense, and teems with depth (and despite what you may have read elsewhere, the engine is *not* based on that of

Ultima VII). Those who really aren't into quests and want a sort of extended chat area can live a perfectly fine virtual life as a baker. Of course, if your pastries become renowned throughout the land, you could lead an ancillary existence as a purveyor of information to travelers seeking adventure. Likewise, a blacksmith known for crafting swords with a well-honed edge will be highly sought after as well.

While being a craftsman really is role-playing in a general sense, most of us crave a bit more action and suspense in our daily RPG lives. I don't want to give away any major plot twists, but be assured that there are plenty of things going on in the *Ultima Online* world. Some are obvious, such as Lord British's struggle to impose order and virtues upon the world, and the attempts by the forces of chaos (supposedly led by Lord Blackthorn) to stop him. Others are more subtle, involving the manipulation of magical forces, the finding of hidden teleportation areas, the binding of strange creatures, and the like.

Then there are the guilds. There are straightforward guilds of craftsmen, and even assassins'

**CG
ON-
LINE**

Check out our in-depth interviews with Lord British and *Ultima Online* Producer Starr Long at www.computergaming.com.



DO YOU HAVE AN APPOINTMENT? Players who decide to do outrageous things, such as drop in on Lord Blackthorn unannounced, are likely to find that the game engine does not suffer fools lightly.



WALKING FAST FOOD While much of *Ultima Online* takes place outdoors, there are plenty of quick dungeon ramps available, where the assortment of *Ultima* denizens look to be more intelligent than the usual AI monsters.

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CONVERGENCE RPG Universes blend in *Ultima Online* much as they do in the paper RPG world. This is the symbol of the Abetor of Cithria, a player-generated guild.

guilds (I can't wait to see what Senator Leiberman has to say about this game). When

Ultima Online first went into internal testing, one group immediately announced its intention to stay Lord British (you have to wonder about their job security), and immediately thereafter, another group formed to stop them.

In addition to the obvious mayhem that will ensue simply from guilds with diametrically opposed philosophies, there will be those who will frequent the world simply to prey on other characters. To keep such gamers from having a collection of *Ultima* scalps to line their virtual trophy case (next to their ears from *Dawko*), the designers have multiple lines of defense.

The game engine remembers when a character has committed a misdeed, and will actively pursue and arrest you in towns, and may even offer an armed escort to merchants or travelers to protect from highway robbers. If this fails, keep in mind that the Origin staff will be playing the game on a regular basis, with the capability of removing malcontents. This doesn't mean that they will adopt a Big Brother attitude, just that they aren't going to stand by and watch a handful of players disrupt the structure of the game world. If you wanted, for example, to create a Robin Hood-like character, and your band of merry mayhem makers did more than just kill everyone who came through, chances are you'd be left alone, because you would contribute to the game's ever-evolving myths.

GHOSTLY PLEAS

Another problem with cheaters is that they tend to conveniently "lose connection" whenever they aren't winning. In *Ultima Online*, if you break off connection, other than in a safe house or a pitched combat, your character remains in the game for five minutes—an eternity if you are locked in mortal combat.

Should you die in the game, you don't simply pop back up, *Quake*-style. First, you wander the world as a ghostly apparition, and your skills begin to diminish (all skills improve when used successfully, and diminish with lack of use). You can try to communicate with mortal

characters, but unless they possess the Sory skill, your typed messages to them appear as only "Dooooo." By the time you manage to find the appropriate shrine and gain resurrection for your character, your former body will have been reduced to a mere shell, deprived of its flesh, clothing, gold, and armaments.

QUEST DU JOUR

In addition to the overall storyline, the designers wanted players to experience manageable chunks of the *ULTIMA Online* flavor. There are countless mini-quests, similar to those you would find in a traditional CRPG, but with a twist: both the game AI and other players will often oppose you in your quest in order to achieve their own goals.

If all this sounds incredibly ambitious, it is. Whether Origin can make this a profitable venture remains to be seen. For now, they plan to charge a nominal fee, and evidently, when you purchase the game (which is only available boxed at retail), you will receive a number of free hours online. It won't be as inexpensive as *Dawko*, but there will certainly be more long-term replay value.

The ability to go on quests and interact with human players, supported by a rich network of non-player characters, makes *Ultima Online* the closest that computer gaming has come to the rich level of interactivity and camaraderie we've always enjoyed with paper RPGs. When you add in the rich background of the *Ultima* world, and the incredible amount of activity generated by gamers themselves, *Ultima Online* will almost certainly be greater than the sum of its parts. It's hard to ask more of a role-playing world than that. ☞

form his own company. "I've done that. And while I remember the excitement of a startup company, I also remember the pain," says Garrick.

At a time when he could kick back, retire to his mod-*cool*-style mansion and enjoy his millions, Garrick is visibly excited about the future of *Ultima*. While he wouldn't discuss specifics past *Ultima IX*, he squashed another rumor by saying that the ending of this trilogy

and the publishing of *Ultima Online* will not be the grand finale of the series. While cycles might point to the amount of money EA and Origin would make from additional sequels, it was obvious to me from the twinkle in Lord British's eye that he views his birthchild as much more than a cash cow—that's good news for all RPG fans, and *Ultima* fans in particular.

"ULTIMA ONLINE is the most innovative product in computer role-playing since the original ULTIMA."

Ultima Online

(along with this upcoming *Ultima IX*) marks the highest level of involvement for Richard

Garrick (Lord British) in game design and development in several years. It has a bit of all his games' best sustained virtues of *Ultima V* (the moral ambiguity of *Ultima VI*) and the mystery of *Ultima VII*, all wrapped up in a shiny technological package that the young, idiosyncratic designer of *Alphastar* could scarcely have imagined.

Contrary to persistent rumors, he is not, like compatriot Chris Roberts, considering leaving to



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(Centauri Galaxy)

Fe

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Ex

Extinction
.0148

SU



Suffocation
.002

Re

Rebellion
.081

It

Intellect
.890

Gm

Global Maps
.703

Mp

Multiplayer
.1005

Sv

Survival
.703

Tc

Tactics
.0202

Ad

Adrenal
.289

Gm

Combat
.03

Sa

Sabotage
.011

Ct

Construction
0.000

Ev

Evacuation
.302

An



Anxiety
.0488

Cd

Command
.105

SE

Solaris E
.505

M

Mopala
.171

Fi



Fire
.189

Me

Meteor
.52

Vc

Volcano
.005

Wp

Wreckage
.408

Cnf

Confederation
.002

Ms

Mission
.0849



Element of Surprise



Element of Danger



Element of Destruction






Element of Disaster



Overkill

Terra > Outpost 2

Cn Colonists .03	Rt Real-time .011	A Action 0.900	Cp ^a Competition .302	Ds Disaster .0408	Tn Tastostorons .034	Ae Atmosphere .071
M Magma .12	Me Miepohe .118	Ps Psychosis .9054	F's Fusion .5005	D Dangar .0054	Cy Coupago .0202	Va ³ Vacuum of space .288
g Ginger .03	Mi Mining .091	Di Discovery .001	Rs Research .032	Dn Desperation .217	Bc  Balance .1003	Dn Day and Night .055
 Element of Captain Death			Cy  Conspiracy .111	St Stipology .1005	T^on Technology .071	Ak Attack .0334

Terra is a distant memory. All that remains is a handful of humans who chose to follow you to the stars. Getting here was the easy part. Now you must battle fire, nature and half the human race to save your people from certain extinction. Survival is just the beginning.

OUTPOST 2
DIVIDED DESTINY™



SIERRA™

Target Release Date: July, 1997

Developer: Mythos Ltd.

Publisher: MicroProse

X-COM 3

MicroProse Plays It Safe With X-COM: APOCALYPSE, but Gamers May Be Sorry

by Martin E. Cirulis

Tight gameplay, challenging AI enemies, and the best premise/storyline seen in a wargame yet earned X-COM—a true underdog classic—CGW's 1994 Game of the Year Award. Then, a year later, X-COM

2: Tension from the Deep arrived, and, while it was still a good game, there was no doubt the CGW critics that MicroProse had rushed out less-than-ideal MOTS (More Or the Same) sequel to capitalize on the surprising popularity of the original. In the most part, this plan

worked, but left the majority of X-COM fans a little dissatisfied. After all, we had gone through all that effort to blast those big

eyed pests from Mars, just to be told "Oh yeah—there was a whole load of 'em under the ocean that we forgot to tell you about!" At the time, I can remember placating myself with the assurance that this game was just a quick thrill to keep us busy while MicroProse worked on something really stupifying for X-COM 3.



► **SWAMP THING**
This ugly reject from the Black Lagoon is one of the alien invaders from X-COM: APOCALYPSE.

Well, soon we'll see if that's true. We recently acquired a late beta of X-COM: APOCALYPSE to get a feel for the third member of this alien brood. Has MicroProse listened to the desires of fans who wanted something more this time around? The answer is an unequivocal...kind of.



► **DRESSED FOR SUCCESS** X-COM fans will be familiar with many of the gameplay elements in Apocalypse, rather than depend on design, MicroProse has simply narrowed the game's scope.

THE FUTURE'S SO DARK...

Despite your stunning victories over the aliens in the previous X-COMs, Apocalypse begins with things worse off than ever for humanity. This time there is nobody to blame but ourselves, since we've managed to steer the Earth so far into environmental upheaval that the only livable place left on Earth is one domed Mega-City: Holy Judge Dredd!

Here was my first hint that perhaps the vision of Apocalypse, despite the fact that the game returned to the hands of the original designers, was a little murky. This premise is



The something from the Ways to Butcher Continuity Handbook. I'm not sure it's a good idea from the fans' point of view to set up a game where previous victories are made utterly pointless. "Gosh, I sure am proud I helped stop the alien hordes so that the world was free to be destroyed by human beings instead." I mean, how much worse could it have been if the aliens had won?

Despite this little environmental screw up on our part, it seems more aliens are hot for our goodies. But this time they are coming from another dimension, and infiltrating the last bastion of civilization left on Earth. Of course, since there just isn't that much left to conquer, the little mutants have had to scale down their invasion accordingly, and are now subtly infiltrating various companies across town and trying to take over from within.

Luckily for us, the old X-COM manuals are found lying around, and a covert ops organization is quickly assembled to identify and neutralize the menace, even if it



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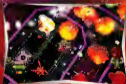
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means ultimately cracking open the Alien Dimension and kicking gray butt permanently (or at least until X-COM 4).

...YOU GOTTA WEAR HALOGENS

At this point, you're probably wondering how deep you have to look to see if this is another *MOTS* sequel. Unfortunately, you better be prepared to peer into the details, because this song seems pretty familiar. What we are really dealing with in this sequel is a change of scale, rather than great leaps in design.

Instead of a planet, you're protecting a city instead of the aliens infiltrating countries that then stop funding you, the aliens are infiltrating companies. Instead of fighting in cities, you are fighting in individual buildings. Instead of cruising about in assault ships, you are driving around in APCs. Instead of finding a way to Mars to destroy the alien stronghold, you have to find a way into another dimension to destroy the alien stronghold. Beginning to get the idea?

To be fair, the beta I played had some borderline RPG elements, and sometimes this was enough to make me forget that all this seemed a little too familiar. Having to scan through the city, looking for signs of alien infiltration and trying to decide which corporate leader has been subverted has a nice edge to it, and if the final version is a little less cut-and-dried about things, it could make for very interesting



BIG GUNS You'll need weapons like this to destroy the aliens, but you'll also need to use your wits to ferret out those corporate CEOs who have been subverted by the subtle alien invasion.

REAL-TIME VS. TURN-BASED: The Debate Continues



FIRE, FIRE Judging from X-COM's current real-time AI, this game won't silence the RT critics. The enemy AI is simply too stupid to provide any good challenge, and your troop AI suffers just as badly.

Currently hoping to please both sides in the hottest debate to hit wargaming since the invention of the hexagon, *Apocalypse* offers the option of playing either the traditional and elegant turn-based tactical combat engine from X-COM 1, or indulging the part of your mind that likes to think on the move with real-time combat.

Unfortunately, unless the beta I played changes radically, it will only fuel the fires of pedantic players everywhere and confirm their bias that real-time combat is merely a gimmick. While RT could have gone a long way to make *Apocalypse* refreshing, the current implementation lacks the AI required for realistic combat. If this game is going to offer a real alternative to turn-based tactical play, there has to be a lot less maling around on the part of the aliens and more useful reactions from your troops.

Points have been made in the past that real-time is used to cover up poor AI, but there is a subtler point to be made as well. Conversion to real-time exposes just how weak wargame AIs have always been. I suspect the antics I observed in *Apocalypse* were simply the same algorithms that were so challenging in X-COM 1 and 2: they just can't hack it in a more realistic environment. For real-time to work at the tactical level in this (and any other) game, programmers have to adopt the dynamic routines of flight sim AIs instead of just taking the pause out of turn-based algorithms.

gameplay. Severe penalties for busting up a legitimate board-meeting could help to put some real thinking and detective work into this title, something that would be a giant leap in distinguishing it from its predecessors.

ALL THIS AND A FACIAL

Of course, it wouldn't be a late '90s sequel without the full SVGA-graphics facelift. The city looks great, like a spiffed up *Sid City 2000* city with lots of little moving vehicles and the occasional alien dimensional rift to keep your eyes glued to the screen. Oddly enough, the only place where the sight-'n'-sound upgrade isn't gratifying is in the combat engine, where instead of increasing the already delightful detail of the previous games, SVGA graphics have made everything, especially the agents and aliens, very small and generic. I hope this will change before the final version is burned onto a CD.

The real drawback to this game is that it just isn't very daring or innovative. The designers seem so unsure what made the original great that they don't want to risk drifting far from the formula, and this is bound to disappoint most of us who were hoping that the long wait between X-COM 2 and 3 would evolve the game.

It may be debatable whether this game needed an increase in scope more than it needed a narrowing, but even with this single-city storyline, a little more effort could make it seem less contrived.

At this point it's easy enough to say that if X-COM 1 and 2 left you wanting more of the same, then *Apocalypse* should satisfy. The franchise has been brought up to modern standards in everything except multiplayer, but aside from that, the designers have played it safe and chosen not to take this franchise to a new level. We'll just have to wait until July, when the final version arrives, to see whether this underwhelming sequel can become the instant classic the original was. **C**

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CIRCLE READER SERVICE #366

Target Release Date: July, 1997

Developers: SSG

Publishers: SSI

Lean, Mean Wargaming Machine

There's No Fat in This Bulge From SSG and SSI

by Tim Carter

The German surprise attack through the Ardennes Forest in the winter of 1944 was a closely guarded secret. Prior to the attack, no one at the Allied High Command believed the Germans would even launch an offensive operation, which suggests that the secret was indeed well kept. Appropriately enough, SSG's new Bulge wargame is being reeled under similar conditions of secrecy. The project is so hush-hush, in fact, that it almost didn't have a name.

Originally begun as *The Last Burrows*, SSG's latest recreation of the Battle of the Bulge couldn't be called that, or many other more recognizable Bulge-type names, for a considerably more prosaic reason: The battle has been

done so many times in both cardboard and digital format that the publishers had a real problem finding a decent name that had not already been copyrighted. Thus, it is now the long-winded, if somewhat descriptive, *Decisive Battles of WWII: The Ardennes Offensive*. When it arrives on your hard drive, however, your surprise should be considerably more pleasant than the infantryman's treat of the boat—literally—who woke up Dec. 16th, 1944, to find a couple of SS Panzer Divisions in their Corn Flakes.

SOMETHING OLD, SOMETHING NEW

The Bulge has been rethought so many times on computers and boardgame battlefields that one has to ask, "Do we need another Bulge game?" Based on the beta, I'd have to say that we aren't getting much that's earth-shatteringly new here. Gaming veterans will quickly recognize the terrain, as well as the strategic challenges, diem-

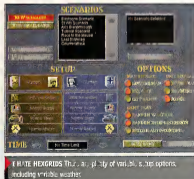


A TRUE BLITZ This Ardennes Offensive doesn't sacrifice authenticity for its crisp graphics and accessibility.

mas, and trade-offs. Is this a bad thing? Absolutely not.

What the folks at SSG seem to be aiming for is not so much an entirely new look at the Battle of the Bulge as it is a definitive, clean, and highly playable look. It's a design that gives players all of the options and the choices that characterized the battle, with few of the cumbersome problems that ragged the boardgames or the clumsy interfaces that got in the way of computer-based enjoyment.

Decisive Battles has it all: rough terrain, roadway congestion, supply difficulties, blown bridges, limited intelligence—all the components that make the Battle of the Bulge so interesting to strategy wargamers. Also, it's one of the few Western front WWII battles that gives both sides a chance to attack within a decent time frame.



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ARRIVING JULY 1997!



CIRCLE READER SERVICE #356

Like most Bulge games, *Decisive Battles* breaks the majority of divisions down into three separate regimental units. A few independent battalion or regimental units also come into play, as do engineers and independent artillery.

Each unit may have up to three steps which can be destroyed in combat and replaced through, well, replacements. As one might expect, as units become depleted their combat strength diminishes, so that your forces can be gradually eroded away. Thus, management of replacements is a key issue both for sustaining a defensive line and keeping the momentum when attacking.

The terrain is generally a pain to traverse, particularly along the main German axis of attack. It includes twisting roads, many bogs (that likely will be blown up by the time you get to them), woods on all sides. Lateral movement—crucial to breaking out both from the starting point and later Allied defense lines—can require considerable finesse and planning.

Speaking of combat, the designers have included virtually every factor one could expect into the combat tables, so that careful planners and good tacticians will be rewarded with considerably better odds. (See the sidebar for a more detailed explanation.)

Following in the footsteps of many computer wargames of late, *Decisive Battles* looks like a board wargame, with a hexagonally based map and cardboard-counter like units. As an additional homage to the Avalon Hill classics of old—including multiple editions of a *Battle of the Bulge* game—the stacking rules allow only three units per space.

From the beta it looks as though *Decisive Battles* will be playable head-to-head, live via modem or LAN, or by email. As some German turns took me well over half an hour, I suspect that the email option will be the most frequently used. As the larger campaign games are only 32 or 64 turns long, this seems quite functional, and the interface and familiar turn-based system are well-suited to an email format.

One small quibble I have with the version I received was the lack of any kind

of historical variants. All of the scenario options appear to be based on a purely historical rendering of the battle. As with many other wargames, this means that gamers get a single campaign game covering the entire battle and then a multitude of scenarios that each cover one small element of the campaign. A little variability in the arrival of reinforcement, or perhaps some political tinkering, could give the game added playability at little cost to the historical version.

Sure, purists would be appalled, but they can stick to playing the historical game and sending historical messages over Usenet. As for me, I like to have as many opportunities for new and different challenges as possible.

KILLER AI

As one would expect from the folks at SSG (and SSI, for that matter), the artificial intelligence looks pretty strong, though the scenarios were still far from being balanced at press time.

All in all, I suspect that *Decisive Battles* will be a big hit with the wargaming crowd. The beta looks good, plays quickly and easily, and rewards those who are willing to plan carefully, count hexes, and fiddle with the odds.

There are a few missing pieces. For instance, the traffic congestion markers on my version didn't display a number indicating the number of movement points added—which the documentation says will be in the final version. Also, the computer never blew bridges when on defense, a crucial flaw that makes the Americans somewhat easy to overrun at present.

But these are minor quibbles, especially since this beta was more fun to play than many finished products I've seen. Against a human opponent, *Decisive Battles* should be a tense and enjoyable game, probably the best ever on the *Battle of the Bulge*. Now, when are they going to apply this system to the Western Desert? ☞

FAST-PACED, FLUID COMBAT



The true test of a wargame is how it deals with combat. *Decisive Battles* does a masterful job of organizing attacks in such a way that most of the factors one would like to see in a wargame come into play. The results are fair, and for the most part, reasonable. They are also random enough that you can't predict every outcome, and less sanguine gamers may find themselves fingering toes by the end of the game. Here, Panzer Lehr, 580 Infantry, and elements of the 116th Panzer Division close in on Allied infantry units in the town of Marche.

The German player then commits some or all of the units adjacent to the town. It's very easy to select and deselect eligible units while keeping an eye on the final odds, thus allowing you to tinker with the attack units you have just the right mix.



The computer totals the basic attack and defense factors as well as bonuses (or penalties) for divisional integrity, supply or entrenchments. It then computes odds, which in turn are modified. The defenders get a four-column odds shift simply for being on defense, plus additional column shifts for artillery support within range. The attackers get shifts for stacking from multiple directions, for artillery, for tanks, and for air support.

Having all the combat info you need on one screen makes force management easy, and the computer conveniently shades off units that have moved already as well as those that have attacked. With Panzer divisions stacking up one behind the other on the narrow Ardennes roads, this system of bookkeeping keeps the game fresh and quickly paced.



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A dramatic scene from the game 'Lands of Lore: Guardians of Destiny'. The background shows a stone tower with a dragon flying in the sky. The dragon is dark with yellow wings. The sky is a mix of purple and blue. The tower is made of stone and has a wooden railing on top. The text is overlaid on the scene.

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Target Release Date: Summer, 1997

Developer: Strategy First

Publisher: Strategy First

Admiral On Deck

Fighting Sail with a Command Perspective

by Johnny L. Wilson

It has been said that captains fight ships, but admirals win battles. Strategy First's *Man of War* is designed for those who long to be the latter. Those who want to fight their ships independently like the young Horatio Nelson will want to avoid this game like the plague. However, anyone who wants to plan battles by pouring over charts, issuing doctrinal orders, commanding via semaphore, and weaving the results of their commands from a 3D deck will love *Man of War*.

THE ADMIRAL'S GLASS

Important decisions are made in *Man of War* before you ever sight upon the poop deck. You must determine the tactical doctrine under which your fleet will fight before the game itself actually begins. At what range will your ships begin firing? How closely will they engage the enemy? Is it your goal to board enemy ships? Will the ships maintain a certain range? These

questions must be answered prior to the game's start, and will ultimately set the pace of the whole game.

In a "captain's" game, you decide the individual course of your ship, the type of shot with which you'll load your cannons, whether to fire low or high, and most importantly, when to fire. In *Man of War*, an "admiral's" or "commodore's" game, you determine whether the entire fleet or one particular division will form line of battle or follow the flagship. You decide when individual ships, a division, or the whole fleet must make

more or less sail. You may order a damaged ship to drop out of formation or signal other ships to more closely engage. If things are going exceedingly well, you can order the fleet to engage in a general pursuit of the enemy.

SIGNAL, CLOSE ACTION

As it did in the mostly text-based Simulations Canada game of the same



FIRE ON THE UPROLL *Man of War* does have some graphic flair, including cannonball splashes and smoke.



FORM LINE OF BATTLE Orders are executed from this view at simulated four minute intervals.

name, the action takes place in simulated four-minute turns. At the end of the simulated four minutes, you get a chart view from which you can signal individual ships, divisions, or the entire fleet with new instructions. If you are a "control freak" in your wargaming tastes, or like real-time strategy with lots of clicking, *Man of War* simply doesn't offer enough to do. It is, however, an ideal game if you want a real taste of command where you get to pace a 3D deck while seeing the consequences of your orders occurring on a 3D canvas, complete with cannonball splashes in the water, smoke drifting from enemy ships, and battered sails indicating the damage taken (and inflicted). Even so, it's sometimes nerve-wracking to await the end of that simulated four minutes and intervene with your superior tactical wisdom. But that's where it gets interesting for me.

The command perspective isn't for everyone, but for those so inclined, *Man of War* could be the Horatio Nelson of fighting sail games. As a command simulation, it's the kind of game that would make Lady Hamilton proud. ☺

FINALLY A GAME THAT

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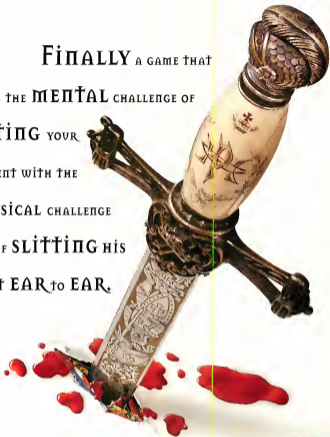
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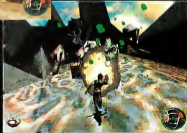
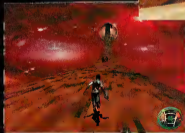
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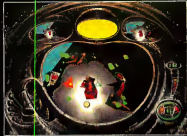
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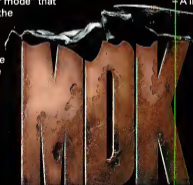
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AIR COMBAT SUMMER

Part One of Our Exhaustive Look at the Future of Flight Simulation

Strap in and get ready for an afterburner takeoff. The next year, with nearly 25 new simulations and sequels in development, is going to be an exciting one for flight simulator pilots. In our two-part series, we'll give you the scoop on what flight sim fans can expect, and when the companies hope to deliver. This month we take in-depth looks at five of the most anticipated sims due in the coming months, including the first-ever look at JWC's F-15 and the first hands-on playtesting of Virgin's Svere Ace.

Next Month: We'll bring you the inside story on the rest of the pack, including F-16 Vires, X-Flaners, Su-27 Flanker 2.0, and Sparrow Deceives Own Enemy.

BY DENNY ATKIN



Jane's F-15

Taking the Lid Off Origin Skunkworks' Project "Big Bird"

In an unassuming office park on the outskirts of Baltimore, a team of designers is meticulously working to duplicate one of the U.S. military's highest-tech weapons systems. By poring over documents obtained from the Air Force and NASA, examining satellite data, consulting with ex- and active-duty military pilots, and gathering data from one of the most respected authorities on military operations in the world, they've managed to replicate the most minute details of this system. The project is covered by a shroud of utmost secrecy. When questioned as to what they're up to, team members only own up to the project's ambiguous code name: "Big Bird."

In late April, I traveled to Maryland and infiltrated this secret office. The East Coast branch of Origin Skunkworks, to be exact, where for the last year a team with credits that include such acclaimed sims as F-19 Stealth Fighter, F-14 Fleet Defender, and F-15 Strike Eagle III has been working on the next product for Jane's Combat Simulations. As the first



journalist to ever enter the offices, I felt like I was about to be let in on a great military secret. Some of the team members seemed anxious to spill the beans, while others appeared to feel awkward to be revealing what's been kept secret for so long. They cued up a video, and Desert Storm footage flashed by the screen. Then the product name appeared: Jane's F-15. Yes, the Eagle flies again.

Striking Eagle

The project is being headed by Andy Hollis, who's most recent product was the 1996 Premier Award winner for simulations, Jane's AH-64D Longbow (Longbow was created by the other division of Origin Skunkworks, based in

Jane's F-15
Estimated Release Date: Early 1998
Developer: Origin Skunkworks East
Publisher: Jane's Combat Simulations

Austin, Texas). His previous hit was Micro-Prose's F-15 Strike Eagle III, so he brings a proven track record to the F-15 simulation. The members of his team bring equally impressive experience, with products on their resumé that read like a list of the best simulations of the '80s and early '90s.

Jane's has, so far, focused on two types of simulations: survey sims, such as U.S. Navy Fighters, where you can fly an entire range of related aircraft, and specialized sims such as AH-64D Longbow, where a single aircraft is simulated in exacting detail. Jane's F-15 is one of the latter, focusing on the F-15E Strike Eagle, the dual-role strike fighter version of the McDonnell Douglas jet.

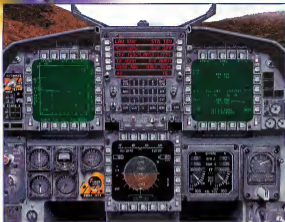
Model Excellence

By focusing on a single aircraft, the team is able to simulate its performance and systems in exact detail. The most groundbreaking aspect of Jane's F-15 is the flight model. In previous sims, developers have gathered data on aircraft performance and attempted to create routines that will let their modeled planes approximate that performance data in common circumstances. The Skunkworks team took a different approach: They obtained the math that the Air Force itself uses to model aircraft characteristics—DATCOM, a series of huge books that incorporate pretty much everything the Air Force has learned about flight—and they've incorporated those equations directly into the program. The DATCOM research was publicly funded, so it was available to the team—although not easy to obtain.

But that was only part of the puzzle: The DATCOM formulas model aircraft stability and control, but in a general respect. To use them,



▲ **ALL-ROUND EAGLE** The F-15 pictured here is the "fifino" F-15C pure-fighter variant; the F-15E models will be even more detailed.



INSTRUMENTAL FEATURES The F-15E's systems are modeled in such detail that you'll actually be able to use the mouse to interact with the up-front control panel and MPDs.

you need stability derivatives for the specific aircraft you're modeling. Luckily, the team was able to enlist the help of a group of Air Force engineers who shared the unclassified F-15 performance coefficients. Once the data was plugged in, the Air Force engineers ran the same tests as the Jane's F-15 team so they could compare and check the data. NASA documents were used to fill in the gaps for modeling different speeds and angles of attack.

By using the actual flight equations, all the plane's performance characteristics "come for free," says Greg Kresale, one of the sim's designers. "Instead of making the sim's physics fit a performance curve, by modeling the actual characteristics, the performance falls out," Kresale says. "So all the subtle effects we get, because we're doing it for real. You don't have to deal with the weird transitional stuff—it's there," he adds. With earlier sims, things like stalls, flat spins, and speed bleed had to be specifically modeled as "special case" items.

For the DATCOM formulas to work, you also need a very realistic atmosphere model. With this, you get many of the details that other sims leave out—control surfaces that have less effect at higher altitudes, and Mach numbers that change depending on altitude. Jane's F-15 is likely to be the first sim that approximates

what it really feels like to pass through the sound barrier—transonic effects on aircraft handling are also part of the flight model.

All Systems Go

Once the initial data was plugged in, the team was ready to test the flight model. And when they first took their virtual Eagle into the skies, they realized something was terribly wrong—the plane was a bear to control, and didn't feel right at all.

There was nothing wrong with their math: It turned out they were indeed properly modeling an F-15—an F-15 without the Computer Aided Stability (CAS) system, that is. Although the F-15 isn't a fly-by-wire aircraft, it does have (and requires) a set of computers to counteract the basic instability that makes it so maneuverable.

Rather than trying to find a workaround, the team set out to recreate the functionality of the F-15's autopilot systems. When you engage various autopilot modes—altitude hold, altitude

hold, bank angle hold—the program doesn't just move the plane into the right position, it actually imparts the correct inputs to the control surfaces to stabilize the plane.

External stores—weapons and fuel tanks—are all modeled with the proper weights and aerodynamic drag. You'll see significantly different handling between a "clean" F-15E and one armed to the teeth. "It's gonna be a pig when it's all loaded up," says Kresale. When you release weapons, the plane's balance and aerodynamics will be affected accordingly.

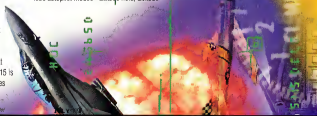
Because the F-15 isn't a fully fly-by-wire plane like the F-16, the flight computers don't put limits on what the pilot can do, and that may cause problems for gamers used to being able to jerk the stick all the way back. "If you yank back on the stick in one of these airplanes, you'll kill yourself," says Kresale. "The F-



BACK SEAT DRIVER Jane's F-15 also lets you operate all the back-seat weapons systems officer functions.

15 will let you do what you want. This thing will pull a 15 G maneuver and break itself up into a thousand pieces." Varying G limitations in different flight regimes are part of the flight model, and you'll find there are some flight modes where pulling 9 Gs is a fatal no-no.

Cockpit systems are also modeled with exciting detail. The standard combat view will be of the



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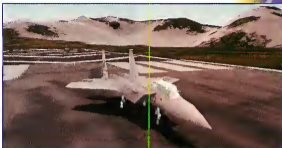
heads-up display (HUD) with the very top of the instrument panel showing. Look down into the cockpit, though, and you'll see an exact replica of a real F-15E's instrument panel; the same applies for the WSO (weapons systems operator, pronounced "whizzo") position in the rear seat.

Views outside the cockpit are of the type used in *Air Warrior 2* and *Warbirds*, with eight primary directional views, as well as up and down modifiers for each view. It is hoped that the adoption of this viewing system by the Jane's F-15 team will help promote it as an industry standard.

The up-front control panel and the multifunction displays (MFDs) all have functioning buttons, and you can work your way through replicators of the F-15's actual system menus. This is provided not only for realism fans, but also for those virtual pilots who'd rather not have to learn dozens of keypresses to operate the jet's various systems.

The complete suite of systems is modeled, with a few exceptions. Although radar control is realistically modeled, for example, there are some esoteric modes that are almost never used by actual F-15 pilots. Jane's F-15 will faithfully replicate all the air-to-air and air-to-ground modes that pilots do use.

"We want to provide realism, but in a way where it's for the benefit of the user," says



TAKE OFF, EH With the sim's realistic weight model, you'll find takeoffs and landings have a different feel. Please don't nose, and when the plane gains enough speed, it will cause the plane to leave the runway.

Hollis. "We're not out to out-knob and out-switch everybody. What we want to do is provide all the options that are appropriate and provide access to them in an intuitive way."

That doesn't mean you'll need F-15 training to take to the skies, though. Simplified modes will also be available, and realism levels can be adjusted for individual systems and aircraft characteristics. "Where things are intuitive," Hollis says, "we provide it the real way but also in a way where beginners can figure out how to do it." And there's no penalty for playing with everything

set to simplified mode. "Far be it for us to tell you how to have your fun," he adds.

Sightseeing

At this early stage, F-15 is up and running with only 2D graphics cards, in 256-color mode. Don't think that dooms you to slow, blocky graphics, though. The reality-based flight model the system uses actually depends on a last frame rate for accuracy, as the flight calculations can't have much of a real-time gap between updates. Hence, the team has worked to insure smooth frame rate even on mid-range Perfurms without 3D cards.

If you examine the screens that accompany this article, you'll notice there's no blockiness in the terrain textures. The team is doing a sort of software simulation of bilinear filtering that scatters pixels at color borders. It doesn't match hardware filtering, but it's a dramatic improvement over traditional 2D filters.

Real-time light sourcing is present. Many of the F-15E missions were flown near dawn and

McDonnell-Douglas F-15E Strike Eagle

Type: Two-seat, dual-role fighter/attack plane.

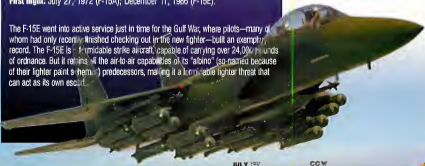
Power plant: Two Pratt & Whitney F100-PW-220 turbofans, each rated at 23,450 lb. thrust.

Armament: 20mm M61 Vulcan cannon; up to 24,500 lb of external weapons including AMRAAM and AIM-9 missiles as well as various bombs and air-to-ground missiles.

Maximum speed: Mach 2.5.

First flight: July 27, 1972 (F-15A); December 11, 1986 (F-15E).

The F-15E went into active service just in time for the Gulf War, where pilots—many of whom had only recently finished checking out in the new fighter—broke an exemption record. The F-15E is a formidable strike aircraft, capable of carrying over 24,000 pounds of ordnance. But it retains all the air-to-air capabilities of its "albino" (so named because of their fighter paint scheme) predecessors, making it a formidable fighter threat that can act as its own escort.



dusk, so be prepared for some dramatic shadowing effects as morning breaks. Aircraft are also realistically lighted—as in real life, a glint off a canopy may be your first visual indication of an enemy aircraft.

Into the Action

The sim will feature three modes of play: quick action, single missions, and the mission builder. Quick action lets you set up a dogfight against a single aircraft type, or a strike against a ground target that can be optionally defended by air assets.

Single missions focus around the game's elaborate mission builder. Not only will you be able to set the typical mission characteristics—target, waypoints, altitudes, defenses, and so on—but the mission builder also incorporates events. You can trigger actions in the scenario based on a goal being completed, or on aircraft entering a certain area, for example. Instead of designating specific targets, you can create an area goal, where you're tasked with taking out as many targets as possible in a predefined kill box.

Not only can you edit briefing text, but you can also associate your own text and voice messages with events. Debriefs aren't fixed for win/loss, but can be based on a goal matrix where the text will vary depending on which of a number of goals were reached.

The campaign is planned to mix the best elements of dynamic and scripted campaigns

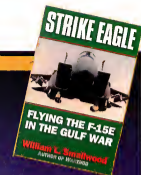
Expert Advice

George Wargo, a former F-15 pilot, is an advisor for Jane's F-15 (he also served this role for F-15 Strike Eagle II). Along with his experienced advice on mission structures and flight modeling, Wargo also provided a connection that allowed the Big Bird team an unprecedented opportunity to test their routines: he was able to get them onto a real F-15E base.

The team was able to fly for hours in F-15E simulators, checking performance characteristics, filming HUD/FUR tapes, and recording warning sounds and the Blitche' Betty voice. They were also able to work in switchology labs that allowed them to more exactly replicate the functions of the various switches and MFDs. In addition, they taped interviews with

Although the campaigns aren't randomly generated, your actions do affect future missions. Destroy a bridge in one mission, and it will still be demolished if you fly over it in the next mission. On a following mission, you may see a portico bridge, and a few missions later a partially built replacement. In addition, if you fail to take out a target, you may be tasked later with taking it out again.

While individual missions may be prescribed, some elements are randomized, so you



F-15E pilots and WSOs, some of whom were Desert Storm veterans.

If you want to get a jump start in preparing for the sim, locate a copy of *Strike Eagle: Flying the F-15E in the Gulf War*, by William L. Smallwood. Published by Brassey's, this exciting retrospective served as an unofficial "bible" for Big Bird's development.

can't always count on the same interceptors coming from the same area. Aircraft and target locations can change.

At any rate, you won't be relying missions in a campaign in an effort to better your score. Campaigns are handled at a squadron level, and if your pilot is killed on a mission, you'll need to choose a new Pilot and WSO to fly as in the next one. Taking away the ability to rely a failed mission adds another level of realism, and makes bringing your plane back intact even more important.

Both campaigns in the sim are based around Iraq. The first is a historical campaign based on Operation Desert Storm, the second is a hypothetical campaign that assumes Saddam hadn't stopped at Kuwait, but had pushed into Saudi Arabia.

More to Come

There are dozens of other features that I don't have room to go into, such as severable custom weapons loads and optional resource management. At this stage of development, there's still plenty left for the team to add to the simulation. The whats and whens of 3D card support and multiplayer play are still to be decided, and the missions are still under development. Look for a detailed, hands-on preview in these pages as Jane's F-15E grows closer to release.



DOWN LOW Real-time, shadowing and software pixel shading work together to give the desert terrain an authentic look.

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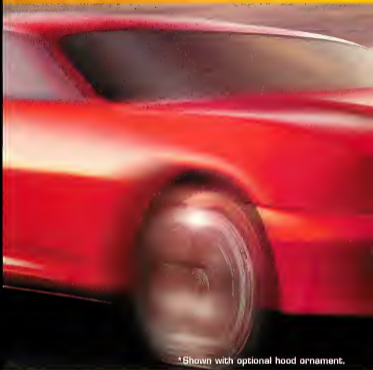
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Falcon 4.0

The Long-Delayed, Much-Anticipated Combat Sim Finally Nears Completion

We've been waiting for it so long, its code name around the CGW offices is Godot. But on a recent visit to the Spectrum Hobbyline offices in Alameda, I saw evidence that Falcon 4.0 was indeed coming together and meeting its development milestones. The current plan is to ship the program before the holidays. That goal certainly looks achievable, but considering that we first saw the program in late 1994, we're remaining cautiously optimistic.

Falcon 4.0 is philosophically similar to its predecessor—a detailed, reality-oriented F-16 Fighting Falcon simulator designed to appeal to the hard-core expert sim pilot, but with simplified options to make the sim accessible to beginning pilots as well.



Falcon 4.0

Estimated Release Date: Late 1997
Developer: Spectrum Hobbyline
Publisher: MicroPress

without perceptible pop-up effects. You'll also be able to replace the ground textures with Gouraud shading to

New Dimensions

Although the Falcon series is centered much more on realism and gameplay than on eye candy, you can't help being blown away by the sim's graphics. Falcon 4.0 runs in 16-bit (64,536) colors, even without the help of a 3D card. On a 2D graphics card, terrain and aircraft look wonderful. Running on a 3Dx Voodoo-based 3D card, the sim's display was so realistic that I was actually in danger of becoming airsick while watching someone else fly.

As you'd expect, all the game's objects, in the air and on the ground, look dramatically better than those in Falcon 3.0. Everything is fully texture-mapped. The rolling terrain is smooth,

boost frame rate on slower machines. Of course, all this graphics detail takes plenty of horsepower. Final requirements aren't available yet, but it appears that the sim will require a Pentium 90 if you have a good 3D card, or a Pentium 166 if you have only a 2D card.

Options abound in the cockpit. In addition to a fixed instrument panel, you'll find a scrollable virtual cockpit, as well as full-screen view with pop-up MFDs.

For situational awareness, three padlock views are available to track enemy aircraft. There's a tweaked version of the original Falcon 3.0 padlock system, a view that uses the virtual cockpit to track the enemy, and a Back to Back style setup with small windows that appear around your HUD showing the direction and orientation of enemy planes.

Expect understandable radio traffic to enhance the cockpit environment, with wingman transmissions such as "SAM has lock, evasive!" to further enhance your situational awareness. Radio calls are handled realistically, with locations referenced relative to a pre-chosen point ("Target 55 miles north of bullsseye!") rather than absolutely.



HERCULEAN EFFORT Escort missions will be among the many mission types created by Falcon 4.0's dynamic campaign.



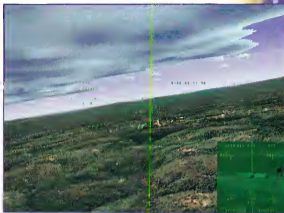
SAM STRIKE In a territory this packed with surface-to-air missiles, you might want to consider hugging the rolling terrain.

Multiplayer All Alone

Falcon 4.0 was designed from the ground up as a multiplayer game. To that effect, except for Instant Action, you're always running in multiplayer mode. Mission setup and the combat environment doesn't change whether you're the only one in the skies or you're playing with six friends. In fact, you could even start a mission as the only human player and have a friend call and join as your wingman while you're en route to the target.

The sim supports the TCP/IP protocol for LAN, modem, and direct-connect play. Bandwidth is the only limitation on number of players—there's no hard-coded ceiling. Ten has an exclusive deal for online multiplayer play, so don't expect to see easy support for direct Internet connections. It that's the case, however, it's almost certain that Kali or a similar product will find a way to bridge free Internet play for Falcon 4.0.

That's not to say that you shouldn't consider the Ten option, however. Not only will the service provide a low-latency connection and matchmaking, but it also has the potential to provide an Air Warrior/WWarenz-style persistent arena. The development team hopes to work with Ten to create a server that will allow you to fly missions, log off, and come back the next day to find that 24 hours have passed in the game world, the war has continued, and the bridge you blew up yesterday is still gone. The hooks are already in the game for such a connection.



CLEAR VIEW Pop-up MFDs let you remain in full-screen HUD view; a full instrument panel is also available.

Mission Orders

Falcon 4.0 will have four modes of play. Instant Action is designed to get you up in the air for quick combat. You can fly immediately, or configure air-to-air or air-to-ground combat, your starting position, and enemy skill level. Scoring is based on a point system where each plane has a base score (roughly the cost of the aircraft), and there's a modifier that depends on how many planes are shooting at you. You pay points for each weapon you fire, so you won't want to indiscriminately lob Sidewinders around.

Dogfight Mode is basically Instant Action tailored for multiplayer. Configure up to four flights

of four aircraft, which can have a mix of human and AI pilots. Range, separation, start altitude, and weapons (all-aspect vs. rear-only IR missiles) are all selectable. Dogfights can be dynamic, where players can enter and leave at will, or you can start only when everyone's ready.

Tactical Engagement is where you'll find the mission builder. A series of missions will be included, and you can design your own or download them from the Net. You can configure virtually every aspect of a mission here, placing ground troops, air targets, waypoints—the works.

The meat of the game is the campaign mode. This is a real-time, truly dynamic campaign engine. In fact, it's so real-time that, as you're working with the campaign interface planning your next mission, your airbase can actually come under attack, forcing you to scramble in its defense.

The campaign engine will provide you with a list of missions appropriate to the current battle situation. Once you choose a mission, you can use the flight planner to modify its parameters. In addition to adjusting waypoints, you can alter altitude parameters and climb rates (best speed to altitude or a fuel-conserving climb), and set up pop-up attacks. Routes can be based on time on target, or simply on speed.

One of the pieces of information you'll get in the mission briefing is the control level. You'll

F-16C Fighting Falcon

Type: Single-seat multi-role fighter.

Power plant: General Electric F110-GE-100 turbofan, rated at 27,600 lb. thrust.

Armament: M61A1 20mm cannon, up to 12,000 lb. of external weapons including AMRAAM and AIM-9 missiles as well as air-to-ground ordnance.

Maximum speed: Above Mach 2.0.

First flight: February 2, 1974.





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FULL BURNER Transparent afterburners and missile trails look terrific, but require lots of performance on systems without 3D cards.

want to make sure you don't cruise at this level, or your aircraft will leave visual advertisements of your position.

You can also view other active flights. At a given moment, you might find two B-52 flights and two F-16 flights. After selecting the F-16 flight, you could hop into the cockpit en route and join the mission, as long as they're not already directly over the target.

Three starting conditions are possible. The neutral scenario starts the battle at the current demilitarized zone. The disadvantaged scenario puts South Korean forces at the southern tip of the country, with U.S. reinforcements just arriving. The advantaged scenario has South Korea pushing North Korean forces back into China—and China entering the conflict.

Bells & Whistles

There's plenty more innovation planned for the program. Like *FIGHTER DUEL 2*, *FUZZY 4.0* supports multiple processor Windows NT PCs, so performance maniacs can take advantage of dual Pentium Pro machines. The avionics look to be amazingly complete, with all the requisite radar modes (as well as simplified configurations for beginners). A wide variety of weapons are available, including rear- and all-aspect Sidewinders, as well as both TV- and IR Mavensack missiles.

The preliminary version of *FUZZY 4.0* I saw left little doubt in my mind that it's going to be a worthy successor to the classic *FUZZY 3.0*. At this point, the biggest question left in my mind is when can I get my hands on it. It's hoped that Microprose will meet the release date. If they do, sim pilots will have plenty to occupy themselves on those cold winter days.

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Sabre Ace

3D Air Combat Over the Skies of Korea

For aviation buffs, the Korean Air War is perhaps the most fascinating aerial battle in history. It featured the ultimate in prop-driven aircraft battling the first jets, in an age before missiles. Yet, other than a nod in Chuck Yeager's *Am Cobra* a few years back, and the deserted Korean arena in *An Warfare*, the conflict has been ignored by sim producers since the days of the *Atari 800*.

The Korean Air War is finally getting its deserved spotlight, with Virgin's *Sabre Ace* and Empire's *MIG Alley* both slated to ship before year's end. *CGW* recently received a late alpha version of *Sabre Ace*, and it looks like the wishes of Korean War sim fans will finally be fulfilled.



Sabre Ace

Estimated Release Date: September, 1997
Developer: Eagle Interactive
Publisher: Virgin

Flight Line

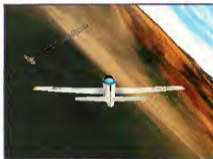
Sabre Ace allows you to fly on both sides of the conflict. On the American side, you'll start with a series of missions in F-51D Mustangs. You'll then progress to the straight-winged F-80 Shooting Star jet, and finally to the swept-wing F-86F Sabre. On the Russian side, you'll start in the prop-driven Yak-9 and move up to the MIG-15 jet.

In addition, there's a series of training missions to bring new players through the basics of takeoff and landing, navigation, ground attack, and air combat. An instructor talks you through each task in a manner similar to the original *Flyer Unlimited*. You'll start in either the T6 Texan or the Yak-18, depending on whether you're flying for the American side or for the Russian side.

Missions are prescribed, rather than dynamically generated, and the detail is very impressive. Voice communications run throughout, giving your flight leader and wingmen personalities. In addition, you often encounter other allied aircraft performing strikes in the same area. Your F-51 flight might be tasked with taking out a series of bridges while B-26 Invaders bomb a nearby airfield.

In addition, some of the missions on different sides of the war are tied together. In one American F-80 mission, you're tasked with escorting General MacArthur's C-54 transport from Japan to Suwon. In a Yak-9 mission, you'll try to shoot down MacArthur's plane before it can land at Suwon.

The 45 missions are divided between flying escort of bombers, transports, and photo recon aircraft; flying ground support; and flying combat



SMOOTH FLYING You won't see any blockiness on the ground if you have a 3D card, as *Sabre Ace* supports blinnar filtering and other 3D tricks.

Virtual Air Force *Sabre Ace* features a wide variety of Korean War-era aircraft.

Player-Flyable Aircraft



F-51D Mustang



F-80 Shooting Star



F-86 Sabre



Yakelov Yak-9



MIG-15 Fagot

Computer-flown Aircraft



B-29 Superfortress



F4U-7 Corsair



IL-10 Stormovik

Additional Computer-flown Planes

AD-1 Skyraider	Attack	F-84 Thunderbolt	Fighter/Attack
B-24 Liberator	Light Bomber	F-84 Starline	Night Fighter
C-119 Flying Boxcar	Transport	F4U Corsair	Carrier-based Fighter
Douglas C-54	Transport	F8F-3F Sturmovik	Seaplane
F2H-2P Banshee	Fighter	IG-40C Intruder	Photo Recon
F3D-2 Skyknight	Night Fighter	Lavochkin La-7	Fighter
FV-3 Ripcord	Fighter	Polynovok Po-2	Straight Wing Bomber
F-42 Twin Mustang	Mock Fighter	Taichon Tu-2	



SABRE VS. MiG When high speed jets face off, Sabre missiles, pilots will need quick reflexes to attain victory.

patrols. None of these are milk runs, so don't expect to work your way through them over a weekend. Armament includes guns, unguided rockets, bombs, and napalm.

In addition to the scripted missions, there's also a custom flight section where you can set up battles with up to four aircraft on each side. You're limited to the planes that are flyable in the campaign mode, but your wingmen and opponents can fly any of the aircraft in the sim. If you just want some basic gunnery practice, set up all your opponents as unarmed C-119 Flying Boxcars. You can adjust time of day, enemy skill levels, starting altitude, and cloud cover.

Although it wasn't yet implemented in the version I tested, developer Eagle Interactive also promises multiplayer support in the final product. This will be head-to-head air combat, with a setup similar to the Custom Flight section.

Stick and Rudder

The flight model tuning wasn't complete as of this writing, but initial indications are positive. For instance, the MiG-15 is suitably touchy at low speed, and you'll need to be careful not to depart from controlled flight when landing. The version I flew had a G-limiter that prevented you

from pushing into accelerated stalls, which makes the plane's vertical maneuvering a bit sluggish. The flight model is still a work in progress, though, and it's hoped that the maneuvering problem will be eliminated, or at least be toggleable, by the time the game ships.

A unique feature is Formation Augmentation, a special autopilot mode that makes it easier to maintain your position in formation. This is especially important in early missions where you won't be flying in the formation. If you want to fly manual formation, you'll appreciate the padlock feature, which swaps between the various cockpit views to keep the enemy in sight.

Sabre Ace is one of the first flight sims to use Direct3D. On a Rendition-based Scream3D 3D card, the game had one of the smoothest frame rates I've seen on a texture-mapped flight sim. Performance on 2D-only cards was acceptable as well, but final judgment will have to await the release version. Explosions, aerial fix, and other effects (such as real-time light source shading on aircraft) further enhance the sim's visual appeal.

With a wide variety of never-before-simulated aircraft, immersive missions, and good 3D card support, Sabre Ace looks ready to launch the Korean War sim genre with style.

F-86 Sabre

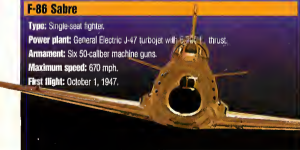
Type: Single-seat fighter.

Power plant: General Electric J-47 turbojet with 5,700-lb. thrust.

Armament: Six .50-caliber machine guns.

Maximum speed: 670 mph.

First flight: October 1, 1947.



Phantom Ace

Eagle Interactive is also hard at work on its next simulation, *Phantom Ace*. Set in Vietnam, this simulation will put you in the cockpit of Air Force, Navy, and North Vietnamese aircraft. You'll be able to load your saved Sabre Ace pilot, simulating a Korean veteran flying in the next conflict.



NICE PANELING *Phantom Ace* will feature authentic instrument panels, even the F-4B and F-4E panels are modified separately.

Flyable aircraft include the F-8 Crusader, F-4B Phantom, and A-4 Skyhawk for the Navy; F-100 Super Sabre, F-105 Thunderbolt, and F-4E Phantom for the Air Force; and the MiG-17 and MiG-21 for the North Vietnamese Air Force (where you'll fly as a Russian pilot). In the Eagle Interactive tradition, there will also be a wide variety of other period aircraft present, including the F-104, B-57, A-6, RA-5C, B-52, KA-3, F-111, and F-5 Scooby Tiger.

Carrier operations and aerial refueling will add new challenges for pilots. As in Sabre Ace, there will be a training syllabus. This time you'll be able to fly the T2 Buckeye, BA-4 Skyhawk, T37 Tweet, and F3H Talon.

Phantom Ace will model the technical advances that occurred as the war progressed. For instance, early in the war, ECM jamming and radar warning receivers weren't common, so you may not have their benefits on early missions. F-104 Starfighters will only be in the theater early in the war. F-111s only near the end.

Eagle Interactive's Gary Kinney says you won't see any flat terrain in this game, as the game will simulate the actual topography of Vietnam. So be ready to follow Thud Ridge to your target some time in 1998.

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Fighter Duel 2

Your Chance to Enroll in Advanced Fighter Piloting 401

The objective of **FIGHTER DUEL 2** is to make a fighter pilot out of you. So says SPGS (formerly Jaeger Software), the small but dedicated Maryland-based developer who's been at the forefront of realistic World War II air combat since the release of the original **FIGHTER DUEL** on the Amiga back in 1991.

The first PC version of **FIGHTER DUEL** was released in 1995. It was lauded for its superb flight models, great frame rate, attractive aircraft graphics, and its exhilarating head-to-head combat. But while **FIGHTER DUEL** has remained popular as a multiplayer game (especially after last year's release of the free *Net Dual* add-on with support for up to nine players), it never fully succeeded as a stand-alone experience. While enemy AI could be quite challenging, especially on faster machines, there wasn't much variety in how and where you'd meet enemy planes. With the lack of a distinct mission structure and only a single terrain area (which was mostly water), single-player **FIGHTER DUEL** just didn't have the gameplay longevity of the multiplayer experience.



Fighter Duel 2

Estimated Release Date: Winter 1997
Developer: SPGS
Publisher: Infogrames

That should change late this year when **FIGHTER DUEL 2** is released, however. Along with building on the strengths of the original, this version plans to attack its predecessor's deficiencies head on.

The Lineup

Like all its previous incarnations, **FIGHTER DUEL 2** focuses on the fighter pilot experience. But instead of simply tossing you into various aerial melees, the sim will include both individual missions and a configurable campaign mode.

A whopping 25 aircraft are planned at this point (with the possibility of even more), all of which are flyable. All the planes in the original **FIGHTER DUEL** are there, such as the P4U

Corsair, P-51 Mustang, A6M Zero, FW-190, and Me-109. New aircraft will include some familiar to players of the later Amiga versions of the game,

including the J7W1 Shinden, P-38L Lightning, Me-163 Komet rocketplane, Me-262, Tempest V, and P-47 Thunderbolt. Some of these will be represented in multiple versions, such as the P-

51B and P-51D, as well as the P-47B and P-47D.

For the first time, bombers will be included as well, in keeping with the **FIGHTER DUEL** tradition, though, these won't be big, lumbering, four-engine targets, but



WASH ME Aircraft detail goes down to exhaust struts on the side of the fuselage; the prop on this Halcat has about as many polygons as the entire Zero in the Amiga **FIGHTER DUEL**.

rather twin-engined bombers with forward-firing guns that can hold their own in a battle. Look for the AR-234C Blitz, the B-25H Mitchell, the Mitsubishi Betty, and the DeHavilland Mosquito.

Four instrument panels are included, one for each nationality. The decision to do generic panels for each country was twofold. First, because real instrument panels don't fill the aspect ratio of a video screen well, you'd have to make it pretty small to see the whole thing; a generic panel can be tailored toward the best compromise between a realistic look and readability. Second, creating common panels gives SPGS more time to create new aircraft or aircraft variants, which add more to gameplay than historical instrument panels. Although the panels were still being rendered when this was written, **FIGHTER DUEL 2**'s panel still stands up as the most impressive ever seen in a sim, so **FIGHTER DUEL 2**'s should look even better.



SPITFIRE'S LAST RITES An Me-262 closes for the kill; note that the terrain in these shots is preliminary and the actual ground graphics should look even better.

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CIRCLE READER SERVICE #347

The Unfriendly Skies

The **FIGHTER DUEL** series has always been known for realistic flight models (witness the initial negative review of the 1991 Amiga version in these pages, when prop torque prevented the reviewer from successfully taking off from the aircraft carrier). **FIGHTER DUEL 2** aims to improve on this, modeling many more of the individual quirks and characteristics of each aircraft. You'll find ground effect, engine torque and yaw, weapon recoil, and weight loading all realistically modeled. For added realism, force-feedback joysticks are fully supported.

Enemy pilots don't have any cheating advantage in **FIGHTER DUEL 2**—their aircraft have

Graphic Excellence

The screens accompanying this article are 256-color grabs from the basic 2D-card version of **FIGHTER DUEL 2**. The program uses the SurfRender graphics library to provide native support for 3D cards as well, using 65,536 colors with hardware acceleration. As of this writing, SurfRender has announced support for cards based on 3Dx, Pyramid 3D, and Morrow Mystique architectures, as well as MMX. In addition, SurfRender can interface with Microsoft's Direct 3D to support other 3D cards. Because **FIGHTER DUEL 2**'s source artwork is in 24-bit color, when 3D cards that display 24-bit color (instead of 16-bit) become available, that support can be reenabled.

FIGHTER DUEL 2 will require a Pentium processor and will support multiple processors under Windows NT. The designer's target threshold is to achieve 30 frames per second for smooth play. Owners of 3D cards will have no trouble achieving this—the early development version generates over 200 frames every second on a Pentium Pro equipped with a 3Dix card. That's faster than the card can output to the monitor. On slower Pentium systems, the sim will automatically reduce the level of detail and polygon complexity to match a user-definable frame rate.



PAINT SHOP **FIGHTER DUEL 2** will include the ability to customize the markings of your aircraft. (But this J/W Shinden will come with a default paint job.)

F4U-1D Corsair

Type: Single-seat carrier-based fighter.

Power plant: Pratt & Whitney R2800-8 radial engine providing 2,000 horsepower at takeoff.

Armament: Six .50-caliber machine guns, 1,000 lb. of bombs or eight five-inch rockets.

Maximum speed: 417 mph at 15,500 ft.

First flight: May 29, 1940.



totally unrealistic, but added some

interesting elements to multiplayer dogfights. Look for it—or something similarly bizarre—to return in the new version.

the same flight model restrictions as yours. All pilots were pretty good at evading your fire and getting into attack position in earlier versions, but look for a greater challenge and more historically accurate combat here. Be prepared to face Immelmans, wing-overs, barrel rolls, split S maneuvers, and hammerhead stalls.

If that isn't enough to make enemy aircraft harder to hit, look out for the more realistic ballistics model. When you do score a hit, the damage model determines the exact part of the plane that was hit. Chunks will fly off the plane, and even these have realistic aerodynamic models—watch one long enough and you'll see it flutter down to the water and make a splash. When various parts of a plane are weakened, structural failure becomes a possibility. Your wing may stay attached when it's initially shot up, but pull to many Gs and it will separate from your plane.

The new particle system looks breathtaking on a 3D card. Look for flames realistically licking out of damaged engines, with the fire lighting up the areas around it in real time. Aircraft and terrain feature real-time light-source shading as well.

Speaking of terrain, there will be plenty of variety this time. In addition to varied, realistic terrain based on digital elevation maps, there will also be areas specially constructed to enhance the dogfighting experience. The Amiga versions of the sim had a huge arch on one island, which was

Mission Critical

As mentioned before, the biggest weakness in previous versions of the game has been the lack of meaty missions. This should be addressed in a big way with **FIGHTER DUEL 2**. Although the mission system wasn't yet up and running when this preview was being written, developer Matt Shaw promises "scores of tailor-made missions to fly, including escort, CAP, day and night interception, ground and sea attack, and bombing missions." In addition, a configurable campaign mode will let you customize a campaign's difficulty and allow you to choose which planes you can fly and fly against. Missions will be dynamic in nature, so you won't experience that "okay, now I need to watch for the Helicans that will pop up from behind that ridge" feeling of déjà vu.

As part of the effort to make a fighter pilot out of you, a training area will let you practice flight, gunnery, and bombing basics before taking on combat missions.

FIGHTER DUEL 2 has TCP/IP network support for LAN and Internet play built in, and missions can be flown either solo or with (and against) human players. Special care has been taken to balance game speed so that players on faster machines won't have an advantage in multiplayer mode. Your machine may be three times faster than your buddy's, but you won't get from point A to point B any quicker than he will.

FIGHTER DUEL 2 looks like a potential oasis in a desert that's been starved of World War II sims for far too long.

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ISS. DATE: FEBRUARY 1997 FEB 1997



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Flight Unlimited II

Flying Free in the Busy Skies Over the San Francisco Bay

Say what you will about its lack of combat, Looking Glass's **FLIGHT UNLIMITED II** set a number of new standards for flight simulation. Its graphics were nothing short of breathtaking, and its aerobically light model was unprecedented. But after learning the sim's aerobically light model was unprecedented, there just wasn't much left to do. Because the terrain repeated, even simple cross-country flights were out of the question.



SHOWER TIME An early realistic rain effect highlights the realism of the sim's weather; rain droplets smoothly stream across the windshield.

Enter **FLIGHT UNLIMITED II: Unlimited Adventures**. This general aviation simulator once again sets new standards, upping the graphics ante to a higher level and creating the most detailed environment yet seen in a PC flight sim. When it's released this summer, it promises to make as big a splash as its esteemed predecessor.

Bay Area

FLIGHT UNLIMITED II offers unprecedented detail in terrain, navigation resources, and air-space management. To accomplish this, the designers focused on modeling a single terrain area—11,000 square miles surrounding San Francisco, California. That's a far cry from the original **FLIGHT UNLIMITED**, where each geographical area featured a repeating four-square-mile terrain map. The Bay Area is modeled at a resolution of four meters per pixel.



Flight Unlimited II

Estimated Release: Mid/Late Summer
Developer: Looking Glass
Publisher: Looking Glass

The terrain model was created using a combination of satellite imagery and digital elevation maps. The satellite shots that Looking Glass used were taken in the early morning, so buildings and other features cast large shadows, giving even flat imagery a 3D look from altitude. In addition, all buildings 10 stories and higher are represented by 3D models, as are major landmarks such as Alcatraz, SCom Condeslick Park, and NASA Ames.

In a major improvement over the original engine, terrain polygons no longer pop up and down as you pass them, but rather remain solid at all altitudes. Also, you'll never see buildings or hills suddenly pop into existence from nothingness. The **FLIGHT UNLIMITED II** engine always renders everything in visual range, adding detail to

objects as you approach them. The only time you see haze in the game is when the air really is hazy—it's not used as a crutch to limit the amount of terrain that must be rendered. Despite this detail, the early version of the sim had a good frame rate on a P133; the team is hoping to add Direct3D support to give 3D-card owners an extra speed burst.

Plane Facts

FLIGHT UNLIMITED II includes six flyable aircraft: the Cessna 172 (both land and seaplane variants), the Piper Arrow, the twin-engined Beech Baron, the DeHavilland Beaver seaplane, a Grob sailplane, and the North American P-51 Mustang. The latter aircraft was the most requested by **FLIGHT UNLIMITED** users. They were probably requesting a combat version, but for this release you'll have to be satisfied with flying it as an unarmed warbird. (The Looking Glass team is definitely hot to do a **FLIGHT COVER** game, and hopefully that will be next on their plate after they ship **FLIGHT UNLIMITED II**.)

The sim doesn't use the original **FLIGHT UNLIMITED** flight model, which was geared



NEAR HIT You can't shoot down aircraft with this sim's P-51, but you can scare the hell out of them.

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LEAVE IT TO BEAVER The DeHavilland Beaver introduces a new element to sims—water landings.

towards aerobatic aircraft, but this one seems equally impressive. The C172 seems to handle just like the real thing, both in normal flight and in the stall regime. Looking Glass look actual aircraft up to measure data such as roll rates and stall reactions to ensure the sim's accuracy. Force-feedback controllers are supported if you're looking for that extra ounce of realism.

As you'd expect, the planes look great inside and out. Instrument panels are fully interactive—to adjust a radio dial, just click on it and type in the new frequency. There's a virtual cockpit mode, but because instruments are so hard to read in virtual cockpits, the team opted to display pertinent flight data in this mode using a text overlay. One military sim innovation has crossed over into the civilian realm—the padlock view, which can be used to make the view automatically track nearby traffic.

Speaking of traffic, you'll never be alone in the *Flight Unlimited II* skies. In addition to your own aircraft, there are 25 additional aircraft modeled. These include airliners such as the 737, 747, 757,

777, MD-88, and DC-12; civilian aircraft such as the Cessna Citation, LearJet, and Beech Starship, and military planes including the A-10, F-16, F-18, SR-71 Blackbird, C-5, C-130, and the Chinook helicopter. You might even encounter the occasional Goodyear Blimp or hot air balloon. There can be up to 450 aircraft in the air or at airports at any time.

The actions of these planes aren't scripted, either. They'll taxi realistically around SFO and other airports, enter landing patterns, and do all the other things you'd normally see in the skies. And if you get in their way, they'll react to you with evasive maneuvers and annoyed radio calls.

Runways All Around

Flight Unlimited II models all 48 airports in the Bay Area, ranging from big international airports in San Francisco and Oakland down to all the little uncontrolled private airports and grass strips on farms throughout the area. Also, the floatplanes can land on various bodies of water.

With its detailed scenery, *Flight Unlimited II* is designed primarily as a visual flight rules (VFR) sim. Full-blown instrument flight rules (IFR) capabilities are there as well, with full support for VOR navigation and ILS approaches.

If some of the terms used here are new to you, you'll appreciate *Flight Unlimited II*'s lessons. Like the tutorials in the original, an instructor pilot first takes you through each lesson, then you're given a shot at the con-

Ground Control to Major Tom

Full-blown air traffic control radio communication is being simulated for the first time in *Flight Unlimited 2*. When combined with the fact that there can be up to 450 other aircraft sharing the skies with you, this adds immensely to the sim's immersiveness. Ground, tower, approach, departure, Unicom, and ATIS information frequencies are all active and packed with authentic traffic.

This traffic isn't canned, either. *Flight Unlimited 2* builds appropriate communication on the fly using a splicing technique. A real air traffic controller provides the ground voice, and also helped ensure the accuracy of the communication. As you tune to an appropriate frequency you'll hear both the tower and other aircraft. Sitting on the ground at SFO and listening to planes being directed to various runways is eerily like the real thing.

Interaction with the ground controllers is handled through a menu system where you build appropriate requests. You'll generally only need a few keypresses to request entry into a pattern, get takeoff clearance, and so on.

controls. The focus is on what you need to know to play the game—wannabe pilots looking for all the gory details may want to pick up a copy of Sierra's *Pro Pilot* as well. You might even try adding some weather effects. *Flight Unlimited 2* will support two cloud decks, as well as realistic rain.

To get in the air, there's a quick flight setting that lets you choose basic condition and your location (in the air at a specific spot, at an airport, or on a 3-mile approach to any runway in the game). There's also a more sophisticated flight planning tool which lets you interactively set up routes on a detailed sectional chart.

Your flights can take place during various times of day, but there's no real-time transition. It was too difficult to implement convincingly with photorealistic terrain.

Flight Unlimited II should please anyone with an interest in real flying. While some may find the single geographic area limiting (add-on discs covering other regions are planned), the fantastic detail more than makes up for it, and the San Francisco Bay area has plenty of variety. ☺

Cessna 172

Type: Four-seat general aviation monoplane.

Power plant: Lycoming O-320-E2D four-cylinder piston engine rated at 160 hp.

Armament: Whatever can be thrown out the windows.

Maximum speed: 151 knots.

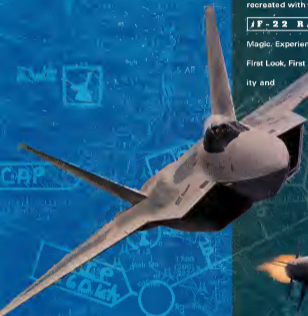
First flight: September, 1957 (2-seat Cessna 150, on which the 172 is based).



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Flight Sim Reviews Index

The Good, the Not-so-good, and the Ugly from CGW's Past 18 Months

Simulation	Issue	Page	Publisher	Rating
EF2000	Jan 96	52	Ocean	★★★★★
Fighter Duel	Jan 96	290	Philips Media	★★★★★
SU-27 Flanker	Feb 96	186	Mindscape	★★★★★
Black Knight: Marine Strike Fighter	Feb 96	200	FormGen	★★★★★
Top Gun: Fire at Will	May 96	202	Spectrum Holobyte	★★★★★
Advanced Tactical Fighters	June 96	150	Jane's Combat Sims	★★★★★
Silent Thunder: A-10 Tank Killer 2	June 96	154	Sierra On-Line	★★★★★
AH-64D Longbow	July 96	164	Jane's Combat Sims	★★★★★
Back to Baghdad	Oct 96	254	Military Simulations	★★★★★
F-22 Lightning II	Dec 96	382	NovaLogic	★★★★★
Blind	Jan 97	256	Interactive Magic	★★★★★
USNF 97	Feb 97	185	Jane's Combat Sims	★★★★★
Flashpoint: Korea	Feb 97	188	Jane's Combat Sims	★★★★★
Flight Simulator for Windows 95	Feb 97	192	Microsoft	★★★★★
A-10 Combat	Mar 97	164	Activision	★★★★★
Jetfighter III	Mar 97	170	Mission Studios	★★★★★
Flying Corps	May 97	152	Empire Interactive	★★★★★
Air Warrior II	June 97	142	Interactive Magic	★★★★★



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Ten Ways to Kill Bugs Dead

When on Bug Safari, Know What to Bring

by Loyd Case

A long time ago, in a...well, anyway, quite a few years ago, I did some backpacking and light mountain climbing in the Pacific Northwest. There was a club in Seattle, the Mountaineers, that came up with the idea of the Ten Essentials. This idea says that if you go traipsing off into the wilderness, you should—at a minimum—take along Ten Essentials. These include obvious items like extra food and clothes, and not-so-obvious (but necessary) items like sunglasses and sunscreen.

Along those same lines, there are some tools—software and hardware—that I frequently use when hunting down an elusive system bug. And since any really good idea is worth stealing, I'd like to offer up my Ten Essentials for computer troubleshooting.

TIPS!

► If you're considering adding more memory to improve your machine's performance, consider carefully how much you want to add. In some cases, you can actually add too much. Every Windows 95 system will benefit from

1. Norton Utilities

Whether you're still using DOS and Windows 3.11 or have fully made the move to Windows 95, Norton Utilities is a must-have item (just don't use the older versions on Win 95 problems). Though I generally don't find much use for items like the System Doctor, tools like Disk Doctor and Norton Diagnostics (which only runs in DOS) are invaluable.

One feature that I was initially skeptical about is the System Genie. But once you get by the overly-cute interface, there are some very nice gems in there. Want to change the way Windows 95 handles long file names? Consult the Genie. Want to hide some of those pesky desktop icons? Consult the Genie. Want to be young, rich, and thin? Well...if you want to hide some desktop icons, consult the Genie at www.symantec.com/au/index.html.

2. Power Toys

This evolving set of unsupported—but free—Windows 95 tools from Microsoft is invaluable. The most useful tool is TweakUI, which allows you to change a number of Win 95 options—and not just the user interface. You can change boot

options, repair damaged icons, and, yes, change some user interface options.

If you have a cluttered desktop, but often can't easily get to the desktop because of multiple open windows, click on the Desktop icon, and you'll get a menu containing all items on your desktop. Download Power Toys at the following address: www.microsoft.com/windows/commoncontent/W95UCB.htm.

3. Kernel Toys

At the same URL as Power Toys, you can find Kernel Toys. These are utilities that make life easier for the DOS gamer. When you run a DOS game from Win 95, a default set of condition coats, as set in the "virtual" AUTOEXEC.BAT and CONFIG.SYS files. One of the Kernel Toys, DOSWZCFC, allows you to change those defaults. But, the user interface is a little on the arcane side. Another Kernel Toy called DOSWINKY deactivates the Windows icon key on the keyboard when running DOS games. Nuff said.

4. Win 95 Control Panel's Device Manager

Though Win 95's built-in diagnostics are, er, incomplete, the Device Manager

“ There are some tools that I frequently use when hunting down an elusive system bug. ”

Memory Upgrades: A Point to Consider

having 32MB of memory. In most cases, even 64MB can be useful. There's a temptation to think that more is better, but that's not necessarily so. For example, systems using the Intel 430HX and 430TX chipsets can't cache memory above 64MB. Some motherboards using

the 430HX chipset can theoretically cache up to 512MB, but only actually cache the first 64MB if the vendor has skimped and left out the necessary TAG RAM, which stores cache memory addresses. If enough isn't present, higher memory addresses won't be cached.

Continued on page 120

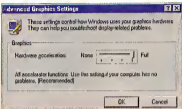
► You can reach Loyd at his new email address: lcas@pacbell.net

TIPS!

Continued from pg. 170

► If you have an older 53-based graphics card, such as the Diamond Stealth 64 or Hercules Terminator Pro, you may notice relatively poor performance on some Windows 95 games. It turns out there's a conflict between the Win 95 drivers and the Win 95 accelerator feature. To turn off the Win 95 accelerator feature, right click on My

Who's In Charge Here?



Computer, click the Performance tab, click Graphics, and turn down the accelerator slider to zero (see graphic). If your game runs faster, then you've solved the problem.

diagnosing box can be a very good starting point. In addition to showing you what's installed on your box (or what Win 95 thinks is installed), it may reveal an error message responsible for an I/O resource conflict. Bring up the Control Panel, double-click on the System icon, and select the Device Manager tab dialog. You'll see a listing of devices, and any misbehaving device will have an icon that's an exclamation point in a yellow circle. This isn't a diagnostic tool per se, but it can provide important clues when hunting down an elusive system glitch.

5. Syjet 95, Ver. 1.5

The Syjet is a 1.5GB, removable hard disk from Syquest, and the external version is two, yep, two drives in one. It's primarily a SCSI drive, but also comes with a parallel-to-SCSI adapter cable. Just buy the "parallel port" version of the Syjet and you also get a SCSI drive.

I use the Syjet for backup. It comes with a finished, but very useful, backup utility. It's fast, easy, and once you make the up-front investment of \$500, cheap Cartridges cost around \$25—less than ten cents per megabyte. Backing up to this baby has saved my bacon on several occasions. And, because it's so fast, I back up more often. For more information, check out www.syquest.com.

6. WinBench 97

What? A benchmark in my set of troubleshooting tools? You bet. On a number of occasions where things seemed to be

running slowly, I've used both the WinBench Graphics WinMark and the CPUMarks to see if any system was running up to snuff. A couple of times, I've uncovered critical slow-downs owing to older 16-bit drivers that may have been installed without my knowledge.

WinBench gives me a baseline performance figure. To get WinBench, check out www.zdbsp.com.

7. Scitech Display Doctor

Scitech Software's Display Doctor started out life as UnVBE, and allows non-VBE (VESA BIOS Extensions) graphics cards to run VBE-based SVGA-graphics resolution games. It also comes with other useful utilities, including VBE Test, which checks your graphics card for VESA compliance. Since I go through a lot of graphics cards, Display Doctor is an invaluable tool at \$35. Download a trialware version from Scitech at www.scitechsoft.com.

8. Electric Screwdriver & Pencil

These may seem like luxuries, but to me they're essentials. The electric screwdriver can pop open a case and remove (or install) expansion cards or peripherals in no time. And the forceps are useful for installing jumpers in awkward locations, and getting into hard-to-reach spots.

9. Partition Magic

Every now and then, a utility comes along that fills a long-suffered gap. One of these more arcane activities is preparing a

hard disk. Microsoft has supplied FDISK since the early days of DOS, but the basic user interface is still the same. Partition Magic cleans up the interface with a graphical (but non-windows) interface. While handy for new disks, Partition Magic's real benefit comes when you want to reconfigure your existing drive.

I recently installed OSR2 (OS/2 Service Release 2) of Win 95 so I could add the FAT32 file system to my disks. FAT32 removes the 2GB disk partition limit and expands it to two terabytes. Normally, I would have had to back up all my drives, run FDISK, reformat my drives, reinstall Windows, reinstall my backup program, and finally, restore my files. Partition Magic 3.0 allowed me to change all my partitions to FAT32 without losing a byte of data. Download the 3.02 patch from Powerquest before attempting to merge volumes. Check it out at www.powerquest.com.

10. Recovery Disk

A recovery disk is essential, whether you use the Win 95 Control Panel to create a basic one or Norton Utilities to create a Caillie version. You need an appropriate minimum set of tools—FDISK, SCANDISK, XCOPY, EDIT, SYS, and FORMAT—to recover from disk problems. On occasion, I've lost something potentially disastrous—such as the boot sector on my hard disk. With a recovery disk, I can usually run utilities to repair the problem. It can save an enormous amount of blood, sweat, tears, and toil.

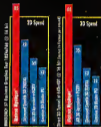
KEEP THINGS IN PERSPECTIVE

If you find yourself getting frustrated and reaching for a hammer, walk away. Remember that a world exists outside of that beige box sitting on your desk. Get some sleep, read a good book, or take a walk. It's amazing how sometimes a solution will suddenly pop into your head when you're not intensely focused on the problem. Computers should only be a diversion, like the games we play on them.

As I check the clock, I see it's time to get going. I'm off for a good day's hike. I guess that new motherboard will have to wait until next week. ☺

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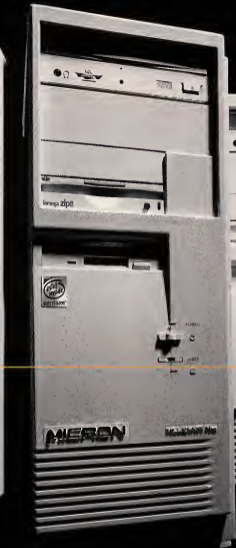
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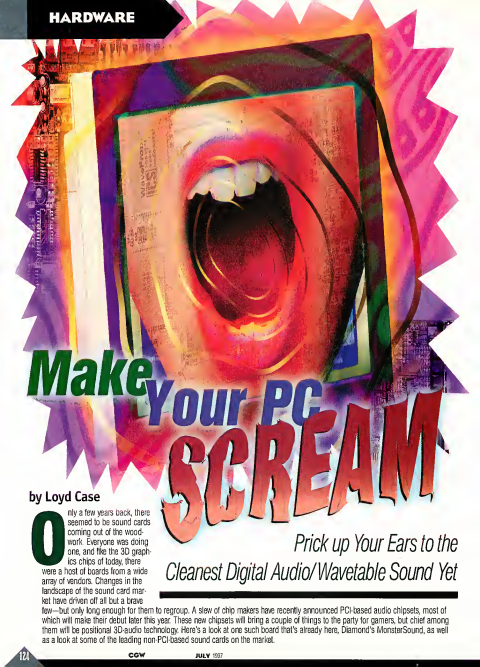
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Make Your PC SCREAM

by Loyd Case

Only a few years back, there seemed to be sound cards coming out of the woodwork. Everyone was doing one, and like the 3D graphics chips of today, there were a host of boards from a wide array of vendors. Changes in the landscape of the sound card market have driven off all but a brave few—but only long enough for them to regroup. A slew of chip makers have recently announced PCI-based audio chipsets, most of which will make their debut later this year. These new chipsets will bring a couple of things to the party for gamers, but chief among them will be positional 3D-audio technology. Here's a look at one such board that's already here, Diamond's MonsterSound, as well as a look at some of the leading non-PCI-based sound cards on the market.

Prick up Your Ears to the Cleanest Digital Audio/Wavetable Sound Yet

Diamond MonsterSound



Of the most interesting products out there is Diamond's new MonsterSound. First off, this card goes into a PCI slot, not an ISA slot. And given how crowded the ISA bus has become, a PCI audio card is a welcome change. The PCI slot is no gimmick, however—this card needs PCI's additional bandwidth, because it's a true positional-3D-audio accelerator card.

The technology behind MonsterSound was developed by Aural Semiconductor, who is something of a Phoenix, having risen out of the ashes of the old Media Vision bankruptcy and then merging with Crystal River Audio. They're now focused strictly on developing 3D-positional audio chips.

The MonsterSound is the first fruit of Aural's 3D audio technology to hit computer store shelves. It's strictly a Windows 95 device, and makes no pretense of working in DOS exclusive mode. There is Sound Blaster emulation software that lets DOS games running in a Windows 95 DOS box think there's a Sound Blaster present, but Diamond strongly recommends keeping your old ISA sound card.

Setting up and installing the MonsterSound is the audio equivalent of installing the company's Monster3D graphics card. You find a free PCI slot, insert the card and attach a pass-through cable to your legacy sound card.



Feed the drivers CD, and the MonsterSound is good to go.

Once installed, you really need to run the demos to understand what the MonsterSound is all about. One depicts a graphically crude helicopter flying above you, behind you, and all around. The overall effect, while not completely realistic, is nonetheless quite startling—it's easily the best positional 3D audio I've heard, and it only requires a pair of speakers or a set of headphones.

The MonsterSound also has a wavetable synthesizer with a ZMB wavetable set. The patch set isn't spectacular, but is good enough. If you have a better MIDI wavetable on your legacy sound card, you can disable MonsterSound's in the Win 95 Multimedia Control Panel applet.

Playing non-enhanced games is pretty straightforward, as long as they're Win 95 games. The digital audio sounds very clean, though there's just a tiny bit more background noise than the AWE-64.

Diamond bundles a couple of 3D audio-enhanced games with the MonsterSound, including Maxis' *SivCorran* and LucasArts' *Duress*. Playing the 3D audio-enhanced version of *Duress* is truly startling. You'll hear taunts from your enemies and gunfire from behind you. The MonsterSound really adds a whole new level of immersion to the gaming experience. Even if you have a good sound card, check it out. It is, as another memorable Lucas character might say, "most impressive."

Diamond MonsterSound
\$199 (list)
Contact: **Diamond Multimedia**
(408) 325-7000
www.diamondrm.com

Creative Labs AWE-64 Gold



For some time now, the Creative Labs line of sound cards has been something of a whipping boy among the more audio-savvy users. Complaints have been heard about noisy digital audio, uninspiring wavetable patch sets, and the lack of leading edge features. But they've fired back with the AWE-64 Gold.

Installation is typical of the AWE series. You plug the card into a free ISA slot, connect the cables, and shove the CD into your CD-ROM drive. If you're system has AutoPlay enabled, a menu pops up on the screen. A few more mouse clicks, and the Windows 95 drivers are installed.

DOS is another problem altogether. Initially, things seem to install well. However, disabling the joystick port in DOS to use a dedicated game card proves problematic—you must deactivate it in Win 95.

Cool looks are one thing, but how does it play? Well, the most impressive thing about the AWE-64 is what you don't hear. There's almost no hiss, no crackles, nor the beloved popping. Digital audio in both DOS and Windows sounds very good—free of noise and with a lot of presence.

The quality of the MIDI music sounds has improved considerably as well. AWE-64's 4MB General MIDI patch set sounds markedly better than its predecessor in Windows 95, AWE-64 can toss in another 32 voices (for a total of 64 voices) by using Waveguide synthesis. Waveguide uses a synthesis technology called physical modeling, which mathematically models the characteristics of a given instrument, rather than storing sample sounds of that instrument.

In an A/B test against a Roland SCQ-15 Sound Canvas daughtercard mounted on an AWE-32, the MIDI on the AWE-64, though much-improved, still hasn't caught

up with the Roland. Acoustic piano lacks body, and the strings in the Star Wars piece are a bit shrill. But really, I'm quibbling—it all sounds really good.

The Waveguide approach eats CPU cycles for lunch, in fact, several users report that the AWE-64 refuses to work in Cyrix 6x86-based and AMD K5 systems; apparently Creative wants "Intel Inside."

As for positional 3D, AWE-64 Gold provides some DirectSound 3D acceleration by using its EMU-6000 synth engine, though their demo that supposedly shows this technology in action was somewhat underwhelming.

Windows 95 game-play sounds simply terrific. The absence of any noise is, well, noticeable. DOS games sounds equally good, and I even got an old DOS game, Crescent Hew's *Revenge* to run with original Sound Blaster support no less.

There's also some bundled software, including a couple of



games—Maxis' *Cyber 2* and *CRACKER*.

AWE-64 Gold
\$199 (street)
Contact: **Creative Labs**
(408) 434-5700
www.soundblaster.com

PROS: Best 3D audio rendering in town; good, clean digital audio.

CONS:

Mediocre wavetable; PCI slot needed; legacy sound card required for MS-DOS mode game-play.



PROS: Solid wavetable; clean, quiet digital audio; great compatibility.

CONS: Non-latest system support problematic; no support for MIDI daughtercards; limited 3D-audio functionality.



Turtle Beach Tropez Plus

★★★★☆

Turtle Beach has long been synonymous with the high-end of sound cards. Several years ago, they made an abortive foray into multimedia kits and entry level audio. Recently, as they were returning to their roots—high quality audio—they merged with Voyetra. One of the results is Tropez Plus, a high-end, Sound Blaster Pro-compatible card with 4MB of wavelable RAM.

The Tropez Plus uses Crystal Semiconductor's CS4232 for digital audio and Sound Blaster Pro emulation, and an ICS Wavefront wavelable synth. Win 95 installation is easy. After sliding the Tropez into an ISA slot, Windows 95 autodetects the card and prompts you for drivers. The Tropez drivers are in a two-floppy set, which feel a bit odd in this CD-oriented era. Still, the installation is easy and straightforward.

PROS: Very nice General MIDI wavelable; fairly clean digital audio.

CONS: DOS setup and boot is something of a chore; no 3D audio functionality.



That is, until you discover that MIDI won't play. It turns out that

the Tropez wants IRQ 9, but my network card had already grabbed that IRQ. The problem can be solved by de-installing the Ethernet card in the Windows 95 device manager and letting Windows re-detect it when it restarts.

Once that little problem is solved, the Tropez Plus handles most Windows 95 audio chores with aplomb. Occasionally the Tropez Plus control panel mysteriously crashes, but this doesn't seem to affect sound at all.

The MIDI patches on this card sound terrific. In an A/B comparison with an AWE-32 with a Roland SCD-15 Sound Canvas daughtercard, the acoustic piano on the Tropez is every bit the equal of the Roland, which is high praise. The Star Wars theme, a 24-voice MIDI sequence from

LucasArts, sounds very good too, though I would give the nod to the Roland for string chorus sounds. Drums are less impressive though, with kick drum and snare sounds palling compared to the Roland.

Digital audio sounds every bit as good as the AWE-64, although there is just a bit of background noise and the occasional light popping sound.

Windows 95 games seem to run fine as well: *Rio Alex*, *Genesis of the Force Six*, *Mirromedia 2*, and *MacQ: The Genesis* all play fine and sound great.

If all this sounds too good to be true, well, read on. Problems begin to surface when configuring the Tropez for DOS mode. Booting into DOS with the Tropez Plus is an exercise in patience. It tests the onboard chrouly and downloads code to the audio chip, and

it takes its sweet time doing it. Luckily, there's a little spinning doodad that tells you your system is still alive.

The DOS installation program is good, but it warns you not to run it if you have Windows 95. Pay attention to what it says. You do not want the DOS stuff loaded when Windows 95 is running, as it seems to cause numerous mysterious lockups.

When actually in DOS, the Tropez Plus seems to run in Sound Blaster mode quite well. I configured the original DOS version of *Phazon Genesis* to recognize a Sound Blaster Pro and general MIDI wavelable card, and it sounded great.

The Tropez Plus has a connector for an IDE CD-ROM drive, and the manual is extensive, with a very solid troubleshooting guide, which you'll probably need if you're in DOS a lot. If you remain in Win 95 most of the time, however, the Tropez Plus is a solid card with a very solid wavelable and good digital audio.

Turtle Beach Tropez Plus
\$230 (street)
Contact: (800) 233-937
www.voyetra.com

Miromedia Surround

★★★★☆

The Miromedia Surround is an interesting little card that adds a Dolby ProLogic decoder in your PC's audio system, you have a spare ISA slot. There's also a surround sound mode using technology licensed from consumer electronics giant JVC. This card

is more of a luxury item than necessary, since there are only a handful of ProLogic-enabled games out there.

The Miromedia Surround is a typical Plug-and-Play device, meaning that Windows 95 will sometimes detect it, and sometimes not installing the Windows driver is simple. The hardware is something else again. The card installation is no

problem, it's the speakers that give you trouble. The JVC 3D sound technology is more interesting than useful, and to get the full effect, you need five speakers: two main stereo speakers, a center channel, and two rear satellites. This setup might be something of a stretch for most home offices, but what's worse is the confusing mixture of mini-DIN and RCA jacks on the back that somehow connect to speakers. The card comes with some sound samples and a demo version of *Wings Commander IV*, a Dolby ProLogic-enabled title.

Still, the Miromedia Surround does work as advertised, so if you're anxious to add Dolby ProLogic to your rig, go for it.

Miromedia Surround
\$99
(800) 474-6476
www.mira.com

PROS: Makes ProLogic titles really come to life.

CONS: An incomplete PC audio solution; requires extra speakers.



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WaTch

YOuR

The Future of Audio Is Behind You

Back

by Dave Salvator

If you think about it, we can "see" much more with our ears than we can our eyes. We can determine the position, and often the direction, of sound usually without having to move our head. This process of how we determine both the position and direction of sounds is called "localization," and researchers in an area called psychoacoustics have learned quite a bit about how humans localize sound. Using this knowledge,

sound designers can fool our ears into telling our brain that a sound is at a specific location by applying digital filters. These filters approximate how sound behaves in the real world when at a given position—left, right, in front, behind, above, or below—relative to the listener.

As audio migrates to the speedier PCI bus, and as graphics traffic is shifted over to the AGP architecture, gamers should look

forward to the next aural dimension: real-time, 3D-positional audio. For a primer on the physics behind 3D audio, check out www.computergaming.com.

In this article we'll take a look at the different approaches to doing 3D audio, some of the hardware in the works, and game developers' take on this new technology.

Will the Real 3D Audio Please Stand up...

Admittedly, the term "3D Audio" has been the source of some confusion and much marketing hooey. But when all is said and done, 3D audio architectures basically fall into three camps: 3D Stereo, Multi-speaker Array, and Positional 3D Audio. All three spruce up traditional 2-channel stereo, but gamers will get the most benefit from the last two, because programmers can position individual sounds, rather than just apply a "3D" effect to the entire mix. Here's how each type works.

- **3D Stereo:** These technologies are really "2.5D" implementations that essentially take an existing stereo output and "spatialize" it, meaning they apply some filters to the stereo signal to widen the perceived stereo field. This technology has shown up on sound cards and in speakers, and has been developed by companies like QSound, Spatializer, and SRS. The effect is an incremental improvement over traditional stereo, but these technologies offer little or no granularity for processing individual sounds.
- **Multi-speaker Array:** Dolby is the best known champion of these technologies, both in movie theaters and home theater configurations like ProLogic and Surround Sound, and more recently, AC-3. These technologies rely on placing actual speakers behind the listener, and then panning sounds into these rear speakers to give a 3D effect. Though primarily used for movies, several game titles, including the *Wings Commander* series and Novalogic's *F22* and *Commander 3*, have used ProLogic.

There's an interesting overlap here with DVD-RDM drives, which will soon be proliferating into PC markets. DVD movies use Dolby's AC-3 audio encoding, which is called a "5.1" setup consisting of left, right, center, left rear, right rear, and sub-woofer channels; or, in other words, five speakers and a sub-woofer. The main problem with these systems is the cost of the extra speakers and a multi-channel amplifier. Also, AC-3 is primarily designed for movies, and can't really be used for game audio, because it's too computationally intense to encode in real-time. So while the 3D audio here can be convincing, it remains to be seen whether gamers will want to shell out the cash for these elaborate speaker systems, though this setup could be ideal for a living-room PC. The good news here is that DVD/AC-3 will also help drive 3D positional-audio technologies, and both will go a long way toward bridging the quality gap that has long existed between



Conventional Stereo: Sounds seem to come from between speakers. Some front-to-back range.

typical PC audio and home hi-fi.

- **Positional 3D Audio:** This technology holds the most promise for gamers, since it allows sounds to be rendered in real-time and is ideal for mapping sounds, both stationary and moving. Positional 3D audio can also be used to virtualize a multi-speaker array such as AC-3 into two speakers. This technology tends to be more effective in headphones, since each ear gets a well-isolated signal of the rendered sounds, but improvements have made this technology quite convincing, even when used with so-so multimedia speakers.

Something Wicked This Way Comes

Diamond's *MonsterSound* fully supports positional 3D audio, and though game titles that take full advantage of it are still



3D Stereo: Sound range extended beyond speakers on either side, approaching 180°.

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relatively few, this board delivers 3D audio that can be readily localized, thanks to filtering technology from Aural Semiconductor. Euphonics has also developed 3D positional filtering technology that will show up in VLSI's new SongBird chip. In addition to doing 3D stereo, QSound also has positional technology that will soon show up in a PCI-based audio chip. Crystal Semiconductor also has a PCI-based audio chip cooking that will support both Dolby AC-3 and positional 3D audio. For their part, Dolby is working on a positional technology, internally code-named "Project X," that will be based on their ProLogic multi-channel architecture.

There is one downside to Diamond's MonsterSound: It only supports Sound Blaster compatibility running under Win 95. PCI audio chips from VLSI, Crystal, and S3 will all support Sound Blaster audio running under MS-DOS mode, thanks by and large to a new feature called DirectDMA in Intel's 430TX, and all future-generation chipsets.

Also on the horizon are a host of CPU-based 3D-audio technologies, many of which will take advantage of MMX, including QSound's QSoft3D, Intel's RSK, and Spatializer's enCompass. At press time, we didn't get a good listen to these technologies, but because full-bore 3D audio processing is pretty intensive, it's doubtful these CPU-based technologies will match the overall quality of their hardware-accelerated counterparts. Then again, because these technologies require no additional hardware, they're usually hard-wired into games, and won't cost you anything extra.

But Why Does This Matter to Gamers?

These new developments will most likely touch games before any other application, and we gamers will reap the reward, especially in first-person perspective games and simulations. Additionally, overall quality should also head north thanks to the higher bandwidth available on the PCI bus. And as AGP-based 3D-graphics chips take on more duties in the rendering pipeline, more CPU cycles will be available to

expand other aspects of the game, especially audio. But before we can cross over into this brave new world of enhanced gaming, 3D audio does face some hurdles.

Sound designers we interviewed at Maxis, Westwood, and Reality Bytes are all planning on implementing 3D audio in some form in upcoming titles. However, they express concern about Microsoft's recently revamped DirectSound 3D API still being somewhat incomplete. Like Direct3D on the graphics side, DirectSound 3D delivers a baseline quality level when using the CPU, but it's unable to use specific features of some hardware-based 3D audio technologies. Again, as with Direct3D, a universal API is a very alluring idea, but difficult to bring to fruition.

As for CPU-based versus accelerator-based 3D audio, all three designers are impressed with Aural Semiconductor's technology, but are also looking to use some CPU-based solutions as well. A key word all three echo is scalability, that is, building game audio so as to take advantage of a 3D audio accelerator if it's there, but also provide some scaled-down 3D audio if processing has to be done on the CPU. From the CPU-based solutions, David Chait of Reality Bytes says he's looking for a discernible difference in 3D quality with little or no additional CPU overhead.

Of course, as is the case with 3D graphics, 3D audio rendering quality will vary widely across different chips, with some vendors making trade-offs and punting certain features to keep costs down. There will be a bevy of cards out there, ranging in quality from not-so-hot to very impressive. As more 3D audio and PCI-based audio parts, as well as new CPU-based 3D audio options, begin to circulate, we'll have at 'em and separate the posers from the real positioners. Stay tuned.

For more on the innards of 3D audio, check out Durand Begauw's 3D Sound for Virtual Reality and Multimedia (AP Professional). ☺



Virtual Surround Sound: Two speakers used to place sounds completely around listener.

THE PORCUP REVOLUTIONARIES
INTERVIEW

DIVA LA REVOLUCIÓN.



Tomb Raider's fiery LARA CROFT is one of the most recognized figures of the PowerVR™ Revolution. A confrontationalist, she has grown tired of the old 3D Order. With passion and anger, LARA has been relentlessly fanning the flames of revolutionary justice for gamers around the world.

WELCOME TO THE MOVEMENT. APPARENTLY, DISCOVERING ANCIENT TOMBS HAS FAILED TO SATISFY THE RADICAL HUNGRERS THAT GNAW AT YOUR SOUL?

Lara Croft: My first passion will always be exploring ancient civilizations. But when I realized gamers were being kept down by inferior 3D technology, I went ballistic. I'm busting my arse to get gamers the 3D experience they deserve.

SO THE BLAND 3D EXPERIENCE WAS BOUND TO PRODUCE A REVOLT?

L: Absolutely. But this is an armed struggle, love. And the weapon is not the Colt .45 in my hand. It's the PowerVR 3D technology that will topple the bloody awful 3D experience.

ARE YOU SAYING EVERYTHING ABOUT CONVENTIONAL 3D TECHNOLOGIES DESERVES TO PERISH—SHOVED OFF TO THE ASH HEAP OF OBSOLESCENCE?

L: Bloody right, mate. Gamers want 3D technology that liberates their experience. Like higher resolution. Higher frame rates. Effects that take them as close to reality as you can get.

LIBERATION SEEMS TO BE A CENTRAL THEME DRIVING THE MOVEMENT.

L: Look, if I could escape the suffocating arrogance of snooty British society, gamers could overthrow the forces trying to smash the PowerVR resistance. That's what pumps adrenaline through my body.

UM, DON'T TAKE THIS THE WRONG WAY LARA, BUT THAT'S SOME BODY.

L: Actually, you should see it at 800x600 resolution. I think you'd dig my aerial flips with realistic shadows.

WHEW, WELL, UH...SO LARA, THESE ARE EXCITING, TURBULENT TIMES. GAMERS AND GAME DEVELOPERS SEEM TO BE GETTING SWEEPED UP IN THE PROMISE OF POWERVR.

L: That's right. Our freedom fighters are developing games right now that are PowerVR Ready: Eidos, Kallisto, Shiny, Sega Entertainment, FASA, Activision, Core Design, Gremlin. All feverishly churning out PowerVR Ready titles, including my next adventure, Tomb Raider 2.

WOULD YOU SAY THE MOVEMENT IS OBSESSED WITH POWER?

L: Of course, you twit. Frankly, we're not stopping until we have profoundly altered 3D reality for all gamers. And we will. Because we have finally seized the ultimate apparatus of real 3D power.

THE POWERVR TECHNOLOGY?

L: Yes. And with it, there will be no obstacles that can stand in the way of the mission of the PowerVR revolution: to produce the most realistic game experience imaginable. Now bugger off, I've got a battle to fight.



Tomb Raider



HAWK



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5-Star Falcon

Mid-Level Mach V Has All the Goodies, and the Price Is Right

by Dave Salvatore

Falcon Northwest has built a well-deserved reputation for making screaming game rigs that are built for gaming, but would run any other stuff (the work), too. But all that performance carried a premium price tag that put the Mach V beyond the reach of many gamers. In this latest incarnation, Falcon unveils a more competitively priced Mach V that comes in at around \$3,500. That may still seem pricey, but the Mach V ships with all the gamers' trappings, and is ready to party right out of the box.

The Mach V's documentation is thorough and complete, including Falcon's "paper registry," which details I/O resource assignments of every board in the system. Even the number of microsat PnP cards out there, this list can be invaluable when installing a new card. The Mach V's installation is basically painless, with all ports clearly labeled. Setup takes about ten minutes, and once you power up the Mach V, it's ready to play, both in Win 95 and DOS. Falcon also includes a set of Direct3D drivers you can re-install in case some misbehaving Direct3D game loses your display drivers.



RIG ENVY This Falcon Northwest Mach V will run you a mere \$3,500.

HOW'S THE PERFORMANCE?

Here, we'll compare the Mach V to Compaq's Presario 8712, a comparably priced high-end gaming box. Looking first at the Win 95 numbers, the Mach V is, as usual, very fast, nearly matching the 8712 in most tests, and Mach V is half again as fast in WinBench's Business Coplax WinMarks test. The Mach V uses EIDE storage components rather than SCSI. And while the storage system numbers are nonetheless respectable, Mach V falls short against the 8712 in WinBench's High-End Disk WinMark test. But in CD-ROM testing (tested with

the drive), Mach V has the edge in performance, and turns in lower CPU usage numbers reading from the CD-ROM. Using 2D's latest benchmark, 3D WinBench, Mach V turns in a very impressive score of 172 WinMarks.

Looking at DOS test results, the two machines are about dead even in QUANTUM's TaseDemo tests, both at the default 320x200, and the 640x480 screen size. In C.Bench's SVGA test, Mach V turns in a speedy 44.4 frames per second score, whereas Compaq can't complete this test, owing to its lack of VESA2.0 support in firmware. In games-based testing, both QUANTUM and CLQUANTUM run very

wiffly, and the latter still runs smoothly with rendering features cranked all the way up. Taking Mach V for a spin through COMMANDER 3 in DOS with all the rendering features turned up shows that Mach V deliv-

ers here as well. In Win 95 titles, performance in US Navy F15STARS '97 and INTERVIEW '76, both DirectDraw titles, goes off without a hitch. USN's '97's frame rate stays between 15-25 fps with all rendering features maxed out.

All told, Falcon has assembled a very impressive rig in this new Mach V, and with a few minor modifications, has brought the unit's price down to be competitive both with Compaq and with Microware's Home MPC.

Falcon excels in the little extras: the CH game card, the CH joystick, and the 3Dfo-based 3D graphics. Not to mention, of course, that the system is tuned for games first, and other tasks second. If you're in the market for a gaming rig, that delivers some nice extras, take a good look at Mach V ☺

What You Get

- 200 MHz Pentium with MMX
- Philips Graphics 17-inch monitor
- Asus T00DX motherboard
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- 321B of SBO DRAM
- 2.1GB EIDE hard-drive
- Toshiba 18x EIDE CD-ROM drive
- STB LightSpeed 128 graphics board (with 2.25MB of MDRAM)
- Diamond Mirror3D board (3Dfx Voodoo chipset)
- Creative Labs Sound Blaster 16 sound card
- Yamaha SW8005 Wave Force daughterboard
- USR Sportster 33.6Kbps modem
- OM Products speed-adjustable GameCard
- OM Products programmable F-16 ControlStick
- ARI-Linking ACS-55 speakers (with Dolby Multimedia Surround Sound)

Price: \$3,495 (as tested)
 Manufacturer:
 Falcon Northwest
 Cases Bay, OR
 (800) FALCON1
 www.falcon-nw.com
 Reader Service #: 340

APPEAL: Action and simulation gamers looking for killer performance and a rig that's ready to rock and roll straight out of the box.

PROS: Great performance across the board; new ATX case simplifies motherboard access.

CONS: Higher 2D graphics resolutions not supported by 2.25MB version of Hercules board.



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the games



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Lukewarm Nitro

by Loyd Case

When S3 delivered the VIRGE ZD95D accelerator chip last year, they beat many graphics chip vendors to the punch. Users then discovered that they had a pretty fast 2D accelerator, but the 3D graphics, although pretty, were less than speedy. In fact, unaccelerated versions of a game like DISCREET 2 would actually run faster than the "accelerated" version. So, S3 went back to the drawing board and came out with the VIRGE/GX and VIRGE/EXX.

The GX-based Nitro, although capable of using SGRAM, comes with 4MB of 28 nanosecond Sileon Mirage EDO DRAM, and lists for only \$149. You also get a terrific game bundle that includes MICH-WEARER, MURKINMAN, INVASIVE '76, SPECTRUM, and HYPERSPACE. But, only HYPERSPACE actually supports 3D hardware acceleration through Direct3D.

As a Windows 2D accelerator, Nitro 3D is a bit above average, but not much, posting 51.5 on WinBench 97 running at 6040/6865-bit color on a Micron Millennia P166 test system. However, it does great on scaled video tests, scaling up a 320x240 AVI file to 800x600 (24-bit color) with only a single dropped frame.

DOS performance was decent. Clench DOS SVGA graphics score was 35.5 fps—again, good, but not great. QUAKE 1.07 ran speedily, but Nitro 3D doesn't support VESA 2.0 in hardware; you'll need a software VBE driver like Settech Display Doctor.

What about 3D? Using Ziff-Davis' new 3D WinBench 97 (see related story in Read Me), the Nitro 3D posted a score of 28.2. We've run quite a few cards through 3D WinBench by now, and the Nitro is the fastest S3-based card we've

seen so far. Image quality is pretty good, too. But even with this second-generation chip, S3 still trails ATI, Matrox, and Rendition-based cards in 3D WinMark.

If you want a fairly stable 2D accelerator with okay 3D performance and a great software bundle—without paying through the nose—check out the Nitro3D. But if you want really fast 3D, you should look elsewhere. ☹

APPEAL: Those looking for an inexpensive 3D card.

PROS: Inexpensive, respectable 2D performance; great hardware.

CONS: Mediocre 3D performance; lack of VESA 2.0 support in firmware.



Price: \$149 with 4MB EDO DRAM
 Manufacturer: STB Nitro 3D
 Distributor: STB, Inc.
 Richardson, TX
 (972) 234-8750
 www.stb.com
 Reader Service #: 341

Voodoo for Less

by Loyd Case

When Ortel Technologies shipped the first 3Dx-based 3D accelerator, the visual and performance quality made a lot of gamers drool with excitement.

The \$289 list price, though generated a lot of waiting and gnashing of teeth. Since then the price has dropped to around \$210 mail order, but it's still not a trivial purchase.

Firing a shot across the bow of Ortel and Diamond is Taiwanese vendor Deltron, with their Flash 3D. At first blush, the Flash 3D closely resembles the other two 3Dx boards on the market, complete with 4MB of 40 nanosecond EDO DRAM. But there's one important difference: it only costs \$149.

As you might expect from the low price, this board comes with few amenities. The documentation, a few pages of photocopied text, gives new meaning to

"space." There's no real hardware, just the GLQUAKE executable (which requires the full version of QUAKE), demos of Tomb Raider and Cybergladiators, and a Microsoft Game Sampler.

Installation was very easy, though Windows 95 detected the Plug-and-Play card and even found the correct driver on the Flash 3D driver diskette. One reboot later, and Flash3D was ready for action. True to the product's space nature, there's no display control panel applet to adjust display parameters.

As for performance, the card scored 97.2 on ZD6 3D WinBench on a Micron Millennia P166, just a couple of points behind the 99.2 posted by Ortel's Righteous 3D. We also ran GLQUAKE's Time Demo numbers, and Flash3D matched Righteous 3D frame for frame, and the image quality was superb.



Here's the bottom line: If you're looking for a very fast, 3Dx-based 3D accelerator for a very modest price, and aren't concerned with software bundles, this card warrants a serious look. While technical support from an unknown manufacturer might be problematic, the card itself looks well-designed and solidly built. It's all worth more than a casual glance. ☺

APPEAL: Gamers looking for 3Dx performance on a K-mart budget.

PROS: Inexpensive 3Dx performance; decent components; easy installation.

CONS: No amenities or bundled games; skimpy manual; uncertain support.



Price: \$149
 Manufacturer: Deltron
 Temon, R.D.C.
 Distributor: HSC Windsor
 Windsor, Ontario, CAN
 www.winhsconline.com
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CG Choice Games This Month

STEEL DIVISION II CAMPAIGN DISK #1



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THE LAST EXPRESS



p. 182

YOU DON'T KNOW JACK MOVIES



The Question is Listening

p. 219

READER QUOTES

Battle cruiser 3000 AD: "I own in excess of 100 computer games and consider your publication the definitive game review source. I thought that your scathing review of *BATTLECRUISER 3000 AD* was too severe, and I chose to keep the game based upon the designer's [claims] that an adequate manual and patch were just around the corner. That was in October of 1986. It is now the end of April and I have been treated to a barrage of promises but very little substance. As of today the manual that was promised with the fifth (yes fifth!) major patch still remains an unfulfilled promise. The famous "CS" patch which was supposed to be the "ultimate" one contains many bugs and now includes three additional "maintenance patches" to be installed after the main patch! I wish that I was making this up. Please

continue to warn your readers about defective products and continue to have the courage to sound the alarm. I am one gamer that is now older and wiser."

Mike Lyons
via the Internet

Black Heroes: "I've been a computer buff ever since Atari came out with *Pong*. My concern today is the role models for computer games. How about making a hero or main character black sometimes? I'm not trying to start a revolution or be the leader of a noble cause. But if you ask that ques-

tion in an article to the big boy companies, maybe I can get an answer."

David J. Johnson, age 44
Afro-American Gamer
Tulsa, OK

Good question. We've seen only one African-American lead character in a game recently, *Taurus* from *I-76*. The upcoming *Damocles* from Ion Storm will reportedly include a controllable black character, *Superfly Johnson*, who looks to be a pretty mean dude (See *CGW* #155). We hope other game developers consider your suggestion seriously.

Review Quote of the Month

"Luke's light saber looks like a neon blue conductor's baton—Zubin Mehta as Jedi Knight."
—Robert Coffey, reviewing *YODA STORIES*

HOW DO WE RATE?

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



Outstanding:

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



Very Good:

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



Average:

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



Weak:

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



Abysmal:

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



Sans Solo

LucasArts' Newest *Star Wars* Sim Leaves Single Players in the Dust

by Elliott Chin

One of my favorite games of all time is *TIE FIGHTER*, but as good as that game was, it was missing something crucial: multiplayer support.

The game had an excellent storyline; well-designed, connected missions; and incredible gameplay. But my friends and I would always have to take turns playing the game, since it didn't have multiplayer support. I wished that we could fly missions together, race to see who could take out the Mon Calamari cruiser first, or just go head-to-head to determine who was the best pilot. So when I heard that LucasArts was working on a sequel that would have multiplayer play, I was ecstatic. I eagerly awaited what I hoped would be a game with the same depth and story, the same sense of being an Imperial (or Rebel) pilot, all with the addition of multiplayer capabilities.

When I first booted up *X-WING VS. TIE FIGHTER*, and jumped into a few training missions and multiplayer dogfights, I was smitten with the game, which played like *TIE FIGHTER*, and looked great as well.

However, once the initial buzz wore off, I discovered that this game was nowhere near as good as its predecessor. While the multiplayer missions are definitely fun, and the idea is great, the game just doesn't have that immersive feel that vaulted *TIE FIGHTER* into the five-star category.

MR. HOLLAND'S OPUS

XVT includes five types of missions: Exercises, solo or multiplayer training missions, melees, competitive missions between teams or individuals, combats, engagements between Imperial and Rebel



▶ **WILL YOU PLAY WITH ME?** At last you can play multiplayer *TIE FIGHTER*, but you had better have friends, because this game isn't much fun alone.



▶ **UPSIDE DOWN** There's no handicapping, so ships like the A-Wing will always have an advantage over Assault Gunboats.

forces (as opposed to the melees, which are competitions without Rebel/Imperial divisions), teamwork, simply three or five meleys strung together, with the goal of being the pilot to accumulate the most points, and battles (one per side), which are actually just the combats, played one after the other in a loose mini-campaign where you try to win seven combats.

While exercises, melees, and combats are played as one-time missions, teamwork and battles record your progress.

That's all there is to the game. You can jump around and play any mission at any time, but that's it. There's no progression between missions, no scenarios that open up after more wins, just a haphazard pool of available missions. All the missions can be played single player, but if you do, be prepared to lose often.

Because the missions are designed for multiple pilots, and because the AI can't be counted on to fly as intelligently as humans, you'll often feel overwhelmed. However, if you can play with others, the missions are indeed fun and challenging.

THE DARK SIDE OF THE GAME

The biggest problem with *XVT* is the poor single-player component. There are no truly interconnected missions and there isn't a shred of continuity in the game. The only encouragement for playing more than a few solo missions is to miss points. Multiplayer combat is the main focus for *XVT*, but still, the majority of people who are buying this product will no doubt also want to play some compelling solo games. If LucasArts had incorporated the original *TIE FIGHTER* solo missions, or added some cut-scenes and mission debriefings between each battle mission, it would have added more value to the single-player game.

Also, none of the classic battles from the *Star Wars* movies are available for play. It would have been great to fly the X-Wing into the Death Star's core to blow it up, or to play the TIE Interceptor chasing Wedge into the core. If a mission editor had been included, we could recreate historical *Star Wars* missions like the Death Star run in *Return of the Jedi*, but one isn't available and LucasArts has been traditionally hostile towards user-created mission editors.

▶▶▶Continued on pg. 157



Price: \$42.95

Minimum System Requirements:

Pentium 90 (P100 recommended), Windows 95, 16MB RAM, 2x CD-ROM drive (4x recommended), PCI graphics card, 16-bit sound card, joystick.

Multiplayer Support: Half modem (2 players); Modem, Internet (2-4 players), LAN (2-8 players)

Designer: Larry Holland and Totally Games

Publisher: LucasArts
San Rafael, CA
(800) 985-8227

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Something's happening here

Java™



What it is
has become
quite clear

computing

Something's happening here

What it **is** has become quite clear

A new kind of computing platform — designed to make your PC or Macintosh work better on the Internet and the World Wide Web — has arrived and it promises liberation from the you-can't-get-there-from-here snafus so typical of earlier times. The future is here and it's called Java™ computing.

Are you into games or web browsing? Or maybe you put your computer to work on your personal finances or you have a yen for homegrown desktop publishing. Perhaps you want to expand your kids' educational opportunities. Do you ever dream of being able to control and regulate the appliances in your house from your notebook computer or a cell phone?

Whatever your interests, Java technology will transform your computing experience. All you need is a Java enabled web browser — and today every major web browser on the market, including Netscape Navigator™ and Microsoft Internet Explorer, are Java computing enabled.

Today, this minute, you can power your desktop computer with Java technology for free. Just select the Java enabled browser you prefer and download it. Then watch as a whole new world begins to fill your horizons. The best is yet to come.



An evolution in web browsers

Browsers have evolved dramatically since Mosaic made websurfing easy for the rest of us. Today's browsers represent a new kind of platform that, while still easy to use, also enables development of rich, robust, network-centric applications.

- **Size.** Smaller is faster when it comes to downloading applications. It also lowers hard disk requirements and gives you a chance to get beyond the "bloatware" that's recently dominated desktop applications.

- **Speed.** Is there such a thing as enough bandwidth? As websites become richer with audio, video, 3D and other data types, speed is key. Java applets can maximize whatever bandwidth you've got.

- **Security.** With the Internet's universal connectivity comes the danger of malicious hackers and their ability to infect your computer. This

can be expensive, and at the very least a huge hassle, especially if you're not a corporation. Your browser should provide a secure communications channel (or "socket") and a reliable



means of identifying users and services to determine their allowed privileges. It should also be able to ensure that viruses, worms, and other malicious software programs can't infect your system. Look for a browser with SSL 3.0 and 128-bit encryption, both of which represent dramatic improvements over earlier SSL 2.0 and 40-bit security.

- **Cross-platform independence.** You probably know folks who use a

fundamentally different kind of computer — a Macintosh to your PC, for instance — and before web browsers came along, it was difficult, sometimes even impossible, to share files with them. Some browsers can alleviate this problem because, as Java enabled browsers, they have become a computing platform in their own right, functioning at a standards-based level above the underlying operating system.

Look for browsers that support secure, open applets and open programming languages along with system-specific, unsecured applets.

Today, Netscape's Navigator and Microsoft's Internet Explorer, among others, both support the Java platform. Sun Microsystems has also developed HotJava™ Browser, which has been designed to deliver customizable applications that will first be honed by the business community, and later emerge on the Internet in electronic commerce and shopping applications. Keep an eye out.

Java™ computing

Applet vs. application

Applet: a program run on a web browser (or applet viewer) that has strictly limited access to your system. An applet can normally not read or write files on your system, whereas an application normally can.

Application: a standalone program normally launched from the command line that has more or less unrestricted access to your system.

A solution apart

Though less than two years old, Java computing and the language on which it's based have attracted more interest than the C programming language managed during its entire first decade.

What sets Java computing apart? Freedom and the very real way that freedom's been evoked: Java computing is genuinely, unequivocally platform-independent. A program written in the Java language can run wherever a Java platform is present, regardless of the underlying proprietary environment, whether it's Windows, Mac, UNIX[®] — it doesn't matter.

Here's how it works: Because a Java applet or application compiles to *machine-independent* bytecodes, the same exact file can run on any operating system, as long as that operating system is also running the Java Virtual Machine. Each underlying system has its own implementation of the Java Virtual Machine, but since there's only one Java Virtual Machine specification, the Java platform acts as a standard, uniform programming interface to applets and applications on any hardware.

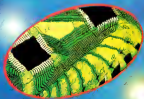
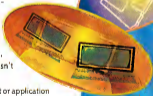
— So Java applets and applications can run in any Java



RECOMMENDED

Astrology. Net provides users with daily horoscopes, astrology tips and your astronomical energy levels for the day. Tune in now and subscribe to your daily horoscope!

RECOMMENDED 99



Let Java computing entertain you

Worldwide entertainment giant Sony has turned to Java computing to create a new web-based entertainment and commerce network called *TheStation@sony.com*. As you might expect, this special new website can be found at <http://www.station.sony.com>.

Highlights of *The Station* include:

- **StationPass**, a unique communications feature of *The Station* combining the best of technology and design. *The StationPass* is *The Station's* webwide walkie-talkie, allowing for two-way communication through realtime messaging from passholders and announcements from *The Station* itself;
- Personalized areas that include personal descriptions, favorite links, buddy lists of other users active on the site as well as account and billing information;
- **CommStation**, an area where users can access multiple communication features such as instant messages, electronic postcards, interactive threaded discussion groups and real-time chat;
- **Station Search**, an area where users can search for people, services, and products in *The Station*; and
- An extensive shopping network that allows multiple companies and brands to offer online customers an opportunity to buy goods ranging from books and CDs to promotional merchandising for entertainment offerings.

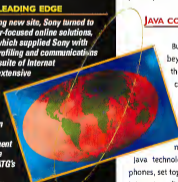
BEHIND THE SCENES: A LEADING EDGE

For development of its exciting new site, Sony turned to a leading provider of consumer-focused online solutions, Art Technology Group (ATG), which supplied Sony with commerce, advertising, user-profiling and communications capabilities from its *Dynamo* suite of Internet applications, and developed extensive network management and administration technology for the web-based online network.

"ATG has built for *The Station* a seamlessly integrated and entirely web-based entertainment service unlike any other on the web today," said Jeat Singh, ATG's chief executive officer.

"We integrated disparate Sony programs for music, game shows, soap operas and kids, as well as third-party content into a single, large-scale, consumer-driven service. Our approach was to design an online network that focuses on delivering a well-integrated, personalized user experience."

All applications are created using the *Dynamo Developer's Kit*, a Java computing application development framework.



enabled web browser, like Netscape Navigator, Microsoft's Internet Explorer or Sun Microsystems's new HotJava Browser. This makes Java computing perfect for today's quickly-blossoming Internet, where one program needs to be capable of running on any computer in the world.

Java computing is universal

Your web browser has likely already led you to your first Java experience, since the Java Virtual Machine now resides on all major browsers.

But Java computing hasn't stopped there. Remember: anywhere there's a Java Virtual Machine, Java applets and applications can be dynamically downloaded and run. That's why Sun Microsystems has made a Java development kit available for Windows95 and Windows-NT, MacOS 7.5 on PowerMacs and 68030 (25 MHz and faster) and 68040 Macs. IBM, meanwhile, has ported the Java Virtual Machine to Windows 3.1, OS/2, and AIX. And the Open Systems Foundation has ported Java to assorted UNIX platforms, while other ports are underway for Nextstep, the Amiga and possibly other platforms.

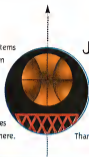
JAVA COMPUTING IN SILICON

But the Java computing arsenal goes way beyond that. Soon microprocessor versions of the Java platform will be incorporated into cellular phones, pagers, palmtops, even thermostats. And for good reason. By the end of the decade, the average home will contain between 50 and 100 microcontrollers. Java technology makes possible easy communication between all these devices. In fact,

Java technology can help link the millions of cellular phones, set top boxes, personal digital assistants and other Internet appliances operating in a networked environment and highly optimized for small applications running at top speed. Eventually, you'll be able to interact with these devices from your PC, Mac or laptop — and it'll all be as simple as using your web browser.

So promising is this new world of Java computing

enabled consumer electronics that Sun Microsystems and others are casting the Java platform into silicon so you can benefit from Java processors' significant power, performance and cost advantages. And recent new interfaces will make it easier for software designers to build Java computing into games, TVs, smartcards, copiers, fax machines and dashboards. Java computing will be everywhere.



Java computing is designed to be portable

The same Java applications run on all platforms and networks — a seamless environment reaching from server to client to cellular phone and beyond. Thanks to its virtual machine orientation, applications

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Fair weather ahead with Java computing

How many times have you left the house without an umbrella, because the weatherman predicted 60-degree temperatures and sunshine, only to be drenched on the way home?

Alas, TV and newspaper weather forecasts are wrong about as often as they're right. We depend on them anyway because there's been no alternative. Until now.

A group of farsighted weather researchers at the University of Michigan have put the Java platform to work so you can interactively view the national weather picture on your desktop computer screen whenever you want. Whether you're in Portland, Maine or Portland, Oregon — or anywhere in between — you can get immediate access to the latest weather information by accessing the Blue-Skies World Wide Web site. So when the weather changes — and it always does — you can be prepared.

NOTHING BUT BLUE-SKIES

The brainchild of three University of Michigan scientists who call themselves The Weather Underground, Blue-Skies is a Java computing application featuring the Interactive Image Format (IIF) Viewer, an applet that works with any Java enabled web browser.

Blue-Skies site visitors can download the Interactive Image

Format Viewer and view a wealth of graphical weather data drawn from a network of nearly 300 Internet sites. By simply moving your mouse across an on-screen weather map,



you can see current weather conditions across the nation, updated instantly.

The viewer applet works by interpreting IIF, which means you can customize IIF web pages on the fly to meet your own particular interests and needs — all without having to recompile the original Java code.

A WORLD OF WEATHER

The Weather Underground offers what is probably the most comprehensive collection of online weather services available anywhere.

Using Blue-Skies, you can access all of this data, plus weather reports from ski destinations, tropical storm

updates and general travel conditions. What's more, through its innovative WeatherCams, the WeatherNet delivers live, daily pictures of weather conditions in over two dozen cities and resorts in North America.

The Weather Underground plans to expand its services even more in the near future. In addition to its free educational site, made possible by the University of Michigan and the National Science Foundation, a commercial site that promises to be an even richer source of weather imagery and weather-related information will be launched soon.

JAVA ENABLES NEW USES

The Java language's robust, distributed architecture is an important part of these new capabilities. Because the Blue-Skies IIF Viewer can be downloaded quickly, easily and free of charge to multiple platforms, The Weather Underground believes it'll be especially useful as a science teaching tool in schools. In fact, an extensive meteorology curriculum for grades K-12 has already been produced to speed the applet's acceptance for this purpose.

Soon The Weather Underground will be licensing its Blue-Skies engine and extending the technology into other fields, from seismic activity monitoring and national park information to campus directories and bus schedules.

"In addition to realtime science data providers, like us, you could use the IIF viewer for any John Doe's really cool home page," says one of IIF's developers.

the great Java computing push

Just months after pioneering Internet 'push' technology based on the Java platform, Marimba, Inc.'s Castanet is emerging as the technology-of-choice for software and content delivery over the Internet.

Channels built with Marimba's Castanet are going up with increasing frequency. And the subjects of these channels span the interests of the world — from interactive comics, games and puzzles, to displayed databases, and absolutely current news and sports information, Marimba makes the Internet come alive.

Now over 50 leading Internet technology vendors, corporate customers, publishers, media companies, consulting firms, and international software distributors have struck strategic partnerships with Marimba, signaling a major alignment around a single Internet technology for content and code deployment. This collective support demonstrates Castanet's unique flexibility for many uses, including, for example, enabling CNNn to provide a new service allowing investors to monitor their stock portfolios on their desktops and get news stories relevant to their portfolios.

"At CNNn, our strategy is to deliver breaking business news and investment information in all ways that are effective and helpful to our audience," said Lou Dobbs,

Check out the Gamelan channel listing. It provides a complete listing of the Castanet channels that are available today.

chief executive of CNNn. "Marimba's Castanet technology will allow us to develop an excellent and unprecedented new channel for PC users."

A NEW KIND OF CHANNEL

Unlike products that merely broadcast information to desktops, Castanet's two-way communications capabilities enable these companies to efficiently deliver media-rich entertainment and information services customized to the unique needs of individual users — without concern for bandwidth constraints.

The Castanet Internet application management system intelligently deploys and automatically maintains rich media content and software to millions of users across the Internet. The system is comprised of the Castanet Tuner client and the Castanet Transmitter server. The Tuner enables end-users to subscribe to application 'channels' deployed by various Transmitters across the Internet.

Examples of types of channels enabled by Castanet include multimedia entertainment, interactive games and productivity applications — all updated in the background with minimal impact on network bandwidth. Since its debut, hundreds of thousands of end-users have downloaded Castanet Tuners from Marimba's website at <http://www.marimba.com>. Castanet is compatible with all Java development tools and runs on Windows NT 4.0, Windows95, Solaris™ 2.5 and the Mac operating system.

In addition to sending simple content like advertising and stock quotes to your desktop, Castanet's 'intelligent push' capabilities are being incorporated into the products and services of leading technology vendors, including Hewlett-Packard, IBM, Intel and Sun. To enable automatic creation of Castanet 'channels,' tool companies Borland, Future Tense, Macromedia, Net-It-Now!, Random Noise and Symantec are embedding Marimba's publishing technology into their own products so content authors can automatically create Castanet channels.

IMPROVING THE VIEW

Castanet is also delivering breakthrough capability to key publishers and media companies. Just like corporations running enterprisewide information systems, media companies and publishers require a robust deployment and maintenance platform on which to build their new generation of media-rich information services and entertainment for the Internet.

Its flexible architecture and ability to scale to millions of users are the primary reasons such companies as Columbia TriStar Interactive, EntertainNet, HotWired, MapQuest, Net Noir, Quote.com, Public Broadcasting Service (PBS), Sesame Street, My Yahoo! and ZDNet have adopted Castanet. Additionally, Marimba's relationship with Macromedia, creator of Shockwave, will ensure enhanced channel viewing experiences — something key to today's computer users.

"Sony Pictures Entertainment is excited to be using the Castanet technology to bring our entertainment content directly to viewers' desktops," said Richard

Subscribe to the Children's Television Workshop Sesame Street KidSite Channel! Join your favorite Sesame Street friends, grab a paintbrush and have fun with the KidSite's interactive coloring book.

company's products and services with customers and business partners," said David Donahue, president of Bentana Technologies. "Now we're able to distribute functions, such as enrollment and financial planning information, directly to the field sales force and to end-users."



Glosser, senior vice president of Columbia TriStar Interactive. "Our first channel — *Shock It To Me, Baby* — which features *Shockwave* games from our Columbia TriStar film and TV websites, delivers such award-winning activity as *Punch the Clown*."

CREATING NEW TECHNOLOGIES

By integrating Castanet with leading-edge technologies from companies such as Hewlett-Packard, IBM, Intel, Lotus, Macromedia and Sun, entirely new Internet applications are emerging.

Intel, for instance, has partnered with Marimba, Macromedia and PBS to develop an "infinite CD" for PBS. The technology leverages the storage capacity of CDs along with Castanet's ability to continually update content in the background to deliver quality entertainment, information and commerce to users' desktops via PBS Online.

"Marimba's Castanet is the wave of the future," said Dan Farber, vice president and editor-in-chief of ZDNet. "It is the kind of technology that enriches the user experience, overcoming bandwidth limitations and allowing for more dynamic, interactive content."

Want to know more about Marimba? Check it out at <http://www.marimba.com>.

BREAKING DOWN THE BARRIERS

The corporate world has leapt onto the Java computing bandwagon in a big way that will become increasingly visible on your webscreen as companies pioneer new ways to reach the rest of us.

Take Bentana Technologies, Inc. This Aetna-funded company selected Castanet for its ability to break down the barriers of enterprisewide communication between the corporation and its agents, clients and beneficiaries. Using Castanet, Bentana Technologies is building and deploying rich content for collaborative and secure electronic commerce channels that allow the implementation of a virtual enterprise and the broadening of relationships with customers and distributors.

"Castanet represents breakthrough technology for our electronic commerce platform, which integrates a

“

Relive everything you loved about the 70s (and tried to forget) with disco-rama from EntertainNet. Tune in and shake your groove thing.

”



Text continued from page 23

are easy to transport across the Internet. The Java platform encourages production of reliable, simple code and its object and component orientation promotes re-use and library-building. Already, hundreds of thousands of programmers have learned the Java language and have begun churning out applets and Java based websites that are transforming the Internet to Java computing.

JAVA COMPUTING ACTION

The fruits of their labors are blossoming all over the Internet and already take nearly as many shapes as you can imagine, from games to personal banking to getting an up-to-date weather report.

Stop by Gamelan (on the web at <http://www.gamelan.com>), a directory of resources relating to the Java programming language and you'll get a sense of the scope and reach of Java computing. Organized hierarchically, the directory is fully searchable and includes such diverse Java related specimens as applets, standalone Java applications and news.

The Java platform is powering chat rooms, too. More than 15,000 webmasters use the EarthWeb Chat client on a hosted basis to build their online communities, making it the Internet's most widely-used Java chat system. Since EarthWeb Chat is written in the Java language, it runs seamlessly within the content of a web page, on any platform, in any Java capable browser. With just a few lines of HTML, even a novice webmaster can install EarthWeb Chat in minutes (check out <http://chat.earthweb.com>). It's also one of the most flexible chat applications available, with numerous options for customization.

Java computing is easing the burdens of staying weather-proof, too. You can check the weather with the newly Java enabled University of Michigan Weather Underground's Blue-Skies (see sidebar on pg.55) application, which gets you web browser access to current weather maps.

Or you can interactively zoom and browse your way to over three million locations worldwide on an interactive atlas, obtain city-to-city and door-to-door driving directions,

identify places of interest, and create and save personalized maps at the MapQuest website. The site offers the most detailed, high-quality cartographic information available online with attractive, readable maps that can be magnified from national to street level. MapQuest gets over three million hits and serves up 600,000-700,000 page views every day, placing it among the top websites worldwide in daily traffic. See MapQuest's website at <http://www.mapquest.com>.

Java technology even delivers Kodak moments via a powerful tool that provides complete online viewing, manipulation and storage capabilities for scanned 35mm photo images. Kodak's new Photo CD on the Web (see sidebar on pg. 56 and <http://www.kodak.com/digitalimaging/aboutPhotoCD.html>) now delivers cost-effective, convenient and high-quality imaging to web browsers everywhere so you can access, view and manipulate high-resolution images stored anywhere on the web.

Java computing can make you a smarter investor, too. WallStreetWeb's subscription service can be accessed at <http://www.wallstreetweb.com> with a secure web browser for instant stock quotes, built-in trading, power searches, personalized securities lists, charting capabilities and portfolio management. And MarketPage offers wireless stock market alerts and updates, delivered from its website directly to your alphanumeric pager.

PUSH TECHNOLOGIES

Until now, the Internet's explosive growth has been fueled mostly by the World Wide Web and by e-mail. Now another innovation opens a new horizon: the Internet as a platform for interactive applications and content that lands on your desktop with little or no effort on your part.

Internet and Java computing standards mean these apps will be much simpler and more flexible than ever before. And that's not all: these interactive applications will be easy to

The MapQuest Channel offers sophisticated worldwide map coverage, dynamic map and information navigation, interactive screen and location icons and millions of business locations and places of interest. *Bon Voyage!*

deploy, simple for everyone to update and able to deliver engaging, high-impact experiences directly to subscribers.

What's more, providers can gather detailed feedback about subscriber preferences so content is always relevant and up-to-date.

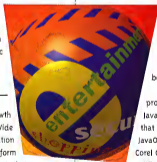
This new revolution has already begun. Java computing based Castanet from Marimba, Inc., for instance, delivers software and content over the Internet (see sidebar on pg. 56) via channels that range from games and sports to news and databases—and Castanet's background communications capabilities means no worry about bandwidth constraints.

BEYOND THE WEB

Java computing opportunities reach beyond the Web, too.

Corel Office for Java, a suite of office productivity applications written in the Java language, can run on any environment that implements the Java Virtual Machine or JavaOS™ platform. Because the client side of Corel Office for Java has won 100% Pure Java™ certification, all documents are readable and editable across all platforms.

Corel is also busy applying the Java platform to the Internet publishing process. With a new web publishing engine called Barista now integrated into Corel's WordPerfect 7



Java driven online imaging

Have you moved your photo apps onto your computer yet? There's never been a better time, thanks to Java computing.

Kodak's Photo CD system is a powerful tool that provides complete online viewing, manipulation and storage capabilities for scanned 35mm photo images. Introduced in 1992 as a linchpin of Eastman Kodak's Digital Science product family, the Photo CD system delivers cost-effective, convenient, high-quality imaging to desktops everywhere.

Support for Photo CD images has been built into most leading operating systems, including Solaris from Sun Microsystems, and dozens of software applications, such as Adobe Photoshop and Pagemaker, QuarkXpress and many others. No wonder the Photo CD image file format — called Image Pac — has quickly become a de facto computer industry standard.

Whether you're not surfing, doing in-depth research, creating Web pages or just contemplating splicing Aunt Harriet's head onto Uncle George's torso, you'll like what Photo CD can do — and you'll like the price even more: Photo CD is free.

IMAGING IS SERIOUS FUN ...

Obviously, Photo CD on the Web can be a lot of fun for web enthusiasts. But there is another side to Photo CD on the Web, too: the technology itself is a huge leap forward in online imaging quality, offering a 24-bit graphics format and an advanced color management system. With that kind of capability, Photo CD on the Web promises to be exceptionally useful for students, academicians and other serious researchers, giving them immediate access to important graphical information across the Internet.



PHOTO CD-AWARE WEB BROWSERS

Now Kodak has unveiled a new Java application, called Photo CD on the Web, to make its imaging technology easy and universally accessible to users anywhere in the world.

With Photo CD on your desktop browser, you can access, view and manipulate high-resolution images stored anywhere on the web. Because of Java's platform-independence, access is always seamless; it doesn't matter what kind of system the user has or where the image is stored. So every Java enabled web browser is also automatically Photo CD-aware, providing users with unparalleled imaging capabilities.

DYNAMIC INTERACTION WITH ONLINE IMAGES

Do you give away snapshots only to wish later that you still had them? Now you can share all your photos and keep them, too. And that's just for starters. Anyone with a Java enabled Web browser has immediate and transparent access to a vast array of high-resolution digital images — from detailed pictures of the surface of Mars to the Smithsonian's collection of Native American artifacts.

Using your web browser of choice, you can dynamically interact with online images like never before. Photo CD on the Web allows you to view, zoom, enlarge, crop and rotate any remote image in real time — as long as that image was previously captured and stored in Kodak's Image Pac format.

The Image Pac format stores a photo image in five different levels of resolution, and you can view and manipulate every one of these levels on the web without losing image quality — which means you can create far more interesting and dynamic Web pages than were ever possible before.

Already, such institutions as the Smithsonian's National Air and Space Museum, the University of Pittsburgh, Oregon State University and the American Museum of Natural History are all currently demonstrating Photo CD on the Web technology in a production environment.

...AND JAVA COMPUTING MAKES IT HAPPEN

Java computing is ideally suited for the robust, distributed operation this kind of demanding application requires. As a user of Photo CD on the Web, you can download the content you select — say, images or portions of images — from a remote Internet server at a museum, university or elsewhere, and then execute the Java applet locally. Rather than downloading an entire five-megabyte Photo CD digital image, the program brings across only the five kilobytes of high-resolution image data required for full operation. Result: performance that's extremely fast, responsive, and efficient.

A BRIGHT FUTURE

No matter what kind of system you have on your desk, odds are that Photo CD on the Web will be running there soon. And when Kodak issues a new version of this Java powered marvel, all you have to do is visit Kodak's web page and download your automatic update. It's hard to imagine software distribution getting any easier. The power and elegance of Java computing plus Kodak's technology-leading online imaging brightens the future for all of us.

For more information about Photo CD on the Web, visit <http://www.kodak.com/digitalimaging/aboutPhotoCD.html>.

and Ventura 7, users quickly can quickly transform existing documents and images into web-ready files — without any programming required. Every WordPerfect 7 and Ventura 7 user is now automatically a web publisher, with complete control over the look and feel of their material.

"Java's unprecedented cross-platform support and distributed architecture make all of this possible," says Corel Technology Evangelist Chris Biber. "Basically, Java has changed all the rules."

With a prototype application weighing in at only 62 kilobytes, Corel Office for Java delivers important advantages:

- Support for open standards.
- A feature set that can be customized and expanded.
- 100% written in the Java language, which allows cross-platform deployment.
- A file format that's consistent across platforms.
- A consistent user interface and standard terminology throughout all applications.

You can find out more about Corel Office for Java at <http://officeforjava.corel.com>.

Many other vendors are developing Java applets and applications that businesses will use to reach their customers — that's us, folks — via the Internet and dedicated corporate networks.

One smaller financial organization that has gained competitively thanks to Java computing is the Heritage Bank & Trust Co. of Lafayette, Indiana.

Over the past year, the bank's CEO accumulated several Java applets at little or no cost, downloading them from various applet sites on the web such as Gamelan. And he wrote applets of his own. Now Heritage Bank offers its customers access to a Java based mortgage-payment calculator. An income qualification calculator uses a potential mortgage borrower's income and expense data to figure out the maximum prudent monthly mortgage and maximum loan amount.

Java computing is secure

Since its release in May, 1995, Java computing has swept across the internet, offering solutions for key problems nagging client/server computing

and corporate use of the World Wide Web.

But it's precisely Java computing's unique ability to distribute executable code over the Internet that has raised concern about its effect on network security. After all, a lot of people have begun shopping on the Web.

Happily, much of the security and reliability needed to protect organizations using Java applets and applications containing executable code has been built right into the Java platform.

SAFETY

In theory, a Java applet can come from anywhere and be capable of attacking unprotected machines in ways that might not be stopped by traditional methods. That's why the Java platform protects its users by placing strict limits on applets to prevent potentially malicious applets from stealing information, spreading viruses or acting as virus-carrying Trojan horses. They cannot read from or write to your local disk. Standalone windows created by applets are clearly labeled as being owned by untrusted software.



SECURITY

The Java platform's security allows a user to import and run applets from the web without undue risk to the user's machine. The Java applet's actions are restricted to its "sandbox," an area of the web browser or the Java Virtual Machine. The applet may do anything it wants within its sandbox, but cannot read or alter any data outside of its sandbox, allowing users to run untrusted code without compromising their trusted computing environments. If a user does accidentally import a hostile applet, the local machine will not be damaged.

A SAFE SHOPPING ENVIRONMENT

All that Java computing security means that Java powered websites are a safe place to shop. More and more are appearing every day.

Worldwide entertainment giant Sony, for one, has turned to Java computing to create a new web-based entertainment and commerce network called TheStation@sony.com (see

Bringing Wall Street and updates to the webtop with Java computing

Have you ever dreamed of an online investment service that sends instantaneous market updates to your desktop, so you could execute realtime electronic trades, graphically chart your portfolio's progress and maybe even page you with breaking news when you step away from your desk?

Sounds like an investor's dream. In fact, it's real, thanks to the World Wide Web, a company called BulletProof and the Java computing platform.

Web immediacy and Java computing's interactivity have been melded into the perfect vehicle for communicating volatility, changeable — and user-selectable — information like stock prices. As BulletProof's Scott Milener

JAVA COMPUTING MAKES INVESTING EASY

BulletProof currently has two Web-based investment applications, both written in the Java computing language.

MarketPage offers wireless stock market alerts and updates, delivered from BulletProof's website directly to your alphanumeric pager.

The other service — WallStreetWeb — can be accessed with a secure web browser for instant stock quotes, built-in trading, power searches, personalized securities lists, charting capabilities and portfolio management.

KEEPING IT SIMPLE

Using the Java language, BulletProof software engineers were able to create a graphical user interface (GUI) very similar in look and feel to Windows-based desktop applications. This

familiarity means you can be up and running on WallStreetWeb and MarketPage almost immediately. Compare, for instance, an earlier HTML

version of MarketPage to the current Java computing implementation.

"The paging setup GUI in the Java based MarketPage applet leaves the HTML interface in the dust," says Milener. Thanks to the intuitive Java GUI, you'll need only a minute or two to pick your personal preferences, complete the pager setup and perform a simple pager compatibility test.

THE "WHOOHH!" FEELING

Scott Milener recalls learning about Java computing for the first time:

"The moment I read about Java, I became very excited and went to talk to our engineers — still very excited — and said, 'I bet we can build this, this and this with the new Java language.' They looked at me and said, 'Yeah, we've already downloaded it and we're working on a new application — what do you think?'"

"I was amazed. We each learned of Java separately at around the same time, and we all immediately saw the enormous implications. We had that 'Whoohhh' feeling!"

Interested in more about MarketPage or WallStreetWeb? Check them out at <http://www.wallstreetweb.com>.



puts it, "Java computing allows us to move from the desktop to what I call the webtop. Java is what makes our application."

sidebar on pg. 54). As you might expect, this special new website can be found at <http://www.station.sony.com> and contains chat rooms, realtime two-way messaging, shopping and much more.

Another Java powered website, Garden Escape (at <http://www.gardenescape.com>) offers an interactive planner for gardening enthusiasts, along with an online magazine, resource pages and links, chat rooms, a gift registry and, of course, shopping.

There are many more Java computing stories like these. You'll hear more and more of them in the coming months, as Java computing spreads across browsers and websites and even boardrooms.

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For more information about Java computing, please visit <http://java.sun.com> or call 1-800-JAVASOFT.



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The Multiplayer Side of the Force

For a game geared so strongly towards multiplayer action, *X-Wing vs. TIE Fighter's* networking is a surprisingly mixed bag. Once you get up and running it performs well, but the restrictions on setup and number of players will annoy gamers experienced with more flexible network games.

XvT's Internet play is handled through the Internet Gaming Zone (www.zone.com) Web site. The Zone provides chat rooms where you can easily find opponents with low latency numbers and then start a game with only a few clicks. No matter what time of day I logged on to the Zone, I was able to find enough players to launch a mission almost immediately. As long as all the players showed up green on the latency meter, games were smooth, with almost no perceptible lag or warping, even when I hosted on a less-than-optimal 28,400-bps connection. You'll need Microsoft's Internet Explorer to access the Zone—in typical Microsoft fashion, Netscape isn't supported.

Because of the sheer amount of information being sent over the Net—locations of not only players and missiles, but also dozens of computer-controlled ships—the Zone limits you to four human players in order to keep performance up. By using Kali 1.10 or later, or by manually connecting to a host player's IP address and bypassing the Zone, you can play with more than four players. You'll probably only be able to play meless without computer-controlled ships, due to the amount of data being transmitted. Network connections easily support eight players; modem play, as you'd expect, is perfectly smooth.

While there are few technical problems with the game's connectivity, there are certainly plenty of annoying design decisions. Perhaps the biggest irritation is the inability to join a game already in progress, even if there are player openings. If a player gets dropped from a game, he will be unable to rejoin unless all players leave the game and re-launch it. If dynamic entry were allowed, you could rejoin a lost connection, or other players could pop in to fill gaps in the team. Also, if you have trouble connecting to a game, the program sits for over two minutes before it times out. If you haven't connected in a minute or so, you're probably not going to, and an option to escape from the connection screen should be available.

One nice feature is the ability to watch the battle from a tactical display on the observation deck—and even zoom in on specific ships and give them orders—once all your own ships have been destroyed. At least you'll have something to do if you die early on.—Denny Adkin

***Continued from pg 144

IS THE FORCE WITH XVT?

The game's engine looks and plays like *TIE FIGHTER*, with the addition of texture-mapped graphics. One problem with the engine is scaling: Capital ships look too small, so you can easily misjudge the distance to a Star Destroyer and then get caught by its guns before you realize you're too close. Graphically, the game looks good, with excellent lighting effects when the starfighters get hit. Cockpit graphics, on the other hand, are rather out of place with a drawn appearance that contrasts poorly with the detailed texture maps on the ships.

Along with overall good control and graphics, XvT does have some great music, and can be customized. You can reup all the commands and create the perfect keyboard/joystick layout for your needs. The list of orders to give your wingmen, as well as the targeting options for hitting ship components, are good holdovers from previous *Star Wars* titles.

If you just take the multiplayer action, from daylight to co-op missions, *X-Wing vs. TIE FIGHTER* is a four-star game. But its poor solo play doesn't rate much higher than two stars. What you end up with is a game with single-player missions that serve best as practice



▶ **DEATH AT TWELVE O'CLOCK** In one of the better multiplayer missions, you and a small group of X-Wings have to take out a Star Destroyer.

for the real fun—the multiplayer missions.

The sad part is, I was really looking forward to this game. After the high of playing *TIE FIGHTER*, I wanted another *Star Wars* experience that would be just as immersive and fun. And while my wish for multiplayer *Star Wars* action was fulfilled, my hope for an equivalent single-player experience wasn't. ☹

▶ **PAPPEAL:** Gamers who always wanted to play *TIE Fighter* multiplayer. Solo gamers need not apply.

▶ **IPROS:** Good *TIE Fighter*-style space combat; good graphics and music; some interesting missions.

▶ **ICONS:** No real solo play; bad cockpit graphics; no mission editor; none of the immersion that made *TIE Fighter* great; some rigging problems in multiplayer games.

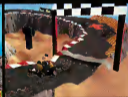




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CIRCLE READER SERVICE #146



Hornet Gets Some Buzz



Another Mac Flight Sim Launches a Successful Attack on the Windows 95 Market

by Robin G. Kim

Nothing compares to the adrenaline rush of a catapult launch, or the sweat-soaked terror of guiding a multi-million dollar jet through total darkness toward a controlled crash on a tiny patch of moving real estate. Graphic Simulations Corporation obviously understood this appeal back when they created F/A-18 Hornet for the Macintosh. Version 3.0 lets PC owners in on the action for the first time, while advancing the Macintosh line through the introduction of rolling terrain, wingman commands, and other minor enhancements.

Like most Mac flight sims, HORNET uses flat-shaded polygon graphics with no texture mapping. The result may not appear photorealistic, but the 3D objects still look great, and almost any Pentium system can achieve fast frame rates at resolutions from 640x480 to 3024x768. The sim tries hard to maintain this speed, actually slowing the passage of game time (sometimes down to 1/3 normal) when the scene gets busy. In practice, this is barely noticeable, and probably less so than if it just allowed frame rate to plummet.

PREFLIGHT

HORNET features 40 missions, six training flights, six multiplayer scenarios, and 25 combat missions in the Persian Gulf. They can be flown individually in any order, or you may create a pilot



IN THE GROOVE Carrier landings can be an interesting challenge, but the sim is too tolerant of errors—slamming into the middle of the deck will get you down just as well as a perfect approach to the three-wire trap.

record and undertake a tour of duty. A tour consists of seven series of gradually increasing difficulty, each one offering four different missions from which to choose. The missions are basically carried (the results of one have no lingering effect on those that follow) but the randomized placement of enemy forces keeps things interesting over multiple replays. A wide enough range of difficulty settings is provided to suit players of any skill level.

The F/A-18 is a true multi-role aircraft, and the diversity of missions in the sim accurately reflects this. Assignments

range from air intercepts to escort duty to strikes against targets on land and sea. Unfortunately, the sim lacks any sort of mission planning. You can't even review your waypoints before taking off, much less change them. Also, most flights start you out very close to your objective. Though this is clearly unrealistic, the only direct consequences are less time spent in boring transit and a reduced need to conserve fuel. As a side benefit, the short flight times also make reviewing films, created using the game's excellent mission recorder, more entertaining.

One or two wingmen accompany you on most flights, but they can only lead air-to-air support—ground pounding is strictly your department. The AI is



GONE FISSION The devastating B-57 tactical nuclear bomb can only be carried on a few select missions against the toughest, most important targets.



See this month's CG Tips section for information on how to fly any aircraft in F/A-18 Hornet 3.0.



Price: \$45.00

Minimum System

Requirements: Pentium, 8MB RAM, 35MB hard drive space, 2x CD-ROM, SVGA video, Windows 95 or Windows NT 4.0. Macintosh: Power PC, 16MB RAM, 25MB hard drive space, 2x CD-ROM drive, 640x480 8-bit color.

Multiplayer Support:

Direct Connect, Modem, LAN (1-4 players), Internet via Kali

Designer: Troy Smith

Publisher: Graphic Simulations Corporation, Dallas, TX (972) 386-7375

www.graphsim.com

Reader Service #: 317

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fairly good when it hasn't been intentionally disabled down for play balance, as is done on some missions. Your wingmen do have an annoying tendency to crash into the ground when ordered into formation at low altitudes, but this design fault can be avoided by simply not issuing them those particular commands.

Acknowledgments and status reports are conveyed by digitized speech with a stately background that sounds much more realistic than the ultra-clean studio recordings heard in some other sims. Radio communications from ground control, the control tower, and the carrier's landing signal officer are also well done, substantially enhancing the feel of the sim.

THE REAL MCCOY

HORNET really begins to shine once you step into the cockpit. Avionics modeling is its forte, and even a quick glance at the instrument panel—a dead ringer for the one in the real plane—should tell you that this is one serious simulation. It's not just eye candy, either. With 12 radar modes, 3 electro-optical

modes, 5 autopilot modes, and H10 keyboard commands, the cockpit is a nirvana for fans of systems realism.

Weapons modeling is also top notch.

Mastering this complexity would be easier if the documentation didn't read more like a reference manual than a tutorial (it also neglects to list CSCS tech support number, which is (972) 386-7575). Nevertheless, when combined with the extensive suite of multimedia

lessons, enough information is presented to push

you through easy setup and impressively smooth network and modem play (the Macintosh version only supports

AppleTalk networks). Up to four people can participate at once, dividing up into two teams of one or two players each. Computer-controlled aircraft aren't available, so you can't fly campaign missions with your friends, but the six multiplayer-only missions that are included offer a good variety of air-to-air and air-to-ground themes. The chat feature allows you to type messages to everyone or to just your wingman.

Despite the low player host and lack of campaign support, the multiplayer missions are entertaining enough to boost the sim's long-term play value greatly—as long as you can find people to fly against. Performance over the Internet is relatively good, so Kell and Kohn users should have little trouble finding opponents and teammates online. Unfortunately, the PC version can't currently connect to the Macintosh version, so PC owners won't be able to join in on the dozing ladder that Macintosh players have already established.

even a novice—albeit a highly motivated one—up the steep learning curve.

As impressive as the avionics modeling is, it does contain numerous small errors. Most of these problems have simple work-arounds, however, so on the whole they are not overly detrimental to gameplay. Examples include ground mapping radar modes (but thankfully

MULTIPLAYER MAYHEM

HORNET uses DirectPlay on the PC to

provide easy setup and impressively smooth network and modem play (the Macintosh version only supports

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See this month's CG-ROM for an interactive demo of Hornet 3.0.





INFORMATION OVERLOAD Players used to flying a sim before reading the manual may find Hornet's realistic array of cockpit avionics a bit bewildering.

not air modes) that can see through hills, and electro-optical sensors that are unable to detect ground vehicles except at ridiculously short ranges.

SURFACE REALISM

At first glance, Hornet appears to have an outstanding flight model. It has a pleasantly fluid, controllable feel that accurs convincing over a broad range of airspeeds. Angle of attack is appropriately tied to lift, and energy bleeds off in a realistic fashion under heavy G loads. Carrier

landings are especially well done, though no landing grades are given, and the sim is rather forgiving of mistakes.

Regrettably, digging a little deeper uncovers many significant errors. Altitude has no effect on turn performance, plane handling is nearly unaffected by heavy ordinance loads, ground acceleration and deceleration is so overdone that it is possible to land on a carrier without using the hook and to take off without using the catapult, absurdly effective rudders make 90° flat turns possible at supersonic speeds, and fuel consumption on afterburner is about three times too high.

With these seemingly dazzling flaws, it would be easy to write the sim off as a glorified arcade game. But unless getting the numbers right is more important to you than game play, this may not be entirely justified. It turns out that if you intentionally fly the plane in a realistic manner—as the designers obviously intended—most of the flight model's greatest failings are not really apparent. Make no mistake: This sim's flight and avionics inaccuracies definitely do distort reality, so those who

demand absolute fidelity will be disappointed by Hornet's shortcomings.

But if you are the kind of person who is willing to cleave to the spirit of the sim rather than dwell on its deficiencies, you may find that all types of missions play out in a fun, challenging, and realistic enough manner. For waxy sim players, that is perhaps what really matters. **S**

APPEAL: Worshipers at the altar of high frame rates; sim veterans who enjoy complex systems models and can overlook failings in other areas.

PROS: Outstanding avionics modeling; fluid flight model feel; good SVGA graphics performance; excellent use of digitized speech; wide variety of mission types; smooth running multiplayer modes.

CONS: Some major flaws in the flight modeling; limited number of missions and no mission builder; campaign lock flow; wingmen occasionally go suicidal.



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Direct Hit

Westwood Delivers Solid Single-Player Gaming With This RED ALERT Expansion Disc

by Elliott Chin

Westwood learned a few lessons the last time they released an expansion set for a hot COMMAND & CONQUER game. Though even C&C: COVERED OPERATIONS, in retrospect, it wasn't all it could have been. Sure, it gave us some new missions, but that was it. No new campaign, no new units, just a series of disparate scenarios. It just wasn't enough. So this time, Westwood is doing more for RED ALERT with their expansion disc, COUNTERSTRIKE.

With this package, Westwood is giving us some very cool, new units and not only better-designed missions, but missions that are grouped into mini-campaigns.

MULTI-PART MISSIONS

Whereas in COVERED OPS, the missions were just a stand-alone mix, in COUNTERSTRIKE, at least the Allied missions are all grouped into mini-campaigns. One mini-campaign is centered around the Soviet's chemical weapons production. In the first mission, you must stop truck convoys loaded with strain gas from leaving a Soviet base. The second mission finds you tracking the

strain shipment to a gas production facility, where you have to infiltrate the installation. In the third and last mission, you find the base where the strain gas is stored, and you must then destroy the camp. Unfortunately, on

the flip side, the Soviet missions are a hodge-podge, and while good, lack coherency and an overarching story.

The variety and design of the missions, in comparison to RED ALERT, are outstanding. For example, the second strain mission actually takes place in the factory, and you have to move from one end of the installation to the other. The level is very tough to beat, though, and you'll have to explore the maze-like structure to find the right computer terminals to disarm flame throwers, all the while keeping your one essential spy safe from patrolling dogs.

The levels also aren't about out-producing or simply destroying your opponent; there are other goals which make the missions harder and more interesting, as they did to an extent in RED ALERT. These are timed escort missions, civilian evacuation missions, base infiltration missions, and seek-and-destroy missions.

Westwood says they made the COUNTERSTRIKE missions less difficult than they could have been, but these missions were tougher than those in RED ALERT, and certainly difficult enough for me.

MULTIPLAYER NESS?

However, many people who buy this expansion disc will be doing so for the new units and



FLAME WARS The missions in COUNTERSTRIKE, such as this installation battle, are varied and challenging.

the multiplayer maps. Unfortunately, while the new units are cool, they aren't available for multiplayer games. You also can't play on the 110 multiplayer maps with others unless you all own the COUNTERSTRIKE disc. In its defense, Westwood is working on a patch that will allow you to play the new multiplayer maps with others who don't own the CD. The patch should also make the new units available for multiplayer use. Lastly, this patch should balance tank runs by giving the defender a more rapid building time for defensive structures.

Though multiplayer enthusiasts will want to wait and verify that the patch does offer the new COUNTERSTRIKE units for multiplayer before buying this expansion disc, those wanting saunter RA missions and cool units won't miss with this COUNTERSTRIKE.

PAPPEAL: Solo Red Alert players looking for new units and some smart mini-campaigns and missions.

MPRODS: Cool new units; well-designed, more challenging missions; some missions strung together in mini-campaigns.

CONCNS: Can't play the new units in multiplayer games; some missions still lack overarching story.



SAY HI TO YOUR ANT To access the secret ant missions, hold down shift and click on the round part of the speaker on the main menu.



Price: \$24.99
Minimum System Requirements:
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Publisher: Virgin Interactive
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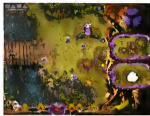
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Rock and Roll

Interplay Tries to Make a Game out of Deep Space Asteroid Mining

by Martin E. Cirulis

The spaceplotation games just keep coming this year, and now Interplay has a new entry that harkens back to the old sci-fi games like *M.U.L.E.*, where commerce—and even mining—meant more than losses and makes. In *FRAGILE ALLEGIANCE*, you take the role of a human company representative charged with prospecting and mining a new sector of asteroids. It's a difficult enough job, with rocks hurtling through the dark at 30,000 mph and deadly accidents taking their weekly toll on workers and equipment, but when you combine that with up to seven other alien races that are looking for the same one, things can get pretty hairy, especially when you realize the game's title refers to the state of diplomacy out there.

PEBBLES IN THE SKY

ALLEGIANCE is a real-time spaceplotation game of a very interesting stripe. Instead of the usual accent on the eXterminate portion of the four X's (eXplore, eXpand, eXploit, eXterminate), which we find in almost every game of this genre, *ALLEGIANCE* revolves around

making a profit. You might be forced to fight in order to survive, but you must do so while keeping an eye on your credit balance and resources.

Each asteroid is treated much as a single planet is treated in games like *MOOII*, except how many of them drift around the map on different vectors—and yes, collisions do occur, much to the despair of anything on either rock. Expensive technologies can either halt the drift of an asteroid or, in some cases, provide it with the engines necessary to putter slowly out of harm's way. Once you colonize an asteroid, you must build the necessary life-support structures, as well as gamer-cough power, air, water, and food to keep your workers alive. Then you can slowly build up your mines. Depending on your strategic needs, rocks can either be kept as simple mining operations or built up into mobile fortresses or stopovers, or a combination of the two.

The mining aspect of the game is relatively simple, but has just enough detail to keep things interesting. Each asteroid can have up to ten different minerals, and a scout ship can be delegated to prospect for deposits so you can pick the most profitable real estate to exploit. The minerals come in three basic groups, based on depth



ASTERIODS-R-US You're the head of a space-borne corporation that is attempting to create a mining empire while fighting off the industrial and military incursions of rival, alien companies.

and rarity. Surface ores are plentiful and only require basic technologies; the rarer ones can only be found deep beneath the surface, and in smaller quantities. Often, you must balance cost and profit before carefully deciding if it is worthwhile to dig deep. Every few months, a company transport arrives at one of your asteroids to buy up any of the stored minerals you are willing to part with. This provides you with the bulk of the money you'll need to maintain your current operations and expand outward into the high frontier.

Technology is also cleverly handled in *ALLEGIANCE*, which allows players to expand their abilities without undermining the premise of the game. *ALLEGIANCE* very logically puts research far out of your reach, and instead allows you to order blueprints for various new technologies from another company. After paying a considerable amount for the rights to build or use a device, the blueprints arrive on the next company transport and from that point on they are part of your technological base.

With dozens of asteroid bases possible in large games, micromanagement can become a problem—but luckily, for a paltry 80–90 thousand credits a month, the company will provide you with a manager to handle the day-to-day



THE ROCK In *FRAGILE ALLEGIANCE*, you colonize asteroids as if they were planets. You have to build life-support structures, mining equipment, and defenses.



Price: \$49.95

Minimum System

Requirements:

486DX/66 (P50 recom-

ended), 8MB RAM

(16MB recommended),

36MB hard drive

space, 2x CD-ROM

drive, SVGA graphics,

DOS 5.0 or

Windows 95.

Multiplayer Support:

Modem, serial connec-

tion (1–2 players);

LAN (1–8 players).

Designer: Kim Blake

Publisher: Interplay

Irvine, CA

(714) 553-8678

www.interplay.com

Reader Service #: 332

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SECRET AGENT MAN Combat isn't crucial to victory, but if you must resort to military means, you can always employ saboteurs.

problems, such as balancing life-support or hauling up mine shafts to efficiently strip your asteroids. The real wonder here is that these AI agents are actually very competent at their jobs, and can even handle players adding various structures to asteroids under AI control.

Unfortunately, while capitalism rules the galaxy and all the races are technically at peace, you'll soon find out that the word "technically" leaves a lot of room for rough stuff.

DIRTY TRICKS

Warfare in ALLEGIANCE is often a necessary evil, due mainly to the computer player's tendency to hit first and then talk, but in keeping with the theme of the game, it is an expensive and wasteful evil as well.

When an asteroid from an alien race (or human competitor in multiplayer) comes within scanning range, you may use the opportunity to converse with the owner and discuss intricate non-aggression or allegiance contracts. These contracts have not only a strict duration, but also carry a hefty monetary penalty, should you break them. You may also trade with opponents, swapping a huge list of cosmetic items, and reaping mutual profits.

On the other hand, if the asteroid belt is just too small for the both of you, you can resort to mayhem along three paths: covert operations, missile attack, and starship combat involving ship-to-ship and ground operations. The covert path is available by lining freelance agents to engage in theft and sabotage in alien asteroids. Missile attacks are

your basic asteroid versions of ICBMs, and there are nearly a dozen different types of warheads available covering the gamut from high explosives to biologicals. These missiles are launched from one asteroid at another, with distance determining what rough percentage of them will reach their target. Once there, they will have to brave any anti-missile batteries present before detonating. Starship combat is simple but elegant; you can build a variety of hulls, from fighters to battleships. Weapons come in either ship-to-ship or ground attack types, thus forcing players to commit to offense or defense when constructing a fleet.

Combat is resolved automatically, and often grand melees occur as fleets circle an asteroid blasting away at each other while the attackers strike installations and surface-based batteries return fire. There's not much tactical strategy beyond the ship deployment.

Players can either increase or decrease the war-like tendencies of their neighbors when setting up a game, so star generals can make it a battle to the death while young tycoons can nudge the computer players toward better instead of guns.

DRIFTING OFF TARGET

These features and the great SVGA graphics would seem to push FRAGILE ALLEGIANCE into the five star mark. But, just when you think the game is on the verge of greatness, you find some disturbing omissions and balance problems that hinder an otherwise excellent game.

The first problem that comes up is the inability to change game speed during the game. You can specify speed when you enter a game, but you can't change it, and the options are paltry: slow, medium, or fast. Aren't slider bars for game speed a given in real-time games these days? Another strange grip is that although you can play against an interesting array of aliens, you cannot play any of them yourself. Even in multiplayer games, everybody must be human.

Other problems with ALLEGIANCE involve game-balance, and are a little more subtle, but detract from the game nonetheless. Mineral assets on asteroids play out very quickly, and so your money runs out just as fast. Instead of

simply making the rocks in this game meager, the designers introduced a tax return for every worker under your control, so while everything in the game tells you to create lean, ultra-efficient workforces, actual gameplay dictates that you build up huge populations of personnel who do nothing but play video games and pay taxes.

The endgame is also disappointing—you just get a generic spreadsheet marking all your accomplishments in the game, and there isn't even a saved high score feature to make a point of continued play. Perhaps a careful study of the endgame in Civ would have been a good idea before Interplay sent ALLEGIANCE out the door.

And, in what is becoming a very disturbing trend in sci-fi strat titles lately, the manual with this game is sparse and inadequate. While it does cover the basic workings of the interface, it does very little to illuminate the actual mechanics and technical details of the game. There is no way to tell the effect of various ship weapons, except to rely on the notion that the more expensive a weapon is, the more damage it must do.

As unfortunate as these flaws are, FRAGILE ALLEGIANCE is easily the most fun I've had at a spaceplotting game so far this year. The play is unique and infinitely variable, with a constantly shifting gamefield and tenacious AI opponents. Interplay has gone far in delivering a sci-fi strat game that actually takes the environment and mechanics of space into account, and they've produced a game that's smart as well as sexy. ALLEGIANCE stands well apart from the more generic fare populating games shelves this year. %

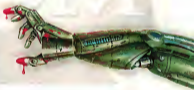
FAPPEL! Gamers who want a different kind of strategy game with some realistic space effects and a good economic model.

PROS: Original, innovative gameplay and mechanics; detailed graphics; economics are as important as military strikes; effective AI.

CONS: Cool economic angle is undermined by poor play-balance; barely adequate manual; lack of variable speed control; can't play as aliens.



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Fallen Haven

I-Magic's Newest Strategy Game Is a Tired Bore

by Tim Carter

Once again, humanity faces a threat to its existence. A hostile alien race—militaristic, xenophobic, and bent on our destruction—has, for the umpteenth time, emptied the picture, and they must be defeated if we are to safely enjoy the fruits of human civilization. WWF, watery beer, and Tom Clancy saves Ho hum.

We've heard it all before, and with more creativity in this tired us-versus-them plot. Sadly, the only creative thing about this game's fiction is the assumption that mankind will ever find a nice more militaristic, xenophobic, and destructive than itself.

BOLDLY GOING...

X-COM was clearly one of the designers' inspirations. A good choice, if you ask me, although they seem to have misused some of the keys that made X-COM such a success. *FALLEN HAVEN* is divided into strategic and tactical turns. During strategic turns, you conduct strategic planning, develop colonies, buy, build, and research. When you or the enemy send in the drop-ships, a tactical battle results. You fight it out at the individual unit level until victory or defeat, at which point you return to the strategic game.

This principle allows for the possibility of exciting tactical conflicts that are directed and influenced by decisions made at the strategic level.

WHERE OTHERS HAVE GONE BEFORE

Sadly, in *FALLEN HAVEN* the tactical system leads to dull, repetitive battles that just don't cultivate the anticipation and tension necessary to make the strategic

game meaningful. Players may move and fire each unit individually, and some actions may elicit a response—generally counterfire—from premature enemy units.

Combat takes place when you accept a mission, which generally involves accomplishing a set of objectives in return for a particular reward.

Even with a variety of units, however, combat is boring. It generally boils down to moving your units into positions where they can see the enemy and then amassing enough firepower to take the bad guys out before they get enough firepower to take you out.

The strategic game has more promise, but ultimately can't overcome the banal nature of the tactical engagements. From the colony screen, players have a variety of *SimCity*-like building options that may be used to develop their colony. For instance, buildings require roads and power (via power plants). Everything costs money to build and maintain, so your strategy tends to revolve around financial and resource management.

At the same time, you can tinker with your colony's research efforts, channeling your scientist's efforts into various fields in order to develop more deadly weaponry or more efficient buildings. All in a day's work for the average computer gamer, this is neither



▶ **TANKS A LOT** The dull tactical battle, where you fight the invading aliens, is the worst part of *FALLEN HAVEN*.

new nor particularly stimulating.

On a positive note, *FALLEN HAVEN* does not suffer from the technical glitches that helped to sink *DESTINY*, I-Magic's last strategy game. The interface is intuitive and easy to manipulate, the graphics are clear and easy to understand, and the commands are easy to execute.

Still, none of the technical competence displayed in the game's programming can overcome the essential dullness provided by the experience of playing this all-too-familiar game. ☹

▶ **APPEAL:** Those who like single-player strategy games that play like every other single-player strategy game.

▶ **PROS:** *SimCity* planning plus combat; clean and easy interface.

▶ **CONS:** Slow, dull, and unexciting; tactical battles are inferior to the strategic game.



Price: \$49.95

Minimum System

Requirements:

486DX/100 (Pentium recommended), 8MB RAM (16MB recommended), 30MB hard drive space, Windows 95, 2x CD-ROM drive, SVGA graphics, supports most major sound cards.

Multiplayer Support:

None

Designer: MicroMeq

Publisher: Interactive

Magic

(800) 298-0872

Research Triangle

Park, NC

www.magicgames.com

Reader Service #: 334

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CRIBET BOLDER STORAGE #4774





Rear Admiral

Contemplating Your Naval (History, That Is)

by Bob Proctor

In ADMIRAL SEA BATTLES, you start with three ports and some money to begin building ships, of which there are 11 types. Later in the game, you can build forts and more ports. The map isn't randomly generated but, instead, is selected from the 17 available, all consisting of islands scattered around in an ocean. The six starting ports are always in the same locations, so each map has its own particular strategies. For example, in some the scenarios, islands form impassable chains with only one or two navigable channels through them; these straits become focal points for fort building and fighting. Money, though, is the real key to the game. Any ship can be built—or lost—in a single turn. Whoever runs out of money first can't repair or build replacements, and their position quickly deteriorates.

CONFUSION TO THE ENEMY!

Judging from the game's advertisements, it seems the marketing types decided this game would appeal to those who want to "time travel" to the days [of] great sailing vessels. Actually, any knowledge you have of tactics in the AGE OF SAUL will serve as a handicap in ASB. Battle lines



PRIMARY COLORS A squadron of red ships has just destroyed a green fort guarding a channel. Holes in the sails show that the red ships have taken some damage.

have no meaning, the weather gauge changes randomly each turn, and crew strength for boarding is determined by the men in excess of the number required to man the ship. So, a transport with full crew can often capture a three-decker that has crew losses. There is a consistent tactical doctrine that must be mastered to be successful in this game; it's just that it has nothing to do with history. It might have been better if ASB had been done with a fantasy background—Berserkerian Air-Bag Battles or something similar.

wind in your favor several turns in a row, and the unpredictability of the wind gauge can be frustrating.

PASSEO OVER FOR PROMOTION

While this is a solid piece of programming, there are several annoyances. The user interface is simple but clumsy, the manual is minimal, and the map is always partially hidden behind floating control bars. Plus, lots of extra mouse clicks are needed to do simple things like move a ship or see its status. Hey guys, how about using the right mouse button? I can't recommend ADMIRAL SEA BATTLES for solo play, but as a simple two-player game over modem, network, or email, it's possible. ☹

FAPPEAL: Anyone who likes Emacs-style conquest games with a human opponent.

HPROS: Supports every conceivable mode of play; decent 2-player game.

ICONS: Predictable AI; clumsy interface; no fog of war; knowing real-world naval tactics hurts more than helps you; lack of random map generator.



Price: \$39.95

Minimum System

Requirements:
486DX2-66, 8MB
RAM, 25MB hard drive
space, Windows 95,
256-color SVGA graphics,
2x CD-ROM
(4x recommended),
Windows-compatible
sound card

Multiplayer Support:
hotseat, network,
modem, or email
(2 players).

Designer: Meridian-93
Publisher: Megamedia
San Jose, CA
(510) 623-1100
www.megamedia.com
Reader Service #: 335



BLAST FROM THE PAST? ADMIRAL SEA BATTLES looks and plays much like a QOP game from days gone by, but it isn't as addictive or well-rounded as say, THE GALLEON FLEET.



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Fresh Ammo



by Terry Coleman

The original STEEL PANTHERS was a revelation, a great step up in realism from games like PANZER GENERAL, but with a similarly accessible interface and crisp graphics. STEEL PANTHERS II was a very good game, but with a slightly worn luster. However, sales of STEEL II were brisk; this is, after all, a sequel-driven business.

The surprise, then, is that CAMPAIGN DISK #1 is not your typical add-on pack, but an enhancement that supplies a needed spark to the STEEL PANTHERS franchise. *Air* strikes are better integrated, opportunity fire seems more realistic, and even the individual scenarios are better balanced than in the parent game.

Some of the more than 30 battles, such as *Greenwich*, are academic exercises, while others are little more than



BUG IN WITH NOWHERE TO GO In *Rose 1898*, you don't have to wait long for the fireworks to begin.

thinly-veiled paraverbs — but are no less enjoyable for their armor-worship enthusiasm. The real treat, though, are the politically incorrect campaigns, two of which feature an aggressive, unified Germany in the 1990s taking on any European power that stands in its way. A more sober campaign covers the very

real possibility of an explosive North Korean–South Korean conflict in tomorrow's headlines.

This is prime material for wargaming, and if this controversial add-on pack gets banned in some overly-sensitive Eurochamber, then fine. SSI deserves a lot of credit for shaking things up; I hope this attitude will carry on to STEEL PANTHERS III. ☺

APPEAL: Anyone interested in modern warfare.

PROS: Great hypothetical campaigns; welcome tweaks to a great system.

CONS: Still some minor realism issues; where's the third hot play?



Price: \$14.99 (street)
System: 486-66, 8MB RAM,
DOS/Win 95 CD-ROM
Multiplay: 2 players email
Publisher: Strategic
Simulations, Inc.
Sunnyvale, CA
(800) 245-4525
www.ssionline.com
Reader Service #: 336

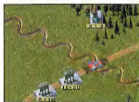


Obscure Wars



by Terry Coleman

In the old cardboard days, if you wanted to game your way through the Franco-Prussian War (or some similarly obscure fare), you went to *Strategy & Tactics* magazine, or took a chance on hand-crafted labor-of-love designs shipped in ziplock baggies. Oh, how things change. Take AGE OF RIFLES, for example: This is about as comprehensive a look at mid/late 19th century warfare as you're likely to find, and with a complete editor to boot, seemingly it's an endlessly replayable product. Yet, the chance for new RIFLES scenarios and campaigns is so great that SSI had this add-on disk in production weeks after the parent game shipped.



PHANTOM OF THE OPRY Hood's Offensive ultimately fails to show why the general's campaign for Tennessee failed.

From *San Juan* to the *French Foreign Legion*, the scenarios are clever, and fill some of the holes that even a wide-ranging simulation such as RIFLES must have. As might be expected, those created in-house by SSI are more polished, but they

aren't always the best. On the other hand, it lacks that PANZER GENERAL-esque sense of scope and wonder characterized by the *Soldiers of the Queen* campaign from the original RIFLES. Many of the other obscure battles have been done better elsewhere. There's plenty of value here, but it isn't the must-buy that CIV II, SCENARIOS or WARCRAFT II: BEYOND THE DARK PORTAL are. ☺

APPEAL: Fans of obscure wars.

PROS: 19th century comprehensiveness; strong AI.

CONS: Not up to the quality of the parent game.



Price: \$14.99
Required: 486-66, 8MB RAM,
Windows/DOS 5+ CD-ROM
Multiplay: email, hotseat (2 players)
Publisher: Strategic Simulations
Sunnyvale, CA
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Reader Service #: 337

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Mystery Train

The Prince of Persia Puts Adventure Games Back on Track

by Petra Schlunk

While many war and strategy games are based on real-life historical events, adventure games tend to be based primarily on fantasy, mystery, or horror stories. Perhaps sensing that the well has begun to run dry, many adventure game designers have recently turned to historical settings, as well (*TITANIC: ADVENTURE OUT OF TIME*, *CRISTAL SKULL*, and *VERSAILLES 1665*, are good examples). *THE LAST EXPRESS*, which was designed, directed, and co-written by Jordan Mechner, of *PRINCE OF PERSIA* fame, is a captivating look at real-life events from a semi-fictional adventure gaming angle. But don't think this means you're in for a boring history lecture: *THE LAST EXPRESS* is also one of the best adventures released so far this year.

STOP THAT TRAIN

The game takes place in July, 1914, during the last run of the Orient Express, relaying its famed Paris-to-Constantinople run. Europe, on the brink of World War I,

is seething with intrigue—a fascinating microcosm of which permeates this voyage of the Orient Express. You play a young American physician, Robert Cath, who jumps on the train (sans ticket) as it leaves the Paris station. You do so at the behest of your friend who is involved in affairs that are quickly spinning out of control.

Once aboard, you discover that your friend has been killed. You must assume his identity to stay on the train and learn what has happened to him. During your three-day voyage, you encounter passengers from all over Europe, many of whom are involved, to one degree or another, with the events that are currently marching Europe toward World War I. Not only must you learn who is on the train and why, you must take over your friend's negotiations with several characters on the train. You'll have to survive direct attempts on your life, defuse a bomb that threatens to blow up the train, eavesdrop, search the passengers' compartments and,

all the while, try to avoid getting arrested. The clock is constantly running against you, even as time is running out for Europe.

TRAVELING FIRST CLASS

Emphatically, *THE LAST EXPRESS* expertly places the gamer in the long-gone, opulent setting of the Orient Express. Making use of photographs of the train's interior, the game successfully captures the ambience of the period. Clever use of animation based on live-action footage (rotoscoped) results in an elegant and pleasing visualization of the game's events. Most of the game takes place from Cath's (the gamer's) perspective, but important conversations, fights, and other significant events are shown from a third-person viewpoint.

The sound effects, beautifully played music, and outstanding acting all contribute authenticity and ambience to *THE LAST EXPRESS*. Particularly impressive is the use of actors who speak the numerous other languages on the train (German, Russian, French, and more) in what seems to be native accents and dialects. While I can't vouch for accuracy of all the languages, I can attest that the German was quite authentic, and I



HELLO GOODBYE A rusty surprise—a dead friend—awaits Cath after he jumps onboard the Orient Express.



Price: \$39.00

Minimum System

Requirements: Windows 95 or DOS 6.0, P60 (66 Mhz 486/DX2 for DOS), 8MB RAM, 35MB hard disk space, 4X CD-ROM, SVGA graphics, Sound Blaster 16 or compatible card. Minimum requirements: Power Mac with System 7.1.2, 16MB RAM, 35MB hard disk space, 2X CD-ROM.

Multiplayer Support: None.

Designer: Smoking Car Productions

Publisher: Broderbund Software

Novato, CA

(415) 382-4400

www.broderbund.com

Avaster Service #: 318



WE CAN WORK IT OUT Prepare to have Cath's life threatened on a regular basis by many of the train's passengers.

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their car keys.
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whole continent.



Atlantis

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HELPS The passengers are in terror after the train is hijacked by a gang of Serbian terrorists

suspect that the rest were as well. Since there is little that delays suspicion of disbelief faster than a "native" speaking with an incorrect accent, I was very pleased to see this extra level of effort.

THE LAST EXPRESS has the standard adventure game point-and-click interface. The cursor changes when you can move or when you pass it over

objects or people with which you can interact. Often, the cursor changes to a specific inventory item when you come to a place where that item would be useful. Don't rely on this feature too heavily, though, you frequently must select an object from your inventory before you can use it.

When you can pick up an object, you will automatically do so when you click on it. To bring up your inventory to view something or to

select an object, click on the picture of your character at the top of the game screen. Cath can carry much of what he finds, although he won't pick up everything he examines.

TRAIN IN VAIN

There are no saved games per se in THE LAST EXPRESS, although you can play up to six games concurrently. The game automatically saves as you play.

When you die, get arrested, or are otherwise unsuccessful, the game automatically rewinds in time to a point at which you can avert this disaster. You can also manually rewind the game to replay segments differently. The only problem with the automatic rewind feature is that it only rewinds to a time prior to the current disaster, and you may in fact be heading (because of earlier mistakes) to another disaster in the near future. When you hit that next disaster, your game may be rewound by over

two hours. Such long rewinds can get frustrating, not only because you must replay a huge chunk of time, but because you may have to play that span of time over and over again until you get it right.

THE LAST EXPRESS is one of many games where onscreen text is not an option (the only text appearing are translations of conversations in foreign languages). This makes playing the game without sound impossible—an unfortunate hindrance for those who must (or prefer) to play that way.

The puzzles in THE LAST EXPRESS are almost all logical extensions of the game's story. Hiding from the authorities, searching people's belongings, using information from conversations, surviving some fights, and avoiding various disasters. The only puzzle that does not follow from the game's story is figuring out how to open a golden firebird egg.

There are also many optional activities, including paying close attention to the various stories being played out by the train's passengers. These extra events are designed to fill out the story, if you miss something you can still complete the game. Vital clues are always provided through interactions that Cath can't avoid in order to facilitate moving ahead in the story.

ALL ABOARD

THE LAST EXPRESS successfully combines intrigue, suspense, tragedy, and romance in a rich, exciting historical drama. With gameplay this engrossing, players won't miss the likes of Agatha Christie or James Bond from the Orient Express passenger list. Mechner and his huge team have enriched this game with superb graphics, sound effects, music, and a well-told, well-acted story. For a satisfying and genuinely dramatic interlude, get aboard THE LAST EXPRESS. **B+**

Puzzle Clues



Solve the firebird puzzle by studying the Russian poem found in your dead friend's belongings. The locations to which the firebird travels hint at which gems to press on the egg, and in what order, to open it. Practice opening the egg (after you find it), because when you have to open it, you don't have a lot of time.

Finding and defusing the bomb on the train can be difficult. Search between the sleeping cars. Use your matches and telegram to remove the bomb and to defuse it.

Fights are in real time, but you can figure out what Cath must do to avoid getting hit or to land punches by watching his opponents. The final fight is on top of the train, and you have to duck quickly at one point in the fight to avoid being killed by a tunnel.

PAPPEAL: Adventure gamers; mystery fans; history buffs; anyone who appreciates a rich historical drama.

PROS: Original, compelling story; strong graphics, sound, and music.

CONS: A frustrating rewind feature that can bite the player pretty far back in the game's story; no onscreen text option.



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CIRCLE READER SERVICE #155



The Empire Strikes Out

The Dull Side of the Force Wins in LucasArts' New Desktop Adventure

by Robert Coffey

Twenty years later, I can still remember the movie theatre where I saw *Star Wars* for the first time. Considering it's the same place where, over the past two weeks, I saw it my second, third, fourth, and fifth times, it's not too surprising that it's well-embedded in my memory. The *Star Wars* movies' status as beloved, cultural icons is firmly established, which helps make a product as reasonably ill-conceived as *YODA STORIES* doubly disappointing. Being a lousy game is bad enough, but messing with *Star Wars*? That's practically criminal.

RERUN OF THE JEDI

Daringly trying to capture the software-playing portion of the gaming public, *YODA STORIES* is the second in LucasArts' series of "desktop adventures," in which a new adventure is generated with each new game (the first was *INCA'S DESKTOP ADVENTURES*, an illustrious member of our 50 Worst Games of All Time list).



ELECTRONIC GUIDEBOOK The Terrain Locator reveals puzzles and tells you how to solve them, mercifully speeding your way to concluding the game.



BOBBLE-HEADS With oversized heads and tiny bodies, even Imperial stormtroopers look like they'd be more at home with the Muppet Babies or on the dashboard of your car.

Every game begins on Dagobah where you, as Luke Skywalker, must find Yoda to discover your mission goal. Then you head off for Hoth, Tatooine, or some other planet to rescue Han, foil an Imperial plot, and so on. This world seem to offer gameplay variety, but the opposite is true.

Each hour-long game runs in a tiny window and plays out the same. Luke travels the large tile-based map of the world, endlessly finding and retrieving things to trade for more things to finally get the thing he needs to end the damn game. He fights hostile creatures, aliens, and Imperial Stormtroopers in combat episodes that can be generically described as *backlaster*.

The mouse-driven interface is a mix of sluggishness and mania. While left-clicking objects adds them to the inventory, it is also responsible for movement. Multiple clicks are frequently required until Luke finally moves his orange-jumped butt from one square to the next. Luke displays an annoying tendency to enter and exit buildings repeatedly.

Puzzles consist of pushing and pulling blocks and crates to find objects or gain access to areas. Flaws in world generation make some of the puzzles unworkable. If blocks are placed too close to the

edge of a map screen, Luke can't drag them into the next screen. If he can't reach his goal from the other side, it's time to start a new game.

STAR BORES

Fighting is also frustrating. Luke can attack any adjacent square with his light saber only. To use a blaster, Luke can only shoot at right angles above, below, or to either side of him, not diagonally. Yet blaster-wielding enemies can attack from any square next to Luke. This is inconsistent and unfair.

The game is graphically dated, featuring cookie-cutter worlds filled with big-headed, costumed characters and stiff motions that are just this side of being flat-out embarrassing. Luke's light saber looks like a neon-blue conductor's baton—Zubin Mehta as Jedi Knight.

YODA STORIES has two saving graces: the Terrain Locator, a map that reveals unworked puzzles and tells you what to do, thus hastening the game's end; and a smattering of footage on the making of the new Special Edition *Star Wars* movies—footage which is better seen in the cinema. Gamers hungry for *Star Wars* action should wait for *X-WING VS THE FIGHTER*.

HAPPEAL: Those who want to play short *Star Wars* games. Fans of Ken's *Deane Avenue*.

PROS: It's a *Star Wars* game.

CONS: It's a really bad *Star Wars* game.



Price: \$19.99

Minimum System

Requirements:

Windows 95, 4096K,

8MB RAM, 6MB hard

drive space, 256-color

VLB or PCI VESA

video card, 2x CD-

ROM drive, Windows

95-compatible sound

card, Microsoft-

compatible mouse.

Multiplayer Support:

None.

Designer/Publisher:

LucasArts

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CIRCLE READER SERVICE #143



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A Fistful of Doom

This New Shooter Evokes Memories of Spaghetti Westerns and Doom

by Mark Clarkson

LucasArts' new first-person shooter, **OUTLAWS**, gets off to the best possible start. The animated opening scenes do a great job of drawing you into the game, and the opening credits skillfully evoke the mood of a "spaghetti" western. Similarly, the musical score seems lifted from one of Sergio Leone's epic horse operas, and could have been composed by Ennio Morricone himself. Those who routinely skip past such things will be missing out on the best part of the game.

It's when we get to the game (and, specifically, the gameplay) itself that we run into trouble. Let's face it, this is basically a **DOOM** clone. And if a **DOOM** clone is going to grab my admittedly jaded attention in 1997, it had better deliver something new.

But **OUTLAWS** is a Western. Isn't that, in and of itself, enough? Surprisingly—the answer is no, it's not. As I embarked on my journey of revenge in this Wild

West, I could never shake the feeling that I was just playing a hacked version of **DOOM**—only one in which the marauders were replaced with evil cowpokes instead of Barney the Dinosaur.

The format is familiar: You make your way through levels teeming with hoddies. You have to collect keys, push buttons, and throw switches in order to open a sequence of doors which eventually lead to the end of the level. Along the way, you collect weapons, ammo, armor, and health, all the while keeping your eyes open for subtly hidden doors. You can walk, run, swim, crouch, jump, and slide from side to side, as well as look up and down.

The levels do mix it up a little, with gun battles taking place outside among the mesas, within darkened mine shafts, along the high walk of a log stockade, and from car to car within a speeding train.

Each level has its own goal—a chief bad guy you must overcome before you can advance to the next bit of movie. Fittingly, most of them make a little speech before they finally give up the ghost. "You're too late. He took your daughter on the train. You..."



MARSHAL LAW In **Outlaws**, you're the ex-marshall brought out of retirement when the evil entrepreneur has your family murdered.

FOR A FEW PIXELS MORE

OUTLAWS sports a weird look—a blend of 2D cell animation and 3D shooter that just doesn't quite mix. The textures are highly pixelated, even at 800 x 600. In some places the palette seems limited to less than a dozen colors—you can barely tell the doors from the walls.

The graphics are, in some instances, astoundingly poor. Sticks of dynamite are depicted as nondescript tan rectangles with black stick fuses. Throwing knives are little better, and the rifles and various shotguns are virtually indistinguishable from each other when they're lying on the ground—you don't know what you're getting until you pick it up.

While you might not expect to be able to tell one pig-like alien from another, or to distinguish one body-



HIGH PLAINS TWISTER Part of the challenge in **Outlaws** is not wasting the innocent civilians who cross your path.



Price: \$54.95

Minimum System

Requirements: Pentium 60, 16MB RAM, 61MB hard drive space, 2x CD-ROM drive (4x recommended), Windows 95, SVGA graphics, 16-bit sound card.

Multiplayer Support:

Modem, serial connection (1-2 players), LAN, Internet (1-8 players).

Designer:

Daron Stinnet,

Stephen Shaw

Publisher: LucasArts

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armored stomatopod from the nest, it is painfully obvious when you're shooting the same four cowboys over and over; at a distance, you can almost tell what weapon a guy is packing by the shirt he's wearing.

"The bad guys want you continually, but they only know a few taunts—"Where are you, Marshal?" "You're outnumbered!" "Had enough yet?" "Hope you plant better than you shoot!" and "Don't be a fool, Marshal!"—all repeated over and over, ad nauseam.

Sounds fade away far too quickly with distance. You'll see bad guys standing 50 feet away, their guns blazing, but you can't hear their 45s. Dynamite going off 100 feet down a mine shaft makes no sound, though you can clearly see the flash.

Interactivity is inconsistent. Some windows can be shot out, others can't. If you shoot out a lamp in a stockade at night, the room doesn't get dark. The

shattered lamp sets the floor on fire, but the fire neither spreads nor burns you if you stand in it; its only purpose seems to be to explain the room's continued illumination.

There are cows and horses, but you can't ride them, kill them, milk them, or interact with them in any way...they don't even say "Moo."

WHERE'S THAT CHICKEN?

In addition to the main game, *OUTLAWS* provides historical missions (one-level bounty-hunting quests) and multiplayer gaming—both cooperative and deathmatch—over modem, LAN, or internet. Each machine needs its own CD, but *OUTLAWS* comes with two CDs, both of which support multiplayer play.



PALE FIGHTER The gringo marshal will have to kill this taunting bandit in order to advance to the next level.



UNFORGIVEN Dead bandits will litter the floors of the sawmill before the marshal is able to solve the water puzzle.

Clues for Crying Cowboys

First and foremost, you have to learn to drive the game with the mouse. *Outlaws*' mouse-plus-keyboard interface is especially easy to use and it greatly improves aim and speed over the keyboard alone.

Reload early and often. Jam a few more shells in the old shotgun whenever there is the slightest break in the action. Never go through a new door without first checking your load or the dry "click" of the hammer falling on an empty chamber may be the last sound you hear.

Choose your weapon carefully for each encounter. The saved-off shotgun is devastating at close range, but ineffective past 20 feet or so. The Bowie knife is quiet. The .44 rifle, with a scope, can take down an adversary at 300 yards without his ever seeing you.

Careful with that dynamite. It is practically impossible to throw the dynamite more than six feet, especially if you're trying to throw it through a window or door. The best way to use dynamite is to drop it and run away. It can provide an unpleasant surprise for anyone chasing after you.

Remember the crouch key. You make a much smaller target if you're crouched behind a barrel.

And, if all else fails, try these cheat codes:

- OLPOSTAL** Gives you all weapons and ammo.
- OLCDS** Super map mode.
- OLREDLITE** Freezes all enemies.
- OLFPS** Displays frames per second.
- OLRANCH** Takes you to the Ranch level.
- OLMILL** Takes you directly to the sawmill.
- OLMINE** Takes you directly to the mine.

In addition to traditional death-matches,

OUTLAWS provides some entertaining multiplayer twists, including Capture the Flag, and "Kill the Fool With the Chicken," where players can only shoot the fool holding the chicken.

You cannot, however, play a multiplayer version of the main game. A friend and I enjoyed working our way through *Duke Nukem 3D* in cooperative mode. This is not an option in *OUTLAWS*.

DEJA VU

There's nothing really wrong with *OUTLAWS*. There just isn't that much right with it. Sure, there's a plot which unfolds as you play. There's even the occasional pearl of

great dialogue ("You never shot an innocent man," which is followed by, "I never met an innocent man."). But it's not as if you're choosing the dialogue, or making decisions which affect the outcome of the story; you're simply shooting your way through one level after another.

The music, art, and interface are absolutely first-rate. The animated cut-scenes are well-done, if not superlative. But, unfortunately, the core game is lame and unattractive.

OUTLAWS lacks the interactivity of *Duke Nukem* and the tension of *Quake*. And, despite its exotic (for a computer game) setting, it shows us nothing new in terms of gameplay. ☹

FAPPEAL: Anyone tired of Doom-ing, Quake-ing, and Dae-ing it out in futuristic settings, and who wants an old-fashioned battlefield instead.

MPROS: terrific music; great animated cut-scenes; a new look for an old genre; fun multiplayer options.

ICONS: Poor graphics; mostly non-interactive environment; a feeling of "been there, done that."



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Coppers in Choppers



by Robert Coffey

Fans of airborne shooters have had little to cheer about since the release of DESCENT 2. 7th Level's anime-flavored chopper blastfest **HELICOPS** aims to fill that airborne void with its console-style gameplay. With an enthralling mix of missions that is far better than the bludgeoning-repetitive **HELI-NEOS**, **HELICOPS** just might satisfy that 3D air-combat jones until something better comes along.

HELICOPS is an elite unit of crime-fighters battling the evil crime syndicate Nemesis across the city of Neo-Tokyo. There are five pilots from which to choose. Though the manual says they fly differently from each other, they really don't. However, the five assault helicopters do handle a little differently from helicopter to helicopter.

Twenty-three missions are broken up into six mini-campaigns, and you'll have



SHOOTING GALLERY **HELICOPS** offers plenty of fun action. It's not too difficult, though, and doesn't have much depth.

to complete all six campaigns as one pilot to finish the game. It would have been interesting to allow the team to truly operate as a unit, picking pilots whose skills best suited certain campaigns.

Mission variety is **HELICOPS'** strongest feature. Played in a texture-mapped 3D world, mission objectives include rescue operations and timed

efforts to thwart escapes that take place in a variety of locales. A slew of inventive power-ups adds to the novelty.

Unfortunately, for experienced gamers, **HELICOPS** isn't too challenging (some levels can be finished in under a minute). Controls that hamper maneuverability and a lack of an incremental save feature keep **HELICOPS** from being a real winner. Still, if you're looking for some old-fashioned, airborne fun, **HELICOPS** may well fit the bill. **B**

FAPPEAL: Action fans who want quick and simple shooting fun.

PROS: The game is fun and looks good.

CONS: Too short; poor save feature; not too challenging.



Price: \$39.99

Minimum System

Requirements: Pentium 100,
8MB RAM, Windows 95.

Multiplayer Support:

Modem (2 players),
LAN (2-8 players)

Publisher: 7th Level

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www.7thlevel.com

Reader Service #: 322



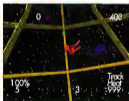
Cyberdoze



by Robert Coffey

As a technical showcase, **CYBERDOME** isn't too bad, but as a game, it comes up well short. You play yet another virtual-robotic game world in this case it's the CyberDome—a big, golden whiteball stocked with enemies. When using a 3D accelerator, **CYBERDOME** sports smooth frame-rates, pleasant visuals, and mildly engaging, if repetitive, combat. Still, there's a library of problems.

For starters, the game is short. Even the documentation acknowledges that a good player will complete all 64 levels in an hour. Perhaps in order to pad playing time, **CYBERDOME** has no save feature, forcing gamers who die on level 63 to start over from the beginning. Controls are sluggish, as is movement, especially compared to the lightning



WEB OF DEFEAT To play **CYBERDOME**, you'll need to either have a monster machine or play with these lousy graphics.

speed your foes possess. And, the laser doesn't track your prey—this is particularly annoying since it doesn't fire from the same part of the screen consistently, thus making targeting a matter of dumb luck.

The biggest knock against **CYBERDOME** is its steep system overhead.

Without a 3D card, you'll have to use the configuration editor to shut down most graphic options in order to avoid a stuttering frame-rate. Even with the accelerator, you're not assured smooth play, since **CYBERDOME'S** **READ ME** practically boasts that it crashes most non-3Dfx cards.

With little gameplay appeal and its greedy resource-gobbling, **CYBERDOME** ultimately isn't worth the trouble. **D**

FAPPEAL: Gamers who need to justify the existence of their 3Dfx card.

PROS: Takes advantage of the 3Dfx chipset.

CONS: Not much of a game; too short; sluggish controls; crashes.



Price: \$29.95

Minimum System

Requirements: Pentium 100,
12MB RAM, Windows 95.

Multiplayer Support: None.

Publisher: Microcage

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Reader Service #: 324

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**STREETS OF
SIMCITY**



Monster Truck Mayhem

TEST DRIVE: OFF-ROAD Has Three Flat Tires

by Gordon Goble

Have you ever slipped your joystick from the desk, jumped up, and stomped the freezing thing back down to its base elements, all the while shrieking profanity-laden epithets? Well, neither have I, but Accolade's TEST DRIVE: OFF-ROAD got me awfully close a couple of times.

THE BUMPY ROAD AHEAD

According to the game's marketing, TEST DRIVE: OFF-ROAD offers "true-to-life driving mechanics," and "12 tracks to test your off-road skills." Yeah, the game does have 12 tracks, but it doesn't feature anything approaching true-to-life mechanics, nor does it test your off-road skills as much as your ability to float a fore-aft pendulum through a pinball-like environment that has you rebounding more than driving. Losing control of my vehicle at a little over 15 mph is not my idea of fun.

Add to that the arcade racing staple of computer-driven opponents whose capabilities fluctuate in accordance with your position, and the whole exercise gets too frustrating. Is there anything worse than driving the perfect lap, only to find that the same guys who slowed to a crawl after your last crash are now hot on your tail?

In theory, TEST DRIVE: OFF-ROAD affords you the opportunity to drive one of four production 4x4s (Jeep Wrangler, Chevrolet K-1500 truck, Land Rover Defender 90, and Hummer) through a variety of conditions and environments, each of which is anything but ordinary. The 12 tracks include forest, desert, and snow terrain; we become available only after you've thrashed the competition in a given racing series. If you really play your cards

right, you'll get four bonus vehicles too.

But for all the supposed variance in vehicles and tracks, and the many driving options and user preferences, very little variety is actually reflected on the track. Sure, honkin' through snow is different than driving to the desert, and the Hummer handles marginally better than the Jeep, but it's all just so damned arcade that nuances are lost forever in a bump-it-til-you-mine.

DRIVING'S UPS AND DOWNS

To its credit, TEST DRIVE: OFF-ROAD is packed with amenities. There are nine driving perspectives from which to choose, a full replay at the end of each contest, and a fairly large world on either side of the track. You can take shortcuts over hills and dikes or perhaps through some nicely-rendered trees (you can also get lost).

Trucks will slow down when hit, and perhaps be spun around or tossed upside down after a leap gone bad, but are magically righted a few seconds later. Sadly, your vehicle will not show damage, and therefore there is no such thing as a repair shop (or an upgrade shop, for that matter). At least the music, a much-hyped songfest from industrial rockers Cavity Kills, sounds good.

Three display options (VGA- and SVGA-graphics, and the odd middle ground of "Modex") and a ton of detail



CHEAP JEEP You can race four sports utility vehicles, including this Jeep, but there isn't much difference between them. Sure, one might corner a little better, but they're practically the same.

levels assure that most Pentium-class machines will run the thing, and this is one game where VGA doesn't mean Very Crappy Aperture. The tracks themselves are exasperating in any mode, and graphics would have to be considered TEST DRIVE's strong suit.

But if big, loose 4x4s are your thing, check out Microsoft's MONSTER TRUCK MADNESS for some wild, semi-authentic action that leaves this game in its dust. TEST DRIVE: OFF-ROAD will test your patience, but little else. **C**

APPEAL: Off-road arcade fans who don't have time for deep racers that require skill.

PROS: Loads of options; slick-looking trucks; impressive VGA-graphics mode; soundtrack is pretty cool.

CONS: Frustrating handling; AI drivers that just shadow your performance; too little test driving.



Price: \$49.95

Minimum System

Requirements:
Pentium 90, 16MB
RAM, 50MB hard drive
space, 2X CD-ROM
drive, supports all
major sound cards.
Multiplayer Support:
Modem, serial cable
(1-2 players), LAN
(1-4 players).

Designers: Elite
Publisher: Accolade
San Jose, CA
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www.accolade.com
Reader Service #: 325

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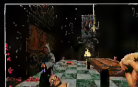
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CIRCLE READER SERVICE #261



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CIRCLE READER SERVICE #282

GT[®]
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Idiot Savant

XS Offers Tough Opponents, but Few Graphic Graces

by Peter D'afson

It is a realization that all 3D-action gamers reach sooner or later: The combined intelligence of their computer-controlled enemies couldn't light a candle. If you want witless robots arranged in action-oriented puzzles, you play solo. If you want real combat with enemies who are smart like a fox, you play with real human opponents.

So, the foundation upon which SCI's XS is built—a multiplayer-like game that doesn't require other players—is trying. The game has a series of 20 deathmatches with computer opponents who behave more like humans than droids.

There isn't a better action-game AI currently on the table. But that's one of the game's few assets, and design limitations quickly outweigh this one advantage.

NOT ENOUGH

You're dropped into a multi-level arena along with three other contestants and a range of mid-managed bots. Be the last one standing and you'll move to the next arena, along with whatever new weapons (ranging from hand blasters to armor-piercing crossbows) you've harvested from the dead.

The arenas are bland. They're genuine 3D constructs, but the textures are rather Doom-like, the dimensions are modest,



FUNNY, YOU DON'T LOOK HUMAN XS offers deathmatch-style gameplay without other players. The AI is good, but the rest of the game is lacking.

and the designs are naggingly similar. There's no water, lava, or toxic waste; no unique level features; and no tools to build your own levels. Plus, at first, the shields that surround enemy figures make them all look the same to the untrained eye.

MENSA FRAGGERS

But...they're way smarter than the average NPC. They seek you out. They wait until you and an opponent have worn each other down, and then swoop in for the buzzard kill. They pop out of cover, let loose a few sounds, and then pop back in. They use rocket launchers to target you

through the narrowest windows of opportunity. They retrieve the leftovers of destroyed bots and fallen rivals. And, occasionally, they run for their lives. The illusion of a multiplayer game was persuasive enough that, every now and then, I forgot that I wasn't playing with other people—and that's an achievement. Unfortunately, XS has a few irritating ticks

Picking up an enemy's weapon temporarily locks out the ability to turn. Also, the program seems stable, but crashed on occasion—once while loading the post-arena sequence after I'd cracked an especially difficult level. Plus, the built-in opponent tracker takes much of the mystery out of the game, and should have been made a time-limited power-up.

That's not to say XS doesn't have anything to offer. You can put your character on auto-pilot with a key-press. You can drop up to four cameras to monitor your rivals, or you can detonate those same cameras like bombs. And, you save only upon completion of a level—something I'd like to see more of in this genre.

But I'd rather play a game without much of an AI than an AI without much of a game. Sadly, that's what we have here. **C**

HAPPEAL: Action gamers who want to play deathmatches but can't round up the live bodies.

IPROS: Some of the best AI of any action game.

ICONS: The rest of the game, from levels to enemies, is sub-standard.



Price: \$44.95

Minimum System Requirements: Pentium 100, 8MB RAM (16MB recommended), 21MB hard drive space, 2x CD-ROM drive (4x recommended), 256-color VGA-graphics display (PCI video card recommended), supports Sound Blaster-compatible sound cards.

Multiplayer Support: IPX (1-4 players).

Distributor: SCI

Publisher: GT Interactive

New York, NY

(800) 610-GTIS

www.gtinteractive.com

Reader Service #: 326



NOT AS SMART AS YOU LOOK Though smart, XS's enemies lack shrewdness in issues like positioning and distance.

EXTREME ASSAULT

BLOWS THE COMPETITION AWAY WITH FURIOUS ACTION & STUNNING 3-D GRAPHICS!

If there's one thing that's been missing in the recent deluge of PC games, it's intense action. I'm talking about the type of gameplay that gets your heart racing, your hands sweating and keeps you short of breath. Well, thanks to Blue Byte Software, (makers of such classic games as Archimedes Dynasty and The Settlers II Gold Edition), that's all about to change...

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At times you'll also find yourself in restricted quarters and have to transfer from your lethal Sioux AH-23 attack helicopter to the awesome T-1 battle tank. Each vehicle is heavily armed with a vast array of weapons ranging from Laser Guns and Guided Missiles, to enormously powerful Smart Bombs and Thunderbolts. And I haven't even mentioned the graphics!



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Bottom line... *Extreme Assault* is THE 3D intense action game for the PC!

Matt Broughton

EXTREME INFO

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Mountain source code: #CGW797

Next Month: Editing details on The Extremely Cool Swaggetekes.

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Available: Summer 1997

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3Dfx
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—Computer Gaming World



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CIRCLE READER SERVICE #366

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Play It Again, Jack

Berkeley Systems' Latest Romp Is a Movie Buff's Delight

by Charlotte Panther

So, you think you know movies, huh? Frankly my dear, you don't know jack! So says Berkeley Systems about the latest addition to its hilarious trivia quiz game series, **YOU DON'T KNOW JACK MOVIES**. And, while you'll never be able to convince the fast-talking

Smart-Alec quiz-show host that you know a thing about the subject, take comfort in the fact that you can always use a couple of your friends into believing you're the next Pauline Kael or Roger Ebert.

While I love trivia games, I have my strengths and weaknesses. Entertainment questions I can answer in a heartbeat, but ask me about sports or geography and I'm clueless. Sound familiar? Then you're going to love **JACK MOVIES**. Like its predecessors, the game imitates a TV game show environment, allowing up to three people to compete on one keyboard, but this time the interface has the glow of the silver screen. The black and white screen bearing the initial questions, has the scratched-negative look of an old movie. Once you pick your category, full color resumes. YDKJ fans will recall that half

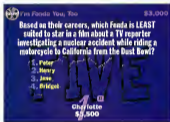
the fun of this game comes from watching each question introduce itself. You'll be happy to know that **Question Four** is still **The Question That Cares**, but it now has a new, improved sleeker look. Each number takes on a movie-industry reference. Satirizing THX,

Question Two whooshes onto the screen, letter by letter, telling us "The Question is Listening." **Question 17** appears in the guise of an NC-17 rating warning, and **Question 20** looks suspiciously like a certain film studio's logo.

MAKING MOVIES

The questions include a good mix of oldies, classics, contemporary, cult, and Gen-X-type movies, all presented in the highly amusing and familiar **JACK** fashion. Along with multiple choice questions, all the old favorites are there: **Snackish Restroom**, or the **Gilbersh Question**, where a seemingly nonsensical sentence actually rhymes with a movie, character or quote; **DvorDat**, in which you must decide whether a movie starred, say, *Audrey* or *Katharine Hepburn*; **Whats-happens**, in which you must try to guess which celebrity you know-it-all host is thinking of; and, finally, **Jack Attack**, a super-fast buzzer round that has you matching two words based on a clue.

JACK MOVIES is a riff with all the sarcastic wit and humor that



GRAPES OF LAUGH **JACK MOVIES** includes questions that span generations—literally.

we've come to expect from the series, and at some points is even more risqué than the earlier titles (during one round, **Question 12** asks, "Did someone order a giant 12-inch sausage?" A zipper is unzipped and a female voice gags, "Oh my!"). The only time the humor became tiresome was during a **Fiber Optic Field Trip**, when our host makes a mock-telephone call to an imaginary viewer who is asked to suggest a trivia question. While this was amusing for awhile, I soon found myself wanting to get back to the business of answering questions. Note that, less than minor irritation is a small price to pay for this otherwise terrific game. **B**



SOUND CHECK **JACK MOVIES** spares no one from its barbs. Here, the victim is Lucasfilm's THX.



Price: \$29.99
Minimum System Requirements: 486/33, Windows 3.1 or Win 95, 16MB RAM, 19MB hard disk space, 640x480 (256 colors) graphics, 2X CD ROM Drive, Sound Blaster 16 or compatible sound card.

Multiplayer support: same computer (1-3 players)
Designer: Jellyvision
Publisher: Berkeley Systems
 Berkeley, CA
 (510) 540-5535
www.berkys.com
Reader Service #: 327

APPEAL: Movie buffs, **Jax** fans and anyone looking for a great party game.

PROS: Hilarious, irreverent, challenging and still fresh; the best multiplayer trivia quiz around.

CONS: Its **Fiber Optic Field Trip** tries to be funny, but ends up detracting from gameplay.





Dueling da Vinci



by Charles Ardai

What can you do to justify a computer version of the classic boardgame *Othello*? A

decade ago, Artworx tried adding pictures of naked women in CENTERFOLD SQUARES. This official Hasbro adaptation of *Othello* is hardly less outrageous, featuring the pinups of the intellectual set, Leonardo da Vinci and Albert Einstein.



MONA LISA POKER-FACE Oddly enough, Leonardo makes for a better computer opponent in *Othello* than does Einstein.

WHAT, NO SHAKESPEARE?

Leonardo, speaking in a Clazo Marx accent and dabbing at a carvas as you walk in, noddily chides you during the game, as an old Italian relative would do. Einstein is a more modest caricature

with his Venetian accent, and his hair is actually tidier than in some photos of the real Einstein. Perversely, I find Einstein an easier opponent to beat.

You can also play *OTHELLO* against a conventional (invisible) computer opponent, or against another human. You can

play in Dutch or German; and you can play with or without computer hints. As usual for a Hasbro adaptation, there are lots of features—most of them appealing, all of them well executed.

But what people will remember are *AI* and *Leo*. The idea is nearly as clever as it is silly, but as with the nude version of 1987, the appeal quickly wears thin. Either you'll enjoy *OTHELLO* for its own sake or you won't. **C**

APPEAL: For those who need pictures with their Othello.

PROS: Good computer opponents; decent multimedia.

CONS: Why buy this when there are so many shrewder versions?



Price: \$29.95 (street)
 Required: 486-33, 8MB
 RAM, Windows 95 CD-ROM
 Multiplay: Internet (2 players)
 Publisher: Hasbro Interactive
 Beverly, Massachusetts
 (508) 921-3700
 www.hasbro.com
 Reader Service #: 326



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Market Madness

NCAA Final Four 97 Is Really Junior Pro League

by Terry Coleman

While NBA LIVE is the current computer sports champ (having won two consecutive COW Premier awards) it still

doesn't satisfy all our hoops cravings. Every spring, our thoughts still turn to dream matchups of Kentucky thoroughbreds nailing three-pointers versus the patience of Princeton's '50s-style motion offense. We want to nite freshman point guards with full-court presses, run the classic UCLA high-post offense, and even—Michael Jordan, avert your eyes now—play zone defenses.

Enter Mindscape, who has licensed 64 teams, exactly enough to let you replay the NCAA basketball tournament. While NCAA BASKETBALL FINAL FOUR 97 is better than some other college hoops games on the PC, it isn't March Madness, either.

Anyone who has played action-oriented basketball games will have no trouble getting into FINAL FOUR 97. Best enjoyed with a gamepad, play is the customary pass, shoot, or turbo. Mindscape gets brownie points for going as a steel button, unlike the PC version of NBA LIVE 97. But the displays are oddly organized. Why must you constantly click to the next screen to see one more menu item?

The low-res graphics are out of date, even the first NBA LIVE looked better. It's obvious that FINAL FOUR 97 was developed for the PlayStation, and considering that the game engine doesn't max out the potential of a PSX PC owners aren't going to be impressed playing this on, say, their brand-new Pentium 166 MMX.



WHERE'S DALE BROWN WHEN YOU NEED HIM? The ability to call plays on the fly isn't as much fun as it could be, since you can't play matchup zones and other notable college defensive styles.

SELECTION COMMITTEE

The confusion continues beyond the graphics. For example, even considering that they can't use individual player names, the team lineups simply don't jibe with the actual season. Half the teams seem taken from the '96 lineups, and half from '97. It's hard to pin down since the stats for each player fail to list class status. Worse, how can you be expected to duplicate Denny Crum's feat of taking four teams to the Final Four in seven years if you can't recruit your own players from the prep ranks? CTE's recruiting model in NCAA BASKETBALL isn't the best, but it works better than the lame season-to-season play in FINAL FOUR 97.

Not that it makes that much difference how you do in the regular season. Since there are only 64 teams licensed,



POLYGONAL SLAMS The player motion for Final Four 97 is fairly smooth, but the graphics would have looked dated in NBA LIVE 95.

every one of them makes the NCAA tournament field. Guess it wasn't worth licensing the Coppin States and Tennessee-Chattanooga of the world.

On-court gameplay isn't bad, just uninspired. Like most action-oriented sports games, FINAL FOUR 97 is

slanted towards offense, but at least the players do miss shots occasionally. If it, there are way too many blocked shots and too few charging fouls and traveling calls—especially considering how much closer refs call these in college than in the pros.

But the big thing missing here is the flavor of college hoops. Where is the hard-one, the triangle-and-two, the Temple matchup zone? Why do players, especially freshmen, not improve as the season progresses? Why is there no home court advantage for teams in legendary stadiums? Without such touches, FINAL FOUR 97 becomes a junior pro league, a slower, less attractive alternative to NBA LIVE. Until they develop their own identity, Mindscape's sports folks will be sidelined. If you crave college hoops, pick up Halfbrick's COURT-SIDE BASKETBALL for stat play, or CTE's NCAA CHAMPIONSHIP BASKETBALL for action. ☺

APPEAL: Far dedicated hoops fans only.

PROS: Easy learning curve; decent, if generic, hoops feel; steel button.

CONS: Dated graphics; too few college teams; confused layout; real lack of originality.



Price: \$39.99

Minimum System

Requirements: P75, 8MB RAM (16MB recommended), 2MB hard drive space, Win 95, 256-color DirectX-compatible VGA graphics, 2x CD-ROM (4x recommended), Windows-compatible sound, supports mouse and all major gamepads (recommended).

Multiplayer Support:

1-4 (daisy-chained gamepads)

Developer: High Voltage Software

Publisher: Mindscape

Novato, CA

(800) 234-3088

www.mindscape

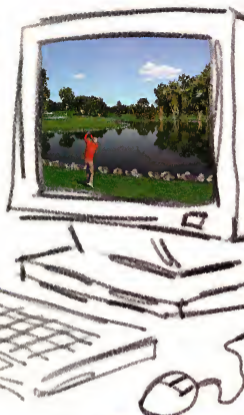
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Caught in the Net

Welcome to Usenet, Where Sports Gamers Gather to Chat—and Flame One Another

Although I get a great deal of personal satisfaction from banging out the monthly sports column for CGW, I never felt I had "arrived" as a gaming celebrity until I was the victim of Usenet newsgroup fraud.

I'm a daily visitor to the comp.sys.ibm.pc.games.sports newsgroup, where opinions from the mundane to the outrageous compete for bandwidth with flame wars, net spam, and outright slander. Many legitimate gamers wade through this noise every day, too, to offer their viewpoints on sports games, new and old. The group is a great resource for tech support, add-ons, finding opponents, and sports gaming chatter.

MR. WILLIAMS WILL SEE YOU NOW

What's most cool, however, is that many game industry and media types routinely read the newsgroups, and can occasionally be goaded into responding. EA and Accolade are among the major players that drop in on the sports group from time to time. During last summer's FPS: FOOTBALL '96 debacle, Sierra's head honcho Ken Williams spent some quality time slumming in comp.sys.ibm.pc.games.sports, where he dodged virtual bricks and mended fences with his gaming public.

In real life, you'd never get past Ken Williams' receptionist's receptionist. Yet, here he is online, trading posts with sports gamers like you and me. I then decided two things: BASEBALL '96 still sucks, but Ken Williams is a very smart man.

Sure, Usenet is a great equalizer and a textbook example of free speech, but emotions tend to run high, and things can turn ugly fast. Last fall, when Microsoft's FULL COURT PRESS was newly released, gamers were hotly debating its merits online. One of the lead programmers sent a private email to a guy who had posted some questions. This incredibly lame individual then posted the email, which was mildly critical of Microsoft, back on the newsgroup for all the world to see.



FOOL'S GOLD No, this is not a shot from "FPS: FOOTBALL '96," because that game doesn't exist, despite what some nut masquerading as Dennis McCauley said online.

Assessing the stakes, of course, were the same Microsoft execs who were paying the programmer, and for whom, we can only assume, he hoped to toil in the future. Not surprisingly, the suits at MS HQ pulled the plug on newsgroup dialogue concerning FULL COURT PRESS shortly thereafter, and it hasn't been seen much since.

DENNIS THE MENACE?

My own descent into Newsgroup Hell began earlier this year with a phone call from a normally friendly PR rep at Sierra. In a tone of barely controlled anger, she asked where I'd gotten the information about a "Gold Edition" of FPS:

FOOTBALL PRO that I'd posted on Usenet. The offending post claimed that Sierra was ditching the product, and would release an entirely new game in February. Of course, this was preposterous—how could a major game be redone from scratch in a month's time? But when posted under the name of CGW's sports columnist? What? Instant credibility.

After reading the phony message, I quickly posted a counter to the hoax. But readers were now confronted with two

Dennis McCauley, I wondered if the group might start peppering me with questions that only a real CGW writer would know—things like, "How's the pay?" (low) and "What does Terry Coleman call everyone?" (Dude)

I eventually convinced the sports gaming public that they'd been had. There was no "FPS: FOOTBALL '96." It is, I learned,

easy to fudge your name and email address to appear as anything you want in the header of a post. I filed a protest with security at Netcom, but I never heard back from them. They did send a form letter saying that, due to overwhelming volume, they might not respond, so I guess in their mind that makes it okay. But when my reputation on the line, I'd like the courtesy of a reply.

In any event, comp.sys.ibm.pc.games.sports is a must for serious sports gamers. It's a great place to cut loose about games, meet fellow sports crazies, and maybe even go mano a mano with the game designers. Be there, but beware, too. ☹

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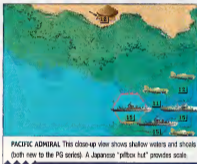
With the exception of *PANZER GENERAL*, SSI's venerable *5-Star Strategy* has fallen on hard times since the original *PANZER GENERAL*. Playing *Star General*, the last installment, was akin to watching one's favorite boxer fight in embarrassing fashion after retirement age, punch-drunk and with no sting in his gloves. But you should never count SSI out until the final bell.

UNCLE ALBERT/ADMIRAL HALSEY

"Trying to capture both the maritime and land-based flavor of the Pacific conflict in WWII stretches the old *PANZER GENERAL* engine to the limit. As with *PANZER GENERAL*, every time fun and realism clash, fun wins out, but the design

team has put in a lot of work to give the game plenty of historical feel. Anyone who (like me) complained that the Brewster Buffalos in the Washington scenario of *PANZER GENERAL* were too

The naval rules have evolved as well. They make a lot more sense here than they did in *PANZER GENERAL*. You can still perform shore bombardment, and your subs still get a



PACIFIC ADMIRAL This close-up view shows shallow waters and shoals (both new to the PG series). A Japanese "pilbox hut" provides scale.

powerful, will be happy to know that they have been toned down to more historical limits here—lest they take out too many Japanese Zeros and unbalance the game

"sneak attack" first shot, but the aircraft counter operations add enough new wrinkles to make this much more than a PC clone. Carriers are limited in how many air units they

may carry, roughly based on their historical capacity. Within those limits, you must carry not only fighter escorts, but

Continued on pg. 221

“ **PACIFIC GENERAL** is a welcome return to the series' roots, and a wonderful bridge to **PANZER GENERAL II**. ”

BRIEFINGS



Space Marines Want You!

Finally, Games Workshop's *Space Marines* comes to the computer! *Eric Warhammer 40,000: Redemption* will be published by SSI, tentatively scheduled for early next year. One of our inside sources described the game as "Warhammer [the miniatures game] meets *Steel Panthers*," a reasonable description, since at least one senior staffer at Games Workshop is a closet *STEEL PANTHERS* freak.

The Next Sid Meier?

Polish your mask and get that cape out of mothballs. *Axis of Justice* is finally emerging from the evil clutches of that dreaded villain, Vaporware. The tactical combat is much more refined than before, with a better balance between physical attacks and those superhero-specific talents such as energy blasts. The strategic game has added depth, too, featuring Ninja death squads, evil cyborgs, and the expected group of megalomaniacs, all obsessed with taking over the world. We'll employ our X-ray vision to give you a sneak peek next month. Speaking of secret identities, SimTex is no more. Actually, they are now known as MicroProse Austin. This coincides with the promotion of Steve Barcia (founder of SimTex) to executive director for all MicroProse game products. Having a "real game guy" in charge of game development bodes well for future MicroProse products.

Baseball MOGUL

"This game is SUPER. If you want to sleep, don't play Baseball Mogul. You won't be able to stop."

- Pierre Dumont, player

"It's extremely difficult to stop playing. You feel like you're behind the GM's desk, making calls, barking out orders, and then watching the results. The still photos for news events and city shots were well done and added to the richness of an all-around high-quality sports strategy game."

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TERRY COLEMAN

STRATEGY/WARGAMES

BRIEFINGS

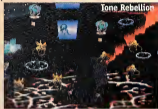
The Real Sid Sid Meier's next game, released by Fraxis through Electronic Arts, will be his first real-time strategy game since *Pirates!* While we are honor-bound not to tell you the subject matter just yet, here's a hint: It's a game that Sid's talked about doing for a long, long time. We'll have the world exclusive scoop on it for you next month—stay tuned.

Steal Of The Month

MicroProse has had its ups and downs financially the past three years, but it's also produced some of the greatest strategy games in the history of the industry. *Conquer the Universe* is a stunning compilation, a journey back to a time not so long ago, when games were more about addictive

They Really Do Have Tone

One real-time strategy game that marches to a different drummer is *Tone Rebellion* from The Logic Factory. It has the stunning graphics you'd expect from the



foles who crafted *Ascendancy*, and a lush soundtrack somewhere between *Also Sprach Zarathustra* and avant-garde jazz. But it's the gameplay that really caught my eye. Rather than the excessive turbo speed favored by the click-and-go crowd, *Tone Rebellion* actually gives you time to think, because it focuses on the strategic picture, rather than tactical micromanagement. There is plenty of real science-fiction flavor here, too, a refreshing change from the

"Let's place this slightly in the future so that we don't have to worry about being historical" games so common in the real-time strategy genre. Sentient floating pods, alien artifacts, a terrible villain that would make E. R. Eddison's *The Worm Ouroboros* look like fish bait—they're all here, with more than enough to keep even casual sci-fi fans busy for hours. Watch for *Tone Rebellion* this fall.

Buying A Clue

Interactive Magic, whose strategy game record has been spotty (to be kind), seems to be moving in the right direction. In addition to *The Great Battles of*



gameplay than SGIA graphics or full-motion video. *CGW* Hall-of-Fame games *X-Com: UFO Defense*, *Master of Orion*, and *Master of Magic* top the list, followed by the derivative (but still very good) *X-Com: Terror From The Deep*. There are at least 1,000 hours of tense, high-powered gameplay here, and the street price of this compelling package is only \$20.

ALEXANDER (due this summer), the folks from North Carolina have also agreed to publish **GREAT BATTLES**

series games on Hannibal and Julius Caesar. Keep your eyes open for these; the boardgame series from GMT Games on which they are based continues to sell in an increasingly depressed paper game market. Also, if you haven't finished that Ph.D. in economics, **Interactive Magic** can offer you a crash course of sorts. In case you felt that the original wasn't arcane enough, **CAPITALISM PLUS** offers enough supply-and-demand minutiae to satisfy Allen Greenspan himself.



Semper Fi

Joe Bakoski has teamed up again with Stanley Associates, of **WOODEN SHIPS & IRON MEN** fame, but their latest collaboration is less like their hallmark naval games and more like Bakoski's operational designs of a decade ago for **West End Games**. **SEMPER FI**, to be released by **Interactive Magic**, is a detailed tactical look at U.S. Marines in the Korean War. It will be turn-based, with an interesting morale system that offers a reasonable alternative to the totally subtractive psychological profiles of the original **CLOSE COMBAT**.

Thar's Gold, Matey

For something completely different, check out **Richard Carr's TREASURE ISLAND**, a sort of simul-



EDITOR GENERAL The new **Battle Generator** lets you generate conflicts of your own choosing with any WWII combatants.

The roughly two dozen stand-alone scenarios include some tantalizing "what-if's" such as **San Francisco, Operation Olympic** (the planned but never-executed invasion of mainland Japan), and even far-off **Madagascar**. It's undoubtedly the best variety of scenarios in any **PANZER GENERAL**-type game. Best of all, unlike **STAR GENERAL**, **PACIFIC GENERAL** has full-fledged campaigns, which may be played from either the Allied or Japanese side.

*** Continued from pg 229

dive bombers and—a first for the **5-STAR STRIKES**—torpedo bombers. This, like carriers such as the **Akagi** give you much more flexibility than say, the **Soryu**, especially when you're deciding how many fighters to put on CAP duty—also a first for this game engine. As your air units take losses, you often lack the prestige points to replace elite pilots—exactly the problem the Japanese High Command faced after the Battle of the Coral Sea. This is a surprisingly elegant strategic problem for such a simple game.

The land battles aren't neglected, either. From the jungle fighting of Singapore to the bitter struggles at the Burmese/Indian border, **PANZER GENERAL** fans will find plenty of tactical challenges to keep them busy. The Allies begin with few quality units, but progress quickly as U.S. industrial might gears up for war. The Japanese start out on fire, but unlike the Germans in **PANZER GENERAL**, they can't crank out Panther V's and Tiger tanks on their way to victory.

"Heyyy man...the City's such a downer and The Man is always getting on your case...we've been picketing the lumber yard because whh, lumber has rights too...but the neighbors and the cops are always bringing their uptightness around you know, so to, whhh, counteract the bad vibes we just get out the ghetto blaster and soak the neighborhood in good vibes...the techno... all good stuff man...we're like giving super powers to the writers that are getting hassled...anyway, come on...the ghetto blaster, ask the kids, man, they love it..."

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Conglomerate Warriors

As the sales and popularity of *REO ALERT* continue to grow, it's hard to know where to begin. You might consider the appropriately titled *Unofficial REO ALERT Home Page* at

<http://home.sol.nolsagevik/ral>, which features a number of high-quality links. One of the most unusual of these is the *Dominus Anima* Web site at <http://bbs.bplanet.com/domimus>. Here, you'll find no

units or scenarios to download, but rather a description and entire history behind a "new" faction for C&C called the *Conglomerate*, with statistics for doing your own units. It's a

shame that this background wasn't done with one of the many C&C hacks, but those are readily available on the Net.

Troubles & Triremes

While we weren't enamored of *ADMIRAL SEA BATTLES* (see the review in this issue), *Meridian 93's* next game looks promising. *ADMIRAL ANCIENT SHIPS* is a fantasy game that lets you ram both triremes and monsters of ancient myth, with multiplayer support of as many as 16 human admirals. Check out the demo at www.megamed.com.



CROSS-POLLINATION Pacific General's unit mix is wonderfully varied, from Seabees to Japanese Bicycle Infantry.

PACIFIC GENERAL is a welcome return to the series' roots, and a wonderful bridge to *PANZER GENERAL III*. I can't imagine a better way for the original *PANZER GENERAL* engine to "go down fighting" than this, a wonderful sporting partner for any gamer with even the slightest interest in the subject matter. ☺

MODERN WARS

In a move that will thrill fans of the series, *PACIFIC GENERAL* has built-in multiplayer support for modern and network play. You can set time limits per turn and have multiple players per side, much as in *PANZER GENERAL ONLINE*. If that isn't enough to keep you busy, use the robust *Battle Generator* to create dream matchups of Brits vs. Japanese in North Africa, U.S. vs. Germans in the Middle East, or even Germans vs. Japanese after the fall of Russia.

The scenario editor lets you control everything from victory conditions to scheduled times for prestige dumps, and is a utility that will doubtless keep this game alive on the Net for a long time.

I should also mention the nice *Timothy Dorsey*-style period soundtrack, the improved graphics, the new high score system and unit glossary, and the tough AI. Whatever caused them to stumble with *SYRA GENERAL*, the SSI folks have learned from their mistakes.

"THIS CITY'S BEEN GOOD TO ME. 'CEPT FOR THE FEW TIMES I HAD TO USE A LITTLE CEMENT TO DROP SOME STUFF IN THE RIVER...BRING A FEW TENANTS ETERNAL PEACE...WHATEVER. NOW, YOU'RE GIVING ME PROBLEMS OVER A FEW DOLLARS. PLEASE...I GOT A JOB TO DO...PEOPLE TO SEE, HITS TO MAKE. YOU SCRATCH MY BACK AND I'LL SCRATCH YOURS, GOT IT? BUT, YOU STIFF ME AND YOU'LL BE A STIFF. YOU MESS WITH ME AND YOU'LL BE MESSING WITH AN UNEXPECTED CASE OF LEAD POISONING.

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RP
ESRB

CIRCLE READER SERVICE #262
JULY 1997 CCW

YOU THOUGHT PMS WAS A

A woman with dark hair and a black mask is shown from the waist up, wearing a glowing, circuit-like bodysuit. The suit is primarily orange and yellow with black circuit patterns. She is holding a dark object in her right hand. The background is black.

// This isometric shooter is going to blow you away...Meat Puppet takes the top-down action shooter to the next level. //

—C/NET GAMECENTER.COM

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STRATEGY & TIPS

Flight School

By Robin G. Kim

With the current trend toward ever increasing realism and complexity in today's combat flight simulators, it is no surprise that many newcomers to the genre end up crying uncle. Unlike sim veterans who cut their teeth years ago on relatively primitive products and have since been riding the simulation technology curve upwards, beginners are forced to digest a host of concepts all at once, usually by reading just a single game manual.

If this "sink or swim" scenario sounds all too familiar to you, then read on. In this two-part series, we will cover the fundamentals every sim pilot should know, plus some basic principles of air combat to help you survive your first few sorties. This installment focuses mainly on WWII-era prop plane sims. Next month's article will delve into the tactics and complications unique to the high-tech realm of modern fighter combat.

Takeoffs and Landings

Getting up into the air isn't difficult in most sims. Just accelerate up to speed, then gently pull back on the stick until you are airborne. If the flight model is accurate enough, you will probably need some right rudder throughout this process to stay pointed in the right



direction (see "TORQUE EFFECTS" sidebar). For tail-draggers—planes that lean back on a tail-wheel when at rest—it is important to lift the tail by pushing forward on the stick soon after you start to roll. This not only improves acceleration on the ground, but lowering the nose lets you see where the heck you're going!

What goes up must come down, the trick is to get it down in one piece. This requires you to juggle airspeed, descent rate, line-up (heading and alignment with the runway), and distance from the pavement simultaneously. While this can be daunting at first, employing the following techniques will help you avoid mental overload. First, line up with the runway from a good distance out so you will have one less thing to worry about later. Second, maintain a constant airspeed just above landing speed during final

approach by adjusting the aircraft's pitch through fore/aft stick movements, and control the steepness of your descent with the throttle. Yes, this is opposite to what works at cruising speeds, so it takes getting used to. Third, pick out the spot on which you want to touch down (or a landmark off to the side if the runway is obscured by your plane's nose) and strive to minimize its relative motion. If the spot moves up, you are descending too rapidly, so add power. If it moves down, reduce throttle because your glide slope is too shallow. The piston engines of most WWII fighters provide good throttle response, but jets often exhibit a noticeable lag between input and result, forcing you to think farther ahead.

If you have done everything right, all that is left once you cross the runway threshold is to ease off the throttle and slowly flare (pitch back) until the wheels kiss the ground. Practice these techniques and you will soon be greasing those landings like a pro.



CRASH AND BURN The Surgeon General has determined that not reading this article may be hazardous to a flight simulator's health.

Angle of Attack

One of the most misunderstood aerodynamic concepts among novice sim pilots, angle of attack (AOA) is an important determinant of an aircraft's turning performance. AOA is the vertical angle between the direction an aircraft is pointing and the direction it is moving; it has nothing to do with a plane's pitch angle. The accompanying diagram of an aircraft descending to land illustrates this difference. Although its nose is pointed slightly above the horizon, it is nevertheless losing altitude (anyone who has watched airliners land at an airport will be familiar with this phenomenon). Its pitch angle is about 5 degrees, but its AOA is 15 degrees. If you rotated the picture a quarter-turn clockwise, the plane's pitch angle would become 95 degrees, but its AOA would still be 15 degrees.

In normal flight, the pilot can increase AOA simply by pulling back on the stick. The lift an aircraft's wings generate, which can be used for turning as well as just staying up in the air, is



roughly proportional to AOA at a given airspeed. That is why you hold the stick back to make high G turns. The greater the AOA, the more lift produced—to a point. Going beyond this point, increases in AOA result in huge reductions in lift and a boatload of drag. This is what it means for an aircraft to stall. Note that a stall occurs whenever you exceed the AOA at which lift is maximized, regardless of your airspeed. When this occurs at higher speeds it is called an "accelerated stall," the onset of which can be sudden and violent. The way to maximize your rate of turn, then, is to ease up to the edge of a stall without stepping over. Finess is the key.

Fighting Styles

Once you have mastered the rigors of routine flying, it is time to start thinking tactics. Though the number of possible air-to-air combat styles is practically infinite, it is useful to divide them into three basic categories: angles tactics, energy tactics, and "boom & zoom." Which is most appropriate depends on the plane you are flying, your own proficiencies, and the circumstances of the engagement.

Angles tactics, the most intuitive of the three, favor the use of aggressive turns in a brute force attempt to gain the upper hand. This is generally the quickest way to get a kill when it works, and is the natural choice if your plane has a turn rate advantage. With energy tactics, the goal is not to out-turn the opponent, but to build up a sufficient energy advantage (in the form of airspeed or altitude, or both) to enable you to maneuver into firing position while the bandit lacks the energy to counter. This decisive energy advantage is achieved through aircraft superiority, more efficient flying technique, or, against an evenly matched opponent, by giving up angles. The prototypical end game involves pulling up into a zoom climb that the bandit cannot follow, then coming back down for the kill while he's slow and helpless. Successful use of energy tactics requires more skill, patience, and good judgement than angles tactics, but they are your best bet if you find yourself trapped in a dogfight against a more maneuverable plane.

While there is some overlap between energy and angles tactics, "boom & zoom" is a whole different ballgame. Instead of fighting it out at close quarters, a boom & zoomer will typically make a diving firing pass (the "boom") from a large energy advantage and then, if the

target was not destroyed, climb (the "zoom") so far away that the bandit cannot retaliate. This series of slashing attacks and eluding disengagements is repeated until the bandit is killed, the attacker gives up and

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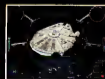
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(Floyd from Accounting.)

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Figure 1



▶ No Lead Turn

Figure 2



▶ Typical Lead Turn

Figure 1



▶ Climbing Lead Loop

flies off, or the energy difference between the two planes shrinks enough that the attacker can no longer zoom away with impunity.

Lead Turns

Boom & zoom tactics only apply when you hold all the cards. If a dogfight between evenly matched opponents begins with a head-on pass, angles or energy tactics must come into play, and the eventual outcome is often decided in the first few seconds. The basis for most

effective opening moves is the "lead turn." A lead turn is simply a turn started before you pass your opponent. Figure 1 shows an offset head-on pass where both pilots turn toward each other as they go by. Since they both do the same thing, neither gains any edge over the other. Now look at Figure 2, in which the fighter on top begins a lead turn before the other aircraft passes. By the time the second fighter begins to turn, it is already at a considerable disadvantage.

The principal components of a successful lead turn are timing and flight path separation (the lateral offset between the two planes' flight paths, also known as "turning room"). If you turn too late, you won't gain enough angles to make much difference. If you turn too early, your opponent can slip in behind you. Flight path separation is not strictly necessary for a lead turn to be useful, but does allow you to turn in sooner and potentially grab a greater angular advantage.

Even the most basic lead turn described above can prove devastating against someone who has never seen it used before.

Unfortunately, it is pretty easy to counter: Just steer toward the lead and minimize flight path separation. That will render any lead turn the benefit performs much less effective, but not totally worthless.

One way to discourage this countermove is to do your lead turn straight up as shown in Figure 3. It works similarly to a level lead turn except that if the benefit wants to take away your flight path separation, he must commit to a steep dive (not shown), necessitating a lengthy, energy-consuming recovery afterwards.

Corner Speed

The most common mistake beginning sim pilots make is to hold the stick all the way back during a dogfight in a vain attempt to maintain a tight turn indefinitely—it just doesn't work that way. No fighter has so much power that it can sustain a maximum rate level turn without losing airspeed, and if airspeed decays too much, so does turn rate. Excessive speed will also impair a plane's turning ability. Between these two extremes is a sweet spot that optimizes turn performance at a given instant. This sweet spot is called an aircraft's "corner speed."



BUTCHER BIRD The Focke-Wulf Fw190 is the epitome of a boom & zoom fighter. It's fast, durable, has excellent handling at high speeds, and can lay down a withering barrage of fire.

Torque Effects

Single-engine prop planes have a strange tendency to yaw to one side at high power settings, especially at low speeds.

For planes whose props rotate clockwise from the pilot's point of view (as most do), the effect manifests as a leftward pull on the nose that must be countered with right rudder. The cause



TWO PROPS ARE BETTER THAN ONE The P-38 Lightning's twin counter-rotating propellers almost perfectly cancel out each other's torque, P-factor, and slipstream effects, giving the plane exceptionally stable low-speed handling.

of this uncommanded yaw is often referred to simply as "torque," but it really results from three separate effects: engine torque, spiral airflow caused by the prop, and something called "P-factor."

If engine torque spins the propeller clockwise, an equal and opposite force will roll the fuselage counterclockwise, to the left. This does not produce any yaw per se, but by countering this roll with some right stick to keep the wings level, you increase the drag on the left wing relative to the right; that does cause a leftward yaw.

A clockwise rotating prop will create, naturally enough, a clockwise rotating current of air behind it. This helical slipstream will hit the vertical stabilizer on the left side (but only at very low speeds), causing the tail to move right and the nose to move left.

P-factor describes how one side of the prop disk will produce more thrust than the other at non-zero angles of attack (see the Angle of Attack sidebar). When AOA is positive, such as during takeoffs, landings, and tight turns, the right side of the prop disk is dominant, causing the nose to pull—you guessed it—to the left.

All these effects are modeled to some degree in most recent prop sims. Usually, some right rudder is all that is required to keep the plane in line. Nevertheless, the yaw can actually become unmanageable if sufficient power is applied at a low enough airspeed, so it is best to avoid such conditions.




FINAL APPROACH To avoid getting overly fixated on any one thing as you come in for a landing, it helps to cycle your attention continually between your plane's airspeed, sink rate, line-up, and glide slope.

The maximum lift a plane's wings can produce rises rapidly with increasing airspeed—the faster you go, the more Gs you can pull and the quicker you can turn. Eventually, the number of Gs available reaches the structural limit of the airframe. Beyond this speed, it is not practical to take advantage of the extra lift because any additional Gs could cause the wings to snap off, possibly ruining your whole day. The lowest speed at which a plane can generate its structural maximum G load is its corner speed (the name comes from the a sharp peak, or corner, that appears at that speed when graphing maximum turn rate versus airspeed).

A plane may have its highest instantaneous turn rate potential when flying at corner speed, but if this entire potential is constantly exploited, airspeed will inevitably drop off (unless executing a diving turn, but you can only dive so low). If you expect a prolonged turning fight, it is therefore a bad idea to use all the turning ability you have unless you are going for the kill, or if your life depends on it. For such engagements, you will want to fly nearer the speed that offers the highest turn rate that can be sustained in level flight with no deceleration. This speed is typically below corner speed for WWII fighters and above it for modern jets.

Mission Debriefing

Air combat tactics are an extremely complex topic. The concepts and techniques explained here barely scratch its surface, but they should give you something to think about as you develop your own fighting style. (For an authoritative book-length treatment of the subject, I highly recommend Robert Shaw's *Fighter Combat: Tactics and Maneuvering*.)

Although several of the lessons covered in this article apply to jets as well as WWII prop fighters, be sure to check back in next month's *CCW* for the final part of this series, which will give details specific to modern air combat. Until then, have fun up there! 



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- SEPT 6
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STRATEGY & TIPS

Interstate '76

Hot Advice for the Long and Winding Road of INTERSTATE '76

by Gordon Goble

Completing the 17-scene TRIP is the ultimate achievement in INTERSTATE '76—the one that proves whether you're really cool or not. Since Scenes 1–4 are little more than extended training missions, we'll kick things off with Scene 5, and then check out some of the more challenging forays that follow.

Scene 6

TO THE RESCUE

After the infamously dream sequence of Scene 4, the action starts getting hairy. Among the smoldering wrecks just to the right of the intersection of highways 380 and 87, you'll find Tauros, still in his car and only slightly wounded. You've got a trio of creepers to pick off along the way, but since they're spread out, try using your handgun for better salvage opportunities.

Don't sweat the multiple creepers on your way to rescue Skeeter, because with a two-minute time limit, you've got to move. Get the speed up and hang a right on Oil Well Road.

Speaking of oil, lay plenty of it behind you and your pursuers won't be a problem. With a loller chasm off to the left and very little shoulder, drive fast, but take care through any hard rights. Oh yeah, negotiating that monster jump just before Fisher's Field will require the judicious use of nitro.

Scene 6

HEY, I'M JUST TRYIN' TO GET SOME GAS HERE!

Take the side road (as detailed on the map) and speed up to 85–95 mph for each of the upcoming jumps. Since it's dark, it's a good idea to drive slowly through each segment to gauge the distance to the next ramp, then turn around and come back at full speed. If you do miss the third jump and plunge down into the chasm, you can still get to the station by following the directional arrows on the barriers, then cutting through the desert.

At the station, you'll get two swarms of creepers. You'll want to kill 'em quick before they destroy the station, but you'll get some limited assistance from Inferno, an ally with a flame thrower and somewhat shoddy marksmanship.

Don't be afraid to chase each bad guy down. It works because they don't have much in the way of rear-mounted weapons, and because others won't take the opportunity to attack while you're



away. So, turn off your headlights (so they don't see you) and pick up your adversaries when they first hit your radar, before they swarm the station. Make sure you use your targeting computer so you don't accidentally hit Inferno instead.

Scene 7

THE KEystone BRIGADE

In Scene 7, there's a bunch of cops on the take who are trying their best to box you in between impenetrable roadblocks, but here's a plan. Just past the first roadblock, make a quick right on Bausie Road and drive until you see a brown barn off to your right. Drop a load of birddroppers around the perimeter of the barn, because you'll be leading a fuzzi parade back here later.

Back out on the highway, travel down to where you're just in sight of the waiting cruises. You should have the chance to get in some looz



HIDE OUT In Scene 7, hide in the barn on Bausie Road. The fuzzi won't see you, but you'll see them from inside the barn, and be able to shoot them from this cover.

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TRIP TIPS

Use the "F" keys for alternate perspectives. For example, Scene 6 sees Groove hurtling several knocked-out bridges, and the only way you can tell if it's a bridge or just a hill is to check your satellite view.

- ▶ Off-roading isn't as damaging or as difficult as the manual would lead you to believe, and cutting corners where the terrain is flat is advised.
- ▶ Look around for alternatives to the suggested routes—even Taurus can be wrong sometimes.



SATELLITE TV Here is an overhead perspective of Fort Smith, using the trip view to locate a tank. This view makes it easy to locate enemies and spot the terrain for bridges and chasms.

▶ Get yourself a multi-button stick. Using the period and comma keys to change gears is not fun.

▶ Learn the fine art of driving at the Burnetti racetrack. Run this mission over and over again to become a boss Piranha pilot.

▶ Salvage bigger and better performance parts whenever you can, but let Skeeter repair anything highlighted in yellow or red before you use it.

▶ Because they improve cornering and road grip over bumps, suspension upgrades should be considered a priority, as should fatter tires.

range. Ann-Nein misale hits before they scramble. Now, load them back down the highway, discharging the rest of your bloodsippers en route.

When you get back to the barn, drive inside it. There's enough room to turn around inside, and since the cops can't get at you while you're in there, you can take pot shots at them as they drive by. With a little luck, some will drive over those bloodsippers you laid earlier. After awhile, the helicopter they've called in will locate and you can drive out, finishing the job. Taking out a fourth car will persuade them to remove a roadblock and let you pass.

Scene 3

WAREHOUSE PATROL

Talus is one tough mission, but you should know that the damaged helicopter's going to take off no matter how fast you get there.

What you have to do is eliminate the creepers before they can check the warehouse.

Kill the first car you see. He'll use his rear-mounted flamethrower on the warehouse and you, if you get too close. Then nail the guy Cover and don't let either get to the warehouse, which stands just south on highway 2H. The key here is to bait the rest of the creepers and lead them away from the warehouse.

Scene 2

CATCHING CALISTO

By now you should have equipped your death machine with Kingers all round, 4-wheel disc brakes, and other near top-notch performance parts—all of which are definite necessities for this mano a mano mission.

Calisto drives an abjectly fortified car. Don't get too close during the chase, and stay away from that gun on his right side. Try getting in front of him and dropping a bunch of bloodsippers and mines, then duck in behind, all the while throwing lots of linked machine gun or cannon ordinance his way. Don't fall into just watch until his damage bar turns red—then you've got him.

Scene 10

ROADBLOCKS R U

More bad cops, more roadblocks. Quickly head straight toward the assembled throng (use a nitro), then veer slightly to the left just past the final side road. This will put you on the cliff just above and to the left of the roadblock. Drive just past it and drop back down to the roadway before the height gets too severe.

When approaching from the rear, the cops put up a curiously weak fight while you're able to pound them with turrets or mortars. One or two may sneak up the cliff and get close, but if you monitor the satellite view you'll know before they get there.

Scene 11

A BRIDGE TOO FAR

There's no way to stop the creepers from taking out both obvious bridges, but a third awaits. You'll probably have to take a bit of a drop getting down into the chasm, but once there, drive a very long way and you will find the last bridge.



BRIDGE OVER THE RIVER KWAIT Not quite, but this bridge is your only way over the Pecos in scene 11.

Weapons of Choice

The Good:

Loaded Machine Gun: Bar none, the best thing you can do for your hitting power throughout the game.

Oil Slick Dropper: Even if it simply delays the inevitable, but in missions where screaming past the bad guys is advisable, it is very useful.

Turrets: Will follow target even if you're facing another direction and are great for helicopters.

Cherub Missile: A rare beast but stupendously fatal. Use from long distance only.

The Bad

Canons: They pack a punch but don't have nearly as many rounds as machine guns and feel and look a bit odd when being fired.

Martars: Effective only when blasting a static target, and static targets can be hard to find.

Specials: Aside from repeated video applications, I didn't use a one. I mean, a cup holder?



GROOVE TO THESE MOVES Mounting a turret on your roof is a good idea, because it will track your targets.

The Ugly

Handgun: Great for eliminating a driver while leaving his or her vehicle unscathed. But mastering the pistol can be quite difficult, and you can easily muddle your way through without ever using it.

Flamethrowers: Turn virtually anything into a crispy critter, but you've got to be really close.

Car-E-Raser: Does what it says, but a brand new one has just five applications.

Just past the bridge is a relatively gentle upgrade, one you can use to get up to the bridge. You'll encounter lots of big-time firepower, but it's way better to forgo the shooting gallery routine in favor of a little nitro.

Just keep following the road and you'll hit the highway where you hang a left to meet up with Taunus once again.

Scene 12

ROSWELL WEIRDNESS

et subtlety be your master, and wait for Octoberfest to get inside the Autowerks before attempting the same thing. Take out the helicopter, the rather lame creepers that follow, and then begin shooting the buildings.

The door of one of the buildings will fall backward, which should serve as a great jump ramp to get you the hell out of there. Remember that there's no opportunity for salvage, and hitting the "S" key starts the car.

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CIRCLE READER SERVICE #107

Scene 15

GO SOUTH, YOUNG MAN

You should be loaded with nearly the best performance equipment by now. Turn right down the first road you see and use your compass to continue south, hugging the mountains to your right. You'll drive a long way and do some off-roading as you locate the pass over the cliffs.

It's a bumpy ride through the first range, but once through, continue south past all the gunfire (which you should ignore). When you approach the next mountain range, drive straight into it until you see a pass to the left. Take it over the mountains, and the highway will lie to your right. When you get there, go north again to find Fort Smith or you'll run head-first into creeper central.

Scene 16

A TWO-TANK GARAGE

Tanks will tell you to protect the van by going the opposite direction and picking off creepers, but that'll only alert a flock of them to your presence. Instead, turn around from your opening direction, travel down the road a spell, and where the road veers right, go left. With a little searching, you will find a passage down the otherwise impossible canyon wall.

Link up a couple of 7.62-mm machine guns for the upcoming pair of tanks and single creepers. Once you've taken them out, shoot



DUDES OF HAZARD In Scene 16, you should hurtle over the walls of Fort Smith via a downed guard tower. If you take the backroad into the fort, you'll find just two tanks and one car in your way.

down the guard tower, which then acts as a convenient ramp over the fort wall. Jump it, baby.

Scene 17

THE GRANDE FINALE

This is a one-minute mission if perfectly performed, and you've finally got some heavy-duty transportation alternatives for your explosive showdown with head bad dude Malochito. You need to select the groovy Armored car, and blast Antonio with a deadly

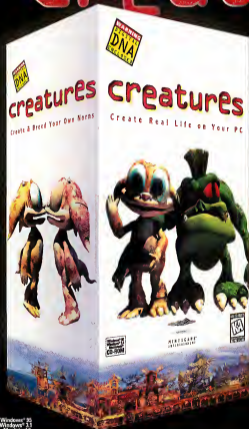
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CIRCLE READER SERVICE #131

MINDSCAPE
ENTERTAINMENT



MANTA RAZD Malecho drives a Manta like this (albeit of green color). It's got plenty of hard points, good speed, and armor, so select the Armored car for this showdown and use a chernub missile to cripple him from afar.

chernub missile from long range—that should be enough to effectively cripple him.

Linked 7.62-mm machine guns work well against the two other cars, but reserve your final pair of chernubs for that damned truck. If you want to live to tell the tale, get him before he has the chance to take aim.

So there's an overview of the 11 hardest scenes in INTERSTATE '76. Now you're ready to strap on your miscreant shades, pick out your afro, and hop into your souped-up deathmobile for some serious action. **S**

Combat Tips

▶ As exemplified by Scenes 6 and 8, it's always smart to deal with creepers individually rather than en masse—they're often more interested in guiding you down than accomplishing their primary goal.

Monitor your radar constantly and respond to it early. There are a few instances where an overwhelming number of evil-doers will force you to run rather than fight, but if you must fight, get involved quickly.

▶ Ramming a creeper, then blessing him before he gets his wits together is often quite effective.

▶ Perfect the art of the bootleg turn. Your "Z" key is the emergency brake and using it while slamming the wheel to either side will immediately spin you around. Much quicker than traditional turning and a great aid for in-close dogfighting.

▶ With a pair of linked machine guns you're rarely out of ammo. If you find yourself surrounded by two or three creepers, just keep that trigger finger depressed and you will get in a few unintended hits.

▶ Creepers don't seem to see well in the dark, so keep your lights off when fighting after sundown.

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CIRCLE READER SERVICE #239

STRATEGY & TIPS

Discworld II

Is Rincewind Running Around in Circles? Let Scorpia Set You Straight

by Scorpia

Well, summer's here. It's not my favorite season, games tend to be scarce during the hot months, and the long days don't improve Fred's temper any! These are the things I think about taking a vacation. Somewhere. Anywhere. Even DISCWORLD. Or DISCWORLD II, which is even worse!

The first rule in this game is to grab everything you come across. Even if you're in someone's shop or home or whatever, there are usually items lying around just waiting for your hot little hands. Take your time in each scene to run the cursor all over the view. While no items are actually invisible, a few are hard to see, and you could miss them if you're not careful.

The second rule is to talk to everyone you meet—several times—using all the conversation modes. Then save after talking, so you don't have to go through the conversations all over again (heh).

Act I

Okay, so here we are in Act I, where Rincewind has to pick up a bunch of things to summon Death back from wherever it is he went. To be more specific, our boy needs glitter, sticks, special candles, mouse blood, and a vile smell.

Glitter: This is Marilyn Monroe stuff pulled off from below. A real breeze.

Candles: Nothing beats do-it-yourself. You just have to get rid of the bees (see: Everyone wants to be in the clothes! Rincewind does need a little protection (visit the desert lady for that). And some hot flowers (or were they chilly?). The nest is pretty obvious. Just keep in mind you need two things from the hives, sweetie.

Sticks: This is the old switcheroo trick. You need one from the shop, and two from the docks. Be stuffy, fake out the pelican. If the net gives you trouble, visit the morgue, muck around.

Mouse Blood: You have to sink your teeth (or someone's teeth) into this one. Have you noticed that it's nighttime? A little corn, a little booze, and a little caffeine can help. If you can't do any drinking, talk to someone about a woman. Which woman? 'Nuff said (heh).

Vile Smell: Give this one the boot, and bottle it up. See Mrs. Cake about that. When she says "order your thoughts," she means it, go through the talk options in the right order. Then you should find around with a brick, careful, this is high energy stuff.

Okay! Death is summoned and he's not interested in his old job anymore. Arrgh! So now you have to get him into the movies. Act II begins, and here we go again.

Act II

Boarding The Ship: Tough. Talk to people first. Then warm up to a reflection, give Rincewind a hand, and put him on sec (or vice-versa).



CHICKEN FEED You'll never catch this chicken while he's sober. Try feeding him some prop-laced corn to slow him down.

After getting on the ship, you can go anywhere, like Hollywood, to find out what you need to make the chickie.

Novelty: This one is a ton of trouble. Ten times as much, actually. Get in the swing of things, though, and you should be okay.

Band: If you need help with this, you probably shouldn't be playing adventure games.

Jungle: Complicated. Chat with Uzi first. Ask for a demo (hoop to it). Then talk to the old hermit at the wheel. Sail west and grab a couple of things. Stock up at Urzoon University. And we having fun? Plan your pyramid wisely and hex it.

Cameo: Naughty little imp? You're too big to follow him into the scenery. You need something small. Something small you can get back easily. Right, mate?

Babe: Finally, you can do something about the Suffrajeter. Ya have to get her first, and that requires a stakeout. Then it's time to rock and roll (or at least rock). Now you can (so to speak) go trolling for the babe. Bribes never hurt (except maybe trolls, heh).

Elven Queen: Really complicated. Before you can go horsing around, there's a lot to be done. Pull a switcheroo at the oasis after visiting the pyramid. After you have what suits you, you need a friend to help out (let's not monkey around here, or should we?). Then you need info on Elves. Someone dead might know about this (I wonder if her name is Morgana?). You're almost ready, but an ordinary equine just won't do. An addition to the disguise is needed, and it's a real hoat.

The Sheep Double: Pike around in the vicinity of Mrs. Cakes' place. Then head for the beach to catch some waves. I'm sure you saw a board around here. If you're having trouble hanging ten, you need to stick to it (and I mean that literally).

The Clickie: Not a big success, huh? Well, all I'll say is this: Variety is the spice of life. Check your inventory and go do it.

Act III

This brings us to Act III, where Rincewind gets to play Death—if he can prove himself up to the job.

Black Robes: You're dying to know about this one, huh? Well, it might be curtains for you, at that. Let me write that down (oh darn, out of ink).



BLOOD SIMPLE What's the easiest way to get four cc's of mouse blood? Read any good Anne Rice books lately?

sharp here, put things together, and you'll be done in no time.

Ant Souls: Co fish, henny

Voice Of Death: Pretend you're Santa Claus, only just talk. If you need to get on top, rope in a good comeback for some help.

Act IV

This brings us to Act IV, where we, er, put some life back into Death. Let's not think about this one too closely, okay? At least the Acts are getting shorter.

The place to check out is Dyehtsby. This one's really a quickie, although you'll likely have to go in and out of town more than once. You'll need some assistance in following the prospector. In fact, you need something else to follow the prospector for you. If he's armed, that will be a great help.

Act V

So we come to the totally superfluous Act V, which is even shorter. All you really have to do here is look around at everything and everything, talk to a couple of people, fill up, and take to the skies. What could be simpler than that?

And that's about it for now. In the meantime, if you need help with an adventure game, you can reach me in all the usual ways. Plus, be sure to check out my new Web site! Until next time, happy adventuring ☺



DOUBLE JEOPARDY Mrs. Cakes is not going to deal with you unless you learn how to ask the questions that she's just answered.

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Internet: scorpia@aol.com or scorpia@scorpia.com

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STRATEGY & TIPS

Magic: The Gathering

Tips and Tactics for the Budding Sorcerer in MAGIC: THE GATHERING

by Bob Proctor

There are few strategy games like *MicroProse's* **MAGIC: THE GATHERING** where you can get so much gaming for your dollar. You can spend hundreds of hours in either the Duel environment—constructing a deck and trying to run the Gauntlet—or in *Shardrak*, the adventure/campaign game. Here are some tips on the latter.

What Color to Choose?

Early on, you will be dueling creatures with 4–10 lives, and you only have 10 yourself. Duels will be short, and a deck that kills quickly is a must. The best early strategy for all colors is a fast creature deck, with low-cost instants and enchantments. Other strategies would work, except that the necessary spells are scarce in *Shardrak*. For example, most starting red decks have one or no direct damage spells.

Flying creatures are important for offense and defense. *First Strike* and *Pumping* are better than *Landwalk* and *Protection*, which are only useful against one particular color. Instants like *Giant Growth*, *Blood Lust*, and *Howl From Beyond* can be cast after blockers are declared to deliver the kill. Low-cost creature enchantments can be used to make small creatures bigger than the enemy. Each color has a few unique spells:

Red: *Dwarven Warriors* can make your small creatures unblockable, use *Firebreathing*, *Immolation*, or *Blood Lust* to increase the damage. **Black:** Don't overlook the most plentiful anti-creature spells, *Weakness* and *Terror*, in the early going.

Green: Elves and Miana Birds are scarce at first; use *Wild Growth* for extra mana.

White: One of the few useful *Astral* cards is *Knights of the Rainbow Vale*—a 20 creature that costs 2, with protection (color chosen at random), first strike for L, and can be pumped.



A MAZE BY ANY OTHER NAME Wizards hide in the deep recesses of their castles. Sometimes you get lucky; this castle only had three creatures on guard. Be patient!

Blue: *Twiddle* and *Unsummon* get blockers out of the way; *Unstable Mutation* provides lifting power; *Power Leak* is an excellent card since so many decks make heavy use of enchantments.

Dungeon Crawling

By mid-game,

you'll want to get the power cards buried in the dungeons. A problem here is that you get ejected after a single loss, so you can't afford to take chances with mana shortage. My decks are 50 percent mana sources (about 40 percent land). Not all mana needs to be colored; make use of *Strip Mine* and *Mishra's Factory*.

Many Dungeons have a special condition that life losses carry over from one duel to the next. So being able to gain life is crucial. All colors except Red have such spells (although Blue is pretty weak). Here's the complete list; those in red are X-spells that can use all that "extra" mana.

Black: *Drum Life*, *El Hajiji*.

Blue: *Relic Bind*, *Lifetap* (only against green).

Green: *Stress of Life*, *Rebirth*.

White: *Alabaster Potion*, *Healing Salve*, *Spirit Link*,

Reverse Damage.

Artifacts: *Ivory Tower*, *Ornlet*, the five "lucky charms" (one for each color).

The last tip for dungeons and castles is to find out what card starts to play. Your opponent will always have an enchantment or creature in play to start the duel—you must know what it is. With castles, you can go in, find out, and leave to prepare a revised deck, but Dungeons go away when you leave, so you only have one chance—get the clue first. Taking an all-black deck in and finding *Koma* in play is not fun, whereas at the same deck with a *Bad Moon* out is pretty cozy. ☘



A HERO'S DEATH The final challenge of *Astral* isn't intended to be winnable. It's just for extra points, so play accordingly.

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Action

Interstate '76



As one of the hottest games this year, **INTERSTATE '76** is busy satisfying our action addiction. However, if the game is getting too tough for you, type in this cheat code to jump levels:

Girl-Sits-GETDOWN

All the enemies in the level will converge on you, but once they kill you, you'll jump to the next level.

Helicops

If you want more depth, check out **INTERSTATE '76** or **ACHILLEAN DYNASTY**.



But **7th Level's** helicopter-based action shooter is a good time if you are into fast-paced, mindless fun. To that end, here are some cheat codes to help you through the citre wave. Type these cheats in at any time during gameplay:

- Arteman Makes you invincible.
- Skagwin Automatically completes current mission.

Adventure/RPG

Leisure Suit Larry 7: Love For Sail

Certainly there can't be anything more pathetic than wanting to look at nude pictures of 2D cartoon women. Nevertheless, as a public service for those with no pride, here's a list of just some of the easter eggs in **LEISURE SUIT LARRY 7: LOVE FOR SAIL**.



1. Go to the Clothing Optional Pool, click on the Pesky Branch covering Drew Baringmore's chest. Select "Other," and type "push."
2. In Captain Queeg's Ballroom, click on Larry, select "Other," and type "dream."
3. After the Jugg's performance, go backstage, click on the mixing table, select "Other," and type "Feel." Then go to Drew Baringmore and talk about Arlon Folker.
4. In the library, click on the stuffed beaver, select "Other" and then type "milk." Proceed to the Jugg's dressing room for your big thrill.
5. After killing *Annette Boring*, go back to Annette's room. Before pushing the doorbell, click on the catch of the third male statue, select "Other," and then type "Urniep." Now ring the doorbell. There's actually more, but that's quite enough, don't you think? Now try meeting some real women, studboy.

Strategy/Wargames

Admiral Sea Battles

While this game can be fun, its lack of realism makes **PINZER GENERAL** look like *Das Weicht Am Rhein* by comparison. Your best bet is to unleash anything you know concerning real naval tactics. For example, the best defense to prevent the enemy from capturing your ships is to keep them in pairs.

Only two ships will fit in a square, and if both vessels in that square are yours, then no enemy can enter or board. Wonder what Nelson would have thought?



Red Alert

If you've played **RED ALERT** online, you've likely fallen prey to the infamous Soviet Tank Rush. Since the designers wanted to avoid small-arm fire being able to take out armor (as in C&C), building infantry isn't much help. Also, since the design prizes mobility, simply going on the passive defense doesn't help. What you have to do, to paraphrase Gen.

Simulation/Space

IM1A2 Abrams

• **Advance to contact in a wedge:** This gives you flank protection as well as a good forward field of fire. Go into echelon toward known threats, and employ line formations only for defense.

• **Infantry will deploy when their carriers halt and will only move with carriers.** Make them your backup forces.

• **Know your vehicles; read the data charts.** The best American AVweapons, other than special units, are APCs with Striders, so use them against those enemy Hawks.

• **If you stop when ordered to, you may incur a victory point penalty,** despite what



your communications data says. Make sure to play missions to the very end.

• **While it might seem obvious, use terrain to your advantage.** Above all, trust your gut-net. Don't play Davy Crockett when commanding a platoon or company.

• **Rocket artillery is devastating** but takes longer to re-load. Use mortars and ISAs for cautions, slow advances and defense. —*Jon Cobb*

Puzzles/Classics

Marble Drop

If you find you're spending all your hard-earned points buying back marbles in *Mexes' MARBLE DROP*, here's one way to get your bank balance back up. On certain puzzles, such as *IS Democratic*, if you quickly drop a bunch of marbles one after the other into all the available funnels, pretty soon they'll start bouncing around in perpetual motion. Every time a marble hits the crossbow you gain ten points. We left the program running for a while and returned to a score of 50,000 points. You'll want to



reset that particular puzzle in order to solve it, but when you do, your newly acquired high score will remain intact.



James Longstreet, is to make the enemy fight on grounds of your choosing—easier said than done, of course.

The key is to recognize that the combat algorithms in *RED ALERT* give a huge firepower edge, both in terms of accuracy and damage, to stationary units. So, position rows of tanks with their fields of fire covering the most obvious avenues

of approach to your base, and smother the lead tanks of your opponent's formation with overwhelming fire. You don't have to worry about the angles of your shots, because *RED ALERT* (marble-*soy*, *STEEL PANTHERS*) doesn't model front/side/rear armor differences. If your enemy stubbornly persists in futile attempts to punch through your defenses, you'll have time to scout around for *AviBac*.

X-COM: UFO Defense

With the re-release of *X-COM* as part of *MicroProse' CONQUER THE UNIVERSE* collection (see Terry Coleman's *Strategy/Wargames* column this issue),

Sports

Q Soccer



Since there's exactly no kick-ass soccer game on the market (both *FIFA* and *MICROSOFT SOCCER* leave a lot to be desired), why don't you try a kick-head soccer game instead? A group of deranged folks who go by the name of *QSports* have come up with a free *QUAKE* add-on called *QSOCCER* that lets you play the world's most popular sport with a whole new twist. You kick a severed head instead of a soccer ball. Though this sounds like more of a gimmick than a game, the multi-layer matches can be awesome fun (though we wish you took damage hits for shin kicks). Be on the lookout for *Version 4*, which promises to add a working referee to the match. One question: will we get to kill him?

You can find *QSOCCER* at www.planetquake.com/qc/qtip

there's been an upsurge of interest in this Hall of Fame title. If you're having trouble winning at the higher levels of difficulty, check out the unofficial *X-COM* Web site at [www.franken.de/users/speedyhalon/hobbies/isd/del/com/Welcome.e.html](http://www.franken.de/users/speedyhalon/hobbies/isd/del/com>Welcome.e.html). It's worth typing this ridiculously long URL to get the easy-to-use utilities, which include editors for weapons, soldier and base stats, *UFO*pedia, and even alien containment.



Simulation/Space

F/A-18 Hornet 3.0

Graphic Simulations' F/A-18 HORNET 3.0 is a fun sim, but it limits you to flying just one of the 15 planes it simulates. That is, unless you know the insider codes used by the programmers for debugging the game's missions.

Simply type the codes listed below in the pilot call sign field in the following format: flyPLANE-#, where PLANE is the aircraft code and # is the aircraft ID for that mission.

Please note that you cannot fly helicopters using this feature, and that the codes only work in specific missions. Also keep in mind that

these codes are designed for the release version of the game, not the demo version.

Because this feature was designed for debugging purposes, you'll find that some planes exhibit quirky behaviors. For example, if you engage the autopilot, the computer will take control of the plane. Also, the plane may occasionally take control itself. And aircraft may no longer taxi on their own, even with autopilot on.

This Easter egg is not officially supported by CSC, and they kindly request you don't bother tech support with problems about flying the B-52.



Aircraft Key

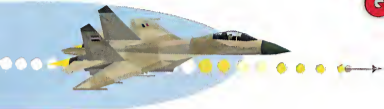
A10A = Fairchild Republic A-10A Thunderbolt II
AWAC = Boeing E-3A Sentry (AWACS)
B52G = Boeing B-52G Stratofortress
B727 = Boeing 727
E2C = Grumman E-2C Hawkeye

F117 = Lockheed F-117A Nighthawk
FA18 = McDonnell Douglas F/A-18C Hornet
DC10 = Douglas DC-10
MIG21 = Mikoyan Gurevich MIG 21MF Fishbed

MIG23 = Mikoyan Gurevich MIG 23S Flogger
MIG27 = Mikoyan Gurevich MIG-27 Flogger-D
SU27 = Sukhoi Su 27UB Flanker
TU20 = Tupolev Tu-20 Bear-G

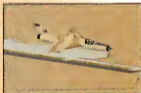
Training (Hawaii) Theater

MISSION	ID #	CODES								
Takeoff and Flight	T001	FA18 00	FA18 01	FA18 02	DC10 00	DC10 01	B727 00	B727 01	AWAC 00	
Airstrip Landing	T002	FA18 00	FA18 01	FA18 02	DC10 00	DC10 01	B727 00	B727 01	AWAC 00	
Carrier Operations	T003	FA18 00	FA18 01	FA18 02	DC10 00	DC10 01	B727 00	B727 01	AWAC 00	
Navigation & Radar	T004	FA18 00	FA18 01	FA18 02	DC10 00	DC10 01	B727 00	B727 01	AWAC 00	
No-to-Ground	T005	FA18 00	FA18 01	FA18 02	AWAC 00					
Air-to-Air	T006	FA18 00	FA18 01	FA18 02	DC10 00	DC10 01	B727 00	B727 01	AWAC 00	



Tour of Duty (Kuwait) Theater

MISSION	ID #	CODES							
Pull the Plug	M 228	FA18 00	FA18 01	MG23 00	SL27 00	SL27 1	SL27 02		
Red Ball Express	M 227	FA18 00	FA18 01	FA18 02	MG23 00	SL27 00	SL27 01	SL27 02	
Tanks Anyway	M 226	FA18 00	FA18 01	FA18 02	FA18 03	EZCA 00	MG23 00	SL27 00	SL27 01
Hole in One	M 225	FA18 00	FA18 01	FA18 02	MG23 00	SL27 0	SL27 06	SL27 02	
Burning Waters	M 224	FA18 00	FA18 01	FA18 02	FA18 03	EZCA 00	MG23 00	MG23 01	SL27 00
Bad Waters	M 223	FA18 00	FA18 01	FA18 02	FA18 03	EZCA 00	SL27 00	SL27 01	MG23 00
Night Threat	M 222	FA18 00	FA18 01	FA18 02	FA18 03	EZCA 00	SL27 00	SL27 01	MG23 00
Chopper Hop	M 221	FA18 00	FA18 01	FA18 02	MG23 00	MG23 01	SL27 00	SL27 01	
The Bridge	M 220	FA18 00	FA18 01	FA18 02	FA18 03	EZCA 00	MG23 00	MG23 01	SL27 00
Night Hawk	M 219	FA18 00	FA18 01	FA18 02	F117 00	F117 01	MG23 00	MG23 01	SL27 00
High Flyer	M 218	FA18 00	FA18 01	FA18 02	A10A 00	A10A 01	MG23 00	MG23 01	SL27 00
Surf's Up	M 217	FA18 00	FA18 01	FA18 02	A10A 00	BS26 00	MG23 00	MG23 01	SL27 00
Turkey Shoot	M 216	FA18 00	FA18 01	FA18 02	EZCA 00	MG21 00	MG21 01	MG23 00	MG23 01
Road to Destruction	M 215	A18 00	FA18 01	FA18 02	FA18 03	EZCA 00	MG23 00	MG23 01	MG23 02
Intercept Santa	M 214	FA18 00	FA18 01	FA18 02	FA18 03	MG23 00	MG23 01	MG23 02	DC10 00
Red Glare	M 213	FA18 00	FA18 01	FA18 02	FA18 03	AWAC 00	MG23 00	MG23 01	MG23 02
Incoming	M 212	FA18 00	FA18 01	FA18 02	MG21 00	MG23 00	MG23 01	TU20 00	
Ready Up	M 211	FA18 00	FA18 01	FA18 02	MG21 00	MG23 00	MG23 01	MG27 00	MG27 01
Chemical Dependence	M 210	FA18 00	FA18 01	FA18 02	MG21 00	MG23 00	MG23 01		




Switch Sides	M 209	FA18 00	FA18 01	FA18 02	MG23 00	MG23 00	MG23 01	SL27 00	
Warm Welcome	FA18 00	FA18 01	FA18 02	F117 00	MG21 00	MG21 01	MG23 00	TU20 00	TU20 01
Donker Run	M 207	FA18 00	FA18 01	FA18 02	BS26 00	MG21 00	MG21 01	MG23 00	
Duck Hunt	M 206	FA18 00	FA18 01	FA18 02	MG21 00	MG21 01	MG23 00		
Just Say No	M 205	FA18 00	FA18 01	FA18 02	BS26 00	MG21 00	MG21 01	MG23 00	
Rambo Caving	M 204	FA18 00	FA18 01	BS26 00	MG21 00	MG21 01	MG23 02		
You Can't Hide	M 203	FA18 00	FA18 01	FA18 02	EZCA 00	MG21 00	MG21 01	MG21 02	
Sird Down	M 202	FA18 00	FA18 01	FA18 02	EZCA 00	MG21 00	MG21 01	MG21 02	
Black Gold	M 201	FA18 00	FA18 01	FA18 02	AWAC 00	MG21 00	MG21 01	MG21 02	

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1150 Age of Empires XXIII	RTS	\$49	Conquest XXIX	RTS	\$44	Warlord 27	RTS	\$39
1155 Age of Empires XXIV	RTS	\$49	Conquest XXX	RTS	\$44	Warlord 28	RTS	\$39
1160 Age of Empires XXV	RTS	\$49	Conquest XXXI	RTS	\$44	Warlord 29	RTS	\$39
1165 Age of Empires XXVI	RTS	\$49	Conquest XXXII	RTS	\$44	Warlord 30	RTS	\$39
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1180 Age of Empires XXIX	RTS	\$49	Conquest XXXV	RTS	\$44	Warlord 33	RTS	\$39
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1190 Age of Empires XXXI	RTS	\$49	Conquest XXXVII	RTS	\$44	Warlord 35	RTS	\$39
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3D World War II	10/97	\$46	Cartographer 2	10/97	\$49	Mar 17	11/97	\$42
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MIGHT AND MAGIC

New World Computing, 1986

The *Might and Magic* role-playing series is now one of the most beloved of the genre, but its roots are humble indeed. Jon van Caneghem, a self-taught programmer and RPG fan who had never made a game before, took upon himself the task of creating an RPG that would stand up to the giants of the day, the *Ultima* and *Wizardry* games. He did it almost all himself—the story, the programming, the computer graphics, the manual—and the result was an epic RPG that more than accomplished his ambitious goal. Although the game looks primitive by today's standards, *Might and Magic's* 3D graphics were effective and original at the time, and helped create a distinct look for the universe that has persisted throughout the evolution of the series. Also present in van Caneghem's first game are the foundations of the series' enduringly engaging combat and spell systems, as well as an emphasis on exploration and plot advancement (in addition to the usual hack-'n'-slash) that became a hallmark of all *Might and Magic* games. As we look forward to *Might and Magic VI*, due at the end of this year, it's worth pausing to salute the original chapter of van Caneghem's epic work, which has had the might to stand sword-to-sword with the giant franchises of the genre, and the magic to enchant gamers into playing far later into the night than has been good for us, as we seek out just one more town, one more magical fountain, one more treasure chest full of gold.



M.U.L.E.

Electronic Arts, 1983

In the early '80s, *Carcels* & *Cutthroats* was all the rage. But when asked to create a *Carcels* clone for EA, Dan Berry (then Dan Burten) decided—luckily for gamers—to throw away the template. Burten created an environment where four players would try to explore and colonize another planet using a M.U.L.E., the robotic "mule" that enables you to farm, mine, transport equipment, and perform any other function you wish to perform on the planet's surface.

Somehow, Burten managed to seamlessly merge elements of economics, from supply and demand to the hassles of production and storage, into a tense four-player exploration and strategy game. M.U.L.E. was the landmark for multi-player hotseat play, because to win, you had to ruthlessly drive all other players out of business—sort of *Monopoly* meets *Dark Side of the Moon*. The game contains no bombs, guns, or missiles. It just offers an exciting game of cutthroat competition complete with live auction action that actually makes economics fun. With a straightforward, humorous interface years ahead of its time, we can only speculate on how much fun M.U.L.E. might have been via modem. Because EA could never manage to come out with a sequel, many of us held on to our C-64s and Atari 8-bits just to play this, still the best—and most balanced—multiplayer game we've ever seen.



Modern Inductees

Inductees Prior To 1989

BATTLE CRESS (Interplay Productions, 1988)
CHESMMASTER (The Software Toolworks, 1986)
DUNGEON MASTER (FTL Software, 1987)
EARL WEAVER BASEBALL (Electronic Arts, 1986)
EMPIRE (Interstel, 1979)
F-19 Stealth Fighter (MicroProse, 1986)
GETTYBORG: THE TURNING POINT (SSI, 1986)
KAMPGRAFFER (Strategic Simulations, 1985)
MECH BATTLE (Strategic Simulations, 1986)
MIGHT & MAGIC (New World Computing, 1986)
M.U.L.E. (Electronic Arts, 1983)
PIRATES (MicroProse, 1987)
SIMCITY (Maxis, 1987)
STARBUCKET (Electronic Arts, 1986)
THE BIRD'S TALE (Electronic Arts, 1985)
ULTIMA III (Origin Systems, 1983)
ULTIMA IV (Origin Systems, 1985)
WAR IN RUSSIA (Strategic Simulations, 1984)
WASTELAND (Interplay Productions, 1986)
WIZARDRY (Sir-Tech Software, 1981)
ZORK (Infocom, 1981)

ALONE IN THE DARK
 (3-Motion, 1992)

BETRAYAL AT KNIGHTON
 (Dynamix, 1993)

DAY OF THE TENDRIL
 (Ed Software, 1993)

DOOM
 (id Software, 1993)

FALCON 3.0
 (Spectrum HoloByte, 1991)

FRONT PAGE SPORTS FOOTBALL PRO
 (Dynamix, 1993)

GUNSHIP
 (MicroProse, 1989)

HAWKON
 (Three-Sixty Pacific, 1988)

KING'S QUEST V
 (Sierra On-Line, 1990)

LEMMINGS
 (Psygnosis, 1991)

LINKS 386 Pro
 (Access Software, 1992)

M-1 TANK PLATOON
 (MicroProse, 1989)

MASTER OF MAGIC
 (MicroProse, 1994)

MASTER OF ORION
 (MicroProse, 1993)

RAILROAD TYCOON
 (MicroProse, 1990)

RED BURN
 (Dynamix, 1990)

SO MEEN'S CIVILIZATION
 (MicroProse, 1991)

THE SECRET OF MONKEY ISLAND
 (LucasArts, 1990)

THEIR FINEST HOUR
 (LucasArts, 1989)

TIE FIGHTER
 (LucasArts, 1994)

ULTIMA VI
 (Origin Systems, 1990)

ULTIMA UNDERWORLD
 (Origin Systems, 1992)

WING COMMANDER I, II, & III
 (Origin Systems, 1990-91)

WOLFENSTEIN 3-D
 (id Software, 1992)

X-CON
 (MicroProse, 1994)

Computer game programs have grown so massive, and the number of hardware configurations has become so huge, that incompatibilities and glitches are frustratingly common.

BY GUY LAWRENCE

Software fixes, or "patches," for buggy programs have become a necessary evil until we reach the golden age of standardized platforms and bug-free programs. New patches are in red.

A-10 Cabot: Latest upgrade allows you to reverse the rudder settings, press Enter or ESC without problems, and even center your joystick. What's more, the original A-10 Quad serial numbers now work.

be cast in town, and this patch ends duplicate item generation at the Blacksmith and Witch within the same game. Game speed, latency, and packet loss issues over the Internet are also much improved.

Age of Rifles V1.3: Commanders will find campaigning much facilitated by the variety of command control breaks, scenario enhancements, and casualty rate adjustments, among other fixes. Be sure to reconvert the exhaustive README file.

Interstate 76 V1.05: More than a dozen fixes make this the hippest, baddest multi-vehicle around—especially since the host no longer gets double kills.

Age of Sail V1.05: Bowstern chasers no longer reload after being destroyed. There are also improve merits to the ship repair rules.

JetFighter III Update 1: New wings for Mission Studios' tight sim, including better throttle/rudder/joystick calibration, support for sound in Windows 95, sound board autodetected, programmable joystick buttons, and more.

Air Warrior II V1.01a: This is the latest upgrade for better multiplayer turbulais.

MechWarrior 2 For Mac: Mac Mech-masters now enjoy support for 603e and 604e processors and additional joysticks.

Battleground Shlich V1.1: Winner of CGW's best wargame is improved even more by this latest upgrade, which includes AI tweaks and more realistic casualty rates.

MechWarrior Mercenaries V1.06: Regardless of clan affiliation, all will benefit from this latest upgrade, which repairs more "mech deficiencies.

Battleship V1.1: Hasbro's ship finally sails as it should have, with many of the multiplayer and timing issues solved by this patch.

MOO II V 1.31: This latest in galactic technology evidently repairs much of the damage to the diplomacy model, as well as adding an initiative-based system for ship combat.

Blood & Magic V1.01: As Aleric the Avenger on Level 3, you should no longer have the problem when the Brigand is attacked after the game is saved. Modern and Direct Link performance is improved.

NCAA Championship Basketball: NEC Systems with Alienor Pro Motion Video Cards that are experiencing lockups will find this more refreshing than a 30-second timeout.

Capitalism For Mac V1.1: Both Mac and Power PC users will find the road to capitalistic riches a smoother ride with this archive.

Over the Reich V1.01: Gameplay hits a higher ceiling with several adjustments to bomber deftensive fire, frequency of reinforcements, angle of interceptions, high-G maneuvers, and banking.

Cave Wars V1.20: Godmode bugs are banished, and you may now select the number of levels to play—a boon for shorter games. Plus, any video card problems are banished.

Oggerfall V1.07.213: Another welcome patch for Bethesda's award-winning RPG.

Privateer 2 The Darkening: Since the movie is the best part of the game, it's nice that this patch solves most of the video difficulties.

Diablo V1.03: Dungeon delvers of all persuasions will benefit from this upgrade. No longer can illegal spells

Tomb Raider: The 3DX support patch is now final, and shows off

Lara Croft's attributes in stunning high-resolution, complete with mip-mapping and more hotkeys.

Wages of War 1.2B: Several minor fixes for New World's mercenary strategy game.

WarCraft II Dark Portal V1.23 for Mac: If your Orc grunts are "clipping" under System 7.5.5 or 7.5.3, this patch is as welcome as a new magic spell. It also solves CD-ROM compatibility problems, audio feedback dilemmas on PerformaLC 57x series Macs, and a host of saved game difficulties. It supports 256+ zones on an AppleTalk network.

War Wind V1.2: KALI-compatible, LAN and Internet-enhanced version of SSI's strategy game.

Wooden Ships & Iron Men V1.02: Sailing into battle with 6MB RAM is now a breeze.



► Check for new patches on the demo disc.



Patches can usually be downloaded from online networks (such as CompuServe and ZDNet), from CGW's Web site (www.computergaming.com), or from the individual software publisher's Web site (see listing below).

Publisher Web Sites

Many patches are available from the publishers at the following sites:

- Accolade: www.accolade.com
- Activision: www.activision.com
- Apogee/3d Realms: www.apogee1.com
- Avalon Hill: www.avalonhill.com
- Bethesda: www.bethsoft.com
- Big Time Software: www.bigtimesoftware.com
- Blizzard: www.bizzard.com
- EA: www.ea.com
- Eidos: www.eidos.com
- Epic MegaGames: www.epicgames.com
- id Software: www.idsoftware.com
- Interactive Magic: www.magicgames.com
- Interplay: www.interplay.com
- Jane's Combat Simulations: www.janes.co.com
- LucasArts: www.lucasarts.com
- MicroProse/Spectrum HoloByte: www.microprose.com
- Microsoft: www.microsoft.com
- New World Computing: www.nwoc.com
- Origin: www.origin.ae.com
- Papyrus: www.sierra.com/papyrus
- Sierra On-Line: www.sierra.com
- SSI: www.ssionline.com
- Talonsoft: www.talonsoft.com
- Vigil: www.vigil.com

THE COMPUTER GAMING POLL • A MONTHLY SURVEY OF CGW SUBSCRIBERS

Each month, 2,000 CGW subscribers are selected at random to rate 100 computer games. The results of that poll are combined with the results of previous months to yield a cumulative average for the best plays in gaming. If you receive a ballot, please return it with your ratings so that other gamers and game publishers can benefit from your feedback.

TOP ACTION GAMES

RANK	GAME	COMPANY	SCORE
1	Tomb Raider	Eidos	8.53
2	Duke Nukem 3D	Apogee/3DRealms	8.46
3	Crusader: No Remorse	EA/Origin	8.20
4	The Need For Speed SE	EA	8.09
5	Quake	id Software	8.04
6	Crusader: No Regret	EA/Origin	7.94
7	The Need For Speed	EA	7.58
8	Syndicate Wars	BullDog	7.40
9	Pro Pinball	Empire	7.38
10	Bescent II	Interplay	7.30

TOP ADVENTURE GAMES

RANK	GAME	COMPANY	SCORE
1	Gabriel Knight 2	Sierra	8.36
2	Pandora Directive	Access	8.31
3	Rama	Sierra	8.18
4	The Neverhood	Dreamworks	8.10
5	Spycraft	Activision	7.87
6	Libero Solt - I'my 7	Sierra	7.66
7	Circle Of Blood	Virgin	7.64
8	Full Throttle	LucasArts	7.54
9	Lighthouse	Sierra	7.48
10	Zork Nemesis	Activision	7.27

TOP CLASSIC/PUZZLE GAMES

RANK	GAME	COMPANY	SCORE
1	You Don't Know Jack II	Berkeley Systems	8.52
2	You Don't Know Jack	Berkeley Systems	8.20
3	Power Chess	Sierra	7.38
4	Incredible Years	Sierra	7.25
5	Incredible Machine 2	Sierra	7.09
6	Memopoly	Virgin/Westwood	6.90
7	Mind Grid	MicroForm	6.88
8	Baku Baku	Sega	6.06
9	Clue	Hasbro	5.65
10	—	—	—

TOP SIMULATION/SPACE COMBAT GAMES

RANK	GAME	COMPANY	SCORE
1	Wing Commander II	EA/Origin	8.47
2	MockWarrior 2	Acvision	8.24
3	JH-64 Langbow	EA/Origin	8.12
4	Primor 2	EA/Origin	8.00
5	Silent Hunter	SSI	7.92
6	U.S. Marine Fighters	EA	7.92
7	EF2000	Ocean	7.78
8	U.S. Navy Fighters	EA	7.60
9	Advanced Tactical Fighters	EA	7.56
10	F-22 Lightning II	Novologic	7.55

TOP SPORTS GAMES

RANK	GAME	COMPANY	SCORE
1	Links LS	Access	8.74
2	NASCAR Racing 2	Sierra	8.35
3	NHL '97	EA Sports	8.20
4	Grand Prix 2	MicroProse	8.17
5	NBA Live '97	EA Sports	8.12
6	FPS Football Pro '97	Sierra	7.80
7	FIFA '97	EA Sports	7.69
8	NASCAR Racing	Sierra	7.66
9	Tripleplay '97	EA Sports	7.61
10	FPS Football Pro '96	Sierra	7.60

TOP STRATEGY GAMES

RANK	GAME	COMPANY	SCORE
1	WarCraft II Expansion Disk	Bizzard	8.93
2	WarCraft II	Bizzard	8.89
3	Red Alert	Virgin/Westwood	8.87
4	Heroes of Might and Magic II	New World Computing	8.86
5	Civilization II	MicroProse	8.80
6	C&C: Conquest Operations	Virgin/Westwood	8.40
7	Command & Conquer	Virgin/Westwood	8.34
8	Civilization II: Scenario	MicroProse	8.10
9	Jagged Alliance: Deadly Games	StratTech	7.97
10	Heroes Of Might & Magic	New World Computing	7.96

TOP ROLE-PLAYING GAMES

RANK	GAME	COMPANY	SCORE
1	DuMo	Bizzard	8.84
2	Beast-Ifell	Richard*	7.53
3	Avail Of Dawn	New World Computing	7.28
4	Starbuck	Interplay	6.89
5	Albia	Blue Byte	6.17
6	—	—	—
7	—	—	—
8	—	—	—
9	—	—	—
10	—	—	—

TOP WARGAMES

RANK	GAME	COMPANY	SCORE
1	Steel Panthers Campaign Disk	SSI	8.75
2	Steel Panthers II	SSI	8.61
3	Steel Panthers	SSI	8.45
4	Battleground: Antietam	TalenSoft	8.19
5	Battleground: Shiloh	TalenSoft	8.12
6	Tigers On The Prowl 2.0	HPS	7.74
7	Battleground: Waterloo	TalenSoft	7.68
8	Battleground: Gettysburg	TalenSoft	7.50
9	Robert E. Lee: Civil War General	Sierra	7.42
10	Age of Sall	TalenSoft	7.14

	RANK	GAME	COMPANY	TYPE	SCORE
★	1	WarCraft II Expansion Disk	Bizzard	ST	8.98
	2	WarCraft II	Bizzard	ST	8.88
	3	Red Alert	Virgin/Westwood	ST	8.87
	4	Heroes of Might and Magic II	New World Computing	ST	8.86
★	5	Diablo	Bizzard	RP	8.84
	6	Civilization II	MicroProse	ST	8.80
★	7	Steel Panthers Campaign Disk	SSI	WG	8.75
★	8	Links LS	Access	SP	8.74
	9	Steel Panthers II	SSI	WG	8.61
★	10	Tomb Raider	Edice	AC	8.53
★	11	You Don't Know Jack II	Berkley Systems	CP	8.52
★	12	Wing Commander IV	EA/Origin	SI	8.47
	13	Steel Panthers	SSI	WG	8.46
	14	Duke Nukem 3D	Apogee/SRDreams	AC	8.46
	15	C&C: Covert Operations	Virgin/Westwood	ST	8.40
★	16	Gabriel Knight 2	Sierra	AD	8.36
	17	Nascar 2	Sierra	SI	8.35
	18	Command & Conquer	Virgin/Westwood	ST	8.34
	19	Pendora Directive	Access	AD	8.31
	20	NHL '97	EA Sports	SP	8.29
	21	MechWarrior 2	Activision	SI	8.24
	22	Crusader: No Remorse	EA/Origin	AC	8.20
		You Don't Know Jack	Berkley Systems	CP	8.20
	24	Battleground: Artibeus	MonSoft	WG	8.19
	25	Rena	Sierra	AD	8.18
	26	Grand Prix 2	MicroProse	SP	8.17
	27	NBA Live '97	EA Sports	SP	8.12
		AH-64 Longbow	EA/Origin	SI	8.12
		Battleground: Shiloh	TalenSoft	WG	8.12
	30	Civilization II: Scenarios	MicroProse	ST	8.10
		The Neverhead	Dreamworks	AD	8.10
	32	The Need For Speed SE	EA	AC	8.09
	33	Quake	id Software	AC	8.04
	34	Privateer 2	EA/Origin	SI	8.00
	35	Jagged Alliance: Deadly Games	StratTech	ST	7.97
	36	Heroes of Might & Magic	New World Computing	ST	7.95
	37	Crusader: No Regret	EA/Origin	AC	7.94
	38	Silent Hunter	SSI	SI	7.92
		U.S. Marine Fighters	EA	SI	7.92
	40	FPS Football Pro '97	Sierra	SP	7.80
	41	EP2000	Decan	SI	7.78
	42	Tigers On The Prowl II	HPS	WG	7.74
	43	Lords Of The Realm II	Sierra	ST	7.73
	44	FRF 97	EA Sports	SP	7.69
	45	Battleground: Waterloo	TalenSoft	WG	7.68
	46	Spycraft	Activision	AD	7.67
	47	Leisure Suit Larry 7	Sierra	AD	7.66
		MASCAR Racing	Sierra	SP	7.66
	49	Circle Of Blood	Virgin	AD	7.64
	50	Tripleplay '97	EA Sports	SP	7.61

	RANK	GAME	COMPANY	TYPE	SCORE
	51	U.S. Navy Fighters	EA	SI	7.60
		FPS Football Pro '98	Sierra	SP	7.60
	53	NBA Live '96	EA Sports	SP	7.58
		NHL Hockey '96	EA Sports	SP	7.58
	55	The Need For Speed	EA	AC	7.58
	56	Fantasy General	SSI	ST	7.56
		Advanced Tactical Fighters	EA	SI	7.56
	56	F-22 Lightning II	New Logic	SI	7.55
	59	Full Throttle	LucasArts	AD	7.54
	60	Daggerfall	Bethesda	RP	7.53
	61	Battleground: Gettysburg	TalenSoft	WG	7.50
	62	Lighthouse	Sierra	AD	7.48
		PGA Tour Golf 400	EA Sports	SP	7.48
	64	CivNet	MicroProse	ST	7.47
	65	Robert E. Lee Civil War General	Sierra	WG	7.42
	66	Syndicate Wars	Bullfrog	AC	7.40
		Tony La Russa 3 '96	Stormfront Studios	SP	7.40
	68	Pro Pinball	Empire	AC	7.38
	69	Power Chess	Sierra	CP	7.38
	70	M.A.X.	Interplay	ST	7.31
	71	Bescent II	Interplay	AC	7.30
	72	Ami Of Genes	New World Computing	RP	7.28
	73	Zork Nemesis	Activision	AD	7.27
	74	Virtual Pool	Interplay	SP	7.25
		Incredible Toys	Sierra	CP	7.25
		Misadventure Cyberstorm	Sierra	ST	7.25
	77	Road Rash	EA	AC	7.19
		Jetfighter III	Mission Studios	SI	7.19
	78	Neon	RavenId	AC	7.17
		Magic Carpet 2	Bullfrog	AC	7.17
	61	Terra Nova: Strike Force Centauri	Looking Glass	AC	7.16
	82	Age Of Sail	TalenSoft	WG	7.14
	83	Legends Of Nygrendia 3	Virgin/Westwood	AD	7.12
		System Shock	EA/Origin	AC	7.12
	65	Flight Unlimited	Looking Glass	SI	7.09
		Incredible Machine 2	Sierra	CP	7.09
	67	Phantasmagoria	Sierra	AD	7.08
	68	Nyper 3D Pinball	Virgin	AC	7.05
		Star! Star!	Empire	ST	7.05
	90	Tomstruck	Virgin	AD	7.04
		Star Trek: TNG, Final Unity	Spectrum HaloByte	AD	7.04
	92	Hind	Interactive Magic	SI	7.00
	93	The Dig	LucasArts	AD	6.99
	94	NHL Powerplay	Virgin	SP	6.98
	95	Star Control 3	Accolade	AD	6.95
	96	Caesar II	Sierra	ST	6.94
		Aces Of The Deep	Dynamix	SI	6.94
	96	Madden '97	EA Sports	SP	6.93
		Virtua Fighter PC	Sega	AC	6.93
	100	Phantasmagoria 2	Sierra	AD	6.92

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 = Chess/Puzzle. Games are listed after two years and become eligible for the Hall of Fame.



What's the Deal with... Sick Ads?

Originally this was going to be a sequel to last year's "Dumb Ads" column: another witty little rant pointing out which companies really need a slap in the PR department, and perhaps a little musing about how ad proposal meetings must be going much better with coke—they must be because I can't imagine how else a group of adults decides that using the word "douchebag" is a clever and hip idea.

And then I stumbled across this little gem from the kids at Kall, and everything just tumbled into place. My whole disgust and loathing over the endless violence and gore ads crystallized when I read their ad and realized that poor taste could be the least of our problems.

"In prison interviews, psychopaths often speak of the incredible power that comes from killing another human being. You're a lot cooler to being interviewed than you'd like people to know."

Now Kall is a cool net gaming service, and I am sure everyone working there is very hipper than thou, but I really have to ask them one question: What the hell were you people thinking when you OK'd this vile piece of shit? Are we living in the same dimension here? Because the one I am writing

this column from is the one where the biggest threat to young adults are other young adults, and every legislator on the planet who can't think of anything useful to do is looking to find an easy goat to blame, and to pass yet another dumb-ass law to fix things.

“ I can't imagine how a group of adults decides that using the word 'douchebag' is a clever idea. ”

Regardless of how tasteless and just plain stupid that kind of "serial killer chic" ad copy is, isn't anybody paying attention to the news? Do these people, who think crap like this will sell games (or online time, as the case may be here), have some sort of brain-damage that keeps current political events from sinking in? Are they unclear on the fact that people out there are so desperate for easy answers (and easy targets), that you can't find a political being anywhere willing to stand up and say the V-Chip is the worst idea since plutonium?

I hate to break it to anyone, but computer gaming is still out on the fringe of society—and when push comes to shove, we aren't any sasher than lesbian volleyball players or communist Boy Scout leaders when the crypto-fascists with an agenda come looking for somebody to blame for the "dire state of today's youth." Nobody is going to bother with subtleties like dead-end poverty and societal contradictions when some guy can stand up and say, "Lookee here Bubba, this ad says it'll make kids into psycho-killers... somebody ought to do something about this!"

Do you think that way back in 1980, when Tommy Hanks was getting work portraying a crazed college Dungeon Master on TV, and every reverend on the tube was burning AD&D manuals, that TSR would have been real smart to run full-page ads to the effect of, "Hey adolescents! We know what you REALLY want to do is stab people in the back and steal their gold, worship Pagan gods, dabble in dark, violent sorcery, and have tons of sex with over-employed people in fur underwear! Buy a D&D starter set and you could do all this and more!"

Money-crazed internet entrepreneurs may think the past can't louch them, but all you have to do is look at the ratings on computer game boxes to realize how easily our hobby can be clubbed by the misinformation. Given the current state of politics, a retarded hamster could walk into Congress

with the Kall ad, that delightful R-U-L-O-O-O campaign, and a few pics of guys lying around in bathtubs of blood, and our little hobby would be regulated back to Pons. While I wouldn't mind the eradication of a few brainless shooters, I am not so stupid as to think that it wouldn't take only a few more days before strat games using rules and tight sims where you can fly German or Russian aircraft were found "inappropriate."

If you think I am being hysterical, or just not "getting the joke," go down to the library, check out a little paranoid gem called *Section of the Innocent*, and look up the artistic horror that was the Comics Code Authority Seal.

It's part of evolution that computer gaming has to be put at risk by the Monks, Kowens and the Nazi-Tears, but we shouldn't have to be put in danger of being legislated to a level of morality that would bore an 8-year-old, just because some idiots have decided that violence is all that sells games. And if companies can't sense the chill in the air, then perhaps magazines, CGW included, should have the guts to see further than the power of the Almighty Buck and start sending a few ads (and checks) back with a little note saying, "get a grip and try again."

After all, there won't be much left for anybody if we have to try to fill gaming magazines with 10-page strategy guides for the Tipper Gore-approved *Lawrence 27*. **✚**

NEW

Jack Nicklaus 4



"...the preeminent golf simulation of our time ...an absolute model of perfection ...one of the most well-crafted games of any genre - that I've seen in years"

Computer Gaming World

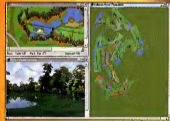
"a superb piece of work powerful, full-featured, gorgeous and fun...it will undoubtedly rule its category for some time to come"

T. Liam McDonald

"...gives Links LS a run for its money."

Strategy Plus

The Course Designer



This is the Course Designer that created all 5 Nicklaus-designed courses in the game!

Use the Designer to re-create your favorite course! Import, modify, and play courses from previous Nicklaus games!

From Tee to Green



Challenge golfing legend Jack Nicklaus - The Golfer of the Century - on one of his own signature courses!

Play with friends across the room or around the world via serial, modem, LAN, and the Internet!

"Jack Nicklaus 4 provides a rich, wonderful, involving experience ...the Course Designer is so much fun, it could almost be a game unto itself."

CNET

"...promises to be among the greatest achievements yet on the electronic links."

PC Games

"The Course Designer is a landmark!"

PC Gamer

"A truly revolutionary product. Links finally has some stiff competition."

Computer and Network

"...impressive..."

IGN/ITTL

Featuring Colleton River Plantation, Country Club of the South, Muirfield Village, Cabo del Sol, and Winding Springs.

The Course Designer

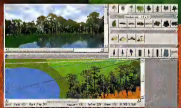


Input the basic details of a course from a real scorecard—the "Wizard" automatically routes each hole.



"Is it live or is it...?" Our Course Designer is so true-to-life, it's hard to tell the difference!

This image is of the 3rd Green at Country Club of the South. The left half of the image is from the Course Designer; the right half of the image is an actual photo.



Choose from over 100 different types of trees, bushes, rocks, and other objects!



The result: a new bunker

Click on from a variety of templates, or create your own shapes. Changing terrain is as easy as click-and-drag.



The Hole View of the new bunker.

From Tee to Green

The Tee Shot



Pop-up displays are optional—leave them off for the purest golfing experience.



New "Intensity Control"[™] reproduces the dynamics that shape the shot. "Club up and swing easy" for control or a low trajectory; "swing hard" when you want spin and distance.

Every shot flies, bounces, and rolls true to the game, with the best ball physics model in existence. Courses are accurate to within 6 inches!



The fastest screen redraw times on the PC allow the camera to automatically switch to the landing in full-screen, from varying viewpoints!

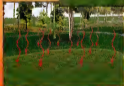


Multipayer play is fully supported, including recorded rounds, shared keyboard, serial, modem, LAN and Internet play.

Around The Green



Separate chipping and putting meters maximize control around the green.



For enhanced gameplay, this optional grid floats down and drapes itself over the green, clearly showing all high and low spots.



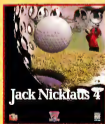
Weather can change in the middle of the round, and natural wind variations and every possible turf condition add to the challenge!

Our new approach makes putting more realistic. Mow lines on the green help you read the contour.

Call 1-800-245-7744 to order direct

Look for the Jack Nicklaus 4 playable demos in select magazines, online at <http://www.accolade.com> or at your local retailer.

For hints and tips on Accolade products, call Accolade Direct 1-900-454-HINT. \$0.99/minute. If you are under 18, please get your parents' permission before making this call.



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Lives with his mother.



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