COMPUTER GAMING WORLD

The #1 Computer Game Magazine

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Battlecruiser 3000 A.D.

100 GAMES RATED

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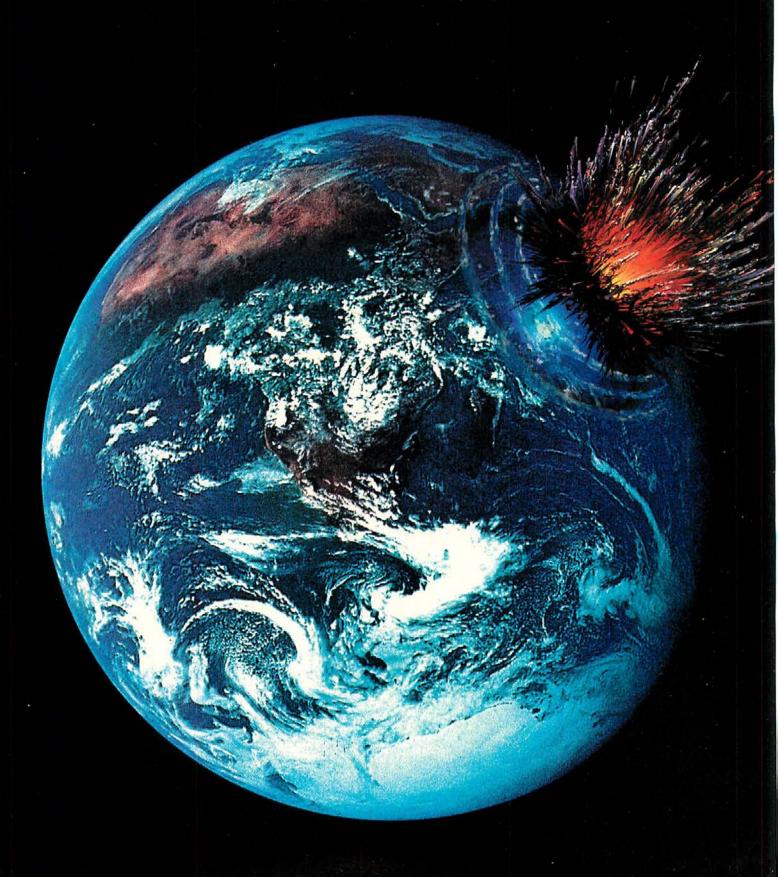
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About The Cover—Robert P. Whitney of Mission Studios created the cover art on a Pentium using *3D Studio*, Aldus *Photostyler* and John Wagner's *Improces.* Inspired by the *Battlecruiser* story, the scene depicts an attack on Galcom Headquarters by enemy forces.

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DEPARTMENTS

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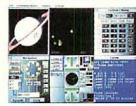
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Circle Reader Service #67

THEY JUST DON'T GET IT!

by Johnny L. Wilson

Turned off by those neologisms designed to describe the current state of computer gaming? Does "cross-platform compatibility" sound more like seating considerations for a political convention than a technological concern? Do you find yourself wondering who put the "multi-" in multimedia, especially when the current generation of products seems so one-dimensional? Even though it's still under construction, do you find yourself looking for the nearest off-ramp from the "information superhighway?" Then, cheer up, we have a new phrase for you.

The new buzz phrase for 1994 is, "They just don't get it!"

Look at Hollywood. The film industry has discovered the long-range potential of interactive entertainment and decided that it has revenue potential to eclipse their current business. Yet, "They just don't get it!" Most of the projects seem to be based on grabbing some outtakes from an upcoming film; slapping in a few arcade sequences; and adding a little dialogue. Or, some would-be multimedia directors simply want the viewer to choose between different perspectives when viewing the action in an "interactive" movie, rather than truly *affecting* the action. They don't seem to understand that in order to be interactive, the player has to feel like his or her involvement means something and changes the story, not just the perspective.

Many of the planners for the cable television providers and telephone companies think they can easily translate the success of video game platforms into an instant cash cow. Lots of people play video games, right? They'll pay money to download video games. Or, if we have to, we'll create multi-player video games. They just don't get it! There is no guarantee that even diehard video game addicts will want to download games more than once. It is highly unlikely that channels can succeed as merely a "try before you buy" service, unless the business plan has changed significantly. Further, making multiplayer video games that function over cable systems or fiber optic networks is going to be tough. There is a latency factor whenever data is processed remotely. Action gamers are not going to put up with multiplayer games where they input a sword thrust and can't be sure the host computer is going to process that command before it processes the simultaneous command of an opponent. Timing is everything in the "twitch and flex" games that dominate the video game market and those gamers are not going to accept delays.

Strategy gamers wouldn't notice the delays as much, but we don't see the television/telephone providers looking to strategy games as a viable strategy. Stat-based sports gamers wouldn't notice, but the interactive television/telephone market segment hasn't discovered the fantasy leagues and stat-based simulations that would appeal to mature, casual gamers. They just don't get it!

Book and magazine publishers are also entering the competitive arena of computer publishing. Most executives think that they can pour their "content" (a very important buzz word meaning "the stuff we've already done for which we think we can get more money") into CD-ROM molds. The trouble is that most of these products look like electronic coffee table books. You can access their data in new ways, but the only way to really *use* the data is to play the trivia games which seem to have been jammed onto the same CD in order to claim that they include a "game." They just don't get it!

Even software developers, those who have been in this industry longest and should know how to get around the technical limitations, don't get it. Too many of them want to be able to use the same techniques to create on-line network games as they have used in stand-alone games. They haven't bothered to try to understand the challenge of keeping hundreds or thousands of players entertained via constant design tweaks or the business model that requires "retention" (a marketing term meaning "a quality that makes gamers keep coming back again and again").

In a related vein, most software publishers don't want to invest the funds and energy to develop on-line games because they don't pay enough according to today's profit model. Little do they realize that today's successful on-line games may well serve as the model for tomorrow's massive "cyburbs" (a CGWism meaning "the imaginary playground where we all hang out on-line") on the information superhighway. They just don't get it!

Some computer journalists may be as bad as the rest. While they complain that no one will want to watch 500 channels of junk on the information superhighway, they also overlook the obvious. It's not about 500 channels. It's about *one* channel with *you* as program director. You can program information, games, television, video conferencing or movies, but it's *your* channel. As pundits, they question the model of having people computing in the living room, because they know that gamers/users won't be able to get the large screen television away from their kids. Too many of them just don't get it! Any society that is wealthy enough to wire a neighborhood is wealthy enough to wire a house. Information, television, video, movies, computer games, etc. may all enter the house through the same node, but the bandwidth is likely to be such that several downstream transmissions can be received simultaneously and sent to various rooms in the house.

Frankly, I think the software industry needs to focus on integrating new technologies and new content into quality games. The game is the thing. Publishers need to consider whether that extra musical track or video clip enhances the game experience, not whether it's cool technology and everybody's doing it. They particularly need to concentrate on solid game design, careful play balancing, and rich game world development. If they can do that, they'll find a way to reach new markets, whether those markets are delivered by telephone, television or the next big thing.

Astute readers (and since you've bothered to wade through my rhetorical rhumba to this point, you are *obviously* astute) will realize that there is always a risk of overgeneralization whenever you use the third person common plural ("they" for those of you who skipped to the end). There are perceptive individuals in all six categories of "they" that actually *do* get it on these issues. Still, the point is that all six categories are full of people looking for easy answers in order to address a very complicated future situation. If we don't learn to focus on quality now, we may never get that chance to exploit the potential of that future. Either that, or *I* just don't get it. **CGW**

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Software Publishers Association Picks Codie Winners

Macintosh Titles Lead The Pack Again

An annual highlight of the Software Publishers Association's Spring Symposium is the Codie Awards Banquet. This year, as usual, the Macintosh platform showed a greater strength in the award categories than it does in the actual marketplace. Three out of five award winners in the entertainment software categories debuted on the Macintosh. *Best Adventure/Fantasy Role-Playing Game* honors went to **Broderbund's** *MYST*. The eerie adventure developed by **Cyan** (Robin and Rand Miller) features beautifully rendered 3-D environments and diabolically difficult puzzles. The Codie for *Best Simulation* went to **Maxis** for the fifth year in a row. This year, *SimCity 2000* won the nod and the award was presented by *CGW* Publisher, Russell Sipe. In accepting the award, Will Wright made his first Codie appearance and thanked co-author Fred Haslam, as well as **Maxis** Chairman Jeff Braun. **Drew Pictures'** *Iron Helix*, distributed by **Spectrum HoloByte**, won *Best Strategy Game* honors.

The Codie for *Best Sports Program* was presented to **Papyrus Software** for *IndyCar Racing*. Designer Dave Kaemmer was present to receive the award for the program which surpassed **Papyrus'** previous watershed simulation, *Indianapolis 500: The Simulation* (published by **Electronic Arts**). Finally, *Lemmings 2: The Tribes* won the award for *Best Action/Arcade* game. This marked the second victory for **Psygnosis** and their British developer, **DMA Design**, since the original *Lemmings* also won the award in this category.

Software Publishers Association Unveils New Data

27% Of U.S. Households Have One Or More Personal Computers

At the Spring Symposium of the Software Publishers Association, Research Director David Tremblay revealed that 27% of U.S. households (roughly 24 million homes) have at least one personal computer. Of these, approximately 31% acquired their primary computer during the 1993 calendar year or early in 1994. The best news for gamers is that these machines are loaded. 40% are 486-processor-based or higher; 60% have modems; 35% have CD-ROM drives (usually replacing the 5.25 inch floppy drives); 35% offer FAX capability; and 20% have a sound card. Most importantly for the growth of the computer gaming hobby, 48% of those surveyed play games on their computer. The only sad statistic in the recent survey is that only 7% of respondents reported any kind of on-line usage. Tremblay admitted that the percentages of computer ownership may be slightly conservative, but he assured the press that these were useful numbers.

Free CD From Logitech Offers Gamers 'Sound Advice'

With all the cryptic jargon for sound boards and digitized audio, it's no wonder a lot of gamers are still listening to bleeping PC speakers.

If the ads and hype sound like one cacophanous din, you should hear Logitech's free "Sound Advice" CD that explains the different technologies and uses audio demos to illustrate the differences.

Hosted by a technology commentator, an electronic musician, and a Logitech product manager, the Logitech CD does a great job of explaining the basics. The discussion covers 8-bit and 16-bit audio, FM synthesis, and wave table synthesis, with musical accompaniment by Wayne Gabriel.

As Logitech's product manager Dave Pelton points out, the game community is now moving towards wave table and General Midi standards. Pelton advises gamers to buy a sound card that supports both, to enjoy games such as *The Seventh Guest, X-Wing* and *Return to Zork*.

Leo Laporte, host of the nationwide talk show "On Computers," keeps the 20-minute discussion lively. The CD then features original, full length compositions by Gabriel, who received Gold and Platinum records with John Lennon and has performed or recorded with Mick Jagger, Stevie Wonder, John Lee Hooker, Muddy Waters and others.

Sound Advice, which can be played on any CD player, is available at no charge by calling (800) 889-0046. The package includes a $10 rebate coupon for any Logitech sound product.

Creative Labs Rides The Wave With New AWE32 Sound Card

Not content to rest on their unofficial "industry-standard" laurels, Creative Labs has launched their latest and most advanced sound card to date, the AWE32. Incorporating the Sound Blaster 16's Advanced Signal Processing technology (real-time audio compression and decompression), the AWE32 features the Advanced Wav-Effects digital sample playback synthesis capabilities of E-mu Systems' EMU8000 integrated audio DSP. Real instrument sounds are provided in CD quality audio through wave table technology, along with multiple channel audio and downloadable sounds (through E-mu's *SoundFont* collections).

The AWE32 maintains the compatibility of Creative's 16-bit audio boards, as well as supporting General MIDI, Sound Canvas and MT-32 specifications. In addition, the audio card supports CD-ROM drives from Sony, Mitsumi and Creative. A 4 megabit DRAM chip handles samples downloaded to the AWE32, and can be expanded to 28 megabytes of RAM.

Bundled with the new card are *Creative VoiceAssist* speech recognition and *Creative TextAssist* text-to-speech software, *WaveStudio*, *Creative Ensemble* (software resembling an on-screen "hi-fi" system), a microphone and several other applications.

Available for a suggested retail of $399.95, the AWE32 offers all the capabilities of the Sound Blaster 16/Wave Blaster duo, and beyond, at a competitive price. There is, however, a notable drawback— loading all of the AWE32's required TSRs consumes a significant chunk of RAM (initial tests indicate a loss of 30-50K of conventional memory, depending on other TSRs loaded, while employing a memory manager). This, unfortunately, leaves precious little RAM available for today's memory-hungry games.

— On War —

The Best Wargaming Minds Will Meet To Discuss The Hobby's Future

Some of the greatest wargame designers in the country are drawing up battle-plans to invade Montgomery, Alabama in late May for the mother of all wargaming conferences. The Second Air University Airpower Education & Commercial Wargaming Conference (how's that for a title?) is designed as a brainmerge for the largest gathering of civilian wargame designers and military authorities.

Those in uniform will include all services (Army, Navy, Marine Corps, Air Force) plus a number of foreign military experts. HQ for this TacOp will be the Air War College at Maxwell Air Force Base, May 25-27.

Last year's attendees (who are expected again) included: Dr. Ed Bever (*No Greater Glory*), Larry Bond (*Harpoon*), M. Evan Brooks (*Computer Gaming World* Contributing Editor-Wargaming), Maj. Matt Caffrey (*The Gulf War Fact Book*), Frank Chadwick (*Third World War*), Jim Dunnigan (*Hundred Years War*), Trevor Dupuy, (*Encyclopedia of Military History*), Don Gilman (*Sub Battle Simulator*), Gary Grigsby (*War In Russia*), Mark Herman (*Gulf Strike*), Joseph Miranda, (*Afghanistan*), LTC Gary Morgan (*TAC Air*), Dr. Al Nofi (*Imperium Romanum*), Dr. Peter Perla (*The Art of Wargaming*), Ezra Sidran (*U.M.S.*), S. Craig Taylor (*Air Force*), Dave Walker (*Tigers In The Snow*), Lou Zocchi (*Battle of Britain*).

The program is composed of several lectures on the various aspects of gaming as well as "break-out" groups which discuss the nature of the market and directions it is moving in. Topics will cover land, naval, air, geo-political and economic factors.
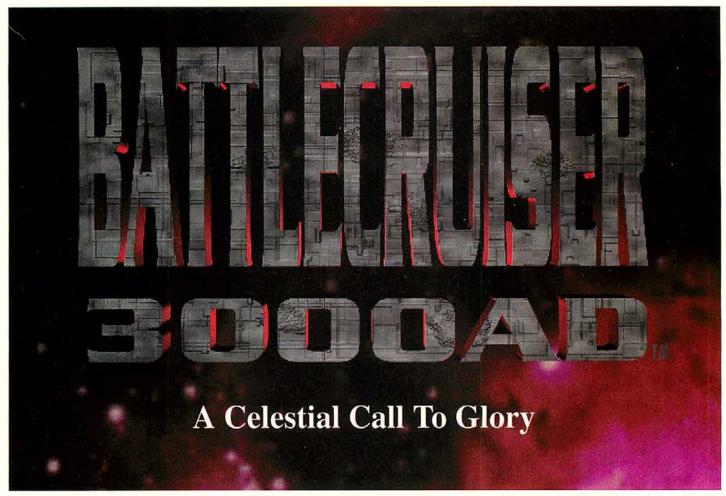
Wargame designers wishing to join in on the assault should contact Maj. Matt Caffrey at (205) 953-5499.

Open MPEG Group Means Good News For Gamers

Gamers tired of incompatibility problems with peripheral cards will be pleased to know that the manufacturers of MPEG video cards (hardware devices which allow computers to play back video according to compression standards set by the Motion Picture Expert Group) are meeting to avoid such hassles. During March of 1994, more than 80 people from approximately 60 companies met at intermedia to form the OM/1 (Open MPEG-1) Group. With digital heavyweights like GTE, Sigma Design, and Diamond Computer supporting the drive for a common API (Application Programming Interface) in order for all Windows and DOS programs to call MPEG files and establish basic settings, the group expected a new industry standard to emerge prior to this summer.

Several industry leaders served as spokespersons for the effort. Jim Anderson, one of the founders of the VESA and MPC standards, observed in announcing his support of the OM/1 approach, "Without a standard, there isn't a market." Glenn Kaufmann from Diamond Computer (the leader in the graphics accelerator market for Windows) suggested that it will become increasingly important in the near future for entertainment and educational products to be able to shift video functions (scaling, color shifting, et. al.) to boards themselves. He asserted that there needs to be a standard API to assist this development. Dave McComb, one of the developers of the *ReelMagic* board, said that the group's goal is to ensure that every hardware manufacturer that wants to use MPEG can have the same driver and function calls for their hardware.

This means that gamers shouldn't have to face many of the incompatibility problems between games and peripherals that we faced in the sound card driver wars. Technical specifications have not yet been finalized, but the group expects to agree upon specs by mid-year. **CGW**

BATTLECRUISER 3000AD™

A Celestial Call To Glory

by Mike Weksler

Battlestar Galactica it's not! Of course, to those of us of a certain age, that's exactly what we're going to imagine when we hear of huge intergalactic battleships equipped with fighter interceptors. Fortunately, the only similarity between *Battlecruiser: 3000 AD* and the weak science fiction of the television series is that you scramble fighters to interdict the waves of alien assaults against civilization as you know it.

The *Battlecruiser: 3000 AD* space epic allows the player to experience such old time favorites as faster-than-light speeds, transporters, wormholes, jump-points, flux fields and, of course, a nasty alien race with a yen to rule the stars. Still, it is perhaps the most ambitious space game to date. It has the scope of the genre-busting *Star Saga* classics; the dynamic world of an adventure game in the tradition of the *Starflight* and *Star Control II* games; the depth and simulation aspects of *Falcon 3.0*, *Flight of the Intruder*, *Megafortress* and *688 Attack Sub*, combined with the adrenaline-pumping space action and adventure of the *Wing Commander* series. Quite a celestial cocktail!

Derek Smart, *Battlecruiser: 3000 AD's* designer, explained it this way: "This is more extensive than just going into space and blowing things up. I want to get the player involved, to know the feeling of commanding the game, *not* the game commanding the player. The player has control over every facet of the game combining fantasy role playing, with space flight simulation *and* planetary flight simulation using advanced technology to accomplish this."

Where the product differs from its predecessors is in its tremendous depth, multi-tasking story, and its advanced use of physics in its modeling of the game universe. By the time the player has mastered the systems and the intricacies of command, it's time to command mission after mission in thwarting the Gammulans, the nasty aliens who want to rule with a titanium fist.

Interceptors of the Lost Art

Some missions may only require the use of the battlecruiser itself. In other missions you may need to switch back and forth (*Flight of the Intruder* style), into one of four Interceptor cockpits. Others still demand that you enter the atmosphere of a planet and conducting planetary raids. Interceptors are used for both dogfighting in atmosphere *and* in space, and can be armed to the teeth.

Atmospheric missions can turn into heated high-tech furballs. Not only must you take on enemy craft in dogfights, but you have to watch out for surface-to-air lasers (SALs) or missiles (SAMs). You can't fly too low because of SALs, nor can you fly too high because of the SAMs. Interestingly, interceptors which become damaged in atmosphere may have to be left on the planet until you can manage to bring down a shuttle full of parts and engineers to repair it.

Tonkas in Space

Battlecruisers have a point defense called

player, he can move his "virtual head" around and target enemies and acquire targets in this manner. This locks the ship's lasers onto a given target. The VR monocle is also used in the Interceptors as well. In the battlecruiser, everyone has access to different computers via the VR monocle. The Navitron, Engineering, and Tactical computers are all accessed from within the bridge location via the VR monocle.

There's nothing quite like a battlecruiser with four interceptors flying in formation off its stern; the program allows you to enjoy this scene by using outside views with the ability to slew the view around. The outside view of a battlecruiser in high orbit around some of these texture mapped planets could make other space operas envious.

The Supreme Commander

As Supreme Commander, you are the micro-manager extraordinaire. You must keep track of your crew and let the fatigued ones rest. After interceptor flights, they must be pre-flighted again, and any repairs made. This takes a certain amount of real-time/game time in which you may not use the particular craft because it will be rendered off-line until ready for flight. Repairs that are made to either the battlecruiser or the interceptors will be accomplished whenever you assign adequate engineers to the appropriate tasks. Naturally, the effectiveness of repair assignments (as with all assignments) will be modified by whether the crew members assigned are green, fatigued, have low intelligence, or rate with more positive evaluations. When repairs are made in a battlecruiser, it takes real ga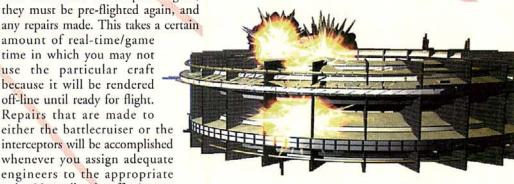me time. However, when repairs are made in a star station (which costs money as opposed to the "free" work done by the crew), time is suitably accelerated. All this time, you may be flying interceptors on missions, deploying marines and supplies via shuttles, launching probes, or managing your intelligence, resources, and information, while targeting your lasers on a pirate vessel.

The Probes used in the game fly out to star systems and then relay information back to the network of other probes and star stations. If information is being relayed from a probe and the probe gets destroyed, the same information may or may not be sent from another probe. It depends on your range, but there is built-in redundancy.

Cockpit instrumentation is fairly simple to grasp after a brief learning period. Both the battlecruiser and the interceptors use a flight path computer, a *Wing Commander-*esque radar, and a computer to sort targets and select weapons. Interceptors have a back seat position and, should your front seat get shot up, you can heroically attempt to fly it back from the "pit."

A Star To Steer Her By

Navigating in a space game may be as important as the magic system in a fantasy role-playing game. It is the device which provides for the most suspension of disbelief as you chart courses across the far reach-

es of the galaxy—assuming it is well done. *Battlecruiser: 3000 AD* uses the Navitron, which is available both in your battlecruiser, as well as most friendly star stations (which can be handy in case the Navitron on board ship becomes damaged). From the Navitron, you can view a map of a given star system. From here, the virtuoso commander can compose a concerto of waypoints for the battlecruiser, its four interceptor craft, and any shuttles, probes, mines and marine units. Waypoints may be "anchored" in one star system, and subsequent star system maps may be invoked for creation of additional out-system waypoints. The assignment of waypoints and tasks is done to a level the likes of which I haven't seen since *Falcon 3.0*. The windowing interface is very slick (it's good enough to give MS Windows and OS/2 a real run for their money). You can have a window for each craft and unit in your command, and each can be moved and minimized to suit your preference.

Passive Target Acquisition (PAT) which will automatically acquire and destroy a target which comes into a specified range. In addition, battlecruisers have a variety of laser and guided missile weapons. However, most enemy ships will be able to use some type of electronic countermeasures to jam your attempts to target them effectively.

Additionally, for those times when the Supreme Commander is commanding four interceptors in combat, or just relaxing with a beer, there's a Fast Target Acquisition and Lock (FATAL) system, which can assign unlimited weapons to given targets. Thus, you can assign 20 missiles to a Gammulan storm carrier—the only ship in the Galaxy which packs more of a wallop than your own battlecruiser—and the weapons computer will handle firing automatically when the storm carrier comes into range.

To manage tactical information from the battlecruiser, each crew member wears a VR monocle that projects pertinent HUD (head up display) information onto various scrolling views, providing the Supreme Commander with a panorama view of a battle. If manually locking on using the TACSCAN computer is too much for the

Deep within the Credian Sector, the battlecruiser establishes orbit around a planet.

Trading Spaces

The TRADECOM is where you participate in the second oldest Terran profession—commerce. The dynamic world incorporates inflation into the economic model. Prices in parts of the galaxy may change due to the political climate, so the best plan is to opportunistically buy goods in a non-war zone, then sell goods in a war ravaged area where goods are scarce and prices are whatever the market will bear. The trading is used as a device for one to have extra money instantly without having to rob ships (you are a military pilot and not a mercenary in this game). Items are fairly diverse for a space game, including miscellaneous items like magazines, sportswear and livestock, in addition to more mundane items like spare parts, weapons and minerals.

Additionally, star stations give all the dirt on a given star system, including the presence of flux fields (ala *Starflight*) or

"I'll have a plug of tobacco, some leather underwear, and a bag of fertilizer...to go."

jump-ports. They also serve as a clearing house for missions via the MISCON (Mission Control) computer, providing information on intelligence, scenarios, missions and training. These star stations are like the self-service rest stop/gas stations on strands of highway in the middle of nowhere.

When In Doubt, Jump, Flux, Or Take A Wormhole

Battlecruiser does not offer interstellar flight as in the *Starflight* series. Traveling from one system to another is accomplished via the story device of flux fields (naturally occurring fields which "warp" the player from one coordinate to another). These flux fields are, once discovered, known constants throughout the game. Jump points

are man-made flux fields that were deliberately placed in a given star system. Wormholes are bad news; they damage your ship due to intense gravitational fields and end up spitting your ship out to some unknown location. As for black holes, well, if you want to end the game in a hurry, steer your ship towards one of these cosmic toilet bowls.

Star Thirst

Star systems are a real mind blower. If you haven't partaken of a space game since the *Starflight* days, you are in for a treat. I would have done anything to take control in a first person perspective in *Starflight* and fly to all the planets in a given system. I might have done more to be able to man a smaller craft and actually enter the planet's atmosphere and descend down to the surface, all in first person perspective. This is where *Battlecruiser: 3000 AD* really shines. It not only presents planets in texture-mapped detail, but models their gravity and atmosphere, as well. You can approach a planet and use its gravity to sling your battlecruiser around the planet to another part of the star system, manually perform a "Hoffman ellipse" maneuver from high orbit to low orbit, or have the autopilot perform the task for you. If you approach the planet at an improper angle or speed, you can expect to burn up in the atmosphere. In addition to planets, there are nicely rendered asteroids, comets, meteors, and alien craft, all with their special effects.

It's The Glory, Stupid!

In playing space games over the last decade, I believe I can safely say that *Battlecruiser: 3000 AD* won't be a game where the average player can boot up and immediately proceed to kick Gammulan butt. Most of us will have to scrutinize the manual thoroughly before doing anything described in this preview. *Battlecruiser: 3000 AD* is based upon a complex AI running on a neural net (an artificial intelligence structure in which the software learns and makes new connections as the

During a break in a dogfight, an idle interceptor scans a star system for hazards.

player discovers new information) that operates subordinate crew members, allies and enemies throughout the entire game. The gamer will be able to control as much or as little as desired. Derek Smart explained to me that even if you just sat and watched the events transpire, several hundred hours would pass before the game events played themselves out! Add player interaction and its attendant new variables to that equation and, according to Derek, you can literally have a game that goes on for well over a year!

What remains to be seen is how well developer, publisher, and distributor can work together to bring this product to fruition. Play-balancing this *magnum opus* will be crucial. Will the gameplay subtly change as you become more experienced in various portions of the game, or will gameplay become repetitive as you advance through the game? That remains to be seen. As for myself, I'll be the first in line at the GALCOM Academy, for *Battlecruiser: 3000 AD* has the most *potential* of any space epic I've seen. GALCOM should be aggressively recruiting stalwart star pilots this summer. **CGW**

The hunt begins: An interceptor in atmospheric flight has locked onto a target.

So Many Star Systems, So Little Time

Gametek's *Frontier: Elite II*

by Jeff James

D esigners David Braben and Ian Bell burst onto the computer gaming scene almost 10 years ago with **Firebird's** *Elite*, bringing revolutionary 3D polygon technology and an addicting milieu of star-hopping capitalism to 8-bit computers. With *Elite*, a new gaming genre was born, soon populated with products attempting to capture its mystique and "cult" success. Over the years, gamers have been treated to functionally equivalent products, including *Light-*

speed and *Hyperspeed* from **MicroProse**, *Starflight* from **Electronic Arts**, and **Origin's** *Space Rogue* and *Privateer*. Into this crowded market comes the long awaited sequel to *Elite*, *Frontier: Elite II*.

Buy Low, Sell High, Shoot Often

True to the money-grubbing nature of the original, *Frontier* is first and foremost an exercise in cut-throat capitalism. To make money, you must heed the motto of Wall Street: Buy low, sell high. Buying goods on one planet and then reselling them elsewhere for a higher price is the essence of this game. Profits gained can be used to buy weapons, ship upgrades, and more goods. The tableau for *Frontier* is the 33rd Century, where hu-

manity has spread across most of the galaxy, colonizing thousands of worlds. The balance of power is held by two powerful interstellar kingdoms, imaginatively called the "Federation" and the "Empire." Filling in the cosmic cracks between these two diametrically opposed forces are an innumerable amount of non-aligned and unexplored worlds, providing a colorful environment for exploration. In addition to peaceful traders and merchants, the space lanes are filled with the flotsam of space: pirates, rogues, mercenaries, bounty hunters and criminals.

Unlike the original *Elite* which offered players only one starting point, *Frontier* provides three starting positions. The recommended starting position is on the planet Merlin in the Ross 154 system, with the player in possession of a tiny spacecraft equipped with a scanner, atmospheric shielding (for atmospheric flight), a class-1 hyperdrive, a single laser cannon and an autopilot. *Elite* veterans looking for a challenge should look to the other two starting locations, Mars and Lave, since they provide much less starting equipment.

To earn money for more equipment, you have a number of options. In addition to the profit generating staple of interstellar trade, you may also choose from a variety of missions. Available via a BBS link at most starbases, missions range from ferrying passengers from one star system to another, to carrying out covert military missions for the powers that be. None of the missions are

interconnected; *Frontier* shirks the plotline found in such products as *Privateer* for pure, unrestricted playing freedom. You are free to live life as you choose, whether it be as a bounty hunter, interstellar merchant or bloodthirsty pirate. Of course, smuggling guns, slaves and drugs won't endear you to the already touchy authorities, who will be much more likely to blast you into atoms if you live a life of crime.

However you decide to make your living in the space lanes, *Frontier* offers many ways to spend your hard-earned credits. As opposed to the limited number of ship types available in the original *Elite*, you can now choose from nearly three dozen ships of varying capabilities. Bounty hunters and pirates may opt for the Boa-class starship, while commercially-minded players might prefer the wallowing Panther trader, which can hold a whopping 2100 tons of cargo. Large ships such as the Panther also require that you hire and pay a staff of crew members. Each ship can be upgraded with a wide variety of missiles, guns, mines and other weaponry. Items of a less militaristic nature abound as well, including an auto-piloting module, escape capsule, extra passenger cabins, fuel scoops and even self-contained mining machines used to process and refine minerals from rocky planets and asteroids.

Spaceflight 101

In terms of flight controls, *Frontier* shares several elements with its progenitor. The familiar radar scope uses a system of dots and lines to indicate the location and direction of any spacecraft nearby, and is placed squarely at the bottom of the viewscreen. Flanking the radar scope are ten icons: the five on the left control display features (maps, viewing positions, etc.), while the five on the right are used to perform ship functions (jumping to hyperspace, raising landing gear, engaging autopilot, etc.).

Navigating across the galaxy is facilitated by a wealth of on-line mapping features. At the highest level of magnification, a Galactic Map option offers a top-down view of the galaxy. *Frontier* features an incredible amount of magnification, allowing players to zoom in to see individual star systems. For an even closer vantage point, the system map provides a view of planets orbiting their sun. For astronomy buffs, a novel bank of VCR controls on the system map is used to see planets and moons zip around the sun in their orbits. This same VCR button metaphor is successfully used in *Frontier*'s time compression utility. Replete with pause, stop, play and a number of fast-forward buttons, the "Stardreamer" time control can compress the passage of time from 10 to 10,000 times normal. If you're attacked while time is compressed, the system will automatically return to real time.

In *Elite,* docking a spacecraft without the aid of an autopilot was a challenging task, bordering on the impossible. Thankfully, one of the starting positions in *Frontier* (Ross-154) supplies the player with a functional autopilot. While the autopilot does make navigating through vast tracts of space a point-and-click operation, it is better in theory than in practice. Using the autopilot to land on a planet with an atmosphere, for example, is usually a recipe for disaster. On

my frequent attempts at doing so, my craft was either burnt to a crisp upon entering the atmosphere or smashed to flinders when striking the ground at high speed. Roughly half of the docking attempts I made using the autopilot resulted in my craft being smashed into bits by colliding with the outside surface of the station. The autopilot also has a bothersome tendency to bounce a ship around the edges of a docking bay before entering. Strangely, one of the best uses of the autopilot is as a targeting tool. Selecting an enemy ship will cause the autopilot to doggedly pursue the craft, attempting to smack the two vessels together. While this makes lining up shots incredibly easy, it also simplifies the process for enemy ships.

Polygons and Parsecs

Gamers accustomed to gouraudshaded, texture-mapped objects in their gaming products will be in for somewhat of a disappointment with *Frontier*'s graphics. The Amiga version appears to use not much more than 16 colors, with no support for AGA, and the IBM palette is only slightly more colorful with 256 shades. It may not be exceptionally pretty, but *Frontier* more than compensates for this lack with a surprising amount of graphic detail. Starbases are covered with tiny advertisements and other placards,

while ships sport ID numbers, rotating radar dishes and flashing navigational lights. This detail extends to the portrayal of other objects in the *Frontier* universe, including planets, moons and other objects. Taking a low-altitude flight over many of the planets will reveal tiny buildings, bridges, towers, mountains, rivers and other structures. Screen updates are slow on an unexpanded Amiga 500, but owners of accelerated Amigas sporting speedy 68030/68040 processors will be treated to silky smooth scrolling and animation.

The *Frontier* package includes a robust set of instructional documentation, including a hefty 106-page reference manual, an interplanetary travel guide and a booklet of short science fiction based in the *Frontier* gameworld. A large, colorful map of the galaxy is quite helpful, as is a quick reference sheet for quickly locating play options. The documentation should serve any aspiring interstellar tradesman well.

To Go Where No Capitalist Has Gone Before

A blurb on the box claims that *Frontier* contains nearly 100 billion planets and moons! While it may be next to impossible to verify that figure, even in a lifetime of gameplay, the world of *Frontier* does seem incredibly immense. From a practical standpoint, your limits are dictated by the amount of fuel you can carry, the strength of your hull, and the limits of your desire. Gamers who want a guiding force in their gaming products which gently (but insistently) nudges them in a certain direction are apt to be disappointed by the unfettered nature of *Frontier*. Its large universe is a *tabula rasa* in which the player becomes the actor, director and scriptwriter in a science fiction opera. If you've the imagination to fill those roles and compensate for the game's lack of a plot, *Frontier* should offer months, or even years, of galaxy-trekking fun.

CGW

Space Operetta

Nomad Explores The Lighter Side Of Galactic Genocide

by Douglas Seacat

A new space exploration epic can evoke a number of emotions from gamers, among them fear. It seems that few gamers these days have the time or energy to explore the thousands of stars, planets, and alien empires such games boast. While it's amazing to see games attempt to capture the scope of space itself, most players can be overwhelmed by the cosmic scale. Into this precarious niche comes *Nomad*, a space epic aimed at those who enjoy hurtling through space and interacting with alien races, but would rather not make a career of it.

In the time-worn tradition of space games, *Nomad* begins with a close encounter of an alien kind. In this case, it is a starship from an advanced civilization that craps out near Earth and crash-lands, no doubt in a Kansas wheat field. After determining that the ship can be repaired, the Earthling authorities select you to take command of an ambitious project to explore the universe. Your unbridled enthusiasm at becoming the first interstellar human traveler is tempered only by the fact that, once you leave, no help can be expected from Earth.

What A Korok!

Once in space, it becomes clear how isolated Earth has been from current galactic events. While humanity has been myopically focused on its own petty concerns, the rest of the galaxy has been moving steadily toward war. At the heart of the melee is a race of machines known as the Korok. Originally designed to serve a now-forgotten civilization, they have since been reprogrammed for death and destruction. Controlled by a single malevolent mechanistic entity, the Korok plan to exterminate all that is soft and gooey

and organic. Opposing the Korok are almost a dozen alien races, all coming from various civilizations and technology levels. These beings are not completely unified, as petty racial prejudice and hatreds divide them in ways all-too familiar to humans.

Of course, humanity isn't likely to remain uninvolved; this conflict is too serious to ignore and will eventually make its way to Earth. However, this doesn't mean *Nomad* is

necessarily a violent game. You can try to solve the crisis through exploration, trading, and conversation, as well as combat. A mix of strategies is recommended, even though it is theoretically possible to solve the game without fighting.

From Dark Mess To Light Play

In spite of the dark and ominous plot, the game's mood is actually quite light. While the wacky alien personalities (almost a bald rip-off of those in *Starflight I&II*) have a lot to do with this, the game's quick and easy menu-driven interface adds to this airy feel. At five pages, the game's manual is more of a pamphlet, but this is actually all you need to play. All of the game's commands are displayed in a
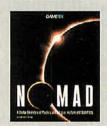
small menu box in a corner of the screen and can be activated by pressing the appropriate highlighted letter, or by using the mouse.

The primary ship functions are: Navigation, Communication, Scanning, Combat and Engineering. While these features are common to many space exploration games, *Nomad*'s use of them is particularly simplistic. To scan a ship, for example, you simply select a ship by tracking through all the eligible ships nearby, then activate the scanner. The other commands are slightly more involved, but equally painless.

Once a ship or planetary representative has been hailed, a portrait of the targeted alien is displayed with a box containing the "translated" dialogue. Through another series of menus, aliens can be questioned on any subject with which the player is familiar, divided into the categories: People, Places, Objects and Races. Trading may be initiated with an alien at any time and is the best method to upgrade equipment. Since all trading is handled by bartering, there is no worry about alien currency; an item's worth can be determined by comparing it to other items.

Navigation can be handled in two convenient ways. You can access a map which can be zoomed between three levels: Galaxy, Sector and System. This is useful for finding planets based on limited information or when blindly exploring the galaxy. The other method involves a list of known planets which can be indexed, allowing you to focus on

Nomad

exactly where you want to go. As soon as the appropriate planet is selected, the ship leaps into hyperspace and arrives at the planet automatically. There's no navigational fuss, no need for a pilot's license, and only a minimal wait.

Combat is almost childishly simple compared to other games in this genre. *Nomad* does not pretend to be a space combat simulator. The only weapons are missiles, which automatically track a target once they have been "locked on." The only other consideration during battle is activating the ship's jammer to prevent enemies from calling in reinforcements.

Engineering serves the dual purposes of repairing the ship and choosing which devices to activate. Graphic bars demonstrate the relative usefulness of each piece of equipment, so the most powerful or effective technology is obvious. This frees you to trade lesser pieces of equipment for more important goods.

Can We Twalk?

This simple command structure allows the player to concentrate on the story line that unfolds through conversations with aliens. These alien encounters are where *Nomad* really shines. Each race has a distinct appearance, from the nebulous Altec Hocker to the sensuously feline Phelonese, and each has its own personality and mode of speech. The pitiful Pahrump are almost always complaining about imagined illness, while the Chanti-

cleer are an eminently practical and serious group of clones. Even within the same race, individuals have different styles and colors of clothing and hair, giving each alien a unique identity. Animation is minimal, but portrays such a range of emotions that it is readily apparent if an alien is happy, angry or neutral to you. The ability to question individuals on nearly any subject is a nice change from the general "multiple choice" method found in most games. It would have been nice if there was a wider variety, as most of the responses are exactly the same from person to person within the same race. Still, I found myself

seeking out certain aliens just to shoot the breeze.

Nomad is well balanced between allowing freedom of choice and imparting a feeling of progression toward the conclusion. The game can be approached from a variety of angles and solved at your own pace. Many players will find a mission approach to be easiest, since various important missions, usually combat related, are posted at most civilized worlds. Taking this direct approach works well for people not inclined toward random exploration or dialogue. Alternatively, the plot can be pieced together solely from conversation. These options aren't mutually exclusive; most players will use a mixture, taking missions for excitement, with some

exploring between adventures. As missions are accomplished, the crisis escalates, and new opportunities become available. In this way, the gamer is pushed gently but firmly toward the Endgame.

A Small Galaxy After All

Although *Nomad* has been nicely designed and is easy to use, there are a few technical problems. Missions are not always erased after they are solved, nor are all missions solvable. Also the Ship's Log is less useful than it should be. The text editor was supposed to eliminate the hassle of taking notes, but since the log doesn't record conversations, it is of minimal use. The game saving feature is primitive, with only a single save slot per player without resorting to some DOS manipulations (copying and renaming files). The game also lacks a Load Game option, requiring you to restart the game whenever you want to restore.

My greatest concerns involve

larger and more abstract issues. For one thing, *Nomad* is decidedly unoriginal. Playing it invoked tremendous nostalgia for *Starflight*, perhaps the first and best great space exploration game. The resemblances are glaring and cannot be considered accidental. Paying re-

spect to a classic is well and good, but there is an important line between homage and imitation, which *Nomad* comes dangerously close to crossing.

Given *Nomad's* presentation, it is reasonable to expect a broader, deeper and altogether more involving game. But in comparison to other Space Exploration games, most notably *Frontier* and *Privateer*, *Nomad* comes up short. It simply isn't as large, doesn't pay off in as many hours of play, and doesn't have the same detailed atmosphere and scope. So *Nomad* is clearly not a game for veterans of the Space Epic, though it does have a lot to offer the casual gamer. Its play mechanics are well designed and easy to use, it doesn't require practiced flight simulator skills, nor an inordinate time investment. It's a game with an old but reliable plot, interesting characters, and a good deal of charm. Those who look to long-term commitments from their space epics should set a course for another star system, but those who actually work for a living and game "on the side" may find *Nomad* a fulfilling affair. **CGW**

THE HORDE

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Profits Of Damnation

Feel The Wrath Of Origin's *Righteous Fire*

by Bernie Yee

Gamers tired of playing the blue-haired good guy in **Origin**'s *Wing Commander* universe got a nice break with *Privateer*. Playing the pirate, smuggler, mercenary or merchant of their choice, *Privateer* allowed space combat fans the chance to stray off that straight and narrow path that galactic saviors must tread. Instead of fighting the good fight against all that is wrong in the universe, the player's quest was one of greed: make the fortune, earn the money, and upgrade the rickety old space craft into a top of the line Centurion, bristling with weapons, for the sole purpose of making another buck.

Of course, there was a story too. Eventually, all that star-hopping got the player to the game's plot line which involved the recovery of a mysterious alien map, a derelict alien starship, a salvaged alien weapon, and finally contact with the Steltek, an ancient and technologically advanced alien race. Pilots also became acquainted with the flora and fauna of the seamier side of the *Wing Commander* universe: pirates, bounty hunters and Retros.

The Retros were the worst of the lot, a fanatical religious organization dedicated to wiping out technology. They always flew directly at you, making an easy target. If you purchased *Privateer*'s optional speech pack, you could hear them yell "Die by the very weapons you adore!" or the catchy battle cry, "Taste righteous fire!"

These space zealots get their own spin off in Origin's *Privateer* add on, *Righteous Fire*. The story takes place one year after the player successfully defeated the green egg shaped

Steltek drone in *Privateer*. While enjoying the fruits of his labor on the Jolson Pleasure Base, our privateer is robbed of his brand new Steltek cannon that he worked so hard to get—and he's mad! As you once again jump into his boots, it is your job to keep your ears open and find people who might know something about what's going on, and use your skills to persuade them to help you recover your weapon.

Mo' Money

Righteous Fire is as open-ended as *Privateer*. You can immediately start accepting missions from Jolson to build up your bank account, which is a good idea, as you'll need the extra cash despite the fact that you can import your hero from *Privateer* with his ship and credits intact. *Righteous Fire* introduces new technology, including a new cannon, stronger shields and engines, and speed and weapon enhancers that all cost big bucks.

The game's continuity with *Privateer* is maintained nicely. Veterans of *Privateer* will remember that the last series of missions to stop the Steltek drone were assigned by the Confederation Admiral at the Perry Naval Base. Now that the Steltek cannon has been stolen, my first instinct was to head back to Perry for an audience with the military. Sure enough, some military official was waiting at the bar for me, and he assigned a series of missions. Over the course of these missions I began to get a picture of the nasty political goings-on that took place while the "hero" was lounging around some brothel on Jolson. As Oxford was instrumental in learning about the Steltek in *Privateer*, so is the university planet again useful in learning about who might have stolen your artifact in *Righteous Fire*.

Gameplay is, of course, identical to *Privateer*, which itself was an improvement over the *Wing Commander II* engine. Still a step below what is planned for *Wing Commander III*, and lacking the smoothness of a pure

polygon graphics engine like *X Wing* and *Tie Fighter*, *Righteous Fire* is nonetheless very enjoyable to watch. Sound and music are well implemented too, with Origin's General MIDI support for the next generation of music cards like the **Creative Labs** *WaveBlaster*.

My only gripe about this game is its lack of challenge for the experienced privateer. A combination of stronger shields and engine made my Centurion feel almost unstoppable, so that some of the missions seemed like trivial exercises that got in the way of the advancing storyline. Still, the new storyline is fun, and the new ship elements breathed a bit of fresh cosmic wind into the game, ensuring that *Privateer* will avoid wrath of the "DEL" command for some time. It is certainly recommended for privateers who just can't get enough of life on the edge of the *Wing Commander* universe. **CGW**

Righteous Fire

PRICE:	$29.95
SYSTEM:	IBM
REQUIREMENTS:	Original *Privateer* game, 386-33, 4MB RAM, VGA graphics; 4MB hard drive space; recommended: 486-25, joystick; supports most major sound cards
DESIGNER:	Tom Kassebaum, Phil Wattenbarger
PUBLISHER:	Origin Systems Austin, TX (512) 335-5200

Shoot-out At The VR Corral

by Martin E. Cirulis

Velocity's Multiplayer Game of Virtual Mayhem, SpectreVR

The original *Spectre* ran like a *Battle-Zone* out of hell, enabling you and up to seven of your caffeine-fevered friends to face off in real time on the same battlefield, blasting each other's polygon graphic tanks to twirling shards. Tiring of mindless destruction, you could collect flags while fighting, or divide into teams and try to breach each other's home base. *Spectre* became a Mac sensation, and later was translated into the realm of DOS and Windows. Unwilling to abandon this hyperkinetic arena, **Velocity** has gone back to the shop and overhauled *Spectre* for all it was worth. The result: *SpectreVR*...and probably a whole new batch of strained wrists and friendships.

Virtually Meaningless

Despite the extremely liberal use of the term "Virtual Reality" and the pretensions of cyberspace spread throughout the documentation, players should make no mistakes about the nature of this product. *Spectre VR* is distilled essence of video game, especially in single player mode. It is to *Battle-Zone* as fine Scotch is to juniper berries. The action is pure and uncluttered by anything like plot, depth or even realism. Instead we are treated to a form based on 15 odd years of arcade tradition, embodying all the mindless, addictive action that has swallowed so many quarters.

The player controls a single battletank in the depths of cyberspace and fights hordes of computerized enemies in tanks both weaker and stronger than his own. Ammunition is limited, as is the amount of damage a tank can receive before being "de-rezzed." These limitations can be compensated for some-

what by running over special tiles that repair damage and reload ammunition. Unfortunately, this was all there was to *Spectre*; when you had defeated a level of opponents, you were faced with another level filled with more of them. Not exactly a feast of variety.

In the realm of *SpectreVR*, this limitation has been addressed with gusto. Now a player is not only faced with enemy tanks, but hunter-killers that can fly, tanks that are invisible to radar and sight, mines resembling Bouncing Betties, automatic gun turrets, and slicers that cruise across the landscape like shark fins, peeling open any tank unlucky

enough to bump into them. Even the terrain itself has become decidedly unfriendly with the addition of acid pools that will melt you to slag in a few seconds, intelligent walls that crowd and corral unwary players, and last, but far from least, the deadly CyberMud, an intelligent form of acid pool that tries to be on you like hype on game boxes.

And if things in the arena get too hot for you, you can always spot a teleportation diamond to

warp to safety or even a gateway into Negative Cyberspace, a strange realm beneath the surface of the arena. *SpectreVR* has managed to turn a usually overlooked and passive aspect of most arcade games—the playfield—into a dynamic and troublesome enemy that has to be actively dealt with.

Suicide Machines

But the pesky computer is not the only one sporting improvements. *SpectreVR* has graciously given its players a few added options to even the score, or at least to help run up the score. In addition to the familiar cannon and grenade launcher, you can now fire smart missiles, heat-seeking cannon rounds, arc-firing scattershot, proximity mines that can be dropped in front of pesky pursuers, and spinners that can turn a deadly enemy into an amusing top until you are more prepared to deal with them. What's more, there are now CyberBlasts which can be dropped from the air like bombs and PulseBursts that function like air-to-ground missiles.

Why the need for these last two weapons? The maniacal designers at Velocity have added a third dimension to this adrenaline-fest: your cybervehicle is now capable of limited flight. Certain tiles in the floor of the arena send your ve-

BOMBS ONLINE

hicle aloft for a short while. Although it's not *Falcon*, it is more than enough to open up a whole new realm of tactics. Flight resembles helicopter movement more than anything else. Idle, your vehicle rises to maximum altitude, moving forward accelerates it but lowers your altitude until you reach a maximum speed just above the surface of the arena. You are incapable of loops and stalls, but strafing runs become an art form in and of themselves.

A player's tank is rated in three attributes: Speed, Armor and Ammo capacity. The game offers three standard vehicles representing the philosophy of the fast, the well protected, and the Jack-of-all trades. Experienced players have a fourth choice, customizing their own vehicle, changing the three values to suit their own tastes. In my modest experience I have found that ammo capacity should generally be traded for speed and armor in single-player games. Of course, all bets are off when faced with opponents of the human kind.

Net Yourself Some Friends!

The original *Spectre* shone its brightest when hooked up to a network environment, and *SpectreVR* has lost none of that. There is still room for eight computers to link together and form an electronic gladiator's den where victory is to the swift and sneaky. Once there were only three games you could play in the land of *Spectre*: a no-friends free-for-all in

MISSILES ONLINE

which the person with the most kills won; a form of flag rally where the same open warfare existed, but the victor was the first one to collect a series of flags scattered across the arena; and a team game where the first side to touch the other's home base won the point. The first scenario was by far the most popular and intense (I have the wrist damage to prove it), while the last was the weakest, as the designers

SPINNERS ONLINE

seemed to have neglected to consider the durability and speed of most vehicles.

SpectreVR retains these basic scenarios and adds another set with the introduction of the flight model. There is a free-for-all level where players have access to most of the weapons available in the single-player game. These are the logical improvements to be found in a sequel, and most companies would stop there, but not *these* guys. They also added scenarios like Tag, Keep-Away, Bumper tanks and a form of full combat tic-tac-toe for the violent inner child. People of a more team-minded spirit can find manic pleasure in games like Bitball, a kind of cyber-rugby with a single goal in the middle of the arena where the final word in defense is to blow up the ball, and Cyber Soccer, which is very much like the traditional sport except that goalies come equipped with land mines invisible to the opposing team.

The addition of these new scenarios increases the longevity of this product by at least three-fold.

The Fly In My Cyber Soup

For all the improvements, enhancements and care put into this sequel, *SpectreVR* still has one glaring flaw that I find hard to ignore—it's not finished. *SpectreVR* was released too soon, the first hint

of which is that the product is missing the terrain editor promised on the outside of the box and the set of protocols that will allow the game to run on an IPX network (an omission that cuts the compatibility of the product in half). The note states that Velocity will be glad to ship the aforementioned to registered users free of charge, but it is a disappointing revelation after purchasing a new $60 toy.

If this were all, it would simply be an inconvenience, but there are more drawbacks the longer you stay in this virtual new world. The terrain lacks the snappy graphic kick of the original and is completely devoid of the features shown on the box. One can hope this will come with the terrain editor. Though the documentation gives a cautious green light to operations under Windows, even to the extent of providing an icon for the game, it is in fact severely unstable on all but the most muscular computers and often violates system integrity. Other small glitches and omissions mar an otherwise beautiful piece of software. Hopefully by the time you read this,

MISSILES ONLINE

editors, protocols and patches will have been sent to loyal consumers. To their credit, Velocity seems eager to deliver on this as soon as possible.

"It's Cyber-riffic!"

Despite the poor decision to release the game too soon, I cannot help but be more enamored of this game every time I play it. *SpectreVR* seems to represent a true step forward in a genre drowned in endless street-fighting and slide-n-shoots, an intelligent video game where you are free to act and react while the game twists and turns to keep you entertained. With the promise of add-on disks giving new features and scenarios, this product could have a solid future with a hard-drive life measured in years instead of the usual weeks.

The author would like to thank Craig Reece and his networking wizardry. CGW

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

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Frigid Heirs Of The Robber Barons

Train-to-Train Warfare in ReadySoft's *Arctic Baron*

by H.E. Dille and John P. Withers

The year is 2714, and the brave new world has gone horribly awry. In the early years of the 21st Century, scientists attempting to reverse the greenhouse effect make a terrible miscalculation, plunging the world into a perpetual winter. Before they can repair the damage, society falls into chaos. Over the chilled centuries, a new society emerges, dominated by the Viking Union, a federation controlling the only working global transportation system—the rail system. The Unions' giant trains form the only trade connection between the world's frozen nations, giving the Union a monopoly that makes them *de facto* rulers of the planet.

Is the planet doomed to become a frigid hunk of permafrost, lorded over by an ice age railroad tycoon? Perhaps not. Rumor says that there might be a chance of activating an old project that would bring the world back into the light and break the spell of winter that encircles the globe. The Viking Union, seeing a threat to its power, does everything it can to suppress any knowledge of this project, going as far as eradicating all references to the sun. The last hope of sunbathers the world over is the Arctic Baron, leader of the faction trying to save the planet, who steals one of the Unions giant trains. Guided by the player, the Baron sets off into the frozen wasteland in search of the secret that will doom the Viking Union to a frostbitten footnote in history.

I've Been Freezin' On The Railroad

The most important element of *Arctic Baron* is the Transarctica, the train the Baron has stolen from the Viking Union. At the outset, the Transarctica is a small train with a couple of trading cars and 10 troops for defense. But up to 100 cars can be attached to the engine, and one of the player's first priories is to get more cars to make the train more formidable, both as a trader and a weapon of war.

Over 20 different types of train cars are available, and their multiplicity is one of the more interesting elements of *Arctic Baron*. Different types of cars, from tankers, to animal haulers, to cargo wagons are available to haul a variety of trade goods from town to town. Unfortunately, the Viking Union isn't taking the theft of their train and threat to their power lying down, so there are also cars designed for train-to-train combat. Weapons range from machine guns to medium range missile launchers that can smite an enemy train over 500 kilometers away.

While the cars are interesting, the actual operation of the train leaves something to be desired. The only controls are forward/reverse and the speed control. With such a simple set of controls, it would seem impossible to make them hard to use, but the Transarctica's control panel seems to be designed to be intentionally annoying. In order to see where the train is going, the player must look at a map screen, but to add coal to the boiler the player must be in the engine control section, which overlays the map. To change the speed, yet another layer of display must be accessed, which only contains the speed control and some warning lights. The whole process is cumbersome and could have been easily avoided by adding speed and coal controls to the map screen.

To determine the destination of the Transarctica, track switches must be set on the map display. This is a simple process, but in many situations the Transarctica is sitting right on a switch that must be changed. When the switch is obscured by the train, figuring out its position is a matter of squinting at the screen, trying to see the edge of the position indicator around the train icon.

Paying The Bills

The most important commodity in *Arctic Baron* is coal, and it comes in two varieties: Lignite which is used for money, and anthracite, which is used exclusively for fueling trains. In an emergency situation, the Transarctica can be run on lignite. This gives *Arctic Baron* the amusing distinction of being the only game on the market where money can be burned as fuel. Lignite is most useful, as it can be used to buy additional cars and troops. Though very simplistic, the trading aspect of *Arctic Baron* is the game's strongest point.

The map features many different town types; some supply

troops, others hold information, a few produce train cars, but the vast majority are trading centers. At any given trading center there will be a few products produced there, and others that are in demand. One of the tricks of the game is finding out what products are in demand at each town. In most places, for example, fishing rods will be worth 5 to 10 Baks (a unit of lignite coal measure), but in Alexandria they are worth 50 Baks. Unless you stop in a trading town with the right product, there is no way of knowing ahead of time what any particular city will want.

There are very few actual market forces operating in *Arctic Baron*. If a town will buy 50 units of mammoth dung for 40 Baks at one time, they will continue to do so as the game progresses. However, towns only produce so much in the way of goods to sell, and restocking takes quite some time. As such, after a product line is traded out, there is a long lull before you are able to round up enough of that same commodity to make another trading circuit profitable.

Another complication in the trading process is car type. Certain goods can only be carried with certain types of cars. Deciding the proper proportion of livestock cars, liquid cars, greenhouse cars, and standard cargo cars to add to the Transarctica is a major decision, particularly when balanced with the defensive and offensive cars required to survive train-to-train combat.

Then there is the matter of slaves. In *Arctic Baron*, slave trading is an important part of the game. Slaves are used to dig mines and build bridges—small but necessary tasks. While a cheap allusion is made in the documentation to these slaves being of some kind of inferior race, it becomes apparent during play that captured enemy soldiers are the stuff of which slaves are made.

Training For War

Combat occurs whenever the Transarctica meets a train of the Viking Union on the tracks. Victory is achieved by destroying all the weapon and troop cars on the opposing train. There are two attack options for train combat: troops and weapon cars, with troops as the most versatile option. Disgorged from troop cars either as a whole or in smaller squads, troops can plant bombs on opposing trains and attack enemy troops directly. A bomb set on a car goes off after a small delay, destroy-

ing with a single blast the entire car and any troops left on it. Friendly troops that discover a bomb on their own train have a chance to disarm it before explosion. Thus, it behooves the smart player to not only send out troops to the opposing train, but to keep some back for defense.

Weapon cars come in two major varieties: machine gun and cannon. The machine guns kill enemy troops within their fire pattern, while cannons destroy cars on the opposing train. As this requires multiple shots, and since guns are fixed so that they can fire in only one direction, the placement of weapons cars in the string of the train is critical. A group of weapon cars, when purchased, will all be hooked together in a clump at the end of the Transarctica, making them minimally effective. Going to a station and spreading out the guns is a good idea that pays off handsomely. After combat is concluded, the remaining cars from the opposing train and

their cargoes become a part of the Transarctica.

The train combat is not, in and of itself, badly designed, but it is painfully slow. A simple combat on a 386-33 can take over 15 minutes to resolve, despite the fact that the actual combat routines are rather simplistic, and no great graphic or sound effects are in evidence. To the game designer's credit, there is an option that allows the player to skip combat all together.

Quest For Fire

The quest, freeing the world from perpetual winter, isn't particularly notable in either a positive or negative sense. It is a typical matter of showing up at the right places and gathering the parts to make Operation Sun work. Of course, there are the requisite battles with the Viking Union to secure the day and save the world. Most players will probably not be that enthralled with the quest, but the game doesn't lose replay value because of it. The quest really contributes little to the overall design other than some added motivation.
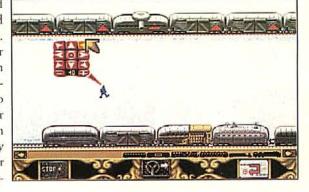
While a solid game in general, *Arctic Baron* has a number of annoying rough edges. The main control icons are far too dark to be easily seen. When saving or retrieving a file there is no directory option, so a player just has to remember their save names. The opening and closing music of the game is FM-generated and sounds tinny and weak. However, the sound effects are superb and, to a degree, make up for the poor music. The sounds of the train on the track are very well done and lend a real railroad feel to this game.

If this game were flawlessly constructed, a player might easily be sucked into the reality of the background world, but the small, yet annoying, quirks make one start to question the whole premise. If the world still has the technology for missiles, why isn't air transport a bigger factor? Why is there plenty of light on many of the outdoor scenes when there is supposed to be no sunlight? Since gasoline is a trading commodity, why aren't there gas-powered vehicles competing with the Viking Union's trains?

At the end of the line, the heat of our enthusiasm for the originality of the game concept met with a small cold front of disappointment, resulting in this rather lukewarm review. *Arctic Baron* can still provide some fun play on a fast machine, but its small blemishes derail an otherwise original and delightful premise. **CGW**
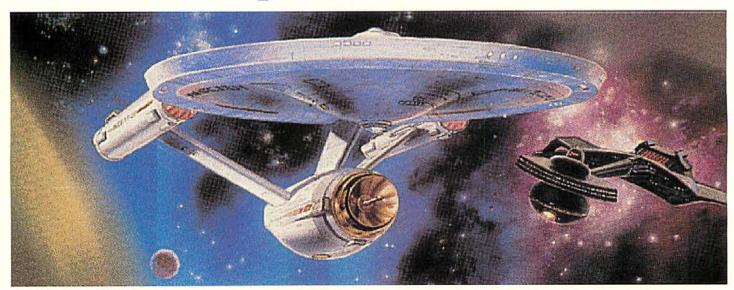
Spock's Vox

by Charles Ardai

It's a little like getting a phone call from an old friend: the voice out of nowhere, the moment of startled recognition, the swarm of memories rushing in, the smile that spreads slowly across one's face. There's an instant of dislocation, then the wonderful plunge into a familiarity that is part nostalgia and part curiosity—so much to remember, so much more to discover!

The catalyst that produces this effect when the CD-ROM edition of **Interplay's** *Star Trek: 25th Anniversary* opens is William Shatner's voice, intoning Gene Roddenberry's famous prologue ("Space...the final frontier..."). When the first edition of the game was released, players praised its fidelity to the look and sound of the TV series, and rightly so; but the original, as good as it was, can't hold a candle to the new version. On CD-ROM, with not only Shatner returning to the role that made him famous but Leonard Nimoy, DeForest Kelley, Nichelle Nichols, Walter Koenig, George Takei, and Jimmy Doohan stepping up to the mike as well, the game is much more than it was before.

In its original form, *Star Trek: 25th* was just a game like any of the countless others that have surfaced regularly since the series first appeared, though it was quite possibly the best of the lot. Now that the banter between Spock and McCoy or between Kirk and the Klingons is not just typed out on the screen but performed by our old friends (close your eyes and...yes, it really is them!), *Star Trek 25th* becomes a piece of the myth.

Kirk's Perqs

In most ways, the CD-ROM edition is the same as the original game. The player climbs into the vinyl boots of the one and only "James T. Kirk of the Starship...Enterprise" (as Shatner introduces himself to any alien in earshot), directing his crew and his ship on a half dozen missions that correspond roughly, in scope and theme, to a half dozen typical episodes of the original series. There is also an introductory starship battle and a concluding encounter which, though basically just another battle in the original version of the game, here is fleshed out to full-episode length.

While in space, the player runs the show from the bridge, getting assistance from various crew members by clicking on them. When the Enterprise reaches the site of its mission, the interface switches to a more traditional adventure game scheme with commands such as "Take", "Use", "Look At", and "Talk To" executable with a click or two of the mouse.

Though a landing party always consists of four people (Kirk, Spock, McCoy, and a generic security officer), Kirk is the conduit for all of the player's commands. The other characters do what Kirk tells them to, dogging his heels like so many loyal puppies. (Such are the perqs of being the best-known captain in Starfleet.)

Most episodes start with a dogfight between the Enterprise and one or more alien craft. These battles, though true enough in spirit to the so often pyrotechnic TV series, are a frustrating lot. The Romulans are surprisingly easy to defeat (especially considering that their craft is invisible for much of the time) and the Klingons can be talked out of fighting, but the ubiquitous Elasi Pirates are as annoying and hard to hit as mosquitoes. Unfortunately, there is no way to proceed in the game without beating them in space combat; adventurers with no particular arcade skills just have to hope their hand-eye coordination improves before their patience expires.

Once past the combat hurdles, the stories offer a rich and varied pastiche of Star Trek bits. There's the one about the machine that

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primitive aliens think is a god; there's the one about the ancient god who turns out to have been an alien all along; there's the one about the virus that quick-thinking McCoy has to cure; there's the one about Harry Mudd getting in over his head while trying to turn a profit from some alien salvage; and so on. Misunderstandings explode into bloodshed and are then cleared up while characters soliloquize about honor and compassion, just like on TV. Everything is slightly abbreviated, with most episodes taking place in only four or five rooms and containing only a handful of puzzles, and the soliloquies are shortened to a couple of lines apiece, but the feel is Star Trek through and through.

McCoy's Poise

Part of this authenticity comes from the set design, full of red metal buttresses, bulky desktop computers, square panels covered with blinking lights, and sliding doors that whoosh open at a touch. More of it, however, comes from the soundtrack, which now contains layer upon layer of digitized bloops, whirrs, hisses, and clicks taken straight off the TV. Phaser fire sounds like phaser fire. Communicators trill the way communicators ought to. The Enterprise computer emits those weird, mechanical ratcheting sounds that no computer except the one on Star Trek has ever made. Supplementing the sound effects are snatches of music imported from several episodes of the series—not just Alexander Courage's theme music, but samples of

various battle, suspense, and "comic relief" themes as well.

The heart of the matter, though, is the voice acting. Even if poor Chekov has little to say other than "Weapons armed, captain" and Scotty spends most of the time interrupting battles in mid-phaser blast to announce "Engines repaired, sir!", the voices are the voices of our beloved comrades and therefore a delight.

Spock, Kirk, and McCoy each have plenty to say, particularly Kirk, who occasionally lands in situations in which the player gets to select from a menu of two or three dialogue choices. Almost all the dialogue rings true: the scientific doubletalk, the sarcastic asides, the idealistic speeches, the intense brainstorming to get out of a crisis, and the rest.

My only regret is that all three actors sound oddly sedate, plodding through the delivery of lines that call for more vigor than they seem able to muster. A cynic might suggest that the years have taken their toll on our heroes; I'd prefer to think that Shatner and crew were just unaccustomed to drumming up the appropriate tone of urgency and passion without props, sets, and costumes around to ignite their performances.

Under the circumstances, the always cool Spock naturally comes off the best. Shatner's turn as an uncharacteristically contemplative Kirk is somewhat odd but not unpalatable. The disappointment of the bunch is DeForest Kelley, who recites lines that call for McCoy to be irked or enraged as though calm and poise were acceptable substitutes. Once in a while McCoy manages to kindle some of the old fire for a jab at Spock ("Why, you pointy-eared..."), but too often he is just a shell of his former feisty self.

The game's other voices include an uncredited actress sounding regrettably Canadian as Kirk's old flame, Carol Marcus; Tom Wyner doing a creditable Roger Carmel imitation as Harry Mudd; and various essentially interchangeable voice actors filling in the blanks as Lieutenant This and Ensign That. Joyce Kurtz, whose voice is not nearly as agreeable as Majel Barrett's, sounds in need of a tune-up as the Enterprise computer; furthermore, she

reads the entry for "Daystrom, Richard" when you look up "Chekov, Pavel" in the ship's library. Other glitches turn up here and there—the computer only reads the first of three sentences in a library entry on tribbles, Kirk calls an object a "trans-MAH-grifier" while Spock calls it a "trans-MOW-grifier"—but these are minor and excusable.

Even given the above complaints, the performances, by and large, are solid. Trekkers may wish they were stronger but in the end will be rapturously grateful to have them at all. Non-Trekkers may not be hurled into comparable ecstasies, but why would a non-Trekker play this game in the first place? No, this game is for true believers only—and for them it's a satisfying climax to years of fantasizing about the ideal Star Trek game.

Trek's Next
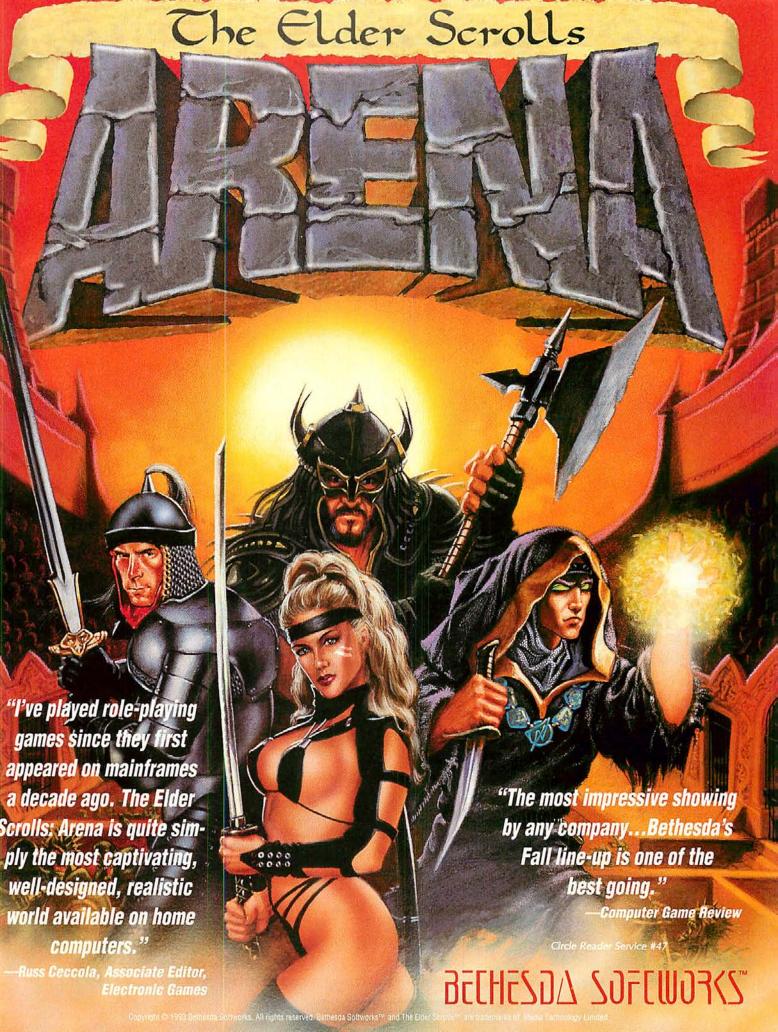
Of course, the recently released sequel to *Star Trek: 25th*, *Star Trek: Judgment Rites*, is a better game in any number of ways. There

is less ship combat and you can bypass what there is; there are more episodes and more locations in each; there is a unifying plot thread running through the stories; and the supporting players have larger roles in the goings-on. Logic, as Mr. Spock would tell us, might suggest that even true believers would want to wait for that one to come out on CD, especially since the actors are already in the recording studio as of this writing.

Still, logic only goes so far. I can't imagine the Star Trek fan who will want to miss the CD version of *Star Trek: 25th*. For all that it could be better, it's still a heck of a good game; and with the original cast unlikely to regroup for another movie, it may be one of the last chances we'll have to see the old crew work together again.

And if they're a little creakier than they used to be, a little slower and a little more wound down, what of it? It is in the nature of the universe for stars to decay. Call me softhearted, but in this fan's eyes, these particular stars still shine brightly enough to light the way back home. **CGW**

Never Trust A
Gazfluvian
Flingschnogger!

**Strategic Space Games
From 2000 To Infinity**

by M. Evan Brooks

~B.Clarke

What exactly constitutes a futuristic strategy or wargame has proven to be most difficult to define, because so many science fiction simulations incorporate elements of role-playing games or arcade sequences. I have tried to cover those simulations that emphasize the strategy aspects and rely less on quick reflexes or intensive role-playing. While some games fall in the inevitable gray area, you won't find any pure "shoot-em'-up" or adventure games listed. Even though space simulators are not strategy or wargames, I have included games such as *X-Wing*, mainly because of their significant combat elements, as well as the immense popularity the majority of these games enjoy. More traditional flight sims were formerly covered here, but I have decided to place them in their historical milieu. The rare fantasy simulation, such as *DragonStrike*, is included simply because it does not fit into another period and is more akin to science-fiction than anything else.

Futuristic strategy games have a tendency to blend into one another. After all, what is the basic difference in a game based on destroying Krellans or Kzinti or whatever race happens to be the villain? Futuristic simulations must create their own environments. While a historical product has an underlying reality which assists in creating the mood, the futuristic product must do so by itself without an external reference. An attractive game today can grow obsolete faster than a historical simulation simply because it lacks the intrinsic linchpin of reality. Of course, this also allows the designer a great deal of latitude; how he handles his created world will determine how long-lived a product he develops. Certain views of the future, such as *Star Trek*, *Star Wars* or *Dune*, have their own reality due to their literary roots. While this can make the gaming universe easier to recognize, it simultaneously runs the risk of not living up to the fan's expectations.

The computer market is quick-changing, unforgiving, and the state-of-the-art changes rapidly. Futuristic simulations seem to be among the most short-lived of all games. Simultaneously, they are also those that are often used for graphic innovations. It should be noted that the ratings given here are an individual preference. Also, please note the platform availability; a five-star game on an Atari 800 that is several years old is not of the same sophistication as a new product designed for a PC 486/66. However, it has been given its rating for what it did and, to a lesser extent, what it still does. Of course, the designers look askance at these ratings, and often deluge the magazine with voluminous complaints. But again, these are intrinsically

subjective, and a discriminating reader should be able to temper the ratings with this writer's normal reviews in order to ascertain the inherent biases.

If any readers have additions/corrections/modifications, please send them to me in care of this magazine or via modem on *GEnie* (address: M.E. Brooks) or Prodigy (address: HFTN43A).

LEGEND:

LINE 1: Title/Rating

Ratings:

	The Black Hole Of Gaming
🐎	= Avoid
🐎🐎	= Marginal
🐎🐎🐎	= Good
🐎🐎🐎🐎	= Very Good
🐎🐎🐎🐎🐎	= Highly Recommended
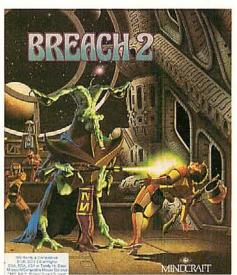
LINE 2: (Machine Format [(A)tari/(C)ommodore/(Ap)ple II/(T)RS-80/II(GS)/(Am)iga/(ST)/(M)acintosh/(I)BM/(Sega)-Genesis; Issue of CGW in which that game was mentioned; **bold** print refers to major article. Company/Designer/Date of Publication/Price;O/P (if out of print)

LINE 3: Difficulty: (Beg)inner/(Int)ermediate/(Adv)anced

Environment: (Tac)tical/(Op)erational/(Str)ategic]

# of Players (M = modem option)

No table of unit sizes has been presented because the scope of futuristic simulations ranges from man-to-man to galactic empires. Generally, a tactical simulation will range from a man-to-man to ship-to-ship; operational simulations cover squadrons to fleets; strategic simulations cover entire planets to complete universes.

AIDE DE CAMP (🐎🐎🐎🐎)

(I; #**108**,112) HPS; Scott Hamilton; 1993; $79.95

Int/Tac-Op-Str/1

Not a game as much as a gamer's aid, this utility program will assist in the conversion of any board wargame to computer output, albeit without the *AI*. Once files are created, games can be played easily by e-mail. A library of conversions by dedicated users is already under way. Copyright laws make it difficult to publicly disttribute such conversions, but the product is gaining support from boardgame publishers. With this product, you might, for example, actually find opponents for a few scenarios of *Starship Troopers*.

ARMADA 2525 (🐎🐎🐎)

(I; #**87**) **Interstel**; R.T. Smith; 1991; $49.95

Adv/Str/1-6

Space colonization, R&D, production and galactic battles—it's all here in an ambitious package. Both multi-layered and detailed.

ARMOUR-GEDDON (🐎🐎)

(Am/ST/I; #**85**,87) **Psygnosis**; Paul Hunter and Ed Scio; 1991; $49.99

Int/Tac/1-2

A simulation of aircraft, tanks and hovercraft in an attempt to destroy the "mad scientists" who will otherwise destroy the planet. In addition to combat elements, you must determine research and production priorities. With a heavier emphasis on tactical battles rather than cerebral considerations, it can be fun, but resembles a Chinese meal: A half-hour later and you're hungry for something with more substance.

AUTODUEL (🐎🐎)

(Ap/C/M/Am/I; #26,**28**,29) **Origin**; Chuck Bueche; 1985; O/P

Int/Tac/1-2

A computer rendition loosely based on Steve Jackson's classic *Car Wars* board game, this simulation panders to the harried commuter in us all. Arm your vehicle and destroy the opposition—carjacking before the term entered the language. The graphics and game play now appear very dated.

BATTLE ISLE (🐎🐎+)

(Am/I) **UbiSoft**; Blue Byte; 1991; $49.95

Int/Op/1-2

A more traditional wargame with a hex-based map in a futuristic conflict. Detailed air, ground and sea units compel you to adopt a comprehensive combined-arms strategy for victory. Enjoyable for the seasoned gamer looking for new worlds to conquer, the system was later used for *Great War 1914-1918*. Easy to learn and play, yet there is still a blandness in the final result.

BATTLES OF DESTINY (🐎🐎🐎)

(I; #**104**) QQP; Several Dudes Holistic Gaming; 1992; $59.95

Int/Land/Tac-Op/1-6; M

Empire in a form truer to the sci-fi background, the technology is contemporary but the scenario is futuristic. Smooth playing, although the frustration of airborne assaults (with the random dropping of assault troops into the ocean) virtually "killed" the game for me.

BATTLE TECH, MULTI-PLAYER (🕃🕃🕃🕃)

(I/M; #95) GEnie; Kesmai; 1993; $4.00/hour

Int/Tac/1-Many; M

An on-line version of *BattleTech*, with the excitement of a simulation plus the depth of a role-playing game. The latency perspective problem found in many on-line sims is mimimized by the lower frame rate, due to the movement occuring on land instead of sea or air. The licensed *BattleTech* universe is put to good use here, complete with upward movement through the various houses or by joining elite mercenary groups. *MPBT* offers the long-term satisfaction of role-playing combined with the quick-playing thrill of a simulation.

BATTLETECH: THE CRESCENT HAWK'S REVENGE (🕃🕃+)

(I; #76,79) Infocom; Barry Green and Tony Van; 1990; $49.95

Int/Tac/1

Set in the *BattleTech* universe, this has strong role-playing elements, but still retains the tactical flavor of mechwarrior combat.

BREACH (🕃🕃)

(Am/ST/M/I; #41,45) Omnitrend; Thomas R. Carbone and William Leslie III; 1988; O/P

Int/Tac/1

Tactical man-to-man space marines simulation; superseded by later releases.

BREACH 2 (🕃🕃🕃)

(Am/ST/I; 65,68,70) Mindcraft; Thomas R. Carbone; 1991; $49.95

Int/Tac/1

A newer revision, and one which fits into *Rules of Engagement* as a tactical subset thereof. Easy to learn and fun to play, it is reminiscent of SSI's *Six-Gun Shootout*, but moved from the Old West to Outer Space. A design-your-own scenario option and on-line availability of scenarios makes this a continually fresh product.

CARRIER COMMAND (🕃🕃)

(C/ST/M/I; #52) MicroPlay; Clare Edgely; 1988; $39.95

Int/Op/1

Carrier warfare in the 22nd century, this British import included air and sea options plus provisions for the production and manufacturing of armaments. Although it combines arcade and strategy elements, it just

Extra-Terrestrial Intelligence
SF Games for '94

ALIEN LEGACY: A potential *Civilization-in-Space*, this simulation emphasizes colonization and development of a faster-than-light drive in a strategic contest. Whether Joe Ybarra's creation will match the addictiveness of a Sid Meier game remains to be seen. IBM, **Imagitec**.

BATTLE CRUISER: 3000 AD: Combining both strategic and flight simulation aspects, this release has been delayed by a year and a change of publisher. Over 5MB of data in the gaming universe offers the explorer plenty of discoveries. The neural-networked AI allows both the computer players and members of the player's crew to improve according to his actions as captain. See the cover story for more info. IBM, **Mission Studios/Interplay**.

BATTLEDROME: From *Captain Midnight* to the present, robots have had their own special appeal. Players will go mech-a-mech against computer or other human players, making wagers on the outcome. IBM, **Dynamix**.

BREACH 3: The latest rendition of the popular space marine saga has a campaign builder, as designer Thomas R. Carbone tries to offer a sense of continuity to the product. The scenario designer, one of the strengths of *Breach 2*, has been retained, and the game mates with *Rules of Engagement 2* for boarding actions. Real-time combat may scare away some gamers, but with the addition of contemporary graphics, the prospects for a winning product look bright. IBM, **Impressions**.

COMMAND AND CONQUER: Following on the success of *Dune II*, this strategy game will utilize its predecessor's game engine. The background for the game will not include the *Dune* universe, however, so fans of the novels may be disappointed. IBM, **Westwood/Virgin**.

DELTA V: In this forthcoming action-packed spectacular, you portray a "runner" in the cyberspace world of corporate espionage and destruction. Mirrors within mirrors...like any plotline associated with this genre. The initial release will contain 40 missions, and additional mission disks are planned. IBM, **Bethesda Softworks**.

FREELANCER 2120: Although very early on in the project, this game appears to be a first person "search & destroy" mission in space. Hot graphics, and the gameplay

evidently will offer more than just arcade action. IBM, **Imagitec**.

G-NOME: Welcome to the life of a 22nd-century lawman. Not only do you have to chase down a villain who can modify his DNA, and thus his shape, but you also have to deal with local crimes as well. Unruly space aliens may pay an untimely visit as well, just to keep you hopping. IBM, **Mallard**.

MECHWARRIOR 2: The Clans: It's sometimes hard to explain, but even gamers who generally don't like action games find themselves enraptured by robotic warriors. This entry should have even better animations and graphics than the first *Mechwarrior*, if only because the technology is more refined. Sixteen new mechs and new campaign scenarios look to create a surefire hit. IBM, **Activision**.

METALTECH: EARTH SIEGE: An expanded *Battledrome*, but more strategic in nature. The player fields teams of robots, rather than a single metallic beast. The game will possibly be released as an on-line version as well, which may delay its release until 1995. IBM, **Dynamix**.
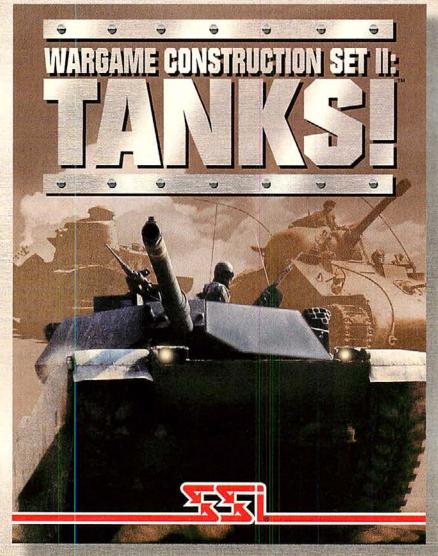
OUTPOST: A sober and realistic view of galactic colonization. Based on hard scientific information, you must develop galactic outposts economically, maximizing research potential while keeping a close eye on morale. Bruce Balfour's design is remarkably thorough, with the details of the ships and colonies brought stunningly to life with *3D Studio* and *Softimage* graphics. Hard SF aficionados can only hope that the final package is unified and coherent, and fun to play. IBM, **Sierra**.

RISE OF THE ROBOTS: In order for this game to stand out versus the opposition, it will have to avoid the sound and graphics bugs which have recently plagued Accolade. At least the 3D models of the robots are impressive. Even so, it faces a stiff challenge from *Mechwarrior II*, which its horizontal scrolling may be too limited to overcome. IBM, **Accolade**.

TIE FIGHTER: Just to show it isn't biased, LucasArts offers you an opportunity to be seduced by the Dark Side of the Force. A fine follow-up to *X-Wing*, wherein you learn how fragile the unshielded Imperial mainstay fighter is. Luckily, you are offered other craft to fly in a variety of missions against those pesky Rebels. See CGW #115 for a Sneak Preview. IBM, **LucasArts**.

WARPOINT: Cosmic war in the year 2049, from the point of view of either a single ship or a task force. The hook would seem to be development of combat technologies in real-time, perhaps reminiscent of Haldeman's *Forever War*. Tim Jacobs of *Harpoon* fame has designed a game which offers both different weapons platforms and an emphasis on strategy. The main question now is how long the 32-bit graphics will take. IBM, **Mallard**.

WING COMMANDER III: Chris Roberts could hardly have imagined that *Wing Commander* would become such a phenomena that it would have, among other things, its own line of paperback books. The biggest problem is in keeping up with the tremendous expectations. If the *Strike Commander* engine can be successfully adapted to the plot and characterizations of the *WC* universe, then we'll have an early candidate for hit of the year. Still, don't even dream about this one until at least autumn. IBM, **Origin**.

ZEPHYR: An action-oriented game where you try to outwit your opponents in the world of mega-corporations. Technology is the key—should you fall behind, your battle tanks will quickly meet their demise. What sets this game apart is the capacity for multi-player involvement via hot-seating and perhaps network play. IBM, **New World**.

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never seemed to stand out from the crowd. The user interface is quite unfriendly.

COMBOTS (🐎)
(C; #74) **Avalon Hill**; John Huff; 1990; $19.95; O/P
Int/Tac/1
RobotJox without *élan*. Players design their own robots and scenarios, but the whole is less than the sum of its parts, and the genre is more suited to a first person perspective as in *MechWarrior* or *Multi-Player BattleTech*.

COMMAND ADVENTURES: STARSHIP (🐎+)
(I; #115) **Merit**; Tom Lima; 1994; $69.95
Int/Tac-Op/1
A graphic and sound delight, this galactic conquest game is flawed by weak gameplay. It's a shame there isn't a game to go along with all of the bells and whistles.

CONQUERING WORLDS (✏)
(Ap; #4.2) **Datamost**; Walt Hochbrueckner; 1984
Beg/Str/1-3
Destroy the enemy civilization. Hardly original when released, and time has done nothing to make it more attractive.

CYBER EMPIRES (🐎🐎+)
(Am/I) **Strategic Simulations, Inc.; Silicon Knights** (Dennis Dyack and Rick Goerts); 1992; $59.95
Int/Tac-Op/1
RISK with robots. Build teams of mechanoid fighters in the far future and resolve conflicts in an arena-style battle format. A quick fade, it simply did not stand out in the marketplace.
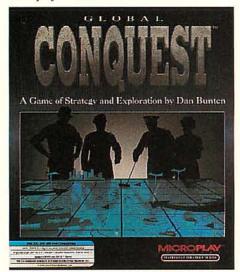
CYBERSTRIKE (🐎🐎🐎)
(I; #106) **GEnie**; David Whatley; 1993; $6.00/hour
Int/Tac/1-Many; M
Game play is similar to that of a primitive on-line *Ultrabots*. Gamers pilot 'mechs and radio in for energy tower drops. The more towers added to one's network, the more likely the player is going to be able to encroach on a neighbor's territory. CGW's On-line Game of the Year for 1993, the game is very competitive in a multi-player environment but lacks the long-term rationale of *Multiplayer Battle Tech*.

DRAGONSTRIKE (🐎🐎🐎+)
(C/Am/I; #71,77) **Strategic Simulations, Inc.; Westwood Associates**; 1990; $39.95
Int/Tac/1
Although this product is set in a *D&D* world, it appears to be an Anne McCaffrey clone of the *Dragonriders of Pern* genre. Jousting atop a dragon with different weapons systems (fireballs, gas, etc.) often resembles a World War I fighter duel. Sadly, this product did not receive the attention or play that it deserved.

DUNE II (🐎🐎🐎🐎🐎)
(I; #105,106) **Virgin**; Westwood Studios; 1992; $59.99
Int/Tac-Op/1
A darkhorse, as its prequel was strictly a role-playing game. However, this simulation is a wargame *par excellance;* superb graphics and sound make an enjoyable gaming experience

as you take a ruling House in the *Dune* universe and attempt to achieve dominance. While some of the latter scenarios tend to approach attritional warfare, the overall style and flair of this program cry out for a sequel (see *Command & Conquer* in ET sidebar).

ELITE (🐎🐎🐎)
(C/Ap; #25) **Firebird**; Ian Bell and David Braben; 1986; O/P
Int/Tac/1
Interstellar trade and combat with two thousand planets in eight galaxies. Using wire frame graphics for space flight, it was one of the first space games with a large universe to explore.

ELITE PLUS (🐎🐎+)
(I; #86) **MicroPlay**; Chris Sawyer; 1991; $49.95
Int/Tac/1
An update of the original with better graphics and sound (although they were still not up to state-of-the-art). More detailed and complex, it was also more tedious than the original. See the review of *Frontier* in this issue for a look at the newest version.

E.O.S. (🐎🐎+)
(C/Ap; #40) **Electronic Arts**; Karl Buiter; 1987; O/P
Int/Tac/1-4
An interesting failure, *Earth Orbit Station* is a game of logistical space station building. Yes, amateurs think tactics and professionals think logistics. The problem is that, even considering the clunky interface, the logistics are just not that much fun.

FEDERATION (🐎🐎)
(Am/ST; #70) **CinemaWare**; Paul Blythe; 1990; O/P
Int/Tac/1
A space ship flight simulator with good graphics and decent gameplay, but it just didn't stand out from the crowd.

FEDERATION II (🐎🐎🐎)
(I; #97) **GEnie**; Alan Lenton and Ken Farnen; $6.00/hour
Beg/Tac/1-Many; M
An on-line economic and role playing simulation in the far future. Players determine the economic viability of trading, bounty hunting, tactical ship-to-ship battles and commodity arbitrage while increasing the wealth, power and influence of their personal character.

FIRE AND FORGET (🐎+)
(Am/ST/I; #52) **Titus**; 1988; O/P
Int/Tac/2
A futuristic tank simulation. At least the title was half-right.

FIRETEAM 2200 (🐎🐎🐎)
(I; #81,82,99) **SimSystems**; Dave Nielsen; $49.95; 1991

Adv/Tac/1-2; M

Tactical ground combat in the 23rd century. A detailed and complex wargame, but one which could have benefitted from a mouse interface and a scenario builder.

FIRST EXPEDITION (☞)
(I; #53) **Interstel**; Steven Englestad; 1988; $49.95
Int/Tac/1

A slow-moving simulation of planetary exploration. Elements of navigation, management and role-playing struggle for attention, and the overall program simply cannot decide which facet to emphasize, subsequently succeeding at none.

FULL METAL PLANET (🏹🏹🏹)
(Am/I; #80) **DataEast**; Hitech Productions; 1991; $49.95
Int/Op/1-4

A traditional hex-based military simulation occurring on a mining planet. Based on a popular European board game, *FMP* is well-balanced and fun to play, but seems to lack that essential spark.
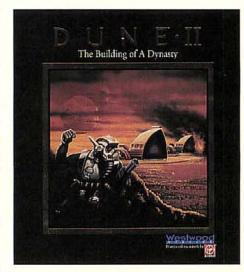
GALACTIC FRONTIERS (🏹🏹)
(M; #99) **Soft Stream**; Russel Lowke; 1992; $59.95
Beg/Str/1-4

A strategic space conquest game, it offered an easy interface and a simple economic model, but absolutely nothing original.

GLOBAL CONQUEST (🏹🏹🏹🏹+)
(I; #93,97,99) **MicroPlay**; Dani Bunten; 1992; $59.95
Adv/Op/1-2; M

The futuristic element is limited to combat operations on another planet, but this product's main strength is modem play coupled with detailed military operations.

GLOBAL EFFECT (☞)
(Am/I; #99) **Electronic Arts/Millenium**; Toby Simpson; 1992; $49.95
Int/Str/1-2;M

A simulation of economic and ecological warfare in the near future, with poor documentation and a clumsy interface. The modem ability of the program is questionable, but it hardly matters, since the planet freezes over sooner or later anyway. Poor beta testing yields an ecological and game design disaster.

HYPERSPEED (🏹🏹🏹)
(I; #92) **MicroProse**; Sandy Peterson and Andy Hollis; 1991; $59.95
Adv/Tac/1
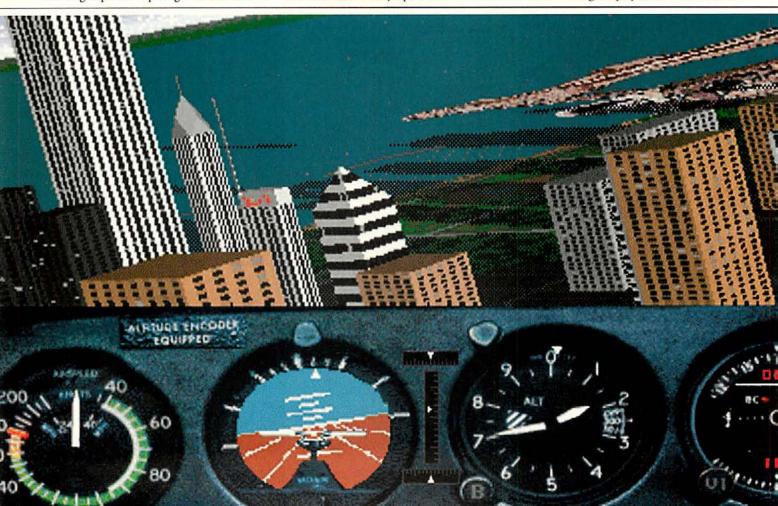
An expanded *Lightspeed*, its strategic aspects are often overshadowed by role-playing elements. Emphasizes trade and diplomacy more than combat operations.

IMPERIUM (🏹🏹🏹+)
(Am/ST/I; #71,75,80) **Electronic Arts**; Matthew Stibbs and Nick Wilson; 1990; $49.95
Adv/Str/1

A very detailed simulation with military, economic and diplomatic aspects. Sadly, its graphics were mediocre and it seemed to quickly disappear from the market, yet its rich texture and gameplay deserve a second look.

IMPERIUM GALACTUM (➢)
(A/C/Ap; #5.3) **Strategic Simulations, Inc.**;
Paul Murray; 1984
Adv/Str/1-4
A successor to *Cosmic Balance II*, this detailed
strategic simulation of space empires simply
lacked sufficient "chrome" to make it an en-
during product.

INFILTRATOR (➢)
(A/Ap/C/I; #29) **Mindscape**; Chris Gray;
1986
Beg/Air/Tac/1
A futuristic helicopter simulation with em-
phasis on arcade aspects. Tongue-in-cheek
documentation quickly grows tiresome, as
does the program itself. James Bond-like air-
craft in an arcade mode.

INFILTRATOR II (∕)
(C/Ap/I; #41,44) **Mindscape**; Chris Gray;
1987; O/P
Beg/Air/Tac/1
A sequel to *Infiltrator*—more of the same.
Even worse than the original.

IRON HELIX (➢➢➢+)
(I/M CD; #104,112) **Spectrum Holobyte**;
Drew Huffman; 1993; $79.95
Int/Tac/1
A cinematic extravaganza, this simulation in-
volves the collection of clues and the destruc-

tion of a renegade starship. An aggressive AI
and quick CD-ROM access times help to
enhance the game environment. Still, the
game would have been more enjoyable if it
had more replay value.

JUST ANOTHER WAR IN SPACE (➢+)
(ST; #82) **Azeroth**; Robert Parkins; 1991
Int/Tac/1
A tactical level space combat game whose title
describes it all.

LIGHTSPEED (➢)
(I; #74,76,82) **MicroProse**; Sandy Peterson
and Andy Hollis; 1991; $54.95
Adv/Tac/1
The lamentable predecessor to *Hyperspeed*, its
utility and game play have been more than
superseded by its successor.

LUNAR COMMAND (➢➢➢)
(I; #110) **Mallard Software**; Wesson Interna-
tional; 1993; $34.95
Int/Op/Op-Str/1
A re-release of *Moonbase*, its economic mod-
elling is excellent. Overall excitement is on a
somewhat lower plane.

MAELSTROM (➢➢)
(I; #108) **Merit**; Andy Blau; 1993; $69.95
Int/Str-Tac/1
This planetary combat/resource management
game featured real-time combat. Its decent
premise was marred by poor execution.

**MANTIS: XF-5700 EXPERIMENTAL
FIGHTER** (➢➢)
(I /CD) **MicroPlay**; Glen Dill, Mark Sere-
met, Paul Conklin; 1992; $69.95
Int/Tac/1
A ship-to-ship flight combat simulator, it ac-
complished its mission adequately, but with-
out style. The CD version is much more

Artifacts Of The Ancients

The universe may be infinitely large, but we must still publish in a finite space. That being so, we had to put our ACME disintegrating editor's pens to the games published before 1984. But there were a few of those ancient games that, because of their historical interest or popularity, we just couldn't zap. Here then are a few ancient alien artifacts from the early days of computer gaming.

CRUSH, CRUMBLE & CHOMP
(A/Ap; #1.1) Epyx; 1982;
An early release which put the player in the role of the traditional "Hollywood monster" (or should that be "Tokyo Monster"?). At any rate, an enjoyable time could be had by destroying New York, Washington, D.C., or other cities. Obsolete by any standard, but I still remember stomping out major cities with pleasure.

CYTRON MASTERS
(A/Ap; #2.5,2.6) Strategic Simulations, Inc.; Dan Bunten; 1982
Combined arms tactics in a futuristic milieu with robot warriors. Players control robot warriors in real-time combat in the attempt to control foreign planets. The last game Dan Bunten programmed while working as an engineer for the City Hall of Little Rock, AK. Dan would quit his job and program his classic *M.U.L.E.* for the newly founded Electronic Arts.

DELTA SQUADRON
(Ap; #3.5) Nexa; Gilman Louie; 1983
A tactical simulation in which the player must duplicate the *Star Wars* destruction of the Death Star. The names and premise were changed to avoid copyright infringement, but there was an obvious resemblance. There were nine different scenarios, but the objective was the same in every case. Note the designer's name; he went on to design *Falcon* and co-found Spectrum HoloByte.

GALACTIC ATTACK
(Ap; #3.3) Sir-Tech; Robert J. Woodhead; 1983
An early real-time space war, with your ship and men freeing the galaxy from the invading Kzinti fleets. One of Sir-Tech and Woodhead's first forays outside of the realm of *Wizardry*.

GALACTIC GLADIATORS
(Ap; #2.5) SSI; Tom Reamy; 1982
Tactical combat between individuals and aliens, this versatile product allowed gamers to produce their own scenarios from SF literature (CGW ran some unauthorized

scenarios for this game in the early years). It played fast and easy.

GALAXY
(A/Ap/I; #2.1) Avalon Hill; Tom Cleaver; 1982
Beg/Str/1-20
A simpler predecessor of *Reach for the Stars*, wherin you must conquer the galaxy. Victory goes to the empire with the most planets at the end of either a preset or random number of turns.

M.U.L.E.
(A/C/Ap/I; #3.4,4.1) Electronic Arts; Dan Bunten; 1983
An all-time computer classic, this was one of the only games ever devised that was playable and entertaining for four humans. Economics made fun! A semi-space game of real estate and production, it still holds up well after all these years, and by itself provides justification for holding onto the 8-bit Atari. Talk of a new version of *M.U.L.E.* has gone on for many years, but definite plans have yet to crystallize. Rumor has it that a SEGA Genesis has been completed, but EA is debating over its release.

ROBOTWAR
(Ap; #1.1,2.2,2.4,2.5) Muse; Silas Warner; 1981
An early game of user-programmed robot war, similar to *Omega*. Touted when released, it is now relegated to slow disintegration on the shelf of "lost games". Still, it holds a place in the hearts of the CGW staff, as it was the second review in our very first issue, and we supported a series of *Robotwar* tournaments for several years.

STARFLEET ORION
(P) Automated Simulations; Jon Freeman and Jim Connelley; 1978
A tactical space combat game published for the Commodore PET on cassette tape, it launched Automated Simulations as a software publisher, which later became Epyx.

STAR RAIDERS
(A) Atari; 1981
The game that started it all. Some strategic maneuvering, but primarily an arcade product that tried to capture the feel of a *Star Wars* space battle and did quite well considering the hardware limitations.

STARSHIP COMMANDER
(Ap; #2.5) Voyager; Gilman Louie; 1982
A starship simulator with individual crew rankings and a more detailed playing environment. It was the first design by Gilman Louie, president of Spectrum HoloByte.

challenging, although even here, the challenge seems to be more of the same.

MASTERS OF ORION (🏹🏹🏹🏹+)
(I; #110) MicroProse; Stephen Barcia; 1993; $59.95
Int/Op-Str/1
Civilization in Space! A surprise (and unheralded) hit from MicroProse, this simulation of galactic exploration, development and warfare is a richly-textured product. Graphics coupled with high play value yield a high recommendation.

MECHWARRIOR (🏹🏹🏹)
(I; #65,66) Activision; 1989; $59.95
Int/Tac/1
Dynamix developed this robotic combat simulator in 3-Space. The game featured simulation-style action and allowed the gamer to use limited role-playing to explore a mystery set in the BattleTech universe.

MEGA LO MANIA (🏹🏹+)
(Am/I; #107) UbiSoft; Sensible; 1993; $49.95
Int/Op-Str/1
A *Populous*-clone, this offers a short diversion into strategic whimsy before degenerating into an also-ran.

MIDWINTER (🏹🏹🏹)
(I; #87) MicroPlay; Mike Singleton; 1989; $49.95
Int/Tac/1
Be a "Freedom Fighter" and restore democracy to the planet. Role-playing aspects are included, but the strategist will enjoy the variety of ways to get at the enemy. A detailed and extensive world can be traversed by skis, cable cars, snow buggies, or hang-gliders.

MIDWINTER II: Flames of Freedom (🏹🏹+)
(Am/I; #82) MicroPlay; Mike Singleton; 1991; $49.95
Int/Tac/1
More role-playing with strategy and conflict, but in a more temperate environment. As a result, less interesting than its predecessor.

MODEM WARS (🏹🏹+)
(C/I; #56) Electronic Arts; Dani Bunten; 1988; O/P
Int/Tac/2; M
War as "Capture The Flag," this game required gamers to use quasi-football tactics in fast-playing attempts to annihilate enemy communications modules. Even strong modem capabilities could not save it from a rapid demise, but it may have been ahead of its time.
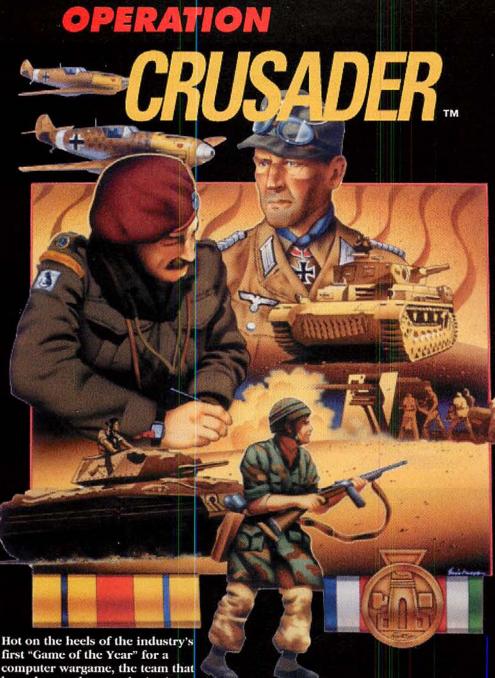
MOONBASE: The Lunar Colony Simulator (🏹🏹🏹)
(I; #80,83) Wesson International; Robert Green; 1991; $49.95

Adv/St/1

Probably the most detailed and realistic space "construction set" ever produced. Not for the joystick crowd, but recommended for the user willing to engage his brain. *See also Lunar Command.*

OGRE (➳➳+)

(A/C/Ap/Am/ST/M/I; #36) **Origin**; Steve Jackson and Steve Meuse; 1987; O/P
Int/Land/Tac/1-2

Based on the **MetaGaming** boardgame, this is a faithful rendition of futuristic tank warfare. However, its inability to design or modify the OGRE tank and its graphics in today's market condemn this product to a dusty shelf. Fans of the game will find the AI to be surprisingly effective and challenging.

OMEGA (➳➳)

(C/Ap/ST/M/I; #64,65) **Origin**; Stuart Marks; 1989; $49.95
Adv/Tac

Programmers loved this "simulation." Design-your-own tank and program it in quasi-computerese to survive the combat environment. If "Androids Dream of Electric Sheep" and you personally "Dream of Assembly and C," you'll love it. Otherwise, it's all Greek to me.

OVERLORD (➳+)

(C/Am/ST/I; #82,83) **Virgin**; David Perry and Nick Bruty; 1991; $49.95
Adv/St/1

A game of strategic conquest with well-done graphics and a rich and broad texture. However, the program does not seem to adjust well to computer clock speeds, and on an intermediate or faster machine (16 MHz), the computer opponent is simply too quick. A great concept ruined by technical oversight.

PAX IMPERIA: THE GALACTIC EMPIRE SIMULATOR (➳➳➳➳)

(M/I; #107,108) **Changeling Software**; Pete & Andrew Sispoidis and Jeanine DeSocio; 1993; $69.95
Int/Op-Str/1-16; M

A strategic space conquest simulation, currently only for the Macintosh, which rivals *Reach for the Stars* in scope. The game can be played turn-based or real-time. The latter is pretty strange for a galactic-scale game, but it does offer some variety. Ship design is so detailed that it makes the specifications for vessels in *Master of Orion* look simple by comparison. This comprehensive simulation involves the player in both internal and inter-galactic politics—you may even define your homeworld's racial characteristics. Rich as the play is, it lacks the briskness of *Master of Orion* or *Reach For The Stars,* and a good tutorial is sorely needed.

PLANETMASTER (➳)

(Ap; #4.3) **Magnetic Harvest**; 1984
Int/Op/1

An early game of planetary ecology in which the player must choose to save six endangered species. A unique simulation, but one which has grown old ungracefully.

PRIVATEER (➳➳➳+)

(I; #113,114) **Origin**; Scott Russo, Erin Roberts et al.; 1993; $79.95
Int/Tac-Op/1

Commercial mercenary enterprise in the *Wing Commander* universe. A little of *Pirates!,* a dash of *Elite,* and the usual Origin plot elements combine to create a pretty exciting game. Still, the product was plagued with an unusual number of incompatabilies with sound cards and joysticks, even for such a complex product.

PROTOSTAR (➳)

(I; #109) **Tsunami**; Vas Nokhoudian; 1993; $49.95

Like so many of Tsunami's products, this game lacks its own identity. Excellent graphics can't hide the fact that these ideas have all been used before. Invading aliens, indestructable super-ships, trading with different space-far-

ing races are all classic sci-fi themes. Where is the panache of *Wing Commander*, the depth and variety of *Star Control II*? This game doesn't even stand out as an adventure game, so muddled is it in concept and execution.

PSI-5 TRADING COMPANY (🐢🐢+)
(C/I; #29) **Accolade**; 1987; O/P
Int/Tac/1
One of the first "alien trading" games, it was interesting in its time.

REACH FOR THE STARS (🐢🐢🐢🐢)
(C/Ap/II/M/I; #3.6,5.4,51,55,81) **Strategic Studies Group**; Roger Keating and Ian Trout; 1983; $45.00
Adv/Str/1-4
One of the best science fiction games ever released. Galactic conquest through detailed exploration, economic and production modules coupled with planetary invasions and space battles make for a product still worth playing. Initial reports contend that *Pax Imperia* may well be its successor in terms of gameplay. A worthy update would no doubt raise this game again to 5-star status.

REBEL SPACE (🐢🐢🐢)
(I/M) Prodigy
Int/Tac/1
An on-line space simulation. Basically an extension of a play-by-mail exploration and combat game, wherein you expand, explore and extinguish your enemies. The GMs keep the universe quite lively and entertaining.

RENEGADE LEGION INTERCEPTOR (🐢🐢+)
(Am/I; #79) **Strategic Simulations, Inc.**; Todd Porter; 1990; $59.95
Int/Tac/1-2
Ship-to-ship combat in space. Sequential turns coupled with simultaneous execution make this product reminiscent of early space simulations, but it can provide an enjoyable interlude.

ROADWAR 2000 (🐢🐢+)
(A/C/Ap/I; #32,49) **Strategic Simulations, Inc.**; Jeffrey A. Johnson; 1986; O/P
Int/Tac/1
Gang warfare in a post-Holocaust, "Mad Max" world. Quite entertaining when originally released, but its primitive graphics have rendered it obsolete.

ROADWAR EUROPA (🐢🐢+)
(A/C/I) **Strategic Simulations, Inc.**; Jeffrey A. Johnson; 1987; O/P
Int/Tac/1
European cousin of *Roadwar 2000*, this was a hit when initially released. It is quite dated today, although it can be fun as a semi-"no brainer."

ROBOSPORT (🐢🐢🐢+)
(M/I) **Maxis**; Ed Killam; 1991; $59.95
Int/Tac/1-4; M
This game offers a friendly Windows interface for point-and-click robot battle programming. Sort of paint ball meets cybernetic wars. The ability to save and play back movies of victories over your networked friends is a riot.

RULES OF ENGAGEMENT (🐢🐢🐢+)
(Am/I; #84) **Mindcraft**; Maurice Molyneaux; 1991; $59.95
Adv/Op-Str/1
Strategic starship combat in the *Breach* world. The interface is detailed and takes time to learn, although it is logical. The gameplay is extensive.
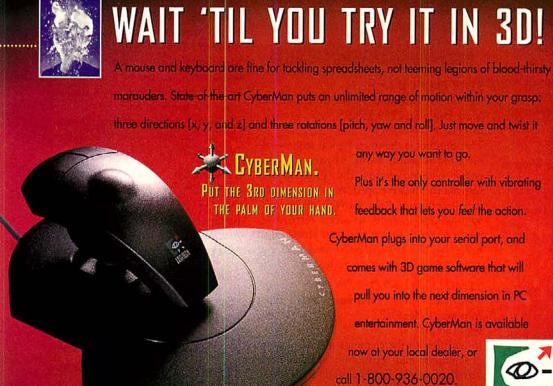
RULES OF ENGAGEMENT 2 (🐢🐢🐢🐢)
(I; #110,111) **Impressions**; Thomas Carbone and Maurice Molyneaux; 1993; $49.95
Adv/Op-Str/1
An updated version, featuring a very detailed simulation of starship command. One of the best of its type released. The game's campaign builder insures that scenarios will never become repetitive.

SECOND CONFLICT (🐢🐢🐢)
(I; #87) jSoft; 1991; $49.99
Int/Str/1-10

Similar to *Reach For The Stars* or *Armada 2525*, it runs in a Windows environment. A scenario editor allows for modified victory conditions, alterations to the starting galaxy, and different opposition.

SPACE HULK (🐪🐪🐪+)
(Am/I; #112) **Electronic Arts**; 1993; $49.95
Better than many games of a similar cut, because it combines real-time combat with a limited ability to pause the action. The tutorial is good, and the product is an excellent rendition of the popular boardgame. Squad combat in space versus aliens is old hat, but this game is as authentic as you'll find, with great graphics and sound.

SPACE MAX (🐪🐪🐪)
(I; #35) **2FS**; T.L. Keller; 1987; O/P
Adv/Tac/1
A very detailed space station construction simulator. Its main flaw is that it tries too hard to be very educational and intellectually stimulating, losing entertainment value in the process.

SPACEWARD HO (🐪🐪🐪🐪)
(I; #107) **New World Computing**; Joe Williams and Peter Commons; 1992; $59.95
Int/Str/1-4; M
Possibly the worst computer concept ever, but executed in the best manner possible. Adapting "space cowboys" to a game of galactic conquest would seem to be pure drivel, and the cover art alone almost prevented me from ever booting this game. Actually, it turns out to be an entertaining conquest game that one will return to again and again. *Spaceward Ho!*, with all of its horse opera cliches, offers a fine "beer and pretzels" game of economic/military space conquest. Better yet, it supports network play! Great gameplay and graphics with a touch of crass.

STAR COMMAND (🐪🐪)
(I; #47) **Strategic Simulations, Inc.**; Winston Douglas Wood; 1988; O/P
Int/Tac/1
Science fiction drama with heavy emphasis on the role-playing aspects. There is some tactical space combat, but its role is definitely subordinate to the adventure.

STAR CONTROL (🐪🐪🐪)
(I/Sega; #76,77) **Accolade**; Paul Reiche; 1990
Int/Tac/1
Strategy takes a back seat to arcade action in this graphically intense ship-to-ship combat simulation. Despite (or maybe because of) its lack of depth, it remains an enjoyable challenge.

STAR CONTROL II (🐪🐪🐪🐪+)
(I) **Accolade**; Paul Reiche; 1993; $49.95
Int/Tac/1

The sequel to *Star Control*, it combines the action combat sequences of the original with the exploration and role-playing aspects of *Starflight I-II*. More deeply textured than the original, it offers hours of "simple, hot and deep" play. Winner of CGW's Best Adventure Game of 1993, and deservedly so.

STAR FLEET I (🐪🐪🐪+)
(I; #5.4,5.5,30,33,37) **Interstel**; Trevor Sorenson; 1985; O/P
Int/Tac/1
Move from cadet to admiral in a superb rendition of the venerable main-frame *Star Trek*, with names changed to protect the innocent. All the bells and whistles one could wish for; this reviewer still plays it today, even though the graphics are primitive. A real shame that this product hasn't been updated like *Empire Deluxe*.

STAR FLEET II (🐪)
(I; #60,65) **Interstel**; Trevor Sorenson and Mark Baldwin; 1989; $59.95
Int/Tac/1
This product is the stereotypical sequel—almost indescribably awful. As part of an ongoing planned series, the product was sufficiently undeveloped as to destroy the parent company. Released with major lock-up bugs and inability to access certain elements of the program, **Interstel** promised to make it good. They sent out revised disks, and never did get it to run correctly.

STARFLIGHT (🐪🐪🐪🐪)
(A/C/I/M; #35) **Electronic Arts**, Greg Johnson; 1986; O/P
Beg/Tac/1
In addition to the elements of role-playing, exploration and economic management, *Starflight* was the first exploration/adventure game that required players to use a diplomatic strategy. The game featured some very alien races conceived in the very imaginative mind of Greg Johnson. Such rich NPCs offered

additional suspension of disbelief beyond the fractal-generated planets that, themselves, provided a depth of reality to exploring the *Starflight* universe.

STARFLIGHT II (🐪🐪🐪🐪)
(A/C/I/M; #66) **Electronic Arts**, Greg Johnson; 1989; O/P
Beg/Tac/1
Sequel to the Hall of Fame original. More wacky aliens, and a larger universe make for even more exploration, alien communication, and simplistic ship-to-ship combat. Still a good buy if you can find it used or in a bargain bin.

STAR KING (🐪)
(I; #85) **Spaceware**; Walker Vanning; 1991; $39.95
Int/Tac/1-7; M
Battleship in space, only with more problems and less play value.

STAR LEGIONS (🐪🐪+)
(I; #105) **Electronic Arts**; MindCraft; 1993; $59.95
Int/Tac-Op/1
A module of *Star Fleet II*, it was released years later as an independent entity. Less cluttered and confusing than its parent game, it retains some play value. The game is marred, however, by an unusual number of bugs and a numbing sameness to the scenarios.

STELLAR CRUSADE (🐪+)
(Am/ST/I; #48,50) **Strategic Simulations, Inc.**; Norman C. Koger, Jr.; 1988; O/P
Adv/Str/1-2
Mr. Koger's first professional design effort was severely marred by a manual which deleted 11 pages of necessary information and made the game an effort to play. Even with the documentation, playing "Space Ayatollah" in this game of religious, intergalactic *jihad* was simply not fun.

STRATEGIC CONQUEST PLUS (🐪🐪🐪🐪)
(M; #35) **PBI**; Peter Merrill; 1987; O/P
Int/Str/1
A *RISK*-like game of conquest, with many Mac gamers preferring it to *Empire*.

STRIKE SQUAD (🐪)
(I; #114,115) **Electronic Arts**; Mindcraft; 1993; $59.95
Int/Tac/1-2
Space Marines strike once again. Is there any originality left to Space Leathernecks?
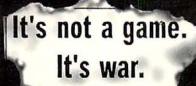
TEGEL'S MERCENARIES (🐪🐪)
(I; #106,115) **Electronic Arts**; Mindcraft; 1992; $59.95
Int/Tac/1
Space Marines yet again! Fairly well-done as

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It's war.

NEW YORK, Monday.

It's D-DAY.

TUESDAY - JUNE 6th 1944

It's The Beginning of the End.

It's here.

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far as it goes, but there are better games of this type out there.

TRUST & BETRAYAL (🐍🐍)
(M; #47) **Mindscape**; Chris Crawford; 1988; O/P
Int/Tac/1
A Chris Crawford design which emphasized personal interrelationships and verbal discourse between aliens. Innovative concepts were marred by slow and obtuse game play.

UFO (🐍🐍)
(I) **SubLogic**; Bruce Artwick and Hugo Feugen; 1989; O/P
Adv/Tac/1
Tired of *Flight Simulator?* Then try *UFO*—same mechanics, but a very different type of aircraft. Personally, I found flying around looking for fuel to have the same appeal as waiting in a gas line during the Oil Embargo of the 1970's.

ULTRABOTS (🐍🐍+)
(I; #108) **Electronic Arts**; John Butrovich, David Seeholzer and John Garcia; 1993; $59.95
Int/Tac/1
Any similarity to *Mechwarrior* is superficial. The game requires network building *a la Cyberstrike* and only features three types of robots.

UNIVERSE (🐍🐍🐍+)
(A; #4.3) **Omnitrend**; Thomas R. Carbone; 1984
Adv/Tac/1
A detailed simulation of space exploration and trading. Multi-faceted and very deep, its playability suffered from documentation which was hard to interpret, as well as an unforgiving game system. Build your own ship to specifications, but a wrong move can waste hours of previous play. Still one of the

early near-classics, albeit flawed. It spawned two sequels, both strictly role-playing games.

UNNATURAL SELECTION (🐍🐍🐍+)
(M/I) **Maxis**; Jim Simmons, Peter Fokos and Nick Corea; 1993; $49.95
Adv/Tac-Op/1
Gene splicing for the combat pool, this gives new meaning to the term "Survival of the Fittest." A different concept, *almost* carried off with success.

VGA PLANETS 3.0 (🐍🐍🐍🐍)
(I; #111) Tim Wisseman; Tim Wisseman; 1993; $15.00
Int/Op-Str/2-11; M
Shareware, but one with a growing number of fans, this will probably become commercial shortly. An excellent exploration and galactic combat game for up to 11 players. It is easy to learn, tough to master.
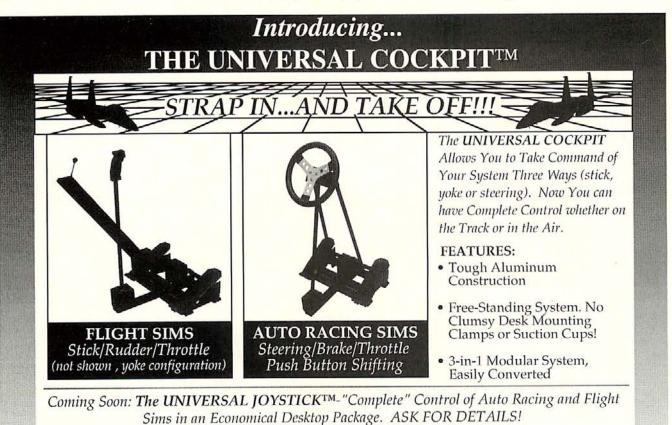
UTOPIA (🐍🐍🐍+)
(A/I; #98) **Konami**; Gremlin Graphics; 1992; $49.95
Int/Tac-Op/1
A cross between *Moonbase*, *SimCity* and *Powermonger*, *Utopia* allows players to create cities on several different planetary types and to face three or four different alien opponents in defending those cities.
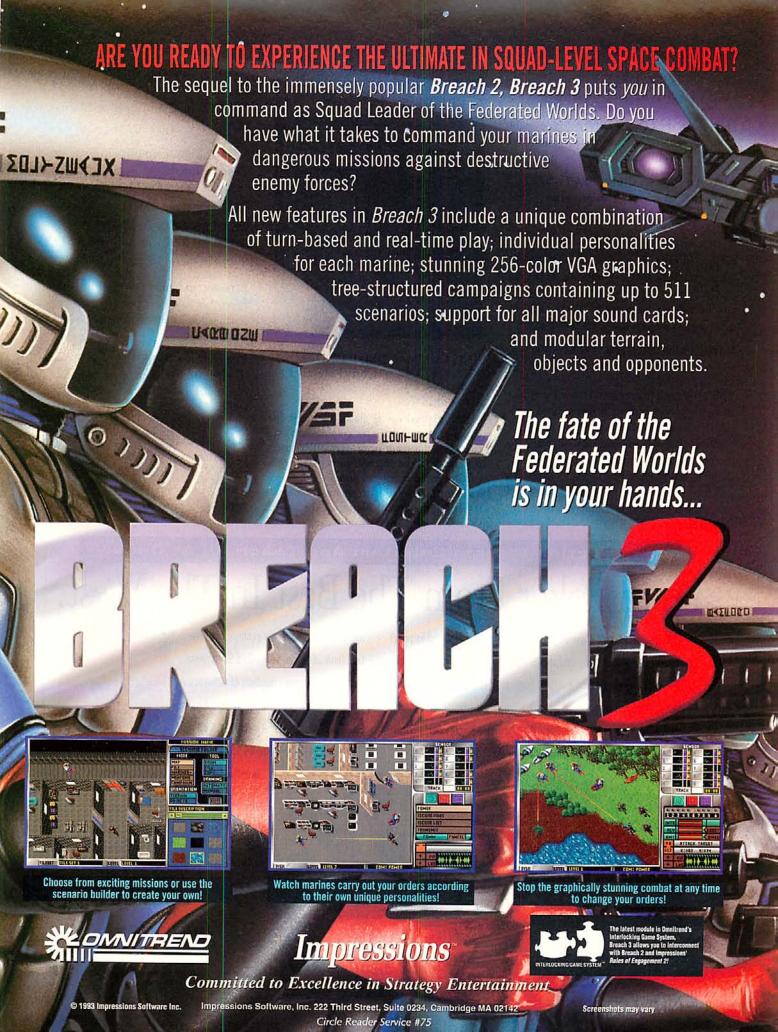
WAR OF THE WORLDS (🏵+)
(At) **Task Force**; Joseph Delinski; 1984
Int/Op/1
H.G. Wells' Martian invader novel brought to the computer. Do yourself a favor and curl up with the book instead.

WHEN TWO WORLDS WAR (🏵🏵)
(I; #107,111,115) **Impressions**; Ed Grabowski; 1993; $59.95
Int/Str/1-2
Aside from the tongue-twisting title, this is a detailed strategic simulation of planetary conquest with emphasis on economics, R&D and production. The problem is that the world and its combat units are so bland that one quickly loses interest in the clash of planets.

WING COMMANDER (🏵🏵🏵🏵+)
(I; #77) **Origin**; Chris Roberts; $24.95; 1990
Int/Tac/1
This program set new standards in graphics and gameplay. Graphically intense and luxurious, it places the player in the role of a space combat pilot in an intergalactic war. Although the plot follows a "branching tree," the richness of the entire package makes this a must-have. Be aware of machine speed problems: a fast 486 is simply too much for this game.

WING COMMANDER II (🏵🏵🏵🏵+)
(I/CD; #88) Origin; Chris Roberts; 1992; $59.95
Adv/Tac/1
Origin followed up its classic with a sequel worthy of the name. The graphics are even better, but the main improvement has been the richness of the plot and gameplay. Again, machine speed is critical, and a 486/66 may be too quick. Probably the game responsible for putting the Sound Blaster on the map as the *de facto* standard for sound cards.

WING COMMANDER ACADEMY (🏵🏵🏵)
(I; #112) **Origin**; Thomas Blom; 1993; $49.95
Int/Tac/1
A space combat simulation set in the *WC* universe. Interesting, but lacks the depth of its parent games. For those who don't need a plot.

WORLDS AT WAR (🏵🏵🏵)
(I; #70,94) RAW; John Almberg; $39.95
Adv/Str
1-2
A newer and more competitive version of *Reach For The Stars*, but ultimately less successful than its ancestor, primarily due to its lack of scope.
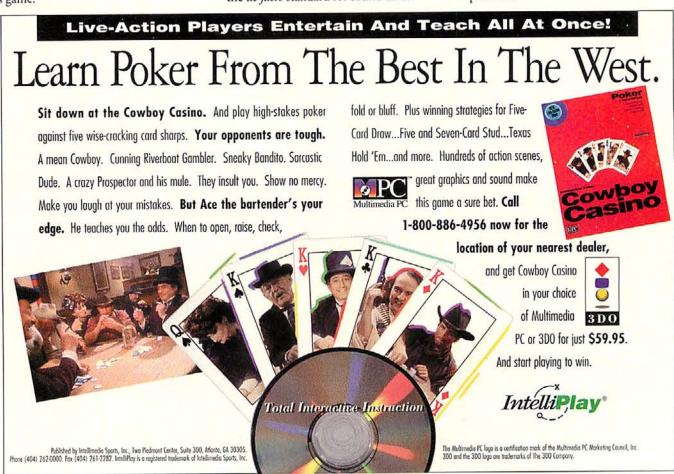
X-WING (🏵🏵🏵🏵)
(I; #99,107,108) LucasArts; Lawrence Holland and Edward Kilham; 1993; $69.95
Int/Tac/1
Use the Force! A superb rendition of the StarWars universe, albeit victory conditions in the scenarios are a bit too structured and rigid. Newer technology than *Wing Commander II* means you get digitized speech without the purchase of an additional speech pack.**cGw**

◆ Medieval England ◆

A time of castles and conquest. The throne is empty. The serfs are restless. Rebellion is in the air.
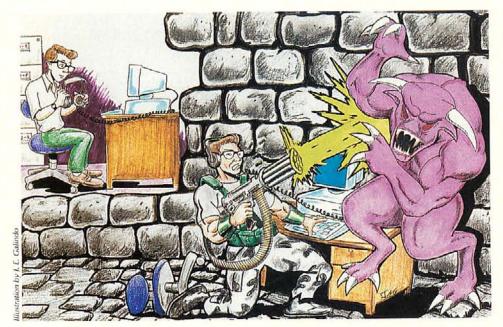
The Lords of the Realm invite you to join their ranks. Build your castles. Cultivate your lands. Marshal your resources. Take the risk.
Go for the Crown.

LORDS of the REALM

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Impressions

Illustration by L.E. Galindo

The Sound Card and The Fury

Making Sound Choices In Sound Cards

by Donald S. Griffin, Computer Music Consulting

When I tell people what I do for a living, the first thing they often ask is "what's the best sound card?" You would think I'd have a quick answer handy, but my usual reply is "It depends." What do you want it for? Games? Multimedia presentations? Making your own music? Playing with sound effects? All of the above?

Since this *is CGW* you're reading, I suppose I could assume that you want the best quality game music that you can get at a reasonable price. But even with this simplification, things can be complicated. There are ease of installation issues, concerns about compatibility, expectations for future expandability, anxieties about backward compatibility, and special sound card features to consider. So, to simplify things even further, I'll assume that sound quality is your number one concern. Besides, there are plenty of articles which just list features, but I'm a composer, so I'll take that perspective in looking at the different qualities of sound chips in today's sound cards.

The Sound Card And The Jury

Sound quality varies from card to card, and the differences are certainly discernible (if they weren't, we'd all be using the same card), but in any comparison, there is room for personal bias. So, rather than telling you what *I* think sounds the best, I worked with *CGW* to devise a "blind taste test," if you will, of music synthesis quality. I selected a collection of original General MIDI music, not provided by the manufacturers, to play through each card and record onto a quality cassette tape with no noise reduction. I also recorded examples of OPL-2 emulation from those cards that provided it. A group of listeners from the gaming community and the *CGW* staff were then asked to compare the music from each card and decide which was of higher quality. This data was used to rank the cards in order of preference. The results can be seen in the table that accompanies this article. Keep in mind that this data does not represent "God's truth," but can be used as a rough, relative comparison of the cards' quality.

A Tone By Any Other Name

Before we get into the information on each individual card, I should explain a few things about sound cards in general. For any one sound technology, there are often several companies which sell it under different brand names with slight variations for each card. This is further complicated because each brand often has a number of models to choose from. If you were to look closely at every one of these models, however, you would soon realize that they all use a few sets of sound chips. If you listen to music played on the Yamaha OPL-2 synthesizer chips of two competing sound cards, the only difference you will hear will be a bit less background noise from the card with the cleaner circuit board design. When a game box says it is **AdLib** or **Sound Blaster** compatible, it is saying that the music will play the same on any card with an OPL-2 chip.

So it would seem that all we have to look at are the chips used on a sound card to determine whether it is the same as, or better than, another sound card. This is only partially true. Some sound chips can be reprogrammed by software run on your PC from a simple upgrade disk; some require software to be run every time you boot your PC for the card to work properly; some require software to be run only when you want to make some advanced feature available (like extra instrument sounds); and others require almost nothing but to plug them in. Before you say that the last one sounds the best, you should consider that each strategy has its own strengths and weaknesses.

All of these sound chips are generically called DSPs (Digital Signal Processors). Sometimes a sound card manufacturer will buy a DSP from a chip manufacturer and program it to do their bidding. These general purpose chips tend to work more slowly than "custom" DSPs designed by the manufacturer for a very specific purpose. Both general purpose and custom DSPs can come in reprogrammable and non-reprogrammable varieties. Once you learn about a few DSPs, you will be able to better judge which card is up to your standards.

> Donald S. Griffin is the owner of Computer Music Consulting in San Francisco. He has composed music for over 20 games and multimedia products, including Aladdin for the Genesis and Mario's Time Machine. Griffin is a registered developer with nearly every sound card maker.

A Note About MIDI

MIDI (Musical Instruments Digital Interface) is a system for cross compatibility between unlike makes and models of synthesizers. MIDI data is *not* a recording of the music itself, rather it consists of simple instructions for *playing* music. When you play a MIDI file you are sending a stream of MIDI messages that "play" your synthesizer chip much like the paper roll in a player piano. MIDI files are much, much smaller than digital sound recordings, and MIDI data can be altered in meaningful ways on the fly. MIDI is a powerful tool for providing interactive music in computer games, because there usually isn't space for digitally recorded music on the game disks or in memory, and because it allows the music to be modified as you play the game.

General MIDI (GM) is a set of guidelines for synthesizer design that allows one GM music file to play reasonably well on different models of synthesizers. GM was designed to allow friends to share MIDI music files without requiring all manufacturers to make their synthesizers sound exactly the same. **Roland** later designed an enhancement of GM called GS which is essentially "GM with some extra stuff." Any synthesizer which is GS compatible is, by definition, also GM compatible. All of the cards reviewed in this article have GM sound sets with the exception of the OPL-2 and OPL-3, which can be programmed by your software to imitate General MIDI to a certain extent.

The MPU-401 MIDI interface designed by **Roland** is the most commonly supported MIDI input/output format. The MPU-401 is supported in nearly every new sound card as a means of getting MIDI data from your software to the synthesizer on your sound card.

Meet The Players

With these considerations in mind, it's time to consider the various families of sound cards and how they may or may not meet your gaming needs.

The *Roland Sound Canvas* is a line of synthesizer products which includes the SCC-1, RAP-10 (Roland Audio Producer) sound cards and many external synthesizers like the SC-55, SC-155 external sound modules and the JW-50 workstation. They all have in common the *Sound Canvas* chips and sounds. The *Sound Canvas* cards all have excellent quality instrument sounds and effects like chorus and reverb. The SCC-1 comes with the full GS sound set. The RAP-10 is similar to the SCC-1 except that it has only the GM sound set, not GS, and it adds two channels of high

Sound Card Comparison

Chip Set	Card Brand	Card Model	MSRP	Rank Order	Average Rank	FM Emul Rank
Sound Canvas	Roland	SCC-1 RAP-10	499.00 599.00	1st	1.1	NA
Kurzweil MASS	AVM	Summit	389.00	2nd Tie	4.3	NA
Wave Blaster	Creative Labs	Wave Blaster (Req. SB16)	249.95 (+199.95)	2nd Tie	4.3	NA
Yamaha OPL-4	Logitech	SoundMan Wave	349.00	3rd	4.4	2nd
Aria 1 Meg.	Viva	Maestro	NA	4th	5.9	3rd Tie
Ultrasound	Advanced Gravis	Ultrasound	199.00	5th	6.0	6th
Ensoniq	Reveal	Sound Fx Wave	299.00	6th	6.1	7th
Aria 512 K.	Diamond	Sonic Sound	299.00	7th	6.4	5th
Analog Devices + Invision Upgrade	Orchid	GameWave 32 + Invision Upgrade	179.00 (+39.95)	8th	8.3	3rd Tie
Analog Devices Standard ROMs	Orchid	GameWave 32	179.00	9th	9.0	4th
OPL-3	Yamaha	(many)	NA	10th	10.1	1st

The sound quality of 11 popular sound cards was compared by a "blind" group of listeners and ranked in order of preference. The first rank refers to wavetable synthesis; the second, to FM-emulation.

quality digital audio which can be synchronized to the MIDI portion of the card. The digital audio can also be fed through the on-board reverb and chorus processors to add a lifelike ambiance to the recordings.

Since the RAP-10's digital audio playback was not designed with **Sound Blaster** compatibility in mind, it will not automatically work with your game's sound effects, but its music synthesizer will work in your game if it supports GM. The real power of the RAP-10 comes from its software which makes full use of the card's potential to allow you to combine MIDI music with recorded, edited, organized and re-mixed digital audio with your MIDI music. As a result you can use the RAP-10 alone to make commercial quality music including singing, live instruments and sound effects! In the right hands the RAP-10 can be a powerful musical weapon which certainly sounds much better than the multi-track cassette decks being used in most amateur home studios.

Protean Blast

The *Wave Blaster* is a synthesizer based on E-MU Systems' *Proteus Technology*. The *Wave Blaster* is a small "daughter card" that plugs into the *Sound Blaster 16*. While it lacks reverb and chorus, the instrument sounds are very good. By the time you read this you may be able to buy **Creative Labs'** new *AWE32* sound card, which is sort of a *Sound Blaster 16 ASP* plus the new *E-MU 8000* synthesizer chip with integrated reverb and chorus. It will have one megabyte of ROM samples and

512K of sample RAM (upgradeable to 28 megabytes) which can be used for additional instrument sounds or sound effects, whatever the task requires.

MASS Appeal

The *Kurzweil MASS* (Multimedia Audio Sample-Playback System) is a set of chips and a reference designed to guide other manufacturers in use of the *MASS* technology. *MASS* has arguably the biggest guns in this race with six megabytes (compressed) of sound samples on ROM chips compared to three for the *Sound Canvas* and two for the *Wave Blaster*. Other cards in this survey have as little as a half megabyte of samples. Since each card has to build the full GM list of instrument sounds from these samples, the more ROM space you have for samples the easier it is to make each instrument sound realistic. The *MASS* also has a special chip just for effects like reverb and chorus, and there are 48 different effects algorithms available by setting a controller to different values. The *MASS* also has three full sound sets including GM, MT-32 and Kurzweil's own Super Orchestra mode which favors orchestral instruments. The *MASS* also has the full compliment of drum sets found on the *Sound Canvas*. The real kicker for you audiophiles out there are the 18-bit DACs which give professional synthesizer quality reproduction of the digital data as analog sound.

The *MASS* is designed as a daughter card to plug into the *Sound Blaster 16*. The *MASS* implementation we used for this comparison

was the unique *Summit Daughter Box* by **AVM Technology**, which puts the *MASS* card into a simple but elegant black box that connects to the joystick port of any sound card with MPU-401 implementation and a *Sound Blaster* format joystick port. The daughter box also receives power from this connection so no additional electrical sockets are required. In spite of this configuration, I found the *Summit* to be extremely noise free. The *Summit* also has a joystick extension port and an additional joystick port-type connector for plugging in a MIDI cable, which comes with each unit, with IN, OUT and THRU connectors for connecting external MIDI devices. A simple connector may be available later which will allow the *Summit* to be powered from an electrical socket and function as a stand-alone MIDI module. I was very impressed with this unit both in sound and design.

OPL And Other Gems

Yamaha's new OPL-4 chip, which is backward compatible with the OPL-2 and OPL-3, is being used by the *Logitech SoundMan Wave*. The OPL-4 adds what is essentially a Yamaha TG-100 synthesizer to the chip. Having all this on one chip helps to keep costs down. **Logitech** did a wonderful job with both the hardware implementation of this technology and the installation software. The *SoundMan Wave* seems to me to be the most reliable, stable, and easy to install sound card of the bunch, and usually works fine even with other cards in the system. There are no jumpers at all on the card, and all configuration is done through simple and easy to use software. Many hardware manufacturers are taking this jumperless approach.

The *Advanced Gravis Ultrasound* doesn't have an actual OPL-2 or OPL-3 chip on the board, so it is not compatible with older games. This is unfortunate, as it would have only added about $20 to the price tag and would have made it a sort of *Sound Blaster* with lots of real neat new stuff. Instead **Gravis** provides software like SBOS to emulate the *Sound Blaster*. SBOS doesn't sound very much like an OPL-2 at all but, to be fair, none of the other OPL-2 emulation schemes we tested sounded very good either. The difference is that the others were all in hardware on the board and didn't require loading a driver first. The new *Mega-Em* software allows the *Ultrasound* to emulate *Sound Blaster* PCM sound effects and either *MT-32* or *Sound Canvas GM*. *Mega-Em* works only in DOS and *not* with 32-bit software.

The *Ultrasound* is really a one MB sampling synthesizer which sells at a tiny fraction of the price of the equivalent stand alone model (usually retailing for ca. $2,000-$4,000). A few games are starting to support the *Ultrasound* in its native mode, which is where it really shines. **Gravis** now offers a 16-bit recording module which comes with patch editor software for editing your *Ultrasound* instruments. By the time you read this, new *Ultrasound* cards like the *Ultrasound CD*[3] and the *Ultrasound Max* (with 48khz recording!) will have 16-bit recording ability built in. **Advanced Gravis** has recently announced a deal with **Advanced Micro Devices** to incorporate *Ultrasound* technology into a new AMD chip set, which will be on many motherboards in the future, so it looks like the *Ultrasound* will continue to be with us for some time.

The **Orchid SoundWave 32** and **GameWave 32** incorporate the **Analog Devices** chip set. **Orchid** has joined with **Invision Interactive**, designers of sound for many professional synthesizers, to make a $39.95 ROM upgrade available to *Game Wave 32* and *Sound Wave 32* owners. I already had a card with the old ROMs, so **Orchid** sent me another card with the new ROMs. We thought the comparison might help people with the old ROMS decide whether to upgrade. Interested parties should contact **Invision Interactive** (not **Orchid**) at (800) 468-5530.

The **Ensoniq** chip set is represented by **Reveal's** *Sound FX Wave 32*. **Ensoniq** is well known for their professional synthesis products.

Sierra Semiconductor's *Aria* chip set comes in 512K and 1024K versions, and we listened to both. The 1024k version was on the *Viva Maestro 16VR* and the 512k version was on the *Diamond Sonic* sound card.

For comparison the Yamaha OPL-3 was included in the test, since most sound cards today have the OPL-3, and most of you have heard it. Since eight of the eleven cards in the comparison have true OPL-2 support or OPL-2 emulation, I decided to include a separate comparison to see how effective each card's OPL-2 emulation was. Since all of these comparisons were blind, there was a fair opportunity for any of the OPL-2 emulations to be rated higher than the OPL-2 itself, but as you can see, that didn't happen. Also, note that the quality of a card's wavetable synthesis has no relationship to the quality of its FM-synthesis, or vice-versa; some companies may go all out for high quality wavetable hardware and skimp on the FM-synth chip.

Missed It By *That* Much
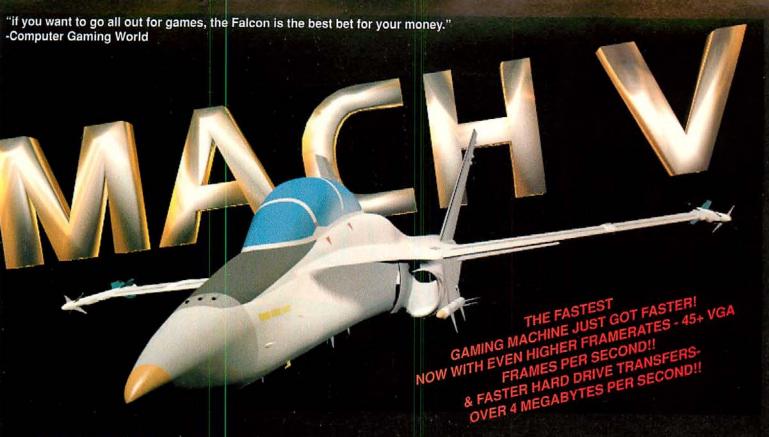
Several new sound cards worthy of inclu-

sion in this comparison are not present because, well...they are not present! As mentioned, **Creative Labs'** new *AWE32* will be out very shortly. **Turtle Beach**, makers of the *Multisound PC* card have a new product called *Maui*. *Maui* is a wave synthesizer meant to sit in a 16-bit slot next to your present sound card so you can add wave synthesis for $199. **MediaVision** just announced that they expect to introduce a 16-bit sound card in the first half of 1994 which will include wavetable synthesis and effects like reverb and chorus. This is the result of a joint marketing and development agreement with **Korg**, and the card will use the "identical" chips found in **Korg's** line of professional synthesizers. **MediaVision's** *Waveguide*-based sound card, discussed last month, is still in the works.

This test yielded some surprising and some not so surprising results. The *Aria 1MB* chip set scored higher than the *512K* chip set, as one might expect. **Orchid's** *Invision* upgrade ROMs show an improvement over the stock ROMs. Not surprisingly the OPL-3 and OPL-4 do a nicer job of sounding like an OPL-2 than any emulation scheme. **Roland** is still the king of GM as the more than 3 point gap between the **Sound Canvas** and any other card clearly shows. But number two came out of the blue. There was a tie between *MASS* and *Wave Blaster*, but when I dropped the high and low scores for each, the *MASS* inched ahead. If you want great music at a low price and already have **Sound Blaster** compatibility covered by your current card, the *AVM Summit* seems to be the way to go unless you already have a *Wave Blaster*-ready card. The EMU 8000 based *AWE32* is an improvement on the *Wave Blaster*, so **Roland** may yet see some competition in the music market. **Logitech's** very compatible OPL-4 based *SoundMan Wave*, which has everything at a moderate price, was very close behind the top three. Below that you will want to balance price versus performance.

There are lots of other considerations when buying a sound card, and other *CGW* articles will attempt to address those, but keep in mind why you are paying the extra money for one of *these* cards when older, cheaper ones will do a decent job with your current stack of games: If you want to dance, you have to pay the piper.

Special Thanks to Tony Farmer, Sherry Huss, Melissa Lean, Joe Szuecs and the CGW Staff.

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EVEN MORE MACHINE POLITICS IN THE 21ST CENTURY

Under The Hood Of *SimCity 2000*, Part Two

by Robert L. Hayes, Jr.

L ast month we looked at the basic infrastructure of a city in *SimCity 2000:* its transportation system, power and water works. This month we'll get our hands dirty in the guts of the program, even going so far as to rip out a few formulae and examine them in detail. We'll examine the key factors—city growth, city services, basic city layout, pollution—that can mean the difference between a struggling burb and a thriving metropolis.

Conventions and Terms

First, a few conventions need to be explained for greater clarity. *SimCity2K* uses a 0-255 point system to rank most of the important variables within the game. Land values range from 0 to $255,000/acre, pollution levels from 0 (nonexistent) to 255 (highly toxic), etc. These 0-255 rankings are also used for the characteristics of a given square on the map. Thus, a square may have a population density of 255 (an arcology), a land value of

Corrections and Clarifications

Water pumps can produce less than 12,000 gallons of water if they are above sea level; last month's article assumed the pumps were built at sea level. Larger cities do require additional wastewater treatment facilities. To determine if your city needs an additional wastewater plant, watch your pollution graph for a sudden unexplained rise.

133 ($133,000/acre), and a pollution level of 21 (mild pollution). With a few exceptions, these variables are not available to the player, but they can be generally determined by using the map overlay function. On an overlaid map (the crime rate map, for example), no coloring indicates a very low value (perhaps less than 20), while near-black indicates an extreme value of possibly 225 or more.

An important concept in the *SimCity2K* model is that of the rent-bid gradient (and here you thought this was just a computer game). The rent-bid gradient (RBG) encapsulates the economic model of a business and the psychology of a building's owner. Basically, the closer to a city's center a building is, the larger the number of customers it feels it can reach (or, for residential structures, the more goods and services available to dwellers). The city center in *SimCity2K* is weighted by land value; you can see your city center on the land value grid in the map section (it's the red crosshair). However, as you get closer to the city center, it is more expensive to build or rent a building; thus, a business owner must decide how much access to customers or services is worth how much rent. Some businesses (office buildings, for example) will bid very high for access to customers and thus tend to be located at the city center, while others (widget manufacturers) could care less, as their customers either have to come to them or don't deal directly with the building. In *SimCity2K* this is somewhat simplified (thankfully). All zone types want to be at the

city center, but it is more important to some than to others. Commercial zones have a high predilection for being at the city center, residential zones have a moderate preference, and industrial zones have the lowest preference. In *SimCity2K* terms, the closer a zone is to the center, the higher its basic land value will be.

Police And Fire Departments

Your police and fire departments have a fixed range of effectiveness, with the exact effectiveness level diminishing with distance from the station. Stations are not effective further than 12 squares orthogonally, 8 squares diagonally. Stations do combine their effects arithmetically, however; if a square is receiving 24 points of police protection from one station and 40 from another, its total protection level will be 64.

Fire stations help prevent fires in their protection areas. In general, their location is not a major consideration as fires are easy to put out and even the largest cities won't have enough fire departments to cover most of their city in their protective envelope, so there is no real harm in simply placing them wherever convenient. The locations of your police stations, on the other hand, are very important. The crime level of a tile has profound effects on its land value, and you must site your stations so as to maximize their effective coverage.

Exactly where to put your stations depends in large part on the type of zones in the area in question (industry tends to be somewhat

less sensitive to crime, so you won't need quite so many stations to keep people happy), the population density of the area, and budgetary considerations. The multiplicity of factors makes general advice difficult to give. I generally place a station every 12 squares or so, giving a strong overall level of protection. In high value areas, you can scatter your stations more thinly, as high land values deter crime. The basic crime level of a given tile is calculated using the formula:

Crime Level = Population Density - (Police Protection / 2) - (Land Value / 4)

If there is a legalized gambling ordinance in force, it adds 12 to the crime value of each square. A neighborhood watch decreases crime by 12 in residential square.

Thus, a square with a population density of 100 (a 2x2 apartment complex, for example), enjoying no police protection at all, with a land value of $80,000/acre in a city with legalized gambling and a neighborhood watch will have a basic crime value of (100 - 0 - 20 + 12 - 12) = 80, a moderate level. A commercial square with a density of 160 (perhaps a 3x3 office building) with 140 points of police protection and a land value of $240,000/acre in the same city will have a basic crime level of (160 - 70 - 60 + 12) = 42, a much lower level.

These basic levels are further modified by an averaging process that takes place across the entire *SimCity2K* map. Each square is compared with its neighbors, and the values between them are smoothed. Thus, a high-crime building can corrupt its pristine neighbors (and be itself somewhat elevated).

Once your city reaches a certain size, you will need to build a prison. I generally build one when the city reaches about 50,000 population, but your experience will vary with the amount of crime you are willing to tolerate in the city. Stamping out all crime is possible, but is very expensive and consumes a lot of real estate for police stations. In general, it is better to set a goal of a low crime rate, and to tolerate occasional pockets of high crime in your industrial slums, rather than litter the landscape with police stations. Fire coverage is easier to allocate; ignore the first request for a fire station for a while (or build it and set its funding to 0%—your sims don't care) and after that build a new fire department only when your sims request it.
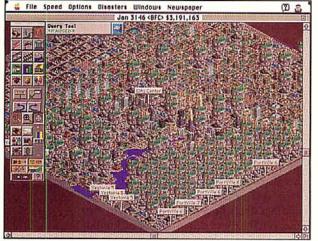
The neighborhood watch ordinance is

good, but be sure you need it before you implement it; if your residential areas are all no-crime or low-crime, then it is a complete waste of funds. If needed, however, it will greatly reduce the expense of building police stations in residential areas if all modest crime is taken care of by vigilant citizens.

The Educational System

The educational system is the beast that can bring down a city; either (a) build an expensive one and watch your finances crumble under the assault of teacher's unions, or (b) build an inadequate one and watch your city crumble into a vast wasteland inhabited by people who think Gilligan's Island represents the pinnacle of Western civilization and who work at jobs suiting their talents. Not a pretty choice, but hopefully these guidelines will make it easier. In general, you want the best school system you can afford, and you want to make improving it your first priority if it is inadequate.

Your city can get by without any educational services for the first 20 years or so, but after that point you are courting disaster if

Grotesque Fruit Of An Obsession: One of the author's prized cities boasts a population of 9 million sims and 150 arcologies.

you don't make up for the lost time. Build a school or college whenever the rating of your existing facilities falls below a B. As a personal preference, I keep them all at A+ and enjoy EQs topping 135-140 as a result. When you build education facilities, generally place them in residential areas as they provide a modest boost to land values around them. However, their physical location is irrelevant to their educational effectiveness, so place them on mountaintops if you like.

In general, 5% of your populace will use libraries and museums. If attendance at those facilities is less than that, you don't have enough of them and the existing facilities are

overloaded. Libraries are easier to gauge than museums, in that you get a grade rating for the system. Keep the ratings high (they aren't expensive and you won't need more than 12 even for an enormous city).

The educational ordinances are all good buys. Enact them all as soon as your city is making a healthy profit.

The Health Care System

Luckily for you, in the health care department *SimCity2K* is considerably more forgiving than the real world (Bill and Hillary would find it a piece of cake). Hospitals aren't very expensive and you don't need hundreds of them, so you may as well build one whenever the existing facilities fall below tip-top condition unless money is tight. For some odd reason, however, sims like to live in places where the life expectancy tops 90 years, so bear in mind that keeping your health system going provides a large boost to your residential desirability. The health care ordinances, like their educational brethren, are all good buys.

Sims Just Wanna Have Fun

When it's time for relaxation, your sims have an array of options: they can go to the park, take in a ball game, go to the zoo, or race sailboats. All of the recreational items in the game are good things. They boost tourism, increase residential desirability, and raise land values. Build them when you can afford them or when your sims request them. Just bear in mind that few cities of 100,000 people boast seven stadiums, eight zoos and docking space for 1,000 yachts.

City Layout and Block Design

The design of your basic city block is very important. While it is possible to mix and match block designs, this makes it hard to implement a coherent zoning mix and difficult to tell exactly what is going on in the city. Furthermore, such patchwork cities often end up with massive traffic problems (see last month's article for an explanation of traffic mechanics) due to the labyrinthine layout of intersections and oddly-shaped blocks. Through extensive play, I've come to find several basic block types to be useful. All of the zones discussed here are of regular (i.e., square or rectangular) shape; oddball zone types are certainly possible but won't be as efficient given the basically orthogonal nature of the *SimCity2K* universe.

The 3x3 block (Figure 1) is the simplest possible block design. It has the advantage of permitting the zone within to develop a 3x3 building, but maximizes traffic problems by

City Block Configurations

Figure 1
3 X 3 Block

Figure 2
4 X 4 Block
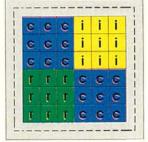
Figure 3
6 X 6 Block
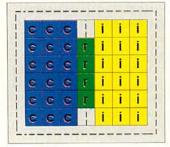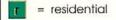
Figure 4
6 X 7 Block

ZONE legend

- c = commercial
- i = industrial
- r = residential
- p = parks
- --- = roads
- ... = etc.
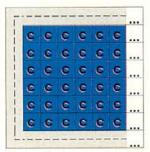
Figure 5
6 X infinity Block
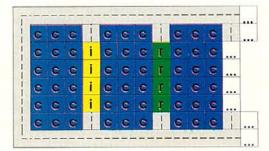
Figure 6
6 X infinity Block

ensuring that each and every trip must be made by car. Additionally, a large portion of your city will be roadway, thus increasing your investment in transportation infrastructure.

The 4x4 block (Figure 2) has room for a 3x3 building, a couple of parks, and most importantly, a few tiles of another zone type. Why put in a few tiles of another zone type? Because of an important hole in the way transportation is handled. Any number of sims can generate a successful trip terminating in the same, lonely 1x1 square of another zone type. Five million Angelenos can all be considered to be commuting to work in the same industrial warehouse. As long as your overall balance of zone types is acceptable, your sims will happily develop their zones despite being unreachable distances from their real places of work, play or residence. This allows you to build more realistic cities, ironically, as you can have large-scale industrial zones without having to break them up with housing and commercial areas, and that in turn allows you to keep your pollution and crime areas away from the expensive real estate where people actually live. The 4x4 zone is the smallest zone capable of permitting this kind of cheating. These 4x4s can halve your traffic problems (and obviate the need for any mass transit at all) since fully half your trips will never set foot on a roadway; the residents will do much of their business within their own block. An additional bonus of the 4x4 is that the larger city buildings (stadiums, zoos, col-

leges, arcologies) all fit neatly within the block, removing the need to break up your city's pattern when you need to rezone for a necessary building.

The 6x6 block (Figure 3) is the most efficient zone design in terms of maximizing density. All four 3x3 zones can develop into 3x3 buildings (remember that you must have an intersection nearby for a 3x3 building to develop). If you mix your zone types within the block, you can cut down on traffic problems; unfortunately you will still have some since you don't have much road for all of that zoned land. Also on the downside, larger buildings don't fit comfortably into the 6x6 zone; you'll have to demolish four 3x3 buildings to put a college or arcology into an already-developed zone (rather than one as in the 4x4). In general, the 6x6 block is not a winning proposition due to these downsides.

The notched 6x7 block (Figure 4) combines the efficiency of the 6x6 with the zone-mixing of the 4x4. It has many of the same problems as the 6x6 but can be a good zone design if space is tight, since less room is wasted on roads than for 4x4s.

The 6 x "infinity" block (Figure 5) is an open-ended block that is unfortunately not very efficient, as only your endpoints can develop into 3x3 buildings. Additionally, lateral traffic is completely impossible. The notched version of this block (Figure 6) is fairly efficient, allows easy zone mixing, but still has traffic and large-building placement problems.

On balance, I favor the 4x4 block for almost all city building. Its compactness makes for cheap incremental additions to your city, it is extremely convenient for later upgrades to arcologies, and its traffic-killing properties don't hurt.

The Big Picture

Every city designer will have his or her own preference for what the "ideal city" should look like. To some people, maximizing land values and quality of life will be most important, others will want to get as many people in their city as possible, while still others will simply want to concentrate on accruing as much money as they can.

Like real city planners, *SimCity2K* mayors have a limited land area to work with. If you aren't trying to get a lot of people in your city, this is not generally a problem, but most people do have at least some desire to build a big city and end up filling the map. Here is where some foresight can pay enormous dividends. To reach maximum city size (around 10 million in the current version), it is necessary to build arcologies. Before arcologies become available, your city must first reach a population of 120,000, which is possible, but requires a bit of planning. These massive structures take up quite a bit of room, and the budding Ed Koch may have a tough time finding space to fit enough of them to reach his or her lofty goals.

Due to the RBG mechanics described above, it is important to place your zones in

what will eventually be the right part of the city. Using zone mixing, there is no problem with isolating parts of your city from one another; as long as the necessary zone diversity is available locally it doesn't matter that your industrial zone is five miles from the residents who work there. For optimal land prices, with their concomitant effect on land development, it is best to follow the RBG concept fairly closely. The very center of your city should be an almost entirely commercial core, with only enough zone mixing to allow buildings to develop. Surrounding the core should be your residential zones, and on the outskirts of your city, industrial zones should be turning the air black (and not incidentally, sharing some of their pollution with the non-existent spaces off the map, rather than only with your city). Figure 7 shows a small city that roughly follows this principal.

The Pollution Solution

Pollution is nasty stuff. It has negative impact on land values and reduces life expectancy in your city. Keeping it minimized is always a good idea. There are five things you can do to keep the pollution levels low. First, and easiest, is to implement the pollution controls ordinance. Second, make sure you have adequate wastewater treatment facilities. Third, change your industrial tax rates so that polluting industries (steel, textiles, petro-

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TABLE 1
Pollution Output of Buildings

Stadium	4
Prison	10
Water pump	2
Runway	10
Pier	10
Crane	5
Port building	5
Hangars	10
Subway station	5
Bus depot	5
Train depot	4
Port parking lot	2
Port warehouse	2
Coal plant	50
Oil Plant	25
Gas Plant	10
Nuclear Plant	2
Fusion Plant	2
Water treatment	10
Plymouth Arco	25
Forest Arco	10
Darco Arco	12
Launch Arco	15
1x1 Industrial	6
Small 2x2 Industrial	12
Large 2x2 Industrial	18
3x3 Industrial	24

Buildings or facilities not mentioned on this table have a pollution output of 0.

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chemical, etc.) have a higher rate than nonpolluting industries (finance, media, etc.). Fourth, isolate your heavy industry far from your city core, putting as much of it as possible at the very edges of the map. This means that at least part of your pollution will disappear from the statistics of your city. Finally, keep traffic levels low by intelligent street planning and/or mass transit use.

The exact pollution level generated by a given square can be generated, though the procedure is complex. An interim pollution value is generated for each square on the map, according to the formula:

Pollution Value = ((Previous Pollution Value + Traffic / 5) + Square Pollution Output) * 2

Add 200 to the result if there is radioactive waste nearby (found only after a fission plant meltdown). The traffic term in the equation relates to the traffic level of the road nearest the building; heavy traffic pollution adds to the building's pollution output. Table 1 contains the pollution output for the various buildings and facilities. Note that each square of a polluting building generates the pollution value shown in Table 1; a 3x3 industrial building generates a great deal of pollution indeed.

This interim value is then smoothed with the interim values of the adjacent squares, "spreading" the pollution a bit. The smoothed value is then divided by the overall city pollution divisor, another involved formula.

Pollution Divisor = 4 - Pollution Bonus + Sewer Bonus

Add 1 to the divisor if a pollution control ordinance is in effect. The pollution bonus term relates to the mix of industries in your cities; it ranges from +2 (a very heavy level of polluting industry) to -1 (a very clean level of polluting industry). For purposes of the pollution bonus (only), the only industries which factor into this are steel, textiles, petrochemical and automotive. If these industries are entirely absent from your city (a difficult, but attainable goal), then you will have a -1; if those industries are all you have, then you will have a +2. Most of the time, you will be somewhere in between. If you have adequate wastewater treatment, your sewer bonus will be 1; if you have no plants or inadequate ones, your bonus will be 0. Thus, the possible
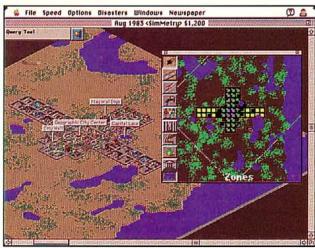
Fig. 7: *This city is zoned for maximum land value and growth. Dense commercial has been placed at the center of the city with residential to the immediate north and south, and industrial reaching out to the east and west.*

divisor can be as high as 6 for a very clean city to as low as 2 for a very filthy one.

The interim value, divided by your city's pollution divisor, becomes the new value for that square.

An example: let us assume that a brand new coal plant has just been built in an otherwise empty city which has added wastewater treatment, has a pollution control ordinance, and has a pollution divisor of:

0 (there was nothing here before, so no prior pollution) + 0 (no traffic) + 0 (no radioactivity) + 50 (it's a coal plant), times two, for a total interim value of 100. Our city's divisor is:

4 - 0 + 1, for a total value of 5. We're working with a central square of the plant, so the smoothing won't affect the calculation; this leaves us with a total pollution value of 20. Had our city had a more polluting industrial mix, no ordinance, and no wastewater treatment, the total value would have been 50—quite a difference! Note also that we're getting a break due to their being no prior pollution; over time (about three iterations of the pollution cycle) the pollution will increase to about 63 in the case of our foul city.

Land Value And Zone Development

Whether a given zone will develop, and how far it will develop, is decided by only two factors. The first factor is the zone's accessibility to other types of zones. High density commercial zones need to be accessible to either high density residential or high density industrial; low density commercial needs low density residential or industrial. Similarly, residential and industrial zones need either of the other two zone types. Only one type of zone type is needed; it isn't necessary to have

access to both of the other types. If a zone misses making a connection (see trip-generation discussion in previous issue), the consequences depend on the zone's density; small buildings will not become abandoned until they miss several connections, while 3x3 buildings will shrink if they miss even one connection.

If a building is adequately connected, then the determining factor becomes the land value of the square(s) it is on. Land value is relatively easy to determine; each zone has its own formula, and there are a few special cases.

The basic land value is taken directly from the RBG; the closer to the center of the city, the higher the value, as modified by zone type. Industry receives a small additional boost to its RBG value if it is close to water. The value of each tile is then modified by environmental considerations. For industrial zones, the total value is:

Industry Value = Basic Value - (Pollution / 16) - (Crime / 4)

Additionally, dense industrial zones have an inherent bonus of +21.

For commercial zones, the total is:

Commercial Value = Basic Value - (Pollution / 4) - (Crime / 3) + (Population Density / 3) + Trees/Parks/Water

Trees/Parks/Water is a difficult to quantify variable which has to do with how many trees, parks and water tiles are found within three squares of the commercial building. This bonus can vary from 0 to +30.

For residential zones, the total is:

Residential Value = Basic Value - (Pollution / 5) - (Crime /3) + Trees/Parks/Water

Residential zones get an inherent bonus of +21 if population density is below 64 (pretty much single family dwellings). Residential zones also get a small bonus from the presence of educational institutions.

For example, a dense industrial zone with a pollution level of 160, a crime level of 40, and a basic value of 90 would have a total land value of (90 - 16 - 40 + 21) = 56, or $56,000. A commercial zone with a pollution of 10, crime of 21, basic level of 140 and a population density of 100 would have a value of (140 - 2.5 - 7 + 33) = 163.5, rounded up to $164,000.

The higher the land value, the more likely the building is to develop further, from a 1x1 residence or office to (if zoned properly and at an intersection) a 3x3 monolith.

Ports And Connections

Your airport and seaport, and your connec-tions to neighboring cities, give a powerful boost to your commercial and industrial development. The total boost for commercial development is:

# of Runway Tiles + # of Runway Intersections + Commercial Connections

where a commercial connection is a road connection to a neighboring city. Note that it does not matter how big your neighbor is or how many connections you have to that neighbor; a road connection is a road connection. (Similar openhandedness is granted to industrial connections).

For industrial development, the total boost is:

# of Seaport Cranes + Industrial Connections

where an industrial connection is a railroad or highway connection to a neighboring city. Again, duplication and neighbor size are not important.

The total boost you can get is limited by the size of your city and the size of the global economy; if your commercial or industrial development starts to sag, lay another road or expand your seaport. If the demand picks up, you needed another connection and if it doesn't, either you didn't or something else (like high taxes or a zone imbalance) is causing the problem.

Captain Hero vs. Nessie —Film At 11

Players who hate to be deprived of the chance to find cute things or tricks in the program on their own should skip the following paragraph.

When you are offered the chance at a military base, don't take it if you have disasters turned on. Captain Hero, the man enigmatically mentioned in your early newspapers, is apparently a conscientious objector and won't help out your city in times of need. If you forego the base, when a disaster strikes there is about a 1 in 3 chance that a brightly-clad flying man will appear, driving back flood waters, quelling rioters, and exploding alien space monsters. He doesn't seem to want to fight Nessie, however. Quick-witted mayors can get a look at the old girl anytime after they build a marina or seaport. Just wait until you hear the distinctive bellow of a sea monster in lust, and you can zoom over to your lake or river and see the familiar coils of the Loch Ness Monster sinking beneath the surface, leaving behind the wreckage of some poor boater's pleasure craft.

Macintosh *SimCity2K* users report that there are several financial "cheats" in the program. The only one we were able to verify was the "PORNTIPSGUZZARDO" cheat. Type this phrase (?) at anytime and you will be granted a half million dollars. Be warned, though: as in the original game, it is rumored that abuse of such cheats can have disastrous side-effects. IBM users have been so far stymied in the search for such gems. Anyone finding such a thing should definitely drop me a note at my e-mail address (below).

Now Leaving SimCity Limits

The best advice I can give a new mayor is to take things slowly at first. Rather than blowing your entire initial wad on laying out your dream city, zone a few areas with minimal services, if any, and slowly build your city block by block, maintaining profitability at all times. Generally speaking, don't start funding your services (it's all right to go ahead and build them to keep your citizens happy) until you are showing a balance of about $500/year in profits. Keep that $500 figure in mind, and only increase funding to the point where you will still be left with $500 in income for the year. Handling growth slowly like this, your city will remain manageable and you won't go broke.

Finally, when you're debating a new addition to your city, ask the simple question: Would I want to live there? Using that as a touchstone, you can often abort an unfortunate decision and keep making your city a better place to live.

Special thanks to *SimCity2K* designer Will Wright for help with the technical issues on this article, and for explaining rent-bid gradients 18 or 19 times until I got it. Any errors are mine, however. Anyone wishing to discuss the game or to point out colossal blunders in my thinking should feel free to send e-mail to 70314,2302 on CompuServe and 70314.2302@compuserve.com on the Internet. **cgw**

Ace Over The PC

Dynamix's Damon Slye Speaks

An interview by Tom "KC" Basham

His name is synonymous with "3-Space." "Simulation" is his middle name. He has been pushing 3-D images across computer screens since the wireframe days of the early 8-bits, and he has worked for Dynamix ever since its inception as a computer game developer. So, when Damon Slye recently took a leave of absence from Dynamix in order to finish his degree and catch up on some long-delayed chess matches, we decided to interview him and create our own personality bitmap for the successful programmer.

CGW: *So, how'd you get into the flight sim world?*

Damon Slye: Let's see, we had been doing products for, probably, 5 years before doing *A-10 Tank Killer*. Something like that. Maybe even 7 years. I always wanted to do flight sims because they seemed cool. They seemed challenging to do, because you have to have a good frame rate, and you have to develop a good flight model and stuff like that. Up to that point we'd only been a developer, making games for other companies, but decided to do *A-10* under our own label because that's really the only way you could survive. It's hard to make money as a developer. So, we decided to do a flight sim and didn't want to get caught up in doing a modern, fancy jet like everyone else at the time.

CGW: *Red Baron was your next flight sim, and the start of the Great Warplanes Series. Why did you pick the World War I era?*

DS: Well, there were a few reasons. One was that no one had done a good WWI game up to that point, an air combat game, so the market was wide open. Another reason was that I knew that it would make for interesting interaction because it has machine guns, and it is just more suspenseful to get into a dogfight where you're so close to the other plane. It's more challenging than learning to operate the electronics on a modern-day jet. And, it just seemed like a really cool era, too, with all those vintage aircraft. It had a cool look and feel about it.

CGW: *Flight itself was a mystery in those days, no one knew how to fly, let alone fight, in the air.*

DS: Yeah, right! All the evolution of tactics took place during that era. That's kind of a cool backdrop to the whole thing. Learning the history was interesting too—about Oswald Boelcke, and how his basic principles that he worked out in World War I are still in use today.

CGW: *Red Baron is still on shelves, and it's been really popular. It's a really great place to start learning ACM. How successful has it been from your point of view?*

DS: It did well. *Pacific* outsold it, and *Europe* will probably outsell it too, but not by a lot. It did real well. It also established our reputation because, up to that point, no one really thought of us as a simulation company. Even after *A-10* they said, "Oh, they did a cool sim there, but you know..." MicroProse was coming out with *Knights of the Sky* at the same time as *Red Baron* so there was a lot of press about this battle, "the battle of WWI" where MicroProse is doing one, Dynamix is doing one, and Three-Sixty is doing one, and they were all supposed to release about the same time. So, because we came out with a real high quality product that compared pretty well with its competitors, I think it established our reputation and gave us prestige.

CGW: *Now when someone hears "Dynamix" they immediately think "flight simulator."*

DS: Yeah, up to that point we'd been sorta all over the board with different products. Some arcade games, some adventure games, stuff like

that, but I think the success of the *Great Warplanes* really identified us in the customer's minds with flight sims.

CGW: *When did Dynamix join with Sierra and how did the purchase affect you?*

DS: I think it was actually during the development of *Red Baron*. We were probably six months from completion when the deal went through, so *Red Baron* went out through the Sierra deal. *A-10* had been released under our own label and distributed by Mediagenic and then *Red Baron* was the first *GWP* flight sim out under Sierra. There wasn't a lot of impact. The biggest thing was they had more capital. We didn't have *any* capital at the time. We were able to put out a higher quality product in *Red Baron*, because we would've had to cut development short if we hadn't had that funding. Creatively, we've maintained our autonomy. We were an organization that was creatively doing well, and they respected that—that was the reason for the acquisition. I think the creative thing is the hard thing. That's the part of the equation you can't just go out and buy. You can't just manufacture it, so when you find it you let it go and you fund it. They didn't mess around with us at all, which was cool.

CGW: *Moving on up to Aces Over the Pacific. Although you used the same basic interface, how does it differ "under the hood?"*

DS: Let's see. We stuck with the original user interface and basic framework because we thought it was successful. We tried to make the interface easier but with enough layered complexity that the user could decide how much they wanted. I guess the biggest difference, really, was just what we were modeling. WWII air combat is a lot more complex than WWI, and more so than we originally anticipated. It went over schedule a fair amount.

CGW: *What doesn't these days?*

DS: [laughs] Yeah, I know. It seems like products are taking more and more time. But, there's torpedoes and bombs and ground attacks and multiple mission guns on the aircraft and more complex instrumentation and carrier takeoffs and landings. [laughing] Stuff like that we said, "Yeah it would be easy to add" and then it turned out to be a ton of work! Mainly the difference was what we were modeling and the tactics. They had more tactics in WWII, and we wanted to model that. We wanted to model the way the Japanese used the "angles" fight and just turned, and the Americans had to use the "hit and run" tactics because they had high energy fighters

instead of maneuverable fighters. So we wanted to get that asymmetry into the game which wasn't present in WWI. I think everyone then just used...

CGW: *Whatever worked.*

DS: Yeah, whatever worked.

CGW: *How does the flight modeling differ in Pacific over Red Baron?*

DS: We used the same basic flight model, but we enhanced it quite a bit. [laughing] I can't remember exactly what we did because it's been so long ago and two products since then. I know we worked on that thing quite a bit! For one thing, there were more control surfaces. We modeled more control surfaces, dive brakes and compressibility—things we didn't have to worry about with WWI aircraft.

And flaps. We added flaps. Landing gear up and down, things like that. There's probably more. It was the same basic bit of code, but it had been reworked quite a bit.

CGW: *What ever happened to the RAF in the Pacific add-on?*

DS: It was an opportunity/cost issue, you know? Finite development resources and what are we gonna do with them? And we decided to do the *1946!* instead. We thought that, as a stand alone, it had more market potential than *RAF in the Pacific*. We were going to have a modem option in *RAF in the Pacific*. That plus the RAF service would be enough to warrant an expansion disk. But the modem option turned out to be a lot of work when we really looked at it. Our original code wasn't written with multiple players in mind and to retrofit something like that is just a lot of work to put into a data disk.

CGW: *Let's head on to Aces over Europe, then. How did the feedback from Pacific affect Europe's design?*

DS: It did quite a bit. I mean we really poured over the *Pacific* comments on CompuServe and GEnie and tried to make up a list of the really important features that people were asking for that we could do. Some things we couldn't do because of the

cost involved, like modem play. There's a couple that we muffed on, and [laughs] our customers let us know about those! But we really did. If we went back and compiled a list, they'd see we hit about 90% of the stuff they talked about. But that missed 10% seems to really sticks out in people's minds.

CGW: *The same question as before: how does AOE differ from AOTP underneath the hood?*

DS: Underneath the hood? Well, for one thing, it's a lot cleaner. That was sort of the emphasis: to put out a really bug-free product, because our initial version of *Pacific* had a fair number of bugs in it, and to refine the concepts in *Pacific*, then adapt them to *Europe*. We had more play testing on *Europe*, by a lot, so I think the product just plays a lot better. The dogfighting has really been fine tuned, and just the inherent differences that we had to model between the Pacific and European theaters. The tactics were a little bit different. It wasn't as asymmetrical in Europe as it was in the Pacific. Then, there were the feature things we did, like 320x400 [video resolution]. That was one of the additions that wasn't that much work, but it stood out real well, so players appreciated it. It's the features that are visual that people really appreciate.

CGW: *Why did you pick the end of the war for Europe?*
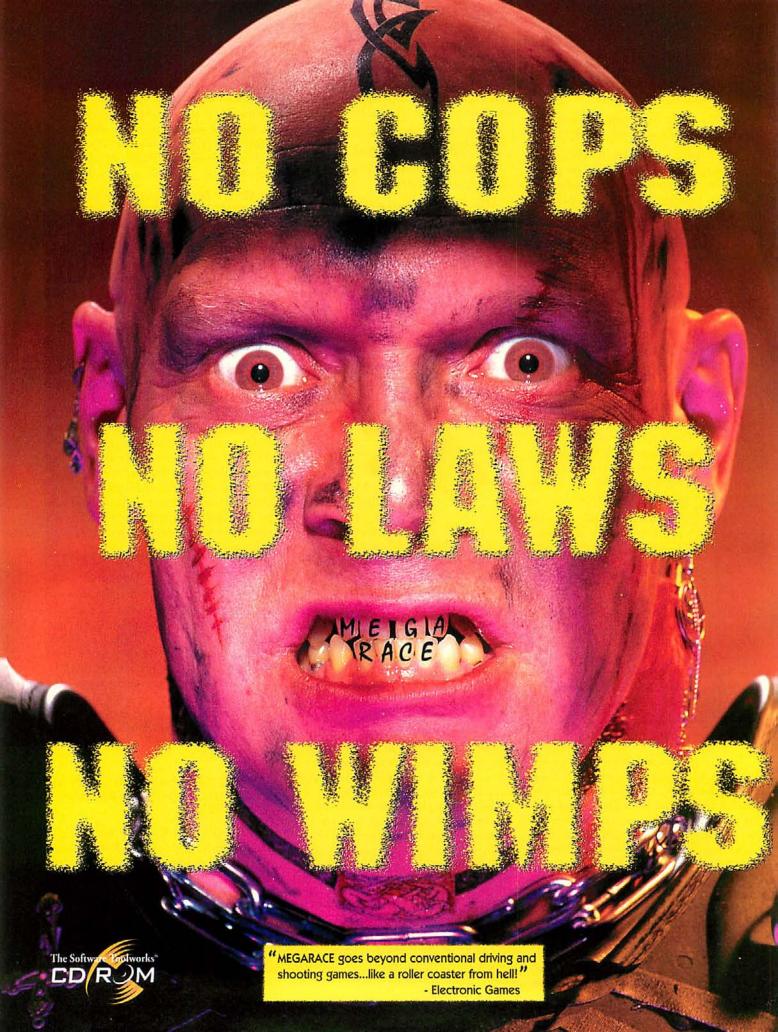
DS: Let's see. Well, the tactical campaign seemed interesting and different because it hadn't been touched as much by other products. *SWOTL* focused on the strategic campaign, and we wanted to get more of the tactical stuff in there. Also, we still want to do a Battle of Britain product at some point and we didn't want to include everything in one product. I don't know what the time frame is, but we will do a Battle of Britain product at some point.

CGW: *That kind of leads into the next question. Are there going to be any add-ons to Aces over Europe?*

DS: I don't think so. I'm sort of out of the loop now that I'm on sabbatical, but I don't think they're going to do them. I'm not actively part of the decision process right now.
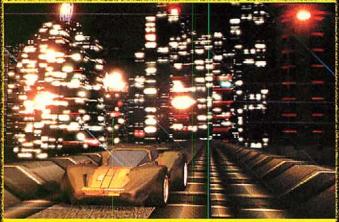
CGW: *So, the Battle of Britain product will be standalone?*

DS: Yeah, it'll be a standalone. There's enough good stuff there to warrant doing a full product with it.

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CGW: *Are there any plans to port new AOE designs and features into a revised AOTP?*

DS: No, it's pretty hard to retrofit that stuff onto an older version, then retro-market it. It costs a lot of money to do something like that, and usually your returns aren't that great. If we had our system down, if the software was more malleable than it is, that might be possible. But, we will do another version of *Pacific* at some point. Each product will probably get done once every three or four years, you know, revisited. We'll just re-release it as a full blown product, like that.

CGW: *When a new sim comes out, there's always a host of questions about, "why did you do this..." or "why didn't you do that..." Could you go into a little more detail about the factors that influence design decisions?*

DS: You have to weigh a whole bunch of different factors to make your decision. It's not like you have a simple set of criteria to use. But, the main trade off is how difficult will it be to implement a feature—how much is it going to cost—versus how valuable you subjectively think that feature is. How valuable you think it is is based on feedback from your customers and your own personal sense of how it fits into the product design. Some features really add a lot. Some things sound good when you talk about them, but when you actually put them into the game they're not really perceived by people at all. So you have weigh this. Everything you do is cost. So, if you do feature A you probably have to leave out feature B. That kind of thing. So, cost, schedule, every feature impacts all these things. We're working with a finite development budget, so you have to make these tradeoffs.

CGW: *Red Baron, and both Aces games have been pretty well "hacked" by players. There are tons of patches that change aircraft colors, weapons, pilots, etc. How do you view these after-market "products"?*

DS: I think it's pretty cool! It's great that people like the games enough that they want to do that. I think a lot of these guys enjoy, or at least it seems that way, tailoring the game to their own needs. I think it's pretty cool.

CGW: *Have you ever considered releasing your own internal editing tools, like Domark did with Flight Sim Toolkit?*

DS: No, I think it's an opportunity/cost thing again. The effort going into that wouldn't be as good as just putting out another product. Plus our tools, I dunno,

they weren't really designed with an end user in mind. It'd take a lot of work. I think the closest thing would be like the mission builder for *Red Baron,* where you could build your own missions, but not a sim from the ground up.

CGW: *Are we going to see any mission builders for the Aces?*

DS: Yeah, maybe. It's still one of the ideas floating around.

The Dynamix team as they appeared on the "album jacket" of Articfox in 1985. Left to right: Kevin Ryan, Jeff Tunnell, Damon Slye and Richard Hicks.

CGW: *Where is the Great Warplanes Series going from here?*

DS: They're still talking about what the next product in the line they wanna do. They're still talking about *Red Baron II,* or *Pacific II,* or *Aces Over Korea,* then *Battle of Britain,* too.

CGW: *How far into the modern day is the Warplanes series going?*

DS: Probably through Korea, and Dynamix will probably get into modern jets, too, but not the stuff I'll be working on. I like historical stuff. It's more interesting to me.

CGW: *How does the proliferation of flight sim gear, like the Thrustmaster gear, impact your design work?*

DS: It takes a little bit of work, but I think it's really worth it. I think it's cool that all this stuff is coming out. It really enhances the market and the quality of experience for the user. Thrustmaster has really done a great job with all their stuff. They've really taken care of their customers, which means they're taking care of our customers too. We talk with those guys quite a bit. And there're other companies that are doing similar kinds of things. It's a little bit of work, but it's worth it. It just helps everybody out. As long as you can

enhance the quality of the simulation experience, that's the key to the longevity of what we're doing.

The one peripheral I'm still waiting for is the helmet. Once we have that I think we'll be set!

CGW: *On that note, what do you think flight sims will be like in five or ten years? Will virtual reality devices play a role?*

DS: To me, "virtual reality" just applies to a piece of hardware, to getting a helmet with a display inside so you can move your head around. When we get that piece of hardware, it's going to be great. You know, I flew in an air combat school where you actually fly around in a real airplane and do air combat. You don't have time to find a key on a keyboard or anything like that. When we have something that captures that feeling, it'll really enhance the experience a lot. When's it going to happen? I dunno. Five years, ten years maybe? When it's cheap enough. To me, that's the one thing that's missing--the one peripheral we really need a lot. The first one was a joystick. Now those are out there in large quantities. The next step is the helmet.
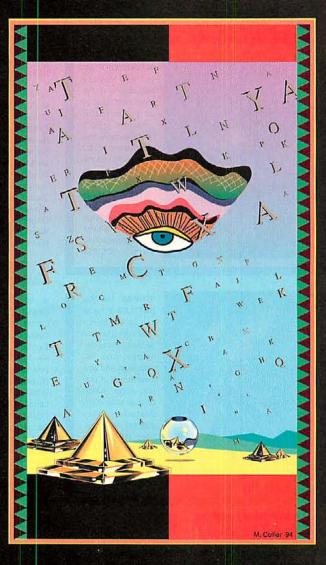
CGW: *So, you say you're going on a sabbatical. You going to do anything interesting?*

DS: Well, let's see. I'm going back to school, but my studies don't start for a while, so I'm going to be playing chess, and skiing, and playing basketball, and doing a lot of reading. That's got me pretty excited, actually, just taking some time off to do things I've always wanted to do. Then, when I go back to school in a couple of months I'll be studying math and physics. Physics is something that interests me a lot, and it applies to what we do with flight models. I think it's important to do a renewal every so often. I've been doing this for 10 years. You need to recharge the batteries and get a new perspective on everything, then come back. In a year I'll building products again, and they'll be a lot better because of the time off.

CGW: *Thanks, Damon, for taking the time to do this!*

DS: Thanks a lot, Tom, that was fun!

CGW

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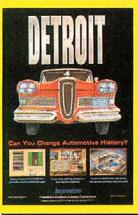
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'STORM ACROSS EUROPE' covers every part of the blitzkrieg that Hitler unleashed in 1939. You control every facet of the war including amphibious landings, u-boat campaigns and strategic bombing strikes. While the battle rages, you must juggle limited resources between production and research. **$12**

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Wheel of Fortune 2	$49

It's Hip To Be Sphere
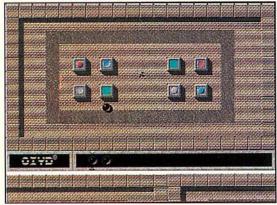
In Dongleware's *Oxyd magnum!*

by Ken Hill

Patronisers of mid-80s arcades will certainly remember *Marble Madness*—the trackball game of maneuvering a marble through a perilous 3-D world. Almost 10 years later, it seems as if a wayward marble has fallen through a wormhole in space-time and appeared in a new game. *Oxyd magnum!* takes the basic concept of *Marble Madness* and puts its own spin on the spheroid, creating a fine game sure to please puzzle fans who don't mind using their reflexes along with their minds.

The basic concept of *Oxyd* is simple. Each of the 100 levels has target squares called "oxyds" which, when touched by the player's little black marble, open to reveal a color. To solve the level, the player simply has to find all the matching oxyd blocks on each level and open them in sequence—sort of like a game of *Concentration*. Of course, it's never as easy as a roll in the park.

The marble, which you control with the mouse, can have a number of special powers. Spread over the game levels are dozens of tools that your spherical subject can use to overcome obstacles. Simply touching the tool adds it to the marble's inventory. There are hammers for smashing blocks, umbrellas for floating over chasms of endless blackness, explosives for blowing holes in enemy defenses and many others. Sometimes the black marble has to team up with a white counterpart to yin and yang its way through the puzzles.

There is no shortage of enemies to foil your efforts. Death blocks—dressed in skull and crossbones—cause our marble friend to shatter on contact, and hidden pits, spinning wheels, and other dangerous traps lie in wait for an errant marble. While you are trying to keep the marble in play, you must figure out how to open the oxyds on each level to continue on; red herrings and clever distractions are here in abundance, just to keep you guessing.
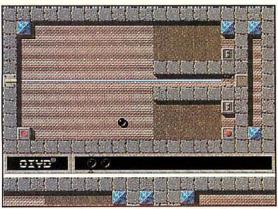
We're Here! We're Sphere! Be Amused By It!

The levels provide a variety of challenges. Some levels call for manual dexterity to maneuver objects on the screen, while others require more input from the higher brain centers. There are levels that test your patience, penalizing hasty moves and impulsive decisions. To make things even more interesting, the terrain can change drastically from one level to another: some screens have icy surfaces that make the marble hard to control, while others have swamps and quicksand to swallow our ebony pal if he lingers too long in one spot. All of the levels are well-designed and have lots of clever tricks thrown in to keep your brain on a rolling simmer.

Every tenth level is a deceptively named "meditation" level. Rather than providing a meditative break from the rigors of problem solving, they actually require you to manipulate four marbles at once. The objective is to place the four marbles in four different spots at the same time. As you can imagine, meditation levels aren't exactly exercises that will promote inner serenity and mental clarity.

Oxyd is a game with very few flaws. The graphics are clean, and the mouse control is crisp. Some objects could have been portrayed a bit larger, such as seeds, which are so small that I found my first one entirely by accident. The quality of the sound support could have been better as well (only Sound Blaster and AdLib sounds are available), but it was adequate.

Marble Gladness

In these days of hard-drive-hungry games, it's refreshing to find a product that can be this much fun and yet take less than one megabyte on your hard disk. *Oxyd magnum!* is a top notch puzzle game that will keep players up to the early hours of the morning attempting to solve "just one more level." Puzzle gamers with any marbles left upstairs would be remiss not to give this one a roll.

CGW

Oxyd magnum!
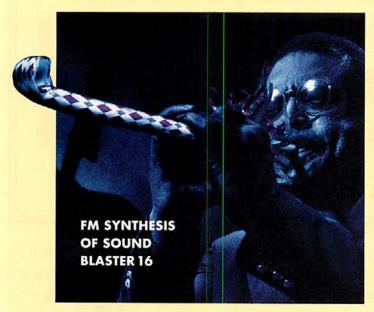
PRICE:	$59.95
SYSTEM:	Amiga, IBM, Mac, Atari ST
REQUIREMENTS:	IBM: 286 or better, 2MB RAM, VGA graphics, 1MB hard drive space, mouse
PROTECTION:	None
DESIGNER:	Meinolf Schneider
PUBLISHER:	Dongleware Publishing Cambridge, MA (617) 497-1130

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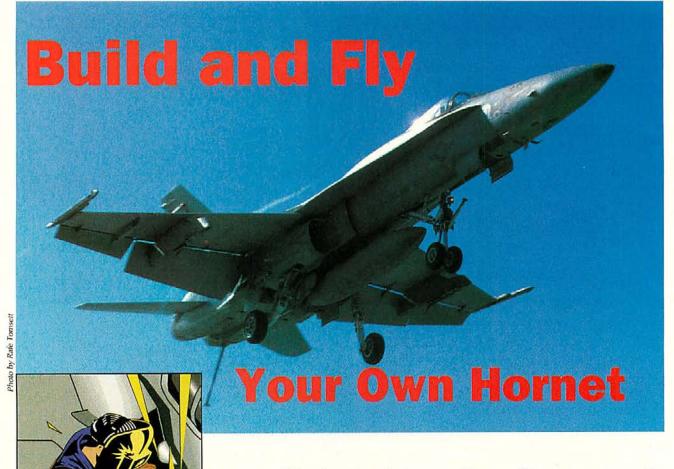
ELECTRONIC BATTLEFIELD SERIES

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Build and Fly

Your Own Hornet

Unleashing the Power of Flight Sim Toolkit

Second In A Three-Part Series

by Matt Miller of Domark

"Sir, we've got an unidentified outbound over the Aleutian Islands heading toward Soviet airspace—high altitude," the SAC radar officer said.

"Anything on AWACS?" asked the Colonel.

"Data coming in now...SIR! It's been identified as a U2!"

"There are no scheduled intelligence gathering missions today. What the hell's going on?"

"Sir. Intel confirms a U2 is missing from Moffett Field NAS. Norad is on the horn."

Stillness settles over the command center as the Colonel picks up the phone,"Yes sir, right away."

"Lieutenant, scramble everything available, that plane will be in Soviet airspace inside of 15 minutes." The Colonel was nearly screaming now, doing his best to maintain composure in front of his men.

"Only thing we can get armed and airborne that quickly is a lone Hornet out of the Aleutian base."

"Do it Lieutenant!"

"Yes Sir! Sir, radar is picking up several Soviet Blackjacks inbound! Probably to take out our SAMs. I doubt they'd be expecting an air-to-air engagement."

"Excellent," a semi-wave of relief came over the Colonel, "Launch the Hornet!"

No, this isn't an excerpt from a mid-80s techno-thriller, but a fictionalization of the *Coldwar* flight sim scenario we began building last month with *Flight Sim Toolkit*. In the previous article we showed you the basics of two editors in our kit, the Color Editor and the Shape Editor. This month we will continue to work on our scenario, delving into the Cockpit and Flight Model editors. We'll also show you a few sound editing tricks you can do with the Recorder program that comes as standard equipment in Windows.

Let's first explore the Cockpit Editor. Here we will place instruments over a cockpit image in PCX file format. Keep in mind that a flight sim doesn't necessarily need a cockpit. In fact, a real-time instrument panel and the cockpit itself can sap a lot of processing power, which can slow down your simulation. Of course, without the cockpit you cannot evaluate your plane's vital signs, leaving your weapon status, fuel capacity, and altitude a mystery, and so greatly reducing your chances of survival. The best bet is to reach a

Figure A:

The *FST* cockpit is highly customizable, offering choice of cockpit, resizable displays, configurable HUD, variable gauges, and optional indicator lights. This figure shows an example of an avionics suite for the Hornet.

happy medium between display options and simulation speed.

To reach our happy medium we will be using the supplied "AV8B.PCX" file located in the clip art library for our *Coldwar* scenario, on which we will paste our instruments. Remember to draw your cockpit in the 256-color mode of your paint program and use only the first 16 colors on the default palette. Also keep in mind the general shape of your cockpit, as the larger the cockpit, the smaller your view on the world. *Toolkit* enables you to customize your cockpit/sim world ratio to your personal specifications.

In most modern sims, the computer looks at the cockpit line by line, beginning at the bottom of the screen. As soon as there is a line that has just one pixel of background color, the sim world will be drawn from that point up. The higher that first pixel is on the screen, the faster the sim. Also, lots of curves in the cockpit edges and on the HUD can slow down the sim considerably, so try to avoid them when possible.

Start off by opening the *Coldwar* project we started last month. You are going to need to copy the AV8B.PCX file from the Library into your *Coldwar* directory (use SAV8B.PCX if you are planning on running an SVGA sim). Now open the Cockpit Editor and select the Background picture you will be using. We've already copied the AV8B cockpit into our directory, so choose that one from the list of backgrounds in the Attributes section of the Options menu. Once this is selected, the AV8B cockpit should appear in the editing window. Since the full cockpit is not being displayed in the window, we must select Views from the menu bar, then select Fit from the menu; this re-sizes the window around the picture so it's easier to edit.

Once A HUD, Always A HUD

The first instrument we'll tackle is the

HUD (Heads-Up-Display). The HUD is the backbone instrument on all modern fighters, as it puts all vital flight information in the pilot's field of view. Start by selecting Add Dial from the Edit menu on the menu bar. Grab the new dial and place it in the middle of the HUD display in the cockpit picture. Now go to Change Gauge on the Edit menu and select the Gauge Type of HUD. The HUD is a pre-determined instrument so you don't need to tell it what the variable is—it can only be a HUD.

Now, click on the edges of the HUD gauge in the window. Stretch the HUD so that it fits properly in the section of the cockpit where it will be placed. We want to be able to see our Airspeed, Altitude, and what weapon we have selected at a glance. To add these three dials, use the Add Dial menu item under Edit, then change two of them to Large Digits in the Change Gauge option. Place one of these gauges in the upper left corner of the HUD (we'll call this "gauge one"), and one in the upper right ("gauge two"). Change the variable on gauge one to Airspeed, with a minimum value of 0 and a maximum of 2000. Change gauge two's variable to Altitude, with a minimum of 0 and a maximum of 30,000. The third dial should be changed to Weapon Select; its variable does not need

changing as it is, like the HUD, a pre-determined gauge. We now need to add a Horizon Ball to the center of the control panel, so create another dial and change its type to Horizon Ball.

You will want to add several other gauges, as noted in Figure A. Once you have figured out how to place a gauge and re-size it, you should be able to design your own custom instrument panel. If you would like to fly with warning lights, simply select the Add Lamp option on the Edit menu, then select either Square Lamp or Round Lamp on the gauge type. You can make any of the following gauge variables as lamps: Gear Up, Wheel Brakes On, Air Brakes On, Aircraft Stalled, Low Fuel, Engine Fail, Hydraulic Fail or Electric Fail. Place these lamps over the left and right warning strips on the cockpit and you're all finished. Save your work as HORNET.FGD. You can easily save all files associated with one aircraft with the same name (in this case HORNET), because the file extensions are all different.

Envelope Pushing 101

Now that we have the cockpit built, we need to design and instruct our aircraft to fly to our preference. To illustrate this, we will be using the F/A-18 Hornet we have been working with in this article. First, load up the Model Editor. The opening screen of the outline of the jet may look a bit imposing at first sight, but don't worry, it's very simple. Since you may not know the exact dimensions of the aircraft you want to model, you may want to look up the characteristics of the aircraft in a source such as *Jane's All The World's Aircraft*. This book gives detailed and accurate flight information on nearly every aircraft ever flown.

The scale of the squares determines the size of the aircraft you are building. To change the scale, select Edit, then Blueprint. This will

Figure B:
Designing the aircraft's shape using the Force Model Editor. The quadrahedron at bottom represents the vertical stabilizer.

allow you to determine the size of the aircraft, and the distance from the right of the grid to where the Center of Gravity lies.

The Center of Gravity on an aircraft is of great importance, because if it is in the wrong place, then the aircraft will be inherently unstable. Such aircraft are actually more maneuverable than normal aircraft, but the loss in stability ultimately renders them useless. Aircraft like the F-16, F-117, and the B-2 bomber are fly-by-wire jets, which means they have a flight computer that is constantly calculating the small corrections needed to make the aircraft stable during flight. These sophisticated aircraft are reproducible in *Toolkit*, but the numbers must be manipulated a bit to make them fit into the program's parameters.

The small rectangle at the bottom of the grid is a cross section of the tail plane, directly in line with the tail on the fuselage above it. This can be very helpful in determining the size of the tail, should its exact dimensions be unknown. For our Hornet, we want to shape the aircraft to resemble an F/A-18, and so adjust the grid accordingly:

- Width: 30 M
- Grid Size: 1 M
- Center: 12 M

Now select the points on the Force Model and shape out a top view of an F/A-18. Note that the Force Model is a rough representation of an aircraft, not an exact duplicate. For instance, in the case of the Hornet where the craft has a large control surface on its wings, you would draw the wing slightly larger than normal. When you are finished, your screen should look similar to that shown in Figure B.

The next step is to input the Engine data. Hornets on afterburners produce around 25,000 pounds of thrust out of twin engines, so we will give our jet the appropriate numbers. By marking the engines as "Jet" we do away with variables such as propwash, but must now concern ourselves with heat-seeking missiles launched at us by enemy fighters; if you give an enemy aircraft a flight model with "Prop," then he only has cannons with which to shoot you down, but if you mark it as "Jet," the fighters are armed with various missiles as well. It is possible to create a Sopwith Camel armed with AIM-9M Sidewinders; it's just a matter of labeling the engine as Jet instead of Prop.

Notice that the Top Speed and Stall Speed of the aircraft have adjusted their values for the new engines you have installed. A Hornet has a stall speed of around 130 knots, so fine-tune the Force Model until the Stall Speed reaches that mark. In order to tune the craft down to the finest detail, we will have to visit the Aircraft Properties screen where we will see a *very* imposing set of words and values:

- **Aircraft Weight:** How much the aircraft weighs without fuel. The minimum value here is 500, with the maximum being 100,000.

The screen that breathes life into your aircraft and determines its flight dynamics.

- **Airframe Drag:** The Airframe drag reflects on the drag efficiency of an aircraft. The scale is from 0.5 to 10.0, where 0.0 represents no drag (no friction) and 10.0 would be a perfectly flat shape (perpendicular to the airflow).
- **U/C Drag:** These values are the same as Airframe drag, and are added to airframe drag when the landing gear is lowered.
- **Airbrake:** Similar to U/C, this value is added when the airbrake is deployed.
- **Wing Dihedral:** The angle of the wings upward from a forward view. A high Dihedral will make your aircraft more stable, as it has a natural tendency to level itself out, but conversely makes the plane increasingly difficult to maneuver. Aircraft may be designed with Anhedral, or Negative Dihedral, which gives a better shape for maneuvering. Anhedral is input as "-#" and represents the angle downward that the wings droop. Some aircraft, such as large jumbo jets, may look like they have Anhedral, but this is only due to the weight of the wings when the aircraft is resting on the ground. Your aircraft may have up to 20.0 degrees of Dihedral, or -20.0 Anhedral.

- **Wing Incidence:** This is the other variable that affects wing angle. This represents the "side view" angle of the wing. Values here range from -5.0 to 10.0, with level flight, at cruising speed, between 1.0 and 3.0.
- **Wing Efficiency:** This number determines the aircraft's stall speed and how much speed is lost in High-G turns. It can range from 0.3 to 3.0.
- **Stall Angle:** This is the angle the aircraft has to achieve to stop the airflow over the wing, thus stalling the aircraft.
- **Control Power:** This determines how sensitive the joystick will be in controlling the aircraft. A sluggish commercial aircraft will have a low Control power, while a military fighter will have a higher one.
- **Roll and Pitch Inertia:** One of the unique aspects of *Toolkit* flight models is that aircraft inertia is taken into account when the aircraft attempts to maneuver. High values make the aircraft slow to start and slow to stop once started. High values will make the aircraft harder to fly, but can allow for some neat aerobatics like the MiG-29's famous "Cobra."
- **Biplane:** Checking this box effectively doubles the wing area.
- **Undercarriage Retracts:** Allows user to retract the landing gear if checked. If left blank, then the Airframe Drag and U/C Drag are added together permanently, with a maximum value of 10.0.
- **Tail Dragger:** This determines where the wheels in the undercarriage are located. If checked, the aircraft will land easier, but may be more difficult to get off the ground.

For our Hornet we will need to modify the basic flight data to read as follows:

Aircraft Weight: 22,541

Aircraft Drag: 1.7 (experimenting with this allowed me to choose a top speed)

U/C Drag: 3.1 (Gear will hinder greatly, remember to raise it!)

Airbrake Drag: 3.0 (allows for rapid speed deceleration)

Wing Dihedral: -3.00 (solid maneuverability)

Wing Incidence: 0.00

Wing Efficiency: 2.7 (a decent, efficient wing)

Stall Angle: 30º

Control Power: 4.0

Roll Inertia: 4.00

Pitch Inertia: 2.00

U/C Retract? Yes

Flaps? Yes

Airbrakes? Yes

Biplane? No

Taildragger? No

Ejector? Yes

Engine: 24,000

Fuel Weight: 1000 lbs.

# of Engines: 2

Type: Jet

Once finished, save your file as HOR-NET.FMD. You may want to take your new Hornet up for a test spin. To do that you need to first create a world in which to fly. We'll go into further detail on world creation next month, but for those who can't wait, follow these simple directions:

1) Open the World Editor.

2) Select the "Raise Land" tool.

3) Make a large patch of land in the middle of the screen.

Power *Toolkit* users can record any sound (e.g., Meg Ryan's cafe scene in *When Harry Met Sally*) and program *FST* to play it back, say, when hitting the afterburners.

4) Change the toolbar to "Object" mode.

5) Place an object on the raised land.

6) Change the object to "Runway.FSD".

7) Zoom in near the bottom of the runway.

8) Place an object at the south end of the runway.

9) Edit this object so that it has a Flight Model of HORNET.FMD and a Cockpit of HORNET.FGD and the shape A-18.FSD. Mark the Hornet as the Player.

Breaking The Sound Barrier

Toolkit lets you add realism and excitement to your sim through the clever use of sound. Rather than create our own sound editor for *Toolkit*, we decided to simply use the one designed by Microsoft for Windows. The Sound Recorder in Windows is able to handle all the *Toolkit* sounds, and save them as WAV files for playback. All you have to do is realize that the computer only looks for a certain filename whenever it plays a sound. If you record your dog barking in the Sound Recorder, then call this "CANNON.WAV,"

everytime you fire your cannon, Sparky will pipe up!

To customize sounds for your sim, you just need to record a sound, then save it with a filename that *FST* can recognize. You also have to make sure that you save your sound as Mono and sample it at 11KHz. Some 16-bit sound cards may give you unusual effects if you attempt to record in 16-bit mode, so it's best to use 8-bit sampling. Even better, use an 8-bit sound card, such as Sound Blaster. Before you begin, you need to plug a microphone into the Input jack on your sound card, load up the recorder from the Accessories icon, and get ready to do some recording. Make sure the room is nice and quiet, then plug a microphone into the Input jack on your sound card. Click on Record. Now record your voice saying "Eject! Eject! Eject!". Save this as "EJECT.WAV" in the Coldwar directory. Now when you eject, *Toolkit* will play back this sample instead of the default sound. You can use the editing option to "clean up" your sound. If there is a long pause at the beginning, move the bar on the sample until it is where your voice begins, then choose the "Delete Before Current Position" in the Edit menu. If there is some noise after you finished, then you can "Delete After Current Position" after moving the slider to the end of the sample. You can add some simple special effects to the sample by choosing "Add Echo" to the sample. Or you may even want to mix the sample of the default Eject (with your voice) giving a more realistic punch to the sound. Once you've mastered recording one sound, try recording the following:

"Eject! Eject! Eject!" saved as EJECT.WAV
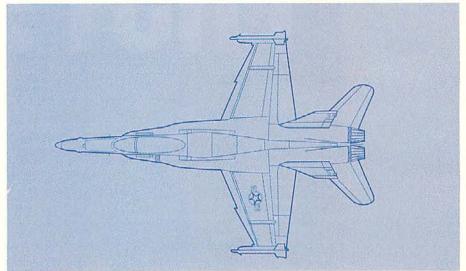
"Fox One Mike!" saved as FIRE.WAV

"FMV-103 Ready for takeoff" saved as START.WAV

"Pull Up!" saved as LOWWARN.WAV

Save these files with the names given. Consult the *Toolkit* Manual, page 12, for even more file names of sounds.

Next month, we'll finish off our three-part series with an in-depth look at the World Editor, the backbone of *Toolkit*. You'll soon be soaring through the air, engaging the enemy U2, and sharing your creation with friends. Polish up your *Flight Sim Toolkit* skills, because *CGW* and Domark are introducing a design contest along with the final installment of this series. **CGW**

Scorpion's View

Enter The Gladiator!

Scorpia Battles In Bethesda's
The Elder Scrolls: Arena
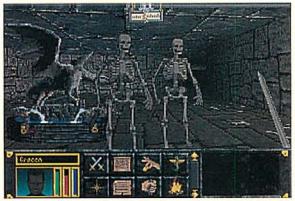
I n a time when most companies are bringing out shorter and faster-playing roleplaying games, **Bethesda** has gone against the grain by creating *The Elder Scrolls: Arena*, a game that could almost be a lifetime project for some players.

Think of it as "*Might & Magic* meets *Ultima Underworld*" on a very large scale. Those who have played a *Might & Magic* game know they are designed as a main quest surrounded by smaller, optional ones that provide experience, money, and the occasional neat item. *Arena* is much like that, except it has many, many, *many* side quests you can do, from running errands around town, to exploring the wilderness, to taking on jobs for the local ruler. You could easily spend as much time on just these side activities as you would on a complete game from anyone else. Fortunately, these are all optional, and you can do as many or as few of them as you care to.

Graphically, the game could almost pass as a new version of *Ultima Underworld*, with its first-person perspective, scrolling, animations and cursor control. The comparison is not, however, complete. For instance, you can't look up to the ceiling or down to the floor as in *UW*, and the keyboard movement controls are not fully implemented. Using key commands, you can only move forward, back, or turn and move. So, there is no way to turn in place, or "slide" to either side, obviously a considerable drawback in combat. Fortunately, those who prefer to wield their mice will have no such problem.

Arena's combat is an improvement on the *Ultima* model. Blows are controlled by holding down the right mouse button, and then just moving the mouse in the way you want to swing your weapon. A fast horizontal movement produces a level slash across the

body, pulling the mouse from top to bottom gives an overhand shot, while a quick move from bottom to top makes a thrust. It's the most natural way of fighting that I've seen in a first-person game. It doesn't move as fast as the combat in *DOOM*, but it's satisfying nonetheless.

Arena differs most from *Ultima* in its plot. *Arena*, for all its size, is a typical "treasure hunt/kill Foozle" expedition. Jagar Tharn, the emperor's Battlemage, turns traitor. He imprisons the emperor in another dimension, then uses magic to impersonate the ruler. Your mission is to travel across the continent, picking up the eight pieces of the Staff of Chaos, and then use the staff to rescue the emperor from Tharn's evil clutches.

This is no easy task, as obtaining the pieces requires you to trek through a minimum of 16 dungeons. Naturally, each staff piece is in a dungeon, but before you can get to the hellhole in which the piece is imprisoned, you have to help the people who can tell you where the dungeon is. Invariably, that means entering a "prequel" dungeon to find the tablet/map/scroll/whatever that contains

the information needed to discern the whereabouts of the staff piece dungeon.

The staff retrieval section is completely linear. After you have one piece, you receive a clue to the location of the next, and so on. There is no way you can do these out of sequence, nor stumble on a staff dungeon by accident. Only after you've tracked down the "helpful item" and returned it to whoever needs it does the dungeon show up on your map.

Speaking of maps, there are four of them in the game. The first is the town map, which you can call up any time you're in a city. This displays the entire town, although only in layout; you still have to walk around to find stores, temples, etc. Then, you can write their names (and any other notes you wish) on the map itself. The second map is the wilderness map, which comes up when you're outside the city gates looking for small dungeons or other interesting places to plunder. This isn't quite as detailed, showing only outlines, and only a small section of the area at a time. The third map is the dungeon map, which operates much like that in *Ultima Underworld*. As you walk around the level, it

The Elder Scrolls: Arena	
PRICE:	$69.95
SYSTEM:	IBM
REQUIREMENTS:	386-25MHz or better, 4MB RAM, VGA graphics, 25MB hard drive space, mouse; recommended 486-33 or better; supports Aria, Ensoniq, Roland, Sound Blaster and Ultrasound sound cards
PROTECTION:	None
DESIGNER:	VJ Lakshman
PUBLISHER:	Bethesda Softworks Rockville, MD (301) 926-8300

slowly fills in, showing what you've uncovered so far. However, neither this one nor the other two are scrollable through prior maps. You can only display the map for the area you're actually in at the time.

The fourth map is the travel map. This brings up a display of the entire continent, showing all the provinces. Clicking on a province gives you a close-up of it, with all the cities, towns, and villages to which you can travel. Clicking on a location tells you the distance and gives an estimate of the time needed to get there. Clicking on the "travel" button takes you there, with a minimum of fuss. While it may take weeks (depending on how far you're going) of game time, in real time it's a matter of seconds.

Talking About My Character Generation

Arena offers a nice spread of character classes based on the standard trio of Fighter, Mage and Thief. You can create a pure character of a single class or one with mixed class, such as a fighter/thief, mage/fighter, or even mage/thief/fighter. Each has certain advantages and disadvantages. Add in the eight races to choose from, and you have a lot to work with when building your character.

The creation process can be as short or as long as you desire. The short method is to simply pick a profession and a race, and go to the stats screen where you have a random number of points to distribute among the character's abilities. If you don't like the numbers, you can reroll as often as you want

until you're pleased with the results.

The long way is to answer a series of ten questions about your character. These are drawn from a pool of questions, so the same ones don't always come up. Each describes a situation and gives you three choices as to your actions. At the end of the "questionnaire," the game gives its estimate as to the most suitable profession based on your responses.
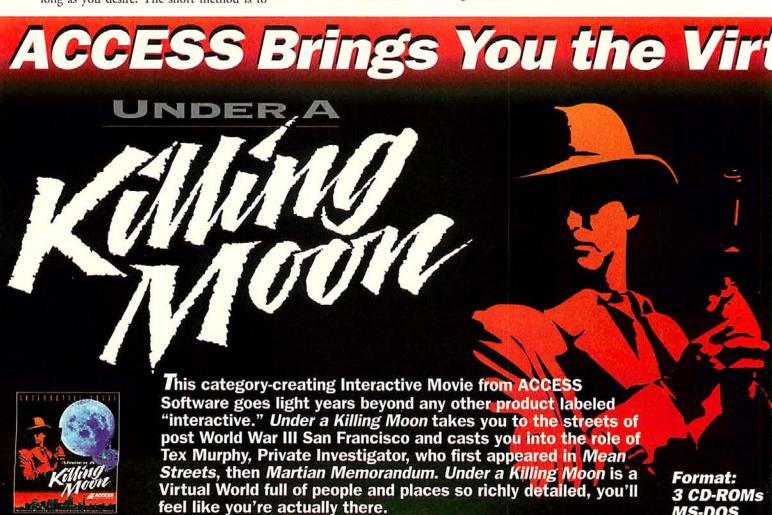
After creation, all characters begin in a sewer/cell area. This is a small dungeon, not very difficult, meant to provide some experience and a bit of treasure to get you started. A magic portal (when you find it) is the exit, and sends you to whatever your home province happens to be, where the game proper begins.

At this point, you could begin asking around for clues to Fang Lair, the first staff dungeon, or take out some time to explore and make money. The latter is the better course, and you won't have to look hard or long for opportunities.

Every village, town, and city has something for you to do, but the best jobs are handed out by local rulers. These usually pay the most. However, this part of the game is afflicted with problems, so it's always best to save before accepting a noble's quest, just in case. Essentially, some quests are impossible. The usual culprit is travel time. All quests have deadlines, and there are occasions when you just can't travel from here to there, or from here to there and back again, within the time limit. It doesn't matter if you're escorting someone to another town, fetching an item from somewhere else, or rescuing the royal heir from a dungeon—the time allotted is simply too short. In one case, the estimate

for travel was woefully underestimated; what was supposed to take 70 days actually went over 90. This one was especially irksome, as I lost out on almost 20,000 gold. Ouch!

The software isn't very stable, and even with three patches so far, problems still exist. The game is prone to crashing at inopportune moments, such as when you pick up those tablets/scrolls/etc. to get the staff dungeons on your map. I made it a habit early on of saving just before I grabbed the item, and that's a good habit to have. It is also a good idea to save often just on general principles, as the game can lock up or crash for no obvious reasons. While this doesn't happen a lot, it does occur often enough to make regular saving a necessity to avoid losing progress.
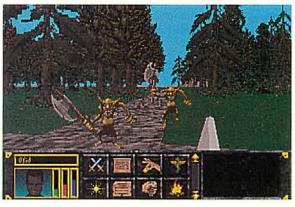
Another problem is that sometimes the dungeon auto-map is not saved properly. Upon restoring a game you may find that most of the level you mapped is not there any more. All you see is a mostly blank parchment. This happened to me in the final dungeon, but fortunately, you only have to get through this dungeon, not out again. It can happen elsewhere, though.

It's Not The Size Of The Dungeon...

The real problem, however, is that in a game of this size, everything eventually becomes mechanical and repetitious. Conversations, on the street with passersby or in taverns with the barkeepers, are limited to a fixed menu of choices. In every town, you must walk around to find all the stores and inns. The towns themselves are much the same, with little to distinguish them from one another. Even the quests become repetitive after awhile.

There is only a limited number of monsters, so you find yourself fighting the same opponents over and over as you go through dungeons. To make up for the lack of variety, the monsters grow in power as you do. Thus a skeleton, for instance, will do as much damage to you proportionally when you're 10th level as when you're 4th level, and with about the same chance to hit, even though your armor class (at least for warriors) is considerably better at the higher level.

Moreover, the game is very disconnected. Every quest, be it in town or for a staff piece, seems to exist in its own little universe. Nothing has any relation to anything else. Nothing you do in one place has an effect on another, except that noble quests are a little easier to

come by as your experience increases. Everything is isolated, and there is no sense of a coherent whole here.

For all that, *Arena* does have some nice individual touches. The magic system, for instance, allows you to buy spells "off the rack" or make your own (if you can afford it).

Further, thieves have more opportunities in *Arena* than in any other game. The towns can be a wonderland of wealth for the skillful and lucky picker of pockets, burglarizer of homes, and plunderer of shops.

Also, the wilderness isn't just empty space as in other games. There are roads, farms, wayside inns and temples, as well as mysterious places to explore. It was a pleasure to see

UW style graphics used for outdoors, both town and country, complete with weather effects such as rain, snow, fog, and even occasional thunderstorms.

Music and sound effects are good, especially in dungeons. Each monster has its own particular sound, so even if you can't see it, you have a pretty good idea of what's waiting for you in the darkness. The tune is always the same in the dungeons, but different music provides audio-ambiance in different towns, and there are signature tunes for the various shops, temples, and other specific locations, as well.

On escort duty, especially for a ruler's progeny, you are likely to be attacked by opposing forces if you have to spend the night at an inn (only inns are open at night, and you can never be sure what time of day you'll arrive at your destination town).

Overall, *Arena* is a game of amazing detail, with spurts of brilliance that can be lost in its huge scope. It is too big to offer real variety, and thus becomes no more than a very

sophisticated dungeon crawl with minimal plot. Still, the game is impressive as a first effort. Most of the pieces of a good CRPG are there. What is needed now is a tightening of the code, a little polishing up of the basic engine, a little scaling back of the size, and the inclusion of some real role-playing elements (some of those perfunctory conversations with the NPCs just beg to be followed up with further questions) with a solid storyline. These are well within Bethesda's abilities, and their addition to future products would make *The Elder Scrolls* a dynamite series. In the meantime, *Arena* is likely to appeal most to those who enjoy extended dungeoneering with occasional breaks for fresh air and sunshine. **CGW**

Bob's Your Bovine Uncle

Crystal Dynamics'
Action/Strategy/Cinematic Game,
The Horde

by Chris Lombardi

Paul Reiche, Fred Ford and the rest of the rabble at Toys For Bob are nothing but trouble makers to we organizationally obsessed editors at *CGW*. We've gone to great lengths to set up a rigid taxonomy of games—action, adventure, role-playing, strategy, etc.—so that we can classify, rate, sort, peg, and pigeon-hole games. We like to keep things nice and tidy, you see.

But the guys at Toys For Bob, and especially their ring-leader, Paul Reiche, have gone out of their way over the years to subvert our system. Witness Reiche's first game, *Archon*. Is it chess or is it a joystick jammer? Well, it's both. How about Reiche and Ford's *Star Control*—strategy game or action game? Both. *Star Control 2*—adventure or action game? Both!!! To maintain the integrity of our system we have to choose a single category, so we usually go with "action," but we don't feel good about it, and we don't sleep well as a consequence.

Well, Toys for Bob, along with their new parent entity Crystal Dynamics, have thumbed their collective nose at us again with *The Horde*. This game is very much an intense hack n' slash action game, but it's also a strategy game in the *Populous* tradition. To beat the batter further, it's a "multimedia extravaganza" with a half hour of full-motion video footage. *The Horde* is a hybrid of the most editor-baffling kind, and what's more aggravating, it's good. *Extremely* good!

Heimlich Heroics

The Horde's story begins with a wild feast around a king's table. As the King's chancellor, Kronus Maelor, relates a ribald tale of courtly doings, the pudgy King Winthrop tries to guffaw and gulp a hunk of turkey at the same instant. When the nobles fail to notice the king's gagging, it is the serving boy Chauncey who races over to give the royal rotunda a heave-ho, saving the King's life. As reward, Chauncey is granted vast tracts of land in the Shimto Plains. This would be a quick and dirty Happily Ever After if the Shimto Plains weren't currently being overrun by the Horde.

The Horde is a family of beasts best described as land-sharks without the CandyGrams. Like the sea predator, the hordling is a grotesque set of teeth in a continual quest for something to chew. Though there are several species of hordling, each shares this rapacious appetite for anything and everything, especially cows.

Now, about cows. Though the game is entitled *The Horde*, it could just as easily been called *The Herd*, given the obsession the game has for all things bovine. As mentioned, cows are the favorite snack of hordlings, but they are also central to the economics of the realm, as they are the single most profitable commodity in the game. They also have a special place in the heart of Chauncey, as they are kin; an orphaned boy, he was suckled at the teats of a wild but mothering herd.

Here's The Beef

The humor is several miles left of center, but the gameplay hits the mark dead-on. Your job as Chauncey is to colonize a virgin tract of land and ensure that it develops into a thriving community. Rather than having complete control over the development of your town, as in *SimCity*, you can only perform small feats of terraforming to ensure that your settlers have clear plots upon which to build their houses and plant their crops. Your primary task is to protect the community from seasonal raids by the Horde. To this end, you can dig moats, build fences and walls, hire knights and archers, among other defensive tasks.

Each season you have two minutes to do your terraforming, plan your defense, and place your grazing cows out of Horde's way. When the time is up, the hunting call of the Horde rings across the plains (and stereophonically across your speakers). Then, on an overhead map you can see the red devils racing directly toward the nearest tasty bit, be it tree, crop, farmer, or cow.

Wielding the King's mighty sword Grimthwacker, Chauncey races about the land under your direction, grimly thwacking hordlings before they wipe out the town. The mouse is the preferred method of control, and the mouse-interface is quite elegant once you get used to it. By clicking the right mouse button and moving the mouse side-to-side, you can cycle through action options. Moving the mouse up and down changes the view from ground-level to overhead map. That's all there is to it. Joystick and keyboard control are also available, but both are irritatingly slow and clumsy when compared to the mouse.

Fancy swordplay will serve you well, but the key to success is resource management and planning. At the end of every year, the King's Chancellor (who we find is actually the Evil Chancellor) will exact a tax from Chauncey with no little pleasure, and making enough coin to keep

The Horde

PRICE:	$59.99
SYSTEMS:	IBM (reviewed), 3DO
REQUIREMENTS:	386-33Mhz, VGA graphics, 4MB RAM, CD-ROM; supports Ultrasound, Sound Blaster, Sound Board, and Sound Master sound cards
PROTECTION:	None
DESIGNERS:	Toys For Bob
PUBLISHER:	Crystal Dynamics Palo Alto, CA (415) 473-3434

You've Trashed Their Homes, Left Their Police Force in Ruin and Laughed While a 300 Ton Monster Trampled Their Streets and Residential Zones...

Now, Those Quiet Little Citizens of SimCity® Have a Few Words For You.

up with his increasing tax demands is no easy task. Money is earned when crops, cows, or trees survive a season of hordling invasions. Money is spent to build defenses, hire knights and archers, buy cows, or use special items during battle. The successful Chauncey is one who carefully balances the cost to defend a commodity against how much that commodity will yield.

Many games have used resource management and action as the underlying structure of their design, but *The Horde* is catapulted above the rest by its variety of play. The game is constantly changing, and new surprises are doled out at regular intervals, pulling you along like a path of sugary sweets. Once Chauncey has survived two years in the Shimto Plains, he is moved on to the Tree Realm of Alburga where the environment offers new challenges. Whereas in the Plains Chauncey could plant and harvest trees for cash, in the Tree Realm he cannot harm a single tree lest he sacrifice some hit points. Likewise, the other regions (swamp, desert, and arctic) have unique limitations and require that you use very different strategies.

The hordlings offer their own surprises as well. Each environment has a species of hordling that is endemic to it. There are pygmy hordlings that hide in trees and fire blow guns; desert hordlings that burrow underground and poke Chauncey with their drill-bit heads; and arctic hordlings that specialize in snowballs, both large and small. The funniest creature has to be the shaman hordling that shoots fireballs, teleports around the screen, and raises slain hordlings from the dead with a little witch doctor mumbo-jumbo.

Variety is also introduced through special items that you can buy at the end of each year. Among the dozen or so items are a flamethrower for nicely broiled (never fried!) hordlings, Boots of Boogy to ensure Chauncey is "staying alive", bombs that can

be dropped and kicked, even aerial support from a dopey dragon with a lot of flame but an undiscriminating aim. Add these special items to the unique environments and hordlings, top with random events that both help and hurt your cause, and you've got a game with a lot of staying power and a ton of charm. The only criticisms I might have are that: 1) it doesn't have a difficulty setting, so those without Olympic-calibre reflexes may find it a bit too tough and 2) it uses the age-old action game convention of only allowing you to save at the end of several levels. So, if Chauncey is killed by the last hordling in the Winter month of a year, it's back to Spring to start over again.
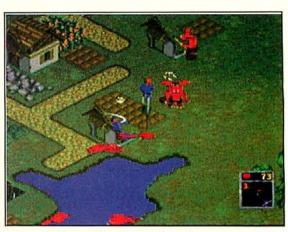
The animation of Chauncey, the hordlings, and the local farmers are wonderful. Chauncey awkwardly swings his too-heavy sword around in a full looping circle, killing hordlings in the radius. The adolescent hordlings lope awkwardly along like they've yet to grow into their overly large feet. When a hordling gets hold of a cow or farmer, he'll shout out ("Ooooo, num nums!") and rub his belly in glee. Watching hordlings die is the real treat: they apparently have an extremely high internal pressure, for whenever a sword pierces their skin they burst like a bubble, their eyes popping out of their skulls and their hides falling flaccid like spent balloons.

At The Moovies

Around this solid game **Crystal Dynamics** has wrapped video segments that tell the saga of Chauncey and his struggles. At the end of every game segment, and at the beginning of the next, you'll be treated to some of the best made-for-CG (that's computer game) footage yet. The sets, directing, cinematography, acting—the whole cinematic package is amazingly good.

It's not Oscar winning stuff, mind you; it's standard fare for a TV show, but it really stands out against other computer game productions.

Kirk Cameron's work on TV's *Growing Pains* earns him top billing on the packaging, but his isn't the most impressive performance. As the awkward, teenage Chauncey who stumbles over sword and fumbles over words in the presence of royalty, he is occasionally too convincing. It's Michael Gregory as the throne- and show-stealing Evil

Chancellor who makes this a must see. His character, as nemesis of Chauncey, is cut and pasted from the Prince John role in *Robin Hood: Prince of Thieves* with a little bit of Prince Humperdink of *The Princess Bride* throw in. Gregory obviously had fun with the role, and it's that energy that carries the story.

In addition to the main storyline are a handful of brief bits for random events. A newscaster will pop up to report on increased immigration, crop yields, rainfall, and the like. The Evil Chancellor will tell you, with obvious pleasure, that there has been an increase in the hordling population or in the tax rate, or that he has borrowed one of your items for his own needs. The real gems, though, are a couple of segments broadcast by a hordling-run pirate TV station in which they announce an "Adopt A Hordling" campaign and spread propaganda about Chauncey.

Taken as a whole, *The Horde* is remarkably well-rounded. The gameplay, music, graphics, and video are all, individually, outstanding, and they only amplify each other when combined. It's refreshing to see a game hyped for its "multimedia" enhancements actually deliver on the advanced billing. So many times we've seen video segments misused, so that either the video becomes the "game" (which is to say no game at all) or it adds little, if at all, to play. The key to *The Horde*'s success, it seems, is that **Crystal Dynamics** started with great gameplay and then added the whipped cream and "multimedia" cherry properly, as garnish.

So, while we may struggle over the taxonomic classification for *The Horde*, and while we might curse the punks at **Toys For Bob** for their wanton disregard for our age old system of categorization, *The Horde*, without question, will be at the top of a category for 1994, whichever category that might be. **CGW**

BEST OF THE REST

Heaving The Compact Discus

Shareware Compilations on CD-ROM

by Chuck Miller

We're back again after a one month hiatus to look at the best buys in shareware gaming. This column had to step aside for the enormous CD-ROM round-up last issue, but shareware gaming on CD-ROM will have its say this month as we look at the wealth of shareware collections on this new delivery medium. Among the contenders for your shareware dollars this time around are discs from Aces Research, Inc., Walnut Creek CD-ROM, Profit Press, and Wizardware Multimedia. Let's spin up these compact wonders and see what they've got.

Aces Up Your Sleeve

Following on their previous releases, Aces Research brings us yet another title focusing on ease of use as opposed to volume of titles. *Games Expert for Windows Volume 1* ($25.95) has a user-friendly interface for loading games directly from CD. Though the collection is rather limited, including only 87 games in total, no decompression or installation is necessary prior to play, making this a good choice for the Windows novice. Included are several well-know games, including *Canfield, Castle of the Winds, Destroyer for Windows,* and *Search & Destroy.* Connoisseurs of shareware games will have seen most of these games before and may find this offering lacking in bang to the megabyte. Contact Aces Research, Inc., 4480-C Enterprise Street, Fremont CA 94538, (510) 683-8855 for more information.

Up the Right Creek

Walnut Creek also has some Windows dressings in store for its customers. Their *CICA Microsoft Windows CD-ROM* ($29.95) offers a boatload of games for Windows enthusiasts—157 unarchived titles ready to play and an additional 200-plus compressed files. Whether you enjoy *Boggle, Canfield, Taipei, Ishido* or any of the dozens of other games on this CD, this Windows collection offers a superior value to many of its counterparts. For those souls who use their computers for something besides gaming, included are hundreds of utilities, screen savers, diagnostic

utilities, printer and video drivers, icons and bitmaps.

Walnut Creek takes on an English air with *Libris Britannia* ($69.95), a disk containing the entire software library of The Public Domain and Shareware Library of Sussex, England, if you can imagine. Six hundred megabytes of games, graphics, and other programs covering agriculture, astronomy, ham radio, home finance, word processing—it's all here. Just be forewarned that a few of the titles are aging, and not very gracefully.

If the Brits aren't your bag, Walnut Creek may bring much joy to Amiga owners with CD-ROM drives. The *Aminet CDROM* ($29.95) is relatively inexpensive, while offering classics like *Drip, Lamatron, MegaBall, Pom Pom Gunner* and *Moria.* This platter

Apogee's Monster Bash from PC Games 2 The Maxx

contains several hundred Amiga games, plus a smattering of software gags, game hints, cheats, game editors and commercial game demos. With the scarcity of CDs available for the Amiga, this certainly fills a niche for long-suffering Amiga users.

For orders or information, contact: Walnut Creek CD-ROM, 4041 Pike Creek Lane, Suite D-820 Concord CA 94520, (800) 786-9907. Be sure to include $5 with your order to cover shipping and handling.

Making a Profit

Profit Press shows that their name is appropriate, coming through once again with some great CD-ROM packages. The all-time winners of CDs on a value-per-cost basis have to

be their titles *PC Games 2 The Maxx,* with over 1000 DOS-based games, and *WindowsWare 2 The Maxx,* featuring 200-plus Windows-based games and many other Windows programs. Each CD is a steal at only $12.95. Though they lack the nifty Mega-Search Retrieval Software of Profit Press' more costly *Mega* offerings, finding and using the programs on this disc is still a breeze. Both titles are also available in a six-disc set for $49 that includes *Sights&Sounds 2 The Maxx, SwimSuits 2 The Maxx, BusinessWare 2 The Maxx,* and *ShareWare 2 The Maxx.*

If you're not *Maxx-ed* out by this point, Profit Press might tempt you further with *Mega Windows 2* ($29) and *Mega CD-ROM 3* ($29). Both offer a wide selection of shareware programs, including games, though the emphasis is clearly on variety. All of the above discs can be ordered direct and are highly recommended. To place your order, contact: Profit Press, 824 E. Ft. Lowell Road, Tucson AZ 85719, (800) 843-7990. There is a $6 shipping and handling charge.

Into The Mix

Though not specifically a game collection, *The Mega-Mix CD-ROM* ($29.95) from Wizardware contains over 150 games among its accumulated assortment of graphic images, paint, capture and fractal software. Like the discs from Aces Research, these programs are all ready to run directly from the CD-ROM, allowing you to check out a program before installing it to your hard drive. Like trail mix, however, the flavor may appeal to those with a less discerning palate, as this CD is rather limited in what it has to offer the more savvy player. While some good shareware titles can be found here—*Duke Nukem, The Orion Odyssey, Galaxtix, Commander Keen, Talking ABC's,* and the *Hugo* adventures—this disc is much more expensive than those of Profit Press and Walnut Creek, and is also more difficult to navigate and lacks the user-friendliness of its contemporaries. If you would like more information about this CD-ROM collection or others from this vendor (including image CDs like *Desktop Magic, GIF Galaxy,*

and *Pixel Perfect Graphics*), contact: Wizardware Multimedia Ltd., 918 Delaware Avenue, Bethlehem PA 18015, (800) 548-7969.

With all of these CDs, remember that the price you pay is for the CD-ROM as a distribution medium and does not constitute the purchase of the software on the disc. You are responsible for registering each shareware program with its author according to his or her stipulations.

Waves In A Stellar Sea

Since this issue has a science fiction bent, I would be remiss if I didn't include at least one game review along this particular theme. *Quatra Command* from **Doe Entertainment** rockets away from its competitors, offering a high-powered Windows action game. So fast and furious is the action, with commercial-quality visuals and 16-bit stereo sound, that you'll find yourself looking for the slot to drop the quarters in.

Quatra Command is slow to load, even on a 486 system, but no holds are barred once the game begins. A sultry female voice draws you into the game, whereupon you slay wave after wave of alien attackers in classic arcade

Quatra Command from Doe Entertainment

style. Planets scroll slowly by, but you generally have little time to admire the scenery, as the different enemy ship types become more and more numerous, flying at higher and higher speeds with each level. What sets this game apart from the norm are the stray meteors that cross the screen *a la Asteroids* making the contest even more difficult and addictive. Graphic detail can be increased or decreased and the number of objects on screen can be raised or lowered. Sound can be set for stereo, mono, QSound or can be turned off, a real plus considering that stereo sound is a real speed and memory hog. The

main feature lacking is the ability to set individual play difficulty levels, such as beginner, intermediate and advanced (the game is difficult even on the easiest levels).

If you like a challenging action game in a science fiction setting, *Quatra Command* is an excellent choice. System requirements are a bit demanding, the ideal being a 486/33DX, 6MB RAM and a fast video card, but you get what you compute for. For a registration fee of $17, plus $3 shipping and handling ($7 outside the USA), *Quatra Command* warps in at a great price. Those daring to enlist should register with Doe Entertainment, 2412 Desert Oak Drive, Palmdale CA 93550. Checks and money orders in US currency only.

Send Us Your Best

If you have authored a shareware or public domain game for MS-DOS compatible, Macintosh or Amiga computers and would like to have it considered for review in this column, please send two complete copies on 3.5" disks with printed documentation and a cover letter to:

Best of the Rest
Computer Gaming World
130 Chaparral Court, Suite 260
Anaheim Hills, CA 92808.

CGW

PENNANT FEVER!

CGW's Box Score for
Pursue the Pennant 5.0

by Jim Gindin

Back in the dim recesses of computer gaming's past, baseball simulations were almost exclusively text-oriented, statistics-based affairs. Beginning with the classic *Earl Weaver Baseball*, base hits on the computer required more in the way of graphics and sound, and even stressed action-oriented physics models. Still, baseball text games were able to carve out a niche, largely because of the statistical nature of the game.

Pursue the Pennant began as a boardgame and has since developed into one of the most accurate baseball simulators on the market today. This most recent version (5.0) features a redesign of the game's simulation engine, but is just as completely text-based as its predecessors. There are no spectacular bit-mapped ballparks or digitized photos of players that you would expect in higher-profile baseball products.

What you do find is that *Pennant*, while not a large game, uses every byte possible to build a vast library of play results. The traditional radio-style transcription is presented in a text area below the hitting team's lineup and, fortunately, the library is thorough enough that play description is rarely redundant. It even avoids those tired baseball clichés like "can of corn" for a high fly ball and "tater" for a home run that have plagued us since the like of "Dutch" Reagan recreated games from telegraphed statistics. The game's replay value is also enhanced by a number of special situations, where players sometimes argue with the umpire or tumble down the dugout stairs while reaching for a foul ball.

For the baseball simulation enthusiast, *Pennant* provides several screens of numbers for every player, including a full set of batting, pitching and fielding statistics. The simulation uses these stats properly, assigning RBI's, errors and other criteria with a sure understanding of the often confusing rules of baseball. After selecting game lineups, the program allows for different weather effects, designated hitters, relief pitcher warm-ups,

and injuries, which can wreak havoc with fragile catchers and pitching staffs.

During game play, the batting team can steal bases, bunt, or try a hit-and-run. The pitching team can challenge hitters or pitch around them, an option that increases walks and decreases extra-base hits. The infield may be moved in to prevent a runner on third from scoring, the baselines can be guarded to decrease the chance of a double down the line, and corner men may be positioned to defend against a bunt. All these features are fairly common in text baseball games, though their implementation is much more clear and accurate here.

Where *Pennant* shines is that the AI makes a surprisingly good manager, by far the best

on the market at knowing when to replace a pitcher. Oddities like sticking a closer in the game in the second inning and leaving him in for the rest of the game for a 20-run pounding are nowhere to be seen. *Pennant* bases lineup decisions on the closeness of the game, the specific situation, and how late it is in the game. While it fails to recognize "hot" players, this is hardly a problem given the variety of decisions where it makes the right call.

Game play from the human side is not so smooth. For instance, you sometimes need to decide whether the runner on second should try to score on a single to center field. The text provides only a couple of clues whether this base advance is reasonable, with your runner often being thrown out by more than ten feet. *Pennant* needs to tell you where the base runner is when the fielder reaches the ball. In real baseball, pinch-hitters are always announced before the pitcher places his foot on the pitching rubber. *Pennant* requires that you replace your pitcher before knowing who the pinch-hitter is, putting you at a disadvantage. The computer also never warms up its pitchers before use, which makes your pinch-hitting decisions a little tougher. Even with

Pursue The Pennant 5.0

PRICE:	$79.95
SYSTEM:	IBM
REQUIREMENTS:	286 or better
PLAYERS:	1-2
PROTECTION:	None
DESIGNER:	Tom Tippett
PUBLISHER:	Pursue the Pennant PO Box 19703, Greensboro, NC, 27419 (910) 299-4388, (800) 765-4787

these quirks, the program plays a fine game of baseball.

As with any good baseball simulation, *Pennant* is a natural for league play. Players can be created and moved throughout the league via a free-agent pool. Each team has a 40-man roster, with at least 25 players active, with manager profiles and primary lineups included for use against left or right-handed pitchers. These lineups have associated depth charts, which the computer manager uses to start a particular player in a certain percentage of team games. You can also designate late-inning defensive replacements and platoon players.
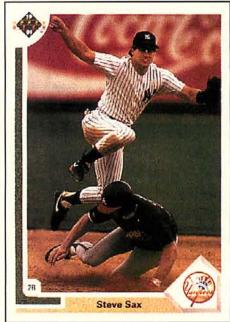
Pitching rotations are generated through another set of profiles. You can choose the size of a rotation, spot-starter percentages, and depth charts for long relievers, set-up men and closers. The computer will set these up upon request, but is very likely to stick players who pitched only a few innings in reliever roles that garner 60-to-80 innings of work per season. Therefore, it's better to put together all the depth charts yourself, which will reward your hours spent with a truly interesting and realistic season replay.

During league play, *Pennant* handles indi-

Dave Stewart

vidual player situations through an event table, created through modification of the three stat forms available. When it's time for league simulation, *Pennant* can complete a 1000-game league schedule in under two hours. *Pennant* also allows you to enter league information, so that it can adjust results to reflect league averages. This allows more realistic play when teams from different time periods play each other. If a shortstop from 1905 makes 40 errors when the league average was 50 for shortstops, he is likely a better fielder than a shortstop from 1991 who made 25 errors when the league average was 20. Thus, he will perform better than the 1991 shortstop when they play in the same league.

Steve Sax

Range factors are even more crucial than error rates when determining how fielders affect a game. A poor shortstop will watch and wave at a ground ball hit up the middle, whereas an excellent shortstop takes away certain base hits. A *Pennant* team composed of fielders with excellent ranges will win 20-30 more games per season than a team filled with lousy fielders, correctly emphasizing the importance of defense in baseball. Further, the discussions of the "elite talent pool effect" and the "perfect hindsight effect" in the game rules, are must-reads for anyone who has ever expressed frustration at Sandy Koufax's inability to match his 1966 Cy Young Award-winning numbers in a simulated season.

While *Pennant* does provide an accurate baseball simulator, it does require a lot of input from the user. If you go to the trouble of adjusting active rosters about once a week,
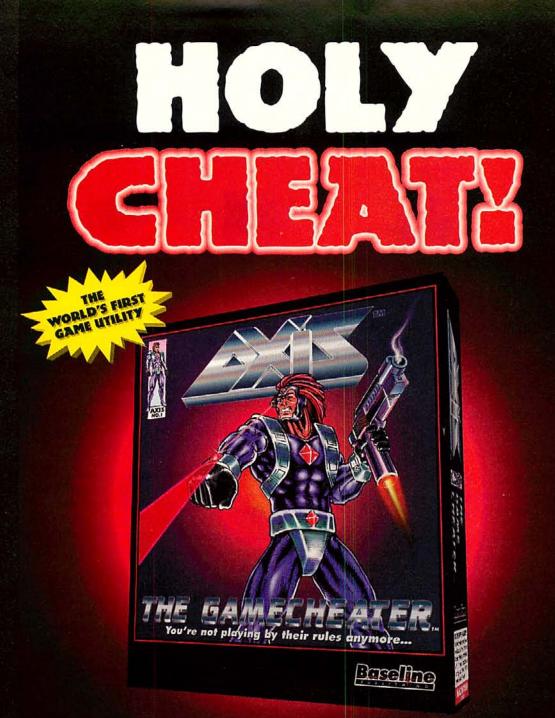
keeping track of injuries and demotions as they happened in real life, you will end up with an incredibly accurate simulation. This enormous amount of work is necessary, since *Pennant* provides no mechanism for automatically adjusting an active roster at a given date in the schedule, which is the game's biggest omission.

Nolan Ryan

Like most games, *Pennant* can be abused. A player who had two hits in five at bats during a season is a .400 hitter, and if allowed 500 chances, can garner 200 hits. Worse, if one of those two original hits was a home run, expect about 100 home runs from that player over the course of a season. On the whole, you can expect about 10 percent variance in a player's statistics over the course of a season, easily in line with other stat-based games. Home runs vary more than any other statistic, because weather and park effects tend to alter home run production more definitely than they would alter other numbers.

Finally, like most games these days, bugs still lurk in the final product. Batters are sometimes skipped in the lineup, errors are charged that did not occur during the game, the league disk fails to include a National League schedule, and there is an occasional program hang-up when using auto-play. These are relatively minor and, to the company's credit, the designers have a good record of providing prompt upgrades to their games.

So, in spite of a few errors, *Pursue the Pennant 5.0* is a Golden Glover. Its overall accuracy and attention to detail is impressive, and it deserves a starting spot in an serious fan's lineup. **CGW**

Letters from Paradise

Open Letter To Charles Ardai

I recently obtained a copy of the **LucasArts** game, *Sam & Max Hit The Road*. After playing the game, I can assure you that Sam & Max *will* "Play in Peoria."

Kent Hoffman, M.D.
Peoria, IL

Skywalker Ranch

Take a trip to Skywalker Ranch and write an article on the developing technologies at LucasArts and Industrial Light and Magic. I'll go for you!

Joe Lombardo
Oceanport, NJ

To paraphrase a former President, we could go to Skywalker Ranch, but it would be wrong. It really wouldn't do a lot of good since neither ILM nor LucasArts Games are located on the ranch. We do, however, make periodic road trips to the game companies and we try to keep you informed through Company Profiles and READ.ME news articles. Of course, anytime George wants to invite us over to visit with Spielberg, Coppola and the gang, we'll be glad to show up. We might even rent a Tucker for the occasion.

Basham Smash 'Em!

I want to congratulate CGW and Tom Basham for being the first magazine and reviewer in the entire history of computer game reviews to present an accurate and knowledgeable article on a flight sim in your coverage of *Aces Over Europe* (CGW #115). Never before has a reviewer clearly explained about aerodynamics and how they affect game play. Basham spoke of the aerodynamic progression from a buffet to a spin and how aircraft can lose altitude in nose level and nose high positions. This shows that Tom and CGW take their jobs seriously. Tom is professional enough to take the time to deal with aerody-

namics and now, he is, in my opinion, the best flight sim reviewer in any magazine (and I read them all). Congratulations and keep up the good work.

Richard Ordway
Boulder, CO

We don't think Tom was necessarily the first, but we know he's one of the best. We're glad to be able to publish his extremely knowledgeable views.

Wind In Their Sales
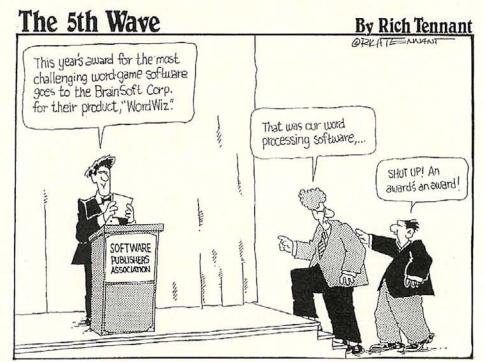
I am agog at the chutzpah of **Tsunami Media, Inc.** In the latest advertisement for *Ringworld* (*CGW #114*), Tsunami has deployed a masterpiece of selective blurbing in what appears to be a bald attempt to mislead readers about what CGW had to say about the game. They quote one line from my review (*"Never before has there been a game so movie-like in its construction"*) but carefully avoid quoting the subsequent lines which explain in what way the game is "movie-like:" *Never before has there been a game so movie-like in its construction. There are great stretches of action during which the player literally does nothing...Even when the player's input is requested, it is often irrelevant...*

Tsunami may wish to note that this letter, if selectively excerpted, could produce the blurb, "In...Ringworld..., Tsunami has...a masterpiece..." I invite them to slap this on all their promotional material. I could certainly use the laugh.

Charles Ardai
New York, NY

Not only was the game "movie-like," but so was the subsequent advertising campaign! If film

The 5th Wave

By Rich Tennant

This year's award for the most challenging word-game software goes to the BrainSoft Corp. for their product, "WordWiz".

That was our word processing software,...

SHUT UP! An award's an award!

SOFTWARE PUBLISHERS ASSOCIATION

The Invasion begins May 7th.

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Alien Invasion

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SAM & MAX FREELANCE POLICE

TM & © 1991 BY: STEVE PURCELL
LETTERED BY: L. LOIS BUHALIS

WELCOME TO ATLANTIS — PLEASE DO NOT TEASE THE ATLANTEANS

PLENTY OF PARKING.. THAT'S WHAT I LOVE ABOUT MOST MAJOR LOST CITIES.

WELL, HERE WE ARE IN THE LOST CITY OF ATLANTIS!

WHY ARE YOU DRESSED LIKE THAT, SAM?

I GUESS I'M FEELING ALL... ADVENTUREY.

WOW, SAM, YOU SOUND LIKE SOME CLAMMY OLD THESPIAN.

REALLY? I DON'T REMEMBER EVER DATING WITHIN MY GENDER.

GREETINGS MY FRIENDS.

WHADDAYA KNOW? A TALKING SEAHORSE MAN!

I AM BATHESPHERE--HIGH PRIEST OF ATLANTIS.

SAM, DID YOU KNOW THAT THE MALE SEAHORSE CARRIES THE YOUNG UNTIL THEY SUDDENLY ISSUE FORTH FROM THE BELLY LIKE CONFETTI?! JUST ANOTHER OF NATURES "TALES TO MAKE THE HAIR STAND ON END."

AS YOU CAN SEE, THE GREAT BEAUTY OF OUR SURROUNDINGS ENHANCES OUR MOIST LIFESTYLE.

SAM, HAVE YOU EVER SEEN A PREGNANT SURINAM TOAD? WHEW.

SHUT UP, MAX.

BUT ALAS, THE INTRUSIVE CAST-OFFS FROM YOUR WORLD ARE DESTROYING THE IMMENSE SERENITY OF OURS. THAT IS WHY WE CALLED.

I CAN SEE LIGHT RIGHT THROUGH HIS HEAD.

YOU MUST CONVEY THE MESSAGE TO THE SURFACE WORLD LEST WE WITHER AND PERISH.

WE'LL DO IT IF YOU FEED US!

TUNA CASSEROLE ALWAYS TASTES BETTER EATEN ON-SITE.

THESE AREN'T DEAD.

WELL, TIME TO CONVEY OUR SIGNIFICANT MESSAGE.

PEOPLE OF THE EARTH! STOP THROWING YOUR OBSOLETE CRAP INTO OUR PRECIOUS OCEANS.

REMEMBER-- DISCARDED PLASTIC AND ALUMINUM BEVER-AGE CONTAINERS CAN BE FASHIONED INTO SAFE, AFFORDABLE CARS OF THE NINETIES--

AND NUCLEAR WASTE COULD BE WORTH BIG MONEY SOMEDAY IF WE CONSIDER IT "COLLECTABLE."

SO, HOW WAS THAT?

NEVER MIND.

---

publicists can selectively blurb Charles Champlin and Rex Reed, I guess we have to expect *"movie-like"* treatment from software publicists. Frankly, we doubt that gamers are as gullible as mainstream movie-goers.

Arsenic And Old Anime

Regarding your review of *Metal & Lace*, it's sad to see anime so abused (exploited). Anime, at its best, is a wonderful and fascinating art form with gorgeous scenery and animation, exciting stories and fascinating characters (with the occasional scantily clad cartoon babe, of course). I regret to think that many people will get their first exposure to anime through a product which seems to only emphasize "babes" and seems to ignore the other things which make anime great. Me, I'll be waiting and hoping for a game worthy of the anime label. *Kei And Yuri Save The Galaxy?*

The Commodore
Ft. Worth, TX

Actually, with Kei and Yuri (The Infamous "Dirty Pair" of Japanime Fame), it would be necessary to destroy the galaxy in order to save it. Since Toren Smith (translator of several manga, including the Dirty Pair, into English comic form) has been known to read CGW, maybe this will inspire him to find a software publisher.

I think that Charles Ardai's review of *Metal & Lace* was irrelevant to computer gaming. I think games that serve as vehicles for cheap, adolescent sexual thrills should be ignored by a magazine of this caliber. While many "A" quality games go unreviewed in your pages, your decision to give precious space to such an obvious "B" quality game is puzzling. I hope gaming will not embrace the concept that "sex sells" as TV and the movies have, at the expense of real content.

Brett Berger
Strongsville, OH

Frankly, we aren't aware of any "A" quality games that have not been reviewed by CGW. For that matter, we aren't aware of very many "B" quality games that have not been considered

in our pages. Finally, we wonder how a magazine can make a statement in favor of real content without pointing out some games with limited content. *Metal & Lace* had some content in addition to the racy art, just not enough content in addition to the sexy anime females.

Working For Scale

How do I scale my grades for games, compared to current releases or what was available when the game was new? For example, *Wolfenstein-3D* was an A+ when new, but now it can be considered as an A- at best.

Michael Connelly
Allendale, NJ

Since the Top 100 is based upon a cumulative score, you should rate games for how you perceive them at the present time. The scores which they have already accumulated will provide the weight that indicates how they were rated at the beginning.

I subscribe and get CGW about a week early. How long should I wait before mailing the CGW Poll card for that month?

H. Shim
United States Air Force Academy, CO

Send it right away! Postmasters are standing by.

Why isn't the *CGW* Top 100 Poll Questionnaire in alphabetical order?

E. Choy
Portland, OR

Would you believe we flunked kindergarten? Don't answer that! The questionnaire is designed to rerate the top games every month, and as many of the new games for which we think we can get sufficient responses. We alternate the placement of the game titles on the questionnaire to avoid "Top of the Ballot" syndrome. In many elections, local officials are elected as much because of ballot position as because the voters approve of their platforms. We don't want games to score artificially high because they are at the top of the list.

It would make the CGW Poll Ratings more useful as a "Buying Guide" if the rating numbers could be explained. How are possible sample size biases corrected? The poll could have more detail: ratings for graphics, sound, ease of use, documentation, repeat play value, and historical accuracy. Please list the versions of games rated in the polls.

Bruce Kohrn
Baltimore, MD

The ratings numbers are a cumulative rating based on all responses to date. We usually tabulate about 500 cards and only print ratings

based on responses equal to or greater than approximately 10% of the cards tabulated. If the sample size is less than that, the title will not appear on the Top 100. It is well-known that an increase in the number of questions within a survey reduces the number of responses to that survey. So, we have elected not to break down the questions into the detailed categories you have suggested. We would rather have a more representative sample than to be too ambitious and receive a poorer response. Also, since these are cumulative ratings and come from numerous sources, there is no way of knowing (short of asking lots more questions) exactly which version people are using. Like democracy, we know our poll isn't perfect, but we still think it is the best there is.*

Bias-Sphere

Why all the complaints about computer game magazines pandering to game publishers? If I could find coverage of politics [in news magazines] as unbiased as your game coverage, I'd read *Time* and *Newsweek*.

Kirk Thomas
Lawrence, KS

Does that mean you'd quit reading about games?

Ahead Of The Game

Please do an overall review of WWII games.

Jeff Zlatkin
Newark, DE

M. Evan Brooks provided such an overview in a two-part article that ran in CGW #110 and #111. Back issues are still available.

Aces Higher

You might want to let *Aces Over Europe* fans know about a file called AOEREA.ZIP (found on CompuServe) that modifies flight handling and flight characteristics of enemy planes. *AOE* now feels really great, more like what I loved about *Red Baron*.

Dan Cumpian
Richmond, VA

Ratings Game

The controversy over ratings in computer games is grossly overblown. Most prime time TV dramas are more vulgar than any computer game. Thank goodness gratuitous swearing and obscene gesturing hasn't found its way into computer gaming (at least, not on the computer screen).

Clyde Dodge
Corona del Mar, CA

With all the sex and violence in other en-

tertainment media, it would be a great moral stance for the entertainment software industry to put self-imposed limits on what people, especially kids, interact with. Try to make an effort to positively affect the kids and society.

Cameron T. Brett
Campbell, CA

How about an N-17 rated patch for Leisure Suit Larry 6?

Dave
Celina, OH

There you have the gamut of opinion on sex, violence and computer games. Again, CGW does not want to become the moral arbiter of appropriate subject matter for computer games. That would be costly and unproductive (like the local Motion Picture Classification Board that cost Dallas, TX so much money in legal fees and maintenance costs up until the last year or so). We simply advocate a voluntary, across-the-board ratings system for all interactive entertainment that would inform consumers about potentially controversial elements within the games. We do not want to see the rise of a new bureaucracy. We just think publishers ought to be more candid about what they're placing on the market.

The Larger Gaming World

As a diehard wargamer, I would love to see an article/issue on PBM/PBEM/BBS wargaming. I know there are many quality games available on the BBSs. Quite simply, *World Conquest* is the best wargame I've played in years! The biggest reason for that is the fact you are playing a game vs. real live other domineering types!

Stuart K. McNeil
Dothan, AL

We are working toward covering some of these types of games in our Telegaming Issue which will appear in the Fall. Thanks for the tip on World Conquest. We haven't tried that one yet.

Silence Of The Lame

Thanks to your magazine, I don't end up wasting my time with lame games. I can now waste my time in other lame ways.

'Tater
Melbourne, FL

CGW

Conquer Memory

Nothing masters memory like QEMM®.

And now, for just a few dollars more than you would pay for QEMM alone, get QEMM 7 with some of the hottest games around!

Game Pack 1 — SOLD OUT

Game Pack 2

Game Pack 3

QEMM was once the power users' secret. Now it's the power players' secret. As Compute Magazine's reviewer said: "If you're a Power user who wants to play with the monster games, then MemMaker probably won't free enough memory. You'll need Quarterdeck's QEMM 7 memory manager utility, which not only will free up more than enough memory but will even optimize parts of your multiply-configured system." No wonder it's the number one selling PC utility.

And now, it's virtually free when you buy our game packs. Check with your favorite retailer or call Quarterdeck direct.

With QEMM on your side, you'll never be defeated by the memory monster again.

Game Pack 2 includes the hot *Aces of the Pacific*, a realistic World War II fighter simulation and *Front Page Sports: Football*, a super-detailed sports simulation.

Game Pack 3 features *Shadow Caster*, the exciting graphic role-playing game and *Privateer*, a challenging space adventure in the Wing Commander Series.

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Circle Reader Service #105

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WHY THE 'F' IN FM SOUND BOARDS MEANS 'FAKE.'
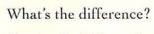
With a headline like the one you just read, you might think an ad such as this represents a slanderous assault on the makers of FM synthesis sound boards.

Well, it isn't.

It's really more of a story about how all good things must come to an end. If only to make room for better things. Like the UltraSound MAX™ sound board.

Until recently most, if not all, PC sound boards used a technology developed in the 1970s called FM synthesis (frequency modulation). In fact, the most popular sound board on the market today still generates sound via FM synthesis.

However, UltraSound MAX (also known as just the MAX), the newest sound board from Advanced Gravis, incorporates a higher technology called wavetable synthesis.

{ *Even Van Gogh could appreciate the CD quality sound delivered by the MAX.* }

What's the difference?
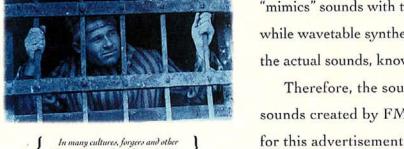
Put simply, FM synthesis fabricates or "mimics" sounds with tone generators using mathematical formulas, while wavetable synthesis creates sounds using digital recordings of the actual sounds, known as samples.

Therefore, the sounds created by the MAX are real, while the sounds created by FM synthesis boards are fake. (Thus, the impetus for this advertisement.)

{ *In many cultures, forgers and other fakers are sentenced to life imprisonment.* }

And whether it's a guitar or a gorilla, the digitally-recorded sounds you hear will come straight at you in 16-bit, 44.1 kHz sound with over 90 dB of dynamic range. In essence, compact disc quality. (Say goodbye to those horrible, tinny game sounds you thought you were stuck with.)

$$F^{(t)} = A\sin(2\pi f_c t = + I\sin(2\pi f_m))$$

{ *This is the mathematical formula used by FM soundboards to create the sound of a piano. We prefer to record a real piano.* }

Recording with the MAX exceeds industry standards as well --
16-bit, 48 kHz and 4:1 ADPCM hardware compression. Which means your
recordings sound remarkable, yet use only a quarter of the disk space.

Then there's also the general MIDI patch set included
with the MAX. Basically, it's like having a 192-piece orchestra in
your computer. What's more, the MAX's unique RAM-based
system lets you modify any existing instrument, as well as

{ *FM synthesis originated when people thought these sounded good. Need we say more?* }

create entirely new sounds. (Try that with a ROM-based sound board.)

Now for those a little less into music and a little more into gaming, rest assured our engineers haven't
forgotten you. UltraSound MAX features two technological breakthroughs destined to
radically change the nature of gameplay for years to come.
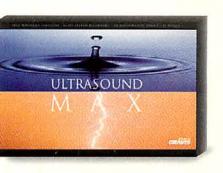
The first allows you to experience 32 digital or synthesized voices at once,
a feature exclusive to the MAX. The second is a revolutionary new concept called
3D Holographic™ Sound, which is simply the audio equivalent of virtual reality.
Together, they will not only add substantial depth and dimension to your gaming
experience, they will revolutionize how games are developed from now on.

Imagine. You're on night patrol, deep in the jungle. It's pitch black. When
suddenly, you hear the rustle of leaves above you and to the right. It's the
enemy. You immediately turn and act, as if on reflex.

{ *With a full 192-instrument MIDI, you could become the world's next great composer. Or not.* }

Now that the MAX is here, such encounters can and will happen. No
wonder Psygnosis, SSI, Sierra On-Line and LucasFilm are only a few of the developers starting to capitalize
on the MAX's vastly superior performance.

Of course, it's going to take some time for all software developers to
unleash the powers of Ultrasound MAX. But until then, you'll be
happy to know the MAX will run games designed for prior sound board
technologies like Ad Lib®, Sound Blaster™ and Roland® MT-32.

In fact, *PC* journalist John C. Dvorak wrote, "...the UltraSound
has a Sound Blaster emulation mode so good that it sounds better
than the Sound Blaster itself."

{ *Thank goodness we're not fake. We're for real.* }

So if you have yet to put sound on your computer, or you're
simply looking for the best way to gear up for the future, visit your
favorite computer retailer and take home the UltraSound MAX.

You'll discover that while imitation may indeed be the highest form
of flattery, it doesn't remotely compare to the real thing.

Advanced GRAVIS

BETTER TO SERVE YOU!

CGW needs to know more about you so we can continue to tailor our reviews to meet your gaming needs. For taking the time from your busy schedule to **fill out the attached reader survey,** we will enter you in a contest. **One *CGW* reader will win a beastie of a gaming rig, a FALCON MACH V** from FALCON NORTHWEST (see specs and details below). Four lucky readers will win a **Sony speaker/sub woofer system** that will make anyone's rig sound great! No matter if you get a prize or not, everyone will win because our staff will know you better and review the latest games with you in mind.

Enter by filling out the accompanying reader survey front and back. Fold, seal and mail it back to us by June 15,1994. We've already stamped it for you. If you do not want to give us your name, that is OK. We would still like you to fill out the survey, but you won't be entered in the contest. If there are two readers for the magazine, photocopy the front and back of the survey and send it to the same address using your stamp and envelope.

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The Ultimate Gaming Machine

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Sony Speaker/Sub Woofer system

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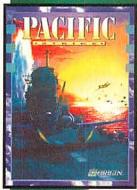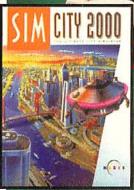
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Keep Your Eyes On The Game
And Your Hands Upon *ProWheel*

Photograph by Larry Malone

by Gordon Goble

Anyone who takes their racing simulations seriously should know about a little company from Gaston, Oregon called **Wizard Racing**. Their new *ProWheel Steering Controller* is one of a precious few wheel control devices currently in the marketplace, and its appearance continues an ongoing thrust toward increased realism in all aspects of the simulation environment.

The most enticing component of the *ProWheel* is its authentic go-kart steering wheel and shaft, which have been set at a comfortable driving angle into sleek black ABS plastic housing. On the back side of the padded wheel are four fingertip switches, two on each side, that accommodate throttle, brake and gear change control. Aside from a serial connector and on/off switch on the rear of the wedge-like housing (for connection of foot pedal units), the rest of the unit is free of exterior fluff. Weighted and equipped with non-skid rubber feet, the *ProWheel* does not require a table clamp to lock it in place, and the review unit remained absolutely immobile throughout its entire testing period. The wheel itself is solidly anchored, and x-axis movement offers graduated resistance, successfully mimicking the feel of the real thing.

ProWheel currently works with the two premier racing simulations, **MicroProse**'s *World Circuit* and *IndyCar Racing* by **Papyrus** (they are the only two sims with the control configurations necessary to use *ProWheel*). The learning curve isn't nearly as tough as Wizard says it might be, so I decided for a practice run on *World Circuit*'s Adelaide track. *ProWheel* performed admirably, with my default McLaren turning in consistent lap times below 1:17 while racing with Ace competition. Substantially less twitchy than a joystick, the

ProWheel permitted me to go into linear steering mode, both with and without steering assistance. I actually came away winning one 8-lap event from the *back* of the pack.

On to *IndyCar* territory. The *ProWheel* soon had me turning in lap times equivalent to my times with other control devices. These promising stats followed just a few hours of *ProWheel* rehearsal, whereas I had spent years with joysticks. The natural feel of the wheel

seemed to make up for any lack of long term experience. At Michigan, my best average speeds in a default Ace car with a quarter tank of gas were 229.076 mph for the *ProWheel* versus 228.864 with a *Flightstick*. At Milwaukee, a 165.993 *ProWheel* time narrowly edged the 165.821 mph speed attained with the *Flightstick*.

As with most products, the test unit was not completely flawless. While screaming through a sixth gear right-hander at Adelaide, all steering control suddenly, and without warning, disappeared. Needless to say, the resulting destruction of my zillion-dollar Formula 1 car did not please my financial sponsors. Upon post-race inspection, it was discovered that the culprit was a small screw bonding the steering shaft to the potentiometer rod. The tiny offender had apparently wiggled its way loose and as a result, my

frantic flailing at the wheel had ceased to be transferred into electronic signals. Ironically, falling out of the race with steering problems is an all too common occurrence at any level of racing.

Without delay, a distress call was made to Wizard proprietor Bob Boulanger, and his assurance of immediate modifications before the *ProWheel* enters heavy production alleviated worries. I was also notified that NASCAR driver Bobby Labonte hadn't had any problems with *his ProWheel*, and, after further discussion, I discovered that the family-run Wizard Racing is busy developing a pedal system (the *ProPedal*) that should be ready in the first half of '94.

The world of digital racing has most definitely been improved upon with the *ProWheel*, and the above-average speeds seem to bear that out. The only problem is a slight loss in the pinpoint precision drivers have become accustomed to with a quality joystick. Although negligible in *World Circuit* (or in practice/qualifying with *either* sim), *IndyCar* racers may detect a subtle drift in their vehicle that becomes noticeable when battling heavy traffic. The additional practice necessary to overcome this drift is minor compared to the huge increase in "realism" provided by the racy feel of a real wheel when pulling high-speed turns.

The *ProWheel* is priced at $119.95 and comes with detailed setup instructions for *IndyCar* and *World Circuit*, a utility disk packed with car setup tips, graphic upgrades, instructions for F1SA competition on CompuServe, and other assorted shareware goodies designed to enhance both *World Circuit* and *IndyCar Racing*. Wizard Racing can be contacted by telephone at (503) 985-7156 or CompuServe e-mail at 73304,2311. **CGW**

ORIGAMO

Quantum Quality Productions, Inc.

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Circle Reader Service #104

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"I Came, I Played, I Conquered"

AI, AI, Oh!
How Much Smarts Can A Wargame Really Have?

by Alan Emrich

I was recently in an on-line discussion about what is possible and reasonable to expect in wargaming artificial intelligence (AI), and since I've been misquoted and had words put into my mouth during that discussion (and here I thought only my kindred in the press were capable of this sort of thing), I thought I'd set the record straight.

I assume that we, the wargaming community, are reasonable people with some unreasonable expectations. One of those unreasonable expectations is that our family and friends are not only going to try to understand our hobby, but actually *embrace* it. Another is that we're going to see AI in our wargames that's truly challenging to our level of play. While either of these *could* happen, I'm not holding my breath.

We would all love to play against a digital Sun Tsu—an AI that was educated in the art of war, was flexible, unpredictable, and creative in its approaches to a game, but is that at all realistic? Heck, chess has been around for ages, studied and scrutinized every which way, and has been a popular object of study for computer scientists for 30 years. As a consequence, there are computer chess games with amazingly strong AI. However, those who care to master the game can still beat these programs. How, then, can we reasonably expect a new computer wargame, one that has only been tested by a handful of souls for a short period of time, has more positions, more unit types and more options than chess, to offer an AI that can truly challenge an experienced wargamer? We can't.

These days, it is more reasonable to demand a *competent* computer opponent, as opposed to a brilliant one. A computer opponent that avoids basic gaming blunders, uses sound and appropriate strategies and tactics, and retains a certain degree of unpredictability should be a programmer's ultimate goal. Of course, getting there is seldom a cakewalk for these hackers in historical simulations.

Part of the problem is that many programmers aren't students of military strategy, nor do I expect that most could pass a quiz on the tactics for the era they're simulating. Since Caesar, Napoleon, Sun Tsu and von Clausewitz did not write their works in BASIC, I really can't expect programmers to get a C++ when programming these games that are, in essence, military history tests. That is really too bad, because employing history's solutions in designing the AI would not only supply these beleaguered programmers with sound principles for constructing AIs that will serve as savvy military opponents, but would make wargamers embrace that game all the more and gush about its "simulation value."

When I play a war or strategy game today, I'm always hoping to find a good computer opponent that doesn't overtly cheat and puts up a helluva fight that I can ultimately win. (After all, who would want to fight a great campaign only to lose most of the time?) Often, however, we find ourselves "cracking" our favorite games. Usually, we can overcome predictable computer opponent strategies and develop techniques that consistently prove a computer opponent's undoing—techniques that would never work so consistently against a more adaptable human mind.

So, there is one thing that I also expect from a computer war or strategy game these days—multi-player options. I want to be able to find a friend, connect with him by modem, and play either head-to-head or by e-mail. Any game that allows me to send my move to an opponent and replay his moves that he sends me has, in my opinion, achieved a higher plane in computer wargaming. No set of AI routines will ever be as wise, bold, or inscrutable as a human opponent. By leaving me the option to find my own enemy to fight against,

I can forgive the "crackable," often ahistorical, AI found in most wargames today.

Although I won't stop hoping that programmers develop a military mind of their own through a study of their subject before they try to program an artificial military mind, I *am* prepared to give up on my family and friends ever becoming a large, happy group of wargamers. All we can do, of course, is go out and make one convert at a time. **cgw**

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Call the **Missile Silo BBS**. Contestants wanted for *Command HQ, F-29 Retaliator* and many others. Tournaments to be held soon. Files, message base and (soon to come) on-line games. Running on Telegard 2.5 7 days a week, 24 hours a day. Located in Skokie, IL outside of Chicago. Call (708) 581-1735. Mention this ad in CGW for no-hassle access validation.

By Area Code

I'm seeking fellow *Flight Simulator 4.0* or *5.0* pilots to hook up with via modem for some pleasure flying. I also have *Falcon 3.0*, but have yet to try it in modem action. I'm in North Arlington, NJ, close to Giant Stadium. Call Jeff Baker at H-(201) 997-4964 or try me on Prodigy at NWTS67A or America Online at FLYING ACE.

Wanted in the Denver area: Modem gamers for *Falcon 3.0* and *MiG-29*. All challengers are welcome. Call Fred at H-(303) 782-5213. I would prefer local area opponents (although my long distance carrier wouldn't [grin]).

Omaha modem warriors sought for *F-15 III, Command HQ, Spectre VR, 688 Attack Sub* or *Seawolf*. Contact Greg Seewald at H-(402) 597-2837.

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Circle Reader Service #55

Circle Reader Service #55

Blood, Guts and Petrol

Avalon Hill's *Operation Crusader* Is An Oasis In A Wargame Desert

by Terry Lee Coleman

When I moved to California to join the *CGW* staff, I didn't look forward to unpacking—until I got to the boxes (more numerous than I'll admit) that held my game collection. As I carefully pulled out the games and placed them on the shelf, I came across an old friend, **Avalon Hill's** *Afrika Korps.* Though showing its age, it looked no less beautiful than the day I bought it, my first wargame. The game had collected little dust, since I always turn to this old favorite whenever I need my Desert Fox fix. For years, I have hoped that **Avalon Hill** would release a computer game that captured the grand sweep of desert warfare half as well

as *Afrika Korps.* But, despite their vast gaming knowledge, computer games from The Hill have previously been unsuccessful, to put it mildly.

Indeed, it seemed ironic that a developer called **Atomic Games** was creating games for a company called **Three-Sixty** that looked like just the kind of natural union between boardgames and computer games for which I had been hoping. If only, I dreamed, the creators of the *V for Victory* series could get hold of some of those classic **Avalon Hill** designs, then we would have the best of both

worlds. Now, Keith Zabalaoui and his Atomic Games crew does have access to those Avalon Hill classics. The union which seemed so obvious and so natural has finally taken place. Indeed, the union has already been so fertile that, after one look at *Operation Crusader,* you may pinch yourself to see if you're dreaming. The last time Rommel was portrayed so well, James Mason was still on the big screen.

A Sea Of Sand

Rodger MacGowan, the renowned wargame artist who designed so many great package illustrations, is doing work for someone else these days, but the cover art uses imagery reminiscent of his illustrative prowess. Strong and colorful, it fits in well with the AH style and entices the gamer before the box is even opened. Afterwards, all you have to look forward to is sand—but what sand! A group effort between Zabalaoui, AH graphics ace Charlie Kibler and others transforms the lifeless desert into a sand painting. The subtle touch of exotic place names adds to the feel that you really are in the desolate terrain between Tobruk and El Aghelia.

The terrain features escarpments, wadis, bunkers and the rocky hammada, all taken from aerial photographs and British Army archival topographic maps. Page after page of terrain descriptions give even the novice gamer a good understanding of how the terrain affects the game. Unlike *V For V*, where information was often overwhelming, *Crusader* offers enough instruction to add to play, rather than detract from it.

The units look very much like—brace yourself—counters from an Avalon Hill

boardgame. With the hexgrid option turned on, you almost feel as if you could move units by hand, rather than with the mouse. Aside from their familiarity, each unit counter is a repository of information, with a single click showing its current status. Units can be "framed" with different colors to show either their unit type, distance from headquarters, supply state, organization (or lack thereof) and even fatigue. Finally, units may be displayed with either military or pictorial symbols, and like their board wargame brethren, units may stack.

The toolbar included is much easier to use than those of similar games, such as *High Command,* but the results are more beneficial to the gamer. Some items are chrome, such as when you bring up the map of the Mediterranean Theatre, but still offer a welcome sense of perspective. The weather is simulated wonderfully with both a forecast and the current weather right at the gamer's fingertips. Other options allow for instant location of leaders or a quick check of victory status. The most unique item on the toolbar is the HQ Button, where players may check supply tonnage, stockpiles, and attach units to different HQs each morning. With the ability to display all the HQs at once, this option justifies the toolbar by itself.

Waltzing Matildas

Thankfully, all the care that went into the art and interface is paralleled by the strength

Operation Crusader

SYSTEM:	Mac, (IBM forthcoming)
PRICE:	$59.95
REQUIREMENTS:	System 7, 10MB hard drive space, mouse
# OF PLAYERS:	1-2 (modem and e-mail)
DESIGNERS:	Atomic Games
PUBLISHER:	The Avalon Hill Game Company Baltimore, MD (410) 254-9200

of the gameplay. When I play a WWII desert wargame, I expect fluidity of movement. *Crusader* gives *four* different movement options. The ever-helpful Executive Officer will move units Automatically, or you may choose to move them yourself. Strategic movement is similar to most wargames, allowing for quick movement along trails and roads, while staying out of contact with the enemy. Moving Tactically retains combat effectiveness, but at a cost in mobility. Through the HQ button, units can move by division, recommended for large offensives. Movement is certainly not dull; as with the Limited Intelligence option, units may run into hidden enemies long before reaching their intended destination.

Unlike many WWII games, desert warfare is well-suited to fog-of-war rules. The fluidity of the overall situation resembles a naval campaign more than a series of land actions. Much of Rommel's success was his unpredictability, invariably showing up at the wrong place, at least for the Allies. As the British became more adept at disguising their movements, the tide began to turn, and it is

here where *Crusader* really breaks new ground. Eric Young and Keith Zabalaoui show the importance of supply to the campaign, but in an unobtrusive manner. The interface shows visually how supply limits movement, leaving you to concentrate on how to move those Panzers out of Sollum. As you move units, they come into contact with the enemy, who pops up on the screen at generally inappropriate times. Thus, with a single game mechanic, the AI takes on the role of a wily opponent, playing cat-and-mouse with your Matilda tanks outside of Tobruk. As a two-player game (either by modem or e-mail), the tension is exquisite.

Fly *Air Alexandria*

Air operations are very similar to *V For V*, but have the advantage of being firmly integrated into the overall design. The fog-of-war element is tied directly to how well each side is performing in the air campaign. If you achieve air superiority, your units can see farther, and you will have earlier warnings of impending attacks. Conversely, if you fritter away your air units you may find yourself blinded by more than a sandstorm. Air missions consist of the classic ground support bombardments along with interdiction of enemy units, restricting their supply and movement.

Sending planes on missions is pretty much a click-and-go affair, but your trusty computer Executive Officer may ground squadrons for refit—often without any input from you. In addition to fatigue, air combat effectiveness varies significantly with morale and with weather. Those would-be *Luftflotte* Commandants who wish for clear blue skies may find themselves grounded by Anti-Air units, who also appreciate good weather. All in all, it's a good system that profits from its directness and lack of fluff.

A Rommel Perspective

Field Marshall Irwin Rommel was marquee material for wargames long before *Operation Crusader*. Flamboyant, daring and imaginative, he was respected by warriors on both sides of the conflict. Sifting through the sands of computer games gone by, we find that capturing Rommel's charisma has at times seemed almost as difficult as facing the great general himself in combat...

Among early efforts, Chuck Kroegel's *Knights of the Desert* (1983) garnered a lot of attention, winning Best Computer Game from the Game Manufacturers Association. Despite the game's relatively high sales and some fine packaging for the era (including excellent cover art), CGW and its readers were put off by the awkward interface. Desert games should be brisk affairs, yet *Knights* lacked any sense of ebb-and-flow, being largely static and boring. In a recent interview with developer David Landrey (CGW # 116), he remarked that the game had not aged well. Both Landrey and Kroegel went on to fame (if not fortune), designing SSI's *Battles of Napoleon* and various American Civil War games.

At the other end of the spectrum was Accolade's *Desert Fox* (1985), which tried to capture the excitement of desert warfare with arcade sequences. Interesting, but then they had to spoil it all by trying to layer a simulation on top of the game. While it is largely unfair to criticize a game which had only 64K with which to work, a great

deal more could have been done to make this interesting and entertaining without worrying about the serious wargame angle. Instead, *Desert Fox* is a typical example of a great game title looking in vain for a decent game system, a problem which sadly is as prevalent today as it was 10 years ago.
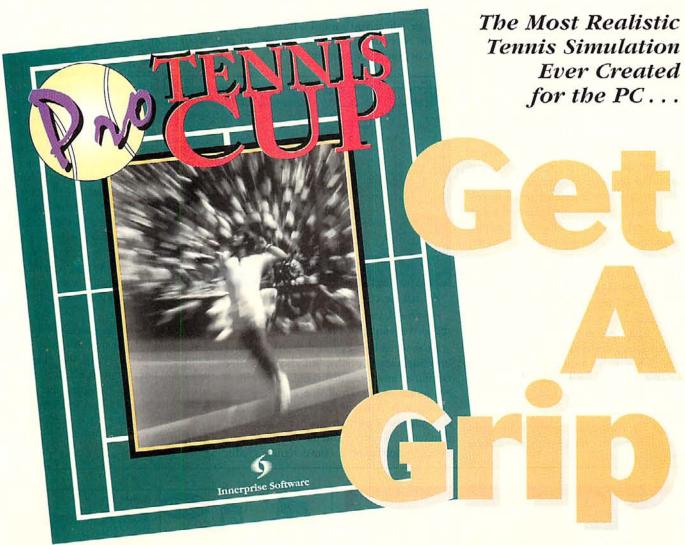
One of the biggest disappointments in computer wargaming was GDW's epic *Rommel: Battles For Tobruk*. One of the greatest designers of board wargaming, Frank Chadwick, did the research and design. This was a game that set out to establish a new standard for computer wargames, and it did—but not how GDW intended. The game tried to be detailed on both tactical and operational levels, losing its focus on both counts. The rules for air combat and supply are almost too intricate for even a veteran wargamer to decipher. Worst of all, the game failed to showcase many of the strengths of the computer, while simultaneously lacking similarities to desert board wargames.

A company which can never be accused of lacking focus is **Simulations Canada**. Targeting a more mature audience, their games feature historical command restrictions and fog-of-war. Normally seen in naval wargames, this approach worked quite well in *Rommel at Gazala* (1987) and *Rommel at El Alamein* (1988), since desert tank warfare often resembles surface combat at sea. Designer Stephen St. John correctly emphasized the importance of supply and the difficulty

of coordinating campaigns with armored columns in the vast sea of sands. Despite some errata, the game has held up well as a campaign study and is fairly entertaining, even though the game lacks graphics.

Desert-style fog of war also worked rather well for **Strategic Studies Group's** *Rommel: Battles for North Africa*, which used the *Battlefront* engine. The *Battlefront* system emphasized command perspective and limited intelligence. Control freaks resented the system's use of AI routines to simulate subordinate commanders and hated the inability to step into play from an almost divine perspective, but the system seemed even more justified in *Rommel: Battles for North Africa* because the scenarios included were designed to simulate the amount of confusion and miscommunication to be found in the desert war.

Of all the games to portray (or betray) Rommel, however, the most successful prior to *Operation Crusader* was *Decision in the Desert* from **MicroProse**. Sid Meier worked his usual magic with gameplay, and Ed Bever provided a solid research base upon which Sid could draw. The end result was a wonderfully entertaining game which still manages to convey a good sense of the revolutionary impact Rommel had on mechanized warfare. As with most of Sid's games, *Decision* proved that good game design can often outlast breathtaking graphics and sound—something that players of *Sid Meier's Civilization* certainly take to heart.

Running The ZOC Gauntlet

If there were any doubts that *Crusader* is a wargame cut from classic cloth, they are soon dispelled by the attention given to that boardgame icon—the Zone Of Control. To wargamers, the ZOC is the modern equivalent of "The Game's Afoot!" No, there is none of that area-movement silliness here, folks. ZOCs are restrictive towards enemy movement, but at different levels of effectiveness, dependent on who's doing the delaying. Units using Strategic movement have weak ZOCs, as they are considered to be in column. Units in defensive mode are very tough to get around, and a line of fortifications puts a big clamp on enemy movement.

Weak ZOCs can be exploited by armored and motorized units, thus reflecting the terrain challenges of desert fighting. The rub is that those weak ZOCs still affect supply, causing a multitude of tactical decisions to be made in a hurry by both sides. Such is the substance of which good wargames are made. At least units in enemy ZOCs are not required to attack, since this is an operational-level game.

When you do make the decision to attack, you may:

Probe: The tried-and-true method of gathering information about enemy disposition with minimal losses.

Assault/No Advance: Either a holding action, or where you cannot advance due to terrain restrictions. Useful for sorties out of forts, or around escarpments.

Assault: Exactly what it sounds like.

All-Out Assault: Like the above, but with the kitchen sink thrown in.

Now, when I get a game that offers me not only the above options, but also allows for combined attacks involving units with different attack orders, I call that one incredible wargame. As if that weren't enough, the odds computation algorithm retains fractions, so I don't have to worry about missing that 3-to-1 attack by one factor. To the designers' credit, they have made all of the terrain effects and other combat modifiers available to the players in a simple, easily digestible format.

Unit variety is an unending delight, mainly because of the ways in which the different types interact. Each engineer involved in an attack on a city or improved position improves the odds by one in your favor. There are over two columns devoted to the intricacies of anti-tank combat. There are overrun rules for Panzer freaks, morale rules, troop quality modifiers (since the Italians are involved, these had to be there), and even combat bonuses for regimental integrity. My favorite bit of chrome, though, is that New Zealand units get a one-column shift after dark because of their special night training.

Operation Crusader is an early contender for wargame of the year, and not so much because of its accuracy, though that is readily apparent, but because it marks the coming of age of a group of designers and artists who enjoy what they do, and whose games exude that effervescence. My old copy of *Afrika Korps* may actually collect a little dust now. **CGW**

The Old Man And The Sea

Can James Dunnigan Claim A *Victory At Sea*?

by Bob Proctor

I was sitting in the reclining chair watching Olympic skiing the other night, when my mind was lulled into reverie by the two-six rhythm of the broadcast—you know, two competitors, six commercials, two competitors, six commercials. Since the ads were all very familiar, my thoughts began to wander towards new strategies for the computer games I am currently engrossed in.

Suddenly, my attention was drawn back to the TV; the screen was flashing images of what had to be wargames! There a map of the Pacific Ocean, then one of New Guinea and the Solomons, several more of islands I didn't recognize. The colors and detail were fantastic! A deep voice droned on about "All the forces that were engaged in the Pacific are yours to command. Control as much or as little as you want..." The screen was now showing a number of small ships on a sea of blue. Small aircraft appeared near a carrier flying the Japanese naval ensign and flew toward another carrier labeled TF 17. I could

even see meatballs on the wings! Then the ad cut to an overhead view of a task force in formation. Several ships seemed to be smoking or trailing oil in the water and the carrier in the center had several large holes in its flight deck. The screen jumped and I stared into the steely eyes of Orson Welles, the man himself! Once again, I was mesmerized by that rich sonorous voice: "We will sell no game before its time!"

At which point, of course, I woke up. Games *do* reach their players in various states of incompleteness, and Three-Sixty's *Victory At Sea* is a case in point. It's a rather extreme case, unfortunately, and my disappointment is magnified by the high hopes I had for this project. Can it be salvaged? Keep reading!

The cover of the box says "James F. Dunnigan's *Victory At Sea.*" This says a lot about the audience Three-Sixty Pacific is trying to reach. Dunnigan produced hundreds of boardgame designs back in the '60s and '70s, and he was one of the founders of SPI, a company that called its products simulations, not games, and promoted historical accuracy. Much of the appeal of Three-Sixty's games, particularly their *V for Victory* series, is that they measure up to the standards of the grognards who played Dunnigan's games in their youth.

Victory At Sea is a simulation of WW2 in the Pacific, from the day after Pearl Harbor until the end of the conflict. It was conceived and designed as a campaign game, although there are also shorter scenarios of famous battles. Both sides move simultaneously using a fast clock, and you "stop the clock" when you want to give orders. Internally, the game uses a six minute time-slice to compute movement, combat, and all other events. Now just take a step back and admire that—240 turns per day, 87,600 per year, or 323,280 for the whole war! An average day, with no large battles, takes about 10 minutes on my Mac IIci, not counting the time you spend with the clock off, of course. Figure on a couple of hours to play a week of war. This is about the length of a typical battle scenario, so these are easily played in a single sitting. On the other hand, if you play the entire campaign, plan to spend 350 to 400 hours in front of your computer. Not everyone can make that kind of commitment, but some of us would do it to study a

Circle Reader Service #88

detailed, accurate simulation of the Pacific War.

How Does It Sail?

So will we students of history be spending months at a time playing *VAS?* Bluntly, no. Consider the most important weapon system in the Pacific—carrier-based air power. In 60 or 70 major attacks, I have yet to see carrier air groups sink a fleet carrier or cruiser! I know such attacks usually resulted in heavy damage and fires, with actual sinkings happening hours later, but there is no such pattern here. Carriers can sink transports and sometimes a destroyer, with the ship sinking during the same six minute turn, but capital ships survive with only superficial damage.

Meanwhile, the attacking air groups are being ground to pieces. The loss rate for a single attack seems to depend more on what type of plane is attacking than on what the target is. USN torpedo bombers take 90% to 100% losses in 1942 and, based on the Battle of Midway, that may be reasonable. But Dauntless dive bombers average 75% to 80% losses, which is unprecedented! IJN Kate torpedo bombers only lose about 20% to 25% per attack, but due to game mechanics, a single sortie may make more than one attack. If those Kates find three US task forces, they may attack all three or the same TF more than once. Start with a group of 36 Kates, and after four or five attacks, you're lucky to get ten of them back! The US Navy is *never* this lucky. So your typical carrier battle consists of the carrier groups getting in range, maybe sinking a few destroyers, and then sailing home with decks empty. Sound like any battle you've ever heard of? Part of the problem here is the "intelligence" of the pilots on both sides. When sent to attack carriers with a screen of smaller ships, why should they choose to attack the screen instead of the main target?

For the record, land-based air does better. The computer once parked a British force of two carriers and four destroyers within range of land-based air in Sumatra. My first attack of 5 air groups, totaling some 150 Kates, simply blew away the destroyers. The second wave of 120+ Kates got hits, and the third attack—still more than 100 Kates!—sank the *Victorious!* The other carrier took off for Ceylon at this point, maybe because it was damaged or running low on fuel! Thus, it is possible to sink carriers, even those with armored flight decks, but it's hard to amass the necessary 350 to 400 carrier-based aircraft.

Curiouser And Curiouser

And there are more examples of strange combat results. B-17s, thanks to their heavy bomb loads, are the most effective bombers against ships at sea, diametrically opposed to their real-life naval performance. Combat between air groups is deadly in the extreme; there are rarely any survivors when fighters meet fighters. Battles between surface forces are unpredictable, (which is OK for night battles), but they are very one-sided, as the winner never loses a ship! In one game the Japanese sent six carriers to raid New Zealand

> How could a respected designer like James F. Dunnigan create such a flawed design? He claims he didn't.

with only six destroyers for protection! I saw my chance, surmising that air power might be worthless, but Big Guns would sink them! I formed up three cruiser groups to destroy the carriers. In a series of five battles, two night and three daytime, this supposedly sitting duck sank 8 of my cruisers and 18 destroyers, all without losing a single ship! Call me a sore loser, but I think something is wrong here, as carriers are generally seen as a liability in surface engagements, particularly at night.

The orders of battle seem all right as far as major warships are concerned, but I haven't bothered to check all of the air groups, troops, transports and supply levels. With such weirdness in the combat routines, it's impossible to judge elements like the amount and location of supplies, the timing of replacements, and overall play balance.

How could a respected designer like James F. Dunnigan create such a flawed design? He claims he didn't. In December, Dunnigan publicly disassociated himself from the finished design. He said he submitted a preliminary "specification" over a year ago and was never allowed to finish the design. Three-Sixty claims the original design was incomplete or unplayable and that Dunnigan was uncooperative in correcting the problems. Wherever the truth lies, both parties agreed to leave Dunnigan's name on the box.

Now The Good News

Apparently, the design of the interface and graphics was done entirely by Three-Sixty, who did a superb job. The screens are almost breathtaking, with excellent detail. There are also QuickTime movies of real WW2 footage showing planes taking off and landing, and combat of various types. These clips correspond with the events in the game and use the lower left corner of the screen so as not to cover up the map or information panels. Although this is a flashy use of video that adds

THE ONLY THING MISSING IS THE DRIVE TO THE STADIUM.
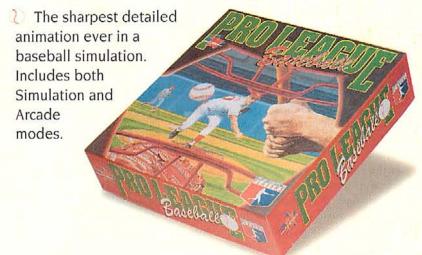
The most highly detailed ballparks ever to be created. Each park consists of 9 full screens.

Season Replay, Strategy Sheet, Head to Head vs. Human & Computer, and True Modem Play with Chat Mode.

Contains full rosters for all 1993 teams with over 40 categories of batting stats and over 30 categories of pitching stats per player.

Draft module with "Computer Draft" Option, Trade module, Team editor module and League Set Up module including the NEW 1994 Division Alignment.

The sharpest detailed animation ever in a baseball simulation. Includes both Simulation and Arcade modes.

Screens may vary.

pizzazz to the short scenarios, you'll want to turn the clips off if you play a campaign. They make the game longer (each takes only a second or two, but the time adds up over the course of a campaign), and their repetitive sounds get a little tiresome.

I was more impressed with the game's beautiful interface design. Accurate or not, VAS makes a tremendous amount of information available without being overwhelming or confusing. First and foremost is the map, which uses 16 colors to show topography and 6 levels of zoom. The highest level shows half the globe, from California to India, and you can zoom in to see smaller areas in greater detail. You have a lot of control over what is displayed, and the computer keeps the screen readable by arranging names so they don't overlap. Even so, there's not enough room for the names of every base in the Pacific on one screen, so base names appear only at lower zoom levels. Once you get a useful view, you can save it and return to it quickly.

Getting more information on a task force or base is a simple matter of clicking it with the mouse. The display lists all units present, and simply clicking on any unit gives you a detailed status window. While a unit is se-

nice touch. The menu also gives access to special screens where you may assign commanders, change the organization, allocate supplies, check replacements, order repairs, and upgrade ports and bases.

Another key component is the message window at the bottom of the screen. Here, you'll see one line messages about significant events: sightings, radio intercepts, attacks, bases captured, supplies delivered, and so on. You can get more information about a report—the results of the attack, what was the make up of the enemy task force?—but don't trust your pilots too much. If you don't like figuring latitude and longitude in your head, another button lets you center the screen on the location of any sighting or event, and then "return from view."

Hope For The Future?

Three Sixty has said they'll correct the problems with VAS. Let's be charitable and assume that they correct all problems with historical accuracy as well as all remaining bugs. Would VAS then be a game worth owning? Sadly, no. You'd have this

wonderful simulation and no one but the computer to play it with. As an opponent, VAS is one of the weakest games in memory. It can't invade or manage supplies well enough to keep its troops from starving, and it loves ahistorical tactics like sending carriers on raids deep into enemy waters with almost no screening forces. This is a bad enough tactic for the Japanese, but it's inexcusable for the US Navy in early 1942!

Although it's easy to make fun of such silliness, I am well aware just how hard it is to create a decent computer opponent for a complex game like Victory At Sea. The computer opponent needs to be improved, but it will never challenge experienced gamers, which is the group Three-Sixty is trying to reach, right? The bigger problem is the absence of a human opponent. You'd think Three Sixty would have learned a lesson from V For Victory, which was also criticized as a weak opponent, but was salvaged for many because it was exciting to play against human opponents.
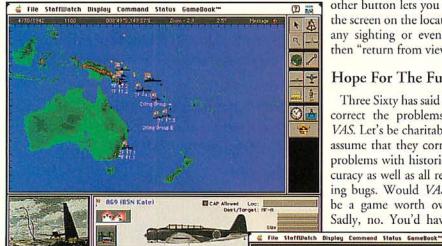
Three-Sixty has admitted that there are problems with crashes, particularly on Mac LCs. They said the game was released too soon and promised to fix it. They have a lot of work ahead of them is they hope to salvage this one. Before this game will be worth anything, they must: 1) stomp the remaining crash bugs; 2) work on historical accuracy by correcting obvious errors in combat results and playtesting the effects of supply and command; 3) improve the computer opponent, particularly in its tendencies to engage in tactics that are completely unrealistic; and 4) add multiplayer options, including a provision for play by e-mail or modem.

If Three-Sixty can correct these deficiencies, Victory At Sea would give everyone, even James Dunnigan, reason to be proud. Until then, hang on to your money. **CGW**

lected, you can give orders through easy-to-understand buttons. Clicking the Ready button for an air group will reveal four additional buttons to select the type of mission. Clicking on the Formation indicator presents all possible ship configurations. The Sextant selection changes the cursor into a cross hair, which you use to set a course by clicking on the map. Sometimes, you'll want to order a task force to return to a base off the map. A menu command lets you set the destination from a list of bases and gives you an ETA, a

A Little Piece of Vulcan, A Little Piece of Sol

Illustration by N. Taylor Blanchard

A Strategy Guide for Tim Wisseman's *VGA Planets*

by Ted Foster

Bulletin boards have always been a forum for multi-human games. Whether rotisserie league sports games, trivia games, or strategy games, the local, private BBS has been a great place to find gamers with which to compete. It wasn't very long ago that ANSI graphics (crude pictures made of colorful text characters) were the leading edge in the displays on these games. Then along came Tim Wisseman's *VGA Planets*.

If you haven't yet experienced this multi-player game of space conquest, it might be time to look up a private BBS in your area and log in. *VGA Planets* version 3.0 and up is a wonderful blend of *Reach for the Stars*, *Master of Orion* and *Diplomacy*. Up to 11 people can play this game by making their moves on their computers and then sending those moves to a host BBS. The host then compiles the moves and returns the results to the player. Each player takes the role of a specific alien race, and each race has its own special ship designs and talents which must be fully exercised in order to win. A sound strategy for building up a production base, defending your empire's perimeter, and going on the offensive is a requirement for success. In this article, I'll discuss some general strategy tips and follow up next month with tips tailored to each race.

Spaceward, Whoa!

As in most space battle-fests, early expansion is the first big task of the game. If all 11 races are being played, there is a good chance you will run into opponents very quickly, so it's important to grab as much territory as soon as possible. Special attention should be given to those worlds with native populations, especially those with ordered governments of Monarchy and above, as these will be your prime sources of money and future starbases.

The first item of business is to examine the messages concerning the game's configuration carefully. This configuration will determine how effective your race's special abilities will be (particularly for players of game versions after 3.00). For instance, if you're playing the Crystalline Empire, the messages will tell you how effective your special web mines will be and if it is possible for them to be cleared. These messages will also tell you how often meteors will occur and therefore how many new minerals will be available as the game progresses.

Next on the agenda will be the allocation of your resources to your production base. Initial funds will need to be divided between raising the technical level of your starbase, building ships, and planetary spending for mines, factories and defenses.

Unless you are playing on the poorest settings, it is wise to increase some of your tech levels at your home world right from the start. By far the most important tech category at the beginning of the game is Engines, as this will dictate how fast you can colonize the sur-

rounding worlds. If possible, go to Tech 10 engines early so that your ships will be able to reach stars visible from your homeworld in three turns or less. These engines will also help you guard your perimeter with fewer ships during the "Phony War" phase of the game.

During the first 10 turns it is helpful to keep a running log of whatever intelligence you can get on the surrounding areas of space. If your exploration distance is great enough to cover 500 light years or more, try to note where your neighboring races are and where their homeworlds might be. This will allow you to make an educated guess as to which star clusters you will most likely meet them in and what size ships you can expect. Use the F4 screen to search for enemy ships, the Scores screen to keep track of planetary and ship totals, and the messages detailing ships hitting mines and so on to monitor your foes.

If you are running on a host program version 3.11 or later, you may also be able to figure out if a race is being played by a computer opponent. Tim Wisseman's artificial intelligence routines for computer players are primitive at best, but these computer players can help fill out an 11 player roster. The computer players "cheat" to expand very quickly and to boost their tech levels, but they are notoriously bad at combat. The computer players also will not take advantage of their race's special abilities. Clues to watch for are a very rapid rise in the number of captured planets, erratic ship movements, and unexplained increases in ship mass during transit, and the repetition of obvious mistakes.

Screech For The Stars

As in most games of this type, play can be separated into three phases: Initial Expansion, The Phony War (when you first contact other races), and Full Scale Hostilities. In the

expansion phase, gaining control of the stars immediately around your starbase is critical.

Your first ships should be freighters or warships with a cargo capacity of 200 tons or more. These will allow you to build worthwhile settlements in one trip to a neighboring star.

When establishing a new colony I prefer to send a minimum of 50 colonist clans, 20 supplies, and a 100 megacredits. On worlds with no native races, this allows you to start a colony that can build enough mines and factories to become a productive mining center. On temperate or tropic worlds, this population is large enough to slowly expand if taxation is kept low. If you have too few colonists, the colony's population will not grow, no matter what the climate.

Be sure to build sufficient factories right away to provide supplies and money for your colony. Without a source of supplies, no factories, mines or defense posts can be built at all. I should mention a bit about taxation here. When populations are under one million, the amount of tax money you will be able to get from your colonists is negligible compared with the money that can be raised by selling supplies. Supplies cost nothing other than the initial factory cost, and factories use no resources to produce them. Because of this, I recommend you keep your tax rate on small, temperate colonies at 0%, allowing their population to grow at its maximum rate. Income for the colony will come from the factories, so maximize them first. As an added bonus, since your taxation is nil, your citizens will be happy no matter how many factories and mines you construct.
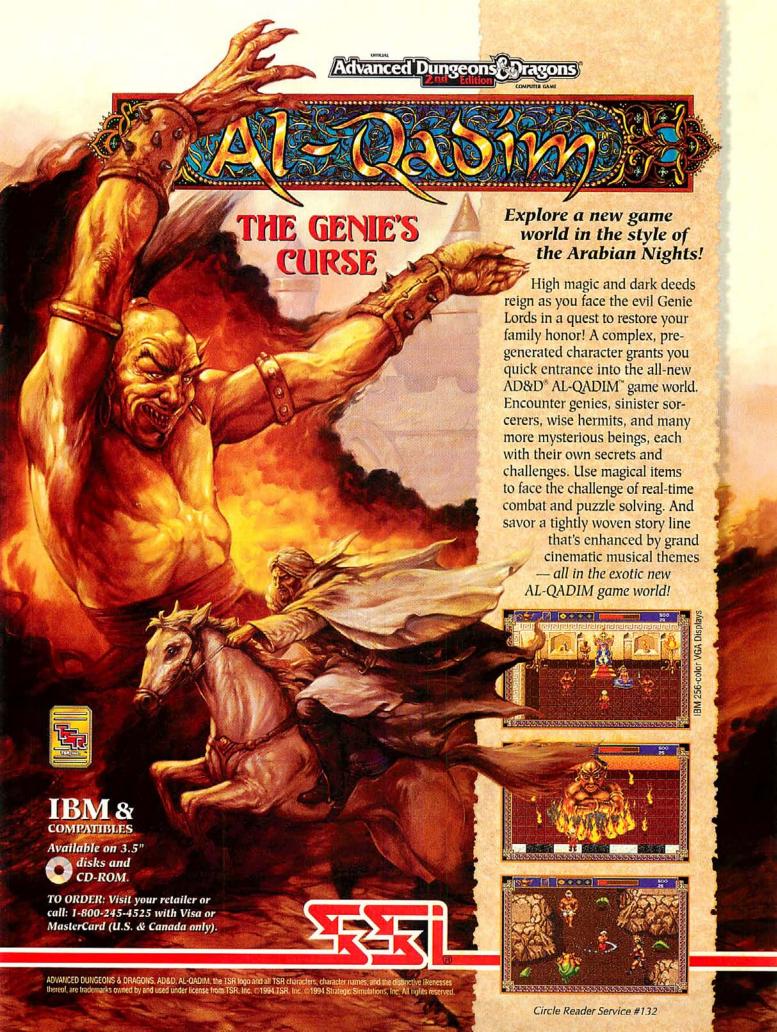
Planets with native civilizations should be nurtured as quickly as possible. In order to ensure that enough colonists are present to tax each native, I like to construct a large

freighter early in my exploration. The freighter can carry 1200 clans per trip, which is usually enough to tax every native on most worlds; this allows you to get maximum money out of these worlds soon after you discover them, without having to shuttle clans back and forth in smaller freighters.

As you explore your immediate surroundings you should single out the worlds on which you plan to build starbases. Choose your best three colonies and devote much of your resources into building them up quickly. If you are in a rich star cluster, it is probably not a good idea to produce starbases at every populated world, as this will make for slow growth and it will be many turns before the bases are ready to become production centers. Focus and be fruitful.

The ideal location of a starbase is a colony with a large native population (four million or more), government of Monarchy or better, decent mineral resources, and natives that are Humanoid, Amphibian, Ghipsoidal or Siliconoid, as each of these will give you a tech level of 10 in one category at your new starbase.

Large Bovinoid populations should also be used, since they are monetary and mineral gold mines, and can be built up very quickly.

A flexible strategy should be followed as your empire begins to grow. It's helpful to identify certain clusters of stars that you would like to possess prior to hostilities. Look for rifts between areas of stars that might be easier to defend and to launch an offensive from. Voids that takes two turns to cross at warp 9 make great defensive barriers; you will be able to see any ships trying to cross the barrier, giving you a turn in which to prepare for the attack.

Watch your opponents' ship movements to see if they are building up individual planets into starbases; these will make nice offensive objectives later. Usually players also fall into patterns of ship supply routes, and these should also be noted for raiding later on.

Starfleet Rattles

Expansion is a good thing, but all good things must come to an end...at least for a while. There will come a time when your expanding empire will bump into one, two, or even three others. Usually this happens at a time when you have many more colonies than you do ships, and many of those ships have few or no weapons. Thus begins the period I call the "Phony War." At this point few players are ready to mount an offensive and will have a devil of a time trying to protect the colonies they already have. There are two basic strategies for this phase, and both can have their problems.

The first strategy applies to those races like the Lizards and Bird Men. Because of the smaller size of their battleships, these races can build capital ships before most other races. If you have a battleship ready and good intelligence on your opponent's homeworld when contact occurs, there is an opportunity to deal an early deathblow. One or two of your ships is enough to take out a starbase if the defending player hasn't maximized his defense. Since he may have some fighters around, consider sending in a sacrificial ship with light guns to clear the fighters for your capital ship's attack.

Should your preemptive strike be successful, you stand to reap substantial benefits. A race without a starbase is like a head with its chicken cut off. Even if some of the enemy ships escape, it may be many turns before your opponent will be able to establish a new base (if at all), leaving you free to claim his colonies. But be aware that the risks are great as well. If your capital ships are lost and the enemy base remains intact, a major portion of your race's resources will have been wasted and you will be on the defensive when your opponent's battleships come on line.
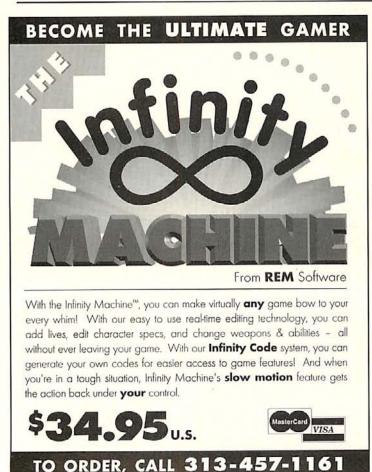
The second strategy is a simple one—negotiate a time of peace. It may sound wimpy and uninteresting, but the alternative is worse. If two races enter into a protracted series of skirmishes, they will sap each other's strength until both are ripe for the plucking by other races who have had the time to build up their war machine.

The risk that you run with this strategy is that, while you are continuing to build, so is your enemy. Keep a careful eye on him for both build-ups on your borders and for opportunities for an offensive. If your opponent becomes involved in a struggle with a third race, consider carefully which would be more beneficial—sending aid to keep a large race from overpowering you both one at a time, or attacking him on your front to divide and conquer him with the other aggressor.

Star Tricks

When you have built up a comfortable level of defense on your borders, and when you have ships left to expand, it will be time to hone your combat skills. *VGA Planets* does not lend itself well to small unit tactics. Ships in combat will fight one-on-one until all vessels from one side are destroyed. There is no retreat, no quarter, and no evasion. Once combat begins you no longer have control, so

you had best be prepared prior to sending your ships into the unknown. Some general rules to remember are:

- **The biggest gun wins.**

Don't underestimate the power of higher technology. More often than not, higher tech weapons will swing the course of the battle to one side or another. I have seen a tiny Cyborg probe with two tech-10 Heavy Phasers take out a much larger Nocturne-class destroyer with tech-1 Beams. A Nova-class battleship with tech-10 Torpedoes can bring down the shields of an empty Colonial Battlestar with one broadside of torps and eliminate it with two more.

- **Intelligence is golden.**

Attacking in *VGA Planets* is always more difficult than defending. Therefore, gather as much intelligence (preferably with cloaked and unseen ships) on an enemy system as you can before launching your strike.

- **Don't leave home without them (weapons, that is).**

When sending warships into combat, make sure they have plenty of torpedoes or fighters on board. Some commanders will send out poorly-armed vessels hoping to save money, but this invites disaster. Even big-gunned ships like a Biocide-class carrier or an Anni-

hilation-class battleship can be taken out by a smaller ship when fighting without fighter support and torpedoes.

- **Respect SIZE.**

This is one game where you can send an endless stream of smaller warships against a large one without much chance of denting it. If the battleships are in play, use your smaller vessels to steal enemy freighters, lay mines, and so on, but don't rush headlong into a pointless fight against battleships or carriers unless absolutely necessary—that's what your battleships are for!

- **What's mine is mined, what's yours is mined.**

Use mines to your advantage and be aware of their limitations. They are a great defense against races that possess cloaking ships and can really mess up an opponent's trade routes. One good trick is to send in a vessel almost within reach of an enemy world, but rather than attack the world, stop the ship next to it, lay a large minefield, and retreat. You have just shut down small ship traffic to that world for some time. Ships being pursued by larger ships can use mines effectively as well. Be aware that mines will not do much damage to a large capital ship. A single mine hit will only cause 10% damage to a battleship or carrier, so don't depend on them to slow down an enemy invasion if large warships will be coming.

More To Come!

With these general tips as your guide, you should be able stake a small claim in the VGA Planets galaxy. Holding onto that claim and acquiring more planetary real estate is another matter, requiring cunning, luck, and the exploitation of your race's inherent strengths. Next month, I'll discuss those racial characteristics and outline some general racial strategies. **CGW**

Pachyderm Platoon

Microleague Brings *Hannibal* and His Famous Elephants To Your Hard Drive
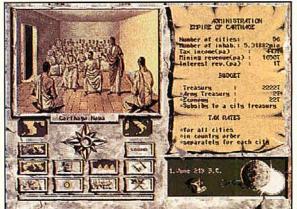
by M. Evan Brooks

Microleague, previously known for sports simulations, has expanded its product line to include historical simulations. *Hannibal*, a European import, is the first such release. It is a detailed simulation of the Second Punic War, and more particularly, of Hannibal's attempt to achieve Carthaginian hegemony over the growing power of Rome.

Ancient warfare has never been a popular subject in computer wargaming, but this seems to be the year of pre-gunpowder simulations, both in the computer and boardgaming branches of the hobby. With the decline of the Cold War, player interest has focused elsewhere, and the ancient period has undergone a revival both in terms of releases and interest. The period has traditionally lacked commercial success, as ancient military maneuver was often limited to occasional movement, and even in the great battles, opponents literally bludgeoned their way to victory or defeat. The question for games of ancient war, and thus for *Hannibal*, is whether the designers can overcome this inherent difficulty and provide both an entertaining simulation and one that realistically depicts history.

Looking Out Over The Med

The documentation is somewhat brief—consisting of 16 pages of "How to Play," followed by a 20-page historical treatise on Hannibal and the Second Punic War. Basic game mechanics are delineated in four pages, so understanding the interrelationships between army operations, economic status and political machinations proves very difficult.

With the detail of the simulation, a tutorial should have been provided. Alternatively, a demo option would have allowed the user to watch the computer and observe basic operational mechanics and strategy. Not only are these options conspicuously absent, making *Hannibal* a difficult game to learn and play, there is only one *long* scenario and one victory condition.

The graphics are acceptable for a simulation of this type. The map portrays the Roman and Carthaginian Empires, with an option to zoom in on geographic locations. Economic and military operations are depicted through use of static pictures. No one is going to be overwhelmed by the graphic opulence, but then again, a simulation of this nature does not necessarily require extravagant graphics.

On the other hand, sound seems to be entirely absent, except for the occasional beep from the internal speaker. Again, an operational/strategic simulation of this nature does not require much sound, but in this case, even a musical introduction is lacking.

Hannibal's user interface is simplistic, yet somehow clumsy and obtuse. Mouse input via 11 "hot buttons" accounts for the majority of actions. You may switch to a political overview map, view the main map, determine economic conditions (tax rate and allocations), leave winter quarters, march, switch to the market menu, split/merge armies, or negotiate/besiege cities. However, after each option is chosen, you must in effect reset the option menu by leaving "the selected point of the menu." Easily forgotten, this can leave you continuously clicking the mouse button, wondering all the while why nothing is happening.

A multitude of over 700 cities, each with its own market conditions, is initially interesting until you understand that the minutiae of economic and political interactions are essential to game success. Historically, much of the data is a "guesstimate," as the details of this period of history are unknown. While one may admire the designers for an interesting interpolation of economic and political history, it is after all only a guess.

Game play may be summed up in a single word—*boring*. Carthage begins with three armies: one located in Carthage itself, and two in Hibernia (Spain). The home army will rarely leave its environs, being destined to provide defense to the home city of Carthage. However,

the two Spanish armies must move into Italy and attempt to defeat Rome.

Since sea movement is dependent on ships and the Carthaginian Empire lacks sufficient tonnage to move its armies successfully, you will generally rely on land movement. Rather than selecting a final destination, you must instead move armies from town to town. Since the road from Hannibal's initial location to Italy is littered with over 25 towns, and since travel from one town to another can take several minutes, it becomes apparent that *Hannibal* is not going to be a quick play.

Military movement, though, is only a small portion of this simulation. Since an army "travels on its stomach," the logistical details of movement are also a player role, and you must constantly buy rations for your troops to assure that morale remains at an acceptable level. Why this could not be accomplished by an automatic subroutine is unclear. What is clear is that logistical operations have yet to produce an interesting game, and *Hannibal* illustrates this fact all too well.

Each new town brings an opportunity to conquer or negotiate, basedupon the city's political alignment. Similarly, a tax rate may be determined on a city-by-city basis if desired. The rise of the bureaucracy goes back to the first empires, yet Rome is popularly considered to have developed the bureaucracy to an unparalleled level. In keeping with its stated premise of historical simulation, *Hannibal* allows you to play the bureaucrat to the extreme. Unless you are engaged in writing a thesis at the Wharton School of Business, or unaccountably enthralled by green eyeshades, this portion of the simulation becomes repetitious, tiresome and dull—yet it is the basis for success.

Truth & Consequences For The Commander

Military operations, while seemingly more interesting, add little spark to counteract the logistical tedium. The "Hints and Tricks" of the documentation advise the player to take "small cavalry detachments and send them ahead of the main army." They can be used for scouting and preliminary negotiations. Good advice, except that the game system does not allow it! Attempting to create a pure cavalry detachment apart from the main army is fruitless, as the simulation automatically merges it back into the larger formation. Only by detaching both cavalry and infantry units can smaller armies be made.

Since destinations are generally dozens of cities distant, the player frequently falls into the trap of allowing tactical expediency to overcome strategic goals. You should write notes of what you intend to do with your forces, and refer to it each turn. If objectives change, at least your reaction will be a conscious one, rather than simply getting lost in the point-to-point movement maze.
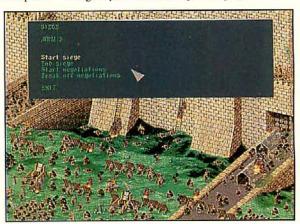
Each turn consists of one day, and whoever determined the scale of time and movement was obviously enthralled with long periods of tedium interspersed with short military battles of equal tedium. When armies collide, your level of interaction consists of determining an offensive/defensive posture, then allowing the computer to resolve the situation.

While the documentation discusses the effects of the various combat formations, they are not graphically portrayed. Instead, the two armies are arrayed by infantry, cavalry and elephants, with casualties mounting by tote board until one army wins or flees—about as interesting as watching a keno board or scanning groceries at the supermarket. Since the player cannot get information on the formation the Romans have used in a battle, any particular success or failure may well be attributed to the gods.

Away from the front, you must assign rear detachments to assure continued political stability. Excess taxation will cause revolt and loss of revenue, yet Roman allies will also grow weary of paying for an expensive war. When a Roman ally revolts, you must consider whether it is useful to offer aid, with your main criteria being location. A revolt by a Roman ally too far from Carthaginian influence will wither away; aid cannot reach it in sufficient time. Should trouble brew within a geographic area capable of Carthaginian reinforcement, you must weigh the consequences. Ignoring a plea for assistance will simply render future revolts less likely, while an intervention may take away forces from the overall strategic goal. Only repeated playings and balancing of actions will give you a feel for optimal play.

Victory is difficult to achieve, as Hannibal himself discovered. Placating allies, bribing potentially hostile cities, and hiring mercenaries all contribute to success. The problem is that the game is so slow moving that you yearn for an early resolution, often caring less whether Rome itself succeeds, just as long as the game ends.

Hannibal himself may be considered the Rommel or Napoleon of the Roman era. Feared but also admired by his opponents, his mere presence on the battlefield was worth thousands of troops. But this simulation apparently lacks any sort of leader bonuses. In effect, you wear so many hats that you portray not only Hannibal, but every leader of the Carthaginian army. The role of the Cathaginian war elephants is also obscured by the game. Actually, the use of such weapons of war were remarkably similar to chemical warfare; initially devastating, the great beasts became less and less effective, and in fact more of a hindrance, as the enemy learned how to counter them. Such lessons are hidden within the scale of the game, and cannot be learned except through the historical background portion of the documentation.

While **Microleague** deserves some credit for publishing a historical simulation of ancient warfare, the company needs to learn from this experience and provide more interesting products in the future. As it stands, Hannibal Lector would prove a more entertaining houseguest than *Hannibal*. Designer Sid Meier has stated on numerous occasions that he emphasizes the "fun parts" of a simulation and throws out the rest. MicroLeague could learn a lot from Sid's success. **CGW**

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Richardson, TX 75083-2190
(214) 437-4858

TUNELAND: Howie Mandel provides the voice for Little Howie, an animated bear in *TuneLand,* 7th Level's first release. This interactive cartoon environment for children ages 3 and up could easily be described as a Living Songbook. *TuneLand* uses traditional animation techniques and a lot of creative humor to teach the same kinds of songs and rhymes children would normally have to learn from Barney. IBM CD-ROM with Windows ($49.95). Circle Reader Service #1.

Colorado Spectrum
748 Whalers Way, E-201
Fort Collins, CO 80525
(303) 225-6929

FEATURE PRESENTATION: FLIGHT: It's a screen saver. No, it's a sound savor. All right, it's a screen saver that features stereo sounds. *Feature Presentation: Flight* includes over 40 aircraft images and 15 authentic stereo sounds of your favorite warbirds flying across your desktop from one speaker to the other. Aircraft aficionados can gaze at historic warplanes from the Fokker Dr 1 Triplane through the F-14 Tomcat. Each image can be easily converted to Windows wallpaper, while sound files can replace your regular system sounds. Another part of the package offers a visual aircraft reference containing vital statistics on each craft, and an air events calendar for the US available by aircraft category and region. If you're into aviation, this Windows enhancer will put some lift into your work-

space. IBM with Windows ($39.95). Circle Reader Service #2.

Deadly Games
275 Community Drive
Great Neck, NY 11021
(516) 482-4000

U-BOAT: Hey, is atta *U-boat?* Before you answer, know that Rene Vidmer (a founding partner of the board wargame company SPI) has added another "simulation for the rest of us" to his stable that already includes *M-4* and *Bomber.* This time, you are the commander of a Type VII U-boat at the outbreak of World War II. The target pickings are initially ripe, but you must develop skills over the course of a campaign to deal with ever improving Allied ASW measures. Vidmer's *U-boat* is rich in visual and aural atmosphere (the box even includes a set of headphones), contributing to the "you are there" feeling of this easily learned and addictive little game. Macintosh ($59.95). Circle Reader Service #3.

Electronic Arts
1450 Fashion Island Blvd.
San Mateo, CA 94404
(415) 571-7171

SEAWOLF: After being in dry-dock for so long, the anticipated sequel to Electronic Arts' *688 Attack Sub* has surfaced with some major changes. As the guiding spirit of a U-boat crew, you must manage weapons, sonar, navigation and communications, while keeping the overall picture of the engagement in mind. The familiar motif of individual stations is gone, replaced by small menus with pictures of the appropriate crew member. The game also features two-player games over a NetBIOS-compatible network. If you have a stereo sound card, you'll be treated to a dynamic underwater universe of sound, particularly in the sonar suite. Since both John Ratcliff and John Miles (providers of the majority of third party sound drivers on the market) were involved in the programming of *Seawolf,* you would be hard pressed to find an unsupported sound card. Certain hard-core simulation features have been left out to enhance overall playability, but the state-of-the-art graphics, tremendous music by the Fat Man, and mind blowing sound effects all combine to lock this product dead on-target. IBM ($69.95). Circle Reader Service #4.

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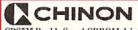
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Circle Reader Service #94

Griffin Enterprises, Alex Trebek, brings his digitized voice to an interactive version of his famed, intellectually-oriented quiz show. Digitized photos are hardly show stoppers, but are certainly better than the cheesy illustrations included with prior versions of this game. Gameplay itself lacks a high-tech gloss, but in fairness, much the same could be said about the TV show. The computer opponents run the gamut from imbecilic to reasonably bright, fairly typical for this type of game. The surprising thing is that the game, despite its many flaws, exudes a certain degree of charm, as it emulates both the good and corny aspects of an American icon. IBM ($29.95). Circle Reader Service #5.

I-Motion
1333 Ocean Ave., Suite J
Santa Monica, CA 90401
(310) 576-1888

ALONE IN THE DARK 2: Edward Carnby, the Sherlock of the Supernatural, is back. The stalwart detective who made his debut in *Alone in the Dark* has to recover a child who has been kidnapped by One-Eyed Jack, the ringleader of a wretched band of smugglers, cutthroats and gangsters. In an effort to rescue the tiny tike, Carnby must negotiate some 15 levels of 3-D territory abounding with mazes, trapdoors and secret passages, while doing his best to simply survive. The animation looks smoother and more lifelike than in the original title and objects appear more realistic. While the control interface is still a bit crude, *Alone in the Dark 2* offers plenty of game play for those who like their adventures with a dash of the macabre. IBM ($59.95). Circle Reader Service #6.

Lance Haffner Games
P.O. Box 100594
Nashville, TN 37210
(615) 242-2617

RAMPAGE WRESTLING: Lance Haffner is one of the few designers still making a living from text-based games, largely because he sticks exclusively to sports. This game is as far out as Haffner is likely to get, since pro wrestling is as much entertainment as sporting contest. Similar to Haffner's *TKO Boxing*, the game uses little in the way of visuals, but displays blocks of text written in the style of an old radio show ("The Warrior goes for the drop kick, and Hogan is down! He's moving in for the pin..."). The system is quite clever, with different competitors awarded "stars" that can be used like wild cards to break holds, make terrific leaps, and generally spice up the game. If you have any interest in pro wres-

Alone in the Dark 2

Rampage Wrestling

Casino Lite Series

World Series of Poker Adventure

The Videogame Solution CD

tling, and can do without graphics, this game might put a stranglehold on you. IBM ($39.95). Circle reader service #7.

Masque Publishing, Inc.
P.O. Box 5223
Englewood, CO 80155
(303) 290-9853

CASINO LITE SERIES: Evidently would-be riverboat gamblers don't have enough to keep them busy, since every month brings another poker program. Though the games in the Casino Lite series feature advice from such notables as David Sklansky and David Malmuth, the text-based information leaves much to be desired, and the interface plays too close to the vest, not being nearly as intuitive as one would prefer. The package does offer three serviceable games, however. The first is *7-Card Stud,* familiar to anyone who knows much at all about playing poker. Opponents range from ignoramus to intelligent, with a couple of the players being very aggressive when betting. The other two games are variations of Hold 'Em, from Texas and Omaha. Of the two, *Omaha Hold 'Em* is preferable, including excellent notes from Bob Ciaffone to help the novice form a decent strategy. IBM, $14.99. Circle Reader Service #8.

WORLD SERIES OF POKER ADVENTURE: Cross-genre games are always difficult to pull off, and this combination adventure/casino gambling game ends up evoking love or hate. Gamers who want to get right into the action will hate it. Those who want something a little off-beat may like it. You arrive in Las Vegas a few days prior to a big poker tournament with only half the tournament entry stake in your pocket. The major challenge of the game is raising the other half in time, thus forcing you to mess around with preliminary fundraising chores. The utilitarian gambling programs used in this fast pursuit of wealth include blackjack, slots, video poker machines, as well as poker tables featuring Omaha, Texas Hold 'em and 7-card stud. Good luck in the big game, if you make it that far. IBM ($39.99). Circle Reader Service #9.

Microforum
1 Woodborough Ave.
Toronto, Ontario M6M 5A1
(416) 656-6368

THE VIDEOGAME SOLUTION CD: Here's a hint! Don't be fooled by the poorly chosen title. This CD-ROM is definitely for the computer gamer rather than the console gamer. By far the most comprehensive collection of helps, hints, solutions and character editors yet assembled, *The VideoGame Solution CD* is jam packed with frustration-bust-

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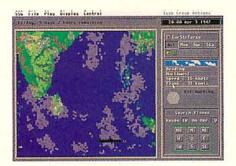
ers for the weary gamer. Included are walk-throughs and hints for hundreds of popular games such as *Alone in the Dark*, *Dune*, *Fate of Atlantis*, most **Sierra On-Line** titles and more. A good collection of game editors allow you to have, for instance, up to nine balls in *Epic Pinball* or to raise your experience points and levels in *Eye of the Beholder III* or *Crusaders of the Dark Savant*. In addition, some great shareware games are included (*Doom*, *Blake Stone*, *Jill of the Jungle*), as well as over 20 commercial game demos. Though the interface is not as polished as it could be and the collection lacks Jason Strautman's *Universal Hint System*, it is still one tremendous collection of helps to have on hand. IBM ($39.95). Circle Reader Service #10.

Strategic Studies Group Inc.
P.O. Box 261
Drummoyne, NSW 2047
Australia
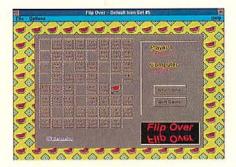
CARRIERS AT WAR II: Just when you thought it was safe to cut the CAP, SSG sends lovers of WWII carrier battles scrambling to the flight decks once again. Not only is *CAW II* compatible with both the acclaimed *CAW* and the *CAW Construction Kit*, but its installation routine automatically updates the previous products. Both graphics and AI have been improved, with the option to upgrade older scenarios if you don't mind torpedoing your saved games. The "Wardeck" options for the computer opponent have been expanded, so that it is even less predictable than before. When combined with the scenarios, which are among the less known of the war, the game becomes a very tense contest. The sinking of Force Z, Kamikazes, night engagements—they're all here in an impressive wargaming package. IBM ($69.95). Circle Reader Service #11.

Technological Computer Innovations Corp.
255 North Cherrywood Dr.
Lafayette, CO 80026-2726
(303) 673-9046
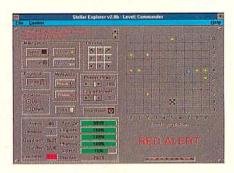
AT PLAY FOR WINDOWS: Included in this quartet of Windows games are two winners and two snoozers. On the sleepy side are *Roulette* and *Tracers*. *Roulette* may offer the quietest casino ever. There is no click as the ball migrates toward its numbered cache (or cash, assuming you've bet on the right number) and no patter from the croupier to signal the end of betting. In fact, there is nary a sound to be heard. The most tired title in the pack is *Tracers*. Tracers provides an archaic blast from the past reminiscent of the *Tron* lightcycle idea. Unfortunately, Windows'
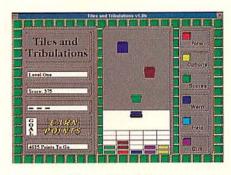
Carriers At War II

At Play for Windows

Stellar Explorer

Tiles and Tribulations

Whirlwind

own *Crayon* screen-saver is actually more fun to play. Now, for the good stuff: *HighScore* is a grid-based mathematical strategy game where 1-2 players vie for a cumulative high score. Players move horizontally (or in some games, vertically) across a grid and add the positive or negative numbers to their aggregate scores. At the higher difficulty levels, you can even end up winning with a negative score. *FlipOver* is a traditional memory challenge game. It's a simple version of *Concentration* with no rebus to be solved in the background. Both *High Score* and *FlipOver* are highly configurable and offer one or two player options with "smart" computer opponents. These latter two games make the package a good purchase in spite of their weak-sister tag-alongs. IBM with Windows ($49.95). Circle Reader Service #12.

STELLAR EXPLORER: Whether you are blasting Klingons, Krellans, or unidentified aliens, anyone who remembers the old *Trek* games (or even **Interstel**'s *Star Fleet I*) will know exactly what this game is all about. While the interface is much better than the old text-based version, and this new incarnation *does* allow you to play under *Windows*, the gameplay really hasn't changed much, except that now you can fire photon torpedoes in only 8 directions instead of 16. As weapons are fired, the energy drain becomes more noticeable, and you must dock often with a friendly starbase. Beware though—on the higher levels, your enemies can actually move, rather than sit dumbfounded in a sort of galactic turkey shoot like they do early in the game. The product does have much better graphics than its ancestors, but it's hard to find fault with a game we enjoyed so much, so many years ago. IBM with Windows ($29.95). Circle Reader Service #13.

TILES AND TRIBULATIONS: *Tiles and Tribulations* may prove to offer more of the latter than the former to most gamers. The game features 50 levels of tumbling tiles. With the look and play of a modest shareware game gone commercial, this *Tetris* derivative features good music, fair graphics, modestly enjoyable play, and a few visual glitches that attest to its "not-quite-ready-for-prime-time" status. Though it offers considerable variety in scoring opportunities (different tile configurations earn different point values), the playing experience doesn't seem significantly different from *Tetris*. Indeed, we thought the game was a bit pricey for what it offers. IBM with Windows ($39.95). Circle Reader Service #14.
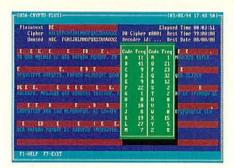
WHIRLWIND: There's little doubt that this game of galactic vortices is anything else but a clone of *Tempest*, a game which recently resurfaced in *Microsoft Arcade* for Windows. As such, it must be judged against its competition. While *WhirlWind* is as playable as Microsoft's offering, and while its vector-style graphics are just as faithful to the original, it comes up lacking on dollar-for-dollar value. Whereas *Microsoft Arcade* includes *Asteroids*, *Battlezone*, *Centipede* and *Missile Command* in addition to *Tempest*, all for $39.95, *WhirlWind* by itself retails for the same price. IBM with Windows ($39.95). Circle Reader Service #15.

Unicorn Systems Associates
433 Lincoln Ave.
Erie, PA 16505-2449
(814) 453-5888

USA-CRYPTO-PLUS: It won't qualify you as a cryptographer with the US government, but having a copy of *USA-CRYPTO-PLUS* will provide you with many hours of word ciphering fun. Both a tool and a game, this program allows you to decode cryptograms from external sources, like magazines and newspapers, as well as from its internal database of 75 ciphers (additional cipher databases are available). The package also includes a frequency chart showing the number of times each letter is used in a given cipher, which is designed to assist gamers in the deciphering process, and a hint feature that allows three hints per cipher. While fully usable under DOS as it stands, it could have been much easier to use. IBM ($20.00). Circle Reader Service #16.

Virgin Interactive Entertainment
18061 Fitch Avenue
Irvine, CA 92714-9841
(800) VRGIN07

LANDS OF LORE: THE THRONE OF CHAOS: The wait is over for the CD-ROM version of *Lands of Lore* to hit the shelves. Featuring the voice of Patrick Stewart (Jean Luc Picard of *Star Trek: The Next Generation*) as King Richard, *Lands of Lore CD* offers full digitized speech for its extensive cast of characters. In other words, it has all the gorgeous graphics, stunning sound, deep atmosphere and play value as the original release, plus quality voice-overs. Even if you've already finished *Lands of Lore*, the option of selecting a different character to play, combined with the enhanced version on CD may offer just enough freshness to tackle this superb RPG again. IBM CD-ROM ($74.99). Circle Reader Service #17.

USA-Crypto-Plus
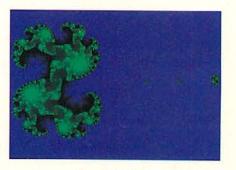
Lands of Lore: The Throne of Chaos

Virtual Tarot

Artificial Life Lab

Fractal Creations

Virtual Media Works
P.O. Box 70030
Sunnyvale CA 94086
(408) 739-0301

VIRTUAL TAROT: Divine your future and introspect on the course of your life with the aid of the mysterious Tarot deck. A great deal of background on the history of Tarot is included, in addition to the brief and eloquent descriptions of the meanings behind each card. The authors of the program say right up front that you are responsible for your actions, and that the Tarot deck is but a guide to interpret the various influences upon your life. The mystical mood is enhanced by appropriate music, somewhat less obtrusive than in many similar products. The artwork is stunning, and follows the classic style of Tarot illustration, standardized by A.E. Waite in the 1800s. The pace of the program is slow, but this is hardly a distraction, given it's contemplative nature. In addition to a variety of divinations, you have the option to keep a personal diary, which you may update at will. Mac ($84.95). Circle Reader Service #18.

The Waite Group Press
200 Tamal Plaza
Corte Madera, CA 94925
(415) 924-1724

ARTIFICIAL LIFE LAB: If Maxis' *SimLife* got your wetware cooking, you simply *must* take a look at the latest book/software package from **The Waite Group Press**. Written and programmed by Rudy Rucker—professor, novelist, "mathenaut" and cybermyth—the book and *Boppers* program explore man-made digital entities that exhibit life-like behavior. Sex, Death and Gnarl (Rucker's term for "complexity")—the fundamental characteristics of life—are the items of Rucker's inquiry in both book and software. The writing is superb, the illustrations are fun and useful, and the Windows-based A-Life program is flexible and friendly. IBM with Windows ($34.95). Circle Reader Service #19.

FRACTAL CREATIONS: This second edition to the Waite Group's *Fractal Creations* book/software package is *the* do-it-yourself source for the serious fractal explorer. The inner covers of the 450 page book contain both a diskette with the latest version of *Fractint*, the **Stone Soup Group**'s powerful fractal generation software, and a CD-ROM disc packed with 1800 incredible images. The book is both an excellent tutor to fractal basics and thorough documentation for the software. For the programming adept, the source code of the *Fractint* program has been provided and documented for your hacking pleasure. IBM ($39.95). Circle Reader Service #20. **CGW**

COMPUTER GAMING WORLD
HALL OF FAME

Welcome to the Cooperstown of Computer Games. Here, raised upon pedestals, you'll find the games that broke the records, established the benchmarks, and held gamers in delighted trances for hours untold.

The Bard's Tale (Electronic Arts, 1985)

Battle Chess (Interplay Productions, Inc., 1988)

Chessmaster (The Software Toolworks, 1986)

Civilization (MicroProse, Inc., 1991)

Dungeon Master (FTL Software, 1987)

Earl Weaver Baseball (Electronic Arts, 1986)

Empire (Interstel, 1978)

F-19 Stealth Fighter (MicroProse, Inc., 1988)

Gettysburg: The Turning Point (Strategic Simulations, Inc., 1986)

Gunship (MicroProse, Inc., 1989)

Harpoon (Three-Sixty Pacific, 1989)

Kampfgruppe (Strategic Simulations, Inc., 1985)

King's Quest V (Sierra On-Line, Inc., 1990)

M-1 Tank Platoon (MicroProse, Inc., 1989)

Mech Brigade (Strategic Simulations, Inc., 1985)

Might & Magic (New World Computing, 1986)

M.U.L.E. (Electronic Arts, 1983)

Pirates (MicroProse, Inc., 1987)

Railroad Tycoon (MicroProse, Inc., 1990)

Red Baron (Dynamix, 1990)

SimCity (Maxis, 1987)

Starflight (Electronic Arts, 1986)

The Secret of Monkey Island (LucasArts Entertainment Company, 1990)

Their Finest Hour (LucasArts Entertainment Company, 1989)

Ultima III (Origin Systems, Inc., 1983)

Ultima IV (Origin Systems, Inc., 1985)

Ultima VI (Origin Systems, Inc., 1990)

War in Russia (Strategic Simulations, Inc., 1984)

Wasteland (Interplay Productions, Inc., 1986)

Wing Commander (Origin Systems, Inc., 1991)

Wizardry (Sir-Tech Software, 1981)

Zork (Infocom, 1981)

War in Russia
Strategic Simulations, Inc., 1984
Apple

The first "monster" war-game on the computer, *War in Russia* depicted the action on the Eastern Front during World War II. Experienced gamers came to discover that the AI could be faked out easily in an early move of subterfuge, but the game continued to have popularity because of its scale, subject matter, and suitability for playing by mail (players could easily save their moves, send a disk to a friend, and wait for the friend to return the disk for their next move). It was popular among wargamers for as long as the Apple II remained alive.

Wasteland
Interplay Productions, Inc., 1986
Apple, C-64, IBM

It is difficult to speak of CRPGs without invoking the venerable title, *Wasteland.* The game proved the value of a skill-based role-playing system and created interesting algorithms for handling the non-player characters. One couldn't simply strip the NPCs of their items as in other games; the NPCs had "minds" of their own. Further, although the game was combat intensive and used a computerized form of Michael Stackpole's *Mercenaries, Spies and Private Eyes* game system, it was replete with ethical dilemmas and non-combat puzzle-solving of the most devious sort. The story was written by Mike Stackpole, and many of the maps were fleshed out by veteran game designers like Liz Danforth and Ken St. Andre. Now, years later, *Wasteland* is still held with great esteem by *CGW*'s readers. The game has been recently re-released as part of the Interplay 10th Anniversary CD-ROM.

Reader Poll #116

Top 100 Games

	Game	Company	Type	Score
1	Doom	Id Software	AC	10.56
2	Links 386 Pro	Access	SP	10.37
3	Ultima Underworld	Origin	RP	10.29
4	Master of Orion	MicroProse	ST	10.23
5	Warlords II	SSG	WG	10.11
6	Sim City 2000	Maxis	ST	10.10
7	Front Page Sports Football Pro	Dynamix	SP	10.06
8	Wing Commander II	Origin	AC	10.00
9	Day of the Tentacle	LucasArts	AD	9.97
	Solitaire's Journey	QQP	ST	9.97
11	V for Victory: Velikiye Luki	Three-Sixty Pacific	WG	9.93
12	Monkey Island 2: Le Chuck's Revenge	LucasArts	AD	9.91
13	Dune II	Virgin	ST	9.86
14	Indiana Jones: Fate of Atlantis	LucasArts	AD	9.79
15	X-Wing	LucasArts	SI	9.76
16	The Perfect General	QQP	WG	9.75
17	Betrayal at Krondor	Dynamix	RP	9.74
18	Carriers at War Construction Kit	SSG	WG	9.68
19	V for Victory: Utah Beach	Three-Sixty Pacific	WG	9.63
20	Gabriel Knight	Sierra	AD	9.59
	V for Victory: Market Garden	Spectrum HoloByte	SI	9.59
22	Quest for Glory III	Three-Sixty Pacific	WG	9.58
23	Sherlock Holmes CD I	Sierra	AD,RP	9.56
24	Lands of Lore	Viacom	AD	9.55
	Wolfenstein 3-D	Virgin	RP	9.55
27	NHLPA Hockey	Id Software	AC	9.54
28	Conquered Kingdoms	Electronic Arts	SP	9.53
29	World Circuit	QQP	WG,ST	9.50
30	Privateer	MicroProse	SI	9.50
	War in Russia	Origin	AC	9.43
32	Ultima Underworld II	SSI	WG	9.42
33	Might & Magic III	Origin	RP	9.41
34	Aces of the Pacific	New World Computing	SI	9.38
35	Might & Magic: Darkside of Xeen	Dynamix	RP	9.37
	Hardball III	New World Computing	SP	9.37
37	Pacific War	Accolade	WG	9.34
	Might & Magic: Clouds of Xeen	SSI	RP	9.34
	Eye of the Beholder II	New World Computing	RP	9.34
	Ultima VII	SSI	RP	9.34
41	Star Control II	Origin	RP	9.33
42	The Seventh Guest	Accolade	AD,AC	9.32
	Chessmaster 3000	Virgin	AD	9.32
44	Kasparov's Gambit	Software Toolworks	ST	9.28
	Indy Car Racing	Electronic Arts	ST	9.28
46	Comanche: Maximum Overkill	Virgin/Papyrus	SI	9.27
	Jack Nicklaus Signature Golf	NovaLogic	SP	9.27
48	Syndicate	Accolade	ST,AC	9.26
49	V for Victory: Gold Juno Sword	Electronic Arts	WG	9.24
50	Lemmings	Three-Sixty Pacific / Psygnosis	AC,ST	9.21

Top Adventure Games

	GAME	COMPANY	SCORE
1	Day of the Tentacle	LucasArts	9.97
2	Monkey Island 2: Le Chuck's	LucasArts	9.91
3	Indiana Jones: Fate of Atlantis	LucasArts	9.79
4	Gabriel Knight	Sierra	9.59
5	Quest for Glory III	Sierra	9.56
6	Sherlock Holmes CD I	Viacom	9.55
7	Star Control II	Accolade	9.33
8	The Seventh Guest	Virgin	9.32
9	Lost Files of Sherlock Holmes	Electronic Arts	9.20
10	King's Quest VI: Heir Today...	Sierra	9.17

Top Role Playing Games

	GAME	COMPANY	SCORE
1	Ultima Underworld	Origin	10.29
2	Betrayal at Krondor	Dynamix	9.74
3	Lands of Lore	Virgin	9.55
4	Ultima Underworld II	Origin	9.42
5	Might & Magic III	New World Computing	9.41
6	Might & Magic: Darkside of Xeen	New World Computing	9.37
7	Ultima VII	Origin	9.34
8	Eye of the Beholder II	SSI	9.34
9	Might & Magic: Clouds of Xeen	New World Computing	9.34
10	Wizardry VII: Crusaders of Savant	Sir-Tech	9.10

Top Simulation Games

	GAME	COMPANY	SCORE
1	X-Wing	LucasArts	9.76
2	Falcon 3.0	Spectrum HoloByte	9.59
3	World Circuit	MicroProse	9.50
4	Aces of the Pacific	Dynamix	9.38
5	Indy Car Racing	Virgin/Papyrus	9.28
6	Comanche: Maximum Overkill	NovaLogic	9.27
7	Secret Weapons of the Luftwaffe	LucasArts	9.19
8	Stunt Island	Disney	9.00
9	Aces over Europe	Dynamix	8.99
10	Gunship 2000	MicroProse	8.95

Top Strategy Games

	GAME	COMPANY	SCORE
1	Master of Orion	MicroProse	10.23
2	Sim City 2000	Maxis	10.10
3	Solitaire's Journey	QQP	9.97
4	Dune II	Virgin	9.86
5	Chessmaster 3000	Software Toolworks	9.32
6	Kasparov's Gambit	Electronic Arts	9.28
7	Syndicate	Electronic Arts	9.26
8	Hong Kong Mahjong Pro	Electronic Arts	9.13
9	The Lost Admiral	QQP	9.05
10	The Incredible Machine	Dynamix	8.92

The Computer Gaming World Poll

A monthly survey of the readers of Computer Gaming World Magazine.

#	Game	Company	Type	Score
51	Lost Files of Sherlock Holmes	Electronic Arts	AD	9.20
52	Secret Weapons of the Luftwaffe	LucasArts	SI	9.19
53	King's Quest VI: Heir Today...	Sierra	AD	9.17
54	Tetris Classic	Spectrum HoloByte	AC	9.14
	Clash of Steel	SSI	WG	9.14
56	Hong Kong Mahjong Pro	Electronic Arts	ST	9.13
57	The Castle of Dr. Brain	Sierra	AD	9.11
58	Eye of the Beholder	SSI	RP	9.10
	Wizardry VII: Crusaders of Savant	Sir-Tech	RP	9.10
60	The Dagger of Amon Ra	Sierra	AD	9.09
61	Ultima VII: Part Two Serpent Isle	Origin	RP	9.08
62	Les Manly in: Lost in L.A.	Accolade	AD	9.06
63	Bane of the Cosmic Forge	Sir-Tech	RP	9.05
	Quest for Glory I (VGA)	Sierra	AD,RP	9.05
	The Lost Admiral	QQP	ST	9.05
66	Eric the Unready	Legend	AD	9.04
	Empire Deluxe	New World Computing	WG	9.04
	Conquests of the Longbow	Sierra	AD	9.04
69	Police Quest 3	Sierra	AD	9.01
70	Stunt Island	Disney	SI	9.00
	Battles of Destiny	QQP	WG,ST	9.00
72	Aces over Europe	Dynamix	SI	8.99
73	Space Quest IV	Sierra	AD	8.98
	Western Front	SSI	WG	8.98
75	Carriers At War	SSG	WG	8.97
76	The Adventures of Willy Beamish	Dynamix	AD	8.96
	Freddy Pharkas Frontier Pharmacist	Sierra	AD	8.96
78	Alone in the Dark	I-Motion	AD	8.95
	Gunship 2000	MicroProse	SI	8.95
80	The Incredible Machine	Dynamix	ST	8.92
	F-117A	MicroProse	SI	8.92
	Oh, No! More Lemmings	Psygnosis	AC,ST	8.92
83	The Island of Dr. Brain	Sierra	ST	8.91
84	Chuck Yeager's Air Combat	Electronic Arts	SI	8.87
85	Indianapolis 500	Electronic Arts	SI	8.83
86	Spellcasting 301: Spring Break	Legend	AD	8.81
87	Rex Nebular	MicroProse	AD	8.80
88	F-15 Strike Eagle III	MicroProse	SI	8.79
	Gateway to the Savage Frontier	SSI	RP	8.79
90	Tony La Russa Baseball II	SSI	SP	8.78
	Populous II	Electronic Arts	ST	8.78
	Hoyle Book of Games, Vol. 3	Sierra	ST	8.78
	High Command	Three-Sixty Pacific	WG	8.78
94	Heart of China	Dynamix	AD	8.75
95	Veil of Darkness	SSI	RP	8.74
	Dracula Unleashed	Viacom	AD	8.74
97	Gateway	Legend	AD	8.72
98	Starflight II	Electronic Arts	RP	8.71
99	Pools of Darkness	SSI	RP	8.68
100	MiG-29	Spectrum HoloByte	SI	8.64

Games on unnumbered lines have scores equal to the line above. ○ = Top game of type. Magenta=New Game
AD=Adventure, RP=Role Playing, SI=Simulation, ST=Strategy, WG=Wargame, AC=Action, SP=Sports

Top Wargames

#	GAME	COMPANY	SCORE
1	Warlords II	SSG	10.11
2	V for Victory: Velikiye Luki	Three-Sixty Pacific	9.93
3	The Perfect General	QQP	9.75
4	Carriers at War Construction Kit	SSG	9.68
5	V for Victory: Utah Beach	Three-Sixty Pacific	9.63
6	V for Victory: Market Garden	Three-Sixty Pacific	9.58
7	Conquered Kingdoms	QQP	9.53
8	War in Russia	SSI	9.43
9	Pacific War	SSI	9.34
10	V for Victory: Gold-Juno Sword	Three-Sixty Pacific	9.24

Top Action Games

#	GAME	COMPANY	SCORE
1	Doom	Id Software	10.56
2	Wing Commander II	Origin	10.00
3	Wolfenstein 3-D	Id Software	9.55
4	Privateer	Origin	9.43
5	Lemmings	Psygnosis	9.21
6	Tetris Classic	Spectrum HoloByte	9.14
7	Oh, No! More Lemmings	Psygnosis	8.92
8	Prince of Persia 2	Broderbund	8.60
9	Out of this World	Interplay	8.57
10	Rebel Assault	LucasArts	8.48

Top Sports Games

#	GAME	COMPANY	SCORE
1	Links 386 Pro	Access	10.37
2	Front Page Sports Football Pro	Dynamix	10.06
3	NHLPA Hockey	Electronic Arts	9.54
4	Hardball III	Accolade	9.37
5	Jack Nicklaus Signature Golf	Accolade	9.27
6	Tony La Russa Baseball II	SSI	8.78
7	NFL Pro League Football	Micro Sports	8.54
8	Tha Games: Winter Challenge	Accolade	8.50
9	4-D Boxing	Electronic Arts	8.37
10	Wayne Gretzky Hockey III	Bethesda	8.30

PC Research Hits List Of Top-Selling Software

January, 1994

PC Games (MS-DOS/WINDOWS)

Rank	Title and Source
1.	SimCity 2000 (Maxis Software)
2.	Microsoft Flight Simulator 5.0 (Microsoft Corporation)
3.	Star Wars Rebel Assault (LucasArts Entertainment)
4.	X-Wing: B-Wing (LucasArts Entertainment)
5.	The 7th Guest (Virgin Interactive Entertainment)
6.	Leisure Suit Larry VI (Sierra On-Line, Inc.)
7.	Police Quest IV (Sierra On-Line, Inc.)
8.	X-Wing (LucasArts Entertainment)
9.	Wolfenstein 3D/Spear of Destiny (Formgen)
10.	Links: Pebble Beach (Access Software, Inc.)
11.	Master of Orion (MicroProse, Inc.)
12.	SimCity (Maxis Software)
13.	Microsoft Flight Simulator Scenery Disk: USA West (Sublogic)
14.	Star Trek: Judgment Rites (Interplay Productions, Inc.)
15.	Links 386 Pro (Access Software, Inc.)
16.	Aces Over Europe (Sierra On-Line, Inc.)
17.	Unnecessary Roughness (Accolade)
18.	Quest for Glory IV (Sierra On-Line, Inc.)
19.	Microsoft Flight Simulator: New York Scenery (Microsoft Corporation)
20.	Front Page Sports Football Pro (Sierra On-Line, Inc.)

Amiga Games

Rank	Title and Source
1.	AD&D Gateway to the Savage Frontier (Strategic Simulations, Inc.)
2.	Hoyle's Book of Games 2 (Sierra On-Line, Inc.)
3.	Medieval Warriors (Merit Software)
4.	Dick Tracy (Disney Software)
5.	AD&D Dark Queen of Krynn (Strategic Simulations, Inc.)

Macintosh Games

Rank	Title and Source
1.	SimCity 2000 (Maxis Software)
2.	Myst (Brøderbund Software, Inc.)
3.	Chessmaster 3000 (The Software Toolworks)
4.	Leisure Suit Larry VI (Sierra On-Line, Inc.)
5.	SimCity (Maxis Software)

CD-ROM Products

Rank	Title and Source
1.	Star Wars Rebel Assault (LucasArts Entertainment)
2.	Microsoft Encarta (Microsoft Corporation)
3.	The 7th Guest (Virgin Interactive Entertainment)
4.	Gabriel Knight (Sierra On-Line, Inc.)
5.	King's Quest VI (Sierra On-Line, Inc.)
6.	Mad Dog McCree (American Laser Games)
7.	Return to Zork (Activision)WolfPack (Electronic Arts)
8.	Daemonsgate (Gametec)
9.	AD&D Dungeon Hack (Strategic Simulations, Inc.)
10.	Iron Helix (Spectrum HoloByte)

This list is based on units sold by ten retail chains, representing over 1300 stores. For more information, please contact PC Data at (703) 435-1025.

What You've Been Playing Lately

Every month our mailbox bulges with hundreds of Reader Input Cards from our most loyal and outspoken readers. Over the years we've found these cards to be an invaluable source of feedback. Within 10 days of releasing our latest issue we can expect to see cards pouring in with suggestions, encouragements, tirades and many good laughs, in addition to the data for our Top 100 poll. Through your efforts, we know *exactly* where we stand with our readers (you don't mince words!), and we are treated to well-articulated opinions on anything and everything related to gaming. This column is a forum for these responses and for the results of our "Playing Lately?" query on the Reader Input Card. Thanks for taking the time to fill them out...keep 'em coming!

Playing Lately? Results for CGW #116, March 1994

1.	Doom (id Software)
2.	Master of Orion (MicroProse)
3.	SimCity 2000 (Maxis Software)
4.	Privateer (Origin Systems)
5.	X-Wing (LucasArts Entertainment)
6.	Warlords II (Strategic Studies Group)
7.	Merchant Prince (QQP)
8.	Aces Over Europe (Dynamix)
9.	Gabriel Knight (Sierra)
10.	Civilization (MicroProse)

The Players Speak

"Will someone please design a baseball simulation that encompasses the world of fun *off* the field? Free agents, arbitration, trades with computer GM's, shuttling players to the minors and, best of all, firing managers!?!"

—G. Steinbrenner, Bronx, NY (postmarked Newark, NJ)

"Though impressive graphically, *Terminator: Rampage* is *not* fun to play. Even on my 486-50 with 8MB RAM, it runs agonizingly slow. I have more fun with my *Wolf 3D*."

—Matt Trainor, Ashland, MA

"*Blake Stone* is an improvement over *Wolf* in that it has map and re-enter level options. Very fun.
Doom is without doubt the most realistic VR game yet. Only thing missing is re-enter level option. Otherwise it's spectacular! And it runs great on my 486SX-25 (unlike *Flight Sim 5.0*)."

— Ken Marshall, Concord, NH

"Let's get the non-linearity back into role-playing games. *Ultima IV, V,* and *VI* are still unbeatable for non-linearity (esp. *Ultima IV*) and game play!"

— Jay Cook, New Castle, IN

"The perfect CRPG = *Krondor* world and story using the *Underworld* engine. Origin take note: Dante's Inferno using the *Underworld* engine—redeem yourself from *Shadowcaster*."

— Gree Whittier, Brookhaven, MS

"*Red Crystal*—yuk! I bought the game sight unseen because most of QQP's products have been soooo good. Bummer! This game stinks almost as much as that *Starship* garbage! What is the point of modem play when you can't communicate with the other party?....And so it sits on my shelf next to the great QQP games like *Conquered Kingdoms, Lost Admiral, Perfect General, Solitaire's Journey,* and *Heirs to the Throne*—only the later are on my hard drive. Maybe QQP would let me trade *RC* for *Merchant Prince*."

— Bruce, Bozeman, MT

The Patch File

Computer game programs have grown so massive and the number of possible configurations has become so huge that incompatibilities and glitches seem to be breeding at an exponential rate. Consumers and publishers are both frustrated at the need for adding patches into "buggy" programs, but they seem to be an interim solution that is going to be with the hobby for a while (presumably, until a standard platform configuration is agreed upon). So, until the golden age of standardized platforms and bug-free programs, *Computer Gaming World* will publish a regular list of the latest updates of which we are aware.

These patches can usually be downloaded from most major networks (e.g., CompuServe or GEnie), but can also be obtained from individual software publisher's own BBSs or direct from the publisher with proof of purchase. We continue to urge publishers to keep us updated on the latest versions/patches to their games.

("**" indicates new files)

**Air Warrior V1.13 Update: New execute files, fixes several problems. 3/1/94

**Arena V1.2 Update: Fixes scrambled indoor map problem, missing music problem, Quadrant jerkiness, SHIFT +J standing long-jump difficulties, and allows you to sell magic items and delete spells. Particularly helpful for 386 machine users. 3/1/94

Comanche: Maximum Overkill Update: Includes several hardware fixes, including a fix for the Pentium and the Diamond Stealth Pro video card. 1/27/94

Companions of Xanth V1.1.0 Update: Corrects graphic corruption problems associated with Microsoft (V8.2+) and Logitech (V6.13) mouse drivers. 12/23/93

Conquered Kingdoms Update: Fixes some save game problems that have been reported. 12/22/93

CyberRace CD-ROM V1.2 Update: Lowers the base memory requirements, fixes the save game problems, and remedies joystick problems (especially with Phoenix BIOS). 1/20/94

**Diamond Dreams Patch: Fixes all known 3.0 bugs. 2/24/94

Empire Deluxe V3.11a Upgrade: Updates Version 3.11 to Version 3.11a. Corrects a number of minor bugs and extends the sound card support. 12/02/93

**Front Page Sports Football Pro: Fixes player draft error and includes 26 AI enhancements. 2/11/94

Gabriel Knight Floppy V1.0A Patch: Corrects various memory allocation and "fatal -" errors that some players have encountered. 12/16/93

Gabriel Knight CD-ROM Update: Fixes all known problems and speeds up the game restoring process. 1/21/94

**Gobliins CD-ROM Patch: Fixes sound card and CD-ROM driver problems. 3/1/94

Hornet Patch: Fixes many bugs and adds several new features to Spectrum HoloByte's new combat sim. 2/07/94

**Lands Of Lore CD-ROM Patch: Fixes lockup problems on fast machines and allows use of Waveblaster/Soundblaster 16 combo. 2/24/94

Legend of Kyrandia V1.3 Update: Fixes random lockups and corrects some of the phrasing used by the characters. 2/04/94

Links 386 Pro Version 1.21: Corrects many major and minor bugs. 1/28/94

Lost In Time CD-ROM Update: Fixes problems with several CD drives (Mitsumi, Orchid) and certain Sound Blaster-compatible audio cards. 2/09/94

Lucky's Casino Adventure Update: Enables the program to recognize most VESA drivers, and allows the users to set the IRQ and Base address for any sound card. 12/30/93

Master of Orion V1.3 Upgrade: This patch features tougher opponents, adjusted playbalance, and legions of minor combat tweaks. 1/06/94

Merchant Prince Update: Corrects some minor bugs in QQP's latest. 12/29/93

Metal and Lace V1.42A Update: Fixes a few minor bugs and adds an Easy and Hard mode. 1/20/94

Mortal Kombat PC Update: Improves sound card support, fixes crash bugs, and requires less conventional memory. 1/21/94

**Nomad Patch: Gets rid of inventory bug for trade. 3/1/94

Police Quest 4 Floppy Patch: Corrects various memory allocation errors and lockups, and speeds up the game restoring process. 1/21/94

Police Quest 4 Floppy Handcuff Patch: Allows more time to handcuff Walker. 1/21/94

Quest For Glory 4 Patch: Corrects various memory allocation errors and lockups that some players have been encountering, in addition to a few puzzle bugs. 1/21/94

**Quest For Glory 4 Patch: Allows players to receive note from Katrina. 2/17/94

**Real Weather Pilot Patch: Contains aircraft ID patch and fixes install problems with bios. 3/1/94

**Real Weather Pilot Patch: Allows players to use letters only, as suggested by the FAA. 3/1/94

**SimCity2000 V1.1 Update (Mac): Latest version fixes the budget problem, among others. 3/1/94

TFX Patch: Fixes the unexpected interrupt error message due to hardware conflicts, in addition to unexplained crashes. 1/24/94

**TFX Patch UK V2.0 Upgrade: Makes UK version equal to USA V 2.0, including several new features in addition to bug fixes, but only works if you downloaded first patch as well. 2/24/94

War in Russia V1.1 Update: Makes many adjustments to the game mechanics and fixes minor bugs. 2/08/94

The PRODIGY Weekly Top Ten

Computer Gaming World is Prodigy's on-line games expert. Look for us in their Game Center, a forum where users read articles posted on-line by *CGW* and exchange messages on the bulletin boards (we can be reached there at EXPT40B). The Prodigy Game Poll is run by Prodigy based on a list of games provided by *CGW* and is updated weekly. Note that it is not a cumulative rating over time (like the *CGW* Top 100 Poll). Instead, the Prodigy Game Poll is a weekly "Snapshot" of game popularity with gamers rating their favorites on a 1 - 10 scale. The highest total point earners make their Top 10. We provide this data to our readers as another barometer of "what's hot" in computer gaming.

GAME POLL

TOP TEN RANKED GAMES
Week of February 25 to March 3

RANK	SCORE	TITLE	RANK	SCORE	TITLE
1	3520	Castle Wolfenstein-3D	6	2223	Civilization
2	3843	SimCity 2000	7	2087	Seventh Guest
3	2641	X-Wing	8	1871	Wing Commander 2
4	2598	King's Quest VI	9	1585	Links 386 Pro
5	2486	Doom	10	1548	Front Pg Football

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Profiles and photos of missing children.

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Journalist flambé

by Justin Graham Puck

Sometimes, the best laid plans of investigative journalists simply go awry. I hired on at San Jose's famous Il Fornaio restaurant in order to meet a certain red-haired lovely who had been refusing to take my phone calls. I volunteered to work as an extra chef on an evening when the Sharks were playing, because she usually dined there before the game.

I turned and asked one of the waiters if he was going to get off work in time to go to the arena that night. He told me that the only arena he would be visiting was the *Elder Scrolls: Arena* from **Bethesda Softworks**. He talked about that game all the way through the preparation of my special Chardonnay sauce and the only way I could shut him up was to tell him that the sequel would be called *Mournhold*. Blending Romano and a hint of basil into the sauce, I explained that *Mournhold* would connect to and expand *Arena* into a *World of Xeen*-like universe, comprised of three or four games, and that it will run faster because they are revamping the engine to run under DOS protected mode.

As I was tossing the last of the fettucine, the waiter returned with exciting news. "There is a couple out there talking about *Wing Commander III*!" he shouted. "They say it's going to make it for Christmas release and that **Origin** is using **Silicon Graphics** machines to render the backgrounds and cinematic sequences."

I peeked out from the kitchen and noticed the lady in question had locks so red they would have done my clam sauce proud. Since she had been talking about Origin Systems, she must be my elusive contact. I quickly garnered the materials together and joined her and her escort at the table to prepare their meal at a side table. Dropping capers into the piquant sauce, I dropped a hint about the modern tank simulation under development by **MicroProse**. Its working title is *M-1 Tank II* and it is supposed to use the *Across The Rhine* engine for modern scenarios. It's supposed to be released by Christmas.

Catching them off-guard with the aroma of freshly steamed mushrooms in garlic, I dropped hints about two new science fiction games. I told them about **RAW Entertainment**'s science fiction thriller, *Blind Justice*, to be designed by a new developer called **Illymani Designs**. When they didn't respond, I assumed they didn't like products that were marketed solely by direct sales and mentioned a non-violent space adventure called *Terror-Byte* that might even be bundled on an, as yet, unannounced game machine. It's being developed by a new company called **Digital Graphics Library**, and is supposed to have a huge game universe.

While dishing up the pasta, I asked if either of them had heard about **CryWolf Productions**' *Twenty Thousand Leagues Under The Sea*. I wondered aloud if it had anything to do with an abandoned project from **Walt Disney Software** alumnus. They just complimented me on the sauce.

I told them I'd heard from **MicroProse** that *Multiplayer Civilization* is dead. They sympathized and asked if I had any of that famous Il Fornaio *Creme Brulee* for dessert. I nodded and tried again. "They're still working on *Colonization*, but it may not have a multiplayer capability." They ordered two cappuccinos with dessert, and I nodded again and told them that *DragonSphere* will remain a **MicroProse** product. On my way back to the kitchen, I told them that the production team had finished recording the voices for the CD-ROM version.

What was going wrong? Was this woman afraid to tell me anything in front of her escort? Had I been providing rumors of the wrong sorts of games? Would she have been more interested in **RAW Entertainment**'s *2300: Cyber Wars*? I remembered that it was a strategic game using area movement, resource management and diplomacy, but it didn't seem her style. She might not even like the features like biological warfare, galactic commodity market or census reports that add to the realism of the late '94 product. Would she have been interested in **Impressions**' *Lords of the Realm*? She'd probably have been more interested in the fact that it was originally going to be called *Castle Conquest* but the name was changed to avert any confusion with the **Interplay** line of strategy games.

While the waiter served their cappuccino, I brought out the *Creme Brulee* myself. I set it down before the charming, but quiet, couple and tried my last gambit. "You know, this *SimWorld* concept from **Maxis** is looking pretty good. In addition to being able to fly over your city with that product from **Mallard Software**, you'll be able to fight your way through your city with giant 'mechs using a product from **Tsunami**, drive through your city in a different product, or build a skyscraper arcology in your *SimCity* using a Japanese conversion called *The Tower*."

It didn't work. They listened patiently, but as I offered my farewell and turned to leave, I heard the gentleman say to the lady, "So, how long have you known him?"

"I don't," she responded, "I thought he was a friend of yours!"

Then, to make matters worse, I noticed another beautiful redhead across the room, putting on her coat and getting ready to leave the restaurant. She caught my eyes and smiled knowingly before she waved coquettishly and left me bereft of both rumors and answers. **CGW**

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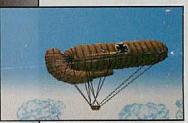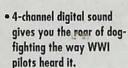
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