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"LUCASFILM PREMIERES FIRST TWO GAMES" CAN IT BECOME A FORCE IN ELECTRONIC GAMING?

by Arnie Katz

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- Remember the first time you saw "Star Wars"? The George Lucas science fiction fantasy epic filled audiences with awe, amazement and a sense of wonder with its mixture of "B" movie thrills and "A" movie production values and artistic sensibilities.
- When Atari and Lucasfilm announced their joint venture approximately 18 months ago, the project raised a storm of interest--and perhaps a few skeptical eyebrows as well. Would Atari be able to capture Lucasfilm lighting in a cartridge? How much could and would Lucasfilm contribute to the finished software? Can filmmakers really make games?
- The first two titles designed by Lucasfilm and distributed under the Lucasfilm-Atari banner provide emphatic answers to the questions which silence all doubters. Rescue on Fractalus and Ballblazer bear the unmistakable Lucas imprint, and what's more important, both programs are superior games. Under the leadership of director, Stephen D. Arnold, and Peter S. Langston, director of game development, Lucasfilm's Computer Division has vaulted directly into the front ranks of the software design houses. The approach epitomized cartridges that materially advance the state-of-the-art.
- Rescue on Fractalus is probably the more expectable of the two releases, since it is precisely the kind of science fiction romp that earned the

company its reputation. It's a first-person flying simulation in which the player dares a mission behind enemy lines to rescue downed pilots. The gamer blasts toward the enemy planet from a mothership and skims low over the surface of the world looking for stranded spacemen while avoiding murderous ground- and air-based fire.

- The greatness of Rescue on Fractalus lies in the wealth of detail which the design team, under project leader David Fox, included to enhance the simulation. "I want to make games that transpose someone to a different reality," says Fox, who's ultimate ambition is to create a Dream Park filled with full-dimension simulations. "That's why the rescue ship launches from a mothership. We didn't want to just start the game right on the surface of the planet."
- Even scoring can't burst this fantasy bubble. "Although it was an early suggestion," says Fox, "we decided not to put the player's score on the door of the mothership, because it would have broken the fantasy."
- Fox and his cohorts have furnished video pilots with a smorgasbord of meters, lights, gauges and screens, all well-arrayed on a control panel located directly beneath the main view-screen. "I spent a week or two with paper, drawing the panel with the instruments we need," explains Fox. Sometimes, that meant removing a useful, but not vital, instrument. "We originally had 4X magnification for the long-range scanner, but people seldom used it during the test games, so we took it out."
- Taking things out can sometimes have as great a bearing on the quality of the finished game as what the designers actually include in the program. That's why the Lucasfilm design team made such a concerted effort to streamline the play-mechanics of Rescue on Fractalus. "We could have made a whole game out of landing the ship," David Fox points out, "but that would've been beside the point. That's what makes this game so user friendly."
- A lot of elements which are less-than-critically important to the actual game play nonetheless do much to create a realistic feel. After you spot a downed flyer and zoom to his position, hauling him aboard your vessel isn't

abstract and automatic. The spaceman runs up to the landing site and raps loudly on the hull to let you know he wants to go inside. You must then open the airlock so he can enter, and close it again to ready the ship for take-off.

- The system of fractile geometry which generates the planetary landscape is another gaming first for Lucasfilm. Benoit Mandelbrot of IBM conceived fractiles and has subsequently developed the notion in several books. Loren Carpenter, who first joined Lucasfilm to work on imaging for movies, did pioneering work on fractiles, and in 1980, discovered a method which produced quick approximations of the fractile concept. His two minute film, "Vol Libre" (which translates as "Free Flight") garnered much attention with its use of fractiles.
- Buoyed by this success, Carpenter next wanted to utilize fractiles in a real-time setting. Working with David Fox, who shared an office with him at that point, they started trying to apply fractiles to games. "The question was, 'Could it be scaled down?'," Carpenter remembers. "We first thought about going for a 2 1/2 dimension effect like Night Driver, but it was a little boring."
- "We decided to shoot for a consistent three-dimensional environment," he concludes. "We wanted one general algorithm that creates an image in any direction." Their research produced an application of fractile geometry that was fast enough to use in the game. Fortunately, suggests Fox and Carpenter, they were working on Atari hardware. "A slower machine would have been impossible," Carpenter admits.
- "Of course, we didn't want to say, 'Fractiles are it', and stop there," David Fox points out. "We didn't want to get too cocky, so we spent lots of time developing the background for the game."
- The original shape of the Atari-Lucasfilm agreement, under which the movie company was to make software suitable for the 2600, made the idea of using scaled-down fractiles unworkable. Carpenter and Fox codified their work in a document and put it aside against the day of future need.
- That day came sooner than anyone expected when the focus shifted toward doing software for the more advanced Atari systems. Out of mothballs came the fractiles.

- The theory may be a mite esoteric, but no one can quarrel with the outstanding results fractiles made possible. It produces a landscape of mountains and valleys which in all ways function as though they had a concrete, spatial existence. In *Rescue on Fractalus*, a pilot can fly through a cleft between two peaks, loop around and encounter the same terrain features in the same relative positions when approaching from the opposite direction!
- This complex and consistent gaming environment is one of the things which stamps *Fractalus* as a "second wave" game. "Originally, there was no shooting at all," says David Fox. "A tracking ship chased you around the planet. There was a rear-view screen that helped the player keep tabs on it." Eventually, the team opted for a dash of combat and eliminated the shadow ship and rear screen.
- *Ballblazer*, the other Lucasfilm creation, is cut from a different bolt of cloth. It's a mechanized sport of the future that matches two athletes, each riding a light and maneuverable craft called a rotofoil. Each side's rotofoil cruises over the checkerboard playfield, trying to capture an elusive ball and either carry or blast it through the other contestant's goal pylons. On defense, the rotofoil is employed like a hockey or soccer goalie.
- Unlike other sports simulations, the horizontally split screen shows each player what's happening on the field, exactly as he or she would see it when looking through the rotofoil's face plate. Play is head-to-head against another human, or solitaire versus any of several droid (computer-directed) opponents.
- According to project leader and principal designer David Levine, getting *Ballblazer*'s distinctive playing surface to look right required a major push. It was the kind of solitary battle which a dedicated designer must successfully wage to transform a good game into a great one.
- The problem was a visual phenomenon called "aliasing." In the world of computer graphics, it's the term which describes the annoying stair-step effect that drawing diagonal lines generally produces.
- The condition stems from undersampling by the computer. A straight line

has an infinite number of points, but computers can only check a finite number in creating a representation of the infinite reality. "In Ballblazer, the aliasing was particularly noticeable whenever the playfield moved back and forth," recalls David Levine. Since the checkerboard stays in more-or-less constant motion, the perfectionist in Levine found it unendurable.

- He hurdled this barrier by developing a mathematical model that, in the minuteness of its detail, far surpassed the capabilities of the computer system. "The model is totally independent of the actual graphics," Levine explains.
- Ballblazer and Rescue on Fractalus are both available on cartridge for the Atari home computer, the 5200 SuperSystem and the brand new 7800 ProSystem. The 7800 versions might have an edge in graphics, but all are basically of the same high quality.
- A company that loves sequels as much as Lucasfilm will probably not abandon two such lovely scenarios after only one game each. Already, there are whispers about a multi-players-per-side version of Ballblazer.
- The prediction most likely to come true, however, is that the Games Division of Lucasfilm will again strike out in new directions. The company has a positive fear of resting on its laurels, and with a wealth of design talent on hand, those far design horizons are beckoning. So be here next year for Atari-Lucasfilm, chapter 2.

THE SOUND STORY

- The sounds of "Star Wars" were nearly as exciting as the special effects, and the company's game designers would have been as apt to neglect the player's ears as his eyes. The use of music and sound effects to flag game-events and to generally reinforce the simulation in Ballblazer and Fractalus sets new standards for home arcading.
- The audio for Ballblazer in particular is ground breaking. The staccato, percussive score underlines the immediacy of the first- person viewpoint and raises the on-the-field drama to nail-biting level.
- "The development of the sound was pivotal," agrees David Levine, the

guitar-strumming designer who personally supervised this aspect of the cartridge. The reaction to the basic score was nothing short of electric at Lucasfilm. "It wasn't long before people up and down the row of offices here had copies. You could walk down the corridor and hear it every step of the way," he says. "Of course, all those tapes weren't synchornized," Levin adds ruefully.

- While toiling away on other aspects of the game, it was inevitable that Levine decided to try something really radical. He contacted a number of musician friends -- all professionals in the blues, jazz, rock and classical fields -- and asked them to provide an improvisational phrase based on the elemental Ballblazer anthem. In the sport's mythos, as chronicled by its designer, each master Ballblazer star gets the honor of adding a musical phrase to the overall theme that, in some sense, sums up the style of play which has made him or her great.
- So when you're rocketing toward the opposing goal pylons, it's to the beat of a complex, textured audio track that never sounds quite the same twice in a row.

HOW NEW IS NEW?

- Are Rescue on Fractalus and Ballblazer innovative, or are they only familiar echoes from an unexpected source?
- "Ballblazer is a logical evolution from Pong," quips David Levine. In a philosophical sense, he's right. Of coruse, International Soccer (Commodore), Starleague Baseball (Gamestar), and, in a larger sense, every action game that uses an on-screen cursor controlld by a joystick or paddle is also "a logical evolution from Pong."
- That said, it's fairly easy to make a case for Ballblazer as a real trailblazer. No sports simulation has given players the immediacy of the first-person viewpoint. Add the inventive use of audio to dramatize the action and the eyepopping visual effect of that checkerboard playfield, and you've got quite a fresh and novel game on your hands.
- Ballblazer's sports simulation pedigree is too obvious to need elaboration,

but Lucasfilm's design squad has done much, much more than just refine existing play and audiovisual elements. Ballblazer represents a wholly new way to translate sports action to the gaming screen.

- Rescue on Fractalus is hardly the first, first-person flying game to rocket across the gaming firmament. Atari's own Star Raiders, a long-time favorite of EG's readers, has been around for years. The greatness of the game is that it builds on the foundation of earlier efforts by immersing players in a much more comprehensive and intricately crafted scenario.
- In short, Rescue on Fractalus is a "second generation" computer game that pushes state-of-the-art forward in a wide variety of areas. The three-dimensional terrain makes a vastly more interesting play- environment than a field of rushing stars, and the ability to present such a finely detailed planetary surface allows the program to challenge the gamer with a mission that's a bit more plausible than taking on a universe full of aliens in a single ship.

DESIGNING GAMES THE LUCASFILM WAY

- It would be hard to find a more modest bunch than the Lucasfilm Games Division. From the moment the ink was dry on the Atari-Lucasfilm pact, the movie company has approached the task of creating electronic games with one eye firmly fixed on the yellow caution light.
- In fact, Rescue on Fractalus and Ballblazer turned out to be a highly successful example of "learning by doing." Originally, both games were intended as merely a pilot project, a couple of titles that Lucasfilm could carry from conception to cartridge to get the hang of success. Steve Arnold's charges learned the necessary lessons so quickly and so well however, that their initial programs turned out to be right up there with the best.
- The use of strategies developed in the course of making the "Star Wars" trilogy and other movies is what separates Lucasfilm from other design houses. The approach epitomized by the tavern scene in "Star Wars" helped shape Ballblazer and Rescue.

- With software, as in movies, Lucasfilm believes in compiling detailed descriptions of the reality to be simulated before worrying about the simulation itself. Just as every alien in the cantina has a detailed species and personal history that never comes directly into the film, Lucasfilm's game designers can tell you everything--from what the pilot's uniform in Rescue looks like and when and how Ballblazing became the most popular sport in the cosmos. Lucasfilm has even constructed three-dimensional models of key objects like the rotofoil.
- It is, perhaps, too soon to evaluate the contribution of Lucasfilm to game design. But if creating entertainment software is truly an art form, then the folks who gave us Luke Skywalker and Darth Vader are major contributors to the perfection of that art.

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