THE DOT EATERS
Video Game History 101

In the long run, it's not important to be the first. It's important to be the best.

- Brian Moriarty, Designer of Loom

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The two ships face off in Space Wars

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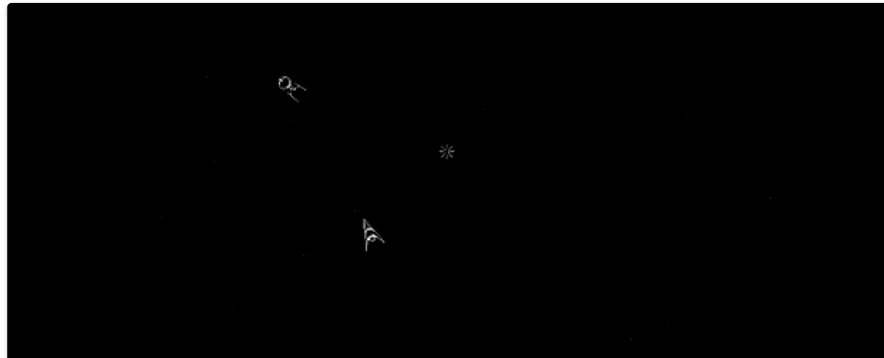
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Space Wars and Cinematronics - Vector Plots

Rosenthal/Cinematronics 1977

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Between the Lines

Located in El Cajon, California, just east of San Diego, floundering *PONG* clone maker Cinematronics ushers in new video game technology with the first vector graphics game, 1977's *Space Wars*. The company is started by Jim Pierce in 1975 , along with Dennis Parte and Gary Garrison, with the latter two eventually selling out to 'Papa' Tom Stroud. The title of the company's new game is a hardly subtle amalgam of the title of the current movie sensation *Star Wars*, and its genesis game, *Spacewar!*, It is designed by Larry Rosenthal, based on his memories of playing fellow MIT graduate Stephen Russell's computer classic. His brief exposure to Spacewar comes during a tour of the MIT campus as a possible freshman candidate in 1968. Later he builds his own version around a vector display. Differing from the current raster graphics monitors of the day, a vector graphics game draws sharp, high-contrast shapes on the screen using straight lines. Upon completion, Rosenthal shops the system to numerous manufacturers while demanding an unheard of 50 percent take in the game's profits. He calls upon companies such as Atari, who blow him off with Bushnell possibly still stinging from the failure of his own Spacewar! translation, *Computer Space*. Hungry for a new, original game, Cinematronics snaps it up. In a move they

ruefully regret later, their agreement with Rosenthal allows him to retain ownership of the technology. Following the Spacewar! motif, it has two ships (one retaining the original's wedge shape, the other suspiciously like the starship Enterprise) facing off around a sun, firing missiles at each other. A nice touch of detail is the asteroid that lazily floats through the playfield occasionally, this and the provided 'hyperspace' button making one wonder how many Atari employees might have played the game.


The hulking Space Wars cabinet
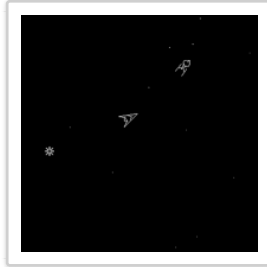
Space Wars gameplay

Cinematronics logo circa 1979

A Galaxy of Choices

Space Wars is also unique in that it offers gamers over 250 variables in play, such as ship speed, ammunition level and the presence of a central star and its gravitational properties. Only the later *Defender* would approach Space War's imposing bank of control keys, with which one could even change the boundaries of the universe it-self. Also featured during battles is a damage model, causing ships to exhibit re-duced performance after being grazed by a shot. The huge game cabinet is big enough to allow two players to stand side by side with room to spare, but has to be weighted in the back to prevent it from falling forward and squashing them. Space Wars not only encourages head to head combat, it requires it as there is no single player option. With the market matured since Bushnell's Computer Space failure, Space Wars is a big hit for Cinematronics, selling 30,000 units and staying in the top 10 money earning arcade games for three years. Through my experiences playing this game at the local bowling alley, I can vouch for it...it's a blast to play.

Speed Freak cabinet
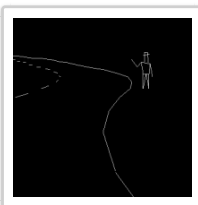
Just cruisn'
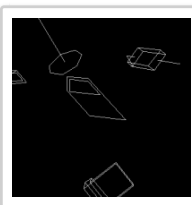
Cars were simpler back then


Vectorbeam Space War

Rosenthal Drives Away

As management chafes at his sweet 50/50 split of the Space Wars profits pouring in, Larry Rosenthal is convinced by head sales rep Bill Cravens to leave Cinematronics and start his own company, placing Cravens as president of the new venture. Thus Rosenthal takes all his technology and documentation on the hardware and begets VectorBeam, basing the company in Sunnyvale, CA. The Cinematronics design labs

are left barren by the departure. After producing his own competing game in 1977 titled *Space War*, he designs vector game *Speed Freak*, also released that year. While it is not the original "first-person" driving game (*Night Driver*, made by Atari a year earlier, takes that honour), it is nonetheless an astounding production. The most realistic driving game made up to that point, Speed Freak involves wheeling a car down a winding road while trying to avoid oncoming traffic and various obstacles like hitchhikers and wayward cows at the side of the road. There is a gear shift offering four gears, and when the player collides with another car, there is a spectacular explosion of various automobile parts. Unfortunately there are only 700-800 units produced, and Speed Freak speeds into oblivion. The steering wheel's super-sensitive response and the rather limited graphic of the player's car probably don't help sales figures.
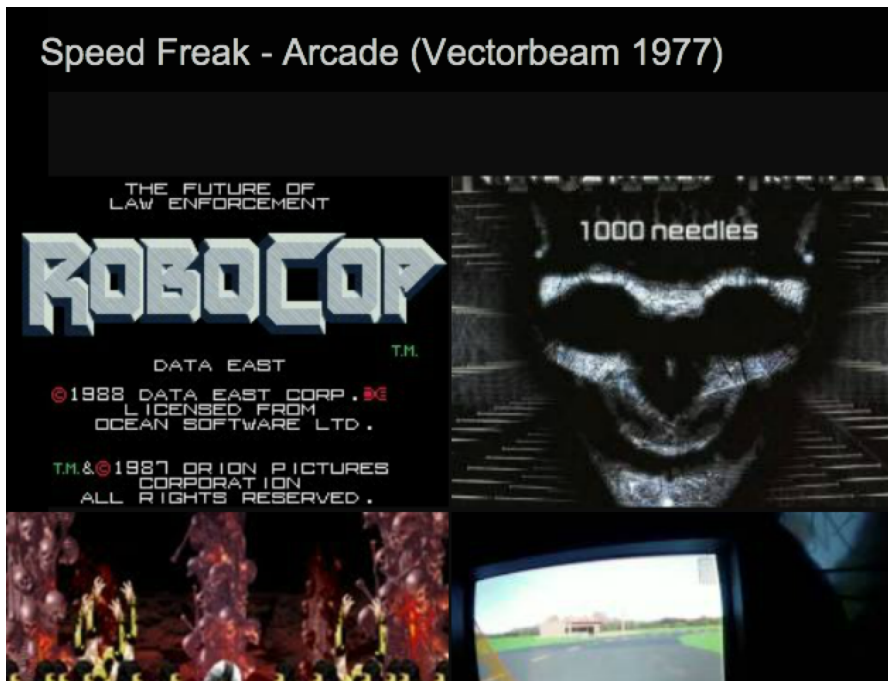

Vectoring to Disaster

Hired by Cinematronics the year after Space Wars is released, graphic artist and computer putterer Tim Skelly arrives to find the development labs bereft of technology and documentation. Working from scratch, Skelly pieces together the technology and creates some of the most interesting games in the arcades for Cinematronics, starting with *Starhawk* (1978), a hit game that resuscitates the company and keeps its 100 employees from the unemployment line. Some other notable entries by Skelly include *Sundance* (1978), *Rip Off* (1980), *Star Castle* (1980) and *Armor Attack* (1980). Historically significant is Skelly's 1979 masterpiece *Warrior*, the first one-on-one fighting game, presaging later games such as *Kung Fu* and *Street Fighter*. Further product by Cinematronics include *Tail Gunner* (1979), *Solar Quest* (1981), and *Cosmic Chasm* (1983).

JUMP: Video playlist of Cinematronics vector games

One not-so-memorable game is *Barrier* (1978). If one plays it and is reminded of the simple LED football handheld games of the 70's, such as Mattel's *Football* or Coleco's *Electronic Quarterback*, it's not surprising. One day Cinematronics owner Jim Pierce walks in with one such LED game and requests that newcomer Rob Patton knock off the concept as his first game for the company. Mentoring him is Skelly, but despite their efforts the end result is deemed unreleasable as a game and winds up shelved. Meanwhile, Rosenthal's Vectorbeam company is anxious to find product to release while development of their upcoming game *Tail Gunner* progresses. As a bit of a joke on their former employee, Cinematronics sells the odious Barrier to Vectorbeam for release.

Tim Skelly lounges on some Reactor cabinets, circa 1982
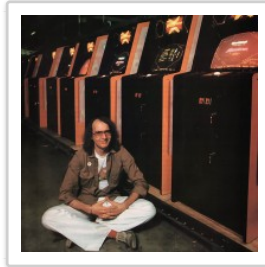
*Tim Skelly and Reactor cabinets, circa 1982*

Tim Skelly, circa 2007

Skelly eventually releases himself from Cinematronics, headhunted by coin-op maker Gremlin (later becoming SEGA/Gremlin) who offer him a royalty deal that his former employers won't even consider. While working on color vector technology that results in games like *Space Fury*, a lawsuit is brought against Skelly and Gremlin by Cinematronics over infringements of their vector game patents, so Skelly decides to move into sprite-based raster graphics games. He is eventually lured to Chicago and D. Gottlieb and Co., and under a $40,000 per-game contract creates 1982's *Reactor*. Aside from being unusual in play style in that gamers don't shoot anything but merely push their opponents to their doom inside a nuclear reactor, but it is also one of the first games to use a 16-bit CPU, the Intel 8088.

Back in the Fold

In the resolution of a lawsuit started by his former employers at Cinematronics, Rosenthal and VectorBeam are eventually folded back into Cinematronics, with Rosenthal receiving a million dollar payout for his company. In turn, Cinematronics gets Rosenthal's Tail Gunner, as well as all rights to the Vectorbeam game technology. After a series of flops, Cinematronics enters Chapter 11 bankruptcy on Sept 17, 1982. It would become the longest Chapter 11 process in California history, and during that time the company would have a stupendous hit by helping to pioneer video disc game technology with the first such marketed game, *Dragon's Lair*.

Pioneered in Space Wars, vector graphics and its method of drawing sharp geometric shapes with straight lines will soon become a hot trend in video games...and garner a devoted cult following among obsessed collectors long after they disappear from arcades.
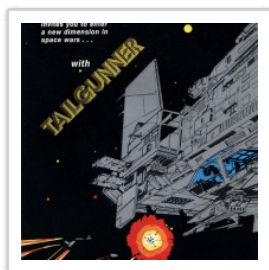
Flyer for Tailgunner

Company logo, circa 1981

Magazine ad for Atari VCS/2600 Reactor

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Image of Tim Skelly sitting in front of Reactor cabinets, and other information comes from Video Games, "Video Games Interview – Tim Skelly", by Neil Tesser, photographs by Mike Tappin, pgs. 20 – 23, 74 – 75, Vol. 1 Num. 2, Oct 1982

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Image of Tim Skelly lounging on top of Reactor cabinets courtesy of Tim Skelly, photo by Mike Tappin

Image of Tim Skelly, closeup from 2007 courtesy of Tim Skelly

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Annapolis Capital, "Cityscape – Attacking the invaders from space is infectious", by Ben Smith, pg. 33, Nov. 11, 1981

Thanks to Tim Skelly for his additional information for this article

Referenced Books (click to open)

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