Zaxxon

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STS 145
Game Review
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February 17, 2001

Following its success on the now legendary *Frogger* (1981), what was then the arcade

coin-op company Sega/Gremlin released another one of its best known titles in 1982, the 3-d

space shooter *Zaxxon*. *Zaxxon* was not Sega/Gremlin's first contribution to the space shooter

genre made popular by games such as *Space Invaders* (1978), *Defender* (1980), and *Galaga*

(1981). The company had previously released a number of *Space Invader* clones, including

Space Attack and *Astro Blaster* (1980), as well as vector graphic 3-d space games, such as *Space*

Fury (1981) and *Tac/Scan* (1982). *Zaxxon* differed from these and other space shooters at the

time by its innovative three-quarters isometric perspective as well as its use of raster graphics in

a 3-d game. In the same year of its release, a handheld version of *Zaxxon* was produced by

Coleco, who also ported the game to the Atari 2600 system. Sega would later publish a DOS

version of *Zaxxon* in 1984.

Although there is no story presented in the game itself, *Zaxxon* leverages the background of its predecessors in the space shooter genre, and it is easy to imagine that once again you are on a mission to defend the earth from evil invaders. The manual for the Atari 2600 version makes this official: "The evil robot ZAXXON and its fierce armies have conquered an asteroid belt. You must stop them before they enslave the entire galaxy!" (Chance) However, unlike games such as *Space Invaders* and *Galaga*, where you must fend off waves of attacking enemy ships, in *Zaxxon* the forces of Earth strike back as you take the battle to the enemy asteroid base.

Gameplay in *Zaxxon* consists of maneuvering your ship with the joystick while firing your laser by pressing the button. In addition to the enemies and obstacles you encounter, part of the challenge of *Zaxxon* is adjusting to the three-quarters isometric view of the game. Tilting the joystick left or right moves your ship "into" and "out of" the screen respectively, while up and down adjusts your altitude. An altimeter on the side of the screen indicates your altitude, which can also be gauged by observing the size of the shadow your ship projects on the ground. You are not allowed to move "forward" into the level. Your ship remains at the "bottom" of the screen while the map scrolls forward.

The attack on Zaxxon's base takes place in four phases. In the first phase, you traverse the asteroid base, destroying as many enemy structures as possible. These consist of vertically and horizontally aligned gun turrets, fuel silos, satellite dishes, and grounded enemy fighters. You can destroy an object by either shooting it with your laser, or crashing into it with your ship. However, the latter results in the destruction of your ship as well. Destroying an object rewards you with a certain number of points, depending on the object.

To make your mission more difficult, the enemy base contains walls and electric barriers, which you must fly around. In addition, the gun turrets randomly fire lasers at your ship, and rockets spontaneously emerge from silos beneath the ground, eliminating anything in their path. Your ship is destroyed if you are hit by enemy fire or if you crash into an object. If you have any ships remaining, you are returned to the nearest checkpoint with one less ship, and the game continues. If not, the game is over, and you have the opportunity to enter your initials in the high score list (if you qualify). There is no option to continue. You begin the game with two reserve ships, but you can earn an additional ship for every 100,000 points scored.

With the exception of the rockets, the enemy objects are stationary in phase one. However, destroying them is still a challenge due to *Zaxxon*'s auto-scrolling. Since your laser only fires directly ahead of your ship, you must position yourself in front of a target in order to destroy it. And although auto-scrolling eliminates one dimension of movement that you have to worry about, it only allows you a limited time to align your ship with a target before it passes you by.

In phase one, all of the targets and obstacles are on ground level (zero altitude), which means that you have the option to avoid these dangers by flying at a high altitude, albeit without earning any points. However, if you do this for too long, a heat-seeking missile comes from off-screen to destroy your ship. Yet, the missile can be destroyed and poses little threat. It turns out that the need for fuel is what ultimately forces you into ground combat. At the bottom of the screen is a fuel meter, which starts full and decreases continuously during the course of your mission. Naturally, running out of fuel is fatal. You can replenish your fuel meter by destroying fuel silos on the ground, earning points in the process.

Zaxxon's forces are quick to respond to your initial attack, and the second phase involves dogfighting with several waves of enemy fighters. This introduces a new level of game-play, as you must now deal with moving targets. In addition to moving left and right, the enemy fighters also change their altitude as they fly towards you, and are difficult to target. Making the situation even more challenging, phase two takes place in open space. Consequently, it is difficult to gauge the altitude of the enemy fighters as well as that of your own, since there are no points of reference. To help you out, an "x" appears in front of your ship accompanied by a small beep when you have an enemy ship in your sights.

The third phase takes you once again to the asteroid base, but this time you must navigate an intricate obstacle course of walls and electric barriers in order to reach the final confrontation. There is little time to destroy enemy structures in this phase as you are rapidly scrolled towards the next obstacle. Since the obstacles extend from both the ceiling and the floor of the map, the most difficult part is gauging what altitude to fly at in order to fit into the gaps between them. However, a skillful player will quickly discover that you can use your lasers to determine a safe flight path.

Zaxxon awaits you in the final phase, armed with a heat-seeking rocket. Destroy Zaxxon and you save the galaxy once again. However, there is only a limited amount of time before Zaxxon retreats and you lose your chance to destroy it. Unfortunately, reaching Zaxxon proves to be more of a challenge than defeating it. It moves much more slowly than the fighters in phase two, doing little to avoid your lasers. Furthermore, its only means of attack is a single rocket, which can be shot down. It is not difficult to destroy Zaxxon before it launches its rocket.

Perhaps the most distinguishing feature of *Zaxxon* is its graphics, particularly its perspective. *Zaxxon* was the first game to use a three-quarter isometric view to simulate a 3-d environment. This view can best be described as a cross between top-down and side scrolling. The x-axis lies along the plane, the z-axis is perpendicular to the plane, and the y-axis projects into the screen and to the right. The result is a new look and feel in the classic space shooter genre. But despite its innovation, the isometric perspective is difficult to use in a game like *Zaxxon*. Altitude is particularly problematic. Even with the aid of the altimeter and your ship's shadow, determining your altitude in relation to other objects still seems difficult to the point of detracting from game-play.

Zaxxon is also the first 3-d game to use raster graphics. Prior to *Zaxxon*, 3-d games like *Battlezone* (1980) used vector graphics, in which objects are represented as points, lines, and other geometric shapes. Raster graphics, on the other hand, are represented as a matrix of pixels, which are painted on the screen one frame at a time. As a result, the graphics in *Zaxxon* are clean and the colors are vivid, producing a visual experience ahead of its time. Unfortunately, the quality of the graphics in *Zaxxon* did not survive the transition to its various ports.

The sounds in *Zaxxon* also contribute to the game experience. Laser blasts, explosions, and the buzz of electric nets all help immerse the player in the action and complement the visual effects nicely.

Despite its innovations in graphic technology and perspective, *Zaxxon* falls back on its space shooter roots in terms of game design. These games tend to focus on the positioning of your ship in relation to an enemy target. In this respect, the only difference between *Zaxxon* and its predecessors is that you have to position your ship in three dimensions instead of two. In *Zaxxon*, you cannot run out of ammunition so there is no penalty for firing more shots than

necessary. Consequently, since your laser fires much more quickly than your ship can move, and since most of the targets are stationary (except during phase two), positioning is even more important than timing in *Zaxxon*.

It does not take an experienced player long to complete the four short phases of *Zaxxon*, and immediately afterwards he finds himself back at the beginning again. He can then continue to fly the same mission on the exact same map, but at a slightly higher level of difficulty. The player has done all he can to "save the universe," so why should he continue playing? It turns out that you do not actually have to destroy Zaxxon to "complete" the mission. However, doing so rewards you with more points. It seems then that the player's goal is not simply to destroy Zaxxon, but to get as many points as possible. Defeating Zaxxon is easy. The challenge is to beat the high score. Only one player can play *Zaxxon* at a time. However, when playing on a public arcade machine, that player effectively competes against the rest of the players on the high score list.

This challenges players to look deeper than a simple instinct to destroy the nearest target. Some objects are worth more points than others. Since there is a finite amount of time in which to destroy them, players have to prioritize their targets and plan ahead. Often, destroying a fuel silo now means that you will not be able to reach the satellite dish coming up on the other side of the map, which is worth three times as many points. In addition, the same type of object does not always give you the same number of points. Destroying a gun turret can reward you with either two hundred or five hundred points. Figuring out why requires a deeper knowledge of the game, which involves additional playtime and experimentation.

As an additional challenge, *Zaxxon* also provides a side goal that players can attempt. At the bottom-right corner of the screen, there is a count of the number of enemy planes that

decreases every time you destroy one. The game does not tell you what happens when this count reaches zero, and doing so does not seem necessary to "win" the game. Uncovering the secret of this goal is up to the player. Because it is such a short game, the set of mission objectives in *Zaxxon* is limited. However, *Zaxxon* provides many mechanisms such as this for players to set their own goals, increasing the replay value of the game.

Zaxxon was so popular that Sega/Gremlin released a sequel, *Super Zaxxon*, the following year. And although it did inspire a few clones such as Neo Geo's *Viewpoint* (1992), few other 3-d isometric space games have been made. Despite of this, *Zaxxon* did manage to leave several significant contributions to gaming. It expanded the 3-d capabilities of raster graphic technology. It also pioneered video game advertising by being the first arcade game to have a television ad campaign in the United States. But perhaps *Zaxxon*'s greatest legacy is the three-quarters isometric perspective, which continues to be used in games today. Such games have moved beyond the space shooter genre to include titles from *R.C. ProAm* to *SimCity 2000* to *Diablo*. It seems strange that the genre that produced the isometric perspective no longer uses it. Maybe the isometric view is too unwieldy with the complexities found in modern shooters. Maybe space shooters in general are disappearing. Or maybe they just did it right the first time.

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