

Subspace Review

STS145: History of Video Game Design

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If you happened to catch a friend playing Subspace on his or her lunch break, you might dismiss it without a second thought. I know I did. A blurb about Subspace in a magazine caught my eye, so I went to the game's web page to check it out. "Weak," I thought to myself. "It looks like Asteroids." Of course, Asteroids was beloved when it was released in 1979, but after 22 years of industry progress, games are expected to be somewhat deeper and more immersive. A few weeks later, at the urging of a friend, I downloaded the beta and tried it out. When I looked up, it was 3:00 in the morning. I was convinced, and so were reviewers and fans alike. Subspace garnered praise for its perfectly balanced gameplay and the developers' willingness to take technology risks too bleeding-edge for many others to attempt. Kevin Rice of DailyRadar says "So what's the big deal? Why are people still playing a technologically and graphically outdated game? In a word, gameplay. This game is the epitome of substance over style."¹ The highest praise, however, is the thousands of people who still play it to this day.

Identification

Subspace was developed by Virgin Interactive Entertainment and published in 1997. Virgin hired producer Rod Humble from Kesmai after his success on the boxed version of the action-oriented flight simulator Air Warrior. "They asked him what kind of game he wanted to make. [He told them] and they said, "Sure, go ahead and here's the money. True story."² Rod brought on board Jeff Petersen, a talented

¹ Kevin Rice, "SubSpace: The Best Game You're Not Playing" feature for DailyRadar.com
http://www.dailyradar.com/features/game_feature_page_890_1.html

² Jeff Sengstack, "Subspace" Subspace review for GameSpot PC
<http://www.zdnet.com/gamespot/stories/review/0,11114,198841,00.html>

programmer he had worked with at Kesmai, and within a month they had a rough prototype up and running. As development cycles in the game industry go, Subspace's was somewhat unusual. The development team was small and unproven as a group, and Subspace wasn't a flagship title, so "JeffP" and "Rodvik" decided to release the game to a public alpha and beta test. This meant that anyone with an Internet connection could download the work in progress, try it out, and send their comments straight to the developers. For a newly created, fledgling team, this was definitely a winning strategy.

There aren't very many clear accounts of what happened shortly after, but one thing couldn't be disputed. VIE disintegrated in a puff of smoke. Some of VIE's assets – including the Westwood development studio, known best for the Command and Conquer series - were bought by Electronic Arts, some of them were folded back into Virgin, Inc., some were divested to Interplay (which now uses the VIE name as a brand name), and some of them simply vanished. Subspace was one of the assets that vanished. While it did exist, though, VIE created some landmark games and a lot of lasting memories.

Gameplay

As is the case with many games, Subspace's back story is inconsequential. This is due in no small part to its gameplay. Subspace is an unabashed Asteroids knockoff – at its core, it consists of spaceships that fly around and shoot at other spaceships. The view is top-down, the environment is a two-dimensional plane, and the concept is exceedingly simple. The one catch is that the movement model is true to Asteroids as well; the controls allow the pilot to thrust and affect the ship's momentum, following Newton's laws of physics. The environment consists of walls forming wide open spaces, tight corridors, mazes, asteroid fields, and doors. There are two main weapons, guns and proximity bombs. The one-size-fits-all powerup is the "green," which appears as a pulsing green blob and upgrades any one of the ship's subsystems (engine, shields, guns, bombs, etc.). There are also various special items such as stealth, repel, burst, and x-radar.

The one innovative gameplay feature is that the ship's health, or energy, is also used as the ammo supply. Each bomb and bullet takes a certain amount of energy to shoot, and the ship's energy level is constantly but slowly recharging. This adds significantly to the depth of the gameplay.

This concept may be historically proven, but in 1997 it would have seemed tired and cliched. However, there is a piece missing. Subspace is an Internet-only game. The official term is "massively multiplayer," but the reality is much more immediate and powerful: the pilot doesn't play against a faceless computer opponent but against real people, thousands of them at once, from all over the world, at any time of day. Each pilot has a name and password, which they use to log onto a Subspace server, or "zone." There are many different kinds of zones, both individual and team-based, including Alpha (beginner), Chaos (every man for himself), Capture the Flag, Warzone (team fighting), Control (a strategic team-based game), Hockey, and others. The servers run 24 hours a day and remember each pilot's score and statistics. The display has a map of the pilot's immediate surroundings as well as an integrated chat window so that pilots can talk to other players, their team, or everyone in the zone. Notifications of events in the game are also displayed here. Subspace was one of the first games to allow hundreds or even thousands of people to play in a multiplayer game at once, and its multiplayer design was a tremendous success.

Technology

Subspace uses a fast, flexible 2D graphics engine, capable of drawing dozens of ships and hundreds of projectiles on screen while maintaining a high framerate. The resolution, user interface, and controls can all be customized. The game CD shipped with a level editor and server executable so that users could run their own servers. The game rules can be defined by the user, so eventually user-run servers appeared with everything from Subspace tournaments to recreations of Star Wars battles.

However, the multiplayer code is by far the most important technology in the game. Subspace uses a distributed client/server architecture that coordinates the actions of thousands of networked pilots at once. The architecture is client-based, which means that each client makes decisions about what happens in the game based on its pilot's actions. The clients send these decisions to the server, which forwards them to any other clients in the area. The network code also uses client prediction and movement filtering to deal with latency, since the Internet is an unpredictable, best-effort-only network. These measures make most reasonable amounts of latency and packet loss almost unnoticeable. This was absolutely essential to the implementation of Subspace's design, because in an action game, even a hundredth of a second can mean the difference between life and death.

Design

Subspace's game design is ingenuous. It is easy to learn but impossible to master, the hallmark of historically successful game designs like checkers, chess, and bridge. The fundamental game design is simple but deep, which allows pilots to develop detailed tactics and strategies. Bullets and bombs inherit both the ship's momentum and momentum in the direction fired, which can be used to a smart pilot's advantage. Ships bounce off walls with 80% of their initial speed, which is often used in intricate flight patterns. Also, the simplicity of gameplay combined with the momentum-based model mean that the skills of flying and fighting can be developed and improved without bound. This is essential for the depth of Subspace's gameplay – if a skill can be mastered quickly, it ceases to challenge the player or provide them incentive to keep playing.

Subspace's game design is also successful because it is massively multiplayer. Human beings are more unpredictable, more challenging, and simply more fun to play video games against than computer AI. In Subspace, there are always plenty of human pilots at any skill level to play against. Moreover, human

pilots can learn from past battles and improve their skills – a human player would learn to counter a tactic that might beat a computer AI over and over again. Also, Subspace gives pilots opportunities to show their own personality and style through the game. Pilots can choose one of seven different types of ships, each with unique characteristics, strengths, and weaknesses. Every pilot's name is displayed next to their ship in the game, and pilots can also draw a small "banner" – a 12 by 16 pixel picture – to be displayed as well. Each zone focuses on a different style of play and emphasizes different strengths that might draw people to play it. Finally, since the gameplay allows for intricate tactics and strategies, pilots often develop distinct styles of flying and fighting and unique maneuvers that are identified with them. These features that draw people into Subspace exist only in massively multiplayer games.

Role in History

Subspace was one of the first truly successful massively multiplayer games in the commercial sphere. Reviews unanimously praised its gameplay and network technology. Reviewers also often commented on the little touches that added polish, such as the notifications of game events, integrated pilot list and chat window, different game types, and customizable server program and level editor shipped with the game. The development of Subspace also succeeded in doing many things rarely (if ever) attempted in commercial game development. A small development team, an Internet-only game, a long public alpha/beta test, graphics that did not push the envelope, all of these were factors that most other development teams would have shied away from. Subspace broke ground in the massively multiplayer field and paved the way for many online real-time games, including Everquest, Asheron's Call, and Quake 3 Arena. It may have performed only modestly on the shelves, but Subspace accomplished big things in the game industry.

After the explosive demise of VIE, most of the Subspace development team struck out on their own and formed a development company called Harmless Games and a publishing contract with Sony. Building

on their experience with Subspace, Harmless is putting the finishing touches on an online, squad-based multiplayer game called Infantry. As for Subspace, the community of loyal pilots is still alive and kicking. The number of people playing at any given time may only be 50-100, around 10% of the numbers at its peak. However, the people are as committed as ever. There is even a Subspace Council, a group informally dedicated to supporting the community in VIE's absence, and updating the game software when needed. So go to www.sscouncil.net and give it a try, and don't let the resemblance to Asteroids stop you. Subspace was one of the first commercial massively multiplayer games. It has deep and involving gameplay, an active user community, sophisticated network technology, and strong opportunities for personalization. And despite all that, it's easy to learn and fun to play.