

Rift Swarm

The Idea:

First Person Shooters, Action RPGs, and Racing games are a natural fit for the Oculus Rift, however is it possible to get other genres to work with the device. We at Project Spearhead have often read people joke about getting top down games or RTS games working on the device, thinking that it wouldn't offer anything.

For our Rift Swarm prototype we are attempting to create a top down tower defense game that not only works on the Oculus, but does something different in the genre.

Gameplay:

You are perched on top of a tower in the center of the bottom of a bowl. In the center of your FOV is a continuously firing laser. The bowl is divided into three sections, blue, yellow, and pink. Enemies will begin in the blue section and 'attack' in waves. In total there are 11 waves. To defeat enemies you can either aim the laser directly at them or you can aim at the color blocks (turrets) dotted around the dome. This will charge the turrets (you will see a circle spinning around the turret) when this is full the turret is completely charged. At any level of charge a turret will begin firing at nearby enemies. The two alternatively colored turrets near the center will fire at a high rate of damage and at a greater distance (though not at anything close by).

The object of the game is to defend your central tower and stop the enemies from reach you. Once 18 enemies reach you, the game is over.

Equipment Required:

- PC
- Oculus Rift Development Kit
- Recommended
 - Backpack
 - [USB to 5v Power Adapter](#)
 - Laptop

Running the Prototype:

1. Connect the Oculus Rift as specified in normal operation
 - 1.1. Make sure the Oculus is mirroring your main display by checking in the screen resolution settings of your PC
2. Start the executable
3. Take some time to adjust the lenses on the Oculus Rift so that the image on screen is as clear as possible

Optional:

1. To get the best experience, run the game on a laptop, place laptop in a backpack while connected the Oculus.
2. Use the USB to Power Adapter cord to power the Oculus and place backpack on the back of an office chair. This will help you spin around easier.

Controls:

Oculus Controls:

Look around to aim the laser.

Conclusions:

Our goal for this prototype was very straight forward, bring the tower defense genre to the Oculus Rift. The biggest worry was that the Oculus would not have enough resolution to create enough detail in the enemies and turrets to make a dynamic tower defense titles. Another worry was that if we made the enemies as small as we wanted to, the Oculus wouldn't be precise enough to hit them with the laser, or users wouldn't be able to hold their heads still long enough. None of this was the case.

Not only that, but because you are sitting in the middle of a 360 degree world your brains physical memory kicks in and helps you remember what is going on in the game. Instead of wondering, 'Ok where on the map am I being attacked... oh yeah, they are in the blue section'; a user remembers, physically that they are being attacked on their right, or that just behind them the need to keep two turrets charged. The dome, which was used to ensure no matter how from the center an object was it would be seen as 'top-down', had a added benefit of creating a sort of poor-man's holodeck. You can't move around in it, but we managed to create a living world with this prototype.