Icarus Changelog

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INTRODUCTION

I have made several changes to the core functionality of Icarus since I have come onto the project. In this document, I will outline what these changes are, as well as summarize what I have learned from making said changes.

ALTERATIONS

- Wing Functionality

  Originally, the wingsuit had a function where the player's flightspeed was inversely correlated to how open their wings were. That is, if the player has their wings close to their sides, they would move faster, and opening their wings fully causes the player to hover in place. This functionality has been removed and replaced with a flapping system.

  When the player's wings extend beyond a certain threshold, the simulation will register their next wing-closing movement as a flap. Flapping grants the player a boost of speed in whatever direction they are facing, as well as in the general upwards direction.

  To counteract this mechanic, the player constantly drops towards the sea at a gradual pace. This also means that, when diving, the player moves at an accelerated rate.

- Simulated Objects

  New to the simulation are Orbs and Birds. There is a roughly 10% chance that any procedurally spawned environmental chunk will contain an Orb. Orbs are colorful flying entities that bring with them a swarm of Birds, depicted as trailrenderers. Birds will constantly seek their parent Orb, and Orbs seek a point about 800 units ahead of

the player. Should the player touch the Orb, it is destroyed, and its child Birds will then follow the player. These repossessed Birds have a different coloured trailrenderer (magenta instead of white), and will despawn in 15 seconds after their parent Orb is destroyed. The player is able to extend the lifespan of any birds following them by flying through the rings scattered about their environment. A ring extends each Bird's lifespan by ten seconds.

FINDINGS/RECOMMENDATIONS

Icarus' wingsuit setup is currently entirely hardcoded. This means that all physical alterations to the wing potentiometers will be met with simulation inaccuracies until the corresponding code/values are changed. This is not optimal, and should be addressed at a point when Icarus has some significant downtime before its next showing.

With flapping back as a mechanic, the physical setup of the suit is not ideal, as strain is placed upon the wires when the user flaps, causing wires to be easily damaged during use. A more lasting solution than duct tape and zip ties should be found, preferably in the same theoretical lengthy downtime described above.