



Game Design Document

*Parallel Productions
Version 2.0*

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Document Revision Table

Version	Updates	Advocate	Date
1.0	Initial Document	Louis McTague	3/24/18
1.1	Formatting	Mitchelson Brooks	3/25/18
1.2	Updated Mechanics and Clarified Sections	Mitchelson Brooks	3/26/18
1.3	Level Breakdowns	Louis McTague	3/27/18
1.4	Updated Mechanics	Louis McTague	4/10/18
2.0	Final GDD	Mitchelson Brooks	4/17/18

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Concept:

High Concept

Traversing an abandoned space station by solving puzzles that explore angles through critical thinking, investigation, and alien technology elicits wonder, satisfaction, and achievement.

Game Goals

Challenge the player to explore puzzle environments using the tools provided until they have a sense of ownership and knowledge over a space. Have the player achieve mastery over the mechanics within the game so that more complex challenges can be presented.

Story:

Story Synopsis:

The player character finds themselves on a space laboratory that is leaking oxygen. Fortunately, a rescue ship is already near the station. Unfortunately, the rescue ship can't dock because of the

gravity field generated by the space laboratory. The player finds the experimental BAD-Gun and must use it to traverse through the space station and get rescued.

Backstory

During a joint operation on an alien world, the United States and Russia discovered an alien device that deconstructs matter, focuses it into a beam, and then reconstructs it at the end of that beam effectively teleporting the user. The device was sent to a top secret joint military facility in a distant galaxy for reverse-engineering. Using what they discovered, a portable prototype has been created and the laboratory has been outfitted with a series of testing chambers. However, the aliens took notice of this progress and felt that they had to take action. The station was attacked by surprise in a show of disdain for human advancement. The player character is the only remaining person on the station.

Gameplay:

Overview

The player explores puzzle areas using movement and the Beam Angle Displacement Gun. Once the player has gained knowledge about the layout of a level, they will have to think critically and experiment with how they can use the BAD-Gun to progress through it. This includes reflecting the BAD-Gun's teleportation beam off of reflective panels, activating generators with the BAD-Gun, and adapting to how moving platforms can impede or help progress.

Camera

A first-person camera that is attached to the player and at a height of two Unity units where one Unity unit is a meter. Horizontal input results in rotation of the player in the direction of input while vertical input tilts the camera in the direction of input. The camera's tilt cannot exceed 90 degrees or be less than -90 degrees. For the purposes of this document the center of the camera's view shall be considered where the player is aiming.

While the player is being transported by the Beam Angle Displacement Gun the camera will zoom in until the BAD-Gun is out of frame, follow the path of the beam at a speed of 20 Unity units per second, and stretch the objects in the center of to the edges of the screen until the player is done being transported.

Mechanics

Movement

The player can move their character forward, backward, left, and right relative to where the player is aiming. Regardless of where the player is aiming only movement in the X and Z dimensions is translated. When the player begins moving, they accelerate up to a speed of 5 Unity units a second over 1.5 Unity units. When the player stops inputting a direction the character decelerates to stationary over 1.5 Unity units.

Beam Angle Displacement Gun (BAD-Gun)

The BAD-Gun has two functions:

1. Teleportation Beam: This beam is fired in the direction that the player is aiming. This beam travels 20 Unity units over one tenth of a second. Only one beam can be active at a time and the player will not be able to fire a beam if one is already traveling.
 - a. If the beam contacts any surface, other than those specified in the game's systems, it will transport the player to that location along the beams path and upon completion of transportation the beam will cease to exist. During this transportation no player movement, camera, or BAD-Gun input is allowed.
2. Test Laser: When activated a constant laser is fired in the direction that the player is aiming that shows the path a Teleportation Beam would take if fired and indicates if the player will be teleported or if a generator will be powered. This effect lasts indefinitely and does not prevent the player from firing a Teleportation Beam.

Systems

Reflective Panels

Panels that will reflect a Teleportation Beam. If the beam contacts a Reflective Panel then the beam will continue for 30 Unity units in the direction of the original beam reflected about the normal of the Reflective Panel hit.

Beam Diffuser Panels

Panels that destroy any beam that touches them and prevents any beam effects from occurring. These panels are used to build certain walls, ceilings, or floors within a level to control where a player can teleport.

Generators

Power sources that when activated by a Teleportation Beam enable Moving Platforms. If a Generator is not active and it is struck by a Teleportation Beam it will become activated. If a Generator is already active when struck by a Teleportation Beam then it will become inactive.

Moving Platforms

Platforms that move along a series of waypoints which can carry the player while moving. Moving Platforms may need to be activated by a Generator before they begin moving through their waypoints. These waypoints can loop or be completed in series. Moving Platforms may stop for a wait time at each waypoint. Individual platforms move at unique speeds that are set before runtime.

Force Fields

Gaps in the walls and floor of the station are shielded with a Force Field. If the player comes in contact with this field they will be killed instantly. Teleportation Beams and Test Lasers pass through Force Fields without contact or interaction.

Checkpoints

Markers of player progress that serve as respawn points. Checkpoints are placed in locations subsequent to each puzzle section.

Death

If the player contacts a Force Field or leaves the play area they will die, and no input will be taken from the player for 1 second. After 1 second, they will be respawned at the most recent Checkpoint they have encountered.

Controls:**Controller**

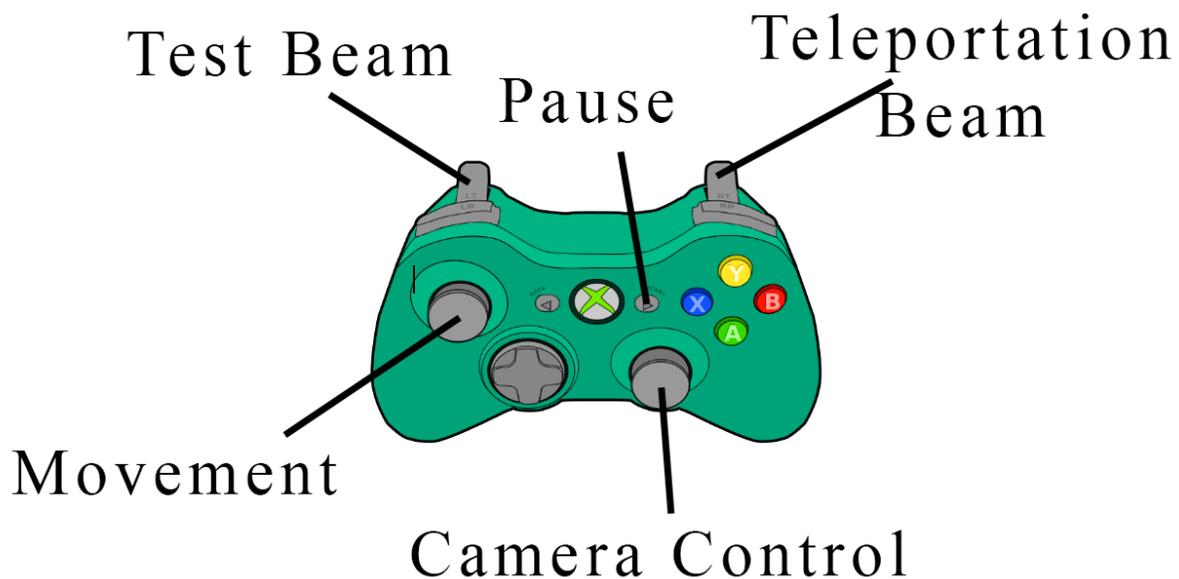
Pause: Start

Movement: Left Joystick

Camera Control: Right Joystick

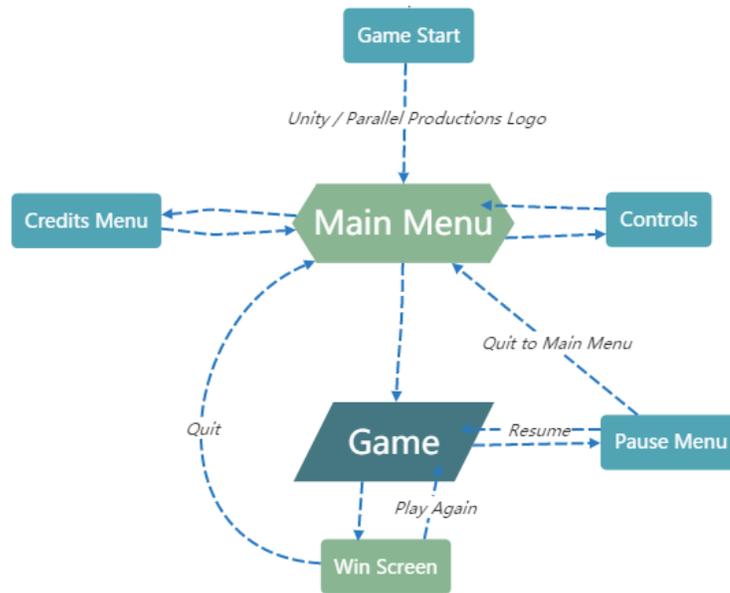
Fire BAD-Gun: Right Trigger

Fire Test Laser: Left Trigger

**Interface:****Overview**

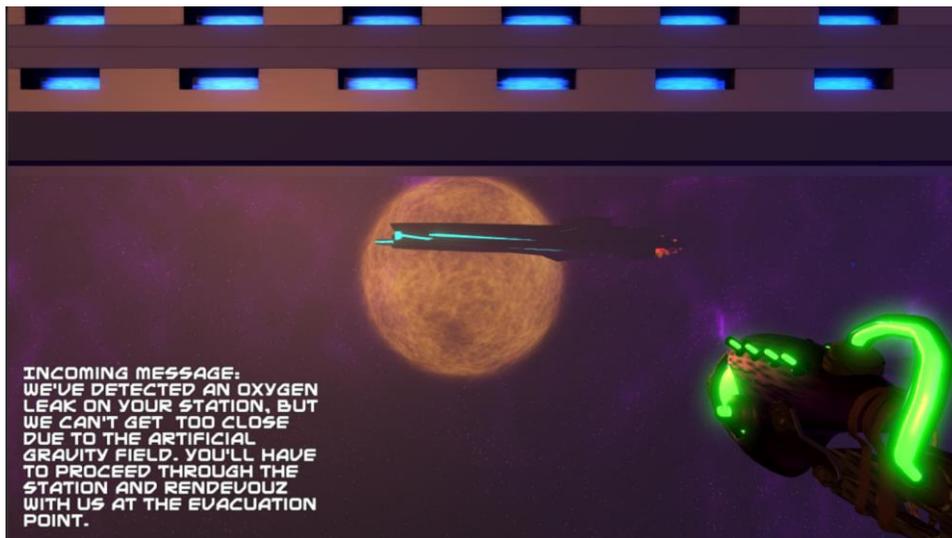
The interface in Reflector is minimal and aesthetically Sci-Fi. Menu buttons are clean and readable but maintain a futuristic style. Reflector has a minimal in-game HUD with most important game information being presented to the player diegetically.

Menu Flowchart



HUD

Text is displayed to the player in the lower left corner of the screen at the beginning of the first level. This text provides context for the story and character motivations.



Environment:

World Overview

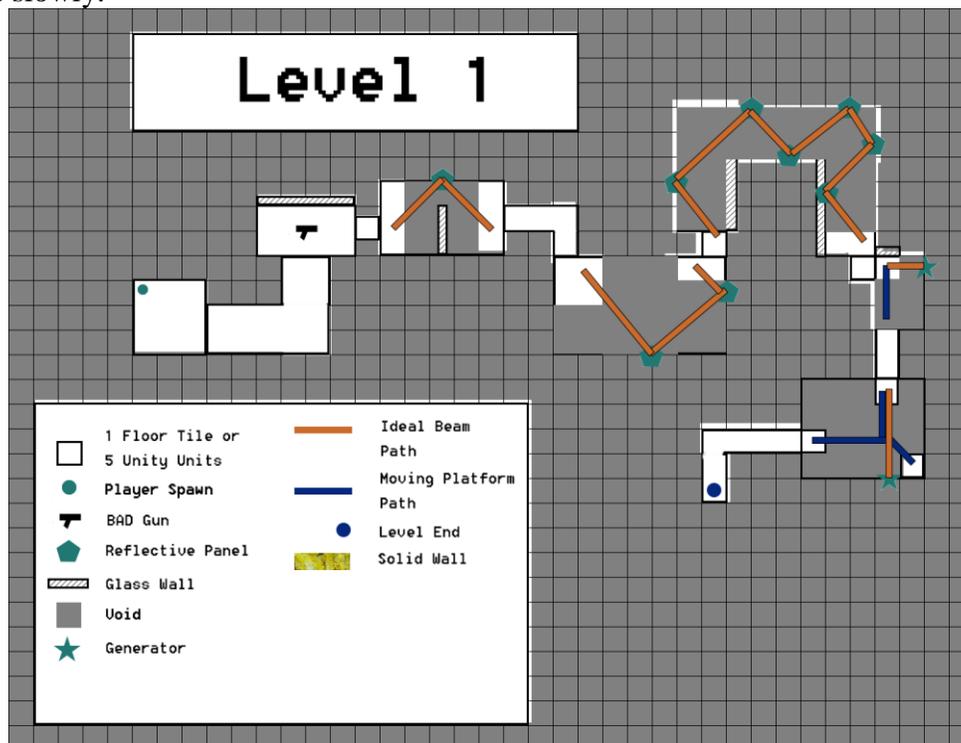
Gameplay will occur inside and outside a damaged military space laboratory that is run by both the United States and Russian governments. The player begins in the testing facilities of the BAD-Gun. After acquiring the BAD-Gun the player will go through several tutorial sections within these testing facilities before eventually coming upon more open testing areas. These

areas combine reflector panels with moving platforms to make a seemingly more chaotic testing environment. This in-space environment is surrounded by a gravity field that generates artificial gravity. This also prevents regular space ships from entering the gravity field.

Level Breakdown

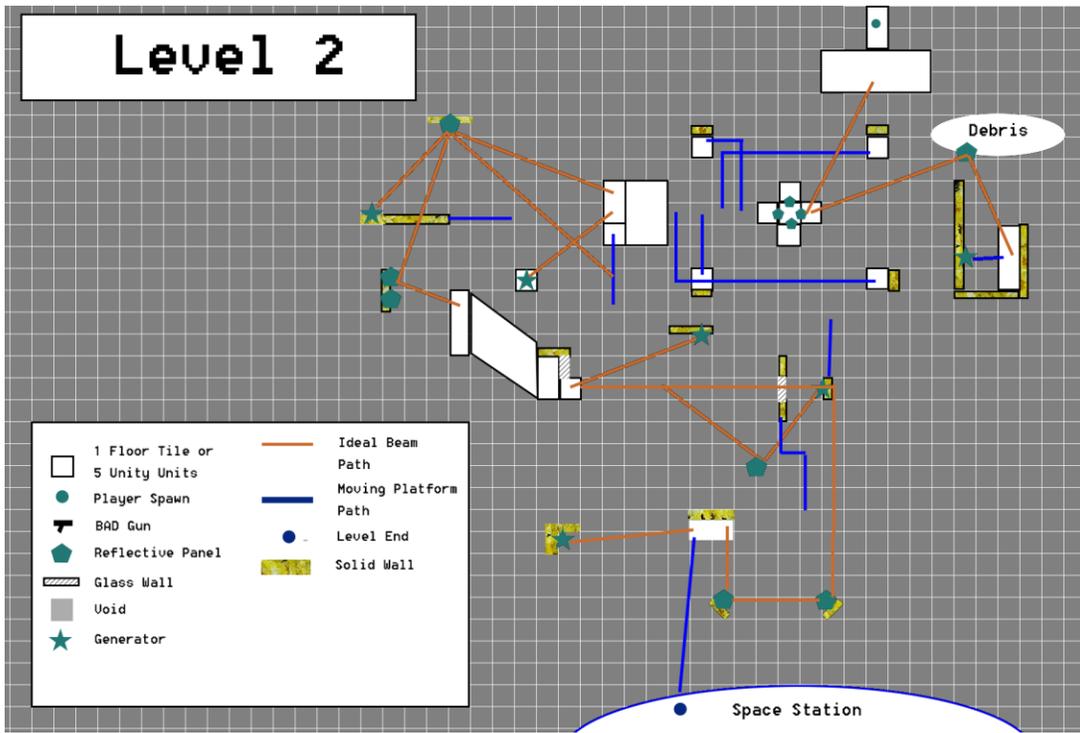
Tutorial & Level One - Test Chambers

Tutorial level that introduces Beam Angle Displacement Gun to player. Player acquires BAD-Gun and must use it and reflective panels to progress through first section. Next section will introduce player to the generator and the effects it can have with moving platforms. Reflective panels and generators are kept separate during this level, letting the player learn about the new mechanics slowly.



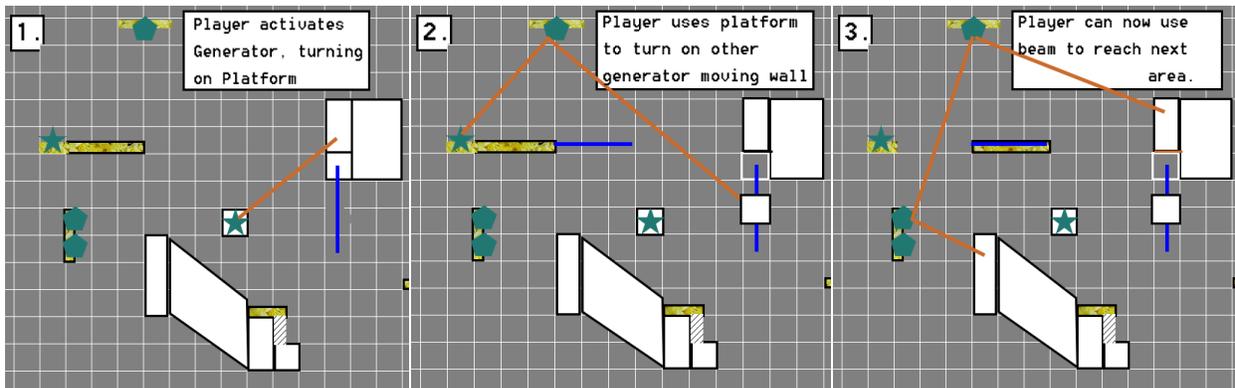
Level Two - Open Space

This level introduces using the teleport beam in conjunction with the generators. The player will have to use their knowledge of these two mechanics to progress through the level. Besides moving platforms, level 2 is very open with many opportunities for the player to fall. To lessen this, many reflective panels have a non-beam backing, meaning that missed beam projectiles won't teleport the player. The puzzles in this level require more precision in aiming the beam, as well as quick thinking in mobile situations created by the moving platforms. The aesthetic of the level is an open-space testing environment surrounded by a blue gravity field.



Level 2 Area Breakdowns:

Breakdown 1:



Breakdown 2:

