

## Overview

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A gamified VR simulation for air traffic control. Players communicate verbally, in real time from an ATC tower with planes “piloted” by AI to safely control planes.

## Goal

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Practice air traffic control communication standards in a low-stakes environment.

## Simplified Game Loop

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1. Airplanes approach and verbally request clearance to land, take off, or touch and go. Requests and flights are also visually displayed on a screen.
2. Players respond and direct flights.
3. Correct terminology, speed of dealing with flights, and accuracy of directions scores points.
4. If the player is able to clear the entire list of flights, they win the level and receive a score.

## In-Depth Game Loop

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1. The player is in an ATC tower with a variety of equipment: a radio headset, airfield cameras, a screen with information about incoming flights, and screens with radar, used during weather events.
2. An incoming flight request is received audibly (an AI voice) and is displayed on the log of flight information. Each flight has a specific goal, and the flight will remain in the game until it achieves its goal or times out (flies past the runway).
3. The player is able to interact with incoming flight requests on the screen. Once a flight is selected, the player responds verbally and instructs the pilot on how to proceed. The plane moves accordingly.
  - a. The log of the conversation between the player and the AI pilots is recorded, to be used at the end of the game for scoring.
  - b. As flights stack up on the log, the player can switch the flight they are speaking to by interacting with them on the screen.
  - c. Planes are able to land, take off, or touch and go on two different runways: 36L and 36R.
4. When a plane lands, it taxis away down the runway into a hangar. When it takes off, it taxis out of the hangar and down the runway. These planes are removed from the log of current flights.
5. Every set amount of time (tbd), a weather event occurs: rain or snow, for a set amount of time.
  - a. Both rain and snow cause cameras to be obscured and turn on radar.
  - b. Snow causes planes to taxi more slowly due to slippery runways.

6. Once the player has survived the length of the round (likely several minutes, to be determined) they receive a score and the log of their communications.
  - a. Score is based on percentage of accurate communications and number of planes whose goals were successfully completed.
  - b. Two planes crashing into each other is an immediate loss.

## **Core Mechanics**

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### *Verbal Communication*

Players must communicate with AI pilots using correct terminology.

### *Resource Management*

With a limited number of runways and specific commands that the AI will recognize, the player has to juggle the requirements of various flights

## **Communications & Names**

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### *Landing*

RUNWAY (number) CLEARED TO LAND.

Or

CHANGE TO RUNWAY (number, RUNWAY (number) CLEARED TO LAND.

### *Touch and Go*

AFTER COMPLETING LOW APPROACH/TOUCH AND GO:  
CLIMB AND MAINTAIN (altitude).

### *Takeoff*

PHRASEOLOGY–

RUNWAY (number), CLEARED FOR TAKEOFF.

EXAMPLE–

“RUNWAY TWO SEVEN, CLEARED FOR TAKEOFF.”

### *Runways*

36L (three-six left) and 36R (three-six right)

### *Airplanes*

[letter] [3-digit number]

### *ATC Tower*

FIEA Tower?

## **Setting**

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The game takes place from the perspective of an air traffic controller inside a tower overlooking an airfield.

Weather events, such as rain and snow, can affect the airfield and the planes. Such as vision clarity and needing a bit more time and caution for landing. Planes need longer space in between when the tarmac is icy.

## **Audience**

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Students training to work in air traffic control and air traffic hobbyists. This audience might be new to the field and might not enjoy putting time into highly stressful situations. They are motivated by concrete indicators of success, like scores and grades, and are most comfortable in situations where the rules are clearly spelled out for them. They enjoy fantasy, but tend to gravitate toward “lighter” fantasy and magical realism over high fantasy.

## **UI**

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Score interface should be fun corporate style to match the environment of the ATC tower.

- Starting screen
- Ending screen with highscore
- Current score indicator on the side so player can see their score going up while completing correct maneuvers

## **Sound**

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In-game sounds shouldn't be too distracting from the core gameplay since the player has to listen to the correct words for playing the game. Otherwise little to no sounds

- Score noise should be fun and light
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## **Art**

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Art is reminiscent of animal crossing, content warning, fun and low poly. The environment changes are rainy, snowy, overcast, sunny.