**Wingmate**

**Game Design Document**

By

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# Game Overview

## Came Concept

Wingmate is a cooperative, competitive, fast paced action-strategy starfighting game designed for those who crave a hard-fought victory. centered upon squadrons of starfighter pilots stranded in an unknown galaxy fighting through war and political turmoil in a time far into the future, Wingmate's main feature is the necessity to use coordinated teamwork to accomplish the game's goals. Dependence on a partner is so pronounced that most objectives are impossible to complete without it.

## Feature Set

- A unique online multiplayer experience powered by Unreal Engine 4 technology
- Tactical space combat shooter gameplay & mechanics
- Cooperative teamwork for players in their starfighter cockpits
- LAN and Steams online server support
- 3 modes:
    - Training
    - Conquest
    - Ace Squad

## Genre

Multiplayer Online Battle Arena (MOBA) / Combat Flight

## Target Audience

- Age Group: 13+
- Critical Thinkers
    - Strategists
- Teamwork
    - Those seeking gameplay that requires teamwork rather than "encourages" teamwork
    - Players with attitudes who prefer "We are the best" over "I am the best."
    - Those that stress the needs of the group over a sense of individualism
- Accessibility to players new to the MOBA genre (not casual, just streamlined with hardcore elements to it that players looking for a high skill cap can test their own skills)
- Individualism
    - Players who still want to make plays single handedly that can alter the course of the game match

# Game Flow

## Pacing

Following Jesse Schell's *The Art of Game Design: A Book of Lenses, Second Edition "Skill & Challenges"* curve theory (see image below), the pacing intent is to introduce to the players their characters abilities, interactive objects, enemies, and goal at a pace that would keep their interest and continue to challenge their team skills. The Training Mode is meant to teach the basics of the games core mechanics. While the Conquest Mode will allow the players to test their skills against increasingly challenging players as their own skill increases.
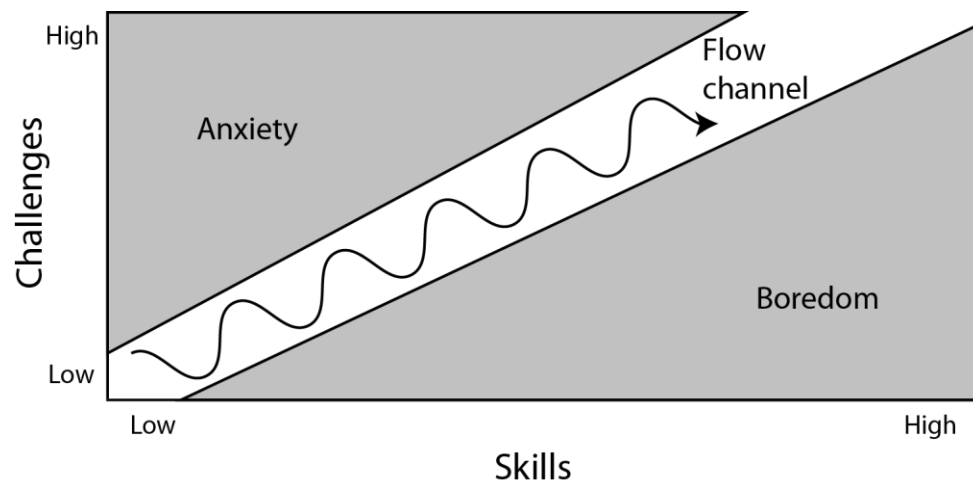


Figure 01. Curve Theory

## Level Navigation

The players are going to be able to move quickly around the level's key locations. While the progression of the game's objective will have the players move linearly, the players will be able to move freely around an explorable space. The difficulty of the combat encounters outside of the player to player conflict will increase as time in game passes by (see glider behavior).

## Menu Navigation

For the purposes of this demo, both the Main Menu (sub-menus within) and pause menu will be very straight forward, with key functionality in mind over player 'Quality of Life'.

# Look and Feel

## Look

*Wingmate* will have a sharp, clean look to its art and combat. Everything, abilities and environmental objects should look like it belongs in a futuristic universe somewhere out in the galaxy.

### Feel

After years of online gaming in competitive Aerospace Warfare, a thought came to me: "How come I never have a wingman? Real pilots have a wingman that helps when a bad guy is behind them." Wingmate is meant to deliver an experience where the mechanics of the game allow players to easily find and navigate to their wingmate first and foremost. Then players abilities will have strong synergies and even change to allow players to closely team together and take out objectives.

The environments and game mechanics should support the core gameplay loop, allowing the players to feel like there is an organization to the madness of a battle.

# *Profile and Networking*

### Online Multiplayer

*Wingmate* accesses Valve's Steam servers to enable online play. For testing purposes, Wingmate will be using Steams free developers port ID features.

At game launch, each player must first have an active steam account and be logged into their Steam account. This will allow the game to find the player's steam account name.



© Valve's Steam Logo

For the purposes of this demo, connecting through the games online Lobby Menu will be simplified. To play online, each player must first choose the Internet option from the menu screen, then select the mode they wish to play. Once that is done, the player will be shown a list of available servers already being hosted for that mode. At this point the player can choose to join one of the existing servers or host their own that other plays may join.

{In game text chat will be in the works at a later date}

### LAN

*Wingmate* has 'Local Area Network' (LAN) support. Players must simply plug their computer into another computer using an ethernet cable or connect wirelessly to access this feature. While connecting via LAN, online features will be unavailable.

For the purposes of this demo, connecting through the games LAN Lobby Menu will be simplified. To play online, each player must first choose the LAN option from the menu screen, then select the mode they wish to play. Once that is done, the player will be shown a list of available servers already being hosted for that mode. Names will appear as how the computer recognizes the Local Users ID. At this

point the player can choose to join one of the existing servers or host their own that other plays may join.

# *Game Modes Overview*

For a more comprehensive breakdown of each game mode, see [Game Modes](#) section.

## Training

Training features a training course where up to three players may join to learn more about their characters and practice their skills against enemies they would face in other modes.

## Conquest

*Wingmates'* conquest is meant to be the primary mode of choice for players. Two teams of five wingmen battle across causeways and an extensive space field that holds powerful buffs and major neutral objectives. An extended causeway phase and large-scale team fights are characteristics of this mode.
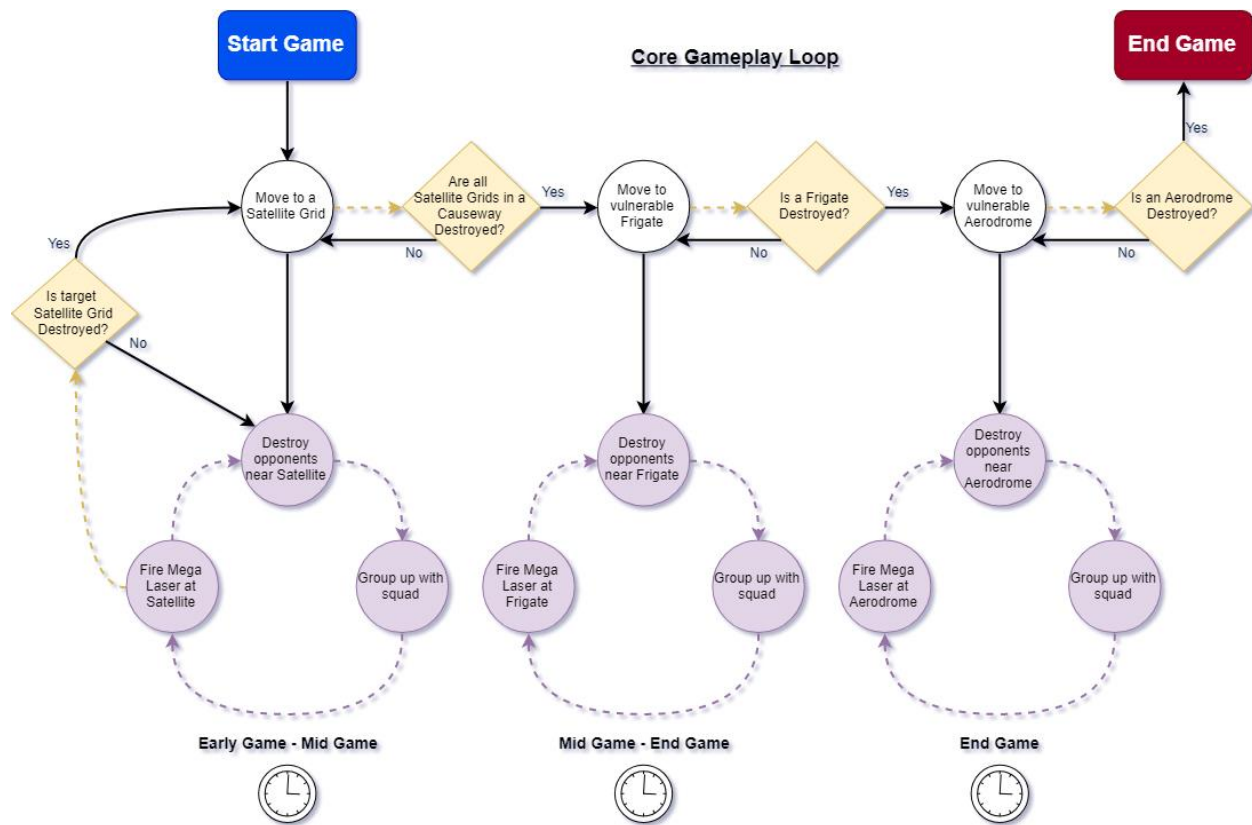
## Ace Squad

Ace Squad is a 3 player vs. 3 player game mode set in a relatively small sized map. There are two stationary bases at opposite ends of the map and a linear path from one base to the other. Guarding each base are two defense satellite turrets and a Frigate.

The main objective for each team is to destroy the Aerodrome in the center of the enemies' base, while preventing that same enemy from destroying theirs. The first team to destroy the enemy Aerodrome wins.

# Gameplay and Mechanics

## *Gameplay*

**Start Game**

**Core Gameplay Loop**

**End Game**

Move to a Satellite Grid

Are all Satellite Grids in a Causeway Destroyed? — Yes

No

Is target Satellite Grid Destroyed? — Yes / No

Move to vulnerable Frigate

Is a Frigate Destroyed? — Yes

No

Move to vulnerable Aerodrome

Is an Aerodrome Destroyed? — Yes

No

Destroy opponents near Satellite

Fire Mega Laser at Satellite

Group up with squad

Destroy opponents near Frigate

Fire Mega Laser at Frigate

Group up with squad

Destroy opponents near Aerodrome

Fire Mega Laser at Aerodrome

Group up with squad

**Early Game - Mid Game**

**Mid Game - End Game**

**End Game**

## Squads

*Wingmate* is all about squad-based teamwork and tactical decisions. In every mode, each player will spawn grouped up with other players making a three-member squad or five-member squad. There are two effects that take place when a squad member is close to another squad member:

1. The maximum speed of squad members wing-manning each other increases
2. Wingmate ultimate abilities will overcharge

## Movement

Players begin with a base forward thrust speed and can control their throttle, pitch, yaw and roll speed.

- **Throttle**: The current forward speed of the player
- **Pitch**: the ability to move up and down
- **Yaw**: the ability to move left and right
- **Roll**: the ability to rotate the player ship
- **Booster**: the ability to temporarily move faster than the default max speed
  - Once the booster button is pressed, players cannot stop boosting until the boost cycle is complete.

- **Dodge**: the ability to dodge in the direction the player is strafing or pitching
  - The players ship will do a fancy roll maneuver (see Star Wars Battlefront II (2005) space)

## Ally Tracking

The player can track the wingmate in their squad by pressing the button that is key-bound to tracking that specific wingmate. When this happens, an icon will appear on the players screen following the targeted wingmate's location. This icon will not disappear if the target is out of the players line of sight.
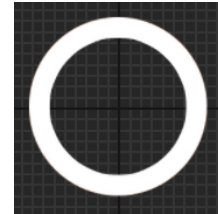


Figure 02. Ally Tracking Icon

## Enemy Tracking

There are four means of tracking an enemy: auto-target, hitting enemy, taking damage, manual target.

1. **Auto-target**: If an opponent is within line-of-sight of the player, the game will attempt to draw a small red "enemy target" icon on the players HUD. This icon will follow that enemy

2. **Hitting Enemy**: If the player shoots at and hits an enemy, a small red "hit enemy" icon will appear on screen. This icon will track (follow) the enemy player's current position that hit the player for a short time.  Multiple "taking damage icons can appear at the same time if the player is hit by multiple different enemies.

3. **Taking Damage**: If the player is hit by an enemy, a "taking damage" icon will appear on screen and track the enemy who most recently hit the player for a short time.

4. **Manual Target**: The player can track the nearest enemy to their ship by pressing the button that is key-bound to tracking that specific enemy. When this happens, the "hit enemy" icon will appear on screen and temporarily follow that enemy's current location. This icon will not disappear if the target is out of the players line of sight.

The "taking damage" icon and "hit enemy" icon can both appear on screen at the same time. These icons will follow an invisible radial track in the middle of the screen. This track is much larger than the player reticle.

## Time to Kill

[How much time should pass before a player dies?]

## Standard Abilities

Every player has a number of standard abilities at their disposal. When an ability is activated, the player must wait for a short timer to countdown before the ability can be activated again.

| Basic Abilities | |
|---|---|
| **Rail Gun** | Fires a continuous barrage of lasers. |
| **Zoom** | Slight aim down site that increases accuracy. |
| **Find Enemy** | Find the nearest enemy (see enemy tracking). |
| **[WIP]** | |
| **Switch Mode** | Toggles the players active action mode |
| **Dodge** | Performs a dodge maneuver. While moving in a direction the player character reposition itself through a short-animated action. |

Along with the Basic Abilities, there are two action modes the player can toggle between: offense mode or defense mode. While in offense mode, defense abilities cannot be activated. While in defense mode, offense abilities cannot be activated. Toggling between these modes will not change the basic abilities.

| Offense Mode Abilities | |
|---|---|
| **Missile Rocket** | Fires a powerful missile that will move to and track down the targeted enemy for a short time. |
| **Laser Burst** | Shoots a quick burst of lasers for a short time. |
| **Laser Beam** | This powerful laser can deal quick damage to an opponent and rip through enemy gliders. The cooldown timer for the laser is much longer than the other offensive abilities. |

| Defense Mode Abilities | |
|---|---|
| **System Repair** | Quickly repairs a portion of the ship's health |
| **Shield Barrier** | Creates a protective shield barrier around the player for a short time. The player will not be able to attack while this barrier is active. The player can turn of the shield barrier. |
| **Defense Ult** | Probably CC using the IMP idea from Brandon Sanderson's Skyward. The cooldown timer is much longer than the other offensive abilities |

## Wingmate Abilities

When a player is within close proximity of a wingmate ally, the laser ability and defense ultimate abilities become overcharged.

| Wingmate Abilities | |
|---|---|
| **Mega Laser** | When firing laser beam ability while in offense mode, the lasers combine to form a Mega Laser that deals devastating damage to enemy players and satellite turrets. The power and size of this laser will increase as the number of allies within close proximity of each other increase. |
| **Defense Ult** | When activating the defense ult,... |

# Mechanics

## Movement

Players begin with a base forward thrust speed and can control their throttle, pitch, yaw and roll speed.

- **Throttle**: Hold up to set the player current speed to a faster speed and down to set the player current speed to a lower speed.
- **Pitch**: Hold key-bound button to move up and down
- **Yaw**: Hold key-bound button to move left and right
- **Roll**: Hold key-bound button to rotate the player ship
    - If the player releases the Roll input key, the players ship will automatically adjust to an upright position at a medium to slow speed.
- **Booster**: Press key-bound button a single time to temporarily move faster than the default max speed
- **Dodge**: Press this key-bound button a single time while moving in a direction.
    - The player character will perform a dodge maneuver animation and reposition itself in that new direction.

## Ally Tracking

As players spawn into the game map, each will be assigned a unique wingmate number. The usernames of the players' wingmen will appear as a part of the UI screen. The position of the wingmate seen in the screen UI is also the direction on the D-Pad the player must press to begin tracking that specific wingmate. For keyboard, the players wingmate order correlates to the number key. The player must press the track wingmate button a second time to stop tracking that ally.

Joystick Example using *Figure 03 Wingmate UI Proxy*:

The player must press Left on the D-Pad to track Wingmate One and Up on the D-Pad to track Wingmate Three.

Keyboard Example using *Figure 03 Wingmate UI Proxy*:

The player must press the "1" key on the keyboard to track Wingmate One and "4" key on the keyboard to track Wingmate Four.
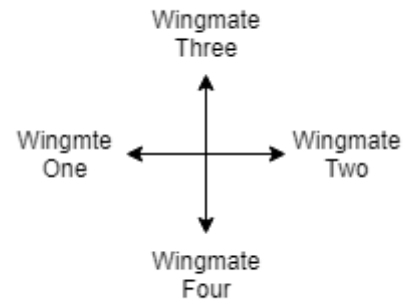
Figure 03. Wingmen UI Proxy

## Abilities
A comprehensive list of all the abilities in *Wingmate* and the systems stats associated with each ability.

*Rail Gun*
[How it is activated]

[Damage on impact]

[Distance it can travel]

[Cooldown timer]

*Zoom*
[How it is activated]

[Cooldown timer]

*Find Enemy*
[How it is activated]

[Distance it can travel]

[Cooldown timer]

*[WIP]*
[How it is activated]

[Distance it can travel]

[Cooldown timer]

*Switch Mode*
[How it is activated]

[Cooldown timer]

*Dodge*
[How it is activated]

[Distance it can travel]

[Cooldown timer]

*Missile Rocket*
[How it is activated]

[Damage on impact]

[Distance it can travel]

[Cooldown timer]

*Laser Burst*
[How it is activated]

[Distance it can travel]

[Cooldown timer]

*Laser Beam*
[How it is activated]

[Damage per second]

[Distance it can travel]

[Cooldown timer]

*Mega Laser*
[How it is activated]

[Damage per second]

[Distance it can travel]

[Cooldown timer]

*System Repair*
[How it is activated]

[Amount repaired per second]

[Cooldown timer]

*Shield Barrier*
[How it is activated]

[Shield strength amount]

[Cooldown timer]

*Defensive Ult*
[How it is activated]

[Cooldown timer]

# Game Modes

*Wingmate* offers a number of different maps for players to conquer. These battlespaces each feature different causeways to complete the win conditions and objectives.

## *Key Objects*

### Causeway
Commonly called lanes in other MOBA's, causeways are the routes taken by the NPC gliders.

### Aerodrome
A large space station in the middle of each teams' base. If a team's Aerodrome is destroyed, the controlling team will lose the game. Gliders spawn from Aerodromes.

### Defense Grid/Satellite Turrets
Satellite Turrets are defense units that will remain in a fixed position and target nearby hostiles with laser fire. Each satellite turret is grouped in a grid of four. All four satellites in the grid must be destroyed before the next group of satellite turrets in the same causeway can take damage.

Satellite turrets will begin a self-repair process once it is destroyed. If it manages to repair itself to a functioning status, it will return at half health. To stop the repair process, all satellite turrets in the grid must be destroyed.

 The satellite turrets fire a very accurate rail gun at its opponents to defend itself. The damage done to gliders is heavy, but remains only a medium amount of damage to a player.

*Speed Boost Field*

Speed Boost fields are generated by Satellite Grids when all four of the satellite turrets within that grid are operational. If an allied wingmate moves within the bounds of the speed boost field, that players ship will gain a temporary boost of speed

If even a single satellite turret becomes inactive, the speed boost field will collapse.

*Satellite Turret Attack Behavior*

Satellite turrets will target the first enemy class type it encounters (i.e. enemy players or enemy gliders). If an enemy player attacks another player aligned with Satellite Turret while within range of the Satellite turret, that hostile player will become the target until it is destroyed or moves out of range of the Satellite turret.

## Frigate

The strongest defense to the Aerodrome is their Frigates. Frigates are large warships equipped with heavy shields/armor and an array of rail guns and missiles.

## Gliders

Gliders are computer-controlled units that fly relentlessly down all paths, engaging any enemies in their way.

There are three types of gliders: Skitters, Trudgers, and Gunships. Both teams have gliders that spawn in groups of six; 4 skitters and 2 trudgers at a rate of [WIP].

*Glider Behavior*

Gliders move along a causeway until they find an enemy unit. When they find an enemy unit, they attack it. An enemy Wingmate can aggro the minion if they attack or use a targeted ability on a nearby allied Wingman.

*Skitters*

These lightweight gliders move quickly to their destination without fear and are armed only with a light rail gun.

*Trudgers*

Slow moving, heavily armored gliders that pack a big punch with their weaker version of the Laser.

*Gunships*

Armed to the teeth, gunships are a formidable foe even to players. When a frigate is destroyed, this powerful glider will begin spawning in the owning lane of that frigate.

This powerful glider will begin spawning after an enemy team's frigate has been destroyed.

*[Rate of respawn]*

### Port

The port is the area behind Aerodrome where players will spawn when beginning the game and after death. The port is protected by a Repair Frigate with a large one-way shield in a sphere around it that enemy players cannot enter.

Enemy players who attempt to push through the shield will hit a collision and explode. Enemy projectile fire cannot enter the shield either.

# Training

In Training, the player can play in a solo or co-op mission of up to 3 players to learn the basics of the game.

# Conquest

In conquest, two teams of five players face off against each other. In a considerably large sized map, there are two bases at opposite sides of each other moving in orbit around a *"highly dense object"*. Each base is protected by six defense satellite grids and three flag ships.

The main objective for each team is to destroy the Aerodrome in the center of the enemies' base, while preventing that same enemy from destroying theirs. The first team to destroy the enemy Aerodrome wins.

### How to Play Conquest

The players goal in Conquest is to work together with their teammates to bring down the enemy Aerodrome located in the middle of their base before their opponent's take down their own Aerodrome.

When players start the game, will appear in the Port with their team. This is also where players will spawn if they die. The Port is a pretty safe place that restores the aligning team's health and shields.

Once all players are ready, they will head down one of three causeways, commonly called lanes. Between the causeways is the nebula field filled with powerful monsters that can beat the heck out of an unprepared wingmate. Slaying these creatures will provide [?]

Each causeway is a path between the two bases guarded by set of powerful satellite turrets. Players will need to destroy their enemies satellite turrets to get into their base and take down their Aerodrome.

The satellites are perilous in numbers, and will melt wingmen very quickly if one isn't too careful. To safely take them down, players need to stay behind their gliders.

Gliders are computer-controlled units that fly relentlessly down all paths, engaging any enemies in their way. Both teams have gliders.

Once a team's gliders push up to an enemy satellite grid, the attacking players will have a few moments to damage it while it attacks the gliders. The players primary attacks do a small amount of damage; however, satellite turrets take much more damage from Mega Lasers. If an enemy player is in range of the turret without their gliders around, the satellite will attack them.

As players die, they'll have to wait for their death timer to expire before respawning back in their base. This timer increases as the game goes on. Dying early in a match only requires a few seconds of time-out. While a death later on could result in up to a 30 second penalty.

Once a team has destroyed all satellite grids in an enemy causeway, the attacking team can begin attacking their opponents' frigates. The attacking team needs to be careful, because the frigates will not just stay in one place and if its health drops below a certain point, it will call one or even both of the nearby frigate allies to come support. The assisting frigates cannot be harmed if they still have a satellite in their owning causeway.

After a frigate is destroyed, the number of gliders from the attacking team in that causeway will double and the aerodrome will become vulnerable.

The basics of Conquest: Move to objective, defeat surrounding opponents, destroy objective and move to the next, all while battling a team of opponents trying to do the exact same thing to you.

A combination of skills, speed, and teamwork will lead each player to the opponents Aerodrome and victory. Then the player can start a new game and do it all over again.

## *Ace Squad*
A smaller version of the Conquest Mode.

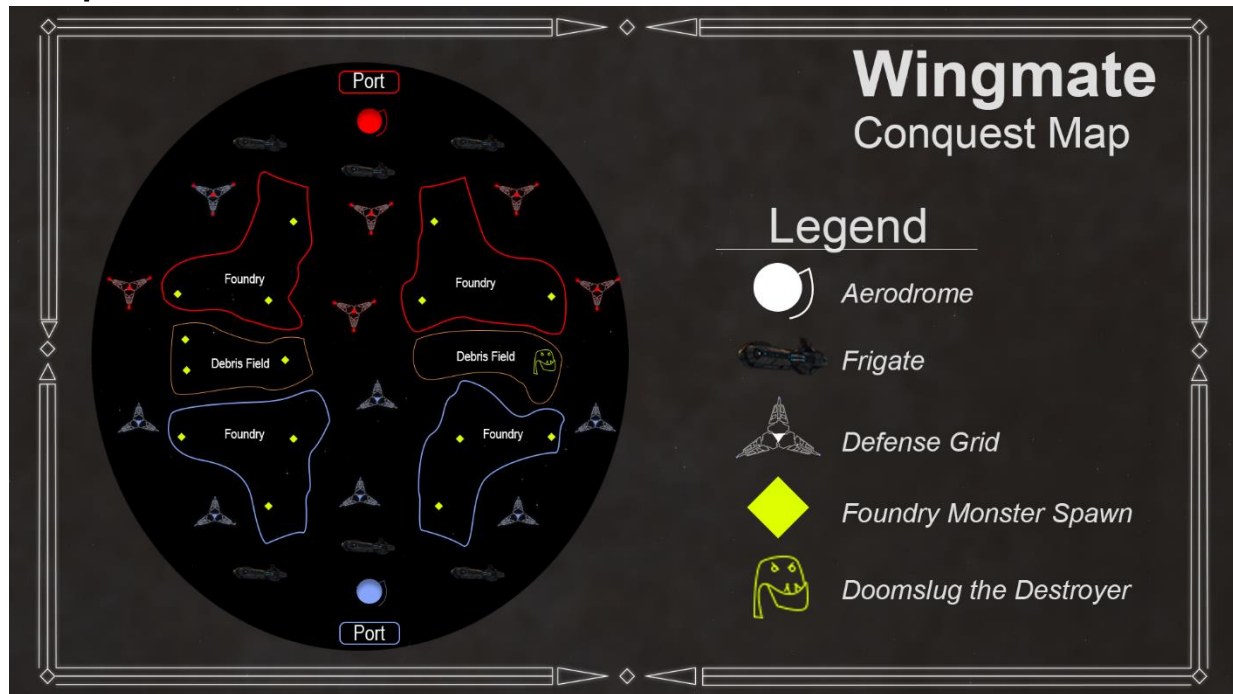# Conquest Level Design

## *Map Overview*



Figure 04. Conquest Map Overview

## Design Considerations

- Easy Fun
    - Navigating into/around Foundry
    - Debris (Must avoid)
    - Debris can be used as a tactic to lose tails
- Hard Fun
    - Move at hight speeds while dog-fighting other players and dodging debris
- Vertical shift in scale
    - XYZ player movement
- Understand general flow and expectation without need of a narrative
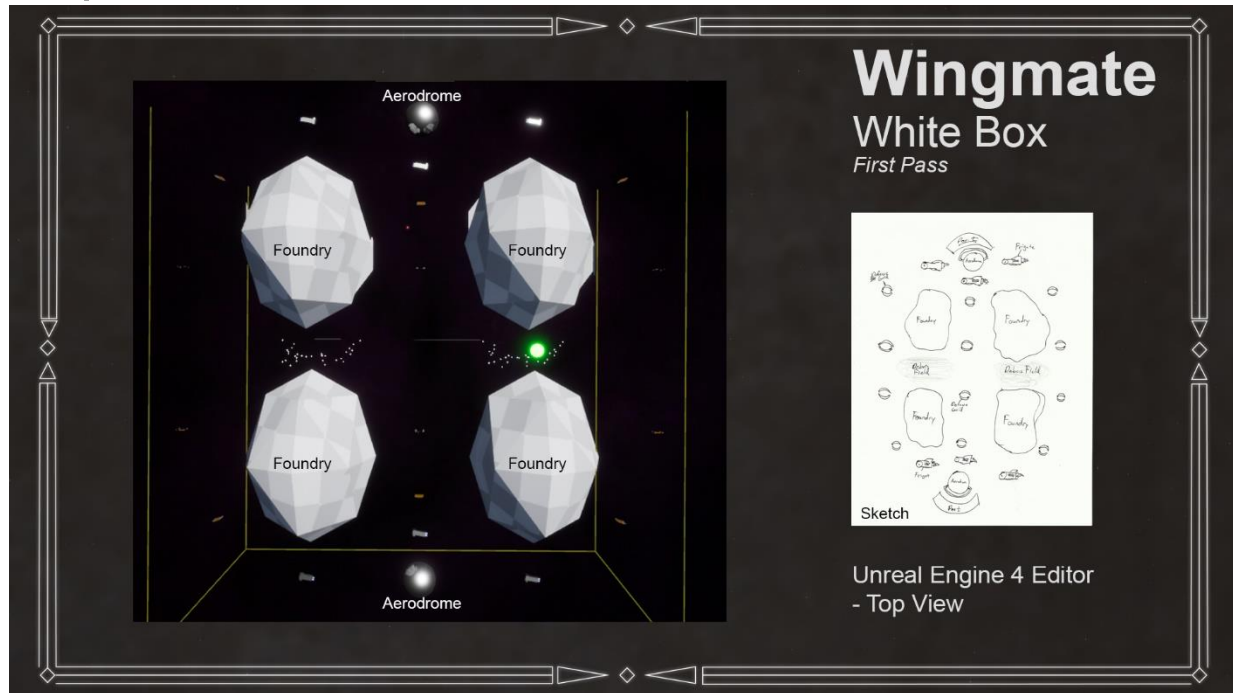
## Map White Box



Figure 04. Conquest Map White Box

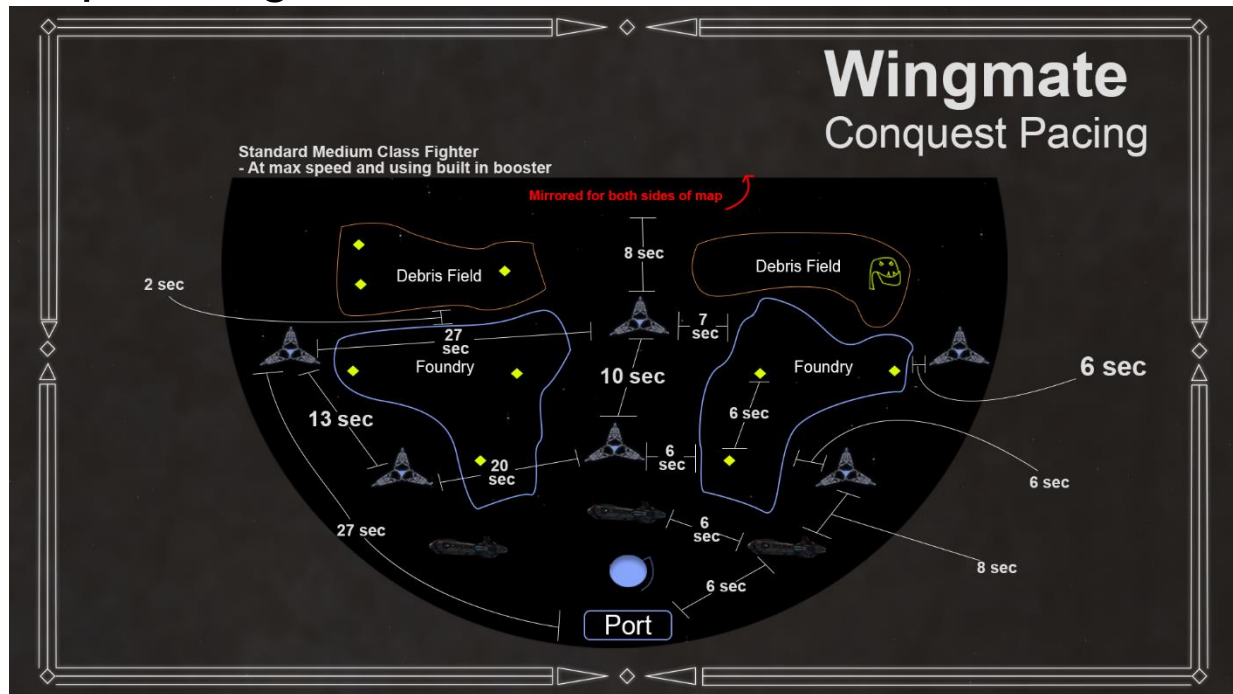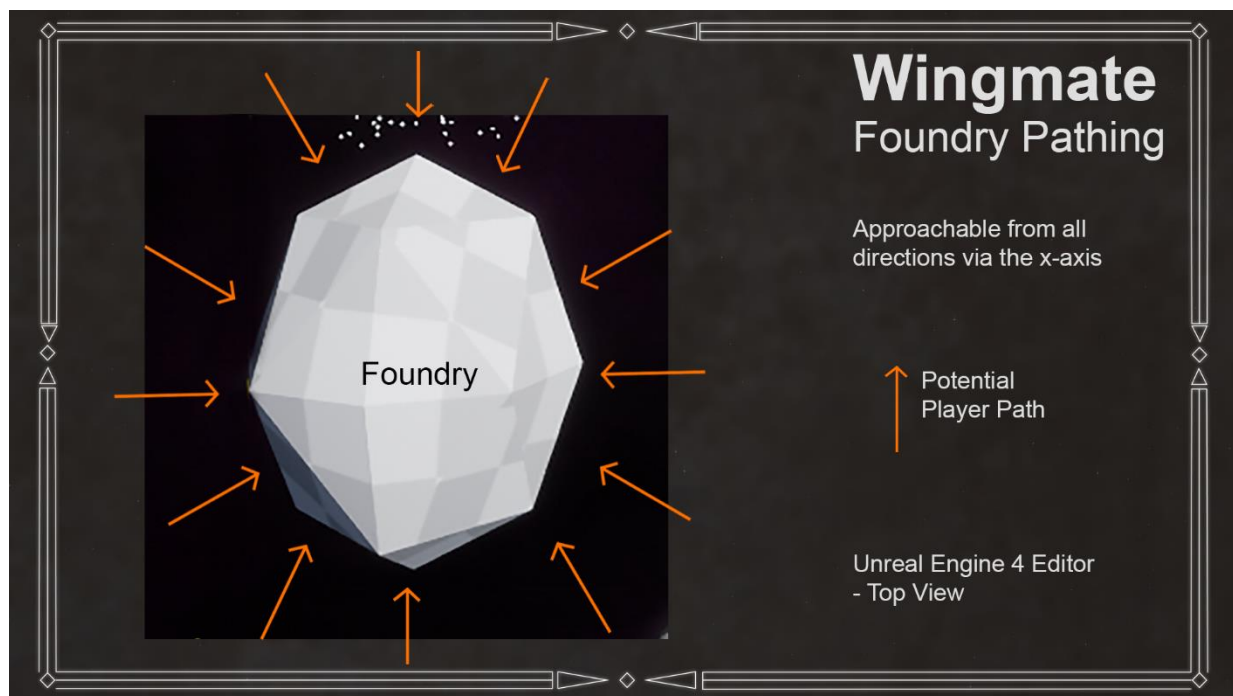The image above shows an initial first pass of the Conquest Map level.
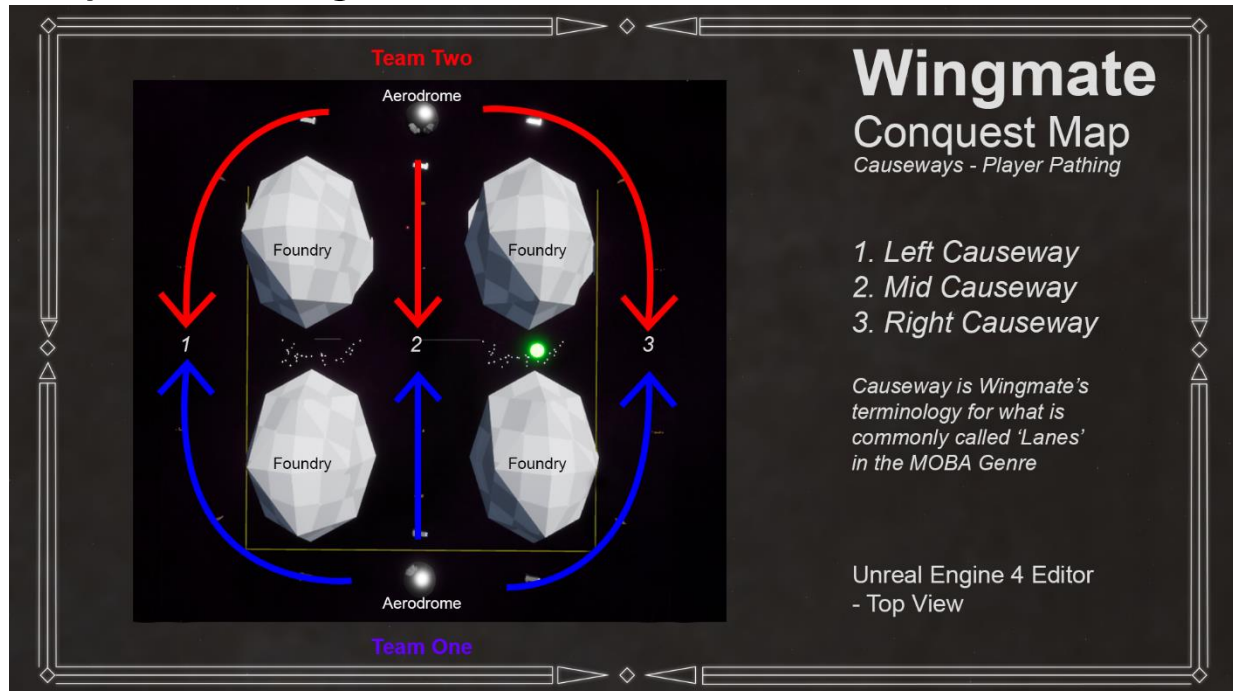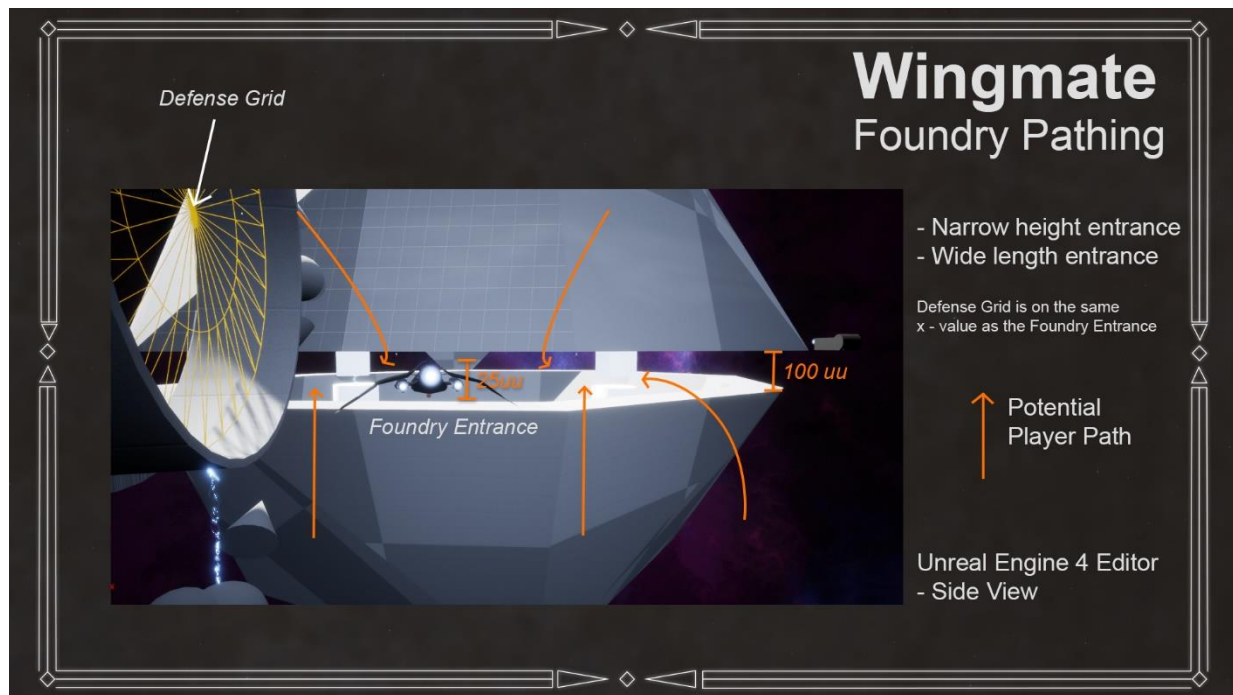
## Map Pacing



Figure 04. Conquest Map Pacing

# *Player Pathing*



**Wingmate**
**Conquest Map**
*Causeways - Player Pathing*

1. *Left Causeway*
2. *Mid Causeway*
3. *Right Causeway*

*Causeway is Wingmate's terminology for what is commonly called 'Lanes' in the MOBA Genre*

Unreal Engine 4 Editor
- Top View

**Wingmate**
**Foundry Pathing**

Approachable from all directions via the x-axis

Potential
Player Path

Unreal Engine 4 Editor
- Top View

Design Considerations

- Causeways act as funnels for direct player paths
- Foundry entrance
    - A little challenging to navigate through
    - Aligned height to Defense Grids to keep players focused on a general z-axis altitude
- Foundry Object acts as an obstruction to assist players with a tail/s behind them
- Obstruct view of other players outside of Foundry
    - To encourage team coordination through communication

# Menus

## Main Menu

1. Host Game
2. Find Game
3. Toggle Multiplayer Options
    a. Internet
    b. LAN (Local Area Network)

## Host Menu

When pressed, the player will begin hosting a game on either the Steam server (if the internet option is shown), or on the players personal computer (if the LAN option is shown). Pressing this option will launch the Lobby Screen Level.

## Find Game

When pressed, the server list menu will appear. The server list looks like this:

| Name | Players | Ping |
|---|---|---|
| Players Steam Name / Personal Computer Name | # of players in Lobby | Host Ping |

## Toggle Multiplayer Options

If the player is using the internet option, the server and other clients identify the player ID by the players steam user name. If the player is using the LAN option, the server and other clients identify the player by ID their personal computers user name.

## Lobby Menu

- Lobby updates
  - Server menu loads and updates player status vs. client
- Leave lobby button
  - When non-host, exit to main menu
  - When host leaves, end session
- Launch game
  - When all players are ready
- Ready Status
  - Show next to players name in lobby
- Team Status

# Classes

# Pilots

Pilots are the player-controlled character in *Wingmate*. Each pilot possesses unique abilities and attributes.

## Judy, callsign: Bloodletter

WIP

## Ara, callsign: Stardragon

WIP

# *Mav, callsign: Dee-Zee*

WIP