Game Design Analysis
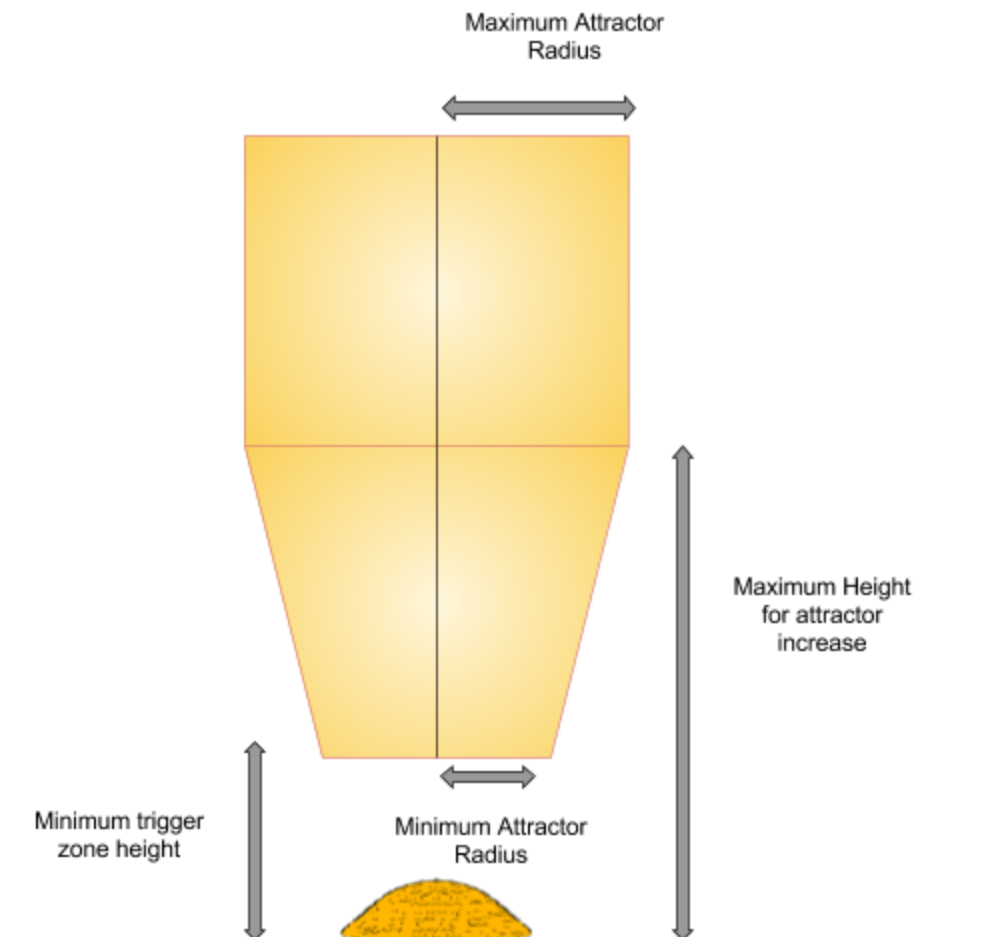# Assassin's Creed's Leap of Faith Mechanic

Overview:

- The Leap of Faith is a navigation action the player can take when jumping from a high position to land safely inside a nearby intractable object.
- Intractable props that allow a Leap of Faith to be executed in Assassin's Creed 1:
  - Hay carts.
  - Haystacks.
- Fits extremely well inside the fantasy of a deadly and agile assassin.
- Iconic jump for the Assassin's Creed franchise.

Gameplay Utility:

- Player ability to escape from perilous situations.
- Switch to low profile if not seen entering haystack.
- Quick descent from Viewpoints and other high points that the player can reach in the game world.

Implementation:

- Hay carts and Haystacks have a trigger area attached to them.
- The trigger area is defined by two parts:
  - A cone shaped area of fixed size.
  - A cylindrical area of fixed radius and infinite length.
- The trigger's volume acts as an attractor for the player character.
  - The player is attracted to the haystack / hay cart when performing any sort of jump that would intersect with the trigger area.

Maximum Attractor
Radius

Maximum Height
for attractor
increase

Minimum trigger
zone height

Minimum Attractor
Radius

General Tunable Parameters:

- **Minimum trigger zone height.**
    - The height above the haystack where the trigger area begins to take effect.
    - A minimum height is required to allow "Leap of Faith" animation to execute correctly.
- **Minimum Attractor Radius.**
    - The radius that the trigger zone has at the minimum trigger zone height.
- **Maximum height for attractor increase.**
    - The height where the attractor radius reaches max radius.
    - Radius increases linearly between the minimum and maximum height.
- **Maximum Attractor Radius.**
    - The maximum radius of the attractor zone.
    - Value of attractor radius remains the same for any height above max value.
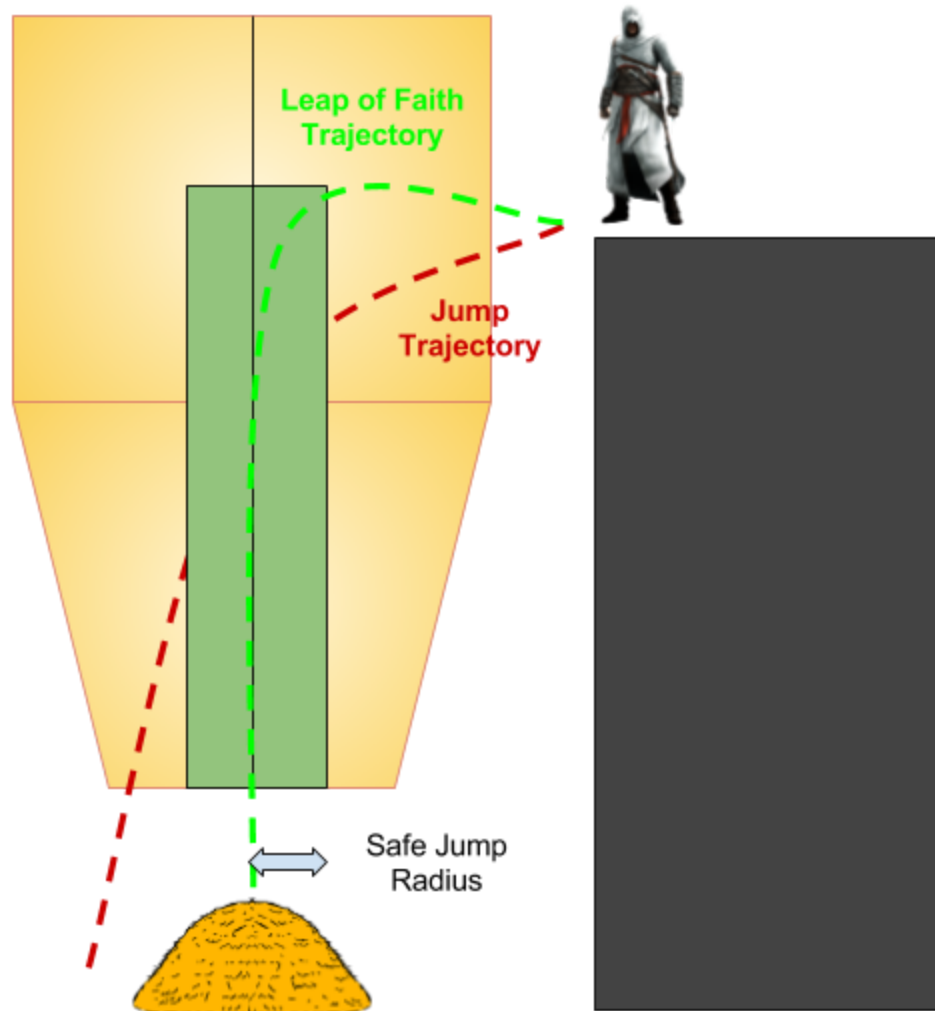
Leap of Faith Activation:
- Player has activated a jump.
    - Jump can be executed from the ledge of a building.
    - Jump can be executed from a hanging position from the side of a building.
- Player jump trajectory is calculated.
    - Player can no longer modify falling direction once a jump is initiated so a trajectory can be pre-calculated easily.
- Check intersection of trajectory with nearby Trigger Zones.
    - If Player trajectory intersects a Leap of Faith Trigger zone, an alternative Leap of Faith Trajectory is calculated.
- Check that there is no blocking element from the player jump height down to the haystack on the ground.
- Check that there is no blocking element on the calculated Leap of Faith trajectory.
- Execute Leap of Faith.

Camera Specifications:
- While executing a Leap of Faith, the player camera Field Of View decreases over time to a minimum value.
    - This increases the sensation of speed and high altitude.
- Camera FOV quickly returns to normal when close to reaching the Haystack below.

Additional Tunable Parameter:
- **Safe Jump Radius**
    - Radius of the cylinder used to calculate if a Leap of Faith is safe to execute from various heights without intersecting other blocking elements.
- **Leap Of Faith FOV**
    - The Field of View value preferred during a Leap of Faith Jump.
- **Leap Of Faith FOV Intro Duration**
    - The time over which the normal Field of View decreases when executing a Leap of Faith.
- **Leap Of Faith FOV Outro Duration**
    - The time over which the Leap of Faith FOV returns to normal.

Level Design Specifications:

- Haystacks are always available around Viewpoints.
- Haystacks are also available around high points that make descending difficult.
- Haystacks are not placed in areas where a player might accidentally perform an unintended Leap of Faith.
- Zones specifically designed to allow a Leap of Faith to be executed are always marked by Birds' Nests or by birds that fly away when approached by the player.