

# **An Untitled Dungeon Crawler DX**

**Game Design Document**

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**Discord Link:**

<https://discord.gg/9gzthvZ>

# Table of Contents

<b>Table of Contents</b>	<b>2</b>
Nathan Michell's Contributions	<b>3</b>
Mechanic #1: Bullets	3
Mechanic #2: Missiles	3
Mechanic #3: Dashing	3
Boss - Phase 1:	4
Boss - Phase 2:	4
Eric Versaw's Contributions	<b>6</b>
Mechanic #1: Laser	6
Mechanic #2: Low Health Benefits	7
Mechanic #3: Double-Edge	7
Enemy #1:	8
Enemy #2:	8
Matthew Findley's Contributions	<b>9</b>
Mechanic #1: Repair Drones	9
Mechanic #2: Blast Shield	9
Mechanic #3: Hellfire Missiles	9
AI State Machine	10

# Nathan Michell's Contributions

## Mechanic #1: Bullets

- Interaction with Other Mechanic #1:
  - Dashing: Increase bullet power when dashing, albeit at slightly less accuracy.
- Interaction with Other Mechanic #2:
  - Missiles: Shooting small, low-power bullets through slow missiles will drastically increase the speed at which the bullets travel.
- Meaningful Use #3:
  - Tap the Shoot button to fire a single, medium-power bullet.
- Meaningful Use #4:
  - Hold the Shoot button to fire a stream of low-power bullets.

## Mechanic #2: Missiles

- Interaction with Other Mechanic #1:
  - Bullets: Shooting a slow missile with a medium bullet will cause it to explode with an even greater blast radius.
- Meaningful Use #2:
  - Tap the Missile button to fire a quickly-accelerating, medium-power, medium-blast-radius missile.
- Meaningful Use #3:
  - Hold the Missile button to charge, then release to fire a slowly-accelerating, high-power, high-blast-radius missile.

## Mechanic #3: Dashing

- Interaction with Other Mechanic #1:
  - Missiles: Dashing while charging a missile will detonate it at the player's location with a low-power, medium-blast-radius explosion and increase the speed/distance of their dash.
- Interaction with Other Mechanic #2:
  - Laser: Dashing while firing a laser will stop the laser until the player exits the dashing state. Instead, the player will take no damage during this upgraded

- dash... but entering this state **and** any damage taken will add to the laser's overheating meter, threatening to force the weapon into cooling mode.
- Meaningful Use #3:
  - When combined with any combination of WASD, the player will dash in a direction to evade attacks and reposition themselves.
- Meaningful Use #4:
  - If the player hits a wall while dashing, they will rebound off of it much more strongly than otherwise due to the higher move speed.

## Boss - Phase 1:

- Attack State #1: Wind-Up
  - Slowly home in on the player.
  - Spins about more and more quickly; as it does so, a warning beep, too, begins to speed up.
- Attack State #2: Charge
  - Once the warning beep reaches a crescendo, quickly speeds towards the player with no homing ability at all.
  - If it collides with a wall at a high enough velocity, stuns itself for a second or two; spins slowly with almost no homing ability.
  - Total immunity to bullet-based knockback.
  - Missile/Explosion damage instantly stops the charge, knocking it backwards minorly.
- Once the boss incurs fatal damage, it violently explodes... to reveal a surprise: another player ship!
  - On death, several health pickups are dropped to heal any damage lost during Phase 1.

## Boss - Phase 2:

**Note:** Unless stated otherwise, Drifter's cooldowns are the same as the player's.

- Movement Behavior:
  - Strafe from side to side, maintaining a safe-yet-aggressive distance from the player.
  - If a player bullet/missile/other attack enters a certain distance and Drifter's dash cooldown is zero:
    - Compare the projectile's position to its own.
    - Dash accordingly to dodge it.
- Aggressive Behavior:
  - **Note:** To choose between these, we can use a random number generator that decides which attack is used; if that attack is on cooldown, choose again.
    - Special attacks like Double-Hellfire will ignore the result of the generator.

- **Note 2:** It would be best to focus on the simpler attacks first, and then the more complex ones after.
  - Feasible order of attacks to code in:
    - Medium Bullet -> Suppressive Fire -> Fast Missile -> Slow Missile -> Blast Shield -> Double-Hellfire
- Attack #1: Medium Bullet
  - Fire a medium-power bullet at the player.
  - Cooldown is slightly lower than the player's Medium Bullet.
- Attack #2: Suppressive Fire
  - Fire a medium-power bullet at the player.
  - Immediately afterwards, fire a spray of low-power bullets very inaccurately at the player's general position.
  - Cooldown is shared with Attack #1.
- Attack #3: Fast Missile
  - Charge for a few moments.
    - Play a sound similar to the player's charging sound, but lower-pitched.
  - Fire a fast, low-power/low-radius missile at the player.
  - Cooldown is the same as the player's.
- Attack #4: Slow Missile
  - Charge much longer than a fast missile would need.
    - Like the player, have the charging sound become higher pitched when it's ready.
  - Fire a slow, medium-power/medium-radius missile at the player.
  - Cooldown is the same as the player's.
- Attack #5: Blast Shield
  - Forms a shield around itself, similar to the player's own Blast Shield...
  - ... only to begin aggressively homing in on and dashing at the player, dealing damage on contact and knocking the player away!
  - Drifter is invulnerable for the duration of the attack, destroying bullets, missiles, and other projectiles on contact.
  - Cooldown is very long.
- Attack #6: Double-Hellfire
  - **Note:** Can only use this attack twice; once at 50% health, and once at 25% health. Even if it heals back over either percentage.
  - Drifter is invulnerable to damage for the duration of the attack... outside of the special case given below.
  - Drifter forms a Blast Shield (independently of Attack #7's cooldown), and then navigates to the center of the arena.
  - Fires a volley of high-velocity missiles that explode after either hitting the player or after hitting a wall.

- Each explosion is like a miniature Double-Edge radial burst of bullets, damaging the player with either radial damage or single-hit damage from the bullets.
- Drifter's takes special, unblockable damage for every missile launched.
  - 0.5% per missile.
- Depending on Drifter's health (50% or 25%), more missiles will be launched.
  - 50%: 10 missiles = 5% health lost.
  - 25%: 20 missiles = 10% health lost.
- Drifter's second volley will often link into Healing Drones afterwards, due to the health it ends at.
- Defensive Behavior:
  - Healing Drones:
    - Drifter rapidly regains 30% of its health.
    - Can only be used once during the battle.
    - Can only be used when at 20% health or below.
    - Drifter cannot attack while healing, and will instead attempt to dodge the player's attacks.
  - Low Health Benefits:
    - All of Drifter's cooldowns are halved.
    - Only happens once Drifter's health falls to 20% or below.
    - Only happens if Drifter has already used Healing Drones.

## Eric Versaw's Contributions

### Mechanic #1: Laser

- Meaningful Use #1:
  - The player can cause constant damage to the enemy when the laser is on the enemy.
- Meaningful Use #2:
  - Instead of using a cooldown like bullets and missiles, the laser will eventually overheat if overused; if overheated, the laser will have to cool off completely before it can be fired again.
- Interaction with Other Mechanic #1
  - If you shoot bullets and hold the laser beam down at the same time the laser catches fire to the bullets making them firebullets.

## Mechanic #2: Low Health Benefits

- Meaningful Use #1:
  - Having low health benefits the player by making it move faster and it's bullet damage be greater. This will help the player survive and cause more risky play when the player has low health.
- Interaction with other Mechanics #1
  - Interacts with the Double-Edge Mechanic. When your health is low and you get the low health benefits you will also get a benefit within Double-Edge which will enhance all of Double-Edges abilities giving double edge more damage, longer enemy stuns, and a greater push back to the enemies, BUT the player will take more damage from double edge and having low health will make this extra dangerous.

## Mechanic #3: Double-Edge

- Meaningful Use #1:
  - This ability is given a respectable cooldown of at least ten seconds so that it can't be accidentally spammed. When used, the player will lose some health (which can and will kill them if they're low enough), and they will send out a blast wave or explosion that damages, stuns, and pushes back all nearby enemies.
- Meaningful Use #2:
  - The player must press the button twice in a certain amount of time to successfully activate. After the first press, an indicator will be shown on the health bar indicating how much health they will lose if they activate the attack.
    - This can be checked using Booleans, Branch nodes, and how Input nodes only read a single press and a single release at a time. ~ **Nathan**
  - After the second press, either of two things can happen:
    - If they did not wait long enough, the attack will do nothing but deal damage to the player. As in, if they press the button before the sound cue or particle effect take place.
    - If they waited long enough (will be indicated by a sound cue, a particle effect, or both; will be 0.5 to 0.6 seconds), they will activate the attack and lose the health accordingly. If they decide to **not** use the attack after a certain amount of time following the first press, they will take a small amount of damage and reset the double-button-press.
  - 20% health lost when successfully used, 10% health lost if unsuccessfully used, 5% health lost when timed out or canceled.

## Enemy #1:

- Attack State #1: Shielded.
  - Takes no damage while its shield is up; will shoot projectiles at the player while attempting to maintain a safe-if-aggressive distance.
  - Bullets will deal damage to its shield, eventually destroying it.
  - Missiles and explosions will break a shield in one hit **and** deal halved damage through it.
  - Once its shield breaks, it will enter Berserk mode.
- Attack State #2: Berserk.
  - Takes full damage from all damage sources; will attempt to ram into the player, tracking onto them with a weak homing effect.
  - The longer it moves in a direction, the more momentum it builds up.
  - Being shot with bullets will apply weak knockback.
  - Being hit with a missile or explosion will apply strong knockback and momentarily stun the drone, dropping move speed to a crawl.

## Enemy #2:

- Attack State #1: Seeking
  - Takes full damage from all damage sources; will attempt to ram into the player, tracking onto them with a weak homing effect.
  - The longer it moves in a direction, the more momentum it builds up.
  - Being shot with bullets will apply moderate knockback.
  - Being hit with a missile or explosion will apply very strong knockback and momentarily stun the drone, dropping move speed to a crawl.
  - Upon reaching half health, it will enter Overclocked mode.
- Attack State #2: Overclocked
  - Will attempt to ram into the player, tracking onto them with a slightly stronger homing effect.
  - Health steadily drains, causing death if it drains to zero in this fashion.
  - Increased movement speed, and increased damage dealt.
  - 75% (at least) reduction to all knockback effects, and immunity to stunning.



# Matthew Findley's Contributions

## Mechanic #1: Repair Drones

- Meaningful Use #1:
  - Player can pick these up off of fallen enemies and save them for later use. When used, the player spends one of the drones they have picked up to give themselves a small amount of steady healing for a set amount of time. This allows for survivability inside of rooms during later rounds and a precious resource to regain lost health.
- Interaction with other Mechanics #1:
  - The drones give healing while within a certain distance of the player, so many times dashing can cause the player to lose the healing that the drones provide momentarily.

## Mechanic #2: Blast Shield

- Meaningful Use #1:
  - The player can use a button to produce a shield that blocks one incoming enemy and bounces them back. To prevent ability spam, this shield will regenerate after 3 seconds and only block one enemy in front of the player, making this mechanic skill and timing based.
- Meaningful Use #2:
  - The player can use the shield to knock enemies into other enemies, dealing damage to both.
- Interaction with other Mechanic #1:
  - If the player uses the dash function while holding the shield, the player will shield bash the enemy, dealing damage and pushing them further back than usual.

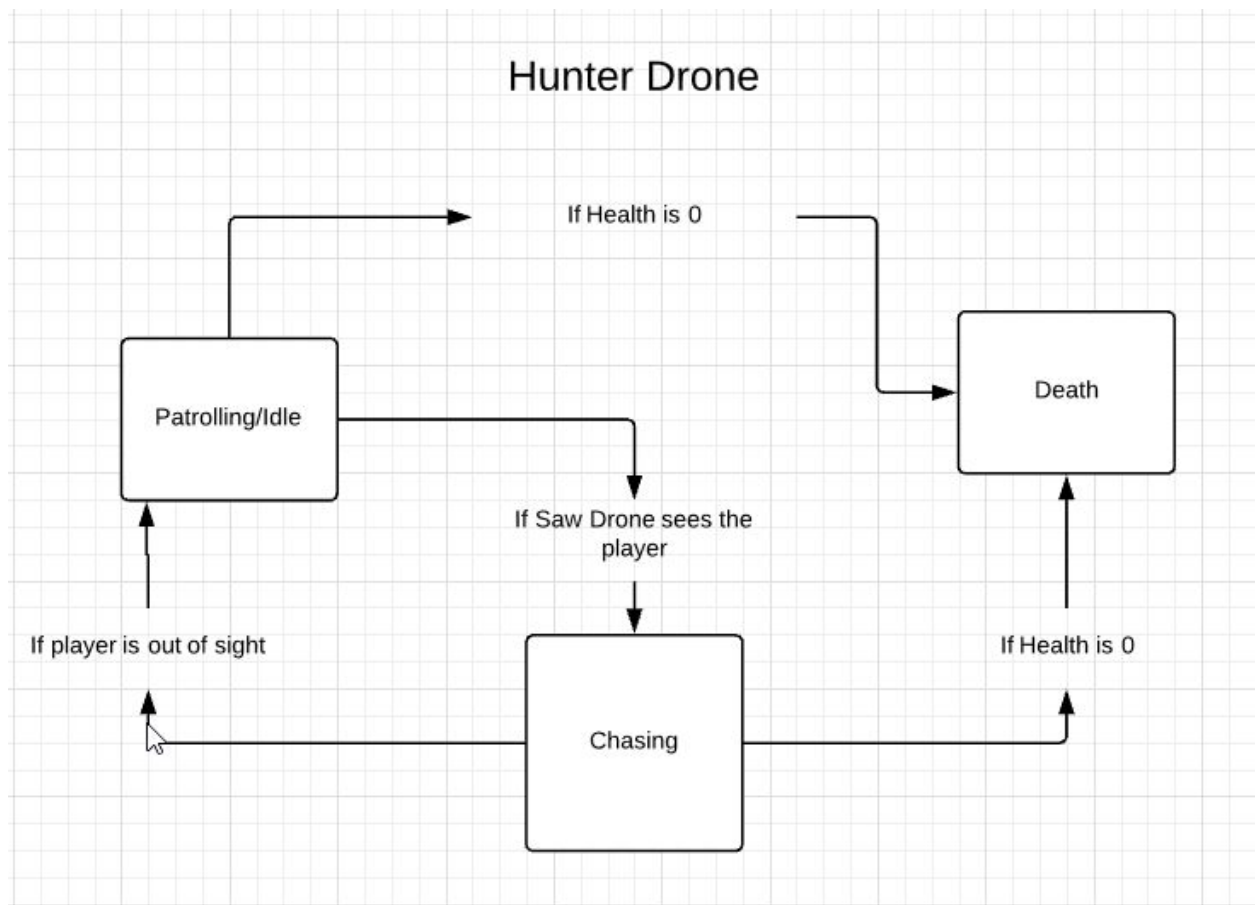
## Mechanic #3: Hellfire Missiles

- Meaningful Use #1:
  - The player has an ultimate ability that they can use after killing a large amount of enemies. This ability causes an array of 10 small heat seeking missiles to exit the sides of the player's ship and fly towards enemies. These missiles deal less damage than the regular missile, but more damage than the bullets and laser, they also home in on the nearest enemy, and if that enemy dies, they home in on the next nearest enemy.

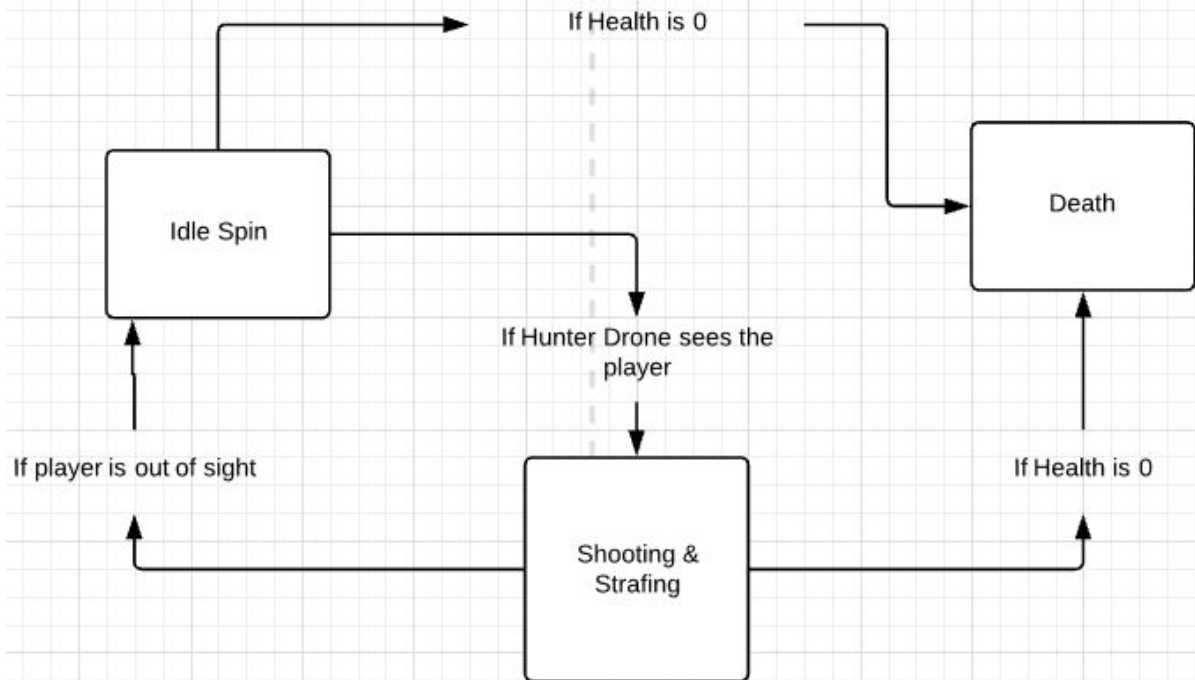
- Interaction with other Mechanic #1:
  - Dealing damage with weapons like the missile, double-edge, or shield will cause the meter to grow more faster than normal.

## UI Elements for Game

## AI State Machines



## Saw Drone



## Boss Phase 1 (Mother Drone)

