Crit Spots

Stage	Status	Last Update
Initial Design	DONE	14/06/2023
Core Design	DOING	

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Pillars

You are piloting a **Mech**	**Build** an arsenal of loadouts	Visceral High-octane asymmetrical **combat**

Problem

Combat is perceived as simplistic and lacking tactical/strategic depth.

Goal

Make combat more strategic and engaging by introducing vulnerable points on enemy mechs that must be exploited for success.

> ℹ️ **DESIRABILITY**
>
> Features and solutions throughout this document are marked with stars to indicate their desirability:
>
> ⭐ = MVP (must-have)
> ⭐⭐ = Premium quality (should have)
> ⭐⭐⭐ = GOTY quality (could have)

Preliminary Gameplay Analysis

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Goal

Ensure sure that combat pace and enemy visibility on screen allows players to take full advantage of Crit Spots.

- Note that all the solutions proposed in this section are **not** mutually exclusive.

Issue: Gameplay Pace/Speed

Currently, combat gameplay is frenetic, which becomes an issue when players try to accurately aim at a specific spot on an enemy's mech.

Proposed Solutions

- **Solution 1** ⭐

  Reduce the overall speed at which enemy mechs move on the ground and in the air (sprinting, dashing, flight speed, etc.) **by tweaking/balancing speed variables**.

- **Solution 2** ⭐

  Reduce enemy mechs' engagement distance to give players a wider space/time window of opportunity to target their CSs before the enemy is aggroed.
  - ⚠️ WARNING: this is **subject to testing** as previously there were complaints that Mechs didn't engage early enough and it felt immersion-breaking, so engagement distances were increased. This means we need to tread carefully here and avoid undermining the previous balancing pass.

- **Solution 3** ⭐⭐⭐

  Reduce the overall speed at which enemy mechs move on the ground and in the air (sprinting, dashing, flight speed, etc.) **by giving players means to temporarily slow down an enemy mech**.
  - For example, using a Tech Skill, an Elemental Damage, etc.

- **Solution 4** ⭐⭐

  Introduce brief, regular breaks in the AI movement. This gives the player a chance to aim at CS with precision and intent.

Issue: Target size/visibility

- An enemy mech's screen-space size is small at combat engagement distance, which in turn makes it hard to target a specific spot on it.
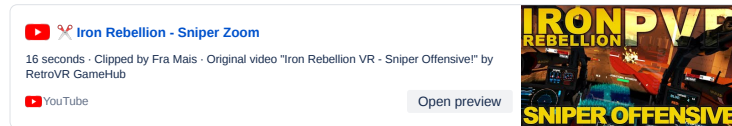- The player has limited ability to zoom in and aim accurately from a distance.

Proposed Solutions

- **1. Magnified View (Zoom-in)** ⭐

  Ability to zoom-in the view on the enemy, to allow for precision shots.
  - Similar to a sniper's scope in function, though it won't necessarily use a physical scope (i.e. it can be a built-in ability of the mech's "windshield")
  - Different weapons allow for different magnification levels (4x, 8x etc.)

Example of magnified view (source: Iron Rebellion), best watched in full-screen, HD:

▶ ⚔ **Iron Rebellion - Sniper Zoom**

16 seconds · Clipped by Fra Mais · Original video "Iron Rebellion VR - Sniper Offensive!" by RetroVR GameHub

▶ YouTube   Open preview

- **2. Tech View** ⭐⭐

  See separate design doc ---> 📄 Tech View

Crit Spots

- A Crit spot (CS) is a specific location on anything that can be damaged, where if hit directly, can trigger one or more effects.
- An enemy can have multiple CSs.
- Each CS has a health value expressed in HPs.
  - This is a separate value from the enemy's Hull/Shield HPs.
- All direct hit damage will affect CS.
  - AoE damage does not affect CS.
- By default, any damage inflicted on a CS is also passed to its owner.
  - UI-wise, designers can choose whether damage to a CS is passed to its owner using a checkbox (default: 'true/checked')

    Example: ✅ **Damage is passed to owner**
- By default, damage dealt to a CS is not affected by the owner's shield.
  - UI-wise, designers can choose whether damage to a CS is affected by the owner's Shield by using a checkbox (default: 'false/unchecked')

    Example: ☐ **Affected by Shield**
- Hitting a CS might trigger an effect on the target machine if the triggering conditions are met.
- From a technical standpoint, a CS is defined at Component level (i.e. Platform, Thruster, etc.) ⭐
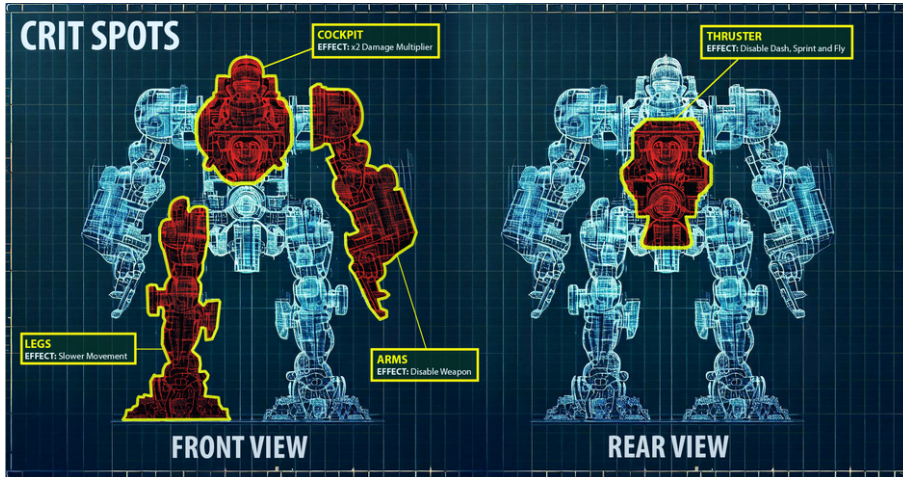 - With the option to have Archetypes supplementing Component-level settings in future iterations ⭐⭐⭐

FIGURE 1: Example of CSs and their Effects on an enemy Mech (click to enlarge).

Triggers and Effects

Triggers

- A Trigger is a condition that when met, triggers one or more Effects.
- Every CS must have at least one Trigger associated with it.
- A CS *may* have multiple Triggers.

⭐ **Must-Haves** (MVP)
Hit
Triggers every time the CS is hit
Destroyed
Triggers when the CS HP <= 0 (zero)
⭐⭐⭐ **Could Haves** (GOTY Quality)
% depleted
Triggers when the CS HP falls below a settable % of its max HP

Effects

- An Effect is an "action" executed when a Trigger fires (i.e. returns TRUE)
- Each Trigger must have at least one Effect associated with it.
- One Trigger *may* have multiple effects.
  (for example, we may want to disable Dash, Walk, and Sprint with one CS).

Effect Description	Example
Disable Weapon Completely disables left and/or right weapon.	Left weapon
Damage Multiplier Settable multiplier. Passes on multiplied damage to the CS's owner. If set to 0 (zero) no damage is passed to the CS's owner.	x2
Shield HP Modifies Shield HP by a settable amount expressed as a % of `maxShield` (Platform Stat)	-50%
Hull HP Modifies Hull HP by a settable amount expressed as a % of `maxHp` (Platform Stat)	-50%

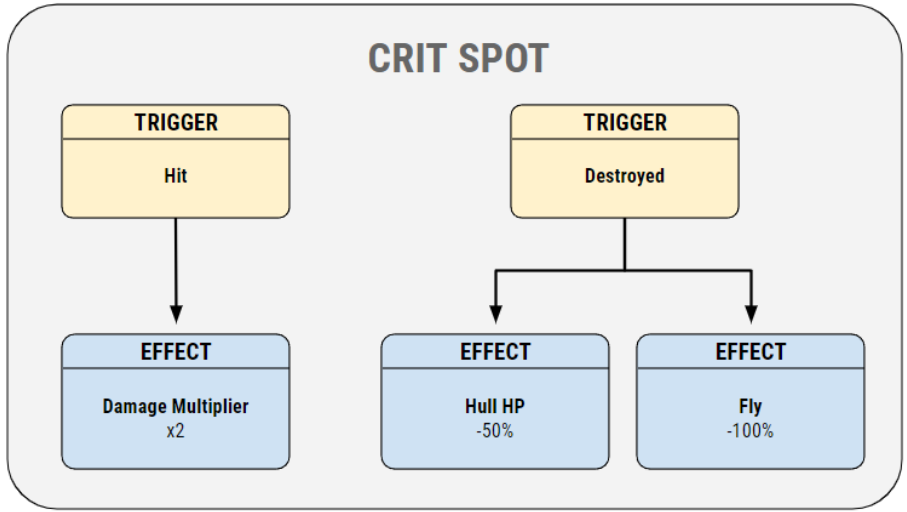| Walk Speed Modifies `walkSpeed` by a settable % (Platform Stat)	-20%
Dash Modifies both `dashGroundImpulse` and `dashAirImpulse` by a settable % (Platform Stats)	-100%
Sprint Modifies `jetPackSprintSpeed` by a settable % (Thruster Stat)	-100%
Fly Modifies `jetpackCeiling` by a settable % (Thruster Stat)	-100%

DIAGRAM 1: Example of Crit Spot with multiple Triggers and Effects

⚠️ NOTE: this setup is completely hypothetical and it's only meant to show the relation between Crit Spots, Triggers, and Effects.

Player's Feedback

- The effect caused by hitting or destroying a CS must be clearly communicated to the player.
  - **Hitting a CS**:
    - UI: The relevant per-hit damage (world-space UI element) must change color (i.e. **50**) ⭐
    - A VFX is triggered (different colored sparks, fire, etc.) ⭐
    - SFX: A unique audio cue plays when a CS is hit ⭐
  - **Destroying a CS**:
    - A VFX is triggered ⭐
    - SFX: A unique audio cue plays when a CS is destroyed ⭐
    - DETACHING BODY PARTS
      - In some cases (i.e. thrusters, arms), the corresponding body part is physically detached from the rest of the body ⭐⭐⭐
      - Alternatively, the corresponding body part can be hidden/removed and shrapnel/debris VFX plays in its place. ⭐⭐
    - UNIQUE ANIMATIONS
      - In some cases, unique enemy animations convey that a particular CS has been destroyed (i.e. legs → Limping animation) ⭐⭐⭐
- Players should be able to see the health status of a CS ⭐⭐
  - This can be achieved by introducing Tech View in the game (click here to see the Tech View design doc)

Visibility

Crit Spots must be clearly visible/easily identifiable.

- For a giant humanoid robot such as HR's mechs, the parallel with human anatomy helps the player predict the effects of targeting a specific part of the body (i.e. hit leg > affect movement).

Consistency

- CSs must be consistent across enemy types. For example, if a mech's Thruster is a CS, every thruster equipped on a mech must be a CS.
  In other words, if a Thruster is a CS on a mech, we won't have mechs where the Thruster is not a CS.
  - This allows players to capitalize on the knowledge they acquired about CSs and re-use it in future encounters.
    - Note: we should use this to our advantage to counter this rule to create interesting dynamics.

      E.g. the classic "enemy with riot shield scenario".

References

Internal References

📄 Crit spots (OLD)

External References

MechWarrior_... ots.pdf
25 May 2023, 01:11 PM

🎯 'Mech Weak Spots Guide

Task Breakdown

Must Haves (Min Quality)	Should Haves (Premium Quality)	Could Haves (GOTY Quality)
Implementation	**Implementation**	**Implementation**

• **Crit Spots**
  ○ Main functionality
  ○ Defined at Component's level
    ■ Add direct hit ability to AoE projectiles (granades, rockets, etc.)
• **Triggers**
  ○ Hit
  ○ Destroyed
• **Events**
  ○ Disable Weapon
  ○ Damage Multiplier
  ○ Shield HP
  ○ Hull HP
  ○ Walk Speed
  ○ Dash
  ○ Sprint
  ○ Fly
		• **Crit Spots**
		  ○ Archetype supplement Component's CS settings.
		• **Triggers**
		  ○ % depleted

Player's Feedback	**Player's Feedback**	**Player's Feedback**

• **Hitting a CS**
  ○ **UI:** The relevant damage world-space UI element must change color (i.e. **50**).
  ○ **VFX:** a VFX is triggered (different colored sparks, fire, etc.).
  ○ **SFX:** A unique audio cue plays when a CS is hit.
• **Destroying a CS**
  ○ **VFX:** a VFX is triggered.
  ○ **SFX:** A unique audio cue plays when a CS is destroyed.
	• **Destroying a CS**
	  ○ The corresponding body part is hidden/removed and a shrapnel/debris VFX played in its place.
		• **Destroying a CS**
		  ○ In some cases (i.e. thrusters, arms), the corresponding body part is physically detached from the rest of the body.

Future Work

- Implementation of Crit Spots as body parts on the **player's Mech**
- Effects that affect the enemy's behavior (AI)
- Extra Large Enemies (details in the 'Bosses' section in the Entities Miro Whiteboard) - we can use crit spots to create complex combat puzzles with layers of triggers.

Version History

⌄ Click here to expand...

Version	Date	Comment
Current Version (v. 67)	**Jun 26, 2023 12:48**	**Framais**
v. 66	Jun 26, 2023 12:13	Framais
v. 65	Jun 26, 2023 12:12	Framais Added a new proposed solution in "Gameplay Pace/Speed" (Solution 4).
v. 64	Jun 23, 2023 08:18	Framais
v. 63	Jun 23, 2023 07:57	Framais
v. 62	Jun 23, 2023 07:56	Framais
v. 61	Jun 23, 2023 07:56	Framais Added notes from 22.06 meeting (review with stakeholders)
v. 60	Jun 21, 2023 16:47	Framais
v. 59	Jun 20, 2023 08:41	Framais
v. 58	Jun 20, 2023 08:14	Framais
v. 57	Jun 16, 2023 11:55	Framais
v. 56	Jun 16, 2023 11:38	Framais
v. 55	Jun 16, 2023 08:50	Jordan Morris
v. 54	Jun 14, 2023 15:31	Framais
v. 53	Jun 14, 2023 15:30	Framais
v. 52	Jun 14, 2023 14:14	Framais
v. 51	Jun 14, 2023 14:13	Framais
v. 50	Jun 14, 2023 14:00	Framais
v. 49	Jun 14, 2023 13:58	Framais
v. 48	Jun 14, 2023 13:55	Framais
v. 47	Jun 14, 2023 13:54	Framais
v. 46	Jun 14, 2023 12:54	Framais
v. 45	Jun 14, 2023 12:52	Framais Moved 'Extra Large Enemies' proposal to the Entities miro board
v. 44	Jun 14, 2023 12:33	Framais Added a note of warning to tweaking engagement distances.
v. 43	Jun 14, 2023 11:43	Framais Fixed link to Tech View doc (it previously pointed to the wrong doc)
v. 42	Jun 13, 2023 14:52	Framais
v. 41	Jun 13, 2023 14:46	Framais
v. 40	Jun 09, 2023 11:17	Framais
v. 39	Jun 09, 2023 11:15	Framais
v. 38	Jun 07, 2023 07:51	Framais
v. 37	Jun 06, 2023 09:22	Framais
v. 36	Jun 06, 2023 09:18	Framais
v. 35	Jun 06, 2023 08:51	Framais
v. 34	Jun 06, 2023 08:24	Framais
v. 33	Jun 06, 2023 08:24	Framais
v. 32	Jun 06, 2023 08:20	Framais
v. 31	Jun 06, 2023 08:20	Framais
v. 30	Jun 06, 2023 07:41	Framais
v. 29	Jun 06, 2023 07:37	Framais
v. 28	Jun 06, 2023 07:24	Framais
v. 27	Jun 06, 2023 07:14	Framais
v. 26	Jun 06, 2023 06:38	Framais
v. 25	Jun 06, 2023 06:31	Framais
v. 24	Jun 06, 2023 05:44	Framais

v. 23	Jun 06, 2023 05:42	Framais
v. 22	Jun 02, 2023 20:27	Framais
v. 21	Jun 01, 2023 12:53	Framais
v. 20	Jun 01, 2023 12:53	Framais
v. 19	Jun 01, 2023 12:00	Framais
v. 18	May 31, 2023 10:18	Kris Golatowski
v. 17	May 31, 2023 09:00	Framais
v. 16	May 31, 2023 08:59	Framais
v. 15	May 31, 2023 08:34	Framais
v. 14	May 30, 2023 18:02	Framais
v. 13	May 25, 2023 14:20	Framais
v. 12	May 25, 2023 13:12	Framais
v. 11	May 25, 2023 08:46	Framais
v. 10	May 25, 2023 08:44	Framais
v. 9	May 24, 2023 10:19	Framais
v. 8	May 24, 2023 10:16	Framais
v. 7	May 24, 2023 10:12	Framais
v. 6	May 24, 2023 10:11	Framais
v. 5	May 24, 2023 10:08	Framais
v. 4	May 24, 2023 10:03	Framais
v. 3	May 23, 2023 15:03	Framais
v. 2	May 23, 2023 14:14	Framais
v. 1	May 23, 2023 14:01	Framais