**Design document: Mecha-FTL / roguelike meets Cyberstorm**

Contents

[Introduction 2](#_Toc381878746)

[Basic concept 2](#_Toc381878747)

[Plot & setting 2](#_Toc381878748)

[Look & feel 2](#_Toc381878749)

[Strategic Gameplay 2](#_Toc381878750)

[Strategic map 2](#_Toc381878751)

[Factions 2](#_Toc381878752)

[Quests 3](#_Toc381878753)

[Movement on the map 3](#_Toc381878754)

[Stops and events 3](#_Toc381878755)

[After battle reports 3](#_Toc381878756)

[End of turn decisions 4](#_Toc381878757)

[Consequences 4](#_Toc381878758)

[Tactical Gameplay 4](#_Toc381878759)

[General description 4](#_Toc381878760)

[Setup phase 4](#_Toc381878761)

[Map 4](#_Toc381878762)

[Terrain types - Biomes 4](#_Toc381878763)

[AI 5](#_Toc381878764)

[Turn content 5](#_Toc381878765)

[Radar 5](#_Toc381878766)

[Action models 5](#_Toc381878767)

[Movement 5](#_Toc381878768)

[Shooting 5](#_Toc381878769)

[Damage 6](#_Toc381878770)

[Heat 6](#_Toc381878771)

[Mech destruction 6](#_Toc381878772)

[Technical Entities 6](#_Toc381878773)

[Units 6](#_Toc381878774)

[Pilots 7](#_Toc381878775)

[Weapons 7](#_Toc381878776)

[Subsystems 8](#_Toc381878777)

[Design principles 8](#_Toc381878778)

[Prototyping 8](#_Toc381878779)

[Configurability 8](#_Toc381878780)

[Generality 8](#_Toc381878781)

[Player orientation 8](#_Toc381878782)

Introduction

Basic concept

FTL’s strategic map, just a bit more detailed with shorter & simpler version of Cyberstorm’s turn-based hex map tactical mech battles, all in the rogue-like idiom of procedurally created games, playable in short play bursts with potential great risks & rewards.

Plot & setting

A group of deserters from The Bad Army (TBA from now on) escape from their base with a couple of mechs and a crawler, and needs to cross the planet in order to reach the Central city, where they can choose to try to attack the spaceport and escape the planet, or attack the main enemy base and free the planet.   
The planet is an earth-like occupied by TBA forces (always against the player), several different nations (and different races) with different opinions on the TBA and the deserters, and other such forces. The way to the spaceport passes through randomly generated biomes, each has some influence on the way the battles happen.

## Look & feel

The general feel of the game is colorful & cartoony at the beginning, and becoming more sedate as the goes on. The general feel is of mostly a wilderness, with areas of habitation few and far between, and mostly war-torn and ragged – both buildings and mechs. Vibrant colors in the wilder areas and for the giant monsters, muted and tarnished for civilization & intelligent enemies. The player represents a group of deserters leaving the war after tiring from it, and the game should represent their POV – battles should not appear to be exciting, but scary and leaving the player with a feeling that he’s not better off afterwards, even if loot-wise he is.

Strategic Gameplay

## Strategic map

Randomly generated at the beginning of each game, of different biomes containing randomly placed bases of different factions. The goal is to get to the only spaceport, on the other side of the map, to escape the planet.

## Generating the map

Split the map into several cells – each cell is an area, with a single event in it. Cell separation can be done using cell automata, for example.

## Factions

Each area of the map is controlled by one of the factions on the planet.

* TBA – enemy, will always attack.
* Rebels – Friends, might be traders, offer missions or need protection
* Bandits – enemy, might be slave traders, gun traffickers (with TBA equipment)
* Natives – depending on player owned pilots & actions. Might be traders, offer missions, need protection, be slave traders

## Quests

Will be randomly chosen for each playthrough (preferably, they’ll be parse-able from XML files, in order to enable simple addition of quests). Each quest will last for 2-4 stops, and will give the player incremental benefits for following it. Quests will have larger influence than regular events in the larger playing scope (see “Consequences”).

## Movement on the map

The player sees all potential stops for the coming turn, and on the easy difficulty, a general overview of the potential events in each stop & rough probability for each such event. The player doesn’t see the available stops afterwards, but does see the general map and can guess accordingly.   
Alternatively, in a more complex way, the player can choose his way over several routes, and at each step there will be a chance for a random event. The player can also choose to stop at every step, but this increases the chance of a random event.  
The events possible at every stop / step are affected by the biome, which faction controls the area and what faction bases are nearby. There can be bases of other factions in a faction controlled area.

## Stops and events

When reaching a stop, if a random event happens it is resolved, and afterwards the player can repair and customize his mechs.   
Event types –

* Trader / slave trader / gun trafficker – can be traded with, or attacked. If the player chooses to attack it might will affect future encounters with the relevant faction. This chance is increased if an enemy unit manages to retreat.
* Attack – If encountering an enemy faction, they might attack outright.
* Defense – Rebels or natives might be attacked by TBA or bandits, and the player can choose to defend them. Success in defending will result in a reward and will affect relations with the relevant faction.
* Mission – a friendly faction can ask the player to go on an attack or defense mission, to reach a certain stop further on the way.
* Friendly base – all mechs will be repaired and equipment, mechs or pilots will be awarded to the player.

Each stop has a randomly generated name, which will be unique to that stop.

## After battle reports

If the player won the battle, there will be loot: Weapons, scrap, sub-systems, ammo, fuel, mechs & crawlers, depending on damage caused to the destroyed vehicles, both the enemy’s and the player’s. The player will be able to choose of the loot and add to his equipment, up to possible cargo capacity. It should be noted that even if a player’s mech was destroyed, there’s a high chance it will be salvageable – the destruction of a mech during combat shouldn’t be a game breaker that reduces the player’s chance of survival to a practical nil.  
There’ll also be a damage report to the player’s units. If enemy mechs escaped the difficulty of future encounters will be increased.

## End of turn decisions

After all these actions the player will be able to use scrap to fix damage to his vehicles, setup his mechs with pilots & equipment and set a course for the next stop.

## Consequences

Some random events may contain lasting consequences, which will be referenced by name by random encounters later on. For example, significant victories will result in messages such as "So, (player's name), you're the one who destroyed our patrol in The Marshes of Whateverville." This will serve to increase player's involvement in the game, through the feeling of a living, reacting world.

The consequences of fighting / avoiding fight can be future benefits in upcoming events, but beyond that there’s a tally of the strength of the enemy army & friendly factions which will affect how hard the final fight will be. The only way for the base attack ending-option to be reasonable is if the player pursued enemy forces and helped a significant amount of friendlies along the way.

Tactical Gameplay

General description

15-10 minutes battles, with 2-6 mechs on each side (can battles be obviously one-sided?), with additional minor units / monsters added in the fray. There are two types of battles –   
Defense: with the player’s crawlers in the back of the battle, as targets that need defending.   
Battles end when either side is completely destroyed or escapes - when enough of the player’s units reach the exit zone (hard to do, since the crawlers are slow, heavy & defenseless) or the enemy units break off their attack. The general feel of the battles is of defending a convoy rather than destroying the enemy.   
Offense: when a stop contains a hunt & kill mission, there are no player controlled crawlers (there might be enemy crawlers), and the battle feels more aggressive and with less to lose.

Setup phase

Before each battle the player can choose which operational mechs to use, and which pilot will control which mech. There will be no advanced mech configuration in this phase.

Map

Hex-based map, large enough that the long range weapons could shoot after the first turn & every additional turn of movement will let the next range criteria shoot, on an average speed much advancing towards each other.

Terrain types - Biomes

* Grass - default values, hill hexes (height bonus, block LOS), wood hexes (block LOS, can be destroyed to create rubble).
* Tundra – cold (less weapon heat), with forest hexes, snow hexes (which cost more movement points) & iced lakes (when hit enough, collapse, becoming unpassable & destroying all vehicles over them).
* Desert – hot (more weapon heat), with dunes (height bonus, block LOS, high movement cost) & unpassable gulches.
* City – Building hexes (block LOS, block passage, create false radar blips, can be destroyed to create rubble). Does not contain monsters.
* Swamp – bog hexes (increased movement cost), Killer plants (non-moving monsters), wood hexes and fog hexes (block LOS).

## AI

All AIs will attack enemies in range if chosen target is out of range, but will advance towards chosen target. All targets are chosen out of seen player units.

* Simple – attack nearest enemy
* Defensive – attack nearest enemy or enemy that last attacked it / chosen defense target.
* Harasser – attack weakest unit / crawler.
* Grouper – attack unit most friendlies attack.

## Turn content

Each turn every player can move all of his units. Each unit has an amount of action points determined by the mech’s equipment and the pilot’s skill, which can be spent on moving, shooting or special actions, and a heat quota – each turn, each mech loses some heat, and acquires heat by shooting and being shot by some weapons. Heat overflow causes reduction in mech performance, ammo explosions and a potential for killing the pilot.

## Radar

Radar can give false information – each hex has a chance to display a radar blip randomly, dependent on the amount of radar blips around it. The more blips there are, the higher the chance.

## Action models

There are two potential action models –

The first is XCOM-like, with a set amount of actions per entity – each action can be movement or operating one of the entities’ subsystems.

The second is energy-based. Each entity has a given amount of energy, and a given amount of overdrive-energy. Each action consumes a certain amount of energy, and if it’s from the over-drive energy, it creates additional heat. Alternative – all energy usage creates heat, and the amount of heat created increases the more energy is used each turn.

## Movement

The cost of movement is affected by the mech’s weight, the pilot’s skill & the movement cost of the hexes through which the chosen path passes. Jump jets enables straight movement ignoring terrain limitations.

## Shooting

A mech can shoot at any target in range and for direct fire weapons, with LOS. Unless specified otherwise, damage is first applied to a mech’s shields & afterwards to the body of the mech. Each shot has a chance to hit, determined by range, weapon types, the shooting & shot pilots’ skills & amount both mechs moved. Chances are displayed to player only as good / medium / bad. In case of a miss, a random hex around the targeted mech will be hit.

## Damage

With no special modifications, a mech of a given size can take ~6 hits from weapons of equal size before being destroyed:  
Its shields can take ~2 regular hits or 1 EMP hit. Heat damage or shield piercing rounds don’t affect shields.   
Its armor can take ~1 regular hit. EMP damage bypasses armor.  
Its systems can take ~3 regular hits or ~5 EMP hits. Each hit will affect a single system, destroying or disabling it, depending on damage type.

Both EMP & heat damage dissipate over time, and shields are restored over time, based on the mech’s system, variant and pilot’s Systems skill.

## Heat

Once a mech gains ~2 heat damage, it shuts down, but will power up when the heat is lost. After ~3 heat damage there’s an increasing chance of ammo explosion (if there’s ammo in the mech) & pilot death – the first causes mech destruction, the second disables the mech.   
Shooting most beam weapons creates ~0.5 heat in the shooting mech, and missile / artillery shots cause ~0.25 heat.

## Mech destruction

After ~3 damage to internal systems a mech is destroyed. If the pilot’s bridge is destroyed or all systems were disabled by EMP or heat then a mech is disabled.  
In both cases the mech is taken out of the battle. Mechs which were disabled are more likely to be salvageable after the battle.

Technical Entities

Units

* Mechs – Independent walking units. Can be customized with different weapons, shields, radars & support systems. Comes in Small, medium & large variants.
* Pilots – a player needs pilots for every active mech, and can have up to 10 pilots. Different pilots come from different races, and have different skills.
* Crawlers – Large cargo vehicles, each crawler can carry either a defunct (broken / inactive) mech and / or spare equipment. Game begins with 1 crawler, ends when all crawlers are destroyed, and the player can reach a maximum of 5 crawlers.
* Infantry / Tanks /Artillery – enemy light units.
* Monsters – large animals that randomly attack any mech.

Mechs

Mechs come in three sizes – small, medium, heavy. Size affects the amount of hit points & speed of each mech, and each size has an additional equipment slot – 4 to light, 5 to medium and 6 to heavy. In addition, all mechs have a reactor slot. (A more complex setup will also add weight to items, and let a larger mech carry more weight. I’m not sure if this is needed, or if it will make the setup phase too slow). Only heavy mechs can carry artillery weapons.   
Some mechs will be of a rare variant (unless mentioned otherwise, all variants have one less weapon slot).  
Positive variants (will be found at TBA):

* Mech with an additional slot, but can carry only smaller systems
* Extra hit points
* EMP / Heat resistant
* Faster (can move more / movement takes less energy)
* No pilot (doesn’t reduce slot number)
* Can’t equip weapons, comes with a pre-chosen giant-sized weapon.
* No radar signature

Negative variants (will be found with bandits & natives):

* Shoddy – no armor (doesn’t reduce slot number)
* Low energy – is disabled after 5 turns.

## Pilots

Each pilot has a race (matters to some random events), and a value in each of the following skills:

* Piloting – influences cost of moving and chances of being hit. Increases the more the mech moves.
* Shooting – influences chances of hitting the enemy. Increases when the mech shoots.
* Systems – influence recovery from damage and effectiveness of internal systems. Increases when the mech is hit and when active internal systems are used.

Positive variants:

* Mind reader – can read the minds of enemy pilots and see their plans.
* Marksman – can aim at specific parts of the enemy mech.
* Remote controller – doesn’t control the mech from inside it, and so doesn’t die if mech is destroyed. Is in a crawler, dies if that crawler is destroyed.

Negative variants:

* Panicky – mech shutdown & pilot runs away after first system damage.
* Inexperienced – lower initial stats.

Weapons

Beam – All weapons come in small / medium / large variants, with higher energy, weight & heat demands, and more damage & range (alternatively, they come in long range, high damage, and high accuracy variants).  
(Do we want a wider variety of weapons that will be harder to learn, but will give each playthrough a more unique feel?)

* direct fire, EMP / physical / heat damage, needs LOS and creates heat.
* Gun – direct fire, physical / shield piercing damage, needs LOS and consumes ammo.
* Missiles – indirect fire, homing, EMP / physical damage, consumes ammo & creates heat.
* Artillery – indirect fire, area of effect, EMP / physical / heat damage, consumes ammo & creates heat.
* Drones – can be released from mechs for simple defend / hunt-kill missions. Indirect fire, homing, stay for a couple of turns. Functions - Laser / Missile damage, missile interception, mech repair or shielding a hex.
* Airstrikes – available only in certain areas, after completing missions for a nearby base.

Subsystems

* Shields – can be either Hard, which prevent all damage until it collapses, or soft, which reduce most damage, but only EMP can collapse.
* ECM – can cloak from radar or block missiles, either for the single mech or for an area.
* Radar - several attributes – long / short range (either all map or just area around the mech), precise / imprecise (can pinpoint mech or just gives general area), informative / semi-informative / dumb – can give information about the radar blips (size of mech, type of mech, energy signature).
* Jump jets – enable a limited amount of movement in a straight line, ignoring terrain limitations. Uses fuel.
* Heat sinks – reduce heat & allow to further accumulate heat.

Design principles

## Prototyping

We’ll aspire to create several prototypes of most basic mechanics, and let people play with them to determine which ones are the most fun.

Each prototype will log such things as play time, time until first shot was fired, average turn time, amount of turns, etc., with player’s feedback – scoring of the prototype and general impressions.

## Configurability

As much of the information should be in easy to manipulate simple text configuration files. While simple numerical values are easy to store, there should also be such a format for weapons, units and quests. This makes the game easier to balance and mod.

## Generality

As much of the game as possible should be coded with reusability in mind, using generics and specialized classes derived from generalized ones.

## Player orientation

The game is aimed at players enjoying small-scale complex problems, who enjoy but are not dependent on strong consequences of their actions, and are willing to learn and restart their game.