

Techtonic Studio

Meteor Squad

Game Design Document

METEOR SQUAD

Antonio Moreno - Victor Gil - Alvaro Touron
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Introduction

The concept of Meteor Squad was born in late 2018. During the first edition of Guerrilla Game Jam in Madrid, 16 students of different Master's Degrees from Universidad Complutense de Madrid and Voxel School had the chance to get to know each other and gathered to form what would later be known as Techtonic Studio. After the (rather chaotic) game jam, we started working on game concepts for our Master's Degree final project.

The final concept that was approved by the Master's Degrees directors was initially nicknamed "Techtonic" (though eventually that name would be assigned to the studio). Techtonic was conceived as a multiplayer shooter set in moving islands on an oceanic environment, but as the game evolved the settings ended up being transferred to the outer space.

As the game naturally progressed to the current state at the moment of writing this GDD, mechanics and details may of course differ from the versions of the game that we worked on during the course of our Master's Degrees. We considered it was interesting to write a complete, updated GDD at the end of May 2019 to show the current structure to those interested, and to give ourselves some perspective with the development of the game.

We want to thank everyone involved in the development of this game: our tutors, teachers, testers, everyone who interacted with us on Twitter and Instagram, everyone who made noise with us during the Guerrilla Game Festival 2019 and everyone who at any point selflessly gave us valuable pieces of advice. Also special thanks to Juan Barro who made such fantastic music for our game!

Everyone in Techtonic Studio had so much fun making this game. We hope you enjoy playing Meteor Squad as much as we did!

- Toni



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Game Pillars

Overview

“Meteor Squad offers an incredibly bold experience in the multiplayer FPS scene that encourages players’ cooperation, including farfetched weapons, bizarre traps and fast-paced, action-packed games.”

Frenetic competition

This pillar is all about multiplayer experience, and how we make Meteor Squad accessible while rewarding skill at the same time.

- **Quick gameplay with lots of movement possibilities.** Enhanced movement and low fire rate combine nicely with game mechanics.
- Game mechanics and their combinations allow for players to develop **emergent strategies.**
- **High level of team coordination is encouraged and rewarded, but not required.** An organized three-man team can perform great feats, but a single person may still be able to pull astounding solo plays.
- **Game flow is heavily based on objectives** that mark clearly the stage of the game and its context. The goal is clear and the action revolves around it.
- **All these elements brought together enable teamplay** and the possibility to boost friendships or make some enemies.

Futuristic vandals

This pillar is all about the references to pop culture and trends that inspire the art, characters, narrative context and settings of the game.

- **Characters extend their irreverent tone to the gameplay.** Wild personalities and urban looks give color to the competition and combine well with weapons and traps.
- **Child-friendly looks with 21st century influences make a direct reference to current social trends.** Trends such as skateboarding, breakdance and trap make a connection with younger audiences.
- **Unique assets of a post-apocalyptic theme** set up an original narrative using scenery from our everyday life as something completely different.
- **Hilarity and absurdity of objectives and victory conditions** allow for emergent narrative shared among friends.

Gadgets and power-ups

This pillar is all about the vast array of extra mechanics that enrich and complement the game flow and design.

- **Gadgets with responsive behavior** give the player a lot of possibilities to expand their gameplay, set up traps and think laterally.
- **Power-up mechanics allow for an expansion of the meta-game.** Strategies acquire a new level of versatility, both offensively and defensively.
- **Clutcher and Meteor Strike mechanics** enable an even higher movement gameplay and allow for an innovative combat alternative to gunfire.

Core Gameplay

Overview

The core gameplay of Meteor Squad is primarily the moving and shooting mechanics. Although general shooter genre standards are followed, there is an essential rule that clearly establishes the outcome of players' confrontations: **one shot, one kill**. Overcoming the opponents will involve personal mastery to hit the enemy and dodge gunshots, as well as team play to avoid being outnumbered. Core gameplay also includes **interacting with relics and Meteor Meals** according to the game mode to progress and achieve victory conditions.

Goals

Core gameplay should:

- Encourage players to play together towards the same goal in competition to the enemy team.
- Have a polished user interface that clearly states the stage of the game at any moment, aims the player towards the corresponding goal and supports use of weapons and gadgets with no distraction.
- Have a low mechanical skill ceiling regarding moving, jumping and achieving victory conditions, but encouraging mastery in gunfire and aim.
- Have clear outcomes of the game so that players know why they lost, what they should have done better or how they can adjust their strategies for the future.

Shooting mechanics should:

- Not be taken too seriously; in other words, they should have a good level of polish but a low level of complexity, in opposition to other hardcore shooter games.
- State clearly in the user interface when modified weapons or any behavior different than normal are being used.

Movement mechanics should:

- Be responsive, reliable and consistent, even if this comes at the cost of losing realism.

User stories

- As a player, I like that if I get shot I don't have to wait a long time before respawning.
- As a player, I love the ability to make long jumps using the Clutcher or Launchpads, so I can try new things while navigating the map or engaging the enemy.

- As a player, I like that if I fall down I always have the chance to use my Clutcher to get back to the map.
- As a player, I like that when I lose in combat I can see why and I know how to adapt my strategies and improve for the future.
- As a player, I love that Meteor Squad allows me to trick my enemies in many different ways using gadgets, so there is always a new surprise in every game.

Weapon mechanics

Overview

The target for Meteor Squad is to have a friendly gunplay for audiences broader than just hardcore shooter fans, with medium-long range, low cadence weapons that kill on one hit.

Core mechanics

Moving and shooting

Regarding gunfights, movement is as important as accuracy. Avoiding being predicted by the enemy and using the verticality of the map are key to winning gun battles.

Reaction

Initiators have an important advantage, considering the weapons' time-to-kill is zero. The survival of the players may rely on their behavior at first sight, just as an enemy is spotted.

Accuracy

The weapon's crosshair needs to feel very accurate, given the fast pace of the games and intense movement. Missing shots doesn't necessarily mean great losses in terms of ammo, as balls can be picked up from the ground or replenished with the players' gadgets.

Weapon feel and aesthetics

The Pneumogun has a very unique look & feel that makes it really recognizable from any other shooter games. Adding hop-ups given by the power-ups that can be found on the map change the weapon clearly, both visually and in terms of gameplay.

Editable parameters

This is a brief list of the parameters we work with while adjusting the behavior of the weapon.

State of the player: Shooting accuracy is affected slightly by the position and movement of the character.

- Standing stationary (default)
- Crouch stationary

- Crouch walking
- Walking
- Air

Fire rate: Variable for the time passed between each shot. If a new fire input is received before this time is over, it should be ignored completely. The player will need to fire again after the delay time is over in order to successfully shoot another projectile.

Projectile speed: Maximum weapon range is directly related to projectile speed. At the same time, it is an interesting value to work with when designing the MeteorFinder power-up. Based on this value and the size of the map, the maximum lifespan of a projectile while on air is defined.

Reload time: How long it takes the Pneumogun to reload when using a Refiller (this value has been zero since the earliest versions of the game).

Power-up weapons

This is a rough description of the additional mechanics that are introduced with the Power-up weapons.

Dominator

The Dominator power-up is the closest thing to a traditional shotgun that you can find in Meteor Squad, but still it is not quite the same. When firing, a round of five smaller projectiles will be shot, instead of a single one. However, unlike traditional shotguns, accuracy is not greatly diminished, so it still enables mid-range and long range combat.

The player will have to use the alternate fire button in order to use the Dominator. Standard Pneumogun projectiles can also be shot with the standard fire button while the power-up is active.

Projectiles are shot with a certain, slight spread. In any case, all their trajectories are evenly distributed across the entire spread of the weapon.

The ammo count is altered while Dominator is active, i.e. a Dominator shot of 5 projectiles will remove 1 and not 5 from the player's ammo. In case of not having ammo, firing will be disabled (as normally). All other values and characteristics are shared with the Pneumogun.

Design values: spread (angle between each projectile trajectory and central axis), projectile count (how many projectiles are shot).

MeteorFinder

While the Dominator offers great spread and impact, the MeteorFinder power-up is all about accuracy. Projectiles shot with a MeteorFinder will travel at maximum speed, resulting in practically zero time-to-target.

In order to fire with this power-up weapon, the player will have to keep the alternate fire button pressed, which will allow for a zoomed in view of the target, sniper-style. When the button is released, the projectile is fired. Standard Pneumogun projectiles can also be shot with the standard fire button while the power-up is active.

Ammo count and all other values and characteristics are shared with the Pneumogun.

Design values: zoom-in time (how long it takes to reach the last point of the zoom-in animation after starting pressing the alternate fire button), special projectile speed.

MeteorMaker

The MeteorMaker power-up enables firing charged-up shots. The longer the weapon is charged, the bigger the fired projectile will be, offering a little plus in accuracy and hilarity.

In order to start charging up the MeteorMaker, the player will have to press the alternate fire button. The longer the button is pressed, the bigger the projectile will be; there is a maximum value after which keeping the button pressed will have no effect. If the player dies before releasing the button, no projectile will be fired. Standard Pneumogun projectiles can also be shot with the standard fire button while the power-up is active.

More precisely, the charge will have a number N of stages. Stage 0 is equivalent to standard size, while specific, progressive sizes are defined for stages 1 to $N-1$. Stage N is the maximum size, and covers all charged-up shots that surpassed the maximum charge up value. A different charge up time is set for each stage; i.e. if a player is charging for 3 seconds and $T_3 < 3 \text{ s} < T_4$, then a Stage 3 projectile will be fired.

Ammo count (no matter how big the projectile is) and all other values and characteristics are shared with the Pneumogun.

Design values: all stages sizes and charge up times.

Hitting other players

Hit feedback

The nature of the weapons and gadgets and the pace of the game ask for a successful hit feedback that feels good to the player and doesn't demand diverting any attention.

The most important thing we want to communicate here is if you have hit your target or not, that is, a **hitmarker**.

Audio

The essential part of this communication is audio, something that stands out well enough but doesn't dim down any other simultaneous sounds that may be happening.

The basic characteristics that we want this sound to have are:

- Easy to recognize, fast to learn and able to turn hit feedback very intuitive.
- Reminding of the sound a tennis ball makes when hitting something (up to a point).
- Fitting to the aesthetics, space setting, wild tone, etc.

The hitmarker sound should not be played when hitting teammates (as there is no friendly fire).

Visual effects

We considered this type of feedback less important than audio this time. The ragdoll physics that are applied as soon as a player is killed should be indicative enough in this sense.

HUD

Feedback is highlighted in the HUD by coloring the crosshair. More importantly, the message of the appropriate kill must be shown very clearly in the user interface, with the name of the player killed. Also, when corresponding, the information is reiterated on the scoreboard for all players.

Movement

Crouching

Crouching works as traditionally in the shooter games genre: the crouch button will alternate the standard idle/run animations with crouching. A crouched player will have their hitbox size shrunk vertically a little and their movement speed decreased.

Players are allowed to alternate between crouching and running while moving on the ground without other penalties than the movement reduction while crouch walking. There is a crouch animation (as well as crouch-to-walk animation) so the transition is not immediate, but there are no middle state; in terms of gameplay the player is considered to be crouching (or walking, for crouch-to-walk) already.

Jumping

Jumping is the core movement mechanic of Meteor Squad, as mastering it is vital for successful navigation through the map and combat. It is essential to achieve balance between traditional jumps (attractive to those familiar with hardcore shooter games) and goofy sensations that could be expected from moving in low-gravity environments.

Jumping while crouching will be possible, but crouching before jumping or after landing (or alternating run and crouch animations in any other way) should not affect the height or distance of the jump.

Jumping with Launchpad

The Launchpad 3000X gadget will enhance a player's jump by adding an increased multiplier to the jump vertical impulse (always a fixed amount). Other than that, the jumping mechanics are not altered in any other way. The interaction between player and gadget will happen as soon as both hitboxes start overlapping.

- The momentum of the player that jumps with a Launchpad should be conserved as long as they were still holding the forward input at the moment of the activation of the gadget.
- Crouching should not affect the Launchpad impulse in any way (same as with standard jumps).
- Given the case that additional impulses are applied on a player right after being launched by a Launchpad (such as by using the Clutcher, being repelled with a Meteor Strike or even by using successive Launchpads), the resulting multiplier to the vertical impulse will be the addition of all.

Clutcher

Overview

The Clutcher is the ultimate movement tool in Meteor Squad, serving as an escape mechanism, some sort of combat initiation or even a last resort to save yourself from falling. Regardless whether the player is on the ground or in the air, if they target an appropriate surface they may use the Clutcher button to latch on and be pulled forward towards it. After using it, the Clutcher will have a cooldown time during which it will remain unavailable to avoid spam.

The Clutcher is mainly used to gain extra height and distance, since the surfaces will always be above the ground level of the map, and also allow changing direction after jumping.

Initial prototype

Basically, if the Clutcher is used successfully, **an impulse is applied on the player in the direction towards the latched surface**. If the player is falling downwards with speed higher than a specific value, an additional impulse would be applied upwards.

A percentage of the player previous movement is conserved up; the intention is not to replace the movement entirely but to **add the impulse to the existing horizontal and vertical momentum**. The exact amount will be most likely the product of successive iterations, so all components of the impulse must be easily editable.

While the Clutcher is in effect, the player should be able to continue moving to add up to that momentum. The goal here is to achieve some sort of **swing effect** or space lianas.

Activation

Since the possible Clutcher activation points should enable movement upwards, the applicable surfaces must be on top of the players in most situations of the game. Spherical objects are ideal so as to orient the surfaces to as many points of the map as possible.

To communicate clearly to the player that they can safely activate their Clutcher, we need visible changes in the HUD (crosshair) that can be seen as clearly as hitmarkers.

The Clutcher should only be activated from beneath the objects with the special surfaces, so the allowed angles from which it may be used will always be in the lower half of the sphere (lower 180°). The exact amount of degrees could be tweaked so it will be a design value.

It is possible to perform consecutive Clutcher jumps if its cooldown time allows for it, even if it is used with the same surface. There is room for analysis and improvement here if chaining infinite Clutcher jumps ends up being a viable strategy; in that case we could implement some **decay in the consecutive impulses**.

The Clutcher should never be available to use under the following circumstances:

- While the player is under recent respawn effect.
- While the player is standing on their respawn platform.
- At the same exact moment a standard jump is started; in other words, the player cannot jump and use their Clutcher at the same time (the standard jump should be prioritized).

Timers

Once the Clutcher impulse has started, the effect will end with one of these events:

- The player releases the Clutcher button.
- Thanks to the impulse, the player gets closer than a specific amount of units to the latched surface.

After this, the cooldown timer will start. This will happen even if the player released the Clutcher button really quickly after pressing it.

Meteor Strike

Overview

The Meteor Strike is a special move that serves as a melee weapon for players. Rather than a punch or kick animation, visually it has the shape of a shockwave or section of a sphere; if this connects with a player in the corresponding hitbox, they will be pushed away.

After using it, the Meteor Strike will have a cooldown time during which it will remain unavailable to avoid spam.

Goals

- To allow players to “keep fighting” when they run out of ammo in the middle of a close gunfight.
- To introduce alternative ways to attack when they get very close to a moving enemy during combat and it gets harder to aim.
- To implement a mechanic that, by interacting with other mechanics, add them another layer of complexity and versatility.
- To be able to use offensively the nature of the map and knock enemies over and make them fall, instead of having to defeat them using guns.
- To implement a mechanic that poses an extra risk to players in the last stage of the game while carrying the Meteor Meal to the altar.
- To offer players that are carrying the Meteor Meal some a way to defend themselves.

Initial prototype

When the Meteor Strike button is pressed, a wave starts travelling from the center of the player outwards, up to a certain range. If this wave encounters another player, **an impulse is applied to them in the direction opposite to the player who used the Meteor Strike**. If the wave misses, the visual effects will happen anyway. In that case, the player needs to wait for its cooldown time to run out in order to use it again.

The impulse is meant to be affected by **friction** with the ground and other objects. In other words, the behavior will be noticeably different if the pushed player is on the ground or in the air:

- If the player that is pushed away is standing on the ground (regardless of whether they are crouching or walking), friction with the ground will reduce the distance they end up being pushed.

- If the player that is pushed away is in the air, no friction will be applied at the moment of the Meteor Strike. As soon as they hit another object or surface, friction may start being applied.

As these conditions suggest, the Meteor Strike should have a significantly higher impact on jumping players, thus offering some risk to the players if they intend to jump in vulnerable areas of the map while being close to enemies.

Both the Meteor Strike impulse and friction values must be easily tweakable in order to be properly balanced.

Interactions

Regarding the Meteor Strike, there will be **friendly fire**; that is, players can be pushed by their teammates. Its cooldown and all other mentioned characteristics apply as normally.

Using the Meteor Strike will have additional effects related to the game objectives.

- If a player successfully uses their Meteor Strike with another player who is carrying one of the relics, the relic will drop to the ground.
- If a player successfully uses their Meteor Strike with another player who is carrying the Meteor Meal, the Meteor Meal will drop to the ground. In any case, if the Meteor Meal was bound to drop where there is no ground and fall away, it must be relocated to the closest ground.

Design values will be used in order to edit the “bounce” or relocation of relics and Meteor Meal when these are dropped due to a successful Meteor Strike.

Gadget mechanics

Gadgets are the last category of tools that are available to players. They complement the gunplay in the form of support items and traps that may be used either offensively or defensively.

Gadgets are **very limited in numbers**. Generally, every player spawns at the beginning of the game with a specific amount of all types of gadgets. As these gadgets are spent, there will be no way to gain more gadget charges, even after being killed and respawning. It is up to the player to spend them wisely throughout the course of the game.

All gadgets are static and **will remain in the same place they were planted** for the rest of the game. Enhanced visibility will not be granted to players for gadgets that were planted by their teammates; in other words, enemy gadgets are as easy to see as friendly ones.

Planting gadgets

Gadgets are planted by throwing them forward from the player's position. The distance and speed of this throw should be easily editable. If the planting is successful (the gadget hits a surface horizontal enough), the planted gadget spawns in that position.

There will be certain areas in the map where gadgets cannot be planted, mainly the area surrounding the altar, the starting bases and the spawning platforms. To the same extent, gadgets cannot be planted in such a way that they overlap another existing gadget. In all these situations, feedback (both audio and HUD) must be very clear for players so as to not lead to confusion.

Quick Menu

Gadgets may be used by pressing their corresponding input key (1-5), but the Quick Menu (**radial menu**) will offer a faster, easy-to-use alternative to manually swap them and use them.

Behavior of the Quick Menu:

- On pressing the gadget button.
 - The Quick Menu appears in the user interface on the top layer of the screen.
 - The player may select one of five circle sector, each one corresponding to a different gadget. The name and icon of the gadgets are shown, as well as the number of remaining gadgets. Selecting the same gadget that was select last time will have no effect.
- On releasing the gadget button.
 - The Quick Menu is hidden.
- On quickly pressing the gadget button.

- The player will use and plant the gadget that was previously selected on the Quick Menu as if they had pressed their corresponding input key (1-5).

The Quick Menu may be used at any time, as long as the player is alive, even if they have 0 gadgets left of any type.

Refiller

The Refiller (gadget **1** by default) will **replenish completely the ammo of the player** that walks through it. They are meant to be limited in numbers but not too scarce, as they are the main sources of ammo for players, aside from picking up projectiles lying around.

Interaction

When a player walks through a Refiller hitbox, the gadget activates.

- The player's ammo will be completely replenished. If the player's ammo is full, it will have no effect.
- Regardless of the player's ammo, the Refiller will enter its cooldown state. During a specific amount of time, the Refiller will be inactive and nothing will happen to players that walk through it.
 - The gadget will have a very different shape while in its cooldown state to clearly communicate to the players that they cannot use it at that moment.
- When the cooldown time is over, the Refiller reactivates and goes back to its standard state.

Launchpad 3000X

The Launchpad 3000X (gadget **2** by default) will apply a **vertical impulse upwards** on any player that walks through it. Once they are planted, they will be aligned with the surface on top of which they are, i.e. if they are planted on a slope they will share the same angle.

Launchpads are the most efficient means of vertical transport in the game, and there should be a high number of these gadgets in the players' inventories.

Interaction

As soon as a player enters a Launchpad hitbox, the vertical impulse will be applied. Launchpads have no cooldown time, so it is possible for different players to use the same Launchpad successively in a short amount of time.

Necronufar

The Necronufar (gadget **3** by default) will **immediately kill any player that walks through it**. As the only gadget that may kill a player directly, they should be limited in numbers. Necronufars are meant to be used in tricky, smart ways, hiding them in the map environment and vegetation. However, it is also possible to use them offensively in a straightforward manner.

Note that Necronufars have **friendly fire**, that is, a player can be killed by one even if it was planted by a teammate.

Interaction

As soon as a player starts overlapping a Necronufar hitbox, the gadget activates:

- The Necronufar kill animation plays and the player is killed immediately. Communication of this event will be shown in the user interface differently than if they had been killed by gunfire.
- Right after activating, the gadget will enter its cooldown state. During a specific amount of time, the Necronufar will not kill any player who walks through it.
 - The gadget will play a special animation during this state (the plant will be closed after having “bitten” a player and will slowly open again) that is clearly different to the standard one.
- When the cooldown time is over, the Necronufar reactivates and goes back to its standard state.

Jaws

The Jaws (gadget **4** by default) resemble a traditional snare trap. When a player walks through it, they will be bound to the position of the gadget for a specific amount of time. The player will not be unable to move, but they will be **restrained from moving away from the gadget** further than a specific amount of units.

Players affected by Jaws will be able to get rid of this “leash” effect by shooting (with a Pneumogun or any power-up weapon) to the correct part of the gadget mesh or simply by waiting until the effect runs off. This way, trapped players will see themselves in a very vulnerable position and will have to invest a possibly significant cost (one shot) to get away.

Jaws can have a greater impact in the game when combined with the topology of the map, especially in chokepoints, but should not be too decisive in open spaces. Players may have a low/mid amount of these gadgets.

Differently than other gadgets, Jaws **have no friendly fire**; in other words, if a player walks through any Jaws planted by a teammate, they will not be activated.

Interaction

When a player walks through any enemy Jaws, the gadget activates:

- The gadget visibly changes its appearance (closed trap) and a wire appears connecting the player's feet and the original position of the gadget.
- The Jaws enter its activated state. During a specific amount of time, the wire remains connected to the player, who cannot move from the base of the gadget further than a specific amount of units.
- When the time runs out (or if the player manages to shoot at the "diffuse" part of the mesh), the wire will disappear, the gadget will return to its standard state (open trap) and the player will be able to move freely again.

Peek-a-boosh

The Peek-a-boosh (gadget 5 by default) looks a lot like the map natural vegetation, with a size big enough to cover a player's full body. Players can go inside the Peek-a-boosh to **hide from the enemy**; they are meant to be the most consistent tool for camouflage and trickery.

In order to avoid spam and excessive transformation of the map, this gadget should be limited to one per player.

Interaction

The goal for this gadget is to hide players from the enemy while not making situations confusing for their own teammates:

- When a player is inside a Peek-a-boosh:
 - They will be able to see all other players inside the same Peek-a-boosh, regardless of their team.
 - They will be able to see the area outside the Peek-a-boosh as if the gadget was not there, as normally.
- When a player is outside a Peek-a-boosh:
 - They will be able to see teammates inside the Peek-a-boosh.
 - They will not be able to see enemies inside the Peek-a-boosh.

It is important to have very clear audio feedback on the Peek-a-boosh whenever a player enters the gadget, to inform players (inside or outside) that someone else might have gone inside.

Power-ups

Overview

The existing power-ups in Meteor Squad will boost the players' capabilities in different ways and enhance their aggressive and defensive options. As opposed to gadgets and other mentioned mechanics, power-ups are not native to the player; they will only be available for them if they find them across the map. If a player gets killed, they will lose all active power-ups after respawning.

Activation

Power-ups will exist on the map as independent objects floating around. After a player walks through them, the power-up object will disappear and its effect will start applying on the corresponding player.

Most power-ups are **stackable**, that is, it is possible for a player to have more than one active power-up at the same time. Only the power-up weapons will be limited in this regard: if a player picks a new power-up weapon, it will override the previous one they had, losing all its effects but maintaining the amount of ammo.

- **Stackable power-ups:** Dash, shield, Adrenalyn, 1 power-up weapon.
- **Non stackable power-ups:** Any power-up weapon with any other power-up weapon.

It is necessary to have very strong feedback (audio, video and HUD) for all power-ups in order to communicate properly the state of the power-ups that are picked up and when their effects run off.

Dash

The dash power-up will enable the player's dormant dash ability. When the dash button is pressed, **the player will be relocated forward horizontally** a specific amount of units while maintaining their horizontal angle. Dash can be used regardless of whether the player is on the ground or in the air, but will always move the player horizontally, no matter where they are facing vertically.

When a player picks up a dash power-up, they will be granted **2 dash charges**. Every time they use their dash, one charge will be used. The dash ability will therefore be disabled when they have zero charges. More precisely, if, at the moment of picking up the power-up, the player has:

- 0 dash charges: they will gain 2 charges.
- 1 dash charge: they will gain 1 charge.

- 2 dash charges: it will have no effect, but the power-up will disappear nonetheless.

Design values: time it takes to complete the relocation, distance of relocation.

Shield

The shield power-up is the safest defense mechanism in Meteor Squad. When a player picks up a shield power-up, a shield will cover them **protecting them from one single weapon projectile**. In practical terms, it grants the player a second life for gunfights. The shield will have no effect whatsoever in the following situations:

- When being hit by friendly fire.
- When getting killed by a Necronufar.
- When getting killed by falling from the map.
- When being successfully pushed with a Meteor Strike.

If a player who already had an active shield picks up another one, the power-up will disappear but it will have no effect; in other words, shields are not stackable.

Adrenalyn

The Adrenalyn power-up affects the player's gunplay by **applying an increased multiplier on their fire rate** and **granting infinite ammo for a limited amount of time**. This power-up is meant to be the most powerful enhancement for gunfights and therefore should be the rarest of all.

As soon as a player picks up an Adrenalyn power-up, the amount of ammo they have will be frozen. During the duration of the Adrenalyn effect, firing with the Pneumogun will not reduce the amount of ammo. If the player had zero ammo at the moment of picking up the power-up, they will be unable to fire, in the same way as if they had not picked it up.

Alternate fire from power-up weapons will not be affected by Adrenalyn, and can actually deplete the player's ammo while under the power-up effect.

Power-up weapons

The following three power-ups will give the player the ability to use the alternate fire from the power-up weapons that were described previously. Their power-up objects have the shape of the hop-ups that will appear on the player's weapon mesh while their effects are active.

In the same way as the rest of the power-ups, it is extremely important to show clearly on the HUD the active power-up weapon, so the player knows immediately which one he picked up or whether they have changed to a new one.

Power-up weapon	Alternate fire	Weapon hop-up
Dominator	When pressed: five smaller projectiles are fired at the same time with a certain spread.	Shotgun fore end.
MeteorFinder	When pressed: zoom-in animation.	Sniper scope.
	When released: standard projectile is fired at maximum speed.	
MeteorMaker	When pressed: starts charging up the projectile up to a maximum amount of time; the longer it is pressed, the bigger the projectile.	Large muzzle.
	When released: enlarged projectile is fired	

Game mode

Overview

The main game mode of Meteor Squad must provide a space where the game pillars shine out, with rules and objectives that offer an entertaining challenge. Players must have the opportunity to not only master the game mechanics but the rules of the game too, always making room for competition, encouraging teamwork and creating interesting situations where the designed mechanics may be used.

Goals

- To make players work together towards victories which are shared with their teams.
- To provide different strategies to master (straightforward combat, sneaking, searching for objectives, etc.), so people with different play styles have room to play the same situations in different ways.
- To let the players create their own emergent narratives, with excitement, pressure and tension.
- To encourage teamwork and strengthen friendship bonds, while making some enemies on the road.
- To offer something different from other shooter games while being very easy to learn and start playing.

Win condition

Meteor Squad games are based on achieving specific objectives. These objectives are easy to understand and define clearly the stages of the game.

In order to win, a team has to **deliver the Meteor Meal filled with both relics to the altar** located at the center of the map **before the time expires**. If no team has achieved this goal within the given time, the resulting winner will be the one whose Meteor Meal is closer to the altar. Naturally, this means that if no team achieves the win condition and both Meteor Meals are located exactly at the same distance from the altar (i.e. at their original locations due to no relics being stored inside any Meteor Meal during the entire game) the game will end with a draw.

Game arena

Cratons Plate, the arena where the game takes place, consists of a horizontal symmetric platform divided in three rails. There are also two vertical levels of the map that are clearly

distinguished: the first one is wide and open, while the second one basically consists of narrow corridors and hidden paths.

In the top level the central rail connects both bases through a series of corridors which lead to the altar in the center of the map. Lateral rails lead to two buildings (or what remains of them), each one located in one side of the altar: the **Meteor Coffee** and the **Candy Shop**, respectively. These constructions are strategic positions that can be used for map control purposes.

The lower level also consists of three rails, with the central one being wider than the lateral aisles. In its center, the **Skate Park** (a vertically oriented construction that allows players to access the superior level and vice versa) can be found. Finally, the sideways paths are narrow and hidden, meant for maneuvering while keeping low notoriety.

Game flow

Each team spawns in an elevated platform just behind their base. In order to access the arena, players must jump down. Players cannot reach this platform in any way once they step on the main arena. After spawning, players will have a short amount of **invulnerability time**. This status will end prematurely as soon as they fire or use any gadget.

Meteor Squad games last for a limited amount of minutes. During this time, the objective that players should keep in mind first is **searching for the relics** and taking them to safety inside their Meteor Meal, located in their bases. Once the Meteor Meal is filled with both relics, it can be picked up and carried by any player of the team.

If the Meteor Meal is successfully carried to the central altar, the carrying player can start **channeling** it. After channeling successfully during a short, specific amount of time without being interrupted the team will win.

Therefore, the player kill score does not technically matter in the overall outcome of the game, although engaging the enemy and winning gunfights will naturally be rewarded with an advantageous position in the fulfillment of the game objectives.

Relics

Relics will spawn in a random position of a series of predesigned locations. This way, during the earliest phase of the game, the position of the relics will be unknown to players. Players will have to find them before the enemy team.

If a player dies while carrying a relic, it will **drop to the ground** as if the player had been pushed with a Meteor Strike, available for being picked up by any other player. If the player falls from the map (or is pushed with a Meteor Strike while having no ground beneath their feet), the relic will spawn again in one of the predesigned locations.

If a team manages to save one of the relics in their Meteor Meal, this does not mean it will be completely safe. **Relics can be retrieved from an enemy Meteor Meal at any time**. Therefore, players will have to take defensive or aggressive roles in order to manage to store both relics and enable the carriage of their Meteor Meal.

Meteor Meal

When a player is carrying the Meteor Meal, they will be **unable to use any weapon or gadget**. By doing this, we are aiming to boost teamwork more intensively during this late phase of the game. The high risk introduced for the player carrying the Meteor Meal makes it very unlikely for him to win on his own, encouraging cover and support from teammates.

If a player gets killed while carrying the Meteor Meal, it will be dropped to the ground as if the player had been pushed with a Meteor Strike, available for their teammates to pick up. A Meteor Meal lying on the ground will also enable enemies to retrieve relics from it.

If a player falls from the map (or is pushed with a Meteor Strike while having no ground beneath their feet) while carrying the Meteor Meal, it will spawn again in its original location in the base.

Spawning power-ups

During the game, **power-ups will spawn throughout the map**, in a random manner that is independent to the spawning of relics. Power-ups will spawn in predesigned spawn points scattered across the map, with enough symmetry to not give any significant advantage to any team.

These spawn points are grouped up according to the area or sector of the map they belong. The following design values are calculated for each of these areas:

- T_s : time of the game when the first power-up of the area will spawn.
- T_f : the amount of seconds the system needs to wait before spawning the next power-up of the area.
- T_e : time of the game when the last power-up of the area will spawn.

After the game starts, at minute T_s one random power-up will spawn at one random spawn point inside the area. After T_f seconds, another random power-up will spawn at another spawn point (which will always be different than the last one) inside the area. This next step will repeat successively until minute T_e is reached, when the last power up will spawn and no more will spawn after it.

The type of power-up that will spawn will depend on the corresponding area of the map and the time of the game. The earlier the time is, the less likely it is that the power-up that will spawn will be a power-up weapon. Every time a power-up spawns, the probability for spawning the same type of power-up will be reduced. Given the nature of the power-ups, it is essential to make it easy to tweak and change these probabilities to avoid unbalanced games (i.e. overabundance of power-up weapons, shortage of shields, etc.).

If power-ups are not picked up and the time to spawn a new one in the same spawn point arrives, the system should attempt to spawn it in a different one in the same area. In the rare case they are all occupied because none were picked up, the previous power-ups may be overridden by the new ones.