Secret Location

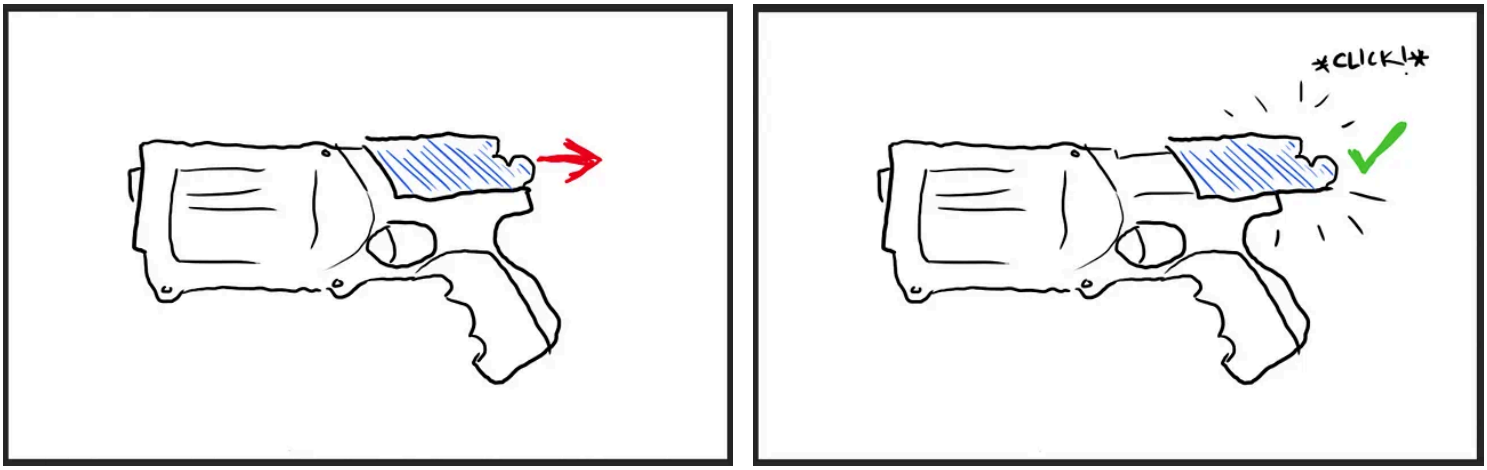
SL Staff Follow 6 min read · Apr 22, 2022

Hello and welcome to our first DevBlog! Today we'll be tackling our first community-voted topic: Blaster Mechanics. This DevBlog will cover all things about the NERF blasters in NERF Ultimate Championship, discussing the various mechanics and some reasoning behind our choices.

Making a NERF game means an obvious attention to detail and realism when it comes to the blasters and authentically capturing the experience of a NERF battle. Adapting those blasters to be both exciting and faithful was paramount for us. We'll be looking into the history and behind-the-scenes research that went into our blasters, focusing on our design philosophy rather than the nuts and bolts of making the game. Now, it's time to dive in already!

Priming and Blasting

Let's start off where we all did: picking up a NERF blaster. There's nothing quite as satisfying as your first-time priming a blaster, the clack of plastic mechanisms locking into place, before aiming and unleashing your first dart! Or maybe you had a motorized blaster, with the purr of the motor heralding the torrent of foam about to be unleashed on your foes (or sibling)!



Early images on priming a blaster.

We wanted to bring that satisfying priming feeling into the game, so manual priming, slam firing, and revving up motorized blasters were always on our radars for game features. Of course, while these features were important for realism, accessibility and diversifying play were also key considerations.

We designed the systems in NERF Ultimate Championship to each suit a playstyle, allowing people to play the way they want. We first developed manual priming to replicate the authentic, real-life blasters. Next, we introduced a few creative liberties to enhance the play experience, namely slam fire as an option for our manual priming blasters. This was our baseline.

From there, we implemented an automatic priming system. This means the blasters will automatically prime themselves after each blast. To help balance this, we control the speed at which the blaster can be fired while auto-priming. You'll trade maximum fire speed for convenience when using auto-priming. The benefit is that both your hands are free, so dual-wielding is possible!

Motorized blasters have a rev trigger and brief rev up time just like their real-life counterparts. This allows players to lay down a hail of darts across the arena with ease! This obviously sounds (and was) a *little too strong* compared to the manual priming blasters. So, to balance this out we looked to rev up time and blast spread. Rev up time is a key point of balance since you'll need to anticipate the approaching opponent and rev up BEFORE you start blasting darts. This gives a slight speed advantage to the manual priming blasters who can fire a dart right away (once primed). Second, the motorized blasters have a wider spread pattern. This dart spread pattern is even wider if players are holding the blaster with only one hand. Holding the blaster with two hands will help stabilize the blaster and tighten up the spread. Where motorized blasters really shine is the sustained firepower. Once revved up, the darts keep coming!

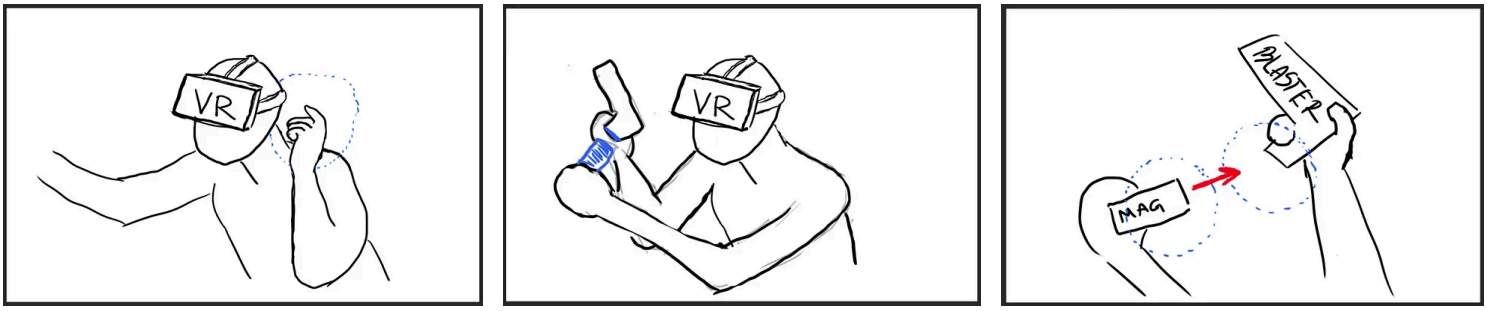
With the careful balance of all these systems, we were able to make each blaster fit a playstyle in the game and ensure no particular blaster is

overpowered and in need of some balancing tweaks. Of course, things might change, as we still have time to play around and iterate more on blasters!

In-game reloading and priming!

Reloading

Listen, nobody wants to spend 10 seconds individually loading 15 darts into a Shockwave RD-15 in the heat of a VR battle! One of the earliest decisions the team made about NERF UC was on reloading, on striking a balance between realism and fun. Keeping a physical action to begin the reloading process was important, but we didn't want it to drag out the game and get bogged down in something like individually loading each dart into the blaster.



Early images on how reloading would work

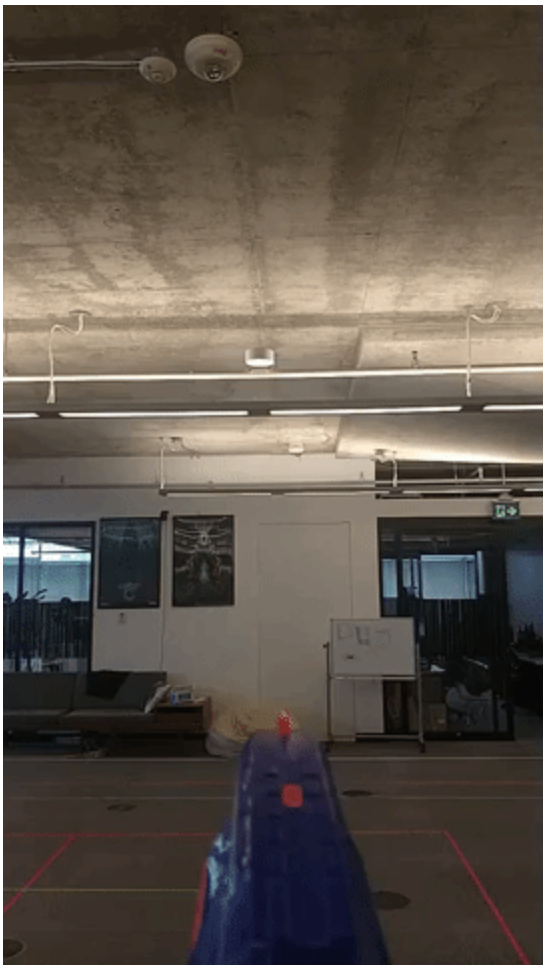
To reload, players will need to grab darts from their backpack by reaching over their shoulder and pressing the grab button. Once you've grabbed a fresh mag or some darts, you'll bring them to the reload point on the blaster. It will then either automatically attach the mag to the blaster or the darts will fill the drum and complete the reload. Allowance is given to our reloading actions, meaning you won't have to panic about lining up the mag or darts perfectly in the heat of battle!

Realism vs Video Game Logic

We've all fired blasters and screamed into the wind about how they *totally* should have hit the mark but didn't. We wanted to retain the authentic feel of a dart in flight, giving it some realistic variance while also keeping it fun and reliable to use in a heightened battle situation.

The system we use has two factors that influence how accurate a darts flight will be — drop and spread. Dart accuracy has exponential instability after a certain travel distance — or, in other words, dart spread increases the further the dart travels through the air. This allows us to guarantee the accuracy of a blaster over a minimum distance while keeping faithful to the sometimes

unpredictable nature of a foam dart. You can stabilize many blasters by holding them with two hands, reducing the amount of spread while firing.



Tracing dart flight with real darts and blaster.

Just like real-life blasters, each blaster has its own unique range, fire rate, and accuracy. Some blasters will be better equipped to take on long-range duels, while others excel in close confrontations. Some favour faster firing rates, others more accuracy. Add into the mix dual-wielding vs. holding a blaster with two hands, and you've got a lot of choices to make!

Conclusion

And that's a wrap! Our first DevBlog done and dusted. We've taken a dive into the design philosophies and systems behind some of the major blaster mechanics in the game, from priming to motorized revving blasters, manual reloading, and elevating that feeling of a NERF blaster fight while bringing it into VR.

Excited as we are? Never want to miss another DevBlog? Be sure to follow us on Twitter, sign up for our Newsletter, and join our Discord once it's public (coming soon!)

See you in the arena soon, champions!

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