

Green Cloaks Blaster Supplement

Version 3.2.0, 2020-02-23

Like all LARPs, Green Cloaks has standards to which weapons are held before they are allowed to be used in the system. In the interest of openness, this document lists the standards applied to foam dart blasters.

Blasters sold as a toy are already held to more rigorous standards than Green Cloaks can hope to enforce. Players planning to simply buy a foam dart launcher from a supermarket need only ensure that it is compatible with system-approved ammunition, and can generally expect that their blaster will be usable at Green Cloaks. This document lays out more complete standards for those interested in modifying a blaster they have bought, buying an enthusiast-grade blaster from an independent seller, or building a blaster from scratch.

Questions and requests for clarification are always welcome at blastersafety@greencloaks.co.uk.

Eye Protection

Whilst eye protection is not a requirement for attending Green Cloaks, it comes strongly recommended. Sports sunglasses, airsoft goggles, visored helmets, welding masks and any number of other characterful pieces of headwear are common to see on the Green Cloaks battlefield.

Toy-grade Versus Modded

The term “toy-grade blaster” covers anything sold as a toy foam dart launcher in the UK, EU or USA, which has not subsequently been modified. Providing such blasters are compatible with system-legal ammunition, they are generally allowed at Green Cloaks. All blasters must be checked, but these blasters are subject to minimal checking.

The term “modified blaster” covers everything else, including but not limited to:

1. Toy blasters which have been modified with spring replacements, rewires, or other performance enhancements.
2. Enthusiast-grade blasters which are not sold as toys, such as the Dart Zone Pro, Spring Thunder, or Worker Dominator.
3. Blasters adapted from devices which were never intended to be toy foam dart blasters, such as the Splatmaster Z100 Paintball Pistol
4. Entirely home-made blasters.

Modified blasters are allowed at Green Cloaks, but are also subject to a yearly chronograph test - this rarely takes more than a few minutes.

Both modified and toy-grade blasters are widely used at Green Cloaks, in approximately equal measure.

Tags

All blasters need to be tagged before being used. We use four different colours of tags to denote different check statuses. Modified blasters need to be re-checked each year, so a different tag colour is issued every year.

Colour	Meaning
Variable	Modified blaster - passed until the first event of each year
White	Toy-grade Blaster - permanent pass
Blue	Advisory Pass
Red	Fail

Ammo

The dart guide can be found in the files section of the Green Cloaks Chatter Box. It summarises the allowed ammo types, their compatibility, and their muzzle velocities. Only ammo of an approved type should be brought to an event.

Players must not harvest spent ammo from the ground and load it back into their blasters. Instead, collected ammo can be dropped off at the Game Organisation Desk (GOD) to be recycled into the system. Various ingame items can also yield crafting resources or other valuables in return for harvested darts.

Blaster Standards

All Blasters

The following standards apply to all blasters, regardless of their history. Blasters should be:

1. Structurally Sound; blasters should generally be in one piece.
2. Safe to Hold; blasters must be free of sharp edges and other hazards.
3. Able to Fire; blasters must be capable of actually discharging a system-legal dart below the system's maximum velocity. For standard "elite" calibre darts, this is 130 feet per second.

A structurally sound blaster is one free of cracks, and held together securely with screws or other fixings. A well-used and obviously worn blaster is unlikely to fail. A blaster that only hangs together thanks to duct tape or cable ties is unlikely to pass.

A safe to hold blaster, aside from being free of obvious sharp edges, should also be generally safe when struck with a LARP-safe melee weapon. Whilst parrying with a blaster is not allowed, accidents happen. Blasters that might catch and tear a stray sword, or the arm holding it, are unlikely to pass.

A blaster with mechanical or electronic faults that stop it firing reliably is unlikely to pass. Similarly, blasters with sticky triggers that cannot stop firing will also not pass.

Cosmetic Modifications

Cosmetic modifications are accepted at Green Cloaks. A blaster may still qualify as toy-grade if its only modifications are cosmetic, however cosmetic modifications must not compromise its structural soundness, render it unsafe to hold, or stop it from firing.

If a blaster's tag has been painted-over, it will need to be replaced. There is no issue with removing a blaster's tag to paint it, then asking for a new one once the work is completed.

Blasters painted in realistic colours or with realistic bodywork are allowed, however participants should be aware of their responsibilities under The Violent Crime Reduction Act covering realistic imitation firearms. This document is not an appropriate place for legal advice, but when in public the blaster should generally be kept in a bag and hidden from view.

Performance Modifications

A modified blaster with no electronics in it, which is otherwise safe to use, is subject only to the muzzle velocity restrictions laid out below:

Ammo Type	Max Velocity (fps)
Elite	130
Mega	95
Rival	110
Demolisher Rocket	65

These are also summarised in the dart guide. All of these velocities are based on a 1-joule kinetic energy limit.

Adjusting the Velocity and Re-testing

If a blaster's muzzle velocity is too high, it is generally possible to re-test it after adjustments. A work table and some tools may be available, however this is not guaranteed. Testing a blaster, swapping the spring or battery, then re-testing is entirely acceptable.

Adjustments should not be easily reversible without using tools and/or spare parts. Attaching a barrel extension, for instance, can often reduce a blaster's muzzle velocity by a few feet per second, but it is straightforward for a naive operator to remove that extension during play. Barrel extensions are not usually an acceptable way to reduce muzzle velocity.

Rewiring and replacing electronic components

Modifying a flywheel blaster usually involves rewiring it. Rewiring a blaster is frequently a player's first hobby electronics project, and is a good introduction to the world of soldering irons and microswitches.

Unless a blaster is rewired by a system-approved outfit, currently either UKNerfWar or Blastersmiths UK, the rewire needs to be checked before the blaster can be used. The most efficient way to do this is to email photographs of the work to blastersafety@greencloaks.co.uk before attending an event.

The photographs should show the quality of solder joins between all components, and include a parts list including the motors, microswitches, wire gauge, battery and battery connector. The blaster safety team will check that all the blaster's components are appropriately rated, the circuit is well-constructed, and that the junctions are properly insulated.

For current-carrying wire, 18AWG is usually preferred at a minimum, and heat-shrink tubing is the preferred insulation. Hot glue can be used to help keep wires tidy, but hot glue must not be used as insulation. Wires should remain inside the blaster; blasters with wiring routed around the outside of the receiver are unlikely to pass. For more complex builds, circuit diagrams are appreciated.

Not all battery types are allowed at Green Cloaks. In particular, TrustFires and other similar minimised lithium polymer batteries are not allowed, and neither are Nickel-Cadmium cells. The battery diagram in the appendix summarises this.

Most rewires will involve using a rechargeable lithium pack. Lithium polymer batteries must be appropriately housed inside blasters, usually inside a plastic shell, to protect against mechanical shock.

If an electronically modified blaster has not been checked before an event, it will need to be opened on site at the event to be checked. Whilst we will make every effort to accommodate these blasters, we cannot guarantee that there will be time to complete these checks. If there is no time to disassemble such a blaster on-site, then it will not be approved for use at Green Cloaks.

If there is any doubt about any combination of components, we are always happy to answer questions if they are emailed to blastersafety@greencloaks.co.uk.

Adjustable Power Outputs

Blasters whose muzzle velocities can be fine-tuned using, for instance pulse-width modulation, are still acceptable, providing the velocity cannot be set to an unsafe level by a naive user. If the adjuster is mounted to the outside of a blaster, then the blaster must be safe even at its maximum possible velocity. If the adjuster is essentially impossible to access without tools, for instance because it is inside a compartment screwed-down with a phillips-head screw, then the operator may tune their blaster to an acceptable level.

If a chronograph is available and there is no queue to use it, then players are welcome to fine-tune their blaster to an acceptable level before asking for an official test.

HPA and CO₂ Builds

Blasters based on external high-pressure air tanks, external compressors, and other compressed gas are currently banned at Green Cloaks, though may be subject to small-scale testing. This ruling may change in the future.

Enthusiast-grade and Home-Made Blastasters

Enthusiast-grade blasters such as the Dart Zone Pro and Caliburn are, when properly assembled, subject to the same restrictions as modified blasters. If their muzzle velocity is acceptable and their construction is sound, they can be approved for use.

Similarly, blasters built and designed from scratch by players will follow the same rules - if a player wants to design and build their own foam dart launcher, they are welcome to do so, though should email their plans in before starting construction, and such blasters will be judged on a case-by-case basis.

FAQs

Why aren't Vortex and Ultra rounds on the list of approved ammo?

Neither is well-supported. The Vortex line only lasted for a few years before being discontinued, and we are wary of the Ultra line following suit. Having standards in place for a discontinued line generally makes the system more confusing, less accessible, and harder to maintain.

I've just seen this new blaster announced! Can I use it at Green Cloaks?

Probably. If it is announced as a toy foam dart launcher, and is chambered for an ammo type which is already approved, then it is likely to be allowed. If a blaster is capable of performing above and beyond any blaster on the market, and we have concerns over its effect on the game's balance, then we may not allow it. Specific announcements will be given for such blasters.

Can I fix a bayonet to my blaster?

No. Even if the bayonet is constructed like a LARP-safe melee weapon, it still has a blaster attached to it. Melee weapons and blasters must be separate entities. We have experimented with bayonets in the past, but ultimately decided not to allow them.

Is this blaster a pistol, a rifle, a heavy weapon, a shotgun, or...?

This is a rules question - you should email rules@greencloaks.co.uk. Whilst the blaster safety team will make every effort to help out in classifying a blaster, the rules team are the ones who decide what classification is suitable in the face of any uncertainty.

If you are building a blaster from scratch and its classification is not clear, we will work with the rules team to pick an appropriate classification.

What's the difference between a disposable lithium battery and a lithium polymer battery?

The two types of battery simply work on different chemistries. Both use lithium so both are, quite confusingly, referred to as lithium batteries.

By "disposable lithium", we mean batteries like the Duracell Ultra Lithium or Energizer Ultimate Lithium lines. You can generally buy them in supermarkets alongside regular alkaline batteries, and they can be used just like any other household battery. You may find a small performance benefit from using them, and their lighter weight might improve handling. A toy-grade blaster running on disposable lithium cells is still toy-grade.

Why can't I use a TrustFire, UltraFire, or other AA-form-factor LiPo?

We don't know their safe discharge rate. A cuboid LiPo pack will usually have a safe discharge rate printed on the packaging. This means that we can tell whether or not your

pack can safely supply your motors. TrustFires and UltraFires don't. The discharge rate differs drastically between brands, and keeping track of this would be very difficult with very little benefit to the system. LiPo batteries in general have very high discharge rates, but exceeding this is a fire hazard.

Someone told me that modified hoppers aren't allowed, but I don't see any mention of it here or in the rulebook. What's going on?

Modified hoppers are allowed, providing the blaster is otherwise safe. When Rival blasters were first released with the Artemis and Zeus, we were concerned that a hopper-fed Rival blaster could easily dominate the battlefield; back then, the rulebook had no "superheavy" category. Now that the superheavy category exists, we are less concerned with modified hopper-fed rival blasters.

If someone builds a hopper-fed blaster that manages to dominate the field in spite of the superheavy weapon rules, the rules and crafting teams may convert that blaster into a crafted item with additional requirements. The blaster's designers and crew are welcome to consider this a badge of honour.

Appendices

Battery Guide

	Allowed	Banned
Standard Size	<p>Off-the-shelf Alkaline Label: Alkaline</p>  <p>Off-the-shelf Rechargeable Label: NiMH</p>  <p>Off-the-shelf Lithium Label: Lithium</p> 	<p>Minimised Lithium-Ion Brands: Trustfire, UltraFire, etc Label: Li-Ion, LiPo, LiFe, etc</p>  <p>The quality of these cells varies wildly both between and within brands. We simply can't keep a consistent list of "good" brands.</p>
Custom Packs	<p>Full-sized Lithium-Ion Brands: Zippy, Turnigy, etc Label: Li-Ion, LiPo, LiFe, etc</p>  <p>NiMH Pack Label: NiMH</p> 	<p>Nickel Cadmium Label: NiCd, Ni-Cad</p>  <p>These are illegal in the EU, but still fairly easy to import. If you buy some custom kit from a non-EU country, double-check the pack that comes in it and, if necessary, buy a replacement NiMH</p>

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https://commons.wikimedia.org/wiki/File:Lithium_batteries_9v_AA_AAA.jpeg

https://commons.wikimedia.org/wiki/File:9.6V_Ni-Cd_Battery.jpg

https://commons.wikimedia.org/wiki/File:Alkali_battery_5.jpg

https://commons.wikimedia.org/wiki/File:LIPO_zippy.JPG

[https://commons.wikimedia.org/wiki/File:Lithium-ion_cell_\(18650\).jpg](https://commons.wikimedia.org/wiki/File:Lithium-ion_cell_(18650).jpg)

https://commons.wikimedia.org/wiki/File:Eneloop_6420.jpg

https://commons.wikimedia.org/wiki/File:Nickel_Metal_Hydride.jpg

Changelog

3.2.0 - 22-02-2020

Document released, at a version number aligned to the core rulebook.