

# Meson Weapon

Development of the [Occhestan Republic](#) after its exodus from the [Lorath Matriarchy](#), Meson weaponry is the pinnacle of their non-Aether weapon design. Meson weapons, as the name implies, fire high-density bolts of relativistic mesons that do not interact with matter and can therefore pass through armor with ease, rendering even superheavy armor nearly useless against the weapon. The damage of the weapon is caused by the controlled decay of the mesons into other high-energy radiation. Meson weapons do not emit waste radiation in the process of firing nor does the beam itself emit such radiation as it travels. While the effects of the weapon are recognizable as meson induced, the radiation burst is not unique to the weapon and its signature varies with beam energy. The energy of these beams sometimes has a bluish-white hue.

## Operation

Note that the weapon cannot condense part of the plasma and leave the remainder for further shots; it must affect all of it at once. This puts a firm upper limit on the rate of fire since the system can only heat the matter at a given rate and also means such a rate of fire is fairly independent of beam energy.

The specific plasma energy at which the field forces the condensation determines the average energy of the beam mesons and therefore their lifetime, which controls the spatial location that the beam will release its energy. Due to uncertainty in beam energy, the particle decays over a short time interval, causing the energy burst to take on an elongated beam form around the targeted location. Since the weapon requires no acceleration system the weapon itself is actually fairly compact compared to most main weapons systems, although its associated capacitor arrays and field generators take up a fairly significant amount of the ship's internal volume.

The mesons themselves are not particularly shielded penetrating but their design allows for immensely particle-dense beams that can easily overwhelm shields due to the tiny cross-section of the beam at the point of impact. Higher meson densities can be achieved through either higher plasma energy densities or superior focal systems. Subspace capable versions (denoted with a -S at the end of the weapon designation) exist that can encase the bolt in a subspace field allowing for both FTL beam propagation and making it fairly shield penetrating (like all such subspace-encasing weapons). Subspace effects cannot be generated if the firing ship currently has a GNF system engaged.

If desired, the field system can condense the plasma into other particle types, such as neutrons or photons. It cannot condense the plasma into antimatter unless the original mass was composed of antimatter. In the more powerful weapons, the neutron particle bolt it can generate can be particularly devastating since the massive beam density and energy can easily punch through-hull armor. Though this does have high-energy secondary radiation from the impact (and the neutrons themselves are high-energy radiation) overall the neutron bolt is less destructive to the non-sensitive equipment (sensitive equipment being the crew, computer system, and such) allowing for follow-up boardings. Due to the nature of meson decay, other beam components (generally neutrons) are used when weapons fire in "spread" modes. Also, note that due to the field established by the system sensors cannot scan the system with any accuracy.

## Legal Notes

Meson weaponry is strictly military use. Possession of components or technical documentation on any Meson weapon without explicit authorization for such possession is considered a High Crime against the State and standing orders exist for extreme sanctions against any individual or body know or suspected to have such items or knowledge.

## OOC Notes

- Unknown Author. Nesting and Linking was fixed by [Andrew](#). Unable to find the approval thread on the forum. 12/22/2020.

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