

Preface

Weapon balance has some of the longest reaching effects in mwo. A 10% cooldown quirk on an underperforming variant can be nice but a mostly forgettable change. A 10% change in the cooldown of a weapon system can have knock on effects on **all** the mechs in the game, whether that be QP (with tiers 1 to 5 being differently affected), Solaris (changing the balance within divisions 1 to 7) or FW (altering the eternal tug of war between Clan and IS).

To try to get a handle on how viable each weapon system is I have tried to rank them against their peers*. That way things are more digestible and it helps reflect one's thought process when they pick up a mech specialized in that weapon type.

*The categories are: IS Energy, IS Missile, IS Ballistic, Clan Energy, Clan Missile, Clan Ballistic

I have ranked weapons as follows:

S = Overpowered

A = Very solid

B = Solid

C = Okay

D = Underwhelming

E = Very Underwhelming

Anything C rank or above is a 'passing grade'. With "S" being any weapon system that is too strong, "A" being strong defining weapons for many builds, "B" being worth taking on many builds, C being typically a more niche (but functional) pick.

Whilst I think there's a lot that can be said about the balance between some of the most prolific and potent weapon systems, I think this approach can sometimes get a little too focused on just a handful of weapon systems with small conservative changes doing little to meaningfully change how most average pilots actually play or see the game.

I think that more variety and flavour can be brought to the game by touching up the weapons which get 'failing grades'. We add more tools to the toolbox (that people actually want to use) and that way we make the game more varied and interesting.

So the main focus for my balance suggestions is to provide relatively humble suggestions that increase the range of viable options available to players without trying to delve too deeply into the nuances of weapons at the highest levels of play.

Balance suggestions are done with QP primarily in mind.

Balance suggestions are done in a broad sense, I am not going to fixate on all the exceptions or top tier mechs, rather the weapon systems should be considered as a whole based on what mechs it'd generally make sense to take them.

(Hopefully a certain degree of common sense can be relied upon. Taking any weapon requires sufficient hardpoints/tonnage/quirks etc etc..)

Weapon Ranks

IS Energy

A: mpl
B: ml, erml, sl, er sl
C: lpl, ll, er ll, ppc family, flamer
D: spl, tag
E:

IS Missile

A:
B: mrm family,
C: srm family, ssrm family, lrm family, narc
D: rocket family
E:

IS Ballistic

A:
B: hgauss, rac2, ac2, lb10/20
C: gauss, rac5, uac10
D: lgauss, ac5/10/20, lb2/5, uac5/20, mg, lmg
E: uac2, hmg

Clan Energy

A: ppc
B: ml, mpl, hml, ll, hll
C: micro family, sl, hsl, lpl, ltag, flamer
D: spl, tag
E:

Clan Missile

A: atm family
B: srm family, ssrm family
C:
D: lrm family, narc
E:

Clan Ballistic

A:
B: gauss, lb2/10/20, uac5/10/20
C: ac2/5/10/20, lb5, mg, lmg
D: uac2, hmg
E:

IS Energy

A rank:

MPLs are the go-to weapon for most IS lights & mediums because of their good dps and many other good qualities (short duration, good damage per heat, etc etc).

B rank:

For the most part, all the regular and extended range **medium and small lasers** are simple but fairly solid choices. You don't invest much tonnage but you get good damage, range and heat efficiency for what you invest.

C rank:

Larger IS energy weapons require a lot more tonnage but what you get for that investment is relatively underwhelming. Whilst they can perform quite well on the right mechs with the right builds, my gut says that they typically are a bit too hot for the work they do. IS DHS are quite big, so finding the tonnage and slots to take these weapons typically means you have to go all or nothing with these weapons.

Flamers provide a niche role to the game (spending heat to try to shut down very nearby enemy mechs). They are a niche pick, though they do their job. So they are fine.

D rank:

SPLs really struggle to be worth taking as dedicated pulse brawlers (mpls have much more upfront damage and more range) or as backup weapons (smalls better for less tonnage).

Tag is a very situational tool.

It **momentarily** allows you to target stealth mechs, which means you need a lot of face time to get and land your lock*.

It allows you to target stealth/ecm mechs at longer ranges, however you need even more facetime to actually land your locks* at longer ranges.

**Why use tag if you are using direct fire weapons? Just shoot the mech!*

If you are hoping to use streaks with tag, then nearby ecm/stealth can still jam the mech, negating both tag and the ability to get locks.

It can help allies get indirect locks, however it has a lot of face time and you have to hope your allies actually have indirect weapons... (and well... aiding indirect locks is not exactly making the game that much fun for the enemy...)

IS Missiles

B rank:

MRMs might not excel at any one thing, though they have very good useability, making them fairly solid weapons (and is thus a common staple of many IS mech builds).

(Useability: They only require few missile hardpoints, they offer a fair amount of damage and heat efficiency for the tonnage invested and they aren't too picky about what range they can be used at)

C rank:

SRMs share a fair bit of overlap with mrms, however they are much more hardpoint hungry and have a much more restrictive range profile. They are fine, though they don't always feel worth the specialization.

SSRMs are quite heavy and hardpoint hungry, all to do a similar job as srms just with a required lockon. Whilst they could easily be D rank, with the right quirks (things like range & cooldown) they can be a fairly potent dps weapon.

LRMs are half decent when used directly (and they can delete mechs for free indirectly if you have the time/locks). On paper they are 'okay', though they will always be very tricky to 'balance' due to their ability to fire indirectly.

NARC balance is often downwind of lrm balance due to indirect fire. A single narc can be used to utterly wreck an assault on Polar highlands.. but on the flipside if a narc is used only to spot for direct fire it's really underwhelming compared to just taking a couple of uavs.

D rank:

The usefulness of **rockets** depend very much on the length of the match, they offer very good, cheap damage early on but their usefulness starts to pail over time compared to continuous weapon systems. For QP they are fairly underwhelming, though for a niche weapon that isn't fully suited to that gamemode, this is fairly okay.

IS Ballistics

B rank:

HGauss a tremendous amount of pinpoint damage quickly to the target. Thankfully this is balanced out by the many downsides to the weapon (11 slots, weapon explodes, inefficient ammo, charge mechanic).

Rac2 good range, ammo, heat efficiency and dps for the tonnage invested, this is mostly balanced out by the facetime and eventual jams.

Ac2s good range, dps and heat efficiency all for one slot. Lots of face time, bleh ammo economy, it is in close competition with the rac2 (until the rac2 jams).

LB10/20 simple and reliable shotgun damage.

C rank:

IS Gauss has mostly the same stats as clan gauss, however IS tech isn't so well suited to sniping and it being 3 more tons is an extra kick in the teeth that often makes it hard to justify

Rac5 does still offer pretty good dps, it however struggles to match up to the rac2 due to its heat efficiency and shorter time to max the jam bar.

Uac10 offers very good burst damage, however the heat and jams make it unreliable and inconsistent.

D rank:

LGauss is a long ranged, cold ac10, the fiddly charge mechanic, longer cooldown and lower damage, it is generally not worth the hassle for its upsides.

Ac10/20 are generally outclassed by their lbx alternatives. AC10 is almost never used. AC20 sees occasional use due to legacy quirks and only needing 10 slots.

UAC20 has good burst damage for what you invest, however the heat and jams both make this close ranged weapon unreliable, inconsistent and risky to use.

Ac5/Lb5/Uac5 are generally not worth the additional tons and slots when compared to the heat efficient and slimmer ac2's/rac2's (who provide similar dps).

LB2 does offer improved heat (and crit/range) compared to the ac2, however the increased slot investment is very steep for these improvements.

mg/lmg lots of face time, slot & hardpoint hungry with middling dps. IS tech struggles to find many mechs to turn into mg boats, they also have to pay twice the tonnage for it. Compared to simple alternatives like small lasers, these backup/finishing weapons are often hard to justify.

E rank:

UAC2 is a bigger, larger and hotter ac2 that offers marginally better dps. With so much strong competition for long range dps, the hot and inconsistent uac2 just doesn't cut it without very strong quirks propping it up.

Hmg doubles down on the tonnage issues of IS mgs. The ammo is terrible, the range is terrible, the dps isn't even that amazing compared to regular mgs.

IS Balance Suggestions

Energy:

- **Larger IS energy weapons need a little bump to be more viable.** I would personally suggest **slightly reducing their heat**, as that would have a knock on effect on the number of sinks needed, thus allowing larger build diversity and reinforcing the role of IS to be the (tanky) dps faction.
- Large lasers are almost B grade already for me, so they don't need much help.
- **Large pulse doesn't** feel worth the 2 ton upgrade, they share a lot of overlap with ermls and generally don't **seem worth the specialization**.
- **PPCs are almost never taken** on any mech that doesn't have quirks for them (and even those mechs aren't super exceptional). **Give 'em some love**.
- **Small pulse struggles to find a niche for itself.** I think it lacks upfront damage, knife fighting is about quick decisive damage, not damage over time.
- **Tag needs to be more consistent.** Optimally, I would like it if tag would allow a mech to override all ecm jamming effects and lock on to their tagged target, making tag a truly consistent way to get locks.

Missile:

- Srms could do with a bump to reinforce their specialization over mrms. Slightly tighter spread or more reasonable missile health would be nice.
- Streaks shouldn't rely on specific (quirked) mechs to be viable, I wouldn't mind giving them a smidge more range (300m?).
- Lrms are a nightmare to balance for due to their indirect fire. So either leave lrms alone, they are fine enough where they are, or make them more akin to atms (low arc) and give them some buffs to compensate.
- Narc is tied closely with lrm, unless you radically change how either works, then leave narc as is. (narc 'could' do something else like only providing intel for the user or no intel and faster/instant targeting data/locks, or just a damage/spread buff.)

Ballistics:

- Consider **changing uac mechanics to be more consistent**. e.g. Double tap has 2 times the regular reload time and they don't jam.
- Also consider reducing heat on uacs (particularly uac2)
- Consider giving IS mgs some more meaningful advantages over clan tech.
- Many weapons (Gauss, lgauss, ac5, lb5, ac10, ac20, rac5) need some tweaks to make them stand out.
- To rattle off some ideas: Reduce gauss cooldown, remove lgauss charge mechanic, reduce lb2/ac5/lb5/uac5/ac10 cooldown, increase rac5 jam jar fill time, remove ac20 ghost heat.

Clan Energy

A rank:

Clan **PPC** is one of the few clan weapons that does great long range damage in an instant. It fits very well with their longer ranged playstyle and is a mainstay on many clan mechs from lights to assaults.

B rank:

Clan **mediums, medium pulse, heavy mediums, larges and heavy larges** all still provide relatively good damage and range for relatively little investment. They are quite well balanced at the moment however their low heat efficiency (except for heavy mediums) makes them rather toasty for smaller clan mechs.

C rank:

Whilst **micros, smalls and heavy smalls** aren't bad, they also don't feel worth taking and getting really close to the enemy (clan are relatively squishy, not so happy up close). That being said, they still do pretty good damage and they aren't bad backup weapons.

Clan **LPL** feels a bit lacking, it's heavy like a ppc without such great handling, it's sluggish like mediums and larges without being so lightweight.

Light Tag has the usual consistency issues, though at least it's only half a ton.

Flamers provide a niche role to the game. They do their job, for half a ton they are 'fine'.

D rank:

Clan **small pulse** has the same issues as IS small pulse. Knife fighting is about quick decisive damage, not damage over time.

Tag is a very situational tool that lacks consistency.

Clan Missiles

A rank:

ATMs provide large alphas of homing missiles with good heat efficiency and they are not very hardpoint hungry. ATMs feel like they are a step above most of the missile competition.

B rank:

Whilst clan **SRMs** are just as hardpoint hungry and specialized as IS srms, the faction typically has a lot more hardpoints to play with and they weigh half as much. A staple on many clan medium mechs.

Clan **SSRMs** might be hardpoint hungry and slow firing. Their weight, range (and ability to be fired with atms) makes them relatively popular.

D rank:

Clan **LRMs** suffer even greater issues with consistency due to them streaming out, giving much more time for ams and cover to counter them (if they are available/nearby).

They and **Narc** suffer the usual issues with balancing for indirect weapons fire.

Clan Ballistics

B rank:

Gauss shares a lot of common ground with clan ppcs, good long ranged damage in an instant (for very little heat). They have the usual drawbacks to gauss weaponry and due to their ghost heat penalty being linked with ppcs they can't add their damage so easily to an energy build (whilst still minimizing face time).

LB2/10/20 Simple and reliable shotgun damage.

UAC5/10/20 less slots for more burst damage. Whilst the heat is steeper and jamming a common issue, uacs fit nicely with most larger clan mechs.

C rank:

AC2/5/10/20 bigger than uacs and hotter than lbxs, who still stream shells at the enemy. Clan regular autocannons 'can' get the job done but why would you ever pick them?

LB5 why waste the tons and slots when you could just take lb2s instead?

mg/lmg whilst they have a lot of face time (clan mechs generally don't like this), they are lightweight and there's plenty of lights boating ballistic hardpoints. They can be really scary.. they can also lead to a very quick death. They are fine where they are.

D rank:

UAC2 with there being strong competition in long range dps ballistics and a lot less quirks like those seen on IS mechs, clan uac2 struggles to merit its hot and unreliable ranged dps.

Hmgs, the dps increase is not worth the additional tonnage invested or the inefficient ammo.

Clan Balance Suggestions

Energy:

- Clan energy brawling doesn't feel quite like it used to. I wouldn't mind seeing some small buffs to the small and short ranged clan weapons.
- Though **if you have to buff any clan weapon, it would be the clan small pulse.** Knife fighting is about quick decisive damage, not damage over time. As such, **clan small pulse needs more upfront damage to be worth taking.**
- **Clan large pulses could do with some love as well.** I'd suggest either looking at their heat or duration.
- **Tag needs to be more consistent.** Optimally, I would like it if tag would allow a mech to override all ecm jamming effects and lock on to their tagged target, making tag a truly consistent way to get locks. (Maybe make it so only full tag is more consistent?)

Missile:

- Reduce **atm** volley sizes by giving them ghost heat akin to mrms (who also can take large launchers).
- **Clan lrm has the usual issues with indirect weapons.** Their stream of missiles help make them a lot less consistent but that's only if there's cover/ams nearby. So for the most part I would either leave them alone or I'd change their arcs to be much more like atms.

Ballistic:

- **Regular clan autocannons should shoot solid slugs**, that way they'd have a reason to exist.
- **I think the UAC2's jamming values (jam chance &/or jam duration) are a tad too high**, it should trade heat for dps (rather than more heat for less dps).
- Consider also **changing uac mechanics to be more consistent.**
e.g. Double tap has 2 times (or even 3 times) the regular reload time and they don't jam.
(Other ideas for uacs: Make double tap a positive result. I.e. Jam only happens occasionally to stop the 2nd projectile in a double tap.)
(If you double tap, the cooldown is longer. So can have either regular AC rof or double tap with slower rof.)
- **LB5/AC5 need a little help** with their cooldown to be worth taking over burst dmg or long range dps.

Final thoughts

Weapons like atms & streaks don't have good indirect fire like lrms but **their consistent damage is still difficult to balance.**

They need good dps to offset their damage splatter and need for locks but consistent dps becomes more and more valuable the smaller the hp pool a target has.

Ideally (in my mind) lock ons would miss more often against smaller targets, that way they deal consistent dps against all targets (rather than just nuking light/medium mechs).

Heat efficiency and face time is a great way to balance weapons against one another, however this carefully balanced meta game is often **undermined by consumables**

Cool shots give mechs effectively a lot more heat capacity when pressured (**making hot builds harder to rush down**) and they can be used to bail out a pilot who goes over 100% making the negative effects of pushing your mech a lot less relevant to the game.

At least cool shots feed into the heat mechanics of the game and they require you to expose your mech and to take risks to get your damage in. Artillery strikes on the other hand can do an incredible amount of damage (randomly!) nuking smaller mechs (like streaks/atms!) for no heat (at any range!) and little to no exposure (just point and click!). **The risk reward ratio for artillery strikes is insane** when compared to almost any other weapon system, whilst you can only take 1-2 of them they effectively act like RNG rockets that can swing entire battles.

Using mechs for intel gathering comes with a lot of risk (of getting run down or shot at) and even then you can only hold 1 lock at a time (unless you use narc). Even if they don't deal damage, **UAVs also play their part in watering down the info gathering minigame of mwo**, providing a relatively risk free way of holding multiple locks, allowing mechs to be much more easily lrm'd to death or for (atms/streaks) to more easily chase down smaller flanking mechs.

All in all, you can fiddle with weapon balance all you like, consumables play a huge role in watering down the nuances between different weapons and playstyles (**for those who are happy paying the cbill cost every match**).

The way heat, tonnage and slots all feed into one another and balance against one another will matter more when you don't water the game down with things that only cost you skill points (and the effectiveness of your cbill grind).

Smaller faster mechs can do more when their job isn't so easily surpassed (with a robot) and their flanking is so easily undermined (by said robot). Heat management becomes a lot more important when you can't just flush your heat problems away. How weapons deal damage (at what range and investment) matter more when everyone doesn't have a RNG nuke in their pocket.

So many factors like hardpoints, slots, tonnage, damage and heat all feed into one system that helps balance it all out, the meclab. As far as weapon balance goes, I think that we should remember that **the meclab should be the star of the show, not the skill tree.**