

4.0 POSes

Player Owned Starbases come in three sizes, small, medium and large. Each takes twice as much fuel to fly as the next smallest type. In general small POSes are fragile enough that they should only be flown in empire or in highly secure space.

Player Owned Starbases have several functions:

Service
Defense
Deterrence
Speed Bump

4.0.1 Service:

A Service POS is one whose primary function is research or manufacturing. These are normally small or medium.

4.0.2 Defense:

A Defensive POS is set up to protect something. Everyone's first instinct is to drop as many guns as possible on one of these. I've seen at least half a dozen capships killed by smallish gangs while cynoing into POSes. Stop and think, what am I trying to protect? What size ship is likely to attack what I am trying to protect? Can the weapons on my POS hit the ship types that are likely to attack? Sure a large artillery battery has great alpha, it's not going to be able to hit a HAC bumping a Rorq away from a force field.

The best idea I've seen for protecting a jump in point was deployed on a Red Alliance moon mining POS. RA had literally a ton of Sensor Damps and EWAR supplementing a selection of small and medium guns. Not the most effective against a Dread in siege but nothing was going to be able to get a lock onto their Rorq! This approach can also be taken with several types of medium POS. Remember to put some guns on your POS even if you're packing the thing out with EWAR!

4.0.3 Deterrence:

A Deterrent POS is one that costs more than it's worth to attack. These will normally be packed out with guns, neuts and hardeners. The idea here is for the POS to inflict the maximum amount of loss in time and isk to an attacker.

A couple things can help enhance deterrence. Capship pilots hate hitting hardened POSes. Most POSes have their hardeners in nice neat rows so that any covops pilot can work out what's active. If you anchor 3 of each type of hardener in a jumbled cube, the only way to figure out what is active is from the POS management screen. An adequately hardened POS will have at least 2/2/1/0 hardeners on its 0/0/25/50 resist.

It takes on average ten large short range guns focusing fire to break the tank of a Dreadnaught in siege. As a Dread in siege can neither move nor receive remote repping during the siege cycle, energy neutralizing batteries can be particularly deadly. In general > 2 batteries will have an enhanced deterrence effect.

4.0.4 Speedbumps:

A speedbump POS comes in three types. The first type is a heavily hardened POS. For a minute forget your shield resist percentages. The first hardener you put on means it takes damage on that resists 25% longer to put the POS into reinforced, the second 20% and the third 12.5%. A triple hardened resist will take 68.75% longer to be put into reinforced. A 40 million shield HP Amarr POS triple hardened will take about 6 dread/hours to go into reinforced.

A proper speedbump will have 3-4 online neuts and several online warp disruptors and a token amount of online guns. This type of speedbump is designed to give you the maximum time to arrange a hotdrop of the enemy fleet and render them in the most disadvantageous situation possible when you do hotdrop.

A naked speedbump simply has 3 of each type of hardener. This is an older POS setup, dating from before the introduction of neut batteries, when Dread fleets were smaller. A Dreads siege cycle takes ten minutes. A system with fifteen POSes will take a minimum of 150 minutes to siege. If the attacking Dreads are forced to take two cycles to reinforce a POS, that's a minimum of 300 minutes, five hours, to siege.¹ Or, you could pay a bit more, slightly increase your fuel costs, and add a couple neuts and scrams for a bit more annoyance and maybe get a kill or two.

The third type of speedbump is a Gallente POS designed for efficient repping when it comes out of reinforced. A Gallente POS has only 35,000,000 shields, the lowest of any POS in the game. A Gallente POS has a natural 50% kinetic resists and 25% thermal resist. Unlike hardeners, natural resists do not go offline when a POS is reinforced. Almost all Dreads do at least some damage on either the kinetic or thermal resist. This type of speedbump is designed to have the fastest possible rep time when coming out of reinforced while taking as long as possible to go down. .

A word of warning, Gallente POSes are horrible. Railguns are PG heavy and the Gallente POS lacks powergrid. Blasters have extreme range issues when fitted with antimatter ammo. Even with the Amarr and Minmatar speedbumps, a more active defense may score one or more capital ship kills. Speedbumps are generally only recommended if you are facing an enemy in a vastly different timezone rendering it impossible to get gunners to the POS. Or to put it more bluntly, I've never actually seen a speedbump POS used effectively but I hear that it can be done.

¹ This approach does not work so well against large power blocks. A large enough capital fleet can split into two or more and still one cycle POSes.

4.1 POS Choice

LARGE POSes Ranked in Order of Powergrid				
Race	Powergrid	Shields	50% Resist	25% Resist
Amarr	5,000,000	40,000,000	Explosive	Kinetic
Minmatar	4,375,000	45,000,000	EM	Thermal
Gallente	3,750,000	35,000,000	Kinetic	Thermal
Caldari	2,750,000	50,000,000	Thermal	Kinetic

Other than as a speedbump Caldari and Gallente POSes are useless. Both POSes lack powergrid. Railgun batteries are extremely powergrid hungry. Blaster batteries, when loaded with antimatter ammo, can easily be outranged with proper Dread placement.

So now that you have a POS what guns do you want to put on it. Well for starters don't put on a cruise missile battery, each battery does less DPS than a single cruise launcher on a Raven! That said you should almost always put on guns of the type that get bonused by the POS.

4.1.1 Medium Guns

Name:	Torpedo Battery*
Powergrid:	80,000
Alpha	1125
DPS	62.5
PG Nominalized Alpha	1125
PG Nominalized DPS	62.5
Range:	250+ km
Ammo	Bane Torp

Torpedo's have the lowest PG requirement so we'll figure nominalized alpha and dps as PowerGrid Requirement / 80,000.

Name:	Medium Artillery Battery
Powergrid:	202,500
Alpha	3383
DPS	190
PG Nominalized Alpha	1353
PG Nominalized DPS	76
Range:	250+ km
Ammo:	Fleet EMP L

Name:	Medium Autocannon Battery
Powergrid:	165,000
Alpha	2175
DPS	490
PG Nominalized Alpha	1055
PG Nominalized DPS	238
Range:	60 km (10 + 50)
Ammo:	Fleet EMP L

Name:	Medium Beam Battery
Powergrid:	225,000
Alpha	1861
DPS	207
PG Nominalized Alpha	661
PG Nominalized DPS	73.5
Range:	250+ km
Ammo:	Amar Navy MFQ

Name:	Medium Pulse Battery*
Powergrid:	157,500
Alpha	2566
DPS	325
PG Nominalized Alpha	1303
PG Nominalized DPS	165
Range:	70km 60+10
Ammo:	Amar Navy MFQ

4.1.2 Large Guns

Large guns generally can't hit anything smaller than a capship. Large long range guns lack the DPS to kill a Dread before it can exit siege and are not dealt with here.

Name:	Large Autocannon Battery
Powergrid:	270,000
Alpha	4048
DPS	639
PG Nominalized Alpha	1199
PG Nominalized DPS	189
Range:	75km 15 + 60
Ammo:	EMP XL (not faction) [@]

Name:	Large Pulse Battery
Powergrid:	315,00
Alpha	10,820
DPS	922
PG Nominalized Alpha	2747
PG Nominalized DPS	234
Range:	100km 80 + 20
Ammo:	Dark Blood MF XL

4.1.2.1 Gun Range and Tracking

Projectile Statistics (Base)					
Name	Optimal	Falloff	Tracking	Scan Res	Sensor Res
Small Autocannon	10.50km	42km	0.0402286	125m	250 mm
Small Artillery	187.50 km	168 km	0.00704	125m	250 mm
Medium Autocannon	15 km	63 km	0.03456	400m	75 mm
Medium Artillery	280.50 km	246 km	0.00256684	400m	75 mm
Large Autocannon	21 km	85.50 km	0.00617143	1000m	35 mm
Large Artillery	300 km	327 km	0.0012	1000m	35 mm

Laser Statistics (Base)					
Name	Optimal	Falloff	Tracking	Scan Res	Sensor Res
Small Pulse Laser	52.50 km	14 km	0.0247619	125m	250 mm
Small Beam Laser	187.50 km	50 km	0.01056	125m	250 mm
Medium Pulse Laser	79.50 km	21 km	0.0203774	400m	75 mm
Medium Beam Laser	280.50 km	75 km	0.0043672	400m	75 mm
Large Pulse Laser	106.50 km	28 km	0.00380282	1000m	35 mm
Large Beam Laser	375 km	100 km	0.00163333	1000m	35 mm

Comparative Tracking	
Large T2 Neutron Blasters (Gank Mega)	.07442
425mm T2Railguns (Fleet Mega)	.00453
Medium T2 Neutron Blaster (Thorax)	0.125
Small T2 Neutron Blaster (Ishkur)	.39562

What does all this mean? Autocannons are good at ripping apart a fleet that has to get close. Against sieged dreads, tacking in meaningless, a Dread is a stationary target with a 1700m sig radius. It also means that, in general, tracking on POS guns sucks rocks and

blows chunks. With sub par tracking it is very difficult for POS guns to hit ships of a smaller then intended ship class. If you're going to be cynoing in Rorqs or JF's put some small guns right where you want the cyno opened. Small guns are the only thing with half a chance of tracking a HAC trying to bump a capship off the forcefield.

And yes Virginia you can hit a battleship with a large POS gun. All you need to do is get a Bellicouse with maxed skills to put three PWNAGEs on a stationary battleship. Good luck with that.

4.1.2.2 Jammer/Webber Scan Resolutions

Module Name	Range	Sensor Resolution
Warp Jammer	150 km	30 mm
Warp Scrambler	75 km	30 mm
Stasis Webifier	150 km	30 mm

Unless you hit the MWD it'll take 40 seconds for a POS web/scram to lock a cruiser, 70 seconds for a frig and 30 seconds for a battleship. Once the POS achieves lock if it has no gunners, it will begin to cycle targets. Against even a small gang, a POS isn't going to reliably web and scram anybody.

4.1.3 Offline Guns

Modules, including guns, can not be anchored while a POS is in reinforced. Ammo can not be put into offline guns when a POS is in reinforced. All CPU using modules go offline when a POS goes into reinforced (this includes shield hardeners, EWAR modules and energy neut batteries). An offline module also does not use powergrid. Silo's and corp hangers become inaccessible. Ships can be removed from a maintenance array.

You will need two setups for your POS. The first is your online setup with hardeners, EWAR, energy neutralizers and the like. The second is an all gun reinforced setup. All the extra guns you need for reinforced plus a couple extra, should be anchored and offline.

4.2 Tower Setup

What does this mean? Once upon a time, when Armor had a natural 60% EM resist, all proper Deathstar POSes used Autocannon's, the thinking being that you could attack against a number of damage types. What a difference 10% makes. Now you have the choice between make the attacker guess the damage type with a Minmater tower or simply stipulating the damage type in return for 30% more DPS.

4.2.1 Deathstars

If you're expecting attack from capital ships go Amarr. At 15km optimal Large Autocannons are going to be operating in falloff unless the hostiles do a stupid and park right on top of the things. Being in falloff will drop your AC's DPS around 25% to about 450dps. The worst a Dread pilot can do is fit a T2 EM Hardener, most won't bork their fits by putting on two. On the other hand that same dread pilot is likely to throw on 3 T2 Hards on the other resists + either an EANM II or DCU II for a normal tower. You don't lose much by going Amarr and gain a 100% effective bonus to DPS.

4.2.2 Rippers

Cynojammer towers and those expecting attacking from Battleships are a different story. If you are doing a known damage type, there is a very high chance that the hostile fleet will fit for it. Add to this that medium autocannons are highly efficient. Like all things in EvE that aren't done every day, there are a number of opinions on how to set up a ripper POS. After we've had cyno jammers in game for a couple of years we'll probably have some idea what the best way is. Off the top of my head the following would probably not result in you making to LOL section of CAOD.

Domination Control Tower (Large)
Cynosural System Jammer
Ballistic Deflection Array * 3
Explosion Dampening Array *3
Heat Dissipation Array * 2
Photon Scattering Array * 1
Domination Medium AutoCannon Battery * 10
Domination Small Artillery Battery * 2
Domination Stasis Webification Battery * 2
Sensor Dampening Battery * 63
Shadow Warp Disruption Battery * 2

Even if the other guy bring a 200-300 man fleet the shear confusion factor that many damps will generate will probably result in a selection to fight within 100km of the tower. (Actually they're likely to get right up kissing the cynojammer meaning that you should deploy your autocannons 10km on either side of the jammer. The remainder can go either under the tower on with the main battery depending on what you think is best.) If you're alliance is a major sov claiming alliance. Consider having say 3 to 4 accounts that are composed all of gunner alts situated at the jammers in your station systems.

4.2.3 Bubbles on the Cynojammer

Anchor 5 or 6 T1 bubbles on the cynojammer. There is no reason to allow hostiles shooting at your jammer to warp off. A large enough fleet will either kill your bubbles or remote rep the damage. A large enough fleet is going to kill your cynojammer no matter what you do.² T1 logistics cruisers and all T2 logistics ships can rep the

² Multiple Doomsday device blasts being a possible exception.

jammer from outside the new, 20km, large bubble radius (hull repping being the exception). Bubble the damn thing.

4.3 How to Defend a Tower

First, let your friends and allies know that your tower has been attacked. Either the attack is ongoing, in which case you should be screaming to high heaven on all coms channels or the tower has been reinforced. Rest assured that the folks that want your tower know exactly when it's coming out.

4.3.1 The Initial Attack

Stront your POS. What time do you want this POS to come out of reinforced? Once the shields get below 51% you can no longer change the stront levels. Take an estimate on when the attack will finish and aim for midway between the acceptable times for the POS to come out. In general coming out later is better than coming out earlier. Be sure you are choosing the correct timezone. If you're a US corp, being attacked by the Goons and all your allies are in EU time, don't set the POS to come out after dinner.

Jet the corp hanger / silos. This is controversial as you may lose the jetted items if you can't pick them up before their cans pop. When your POS gets reinforced the corp hanger arrays and silo's become inaccessible. You can still get ships out of a maintenance array (this is a change that was made after somebody got a capfleet trapped in a capital array).

Start offlining anything that does not add to the tower's defense and start online guns and hardeners. It takes five minutes to online or offline a module.

The first target in a POS attack will normally be either neut batteries or warp disruptors. If your enemy has overwhelming force they may decide simply to go for the tower. You can anchor POS modules from within the forcefield. It will take you 10 minutes to anchor and online a new module. Have a couple extra neut batteries and disruptors in a hauler floating at the POS is never a bad idea. Having them anchored and ready to online is a better idea, but does subject them to loss without use if the POS is attacked in the dead of night.

As a general rule a tower without gunners can not present an effective defense. Call, PM, E-mail, ectra all the gunners in your corp that you know may be available.

4.3.2 Coming out of Reinforced

The first question is whether or not to defend the POS at the POS or on the gate. This will depend on a number of questions such as, does the enemy have a Titan or other

way to enter the system besides the gate. Is the system cynojammed? Fighting on gate is dealt with under the fleet command portion of this guide.

4.3.2.1 Setting up

Rep all guns up and arrange to have a corp member online at least two hours before the POS comes out of reinforced to insure that the enemy has not attacked the guns again.

Set up several “intel frigs” and find a corp member willing to fly them. An intel frig is simply a frigate with one or more ship scanners on it. An intel frigs job is to pop outside the shields, scan enemy capships and pass that info along to gunners and fleet command. I’ve seen fights where the first capship to die had 10bil in faction mods, the second had the weakest tank of the group and everything was just downhill from their.

One of the worst places a support ship can be during a POS fight is within the force field. Inside the FF of a POS a ship can not be locked to receive remote rep. This can be a problem. Have a logistics or carrier (somewhat suicidal) cloaked at a midsafe (a safe in line between the POS and a celestial object) to be used as a remote rep warp to point. Move the safe every so often to prevent hostiles from probing it. Alternatively, you can set up such a remote rep at a staging POS elsewhere in system. There is some risk to this as a very large or well organized enemy may bubble the staging POS.

Forming a remote repping ball during a POS defense can be extremely difficult. It is nearly impossible to visually tell where the POS shields end. Moving in and out of the force field can confuse the location of the remote rep point. One of the ballsiest solutions to this I’ve heard is to strip all the drones off a carrier, 100% insure it then put it into triage mode as a rally point. A carrier in triage at a POS is likely to be the first thing primaryed by a hostile cap fleet. A better solution might be to have a Drake or other high durability ship function as a rally point.

We may all owe our god one death but until a defender is poded out of system, there’s no reason they should be out of the fight simply because of the loss of one ship. If possible have carriers deploy a number of :”replacement” T1 cruisers into the POS shield when they cyno in.

4.3.2.2.POS Gunners

USE THE POS GUNS TO SHAPE THE BATTLE! Medium guns can be used to target enemy EWAR. A single POS gunner with a high DPS output at his control is more effective killing hostile fighters then a support fleet trying to figure just which one of a hundred fighters they should primary. POS gunners can be given the names of enemy FC’s to primary without revealing to the fleet as a whole that enemy coms have been infiltrated.

If gunners will be attacking hostile caps they should focus fire with any friendly capships. Yes I have seen fights where the caps went after one target and the gunners another.

The bottom line will be the number of POS gunners available. An Amarr POS coming out of reinforced might feature, for example 12 Large Pulse Batteries, 4 Medium Pulse Batteries (for fighter control) and 2 medium beam batteries to engage enemy snipers. Gunners are difference between an ineffective POS that cycles targets all over the place and 12,000 dps on a hostile dread, dead enemy fighters all over the place and enemy EWAR that spends more time in warp then on the field.

4.3.2.3 Drones

I've never actually seen any group the discipline to pull this off. I have seen a number of battles where the friendly support fleet was very close to hostile caps, with a hostile sniper fleet maneuvering on the field. Such a situation cries out for energy neutralizing drones to be assigned to a ceptor to go ruin a couple capships day. To employ this in practice, I would suggest setting out several cans full of neut drones at a rally point and making a carrier available to fit them at the rally point. Five heavy neut drones = 1 heavy energy neutralizer at no cap cost to the fielding ship. Being hit by multiple short cycle energy neutralizing effects is a nightmare for any capship pilot.

* Torpedo Batteries where last examined by CCP two major missile nerfs ago. Putting missiles on a POS is not recommended.

* Before you get to excited, remember that the Autocannon battery is 10 + 50, meaning some damage out to 110km. By contrast the pulse battery is 60+10 i.e. damage dies off at 80km. Before you ask, no I don't have a clue what happens if you range tracking disrupt a POS Battery.

@ At 30,000 isk/round you are not going to be loading faction into autocannon batteries.