The Titan Thread to End All Titan Threads – A Report

Since the everyday EVE player has never been exposed to them, I would like to present to you the definitive list of imbalances inherent to Titans, and the Doomsday especially. This is the culmination of over three months of research, and I give you empirical evidence of every unbalanced facet and broken mechanic known to me, and balanced and agreeable suggestions for rectification. Since I can't know how actively the developers have been engaged with working on balancing this sort of thing, I hope to both make sure the nature of the problems is fully understood and expedite their resolution.

I'm not against Titans, or nerfing things without just cause. Titans, in some way, have to stay in the game. To be honest, Titans are why I signed up for EVE a year and a half ago. I saw the big picture of all the ships in EVE during the Red Moon Rising release and seeing gigantic capital ships like the Titans and motherships reminded me of Freespace 2. The grandness of capital ships and the diminutiveness of all other ships in comparison were the things that finally convinced me to sign up for a trial account, after the stories I'd heard from a friend of mine about the freedom available to each player. I do find it a little ironic that I am now taking a stand against the monstrosity that got me into the game from the first place.

Background

Basic specifications

Titans are capital ships with many unique capabilities. A Titan has roughly 1,500,000 HP and 125,000 capacitor. Each has 21 total fitting slots and each has 8 high slots, and has 3 rig slots with 400 calibration.

Titans have an average cargo bay size of 56,000m3, a corporate hangar array of 100,000m3, and a ship hangar bay of 5,000,000m3.

Construction

The blueprint for a Titan costs roughly 50 billion ISK, and the minerals required to produce the capital components for it cost roughly another 50 billion. They are built in a capital ship assembly array, which can only be anchored in a system where the POS's alliance has sovereignty. Then the capital components must be transported to the CSAA, and then it can begin the 3-month construction.

I don't know exactly how many trips it takes, but I've heard that it takes something like 100 freighter loads of components to build a Titan. Since they made freighters have more functionality in the last patch, people would note that it's now easier to transfer components, but in truth it was already possible to unload into a POS because of a bug with General Freight Containers.

Electronic Warfare Immunity

Titans all have immunity to electronic warfare. This not only includes ECM,

Sensor Dampeners, Tracking Disruptors, and Target Painters (mentioned just to be thorough), but also Warp Scramblers and Stasis Webifiers. Titans can still gain the benefit of Remote Sensor Boosters, however.

Interdiction Spheres will prevent it from engaging warp (but only if it has not already started and is aligning), but anchored Mobile Warp Disruptors will have no effect on them. Neither type of warp disruption sphere can be used in low-security space.

The Jump Bridge

The jump bridge requires 250-500 strontium clathrates to activate, and it requires some quantity of racial isotopes to jump a ship based on size but may or may not change over greater distances (don't know exactly).

It has a max range matching the Titan's own, a conservative estimate being 7 light years (assuming it gains the benefit of Jump Drive Calibration), allowing them to potentially move over 15 jumps at once (depending on "geography") and bypassing any resistance along the way.

The Doomsday Device

The Doomsday Devices - Judgement, Aurora Ominae, Gjallarhorn, and Oblivion - use 75,000 racial isotopes (11,250m3, roughly 20 million ISK) and 20,000-27,500 cap, depending on which one it is. Cap use is between 20-24.4% of a Titan's base max capacitor. After firing, it cannot fire again until one hour has passed.

It has an estimated range of 250km. The actual range isn't precisely attainable, but 250km is always assumed. One Doomsday will do (with Doomsday Operation IV) 65,625 damage of one damage type. The skill Doomsday Operation increases base Doomsday damage by 10% per level. Generally speaking, a battleship can survive one Doomsday with a mix of specific hardeners, plates, damage controls, and the like.

The Doomsday has a short warm-up once it has been activated (15 seconds, roughly), but if a ship is not present within 250km from the origin of the Doomsday, it will not take damage. (i.e. "just warp away") Anything hit by the Doomsday will take full damage every time, independent of velocity, transversal, or signature radius. It is essentially an extra-large smartbomb. The only time a Doomsday will have no effect is when one is still cloaked from jumping through a gate, and this may be getting fixed soon.

There are no restrictions as to where or when one can fire a Doomsday, with the exception that Doomsdays cannot be used inside of a starbase force field or in low-security (0.1-0.4) space (though the Titan can still enter it). Doomsdays can be fired at gates, on stations, and at POSes. The Doomsday did, at one point during testing, destroy POS modules through the shield, but this has since been fixed before it could be exploited.

I have heard from a Titan pilot that uncloaking puts on a twenty second timer

until which the Doomsday cannot be fired.

Remote Doomsday Projection Through Cynosural Field

To fire through a cyno, the Titan and a ship equipped with a Cynosural Field Generator must be in the same gang. Then, after they are in a gang, and not before, the cyno-equipped gang member can create a cynosural field, and if the Titan is in the same system, he simply right clicks on the gang member and selects "fire through gang member". As you can imagine, the exact process is not known to me, not being a Titan pilot, but this is basically the process behind it. You do not have to lock the gang member to fire, since, of course, if you can Doomsday through the cyno and your cyno friend is a few AU away, you won't be able to lock him; that's simple logic. There may be an extra strontium cost to do it remotely instead of in-person, but I don't know exactly.

A Doomsday can be used remotely anywhere that a cyno can be created and where a Titan can fire a Doomsday, except for inside of a POS's forcefield. A Titan must be outside (partially, at least; http://eve-files.com/dl/97476) a forcefield in order to fire through a cyno.

Gang Bonuses

Each Titan has a special bonus that gives all of its gang members the benefit. It is +7.5% per level, with racial bonuses being:

Avatar – capacitor recharge rate
Erebus – Armor hitpoints
Leviathan – Shield hitpoints
Ragnarok – reduction to ship signature radius

I am not entirely certain of how these bonuses propagate between gang members, so it could be that the Titan's position in the fleet does not affect who receives the bonuses, but it could also be a flat benefit for everyone regardless of position or level of Wing Command and Fleet Command skill levels.

Other traits

Titans can not dock; they must stay in space forever. They disappear after logging off just like a normal ship. I have heard that they can be stored inside of a Capital Ship Assembly Array, but don't quote me on that.

To jump out, a Titan (or any other capital ship) needs a certain percentage of its capacitor available. With Jump Drive Operation V, it is 71%. Like all capital ships, a Titan can jump out of system with no restriction from aggression timers.

Titans, and also motherships, carriers, and possibly dreadnoughts, have irregularly large "bounding spheres". What this means is that among other things, it gives smartbombs detonated by the ship extra range. When used with officer smartbombs, smartbomb range has been reported to go beyond 13, 15, or even beyond 20km ranges. (Note, Interdiction Spheres have a 20km radius, and can be destroyed by smartbombs)

Problems

An Obvious Imbalance

There are people who will never be easy to convince that there is a problem with a game mechanic that has no solution but to be nerfed. It's nobody's fault that people are wary of trusting anyone who claims that something is too powerful and needs to be nerfed. After all, EVE is a game where knowledge is power, and people who get beaten by a tactic or ship do have a tendency to complain unnecessarily when they aren't aware of other means of attack.

Some imbalances are easier to spot than others. Let's say a 350mm Railgun did more damage per second, more damage per hit, and had better tracking than a 425mm Railgun and was easier to fit as well. Everyone would agree that this doesn't make any sense and either 350mm Railguns or 425mm Railguns would need to be changed.

When it comes to valid balance issues, Titans have very clear-cut and distinct problems that are visible when presented all the facts. Some would disagree about it, whatever their reasons may be, but there is no sensible reason under the sun for anybody to have this kind of power concentrated into one single ship, no matter how much it costs or even if you can never dock again.

Cost Cannot Justify Balance

The "prohibitive cost justifies power" argument can have some truth to it, but cost alone cannot be enough of a limitation to be balanced.

Think about flat taxes in economics. If the tax for everyone was ten dollars a month, people who made 1000 dollars would be more than fine with it. But on the other hand, people who only made 100 dollars might be in a tight spot, and people who made 20 would be put close to their limit.

Cost with Titans doesn't scale properly, especially when once they are made, there is no further cost except for fuel. Furthermore, if one entity has a Titan and they have an enemy making one, the group with a Titan has extraordinarily more ability to prevent the completion of their enemies'. What's more is that they can produce more of their own even faster and in greater safety during construction with the use of the Titan's unique capabilities.

As an appeal to the pirates out there - people who might think that it's fine for a ship to be a "solo-pwnmobile" so long as it's exorbitantly expensive - I'd like you to think about an idea that might make you uncomfortable.

Let's say CCP announces the stats and specs for the new capital industrial ship. It costs 40 billion to build, it can fit 7 strip miners, a cloaking device, and mining upgrades, and it also has a bonus of +50% to ECM jam strength per level and has a 9,000,000m3 cargo bay. In addition, it is also immune to electronic warfare, since it would be silly for a forty billion ISK ship to die to a scrambling rat or get jammed and lose a mining cycle.

It *needs* to have the 9,000,000m3 cargo bay so that it doesn't have to mine into jetcans, since really, if you've spent 40 bil on a ship, you shouldn't have to deal with that. The bonus to ECM strength is to jam "ebil" pirates who try to annoy it, because I mean really, you've worked hard enough to afford something like this, isn't it about time you didn't have to worry about roaming vagabonds ruining your peaceful mining ops? Mining scordite in Scolluzer has finally put you on the best house on easy street now - mining kernite in Ammamake, where everybody has wished they could mine in peace since years ago.

Is this not the same line of thinking that justifies a Titan's potency through cost? If it's okay for a Titan to have awesome destructive force just because it's expensive, wouldn't it be okay for there to be a mining Titan as well? People have wanted a "boost" to mining for quite some time now. Naturally, the above is intentionally sardonic, but I hope that I've made clear the dangers of "cost justifies everything".

The Problems with the Doomsday

The Doomsday is, by far, the most frustrating of all features of Titans, which is also why it's so vocally protested on the forums these days. Combined with the inability to actually catch Titans because of their EWAR immunity, Titans have both near limitless offensive power and can pick their fights with no risk whatsoever.

With this in mind, I posit the Fundamental Flaw of Doomsdays:

"Any weapon that can destroy a potentially limitless number of ships without having to achieve lock, isn't affected by optimal range, falloff, or tracking, doesn't expose the pilot to danger, and has an effective range greater than or equal to the range of any of its targets is, by principle alone, overpowered."

Doomsdays as Anti-Blob Weapons – Merely a Myth

Some argue that Titans and Doomsdays specifically are anti-blob weapons. This couldn't be any further from the truth. **Doomsdays are not anti-blob weapons**. While the effects to the group hit by a Doomsday are greater along with the group's size (as in, the bigger the group, the more ships lost), the effects to the individual hit by a Doomsday are the exact same no matter what size the group is. Doomsdays could only be considered anti-blob weapons if the effects to the individual decreased as gangs became smaller. As it is now, the Doomsday is so sickeningly unbalanced that everyone should be outraged by the thought of it. After resolving things like Gankageddons, multi-MWD Ravens, and 16km/s capable Nanophoons, the willingness of people to surrender the debate on Titan balance to a compromise that the cost alone can justify its power is disappointing.

Sometimes I hear people say that CCP put Titans into EVE because they wanted to introduce "anti-blob" weapons. This is completely and utterly false. "Blob" wasn't even an idea when they announced Titans. Titans were put into the game because they thought it would be "cool" and they made Titans have so many bonuses and perks because they thought, hey, nobody's gonna build one anyway since they're so expensive and time consuming, right? This thing has to be feared and majestic, right?

Tanking Doomsdays – Not likely

People often say that it's easy to tank a Doomsday. A Doomsday *can* be easy to tank, particularly the Avatar's Judgment. All you need to tank that for a normal armor-tanking battleship is a 1600mm plate and an EM armor Hardener II, a 1600mm plate and a damage control, an EM Hardener II and a Damage control, and other little combinations like that. When you look at it like that, it doesn't seem so bad.

You don't know the half of it. A month or two ago, I and some others tried to come up with setups that could be in some way useful within the CPU and power grid constraints of normal ships and still tank an EM and an explosive Doomsday, one after another and in reverse order as well. We wound up having to do things like simultaneous armor and shield tanking for a Megathron, four 1600mm plates on an Armageddon because it doesn't have the CPU to fit much else, and even then without named equipment it needed a co-processor with perfect fitting skills. If mutilating a ship like this is what was intended by design the necessary measure to confront a Titan, then I am utterly appalled. Where there is a will, there *should* be a way, but with multiple Doomsdays there just isn't. No opportunity for the imaginative to flourish, just for them to turn their carefully-fitted ships into insurance payouts.

"Just train for cap ships", and a grim future

I have been met with this response about my views on Doomsdays before. There are two ways to respond to this. People often note that training for capital ships isn't as easy as walking across the street. I myself could be in a Revelation in about 175 days, with implants. In the meantime, that's 175 days where I would be literally useless against it. If I have to confront a Titan *now*, then this option isn't adequate.

However, in a hypothetical situation, where everyone could fly any ship and had trillions in resources, this still isn't justified. In this case, it brings about the bleak future of warfare, all things staying as they are now. Only capital ships can survive multiple Doomsdays, so subcapitals will become useless, with the exception of covert ops ships, interdictors, and interceptors (for fighter delegation), which would have even less significance in combat. To take down POSes, dreadnoughts are ideal, so that would become the mainstay of the new fleet. Carriers would be used for cargo transport and logistics, as well as fighter support, though with Titans so common they'd play second fiddle to dreadnoughts since the fighters would just get Doomsdayed. Titans are immune to electronic warfare, as are motherships, and dreadnoughts are also immune while in siege mode. The end result is the complete and utter devolution of combat in EVE Online. Combat would occur between enemies only by baiting and counter baiting, except it would be around POSes and with only dreadnoughts. The intricate tactics possible with electronic warfare become pointless, fitting setup variety ceases to even exist – combat becomes who can target fastest, who has the least lag, who's name is lowest on the alphabet, who has the most cap ships – it is literally the end of EVE Online.

Some might call this "doomsaying" and insist that it could never happen. As is known today, it is possible for a group to create one Titan. It is also possible for the same group to create another. There lies the possibility that Titans can be made continuously.

At the same time, subcapital fleets have the same effect against the Doomsday no matter how numerous. Therefore, the number of Titans increases, the effectiveness of non-capitals stays the same, at or near zero. Also therefore, Titans can and will outnumber subcapital forces in effectiveness over time. As long as this possibility exists, Titans can never be balanced.

Just what is the problem in terms of specific mechanics?

Among the many things that people view as problematic is the capacitor issue. Considering its capabilities the Doomsday doesn't really use as much cap as some would like. The Gjallarhorn, the Ragnarok's Doomsday, uses 20,000 capacitor to fire, as said above. The Ragnarok has the lowest capacitor of all Titans with a base value of 99,000 cap (Energy management 0). From 100% cap, firing a Doomsday would only reduce its capacitor to 79%, enough to jump out. This is the "he DDed then cynoed out how lame ;_;" problem people talk about. Before Kali, and when all ships had their capacitors increased, the Doomsday almost dropped a Titan's capacitor below 71% (only down to 74.7% from my estimation), but they did not increase the cap use of the Doomsday after they increased the ship's capacity. They did, however, increase its damage.

Now one might say, when facing this problem, "Hey, just increase the cap use of the Doomsday, that'll fix it!" Well, I think that's a good start. But that's not going to do anything if that's all they change. In fact, it might not even be the right thing to do.

Allow me to throw out this little number that people (me) throw out on the forums from time to time. It assumes Energy Management V and Energy Systems Operation V:

027 - Capacitor Control Circuit II -> Avatar.rechargeRate : 5062.5 => 4050.0
028 - Capacitor Control Circuit II -> Avatar.rechargeRate : 4050.0 => 3240.0
029 - Draclira's Modified Cap Recharger -> Avatar.rechargeRate : 3240.0 => 2073.6
030 - Draclira's Modified Cap Recharger -> Avatar.rechargeRate : 2073.6 => 1327.1
031 - Draclira's Modified Cap Recharger -> Avatar.rechargeRate : 1327.1 => 849.35
032 - Draclira's Modified Cap Recharger -> Avatar.rechargeRate : 849.35 => 543.58
033 - Draclira's Modified Cap Recharger -> Avatar.rechargeRate : 543.58 => 347.89
034 - Draclira's Modified Capacitor Power Relay -> Avatar.rechargeRate : 347.89 => 234.83
035 - Draclira's Modified Capacitor Power Relay -> Avatar.rechargeRate : 234.83 => 158.51
036 - Draclira's Modified Capacitor Power Relay -> Avatar.rechargeRate : 158.51 => 106.99
037 - Draclira's Modified Capacitor Power Relay -> Avatar.rechargeRate : 106.99 => 72.22
038 - Draclira's Modified Capacitor Power Relay -> Avatar.rechargeRate : 72.22 => 48.75
039 - Draclira's Modified Capacitor Power Relay -> Avatar.rechargeRate : 48.75 => 32.91
040 - Draclira's Modified Capacitor Power Relay -> Avatar.rechargeRate : 32.91 => 22.21
041 - Draclira's Modified Capacitor Power Relay -> Avatar.rechargeRate : 22.21 => **14.99 seconds**

The average recharge rate on a Titan with this setup is 9,381 cap/s. I repeat, <u>that is average capacitor recharged each second, not peak</u>. If there wasn't a one-hour cooldown timer or a need for fuel on Doomsdays, you could fire Doomsdays faster than the 15-second animation could go through, and probably run capital armor repairers along with it. If these figures shock you, I've been told that they're actually underestimations of how fast a Titan can recharge its capacitor, **not** overestimations. I've

heard people talk about getting figures more like nine seconds on a Ragnarok, giving it over 12,000 cap/s. Doomsday and then have cyno out? It's a guarantee.

Now if you've jumped to the conclusion that the solution is to nerf something directly related to the Titan's capacitor, then just hold on to that thought for a moment. There are many, many things wrong with the Doomsday, but one must first understand the most examine the most extreme problems to find the heart of the problem.

The Many Abuses of the Doomsday

I try to imagine what people who've never been "acquainted" with Doomsdays think they're like. People think and even sometimes say, "Well, you can just warp off, can't you? Doesn't it only have a 30km range? I'm pretty sure you can't use a Doomsday on the same grid as a POS." When people are asked what they think about remote Doomsdays, they think, "it's just a cyno frigate, pop it before the Doomsday comes through". (note, since the cyno frigate can be the origin of a Doomsday outside of the range of all long-range weapons except for Tech 2 fitted Rokhs, and since a cyno origin can be on a ship with more HP than is feasibly destroyable in one volley, it is not a sufficient option)

This kind of ignorance disturbs me - that so many people could be completely oblivious to something that's so blatantly outside the bounds of reasonable game design. I mean no disrespect to developers on the personal level, but I honestly cannot comprehend how the tactics usable with Doomsdays were never anticipated.

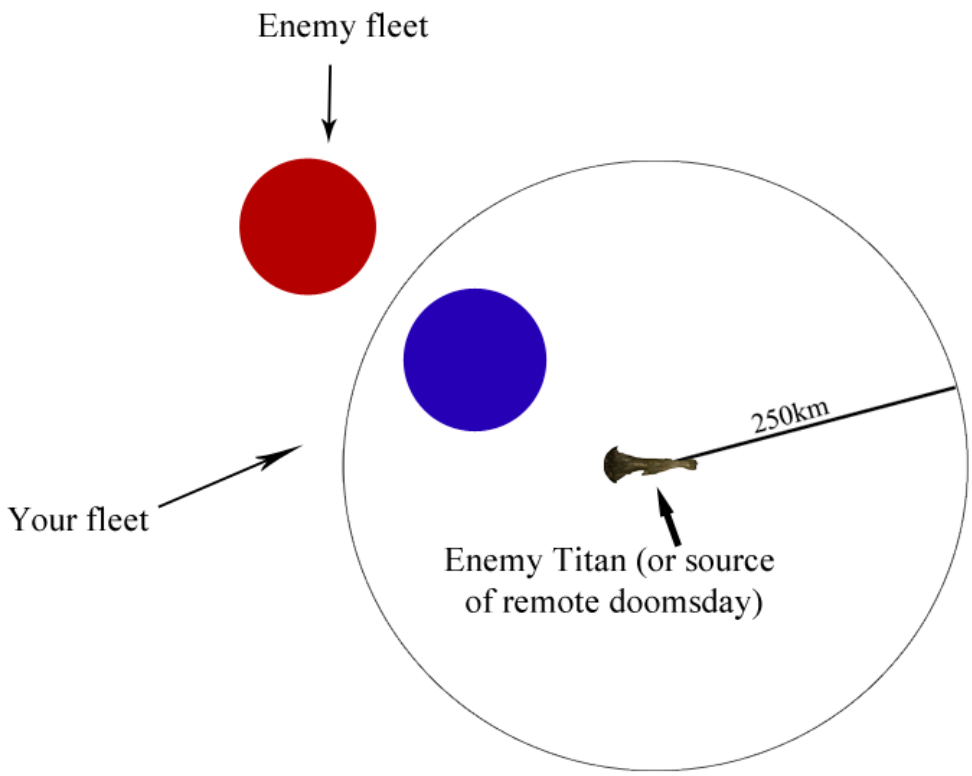
When it comes to remote Doomsdays, many of the less imaginative Titan pilots have tried warping in a cyno frigate on to you, making a cyno, and shooting the Doomsday hoping they can catch you by surprise. This is the uninspired way of doing it. Everyone can see it come in, and then the cyno ship pilot has to load the grid, wait through a little lag, and in all that time it's easy to avoid if you were already prepared.

But as always, people don't stay clumsy and unimaginative forever.

Abuse number one: Doomsday Sniping

I don't care for the term that I came up for it too much, but it's describes it decently enough. Let's say you've got your buddies and you want to fight somebody else's gang of buddies, but they also have a Titan. There exists the possibility that your enemy could take the necessary precautions to set up an unwinnable ambush.

You come through a gate, or you undock from a station, whichever you please. The enemy fleet is at their desired range, whatever it may be, and you might be at your own as well, it depends on who's fitting what. Let's say that everyone's in a sniping battleship, since that's pretty common. You and your buddies come out onto the field ready to fight and start firing. Before you know it, you've been hit by a Doomsday and the enemy fleet hasn't. If you or any of your buddies weren't already dead, being knocked down to structure or a quarter of your armor is going to leave you easy pickings for the enemy fleet. You're dead, the enemy fleet was completely untouched.

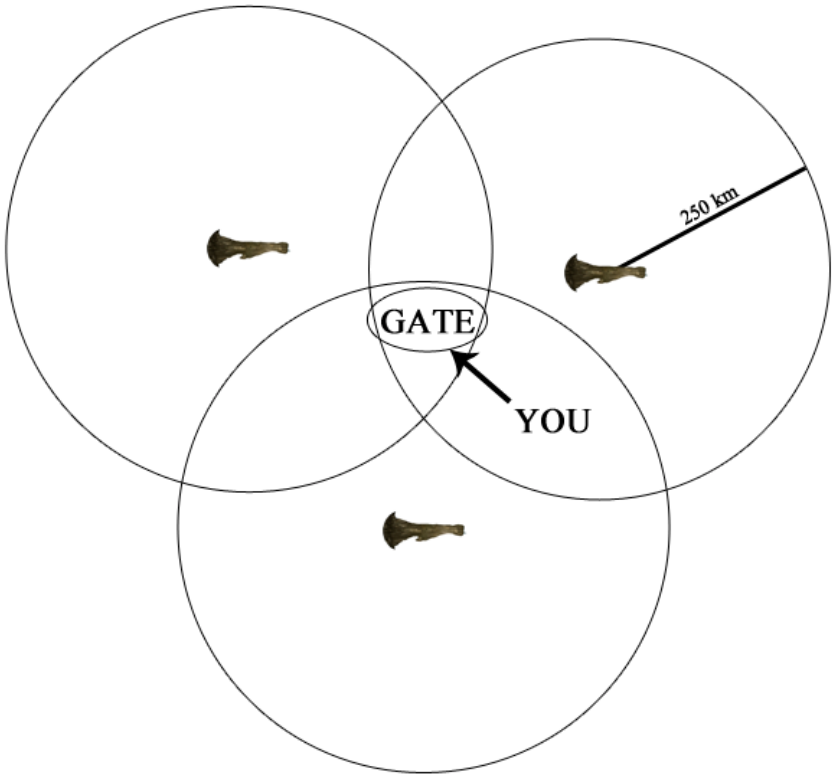


Clever tactic? Yes. Indicative of imbalance? At first glance, maybe not.

Abuse number two: Venn Diagram Doomsdays

The previous abuse was one Titan in one easy to imagine situation, but its not proof positive. But let's say you're in a direr situation. You've got to get through a gate because somebody who also happens to own a few Titans has been messing with your stuff while you were out. They've got some ships of their own and they have a bubble on the gate, maybe multiple bubbles. There's no way to get in except for jumping through that gate.

At this point, it's either do it or don't. Let's say you go for it and jump on through. Assuming a situation with ideal conditions - no lag, framerate issues, nor bugs – you arrive in system and try to move, but ultimately you end up dead because you got hit by more Doomsdays than you could possibly ever tank. You couldn't warp out because you were inside of multiple bubbles, you couldn't destroy the bubbles because you and your friends couldn't do enough damage to destroy them and warp out in time, and you couldn't move fast enough to burn out of them. You were screwed over in the most thorough way possible – the Venn Diagram Doomsday. I think the picture illustrates the problem effectively enough.



Cynics would say "well, that's the same thing that always happens when you jump into a gate camp with a bunch of snipers, you get lagged and blown up before you can do anything".

That might happen to people in the game, and it really isn't fun when it does, but at least *in theory* you can fight your way through a sniper group and multiple bubbles. This literally doesn't allow any recourse but to die horribly, both in theory *and* in practice. There is no possible way to survive or have any meaningful effect whatsoever, and after fifteen seconds it's all over.

Maybe now you are beginning to see what I'm talking about when I say they're overpowered. I'm not done yet.

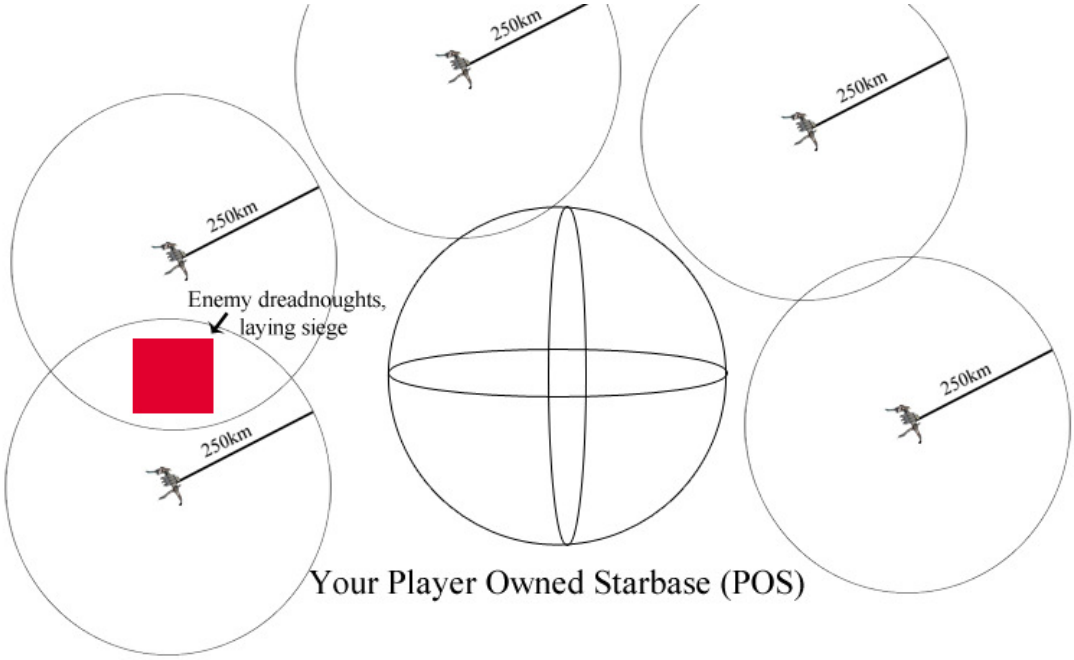
Abuse number three: The Doomsday Minefield

Let's say it's the same sort of situation as above: somebody's been going through your drawers while you were napping and now you've got to do something about it. They're attacking your POS with dreadnoughts and you need to haul on over there and fight them off. There's just one problem…

Before you even got there, the bad guys put about two dozen frigates around your POS in very peculiar positions. These frigates have both a cloaking device and a cynosural field generator fitted.

"So what exactly are you saying?"

What I'm saying is that at any and every position that you try to defend, they can blow you up as fast as they can get a guy on their Teamspeak to say "Hey, I'm open, let her rip!" The picture below might help you understand the situation a little better.



Each cloaked frigate can become an origin of a doomsday, and can be placed all around the POS at every possible location. At any point one could warp in and attempt to defend his dreadnoughts, he becomes wide open for a doomsday. This same thing can happen, but to a lesser effect, with a titan or titans on around the POS and cloaked. Your choices become either a) abandon the defense, or b) attempt defense and get doomsdayed.

So I ask you this: Does it seem balanced to you? Is 20m in isotopes and a prohibitive initial build cost enough to convince you that it's okay for you to lose your POS and your ships just because?

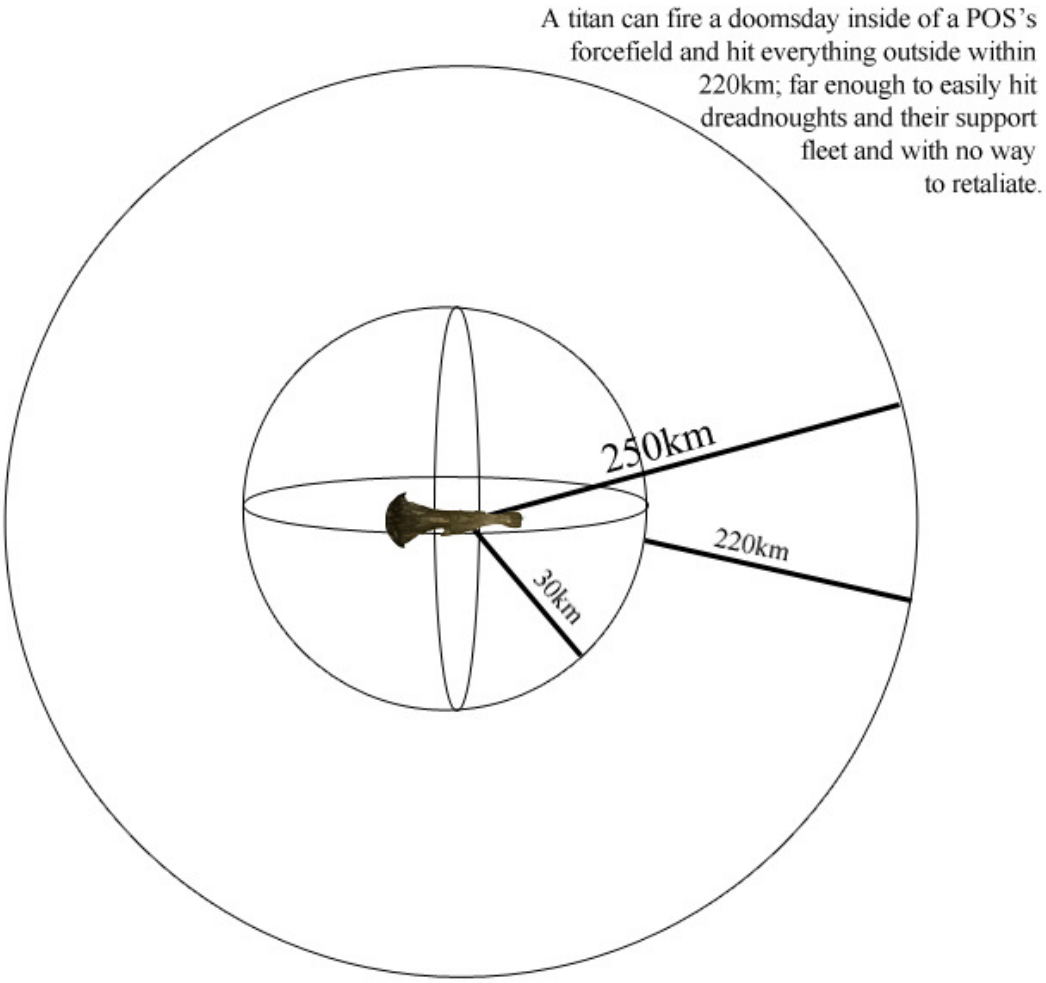
What can you *possibly* do to overcome this? You can't find a cloaked frigate that's within a 400km sphere around your POS. You can't split your fleet into parts, where split apart they'll get picked off by the enemy's fleet. You can't send in one fleet as a sacrifice and hope the second one can make the difference. If there are multiple Titans, the cooldown timer doesn't mean a thing. This is the most significant breakdown of core gameplay mechanics in the entire history of EVE Online. Clearly, Titans could not have been intended to have unbalanced the already intricate, hardware-bottlenecked issue of POS warfare so much in favor of those possessing them. This kind of abuse could not have been anticipated when in design, where it would have been easily shot down before it even got off the ground.

Maybe, after all this, you're still not convinced that Titans are overpowered. That's okay. Nobody can win over everybody, and I'm ready to accept that. But nonetheless, most people can agree that shooting a Doomsday through a cyno is so indisputably overpowered that it should be removed or nerfed in some way.

For the next abuse, this *can* occur in a world where remote Doomsdays have been removed, and instead the Titan must fire in-person.

Abuse number four: Doomsday "Turtling"

This is simply when a Titan sits inside of a POS's force field, almost as safe as can be, and fires the Doomsday. Everything outside is affected, but nothing inside is. A large control tower has a force field radius of 30km, the Doomsday has a radius of 250km. It's pretty clear what the problem is here; the Titan is completely safe, anything outside is not and also completely open to being hit by the Doomsday.



At the time of this writing, this has been fixed so that it is currently not possible to fire a non-remote Doomsday inside of a force field, though I was unable to find

photographic evidence that it was possible at one time. But regardless of whether or not this specific situation wasn't possible, it's a glimpse at the root of the problem with Doomsdays. However, before I go on to actual solutions, I'd first like to touch on some of the other problems with Titans.

The Problems with Electronic Warfare Immunity

I can see the intent behind electronic warfare immunity on Titans and motherships. They didn't want Titans to get destroyed anticlimactically because they warped to the wrong POS or something embarrassing like that. But on the other hand, if they are effectively impossible to put into danger (as they are now), you'll get Titans dying only due to getting probed out while logged off, or getting lagged to hell, which is exactly what you were trying to avoid in the first place. As has been shown in recent events, the intended initial design for titans has failed catastrophically.

The fact of the matter is that abject immunity to electronic warfare has shown time and again that it is far, far too powerful for any ship to have. Warp Core Stabilizers were nerfed because immunity to scrambling effectively made ships avoid key trade-offs that were the basis of game balance. It stands to reason that if any instances of this broken mechanic should be adjusted for thoroughness.

The abuses with ewar immunity are listed as follows:

The Many Abuses of Electronic Warfare Immunity

Abuse number one: The inadequacy of the capacitor as a limiting factor for escape

The issues with cap recharge are proof enough of need of rebalancing. If a Titan has an average recharge rate of 9,381 cap each second, it would take 47 battleships with eight Heavy Energy Neutralizer IIs on each just to drain its capacitor below 71%, the jump-out threshold at Jump Drive Operation V. The only problem is that if you look at it like that on paper, it does seem at least somewhat possible to do it, even if it would take an irrational amount of effort, but among other problems, there's this: A recharge time of 14.99 seconds (a high estimation, as mentioned) is faster than a Heavy Energy Neutralizer II's 24 second cycle.

Would it be possible to stagger your modules so that it would drain the cap continuously instead of once every 24 seconds? Possibly, but suffice it to say, you would need possibly twice as many battleships to drain it down even below 71% for sureness' sake. Even more problematic is that with upwards of one hundred battleships specialized for one task, that means you would need many more to protect them from enemy ships protecting it. And further, they would have to survive the Doomsday and also the Titan's support fleet. And also, the support could have a carrier or mothership ready to transfer energy to the Titan so it could jump out, which has happened many times before. The difficulties this could put on a server are worth mentioning, but in a purely theoretical situation, this is a clearly not a reasonable counter.

Essentially, immunity to scrambling and nigh-infinite capacitor in one way or another literally makes it totally impossible to put a Titan into danger. Cap neutralization is not a reasonable means of immobilizing a Titan by any stretch of the imagination, and living proof of a broken mechanic.

Abuse number two: Starbase Bowling

This is something that almost everyone has heard of; it's simply warping to the center of a control tower and bumping all the ships and any unanchored objects out of it. Since Titans cannot be scrambled, the POS's warp scrambling batteries would have no effect, and there is essentially no way to stop the ship from warping to it. The ships inside the force field, which are meant to be protected as long as the tower is intact, become completely helpless.

This is now a petitionable exploit, though it is hard to prove and successfully convict, but the fact that it can occur and without any defense against it shows a distinct problem in need of rectification. Technically, one *could* do essentially the same thing with other large ships, such as dreadnoughts, carriers, and even freighters, but the distinction between whether or not it is irrefutably an exploit is the immunity to scrambling and webbing. Ships vulnerable to scrambling are putting themselves at risk when entering a POS's effective range, supercapitals have nothing to fear. This deficit marks a problem in and of itself.

Abuse number three: Starbase Ammo Draining

A risky maneuver only in the traditional sense, but this is the act of taking a Titan or other supercapital and sitting it right in front of an enemy control tower and letting its turret batteries fire endlessly. Capital ships have enough HP that they can withstand it for some time, though from what I've heard, not even a dreadnought will be able to survive the assault of a properly configured POS indefinitely without going into siege mode. What this means is that ships with immunity to electronic warfare can sit in front of a tower for however long, soak up the damage from possibly a half an hour's worth of ammo, and warp away in complete safety. Ships without immunity to electronic warfare would either have to try their best to move themselves out of scrambling range (100km for a Warp Scrambling Battery, 300km for a Warp Disruption battery), which is not at all realistic. What would put a normal ship into danger is absolutely nothing to a supercapital. This is the key problem.

The abuses above are not all the problems that can be mentioned, but these abuses, combined with the overwhelming destructive capabilities of the Doomsday, mark profound corruption of core gameplay mechanics. It demands **immediate** resolution from the developers.

The Impracticality of One-Shotting a Titan, as a demonstration

In the past, when met with a ship that was essentially untouchable because of imbalance, people have resigned to alleviate the problem in the short term by getting a

group together and destroying it before it has the chance to escape or retaliate. For a Titan, this is so difficult it borders on practical impossibility.

The equation for locking on to a Titan in a dreadnought (Revelation with Signature Analysis V locking an Avatar, no sensor booster, and in siege mode):

$$\frac{10000}{((55mm*1.25)*1.25)} \Big/ (a\sinh(1425m)) = 73.14\sec$$

This assumes that the Titan is actually in range (250km) and the dreadnought has the appropriate ammo type loaded. Even with a sensor booster II fitted, it would take 45.7 seconds to lock, meaning a Titan could get out in time, and with two SB IIs it would still be more than 30 seconds.

Not to mention that it is **far** more difficult to get fifty (its actually more like 67 if its only one volley, and more like 90 if you count innate armor EM resists for the Revelation example, and double that if you have to use a longer range crystal like Microwave XL) dreadnoughts together than it is to have one Titan pilot around doing his own thing, and the Phoenix and Naglfar will be less useful since they use missiles, which won't reach the target in time or will get blown up in flight by smartbombs and the Doomsday itself. That, and while the Titan can move and warp around all it wants, dreadnoughts in siege are completely immobile.

When even the dependable last-resort remedy for getting a ship off your back isn't an option, it may be about time for a change.

The Problems with Cloaking

Many often point out that being able to hide a ship over twenty kilometers long with a cloaking device is unrealistic. More importantly, many have pointed out that a ship that is immune to electronic warfare and yet can mount a cloaking device is inconsistent. Realism is a nice perk in video games, but in the end, it is still that: a game.

On the one hand, it is good that such a capability exists. It shows the level of freedom of playstyle available to people in EVE, where there is not necessarily one "best" tactic that works over others in every situation. However, on Titans and other capital ships for that matter, it should not be allowed.

A cloaking device isn't going to be worth much more than a laugh on a dreadnought, since it needs all of its highslots to be effective. But on carriers, motherships, and Titans, where force can be projected far beyond the capabilities of subcapitals, it has distinct problems. Not enough to make a list, but let me just tell you a little story.

About nine months ago, a certain person from a certain alliance thought it would be funny to get a cloaked carrier into a system used by many miners and generally low-skilled players, though I don't mean to pass judgement on their playstyles. This person

had an improved cloaking device II fitted on his Thanatos and had multiple VERY long range safespots (greater than 100 AU) to use. Note that this particular system has 22 AU of space between the plane with the planets and a gate above it, and also note that this was before Kali's updated scanning system, so probing out a ship required triangulating. To make matters worse, scanning at the time only worked on a plane that was 1AU up and down. This meant that to probe someone out quickly, it would have required possibly two dozen people along the 22 AU distance between the sun and the gate above it with probes active constantly, hoping to maybe get a chance to get a chance at the carrier, which uncloaked only when its fighters were active. If the fighters did get in danger, they could be recalled immediately, with no way to prevent their return. The incomplete and readily abused scanning system combined with the inconsistencies of fighters frustrated many people I know.

Since Kali, the new scanning system means this sort of thing can be dealt with a bit easier, and I appreciate CCP's work on that. However, this story is simply indicative of the kinds of problems that can arise with cloaking capitals. When applied to Titans, a cloak allows it to hide (though you can't hide from local), and when the time is right, decloak and unleash the Doomsday in nearly an instant and recloak before you can retaliate. This presents the same problem with remote Doomsdays - little risk, potentially huge reward. Of course, it’s not difficult to simply keep track of where a cloaked Titan last was if you saw it cloak, and it obviously can't move much while cloaked, but it is still worth considering for change. The fact that you can't probe out cloaked ships doesn't really help much either.

Think for a minute about abuse number three, The Doomsday Minefield. Without cyno origins, this tactic does become harder to pull off, but where there’s a will, there is a way. If there remains the theoretical possibility to have three or four Titans around a strategic position, cloaked, ready to fire the Doomsday at any time, then therein lies a problem in need of assessment. There are limitations behind firing after decloaking, such as the supposed timer, but cloaking devices would remain problematic nonetheless.

The Problems with Gang Bonuses

This is usually the most forgettable feature of Titans, since most of the frustration comes from being rendered useless against a single, lone Titan. But still, there lies distinct balance problems with gang bonuses that must not be ignored.

It seems to me that when designing these gang bonuses, they just thought up a bonus that each Titan would give and slapped on a 7.5% bonus per level for it. Take a good look at these bonuses:

The Avatar – With Titan IV, it gives a 30% bonus to capacitor recharge, and with Titan V, its 37.5% better cap recharge. This is a huge benefit especially to capital ships, where capacitor means life. For reference, a Chelm’s cap recharger gives a 36% bonus to capacitor recharge.

The Erebus – Gives a 30% bonus to armor HP at Titan IV, 37.5% at Titan V. A nice benefit for all ships, but especially those with innate armor resist bonuses and also

capital ships, which have the highest base HP of all. I can imagine the HP gain from something like this on an Archon or Aeon being astounding. Make note that a full low-grade slave implant set will give you a 33.83% bonus to armor HP, a high-grade will give a 53.63% bonus.

The Leviathan – Gives a 30% bonus to shield HP. Same sort of thing as the Erebus's bonus, but for shield tanking ships. If crystals had the same effect as slaves but for shields instead of armor, a full low grade set would give a 33.83% bonus, and a high grade would give a 53.63% bonus.

The Ragnarok – grants a 30% reduction in signature radius at Titan IV, and a 37.5% reduction at Titan V. This makes a Titan's fleet harder to lock, hit, and track. Notably, a high-grade Halo implant set will only give a 20.7% reduction to signature radius.

It's clear to see that these bonuses have enormous tangible benefits to the owner's forces, but it may have been a mistake to grant them with such high bonuses. Especially considering that these do, to my knowledge, combine with each other if more Titans are in the fleet, so one could have 30% more cap, 30% more armor HP, 30% more shield HP, and 30% less signature radius. This would be the equivalent of giving potentially two-hundred and forty-nine people two different low-grade pirate implant sets, one officer cap recharger, and an ultra-high grade pirate set on each of their ships. This practically doubles the strength of the fleet, and it's simply too much.

The most puzzling bonus to me is the Ragnarok's signature radius reduction. Signature radius is something that is difficult to modify without unbalancing something else. It dictates how fast you can be locked, it makes it more difficult for you to track, and it makes your enemy's hits less effective. I'm a bit disappointed that a ship that could give the effect of two high-grade implant sets to possibly hundreds with no drawbacks got approved – how do these things not get put under tighter scrutiny before release?

The other ones are probably too high to be considered balanced as well, but I will assess that in the Solutions section following.

Solutions

The greatest difficulty in balancing Titans is finding a solution that makes the ship counterable within reasonable means and making it effective enough for players to satisfied with the undertaking of constructing and continuously using it. As in all balance decisions, it may not be possible to please everyone, especially those who have a stake in preserving the problem under scrutiny, but developers must commit to agreeing to a solution and executing it with no time wasted. The playerbase does not want to wait one second longer than it has to for a resolution to broken game mechanics that are inescapably ruining their experience.

Solutions for the Doomsday

First, I think there's enough said and seen about the Remote Doomsday through

Cyno field that just about everybody can agree that it should be removed. The ability to project that kind of destructive power at so many places at once can never, ever be balanced, and it's most problematic in abuse number three, the Doomsday Minefield.

I don't want to sound like I'm self-centered or narcissistic, but most ideas that I see for the Doomsday have one unifying flaw inherent in them. It is a pervasive theme that people simply cannot shake off.

For example, this theme is present in this idea: people often suggest that in order to fire the Doomsday, the Titan must go into "siege mode" where it is immobile and vulnerable for some period of time afterward. The obvious problem here is that nobody would ever bother using the Titan if it meant that it would make it a sitting duck for ten minutes.

But the reason why people seem to come up with this as the solution is that they just can't get away from the idea that Doomsdays must remain overwhelming offensive weapons. The fact of the matter is that, as I stated in *The Fundamental Flaw of Doomsdays,* it can never truly be considered balanced.

Just look at its traits:

- It doesn't have to target anyone.
- It has an area of affect with no saturation (that is, it doesn't burn itself out as it destroys more things).
- It isn't affected by transversal or signature radius; everything hit will receive full damage.
- Its effective range is the same as maximum targeting range (~250km).
- Attacking the origin of the Doomsday requires the person to get within targeting range, and thus forces the attacker to be vulnerable.

Every other weapon has limitations except for the Doomsday. It doesn't matter if it has a 15 second warm-up; it doesn't matter if with a plate and a hardener you can tank a single Doomsday; it doesn't matter if it costs 150 bil and tons of time and labor; it doesn't matter if the state of territorial sovereignty exaggerates its power. None of that matters. The fact that this weapon has the potential to destroy a limitless number of ships, combined with the fact that attacking it *requires* one to make him or herself vulnerable with no way to avoid it, puts it far beyond the realm of logical game balance design. This is definitively, conclusive, *irrefutably* broken.

Damage, at this point, becomes nearly irrelevant. Even if the Doomsday did 1.00 HP of damage over a 250km sphere, it would still be unbalanced, since there lies the possibility that, in theory, a group could construct enough Titans to destroy a ship in their 250km sphere, they have enough HP to remain ultimately unaffected and completely out of harm's way. Damage alone is not the problem.

For all weapons in EVE there must exist a method that allows one to confront and fight it without warping off, some kind of limitation. If warping off, docking, or ignoring

something becomes the most popular solution to a tactic, that can only signify that something is drastically wrong. This is true for many categorically overpowered ships now resolved, gankageddons, nanophoons, and multi-MWD ravens among them.

To find an appropriate analogy, if you shrink this conflict down to the frigate versus a battleship example - in this case a blaster Incursus versus a Geddon full of smartbombs - the Incursus, having very poor range with blasters, will pretty much have to get within smartbomb range if its going to do anything to the Geddon, where he can get blown up pretty much in an instant. The key distinction between this and with an actual Doomsday is that you can just put railguns on an Incursus and still be effective against the bombageddon, though it'll take much longer to get through all that HP. Against a Titan, it is impossible to attack except for taking a Doomsday right in the face or trying to attack during the cooldown - the only thing with any semblance of insight and yet still isn't enough – and during which the Titan can sit in a POS safe and sound or just jump away. All the risk for you, none at all for the Titan.

What the Doomsday needs to become balanced is a paradigm shift. Doomsdays as they are now can be incredibly effective as fleet-killing superweapons. They will never become balanced unless the Doomsday instead becomes purely an emergency maneuver, something which should *only* be used when the Titan is in dire danger, as the name "Doomsday Device" would imply. If the Titan was tackleable in some realistic way (such as my proposed alternative to electronic warfare immunity below) and put into danger, it would need to have something available to use as a last resort for it to escape. That should be specifically what the Doomsday is used for.

For Doomsdays, range is the key factor for balancing the Doomsday and producing this paradigm shift. If you can't outpace its tracking, and you can't outlast the blast, and it doesn't have to lock, the only avenue left for countering is to outrange it. With sufficiently reduced range, there exists the possibility that one could attack the Titan without leaving him or herself vulnerable to the Doomsday.

What I propose with regard to range is to reduce it so much that it would only affect those ships holding it in place – the tacklers. Reducing its blast radius to 50km makes it wide enough that it will hit large mobile warp disruptor bubbles and any tacklers holding it down (if this were possible). The only things that could still theoretically use a warp disruptor beyond 50km would be Lachesises or Arazus with faction warp disruptors, Recon Ships V, and the bonuses from a Skirmish Warfare Link – Interdiction Maneuvers module. It would seem a reasonable range to me.

The beauty of reducing the range is that, as long as the remote Doomsday is removed along with it, it essentially solves all four of the abuses mentioned above. With diminished range, it makes abuses one through three (Doomsday Sniping, The Venn Diagram Doomsday, and the Doomsday Minefield) far less powerful, and there the Doomsday could not be used offensively without putting the Titan into extreme danger, which is at the very least an improvement. Even if it's not exactly possible anymore, when applied to the concept behind abuse number 4 (Doomsday Turtling), the blast

would only extend 20km beyond the tower's force field, which wouldn't be very effective.

But in addition to reducing the range, the cooldown timer must be lengthened. You cannot accomplish much in the one hour (one Titan) after a single doomsday, and you can accomplish even less in half an hour (two Titans). One hour is only long enough to get Doomsdayed, pick up another ship, fly back to the conflict and get Doomsdayed yet again. It is a meaningless limitation even with only one Titan. To transform the Doomsday into a true emergency maneuver, the cooldown timer must be increased to at least three hours, and at most twelve. A three hour cooldown could be adequate, but at some times I think that five hours may be a necessary measure, considering the possibility that many Titans could exist at once. The final cooldown timer must be long enough that the Titan cannot rely on the Doomsday to save itself every time that it is endangered, since it so effectively thwarts its attackers.

Don't Adjust Capacitor, Look at Fuel Instead

On the issue of cap cost, it may not be necessary to increase it, and in fact, it may be a counterproductive to do so. If it were to become a measure meant only to help escape, it cannot be too taxing on the capacitor, since escaping can require having enough capacitor to jump out of the system. Increasing the capacitor cost so much that it completely drained the Titan might make it useless, just like forcing it to enter "Siege Mode", with all of these other changes in mind.

Instead of increasing cap cost, increase the fuel cost. A Titan has enough space in its cargo bay to hold four to six hours of Doomsdays, and at least nine hours more in the corporate hangar bay and yet more in the ship maintenance bay. Further, a carrier (Thanatos in this example) can easily transport 11,250m3 of fuel in one trip using both the corporate hangar bay and cargo bay. That much fuel isn't exactly a huge burden, and the payoff is well worth it. For comparison, the 20m ISK for a Doomsday now will accomplish a lot more than a 20m ISK fighter from a carrier.

Each successive use of the Doomsday should diminish the Titan's ability to escape later on, since the Doomsday itself is so effective at helping it escape. Groups that try to make continued use of the Doomsday as an offensive weapon will need to transport more fuel to the Titan to facilitate it, and over time this will tax their supply lines.

What the exact quantity of fuel needed should be I don't know. It has to be enough to hurt in the wallet to use, but it can't be more than you can fit in a cargo bay that already has enough fuel to jump out in it. Jumping a Titan seven light years would take roughly 4000 isotopes (Jump Fuel Conservation IV), which is about 600m3 of cargo space. That's not really a big portion of the cargo space, so using too much fuel is less of a concern. It might be necessary, for fairness' sake, to rebalance the size of their cargo bays so that the relative space needed is the same for all. Though keep in mind, a Titan could still have over 600,000 isotopes in reserve in its own corporate hangar.

However, in the end, fuel may not be an entirely realistic solution. If the

Doomsday used an entire cargo bay full of isotopes to fire, for complete safety, a Titan would have to monopolize its cargo bay space with isotopes just for its escape, which would almost defeat the purpose of the large cargo bays entirely. This would be akin to trying to solve the capacitor issue by lengthening a Titan's capacitor recharge rate by one hundred times; it is not treating the real source of the problem.

In the end it would be unwise to increase fuel cost too harshly, but I think a fuel cost of 150,000 isotopes (52,500,000 ISK, 22,500m3) might be a good middle ground. It would still be difficult for one carrier to haul, and it's more than twice as much as it is now, but it's not as burdensome as 275,000 isotopes.

With these changes, if the Titan pilot gets put into a situation where the ship is in danger, the pilot must decide whether or not to risk using the Doomsday, though using it should definitely dramatically increase its chances of escape. At the same time, using it offensively would be too risky to do in most, but not all cases.

In some ways, even with all these changes I don't think the Doomsday can ever really be balanced. A smartbomb 100km in diameter that can nearly destroy everything might be just too much no matter what, but barring a complete redesign for or removal of the Doomsday, these changes can be the only solution for now. The EVE-Online forum readers won't be pleased with my saying it, but in all truth, as long as multiple titans can exist at once, the abuses above will essentially remain as they are. As I think about it more and more, the Doomsday can never be balanced without counterbalancing it to a ridiculous level, and I am personally convinced that it simply should not exist at all. As long as the Doomsday exists in any way, amassing as many Titans as possible will remain a valid tactic. It may anger all the titan pilots out there right now (all 5-12 of them), but if I were in charge I would remove the module from the game and reimburse players with the Doomsday Operation skill trained by putting the skillpoints in something like Jump Portal Generation or the like.

Solutions for Electonic Warfare Immunity

The Capacitor Issue Revisited

Some people propose that a stacking nerf on cap rechargers, cap relays, and other related modules would solve the problem. This is somewhat true, but it's only meeting the problem half way. Cap recharge mods aren't conclusively broken on any ships besides Titans and motherships. On a Titan, having essentially infinite capacitor **guarantees** survival, but recharging a few thousand cap/s on a thorax isn't going to make you invincible. That is the real distinction. It is the same problem from speed modules before rigs and istabs were nerfed; the more speed and agility, the more invincible you get, and more speed always had a greater benefit than anything else. However, the same kind of problem doesn't need a global change like a universal stacking nerf. Capacitor recharge is a problem localized to only Titans and motherships.

If it were possible, somehow, to scramble a Titan's warp/jump drive, that would be enough to solve the issue with super-recharge setups. Am I suggesting that a crappy frigate should be able to ruin a Titan's day? Not necessarily.

But first, let's look at some of the ideas passed around from time to time:

Suboptimal Solutions for Electronic Warfare Immunity

Strategic Interdictor – A new type of ship that can either launch bubbles capable of stopping a capital/supercapital's jump drive or that can use a special capital scrambler.

Capital Warp Scramblers – Usable by any capital ship, such as dreadnoughts, carriers, and so on.

Capital Energy Neutralizers – Extra-large Energy Neutralizers meant to drain another ship's cap so low that it can't jump out. Conversely, a ship that uses Capital neuts also cannot jump out, since using the neut drains its capacitor, as well.

Would these ideas keep a Titan from jumping out? In theory, yes, but they are hardly ideal solutions.

The problem with all three of those ideas is that they neglect a fundamental pattern of balance in EVE-Online – no ship is supposed to be completely worthless against another; it should only be less effective.

Saying that one must have a capital ship or a special ship in order to take down another capital ship would be inconsistent with the design of the rest of EVE, and because of this, just doesn't make any sense. In a well-balanced game, an applied effort must have at the very least a slight effect. People say "capital ships are expensive and take a lot of training time. Obviously, they should take a lot to take down as well". This type of logic goes both ways. Tech 2 ships take months of training time and are many more times as expensive to build compared to their tech 1 counterparts (even comparing base mineral costs); should you only be able to attack tech 2 ships with other tech 2 ships? Would it be balanced for tech 2 ships to be immune to weapons from tech 1 ships? What is the real distinction between these two lines of thinking?

So lets say you've got a bad guy in a Titan around your space, setting off officer smartbombs and Doomsdays like it's a fireworks show on the Fourth of July (or New Year's, for non-Americans), and you want to put a stop to it. The deciding factor will be if you have the tackling implement necessary to do so. This is what's wrong: a dedicated, ship-specific tackler means that having one only assures that you have a chance at effectiveness, and without it you have no chance whatsoever. Having a tackling implement should not make the difference between night and day, or flicking a switch, or a one versus a zero.

For a current, well-known example of a problem: since interdiction spheres are the only way to properly prevent a supercapital from warping off, Titans and motherships are effectively invincible in low-sec space since interdiction spheres cannot be launched there. This suggests that, in lieu of not being able to use Mobile Warp Scrambling Devices, normal Warp Scrambler Is and Warp Disruptor Is should have *at the very least* a

limited effect on Titans. There is no other way they can be balanced.

The problem with **Capital Energy Neutralizers** is that, to be successful, some carriers have put down some capital neuts on a Titan and zap its cap below jump out level, somehow. Now you've got carriers with weakened capacitors from using the neuts that become easy pickings for an enemy fleet. Since they can't rep themselves with no cap of their own, they can't survive, and they get destroyed. The Titan escapes again. That, and for only a few carriers to zap enough cap to stop a max-recharge Titan, they would be so potent that they would drain so much capacitance from non-capital ships that they would break countless other mechanics in the game that at the moment function without problems.

Capital scramblers have the problem that capital ships are not ideal tacklers. They're not very mobile on grid and they don't target very quickly, even with sensor boosters. What kind of range would these scramblers need to have? It can't be too short, because of mobility issues, but if it's too long, then worse stuff can happen. If a Titan can Doomsday from 250km away, then a capital scrambler would have to have 250km range in order to catch the Titan, since it can't just MWD over there. But if you had this 250km range scrambler, you could just have a carrier sit 250km away from someone's capital ships and have it do all the tackling for you. The tackled cap ships are in a spot where they can't break the tackle, and the tackler is completely out of harm's way. It's not a good solution in the long term. It could be added in addition to another solution, but it cannot be the *only* solution, and it must be implemented with regard to already existing mechanics.

The **Strategic Interdictor** has the same sort of issue with capital energy neutralizers. When the ship gets blown up, the Titan has nothing to be afraid of yet again. It won't work in the long run, only in the "one Titan all by itself out in space with no support nearby" scenario, which is not a reasonable gauge to base ship balance on.

The three ideas above, quite simply, won't work, for the simple reason that in solving one problem they introduce yet more problems.

The dilemma one faces when thinking up a balanced solution for something like this is that you have to find a solution that will make the Titan vulnerable enough to deal with in a rational situation but self-sufficient enough that people will feel that it's worth the effort to buy and build. What I feel is the most reasonable solution is the simple often-suggested built-in warp core strength. A balanced way to tackle a supercapital should allow for targeted modules to have an effect, and additionally, it should not *require* a completely specialized ship to do it.

That just leaves the question of how much warp core strength would be balanced enough. Ideally, it would be high enough that the "single crappy tackler" shouldn't pose too much of a threat to the Titan, but it cannot be too high that the Titan remains essentially invulnerable, since it would be able to pick its fights with no drawbacks (essentially the same reason warp core stabilizers were nerfed in the first place).

I think +50 warp core strength is something that, after really looking closely at it, everyone can agree is obviously too high. I mean really, that's just going overboard. You'd need 51 points to do be effective, and if you've got a Titan with officer smartbombs that means you'd need to be in a durable enough ship with a 20km or more scrambler. Realistically speaking, that's one point per ship without setting up specifically to tackle a Titan (by that I mean scorpions with eight warp scramblers in their mids). That's at least 51 points from at most 51 ships tackling it continuously and successfully keeping it locked down means replacing tackler pilots as they get picked off. I hope this doesn't need too much explanation, but +50 to warp core strength is just too much. If the Titan knows that its enemies don't have enough midslots to have any effect, then it can run around willy nilly like before, nothing will have changed. On the other side of the spectrum, if the warp core strength was only something like 2, it might make people a little too wary about using it. Ideally, a Titan should not be terrified to leave a POS forcefield because of a small group of interceptors with no support, but those same interceptors shouldn't become hostages to the Titan as well.

To that end, I suggest this magic number: 12. Why do I propose this number? Well, the only other ships with innate warp core strength are blockade runners (and also Skiffs, they actually have a hidden bonus to warp core strength, believe it or not), which have +2 innate warp core strength. Theoretically, a ship can have eight low slots. Hypothetically, if you had a ship with eight low slots and an innate +2 to warp core strength, it could have at most a +10 bonus to warp core strength, meaning it would need 11 points of warp disruption on it to prevent warp on this theoretical vessel.

But there is also a second part to this change: **Change interdiction spheres and anchored bubbles so that instead of applying an infinite number of "points", they apply eleven.** Your end result is that to tackle a Titan, you need either thirteen tacklers with one point each, seven tacklers with two points each, one bubble and two tacklers with one point each, or a mix of all of them.

If just a single dictor bubble could hold down a Titan, there is the problem that a Titan is not at all mobile and will have difficulty moving itself outside of the bubble, which subcapitals can do. This way, one must have both a dictor bubble and a tackler or two holding it down. Tackling a Titan with the fewest ships possible would require one warp disruption sphere and one tackler with a 7.5km Warp Scrambler continuously scrambling it. It's vulnerable enough to put it into danger in a realistic (key word) situation, but not so much so that it'll get ganked embarrassingly. At the same time, a little more than a dozen interceptors could return to their place in PvP.

The numbers picked in this solution do at first seem like they were chosen through a leap in logic, I'll admit, but I choose them for a reason. With +12 innate warp core strength, Titans can be tackled within reasonable means, and should CCP ever release another ship with innate warp core strength and eight low slots, they wouldn't have to mess with the code since it was already set up with this in mind. Choosing 12 as the Titan's warp core strength and 11 as the scramble strength of a bubble is just me

trying to think ahead for CCP and prevent new problems from arising before it becomes a real problem (such as what has happened with Titans as they are now). If 12 is still too low to be considered reasonable, then I insist that the upper limit for the decided innate warp core strength be no higher than 19. Twenty or above is too much.

With a non-ridiculous amount of capital ships (four or five, perhaps), a decently tanked and not set up for max recharge Titan would still take quite a while to take down, and it would take the better part of a half-hour, even with dread support. I can't give you exact numbers for this, since this is just an estimation based on my experience with other capital ships, such as carriers and motherships, so I apologize for an instance of anecdotal evidence. As long as the Titan is piloted, tanked, and has some support to come and help, it would be a fight to remember, I assure you.

So now maybe you ask, "Why would it really be necessary to nerf ewar immunity?" To that same end, I should ask, "Why is it really necessary for a Titan to be immune to ewar?"

A Titan's not going to use any weapon that needs to target; though they can and sometimes do mount capital turrets, most never even use them. Most, if not all, Titan pilots will have in their highslots a Doomsday Device, an Improved Cloaking Device II (or a COSMOS cloak), a jump portal generator, a Gang Warfare Link module or two, and multiple officer smartbombs (the ones with 10.5km range). Sometimes they also mount a clone vat bay, but that's another thing to talk about later. If any highslots remain after that, I've seen *some* put on capital turrets, though I've seen others just put on Miner IIs into combat as a joke. That should say something about balance alone, but it's not associated specifically with my point, just something to think about. Since anchored bubbles at the moment have no effect on Titans, they have no need to warp scramble anyone, so locking still remains unimportant.

Not needing to target anything, remote sensor dampeners are not going to affect Titans in any real way, and their sensor strength is so high already that if they weren't immune to ewar, they all have a sensor strength of 200.0 and would be practically unjammable anyway (though that could be a candidate for a change). Since turrets are almost never fitted on Titans, tracking disruptors are pointless, and as always, target painters aren't going to change much against a ship that already has a 1300m+ sig radius.

But still, I would not be opposed to some kind of resistance to electronic warfare modules such as sensor dampeners. Four Remote Sensor Dampener IIs will reduce a 205km lock range down to 38.8km, and I think that may be a little too much. Some kind of added flag to adjust how the stacking penalty is applied to things like damps might be just about right, so that the first damp has 86% effectiveness, the second has 57% effectiveness, the third has 28% effectiveness, the fourth has 10%, and the fifth has 2.9%. Essentially, the stacking penalty starts at the first module instead of the second. Something like this just might be just the ticket.

In addition, however, it would be necessary to change Warp Scrambling and

Warp Disruption Batteries for player owned stations. At the moment, they do 6 and 3 points of warp scrambling strength, and with innate warp strength change, it may be a little *too* effective against enemy Titans, especially if they put a few dozen batteries on a POS. A Titan is still going to be in significant danger if it goes near an enemy POS with active warp scrambling and stasis webifier batteries, but not quite as much.

As an added note, the electronic warfare immunity given to a dreadnought in siege mode does not, from my estimation, need any kind of adjustment. A dreadnought is completely immobile in siege mode, and its weapons all receive crippling handicaps against non-capital ships, so it has enough limitations to be considered balanced. (Although the Moros' drone damage bonus might be worth looking at)

Solutions to Cloaking Devices

Well, there's not much to say about this, it's just that cloaking devices on capital ships and especially Titans can be unbalanced. Whether or not it is deemed worth changing by the developers is up to them, but I think giving each Titan, mothership, carrier, and dreadnought (for thoroughness) a 10,000% CPU fitting penalty for cloaking devices is an appropriate and easy to implement adjustment.

Solutions to Gang Bonuses

It is apparent to me that the benefits of the gang bonuses may be a little too much considering their effects. Instead, they should be lowered and the bonuses for each should be scaled with respect to how powerful the effect is in combat. 7.5% might not be so great for one particular bonus, but 7.5% for another can be astronomically powerful.

Avatar – Reduce benefit from 7.5% per level down to 4%. At Titan IV it will give 16% to max capacitor recharge and at V it will give 20% recharge. Still a very good bonus to have no matter what ship you are in, but not ridiculous.

Erebus and Leviathan – The 7.5% bonus per level to HP is too great for a fleet of potentially hundreds and on ships that already have over half a million total HP each ship to begin with. I would reduce it down to 4% more armor/shield HP per level, for a maximum bonus of 20% at Titan V. Added to the Siege Warfare and Armored Warfare Skills at level V (read: Armored Warfare V and Siege Warfare V), that's giving an entire fleet a total of 30% more HP to shield and/or armor, and the titan can give the benefits of Warfare Links that boost resistance as well.

Ragnarok – Considering the many different but often forgotten effects of signature radius, it stands to reason that a ship should not grant nearly twice the effect of a full grade Halo implant set to an entire fleet. This bonus should be reduced to 3% per level, for 15% smaller sig radius at Titan V. That's still a significant amount, 75% of a full halo set, but otherwise there isn't much else to work with.

A thing to remember is that bonuses reduced to this level may seem high at first, but the effects of pirate implant sets and officer modules cannot be given out lightly. In most cases, Halo implant sets have far less utility than, say, Snake implant sets, but more importantly, one cannot use both a Halo set and a Snake set at the same time because of limited implant slots. To give someone the effect of two Halo implant sets on top of a

Snake set of their own could have drastic effects on balance. This same philosophy should be used with regard to other bonuses as well.

If they aren't implemented so already, it may be necessary to force these bonuses to propagate down the fleet command ladder in the same way that other gang bonuses do, having their effects shared only from Fleet, Wing, and Squadron commanders. This is to reduce the effectiveness of multiple titans in one force; it is important to have a saturation point where an additional Titan becomes less useful than another type of ship.

The final decision as to what is the best overall solution is ultimately up to the developers, but I would say that it must be taken into consideration very carefully.

Other Needed Fixes

Bounding Spheres

As mentioned before, the extra-large "bounding spheres", as they are called, on Titans and motherships give them nearly double the range with officer smartbombs. Finding what the exact range is would be difficult to test, but I have heard from other people who have said with extreme confidence that a 10.5km smartbomb can exceed ranges of 20km. Given that smartbombs destroy dictor bubbles (which have a radius of 20km), and that tackling outside 20km can be difficult without a tech 2 Warp Disruptor or a Skirmish Warfare Link - Interdiction Maneuvers bonus, I think it stands to reason that these bounding spheres need to be adjusted in the interests of balance. If not, then the same problems as before remain unresolved.

I honestly don't know what can be done with the bounding sphere problem. It may be necessary for something I don't know about, so I don't know what removing or reducing it would do. Similarly, I don't know if it's possible to make a smartbomb have its origin start closer to the center of a Titan than the edge of the bounding sphere. To a degree, smartbombs should stay usable on capital ships for the purpose of blowing up objects obstructing their path, but this issue is in grave need of a fix.

Buggy Bubbles

It is a known issue, but interdiction spheres to not halt the warp drive of a ship that has begun the warp process and is aligning and moving up to speed. This is a bug, and it should be fixed. There's not much else to say about it.

Similarly, anchored Mobile Warp Disruptor Bubbles do not stop a Titan or mothership from warping, and right now there is a bug where anchored bubbles make dictor bubbles not work. Again, these are just simple needed bugfixes, not much to argue about.

Jump Bridge Bugginess

As I have been told, the jump bridge requires users to get within 2.5km of the Titan, but because of a hitbox problem of some kind, it is difficult to get within range before the jump portal closes. This is basically just yet another bug that should be fixed.

Clone Vat Bay Deficiencies

From what I've heard about the clone vat bay, it's not very useful. You can install a clone at it and jump to it, but once you've jumped to it you can't jump back. Perhaps this

deserves a little re-tooling.

Recommended changes to Titans in a summary outline:

I. The Doomsday
   a. It requires a role change from "Fleet nuking superweapon" to "Escape Measure"
      i. <u>Remove the Remote Doomsday</u>
      ii. Reduce the range
         1. Around 50km would be ideal and would solve abuses 1-4.
      iii. Lengthen the cooldown
         1. Three hours could be adequate, though five might be necessary. Should be no more than 12.
      iv. Increase isotope cost
         1. 150,000 isotopes needed to fire could be just about the right amount, but do not try to solve the problem by diminishing the usefulness of the cargo bay by too much.
      v. Make no major adjustments to capacitor cost
         1. It needs to use the Doomsday to escape, and it also needs capacitor afterward to do so. Don't go overboard.
      vi. The above assumes that removing Doomsdays of all kinds is not an option, though there is compelling evidence that they should not exist in any way, shape, or form.

II. Electronic Warfare Immunity
   b. Interdictor Spheres/Mobile Warp Disruptors
      i. Change warp scrambling strength from infinity to eleven.
   c. Give Titans/motherships +12 to innate Warp Core Strength
      i. This would allow normal warp scramblers to have a useful but limited effect, and would not make dictor bubbles the end-all-be-all of tackling supercapitals, encouraging actual teamwork but allowing a means to combat supercapitals in lowsec, where dictor bubbles cannot be used.
   d. Allow use of ECM, RSDs, Tracking Disruptors and Target painters
      i. No real reason it should be immune.
      ii. Consider an early stacking nerf to compensate for the removal. (i.e. The stacking penalty is applied starting on the first ewar module used instead of the second)

III. Cloaking
   e. It just should not be allowed.

IV. Gang Bonuses
   f. They are a little bit too high considering their benefits
      i. Avatar – Reduce bonus to 4% per level
      ii. Erebus and Leviathan – Reduce Bonus to 4% per level.
      iii. Ragnarok – Reduce Bonus to 3% per level, possibly even less.
   g. Also consider forcing it so that the bonuses only propagate down the fleet command ladder (i.e. Titan must be a squad, wing, or fleet commander to share the bonus)

V. Other needed adjustments and bug fixes
    h. Bounding Spheres
        i. Should be adjusted because of their devastating unintentional side effects on smartbombs
    i. Warp Disruption Spheres and Interdiction Spheres
        i. Should be debugged so that they stop warp correctly, as well as changing from infinity points down to eleven.
    j. The Jump Bridge
        i. The Titan's hitbox may need some work so that it is easier to make contact with it and use the jump portal
    k. The Clone Vat Bay
        i. Could be in need of some re-tooling

Remember, the problem with Titans is not just e-war immunity alone or just the doomsday alone, each trait is imbalanced in and of themselves. You cannot resolve to adjust one and not the other, they must both be changed eventually, and the Doomsday may need to be removed entirely after all is said and done.

The Redeeming and Perfectly Balanced Uses of Titans

I anticipate outcry from people accusing me of wildling swinging the "nerfbat" after suggesting these changes. After all, these are huge, sweeping changes, though except for the Interdiction sphere change, they are locally focused on Titans themselves. Some might feel that there would be no use for Titans if these changes were approved, but this judgment would be misplaced.

The Jump Bridge, gang bonuses, enormous cargo bays, and a fully functional Clone Vat Bay could transform a group's offensive capabilities in a truly meaningful way. A Titan could be a mobile station, the heart of an entire fleet, and project itself over dozens of light years in an instant. They have the cargo space and jump bridge which could make them unparalleled as supply vessels, capable of moving dozens of haulers across the cosmos. The gang bonus and Warfare Link capabilities of each are enough to make the Titan and its fleet a veritable powerhouse. Even after all these changes, a Titan could turn an ordinary group into a mobile strike force second to none.

The rebalanced Titan would be a fantastic investment for forces that choose to model their fleets around its incredible capabilities. It should be built only by those fully prepared to take the next step into a new and exciting level of game complexity. This would be the true greatest achievement of EVE Online; it would be a testament to the amazing potential of players working together, and through the force of pure ingenuity and dedication reaping the rewards.

It is the responsibility of the developing team to take all of the necessary steps to ensure this opportunity to the players and release changes with no further hesitation. To neglect or delay any change to Titans, no matter how small, would be unforgivable.