

Avorion Event Balance

The mod works on a principal of the bigger things are, the more scary they are. So if you have a large fleet, you are not likely to be attacked by idiots who do not have the firepower to take you on. However as you move closer to the center, pirates will get more bold.

Here is a little guide about tuning the event chances for your galaxy. There are a bajillion variables and they are named a bit iffy since the math has changed a lot since inception.

You **WILL** have to tune the default values to better represent the play style on your server. This guide is to help you figure out how.

@darkconsole on Discord <https://discord.gg/cDcDReC>
<https://github.com/darkconsole/avorion-event-balance>

Basic Principle

Each sector expects ships to be of a certain size. This size slowly increases the closer to the core you get. For example, this purple sector here is almost against The Wall, and it expects that the ships will average 1.555 mil m³ - which the game represents as 1555.

My ship is 8.6 mil m³ or 8600.

If I am the only one in the sector, and the pirates are expecting to see an average volume of 1555 on their sensors but see 8600 surely they would not be stupid enough to try and attack it.

If other smaller ships arrive, and bring the **average volume** closer to 1555, the pirates may think they can come in, pick a few of them off, and make off and out with the booty.

Additionally, if the sector average is too low the pirates may think it is not even worth the fuel to jump over.

Simulating Pirate Scouting

The primary value to determine how much volume is considered "just right" is defined by the **SkipWindow** variable. This tells the balancer how much deviation from the expected volume to consider prime to attack.

< 1041
Too Small

$1555 \pm 33\%$ (513)
(1041-2068)
Just Right

> 2068
Too Large

If on your server people tend to build larger you can float the sector's expected value up or down using the **SkipWindowFloat** value.

< 1792
Too Small

$(1555+750) \pm 33\%$ (513)
(1792-2818)
Just Right

> 2818
Too Large

SkipWindow is calculated BEFORE SkipWindowFloat. No matter what, the allowed deviation is **513** in these examples, meaning the window always scales only to the sector's expected value.

Simulating Pirate Space Smarts

Each ship in the sector will slightly narrow window for attack. The amount each ship flexes the window can be adjusted with the **SkipWindowFlex** variable. IF this variable is set to 1.0 (default is 0.75) then each ship will narrow the window by **1%**. For easy math pretend it is set to 1.0.

The variable **SkipWindowCap** will limit the calculation at a specific number of ships. The default is **10**, which means the 11th ship will not change anything.

Ships In Sector: 1

< 1807
Too Small

$(1555+750) \pm (33-1)\%$
(1807-2802)
Just Right

> 2802
Too Large

Ships In Sector: 5

< 1869
Too Small

$(1555+750) \pm (33-5)\%$
(1869-2740)
Just Right

> 2740
Too Large

Simulating Pirate Drunkenness

Just because your ship/sector is huge does not mean you won't get yourself a really stupid pirate. Let's say your sector is too large for pirates to attack. By default there is still a 10% chance that some idiot will still charge in. This value can be tweaked with the `SkipChanceVolume` variable.

Simulating Space's Epic Vastness

After all this, space is fucking huge. Even if all these conditions pass and the game decides that you should be attacked, by default there is only a 20% chance that it will happen. This can be tweaked using the `SkipChance` variable.

Things To Think About While Tweaking

If you just want more events, start increasing **SkipWindow** and **SkipWindowVolume** in increments like maybe by **5**. Remember a value of 20, means, 20% chance the attack can happen.

If people are building large on your server, you may want to bump **SkipWindowFloat** up in small increments like maybe by **300** until you start catching your players. Remember it is based on the **average volume** of the ships in the sector. You can monitor the maths by having Debug set to true and checking the pull down console to witness the numbers we are generating. By careful analysis of those numbers, you can tune events for your server's playstyle.

If you want the number of ships in a sector to have more or less weight on the chances, then adjust the **SkipWindowFlex** in small increments of like, **0.05**. Higher values mean more ships are more scary. Lower values mean more ships don't matter so much and the pirates are like YOLO.