

HOMEWORLD2

How to work with Multipliers and Abilities

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1 Introduction

This document is meant to be a step-by-step tutorial on multipliers and abilities. It will show you how to tweak these values in (amongst others) Ships, Subsystems and Nebulas.

2 File structure

Multipliers and abilities are in the tuning.xls files. Ships, Subsystems and Nebulas can apply multipliers and abilities to ships. The multipliers and abilities are tweaked in these files:

Data\Ship\ShipTuning.xls

Data\SubSystem\SubSystemTuning.xls

Data\Nebula\NebulaTuning.xls

In these tuning files, you will find a section that looks like this:

577	MULTIPLIERS				
578	Multiplier 0				
579			function	AddShipMultiplier	
580		MultiplierType	Quoted	MultiplierType	SensorDistortion
581		InfluenceType	Quoted	InfluenceType	OwnShipsWithinRadius
582		ActivityRelation	Quoted	ActivityRelation	Linear
583		MultiplierHigh		MultiplierHigh	0.01
584		MultiplierLow		MultiplierLow	0.01
585		Radius		Radius	2000
586			functionEnd		
587					
588	Multiplier 1				
589					
590	Multiplier 2				
591					
592	Multiplier 3				
593					
594	Ability 0				
595					
596			function	AddShipAbility	
597		AbilityType	Quoted	AbilityType	
598		enable		enable	
599		InfluenceType	Quoted	InfluenceType	
600		Radius		Radius	
601			functionEnd		
602					

3 Multipliers

3.1 General

Multipliers can modify certain parameters of ships like the speed, repair-rate, buildspeed, etc. These multipliers can be edited in the tuning files. Just look for the rows called 'Multipliers' (see image in chapter 2).

MultiplierType	Quoted	MultiplierType	The type of variable that is multiplied. Look in the list below on what types are available at the moment.
InfluenceType	Quoted	InfluenceType	Influence area. This tells the system what multipliers to modify, look below for different choices for this variable. For Nebulas, this will always be "ThisShipOnly".

ActivityRelation	Quoted	ActivityRelation	There are two choices: 'None' and 'Linear'. None means there is no relation between the activity and the multiplier. Linear means there is a linear relation between activity and the multiplier, essentially linking the multiplier to the health of the subsystem.
MultiplierHigh		MultiplierHigh	Multiplier for when the activity is 100%, or in case of a 'None'-ActivityRelation, the value of the multiplier
MultiplierLow		MultiplierLow	Multiplier for when the activity is 0%. In case of 'None' - ActivityRelation this variable is ignored
Radius		Radius	Radius for the spheres defined in the InfluenceType. Look below for different choices for the influence type.

Multipliers are multiplied with the variable. This means that if you want a multiplier to be ineffective, you need to set it to 1.0. The multiplier high and low values can be used when the activity relation is linear. The reason there is a high and a low value is more flexibility. For example, let's say you build a speed-enhancer-subsystem. But when the speed enhancer is nearly shot, it actually has a negative effect on your speed, essentially lowering the speed of your ships below their original speed. In this case you would set the activity relation to linear, the high to 1.2, and the low to 0.8 for example. This causes your ships to speed up when the activity (read: health) is 100%, and when the activity is 0% (heavily damaged) the speed is 0.8 times the original speed. Internally there are two types of multiplier, permanent and temporary. Permanent multipliers are set by research to the value specified. Temporary multipliers are cleared and refreshed every simulation frame and are set by things like subsystems and ships. Many temporary multipliers can apply each turn and each one multiplies the current value. To prevent this going out of control there is a cap limit specified in data/scripts/tuning.lua.

3.2 MultiplierType

At the moment the following multipliers are available:

MaxHealth	Maximum health multiplier
Speed	Maximum speed multiplier. Influences the speeds and the acceleration of the ship. (If you lower the speed, the ships take longer to brake as well, as the acceleration is lowered, too)
MaxSpeed	Influence only the maximum speeds, and <i>not</i> the acceleration of the ship. This makes the ship actually able to stop when the maxspeed is lowered.
BuildSpeed	Buildspeed of ships multiplier
ShipHoldRepairSpeed	Modifies the speed at which ships are repaired when docked
HealthRegenerationRate	How fast ships self heal
WeaponAccuracy	Changes the chance of a shot missing
WeaponDamage	Changes the damage a bullet or missile does that's fired from the ships
ShieldRegenerationRate	How fast shields regenerate.
MaxShield	Modify the shield capacity
HyperSpaceRecoveryTime	Modify the time during which a ship is disabled after coming out of hyperspace.
HyperSpaceTime	Modify the time that it takes to hyperspace.
HyperSpaceCost	Modify the RU cost of hyperspace
HyperSpaceAbortDamage	Modify the damage taken when a ship leaves hyperspace abnormally

Capture	Modify the progress of a capture attempt
CloakingStrength	Modify the cloaking value used when comparing vs. detection attempts. Bigger numbers mean harder to spot.
CloakDetection	Modify the detection value used to compare against cloaking
CloakingTime	Modify how fast a ship uses up its cloak capacity. < 0 means more time spent cloaking and faster recharge, > 1 means less time for cloaking and slow recharge.
SensorDistortion	Sensor distortion multiplier. This multiplier makes ships harder (if multiplier is [0..1]) or easier (if multiplier is greater than 1) to detect by sensors. The multiplier is applied to the detectors' sensor ranges.
MaxSpeed	Influence only the maximum speeds, and not the acceleration of the ship
VisualRange	Influences the visual range of the ship
PrimarySensorsRange	Influences the primary sensors range of the ship
SecondarySensorsRange	Influences the secondary sensors range of the ship
DustCloudSensitivity	Sensitivity to DustCloud charge damage (damage ships inside dustclouds). If this one is set to 0, no damage is taken. If set to 1, full damage is taken.
NebulaSensitivity	Sensitivity to Nebula charge damage (damage ships inside nebulas receive). If this one is set to 0, no damage is taken. If set to 1, full damage is taken.
ResourceCollectionRate	Modifies the rate at which a collector collects resources
ResourceDropOffRate	Modifies the rate at which a ship removes resources from a collector when it is docked.
ResourceCapacity	Modifies how many RUs a ship can store.
DefenseFieldTime	Modify how fast a ship uses up its defense field capacity. < 0 means more time spent shielding and faster recharge, > 1 means less time for shielding and slow recharge.

3.3 InfluenceType

The Influence type describes what the multiplier is applied to. These are the influence types available:

ThisShipOnly	Act only on the ship that this subsystem is deployed on
AllShipsWithinRadius	Act on all ship in the given radius (including the ship this subsystem is deployed on)
OwnShipsWithinRadius	Act on all ships owned by the player within the given radius (including the ship this subsystem is deployed on)
EnemyShipsWithinRadius	Act on all enemy ships within the given radius
AllShipsWithinRadiusExcludingThisShip	Act on all ships within the given radius (excluding the ship this subsystem is deployed on)
OwnShipsWithinRadiusExcludingThisShip	Act on all ships owned by the player within the given radius (excluding the ship this subsystem is deployed on)
EnemyShipsWithinRadiusIncludingSleeping	All enemy ships within a radius including sleeping ships (hyperspacing ships are sleeping)

4 Abilities

4.1 General

With Abilities you can temporarily disable or enable certain abilities on ships. For example, you can disable its steering. This makes it temporarily immobile. These abilities can be edited in the tuning files. Just look for the rows called 'Abilities' (see image in chapter 2).

AbilityType	Quoted	AbilityType	The type of ability that is enabled/disabled. Look in the list below on what types are available at the moment.
enable		enable	0 or 1. 0 disables it, 1 enables it.
InfluenceType	Quoted	InfluenceType	Influence area. This tells the system what multipliers to modify, look below for different choices for this variable.
Radius		Radius	Radius for the spheres defined in the InfluenceType. Look below for different choices for the influence type.

4.2 AbilityType

At the moment the following ability types are available:

Move	Move command toggle. (Has to be in shiptuning to be available)
Attack	Attack command toggle. (Has to be in shiptuning to be available)
Guard	Guard command toggle. (Has to be in shiptuning to be available)
Repair	Repair command toggle. (Has to be in shiptuning to be available)
Cloak	Cloak command toggle. (Has to be in shiptuning to be available)
Harvest	Harvest command toggle. (Has to be in shiptuning to be available)
Mine	Mine laying command toggle. (Has to be in shiptuning to be available)
Capture	Capture command toggle. (Has to be in shiptuning to be available)
Dock	Dock command toggle. (Has to be in shiptuning to be available)
AcceptDocking	Whether the ship accepts docking ships. (Has to be in shiptuning to be available)
Builder	Whether the ship can build stuff. (Has to be in shiptuning to be available)
Stop	Stop command toggle.
Hyperspace	Hyperspace command toggle. (Has to be in shiptuning to be available)
Parade	Parade command toggle. (Has to be in shiptuning to be available)
FormHyperspaceGate	Can this ship form a hyperspace gate? (Has to be in shiptuning to be available)
HyperspaceViaGate	Can ship hyperspace via a gate? (Has to be in shiptuning to be available)
SensorPing	Sensors ping ability. (Has to be in shiptuning to be available)
Retire	Retire command toggle. (Has to be in shiptuning to be available)
Steering	Steering of the ship. Disable this to make the ship tumble in space
Targeting	Targeting systems. Disable this and the ship can't fire anymore.

Sensors	Sensors Systems. Disable this and the ship doesn't have sensors anymore.
Lights	Lights: Disable and the lights of the ship turn off.
DefenseField	Defense field ability.
DefenseFieldShield	Defense field shield ability. The ship needs a defensefield for this to have effect. If this ability is enabled, all owned ships within the defensefield will receive less damage from dustclouds and nebulas. See shiptuning for this ability (multipliers are in shiptuning as well)
HyperspaceInhibitor	Hyperspace Inhibitor ability.
Scuttle	Scuttle is enabled by default.
UseSpecialWeaponsInNormalAttack	This is disabled by default for all ships. Granting this means a ship will fire weapons with special attack activation during normal combat. This will not work well if the ship actually has a special attack. It is used in the torpedo frigate and the bombers to give them the ability to auto choose ammo to fire at different targets once they are upgraded.

4.3 InfluenceType

The Influence types are the same as for multipliers. Look in chapter three for their description.