

# 1.50 Improved

The 1.50 improved mod aims, as the name suggests, to improve on the classic experience by enabling enhancements to tactical combat and weapon mechanics and by making several tweaks, while keeping major elements like custom race picks and the technology tree unchanged. Changes are made with Config. When you first install the 1.50 fan patch, 1.50 improved is enabled by default.

1.50 improved includes the following changes:

## Combat Mechanics

### Interactive Combat Stats

Interactive Combat Stats (ICS) causes ship stats to update within the combat turn. In the original game mechanics, ships recalculate most of their stats at the beginning of each turn. First, this is inconsistent with several effects applying immediately. Second, this is somewhat counterintuitive, e.g. ship tractor to full immobilization is legal for boarding (counted as immobile), while still being able to move. ICS makes all ship stats update as soon as any event affecting them happens.

The stats are:

- Ship speed and immobility state
- Ship move points (squares ship can fly this turn)
- Beam attack
- Beam defense
- Missile evasion
- Fleet ordnance bonus

The events are:

- Cloaking / Decloaking
- Tractor beam attack / cessation
- Black Hole Generator attack / cessation
- Damaging of internal system (special, drive or computer)
- Ship destruction, retreat or capture

For example destroying enemy ship A may result in:

- Cessation of tractors from A towards our ship B.
  - Ship B becomes mobile.
  - B's speed increases, consequently beam defense increases.
  - B's move points increase (restore), it can now move.
- Death of a leader on ship A.
  - Enemy fleet loses beam attack bonus provided by the leader.
  - Enemy fleet loses ordnance bonus from the leader.

For the same event in classic (or with ICS off) only the mobility state is changed. The rest of stats do not update until the end of the turn and ordnance does not change for the rest of the battle.

Speed update deserves a special example. Let's assume ship with speed 10 and 8 unused move points has just been fully stopped with tractor beam:

- Classic: ship is immobile, but the only effect of it is that it can now be boarded, otherwise it still can move up to 8 squares and keeps the defense bonus from speed.
- ICS: ship is immobile, can be boarded, can't move and has defense decreased. Moreover it will regain full mobility and its 8 move points during that turn in case the tractor beam affecting it ceases (e.g. is destroyed).

If the tractor beam is removed on the next turn:

- Classic: ship becomes mobile and can't be boarded, but still has zero move points and defense penalty from immobilization.
- ICS: ship is not immobile in any sense and regains 10 unused move points it acquired at the start of turn, because tractor beam effect 'stopping' the ship ceased.



### **Strict Combat Sequencing**

This combat mode is an improvement of classic ship initiative combat and changes the rules for selecting which ship moves next: Combat is split in two stages, pre-wait and post-wait. In the pre-wait stage ships move in order of their initiative (highest to lowest) and can wait if they want to act later. In the post-wait stage ships move in reverse order (lowest initiative to highest) and can't use the Wait button anymore. Because the Wait button can be used only once for each ship, the player can no longer cycle ships endlessly. Note that with ICS enabled, ship initiative can change *during* the turn which will affect ship ordering.

### **Simplified Beam Formula**

This new formula fixes irregularities in the classic formula. In general the accuracy on ranges 6+ becomes lower and a large BA-BD delta won't cause the range penalty to be ignored (range 6+ is; 7+ squares for PD, 16+ for normal and 34+ for Hv mount).

### **Ship Boarding**

Ships now have to be adjacent to board, while the classic range is 3 (permitting a 2 square gap). Boarding to ships trapped in a black hole is not allowed in 1.50 improved.

# Weapons

## Fusion Beam

Fusion Beam's inherent ranged to-hit penalty has been removed. This mod has also been removed from the Mauler Device via patch (Mauler always hits, so the mod does not have an effect), so only the Plasma Cannon retains it.

## Plasma Cannon

Plasma Cannon's base cost has been increased to 25 (from 15), bringing its cost/space ratio back in line with other beam weapons. (Details in the addendum `manual\_150.xls`, Weapons tab.)

## Missiles

Missiles move at the end of each turn instead of at the end of the next turn in classic Ship Initiative enabled games. In games with Ship Initiative off, missiles move at the end of each turn by default. Note that, as described above, 1.50 improved has Strict Combat Sequencing enabled, which in turn enables ship initiative regardless of its setting in the game/settings menu.

In addition, missiles launched in different turns will not glue together in 1.50 improved. Under classic rules, missile stacks from different turns can join and form one stack.

## Torpedoes

The three torpedoes get the same miniaturization as beams, missiles and bombs (miniaturization group 1). In classic, they are in miniaturization group 2.

	Space group 1	Space group 2	Space group 3	Cost
L0	1000	1000	1000	100
L1	800	800	1000	75
L2	650	700	1000	55
L3	500	600	1000	40
L4	350	500	1000	30
L5	250	400	1000	25
	Beams (0)	Anti-Missile Rocket (5)	Assault Shuttles (4)	All
	Missiles (1)	Gyro Destabilizer (5)	Interceptors (4)	
	Torpedoes (2) *	Tractor Beam (5)	Bombers (4)	
	Bombs (3)	Plasma Web (5)	Heavy Fighters (4)	
	Shields	Pulsar (5)	Reinforced Hull	
		Stasis Field (5)	Heavy Armor	
	* in 1.50 standard	Stellar Converter (5)	Troop Pods	
	(group 2 in Classic)	All Other Ship Systems	Augmented Engines	
			Extended Fuel Tanks	
	(#) is weapons group		(Battle Pods)	

## Fighters

The maximum damage of energy beam weapons on Fighters is clipped to its listed maximum. In classic they get a +1 bonus due to a bug that we regard as having become a classic feature, hence it was not patched but fixed via config.

Heavy Fighters can now intercept missiles too, using their beams only. They will still act in their usual way when targeting ships.

In a balance change, the size and cost of Bombers and Heavy Fighters have been reduced, as follows: (Original classic values after #)

```
weapon bomber size      = 40 20; # 60 30
weapon heavy_fighter size = 60 40; # 80 50
```

Note that in 1.40 and older versions, due to a bug the AI could fit bombers and heavy fighters for 30 space each (interceptors space value). In 1.50 AI adheres to the set space values.

### **Bombs**

Base space of all bombs has been standardized to 5 space, or ½ space of standard beams (10 space). Cost has been lowered as well.

```
weapon fusion_bomb size      = 5 4; # 7 5
weapon anti_matter_bomb size = 5 5; # 7 6
weapon neutronium_bomb size  = 5 6; # 10 9
weapon bio_terminator size   = 5 6; # 7 8
```

### **Plasma Web**

In classic, Plasma Web dissipation is 5 damage per turn for *all webs* on a ship combined (and not per individual web). Over turns, this can lead to huge damage numbers done by this weapon. In 1.50 improved the dissipation is a more reasonable 50% per turn.

### **Black Hole Generator**

A Black Hole Generator only recharges after the previous target is destroyed in 1.50 improved. Thus the attacker needs to wait until the target is destroyed until he can fire the weapon again.

## **Special Systems**

### **Lightning Field**

In 1.50 improved Lightning Field's buggy roll is fixed; the amount of missiles killed now has a binomial distribution. With the default 50% kill chance (it's configurable) this means that on average ½ of all incoming missiles / fighters will be killed. In classic, due to this game bug, on average ⅓ instead of ½ missiles / fighters are killed. The distribution in classic is also asymmetric and yields different results depending on the size of missile pack, e.g. 8 missiles fired one by one and fired in one stack have significantly different survival rates (50% in a stack will survive guaranteed). This could be exploited in Guardian rush games which is why we deem it to be a classic feature.

### **High Energy Focus**

The High Energy Focus bonus is set to +50% for each mount type (75 100 225). The classic setting is 100 150 200, where Point Defense gets a bigger and Heavy Mount a smaller bonus than expected.

## Support Ships

In 1.50 improved, all Colony Ships, Outpost Ships and Transports that are built after a stealth tech has been researched will be fitted with the best available stealth device.

## Combat Satellites

The Star Base specials list has been shuffled such that Battle Scanner is guaranteed instead of Shield Capacitor (this is especially useful for Creative races).

## Jump Gates

Fleets travelling in a Jump Gate controlled wormhole are unaffected by nebulae in 1.50 improved. In Classic, only black holes are ignored but not nebulae.

## Buildings

### Armor Barracks

The build cost for Armor Barracks has been lowered from classic 150 to 80 production points (pp). Maintenance cost is also reduced from 2 to 1 BC/turn.

### Fighter Garrison

Fighter Garrison has been adjusted for Bombers and Heavy Fighters new space and now houses 8 (was 6) Bomber flights and 6 (was 4) Heavy Fighter flights.

### Food Replicators

Food Replicators is arguably the least productive building in the game, charging a hefty 2 PP and 1 BC per 1 food produced (the extra coin was undocumented) plus a staggering 10 BC/turn maintenance cost. In 1.50 improved the 1 BC per food has been removed and the maintenance cost for this building is lowered from 10 to 4 BC/turn.

## Research

Invested research points are no longer lost if a tech find is the same as the current research project.

## Spying

Spies can now steal anything, except the technology that is being researched. Under classic rules, anything but the *tech field* being researched can be stolen by your spies. Democracies that advance to Federation, now have their defensive spying penalty reduced from -10 to -5.

## Leaders

The following skill cost have been revalued:

Famous	3 6	(2 4)
Fighter Pilot	2 4	(3 6)
Navigator	2 4	(1 2)
Ordnance	4 8	(3 6)
Spy Master	2 4	(3 6)
Tactics	1 1	(2 4)

Since the Tactics and Tactics\* skills do not work, the three leaders with this skill have been adjusted for 1.50 improved.



### **Khunagg, the Ruthless**

- Removed Tactics
- Added Assassin



### **Nimraaz, the Master Tactician**

- Removed Tactics\*
- Added Famous



### **Rash-Iki, the Warlord**

- Removed Tactics
- Removed Commando
- Added Commando\*

## Space-Time Anomaly

The first possible occurrence of the Space-Time Anomaly event has been pushed back from 50 to 200 turns (and now has the same delay as Comet and Nova events).

## AI Race Variants

The classic design of AI race Hard and Impossible race variants is bugged by roughly two problems:

1. Sometimes extra abilities are awarded that the base race already has. Examples are Bulrathi getting SA+25 and the Sakkra getting Food+1 in several variants.
2. The range of picks awarded varies hugely per race variant from nett negative (Sakkra's Aquatic+Repulsive) to plus 12 picks, very likely because the design was done before the final race picks that we all know were set. When doing a count with pre-release picks from the Strategy Guide (with for example Repulsive at -2 picks and Tolerant at +8) variability was

greatly reduced and it seems that the devs intended to give on average +3.5 picks (3-4) on Hard difficulty and +7 picks (6-8) on Impossible. For 1.50 improved only the first problem has been addressed, while the latter is left untouched (except for two Darlok Hard variants) because fixing it would lead to larger changes to many variants, making them noticeable 'non-classic'.

In addition, two Pilon variants have been touched that got picks cut in the version 1.3 update that increased the cost of Creative to 8 picks and swapped the Artifacts homeworld of the base Pilon race for a Large one.

## **AI Behaviour**

### **Colony Bases**

In 1.50 improved, the AI is not required to have a drive as well as fuel and colony ship technology to build a colony base. As a result an AI can build one or more colony bases early in pre-warp games as soon as it has the colony base tech.

### **Hyper\_Advanced Research**

The AI is enabled to research hyper-advanced tech fields that miniaturize late game weapons and specials. In classic, upon completion of research of all regular technology fields, AI stops all research and destroys all of its research facilities. This behaviour is now postponed until the AI has completed one level of advanced research in Power, Physics, Fields, Chemistry and Computer branches. The AI will not do advanced research in Biology, Construction and Sociology.

## **AI Ships**

An attempt is made to improve AI ship designs by changing the weapons space allocation tables and some preferred weapon/special lists. For example, ships carry less bombs overall and beam ships will have the Battle Scanner fitted more frequently. Details of all changes can be found in the addendum, tabs AISHIPS\_1 and AISHIPS\_2. The first tab lists the changed order of preference for special systems for the various ship design themes. The second tab details changes to space allocation for weapons and special systems.

## **The Guardian**

Plasma torpedoes and compressors swapped slots in the Guardians design, so that compressors fire first and torpedoes last. (The Guardian received its 2 compressors in Simtex v1.3 and they were simply added in the last slot.)

## **Antarans**

The maximum Antaran offensive fleet can now consist of 6 Titans (was 2) which is a nice improvement for those who enjoy ultra-longplay games (>turn 500). Antaran Defensive Battleship and Titan designs have been updated to match their offensive counterparts, in effect making them slightly stronger. Antaran ship drives have been updated from Hyper to Interphased Drive, increasing the beam defense by +10. Lastly, the Pre-warp delay that defines when the Antarans can make their first appearance has been decreased from 200 to 150 turns (delay on Average is 100 turns).

# Galaxy Map

## Table orbit\_to\_satellite\_type

A Gas Giant can no longer appear in the second orbit of a star system, achieving a ratio of 10 asteroids, 10 gas giants and 30 planets instead of 10/11/29.

O.I	O.II	O.III	O.IV	O.V
1	1	1	1	1
4	1	1	1	2
3	2	1	2	2
3	3	2	2	2
3	3	2	2	2
3	3	3	3	2
3	3	3	3	3
3	3	3	3	3
3	3	3	3	3
3	3	3	3	3
3	3	3	3	3

O.I	O.II	O.III	O.IV	O.V
1	1	1	1	1
1	1	1	1	2
3	3	1	2	2
3	3	2	2	2
3	3	2	2	2
3	3	3	3	2
3	3	3	3	3
3	3	3	3	3
3	3	3	3	3
3	3	3	3	3
3	3	3	3	3

1 Asteroid, 2 Gas Giant, 3 Planet, 4 Companion Star (becomes an Asteroid).

## Table class\_to\_group

The table class\_to\_group fixes the Brown star planet groups from 0/0/1/2/3 to 2/3/3/3/3 since Brown stars are supposed to be weak stars.

O.I	O.II	O.III	O.IV	O.V	
0	0	0	0	1	blue
0	0	1	2	3	white
0	1	2	2	3	yellow
1	2	2	2	3	orange
1	2	3	3	3	red
0	0	1	2	3	brown

O.I	O.II	O.III	O.IV	O.V
0	0	0	0	1
0	0	1	2	3
0	1	2	2	3
1	2	2	2	3
1	2	3	3	3
2	3	3	3	3

0 Bombarded, 1 Hostile, 2 Life Supporting, 3 Lifeless.

## Table climate\_roll

Lastly, it tweaks the two climate\_roll tables, a.o. fixing the hostile planet group values adding to 105 in the classic map, which very likely must have been a typo.

0	1	2	3	
15	15	10	20	Toxic
55	50	15	0	Radiated
25	25	10	70	Barren
5	10	10	0	Desert
0	5	10	8	Tundra
0	0	10	2	Ocean
0	0	11	0	Swamp
0	0	11	0	Arid
0	0	11	0	Terran
0	0	2	0	Gaia
100	105	100	100	

0	1	2	3
15	15	10	15
55	50	15	0
25	20	10	75
5	10	10	0
0	5	10	8
0	0	10	2
0	0	11	0
0	0	11	0
0	0	11	0
0	0	2	0
100	100	100	100

Planet Groups in columns: 0 Bombarded, 1 Hostile, 2 Life Supporting, 3 Lifeless.

