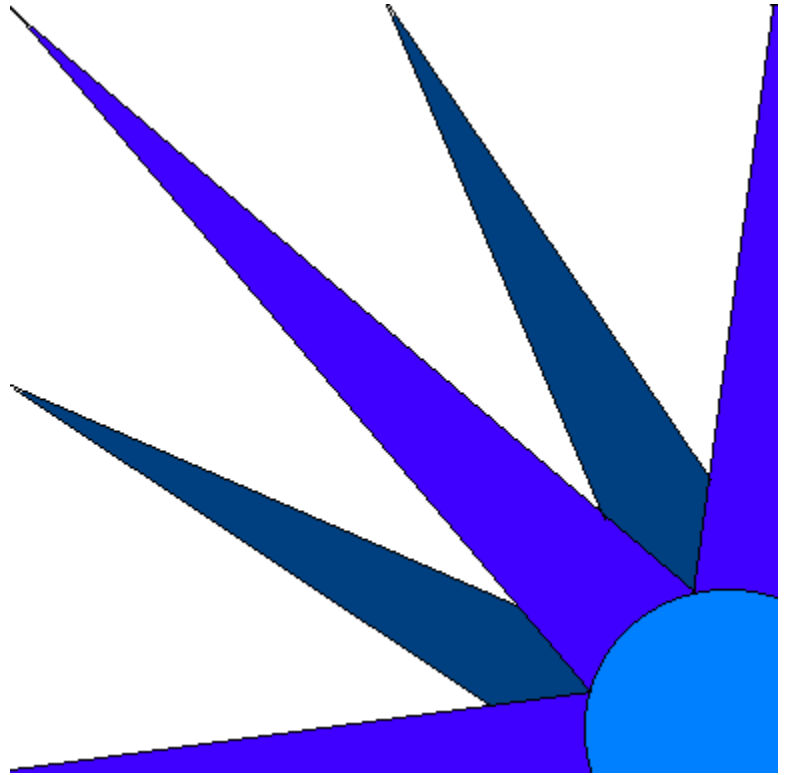


ARKAYN GAME DESIGNS



ASTRA IMPERIA

Space Combat Simulations

AGD1100

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Space Combat Simulations

Written by
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<http://games.pentarch.org>

AGD1100

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1.0 Introduction

“Missiles incoming!” shouted the tactical officer, “Six bogies incoming vector 300. Point defense clusters firing. Four destroyed!”

“All hands! Brace for impact!” the captain announced over the ship’s internal com system.

The cruiser heaved as the multi-megaton antimatter warheads impacted on the shields.

“Shields down to 30%, Captain! ECM and our portside gauss cannon disabled. Damage control on them”

The captain glared at the icon in his display that represented the enemy’s ship. Who would have thought that a pirate ship would be able to go toe to toe with a cruiser of the TCN? Captain Delacroix shook himself slightly and formulated a new plan.

“Helm! Come to bearing 120 and open to full power. Tactical, flush the starboard missiles as she bears. Use the MK2 MIRV’s.”

Delacroix waited tensely as his ship moved through the gyrations he asked of her. As the ship turned, it rocked slightly as the missiles left her. The 4 missiles were not as heavy a broadside as the pirate was throwing, but while the pirate was limited to what looked to be standard antimatter warheads; the Cutlass was a ship of the Terran Confederation Navy, and her magazines held more than standard antimatter warheads. 10 seconds after leaving the ship, the missiles seemed to break apart, and suddenly there were eight missiles roaring in on the pirate. His point defense crews seemed to be taken by surprise by the MIRV’s. Seven of the eight missiles impacted on the shields of the pirate. The shields collapsed and the pirate ship seemed to glow for a brief second before exploding.

“Looks like her plants went Captain,” said the tactical officer.

“Aye, scan for survivors, and stand down from battle stations. Then bring us about and catch up with the convoy. I’m sure the Wolf Trading Company will be glad to hear that there’s one less pirate to attack their convoys.”

If you enjoy reading stories about battles in space against pirates or invading alien armadas and wished you could partake in the battles or even conduct your own, then Astra Imperia is geared for you. Astra Imperia is a tactical and strategic space simulation. Astra Imperia can be considered two games in one, a tactical space combat, and a strategic stellar empire simulation. Presented here are the rules you need to conduct your own battles, from a single cruiser defending a convoy against pirates, to a clash of mighty fleets fighting for supremacy to rule the stars. These rules presented are “lite” rules. Not all of the available technologies, weapons, ships are presented here. Nor are the campaign rules. For information on the complete rules, check our website at

<http://games.pentarch.org>

1.1 Materials Needed

To play Astra Imperia, you will require at least two d10 dice, a hex map, paper and pencils, counters for ships, missiles, and fighters, and your imagination.

2.0 Tactical Rules

The simplest simulation to take place in Astra Imperia would be an encounter between two ships. The tactical game is played on a hex map. Each hex on the map represents 10,000 km. Most encounters take place in the 15 to 25 hex, or 150,000km to 250,000km range.

2.1 Turn Order

Each turn takes place in a specific order. Each turn is comprised of 2 phases of 15 seconds in duration. The turn order is as follows:

Pre-Turn

Initiative

Phase 1 Movement

Phase 1 Combat

Phase 2 Movement

Phase 2 Combat

End Turn Bookkeeping

2.1.1 Pre-Turn

The pre-turn is when shields regenerate.

2.1.2 Initiative

Initiative is determined by a d10 roll. Crew grade and/or admiral grade affects this roll. Crew grade also affects combat rolls. The lower the number for initiative, the faster your crew reacts. Each ship usually rolls for its own initiative. Exceptions to this are ships connected by Command Nets (on page 18), and large battles, where groups of ships in battalions or squadrons move at the same time. The modifiers are shown in the table below.

Crew/Admiral Grade	Initiative Modifier	To Hit Modifier
Green	+3	-15
Poor	+1	-5
Average	±0	±0
Crack	-2	+10
Elite	-4	+20

Table 1 Crew/Admiral Grade

2.1.3 General Movement

The movement phases occur in reverse initiative order, i.e. the higher initiative numbers move first. This is to simulate the experience and ability for faster reacting crews/ships to react to the movements of their opponents.

Each ship has two important characteristics that are relevant to movement. These are Movement and Compensation. Movement is a function of the engines of the ship. Compensation is a factor of the inertial compensators. Ships can move faster than their

Comp rating, but each step past it incurs a -5% to hit and a +1 to Initiative. Ships cannot move more than three steps past their Comp rating. After this, the crew loses consciousness or otherwise is rendered incapable of effectively running the ship.

2.1.4 Movement Basics

Astra Imperia uses a vectored thrust movement system. This means that the direction the ship faces is not necessarily the direction it is moving. Each ship has a Bearing and a Thrust. These are recorded by the following designations 000, 060, 120, 180, 240, & 300. Each ship records the amount of net thrust in a given vector, and the heading. Each ship has a limited number of thrust points to allocate per turn, not phase.

Example: The Katana has a current heading of 060 and a vector of 120 with a thrust of 3. Thus, the Katana's bow is facing 060 and she is moving direction 120.

Net thrust is determined by subtracting opposite vectors. It is recommended that the 'forward' bearings (300, 000, and 060) be used as base headings. When the total movement is determined for each heading, the ship will move 1 hex per movement in those vectors. A negative movement would designate movement in the opposite heading.

Example: The Katana has the following movements, 000:1, 060:0, 120:2, 180:1, 240:0, 300:1. These results in vectors of 300:-1, 000:0, 060:0. The Katana will move 1 hex in the direction of 120.

Movement vectors are recalculated each movement phase. From the above example, the *Katana* will start its next movement phase with a vector of 120:1.

2.1.5 Phase 1 Movement

This is the first opportunity for ships to maneuver in the turn. Ships move in order of reverse initiative. Each ship moves up to ½ of their thrust (round down) or three, whichever is greater in each of its net vectors. After all ships have moved, the phase ends.

2.1.6 Phase 1 Combat

This is the first opportunity for ships to fire. Combat is detailed in the Combat section (on page 7).

2.1.7 Phase 2 Movement

This phase is the last chance to maneuver in the turn.

2.1.8 Phase 2 Combat

This is the last chance of the turn to fire weapons.

2.1.9 End Turn Bookkeeping

The end turn bookkeeping is when damage control crews may attempt repairs.

2.2 Combat

Combat occurs twice each turn. Weapons are mounted on hardpoints on each ship. Weapons are also mounted in firing aspects. These aspects are Spinal (Forward or Rear), Broadside (Port or Starboard), Turreted, Forward Arc, Rear Arc. Spinal weapons do $\frac{1}{2}$ again as much as regular weapons.

Spinal (Forward) – The hex row on bearing 000.

Spinal (Rear) – The hex row on bearing 180.

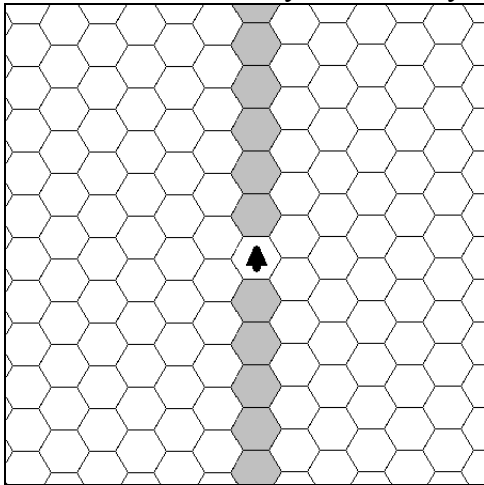
Broadside (Port) – The arc defined by bearings 240 and 300.

Broadside (Starboard) – The arc defined by bearings 060 and 120.

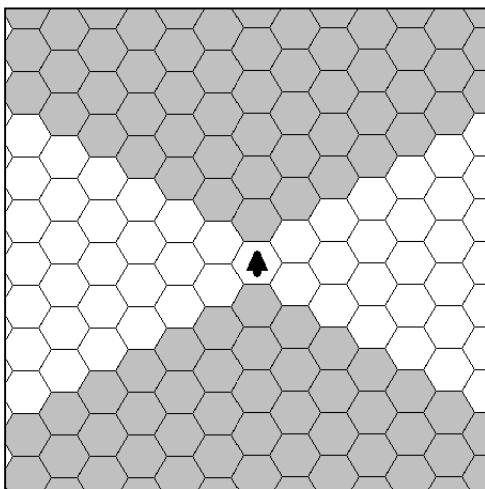
Forward Arc – The arc defined by bearing 000.

Rear Arc – The arc defined by bearing 180.

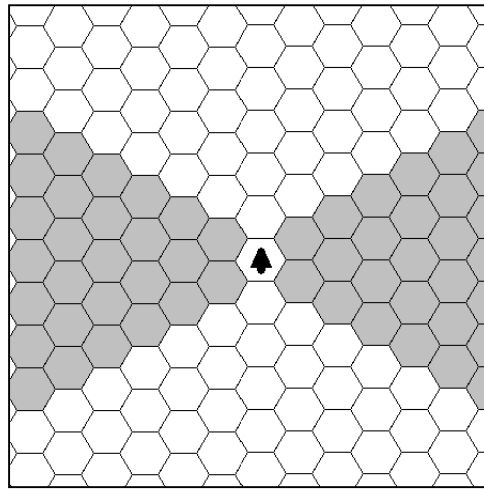
Turreted – May fire into any arc.



Spinal Arcs



Forward/Rear Arcs



Broadside Arcs

2.2.2 Firing

Firing weapons is a percentile roll. Each weapon has a 'to hit' number based on the range to the target, crew ability, ECM, and sensors. If the percentile roll is greater than or equal

to the calculated to hit number, the weapon has struck the target and damage is done. Weapons may fire once per firing phase.

2.2.2.1 ECM

ECM, or Electronic Countermeasures, is used to degrade the chances for weapons to lock onto the ship the ECM is on. ECM can act in one of three different modes. The modes are ECM, ECCM, and Stealth.

2.2.2.1.1 ECM

ECM works against the enemy ship to prevent target acquisition. This is the standard mode.

2.2.2.1.2 ECCM

ECCM, or Electronic Counter-Countermeasures, is used to counter ECM. ECCM aids the acquisition of target lock, by lowering the signature resolution of your sensors.

2.2.2.1.3 Stealth

Stealth mode is an advanced form of ECM. It cloaks the ship from sensors and provides a defense against target acquisition. Weapons may not be fired under stealth mode. The values in the following table directly modify the Resolution of your sensors.

ECM	ECM Mode	ECCM Mode	Stealth Mode
1 st Generation	+10m	-5m	+15m
2 nd Generation	+20m	-10m	+30m
3 rd Generation	+30m	-15m	+45m
4 th Generation	+40m	-20m	+60m
5 th Generation	+50m	-25m	+75m

Table 2 ECM Generations

2.2.2.2.4 Jamming

ECM may be used to jam sensors. ECM used in this manner provides no protection. Jammed sensors suffer a -25% chance to lock on and to hit. Jammed sensors also have half of the channel capacity.

2.2.2.2 Sensors

Sensors are required for both navigation and sensing ships to fire on. Sensors have ranges based on their generation. Sensor use adds to the signature of the ship.

Sensor	Range	Channels	Active Mode	Passive Mode	Resolution under ECM	Resolution under ECCM	Resolution under Stealth	Acquisition
1 st Generation	10 hexes	10	+20m	+5m	50m	63m	75m	40%
2 nd Generation	15 hexes	20	+40m	+10m	40m	50m	60m	50%

3 rd Generation	20 hexes	30	+60m	+15m	30m	38m	45m	60%
4 th Generation	25 hexes	45	+80m	+20m	20m	25m	30m	70%
5 th Generation	35 hexes	60	+100m	+25m	10m	13m	15m	80%

Table 3 Sensor Generations

Ships must roll for Acquisition before weapons can be fired at the target. Once lock is attained, it is maintained until ECM status changes, or the target moves out of the range of the sensors, or the target is destroyed. Channels indicate the number of targets able to be tracked, and the number of incoming missiles/seeking weapons that may be targeted. Point defense may fire under local control, but to hit numbers are halved in this case. Each seeking weapon fired by the ship requires a dedicated sensor channel. The formula for determining lock on is **(Acquisition – Resolution + Signature + Grade)**, where Signature is the Signature of the target ship and Resolution is the Resolution of your scanners, modified by ECM. Active mode and Passive mode show the increase in your own Signature with the generation of sensors in use.

2.2.2.2.1 Active Sensors

Sensors may be activated in one of two modes, Active and Passive. Active sensors may be detected at a range equal to the range of the sensor generation of the detecting ship.

2.2.2.2.2 Passive Sensors

Sensors in passive mode cannot be detected by sensors. Passive mode sensors also have half the range and channel capacity of active mode.

2.2.3 Weapon Types

2.2.3.1 Direct Fire

Direct fire weapons are beam weapons. These weapons do damage when the to-hit roll is successful.

2.2.3.2 Missile

Missile weapons are fired like other weapons, but they must travel the distance to the target. Missile weapons move each movement phase. They are susceptible to point defense. Missiles make their attack roll at 1 hex as they make their final attack run.

2.2.3.3 Seeking Weapons

Seeking weapons are like missile weapons, with the exception that the to-hit roll is not made until the missile gets the target in its attack range.

2.2.3.4 Point Defense

Point Defense weapons have a maximum range of 8 hexes. Point defense may react as soon as weapons are launched within the interception range. Point defense may fire when

weapons enter the interception range. Point defense is granted a “last ditch” intercept at -10 to hit before the weapon gets its attack chance.

2.2.4 Applying Damage

When a weapon hits it does damage. Each weapon does damage of up to three types. These types are Thermal, Kinetic, and EM. Each defense protects against these damage types to a differing degree. Once shields and armor have been penetrated, one-half of the damage is applied to internal systems; the other half is applied to the structural integrity of the hull. Damage is allocated to internal systems according to the following table.

2d10	1 st Result	2 nd Result	3 rd Result	4 th Result	5 th Result	6 th Result	7 th Result	8 th Result
2	Command Net	LRS	Sensors	ECM	EWD	Commo	Science	HEC
3	N-Space Engines	N-Space Engines	FTL Engines	FTL Engines	Magazine	Magazine	Magazine	Magazine
4-5	Cap HP	Cap HP	Std HP	Std HP	PD HP	Magazine	Magazine	Magazine
6-8	Structure	Structure	Structure	Shield Generator	Shield Generator	DCC	DCC	DCC
9-13	Structure	Structure	Power	Power	Cap HP	Cap HP	Std HP	PD HP
14-16	Structure	Structure	Structure	Shield Generator	Shield Generator	DCC	DCC	DCC
17-8	Cap HP	Cap HP	Std HP	Std HP	PD HP	Magazine	Magazine	Magazine
19	N-Space Engines	N-Space Engines	FTL Engines	FTL Engines	Magazine	Magazine	Magazine	Magazine
20	Bridge	Aux Bridge	CIC	Flag Bridge	Life Support	Shuttlebay	Hangar	Inertial Comps

Table 4 Damage Table

Internal damage is generic damage. Internal components do not care whether damage is Thermal, Kinetic or EM. For each volley that hits, and does internal damage, a roll is made for each point. Progress to the right is made along the table each time that particular result comes up.

For each system hit, roll on the following table.

Roll	Result
1-4	Disabled
5-8	Damaged
9-0	Destroyed

Table 5 Internal System Damage

If a system is disabled, Damage Control can restore the system the next turn if the crew makes its roll. A damaged system requires more time to repair. Destroyed systems can only be repaired at a shipyard or similar facility.

Each component on the ship has a number of HP. Damage applied to a component is applied whole. If a disabled component is hit again, it is damaged. If a damaged

component is hit again, it is destroyed. Normal systems absorb one point of damage. Weapons on hardpoints absorb a number of points, listed in the weapons table.

Example: The Katana fires onto the rebel ship Sabre. The Sabre has sustained damage earlier in the engagement, losing shields and armor. Two missiles from the Katana impact on the Sabre doing 12 points of damage. The Sabre has 3 broadside Graviton beams in the aspect hit. These absorb 6 points of the damage. The remaining six points affect the Long Range Scanners, 3rd Gen ECM and the Comm. Suite. Rolling on the table for each component, two of the Graviton beams are disabled, 1 damaged, the Comm. Suite is destroyed, the ECM damaged, and the LR Scanners are disabled. Things are looking grim for the Sabre.

2.2.5 Damage Control

Damage Control crews are vital for repairing combat damage in combat. Crews make a d10 roll, modified by grade and system damage level. If the result is a 7 or higher, the system is considered online and usable again.

Modifier	Level
Disabled	-1
Damaged	-3
Green	-3
Poor	-2
Average	0
Crack	+2
Elite	+4

Table 6 Damage Control Modifiers

The time it takes to restore a system to functionality is based on the level of damage. Disabled systems take one turn. Damaged systems take 2d10 turns.

2.2.6 Special Situations

2.2.6.1 Power Plants

Power plants have a chance to go into a critical meltdown when damaged. This is based on their generation. To prevent the meltdown, a damage control crew must be allocated and make a successful roll at a -2 to their Damage Control roll. Alternatively, the captain may chose to jettison the power plant. Plants are jettisoned into space and explode outside the shielding.

Plant Generation	Meltdown Chance
Primitive	85%
Normal	50%
Enhanced	40%
Advanced	25%

Table 7 Power Plant Meltdown

If a power plant melts down, it explodes, doing damage equivalent to 25% its power rating. This damage is applied to internal systems. For each system on the ship, roll against Table 6 with a +5 on the roll.

2.2.6.2 Sensors

If Sensors are non-functional, the ship may not acquire targets. It may fire at ships that are no more than 2 hexes away. Only direct fire and missile weapons may be fired this way. Direct fire weapons are at -10% to hit. Missile weapons are at -50% to hit. Seeking weapons may not be fired, as they require active sensors for targeting.

2.2.6.3 Life Support

If all life support systems are disabled/destroyed, the ship functions at one grade lower. Green crews get an additional +2 initiative and -20% to hit in this situation.

2.2.6.4 Command Systems

If all command systems aboard the ship are disabled/destroyed, the ship functions at one grade lower than its grade. Green crews suffer an additional +2 initiative and -20% to hit. This is cumulative with the loss of life support.

2.2.6.5 Engines

If the engines are disabled/destroyed, the ship cannot change speed or heading. A ship with no engines loses 1 speed every 5 turns.

2.2.6.6 Compensators

If the compensators are disabled/destroyed, the ship cannot exceed a speed of 4. If the ship is above a speed of 4, it is as if the ship had exceeded their compensators by 3 levels. If compensators are run at maximum rating for more than 10 turns, then every other turn for the next 10, they have a cumulative 5% chance of suffering a failure, and having their maximum rating reduced by 1. After 20 turns at maximum, the chance of failure is checked each turn and increases 10% each turn. If the ship suffers a compensator failure, it immediately is considered at +1 Speed on Table 8. Ships must reduce speed immediately or continue to suffer the excessive speed effects. After suffering compensator failure, the chances for failure are reset to 0. Compensator failure may be repaired by DCC as if the component had been disabled by enemy fire.

Speed	Initiative Mod	To Hit Mod	Structural Failure Chance
+3	+3	-15%	15%
+2	+2	-10%	10%
+1	+1	-5%	5%

Table 8 Compensator Failure

2.3 Weapon Charts

2.3.1 Direct Fire

Weapon	HP	HTK	0	1-2	3-6	7-15	16-32	33+	EM Damage	Thermal Damage	Kinetic Damage
Laser	1	1	95	90	80	60	40	20	1	2	0
Pulse Laser	2	2	80	75	65	45			3	6	0
Graser	2	8	95	95	80	70	50		3	9	0
Mass Cannon	1	1	95	90	75	60	45	30	0	0	3
Kinetic Beam	1	2	95	85	65	45	25		1	0	3
Kinetic Pulse Cannon	2	4	95	80	65	50			2	0	6
Phased Particle Beam	1	6	95	95	70	30			4	0	2
Fusion Beam	2	4	85	85	70	30			2	4	2
Electron Cannon	4	4	95	90	75	45	15		6	1	1
Graviton Beam	1	4	80	60	40				5	3	2
Plasma Cannon	2	8	95	75	50				2	8	0
Gauss Cannon	2	4	85	80	65	50	35	20	0	1	5
Proton Cannon	4	6	95	80	60	40	30	10	5	4	3

Table 9 Direct Fire Weapons

The first set of numbers are to hit numbers, the second set are the damage points. Direct fire weapons are the only ones that may be mounted on PD hardpoints. PD versions of the weapons have a range of 8 hexes. The column HP shows the number of standard hardpoints required to mount the weapon. The HTK column shows how much damage is absorbed by the weapon mount.

2.3.2 Missile Weapons

Weapon	Hits to Kill	HP	To Hit
Missile Launcher	2	1	70
Rocket Pod	6	.5	55

Table 10 Missile Weapons

Missile Launchers fire single shots. Rocket Pods maintain an internal magazine equal to ¼ the size of a standard magazine. The Rocket Pod flushes this internal magazine in one salvo, and cannot be reloaded in combat situations. Basic and Advanced Missiles are -40

to hit by standard and capital weapons. Capital missiles are at -30 to hit by standard and capital weapons. Point defense weapons are +10 to hit missiles. The damage for missile weapons is dependant on the warhead type.

Warhead	EM Damage	Thermal Damage	Kinetic Damage
Fission	1	1	2
Fusion	2	2	2
Antimatter	3	3	4
Plasma	4	6	4
Gravitic	8	5	5
Warp	8	8	8
Laser	3	6	3

Table 11 Missile Warheads

Basic Missile – Cost 5, holds 2 warheads. 12 thrust, 3 turns flight.

Advanced Missile – Costs 10, holds 3 warheads. 15 thrust, 4 turns flight.

Capital Missile – Costs 20, holds 4 warheads. 18 thrust, 8 turns flight.

2.3.3 Seeking Weapons

Weapon	HP	To Hit	EM Damage	Thermal Damage	Kinetic Damage
Plasma Missile	2	70	5	15	0
Particle Bomb	4	50	15	5	5
Electron Torpedo	4	60	20	5	5
Proton Torpedo	4	60	5	25	5

Table 12 Seeking Weapons

2.3.3.1 Plasma Missiles

Seeking weapons can be disrupted. Plasma missiles can sustain 10 points of damage before losing coherency. Plasma missiles have an attack range of 4 hexes.

2.3.3.2 Particle Bombs

Particle bombs can sustain 6 points of damage before losing coherency. They have an attack range of 1 hex.

2.3.3.3 Electron Torpedo

Electron torpedoes can sustain 12 points of damage before losing coherency. They have an attack range of 2 hexes.

2.3.3.4 Proton Torpedo

Proton torpedoes can sustain 15 points of damage before losing coherency. They have an attack range of 5 hexes.

2.3.4 Capital Weapons

All weapons may be mounted on Capital Hardpoints. Capital weapons take a number of Capital hardpoints equal to the number of standard hardpoints. Capital versions of weapons do 2 times the listed damage of each type. In the case of Capital Seeking Weapons, plasma missiles can sustain 15 points of damage before losing coherency and particle bombs can sustain 9 points of damage. Electron torpedoes can sustain 18 points of damage before losing coherency and Proton torpedoes can sustain 21 points of damage.

3.0 Ship Construction Rules

This section of the rules presents details on constructing ships. Ships have various systems, including power, weapons, command, electrical, and engines.

3.1 Hulls

The base of every ship is the hull. The hull determines how many hardpoints the ship has, how big of engines and power plants it can mount, it's sensor profile.

Hull	PD Hard points	Hard points	Capital Hard points	Max thrust	Max Tonnage	Hangars	Structural Integrity	Signature	Size
Scout	1	1	0	10	300		10	5m per 50 tons	Picket
Corvette	2	1	0	10	400		20	5m per 50 tons	Picket
Frigate	4	2	0	8	800		40	6m per 50 tons	Escort
Destroyer	4	4	0	8	1,000		50	6m per 50 tons	Escort
Light Cruiser	6	4	0	6	1,600		80	7m per 50 tons	Cruiser
Cruiser	8	8	2	6	2,000		100	7m per 50 tons	Cruiser
Battlecruiser	10	12	4	4	2,400		120	8m per 50 tons	Capital
Battleship	10	14	6	3	2,600		130	8m per 50 tons	Capital
Light Carrier	8	4	0	6	1,600	2	80	7m per 50 tons	Cruiser
Carrier	10	4	0	4	2,000	4	100	8m per 50 tons	Capital
Assault Carrier	14	4	0	3	3,000	8	110	8m per 50 tons	Capital

Table 13 Hull Table

The PD Hardpoints, Hardpoints, and Capital Hardpoints tell how many of each kind of hardpoint the hull mounts. The Max Thrust column shows the maximum thrust the ship

may sustain before structural integrity fails. The Size column shows how the hull shows up on long-range scans. In addition to size, a long-range scan tells what race (if known) the ship belongs to. Max Tonnage limits the number of components that may be mounted on the ship.

3.2 Power Systems

Power systems supply the necessary power to the ship. This power is required for the electrical systems, support systems, engines, and command systems.

Power Generator	Generation	Power Supplied
Fission	Primitive	40
Fission	Standard	100
Fission	Enhanced	120
Fission	Advanced	160
Fusion	Primitive	80
Fusion	Standard	200
Fusion	Enhanced	220
Fusion	Advanced	240
Antimatter	Primitive	110
Antimatter	Standard	240
Antimatter	Enhanced	280
Antimatter	Advanced	320
Plasma	Primitive	160
Plasma	Standard	360
Plasma	Enhanced	380
Plasma	Advanced	400
Warp-tap	Primitive	200
Warp-tap	Standard	440
Warp-tap	Enhanced	480
Warp-tap	Advanced	520

Table 14 Power Plants

The Power Generator column shows what kind of power is generated. This is mainly flavor text. The Generation column shows the relative reliability and advancement of the generator. The power supplied column shows how many power points are supplied by the generator. Each system requires one or more power points to be properly powered.

3.3 Electrical Systems

Electrical systems include various systems like sensors, long-range scanners, communications, command net and science instruments. Each requires a number of power points to function, though not all need function simultaneously. Shield Generators are considered Electrical systems for damage purposes.

System	Power	Range	Notes
Sensors, 1 st Generation	2	10 hexes	10 channels

System	Power	Range	Notes
Sensors, 2 nd Generation	4	15 hexes	20 channels
Sensors, 3 rd Generation	6	20 hexes	30 channels
Sensors, 4 th Generation	8	25 hexes	45 channels
Sensors, 5 th Generation	10	35 hexes	60 channels
Long-Range Scanners, 1 st Generation	5	5 LS	
Long-Range Scanners, 2 nd Generation	10	15 LS	
Long-Range Scanners, 3 rd Generation	15	30 LS	
Long-Range Scanners, 4 th Generation	20	60 LS	
Long-Range Scanners, 5 th Generation	25	2 LM	
Emergence Wave Detectors	10		
Comm. Suite	1		
Command Net, 1 st Generation	2	15 hexes	Links 3 ships to coordinate fire
Command Net, 2 nd Generation	3	25 hexes	Links 5 ships to coordinate fire
Command Net, 3 rd Generation	4	35 hexes	Links 8 ships to coordinate fire
Command Net, 4 th Generation	5	45 hexes	Links 11 ships to coordinate fire
ECM, 1 st Generation	2		
ECM, 2 nd Generation	4		
ECM, 3 rd Generation	6		
ECM, 4 th Generation	8		
ECM, 5 th Generation	10		

Table 15 Electrical Systems

3.3.1 Sensors

Sensors are required in combat to detect and achieve target acquisition. Increasing generations of sensors are able to detect at longer ranges. If a ship mounts weapons capable of firing beyond its sensor range, those weapons are ineffective outside the sensor range. Sensors also have a number of channels used to track offensive targets, and incoming missiles. Channels increase with each generation.

3.3.2 Long Range Scanners

Long Range Scanners are used to detect ships at strategic distances. Long Range Scanners have a range of 5 light seconds (150 tactical hexes). The only discrimination able to be done at this range is the relative size of the ship, as shown in the Hull table (on page 15).

3.3.3 Emergence Wave Detectors

When ships exit Warpspace, they create emergence ripples in N-Space. These ripples are detectable by instruments. Emergence Wave Detectors (EWD) have a range of 2 Light Minutes, or 120 strategic hexes, or 3600 tactical hexes. Emergence waves are an artifact of Warpspace and thus are detected instantly.

3.3.4 Comm. Suite

Comm. Suites are used to keep ships in communication with each other and with planets. Comm. suites have effectively unlimited range, however, they are limited to light speed, which means that there is a lag for responses.

Example: The Katana is communicating with a planet at a distance of 1 light hour (216,000 strategic hexes). Each message takes 1 hour to get to its destination. The Katana would be better advised to move closer to the planet.

3.3.5 Command Net

Command Nets are a huge tactical advantage to ships equipped with them over ships that do not. The main advantage is it allows a higher grade crew to bring up a lower grade crew for initiative purposes. It also enables the lower grade crew to fire with the higher grade bonus.

Example: The Katana has a crack crew. She is a Command Net leader with the Gladius and the Claymore, both of which have normal crews. When it is time to roll for initiative, all three ships get the initiative bonus for a crack crew. They also receive the bonus to hit for a crack crew. If for any reason, the Command Net is dropped, all three ships would revert to their base grades.

3.3.6 ECM

ECM, or Electronic Countermeasures, helps protect the ship from incoming fire, and helping it from being target locked. Increasing generations of ECM provide larger bonuses.

3.4 Support Systems

Support systems include Life Support, Shuttlebays, and Damage Control crews.

System	Power	Notes
Life Support	1	Required on every ship
Shuttlebay, Small	1	1 bay point
Shuttlebay, Medium	2	2 bay points
Shuttlebay, Large	3	4 bay points
Damage Control Crew	1	

System	Power	Notes
Inertial Compensators, Primitive	4x thrust	
Inertial Compensators, Standard	2x thrust	
Inertial Compensators, Enhanced	Thrust	
Inertial Compensators, Advanced	½ Thrust	
Hangars	2	4 bay points
Magazine	1	Required for missiles

Table 16 Support Systems

3.4.1 Life Support

Life support is a required system. This includes air recirculators, food stores, water stores, etc. A ship without life support will not be able to support its crew for very long.

3.4.2 Shuttlebays

Shuttlebays are required to carry small craft. Small craft that may be bayed in a shuttlebay are shuttles and pinnaces. Small craft are used to transfer cargo and crew between ships and other ships or planets.

3.4.3 Hangars

Carrier-class hulls have built in hangars. If additional hangars are desired, they may be added. Carrier hulls may not mount more than 3x the number of built in hangars. Non-carrier hulls may mount one hangar on Picket size, two hangars on Escort, three hangars on Cruiser and four hangars on capital ships.

3.4.4 Damage Control Crew

Damage Control Crews are arguably the second most important support system. Damage control crews repair any combat damage that the ship sustains. Full information may be found in the Combat section (on page 7)

3.4.5 Inertial Compensators

Inertial Compensators allow the ship to exceed a thrust of 1 safely. Compensator rating is defined as the maximum thrust allowed. Ships may exceed a thrust of 1 by three levels, incurring penalties at each thrust beyond 1.

3.4.6 Magazines

Each Magazine can hold up to 100 Basic Frame missiles, 40 Advanced Frame missiles or 28 Capital Frame missiles. Rocket pod internal magazine capacity is 25 Basic missiles, 10 Advanced, or 7 Capital.

3.5 Engines

There are two types of engines that are important to ships, N-Space and FTL. N-Space engines are used for movement in normal space. FTL engines are used to travel long distances between stars in relatively short times.

3.5.1 N-Space Engines

N-Space engines are rated by thrust. In addition, a factor in the power consumption is the size of the ship. Engines make no differentiation between military and civilian use.

Engine	Ship Size	Power per Thrust
Chemical Rocket	Picket	7
Chemical Rocket	Escort	7
Chemical Rocket	Cruiser	8
Chemical Rocket	Capital	8
Nuclear Pulse	Picket	5
Nuclear Pulse	Escort	6
Nuclear Pulse	Cruiser	7
Nuclear Pulse	Capital	7
ION	Picket	3
ION	Escort	4
ION	Cruiser	5
ION	Capital	6
Grav Pulse	Picket	1
Grav Pulse	Escort	2
Grav Pulse	Cruiser	4
Grav Pulse	Capital	5

Table 17 N-Space Engines

3.5.2 FTL Engines

FTL engines, or Faster-than-Light engines, allow ships to travel between the vast empty distances between stars. Each generation of FTL drive can make a jump up to its maximum jump rating. Insertion power shows how much power is required to insert into Warpspace. Time per LY shows how many days each light year takes to travel.

FTL Engine	LY per Jump	Time per LY (Days)	Insertion Power
1	5	10	50
2	10	8	40
3	15	6	30
4	20	4	20
5	25	2	10

Table 18 FTL Engines

A ship cannot enter into Warpspace within 10x the diameter of a system body. The gravitational fluctuations prevent a ship from safely entering into Warpspace inside that range.

3.5.3 Warp Anchor

The Warp Anchor snags ships out of Warpspace and returns them to N-Space. The resultant “Warp Splash” locks ships out of Warpspace in a radius dependant on the size of the ship. Picket class ships have a radius of 1 LM, Escort class ships have a radius of 3LM, Cruiser class ships have a radius of 6 LM, and Capital class ships have a radius of

10 LM. The splash's effects last for a number of hours equal to twice the radius of the splash.

3.6 Command Systems

Command systems include the bridge and auxiliary bridge and the combat information center. A ship must have at minimum a bridge. If a ship loses all command systems, the crew functions 1 grade lower.

Command System	Power Requirement
Bridge	1
Auxiliary Bridge	1
Flag Bridge	1
CIC	2

Table 19 Command Systems

3.7 Defense Systems

Defensive systems include things like shield generators and armor plating. These are usually the first systems lost in combat. Ships may not mount more than one of each system.

Defense System	Power Req	EM Dmg Absorbed	Kinetic Dmg Absorbed	Thermal Dmg Absorbed	Collapse	Damage Mitigated
Shield Generator, 1 st Generation	5		10	15	25	50%
Shield Generator, 2 nd Generation	10		15	20	35	55%
Shield Generator, 3 rd Generation	15	5	20	25	50	60%
Shield Generator, 4 th Generation	20	10	25	30	65	65%
Shield Generator, 5 th Generation	25	15	30	35	80	70%
Armor, 1 st Generation	-	10		5	15	0%
Armor, 2 nd Generation	-	15		10	25	0%
Armor, 3 rd Generation	-	20	5	15	40	0%
Armor, 4 th Generation	-	25	10	20	55	0%
Armor, 5 th Generation	-	30	15	25	70	0%

Table 20 Defensive Systems

Power Required is the amount of power required for the defense to function.

EM/Kinetic/Thermal Damage Absorbed is how much damage of each type is absorbed in

one turn. Collapse is how much damage may be sustained before the defense is rendered ineffective. Damage Mitigated is how much damage off of the top is removed before being absorbed.

3.8 Small Craft

Small craft include shuttles of various types, pinnaces, and fighters. Small craft do not mount FTL engines, and are therefore limited to the system they are in, unless carried on a carrier. Fighters may not be housed in boat bays due to the boat bay's lack of arming facilities. Small craft are targeted by all weapons with a -20 to hit modifier.

Small Craft	Max Thrust	PD Hardpoints	Std Hardpoints	Hits to Kill	Signature	Bay Points
Shuttle	1	0	0	1	5m	1
Pinnacle	2	1	0	1	8m	1
Assault Shuttle	4	2	0	2	3m	2
Light Fighter	6	2	1	2	2m	1
Medium Fighter	6	3	2	4	4m	2
Heavy Fighter	4	4	4	5	6m	4
Assault Fighter	3	4	6	8	8m	4

Table 21 Small Craft

Weapons mounted on standard hardpoints on fighters have a maximum range of 12 hexes. Point Defense variations on the weapons are as on full size ships. Fighters and small craft may not mount any shields or armor. Fighters mount compensators of sufficient rating to account for their maximum thrust.

3.9 Consolidated Component Listing

Component	Cost	Tonnage	Power Used	Power Generated	Const. Points
Primitive Fission	250	10	0	40	n/a
Standard Fission	200	9	0	50	n/a
Enhanced Fission	300	8	0	60	n/a
Advanced Fission	400	7	0	80	n/a
Fission Warhead	10				1
1 st Gen. Shields	100	50	5	0	n/a
Shield Regen I	200	25	5		n/a
2 nd Gen. Shields	200	50	10	0	n/a
Shield Regen II	400	25	10		
Shield Regen III	800	25	15		

Component	Cost	Tonnage	Power Used	Power Generated	Const. Points
3 rd Gen. Shields	400	50	15		
Shield Regen IV	1600	25	20		
4 th Gen. Shields	800	50	20		
Shield Regen V	3200	25	25		
5 th Gen. Shields	1600	50	25		
Primitive Inertial Compensators	50	25	4x thrust		
Standard Inertial Compensators	75	20	2x thrust		
Enhanced Inertial Compensators	100	15	1x thrust		
Advanced Inertial Compensators	150	10	½x thrust		
FTL Drive I	500	150	50		
FTL Drive II	1000	150	40		
FTL Drive III	2000	150	30		
FTL Drive IV	4000	150	20		
FTL Drive V	8000	150	10		
Warp Anchor	200	50	100		
Laser	100	15	15		
Pulse Laser	300	20	20		
X-Ray Laser	500	50	40		
Graser	1000	60	50		
Laser Warhead	40				1
Picket Chemical Rocket	50	10% Hull	7 per thrust		
Escort Chemical Rocket	75	10% Hull	7 per thrust		
Cruiser Chemical Rocket	100	10% Hull	8 per thrust		
Capital Chemical Rocket	150	10% Hull	8 per thrust		
Picket Nuclear Pulse Drive	100	10% Hull	5 per thrust		
Escort Nuclear Pulse Drive	150	10% Hull	6 per thrust		
Cruiser Nuclear Pulse Drive	200	10% Hull	7 per thrust		
Capital Nuclear Pulse Drive	250	10% Hull	7 per thrust		
Primitive Fusion	500	8		80	
Standard Fusion	450	7		100	
Enhanced Fusion	550	6		110	

Component	Cost	Tonnage	Power Used	Power Generated	Const. Points
Advanced Fusion	650	5		120	
Fusion Warhead	20				1
Primitive Antimatter	750	6		110	
Standard Antimatter	700	6		120	
Enhanced Antimatter	800	5		140	
Advanced Antimatter	900	5		150	
Antimatter Warhead	30				2
Picket ION Drive	200	10% Hull	3 per thrust		
Escort ION Drive	250	10% Hull	4 per thrust		
Cruiser ION Drive	300	10% Hull	5 per thrust		
Capital ION Drive	350	10% Hull	6 per thrust		
Kinetic Beam	140	35	5		
Kinetic Pulse Beam	500	75	12		
Primitive Plasma	1000	5		160	
Standard Plasma	950	5		180	
Enhanced Plasma	1050	4		190	
Advanced Plasma	1150	4		200	
Plasma Warhead	40				2
Plasma Cannon	750	75	20		
Plasma Missile	500	50	30		
Picket Grav Pulse Drive	400	10% Hull	1 per thrust		
Escort Grav Pulse Drive	450	10% Hull	2 per thrust		
Cruiser Grav Pulse Drive	500	10% Hull	4 per thrust		
Capital Grav Pulse Drive	550	10% Hull	5 per thrust		
Graviton Beam	350	25	40		
Gravitic Warhead	45				2
Primitive Warp-tap	1250	4		200	
Standard Warp-tap	1200	4		220	
Enhanced Warp-tap	1300	3		240	
Advanced Warp-tap	1400	3		260	
Warp Warhead	50				3
1 st Gen. Armor	75	4			
2 nd Gen. Armor	150	7			
3 rd Gen. Armor	300	10			

Component	Cost	Tonnage	Power Used	Power Generated	Const. Points
4 th Gen. Armor	600	13			
5 th Gen. Armor	1200	16			
Phased Particle Beam	300	25	8		
Fusion Beam	750	50	15		
Electron Cannon	1200	100	35		
Proton Beam	1300	125	50		
Particle Bomb	200	25	15		
Electron Torpedo	500	50	30		
Proton Torpedo	750	75	50		
Scout Hull	500				
Corvette Hull	750				
Missile Launcher	150	50			
Rocket Pods	500	100			
Small Shuttlebay	100	25	1		
Medium Shuttlebay	200	50	2		
Large Shuttlebay	400	75	3		
Fighter Hangar	250	100	2		
Shuttle	50				
Pinnacle	75				
Assault Shuttle	125				
Frigate Hull	1000				
Destroyer Hull	2000				
Light Cruiser Hull	3000				
Cruiser Hull	6000				
Light Carrier Hull	10000				
Light Fighter	250				
Medium Fighter	375				
Heavy Fighter	500				
Assault Fighter	625				
Battlecruiser Hull	8000				
Battleship Hull	12000				
Carrier Hull	13000				
Assault Carrier Hull	16000				
Mass Cannon	125	75	20		
Gauss Cannon	120	50	30		
1 st Gen. Command Net	250	50	2		
2 nd Gen. Command Net	500	45	3		
3 rd Gen. Command Net	1000	40	4		
4 th Gen. Command Net	1500	35	5		
5 th Gen. Command Net	2000	30	6		
1 st Gen. Sensors	100	10	2		
2 nd Gen. Sensors	200	10	4		

Component	Cost	Tonnage	Power Used	Power Generated	Const. Points
3 rd Gen. Sensors	400	10	6		
4 th Gen. Sensors	800	10	8		
5 th Gen. Sensors	1600	10	10		
Emergence Wave Detectors	500	20	10		
1 st Gen. ECM	250	15	2		
2 nd Gen. ECM	500	15	4		
3 rd Gen. ECM	1000	15	6		
4 th Gen. ECM	2000	15	8		
5 th Gen. ECM	4000	15	10		
1 st Gen. Long Range Scanners	250	15	5		
2 nd Gen. Long Range Scanners	500	15	10		
3 rd Gen. Long Range Scanners	750	15	15		
4 th Gen. Long Range Scanners	1000	15	20		
5 th Gen. Long Range Scanners	1250	15	25		

Table 22 Consolidated Component Listing