Ship Construction

Throughout the Arc, thousands of manufacturers are producing ships and components every day. Most ships adhere to a series of industrial standards set by various bodies that allow components for separate suppliers to be used.

While modular, this means most ships are custom built. Either ordered to specification from a ship assembly yard or rebuilt by her crew. Ships can have huge variety even among the same make and model.

> These rules are presented here in a draft form, intended to allow game masters and players to create their own ships for use in the Advent Horizon role playing game.
>
> While most of the ships in the core rulebook were created using a version of these rules, the cost and systems do not line up, 1 to 1 with these rules, that is because most of the ships presented in the core rule book are mass-produced products that are well defined designs. These rules represent the cost and capability of a built-to-order ship that is, for all intent and purpose, unique.

Creating you Own Ship

A ship is built from a number of components, each is essential and necessary for the craft to be space worthy.

Chassis: This dictates the general size category, number of System Spaces, and base hit points, toughness, and armor class. A Space point is equal to 4 cubic meters. All ships require enough space for all of their systems and crew.

Power Supply: The reactor type requires a set number of spaces and provides an amount of power points to distribute to systems. All ships require power for all systems and weapons.

Drives: There are two drives- EM, and HZ. EM drives are relativistic electromagnetic inertial quantum engines, and HZ, Horizon Drives. While a ship does not require a Horizon drive, it is not capable of interstellar travel without one.

Stations: Each feature, such as sensors or an array of weapons, and each drive requires a Station. A station can have up to five features associated with it. The Helm must control the drive(s). An engineering station is required for each power plant. The Class of the Ship dictates the crew necessary for each station, and each feature can have multiple redundant stations. Each station requires 1 Space and 1 power, above and beyond the power required by the systems it commands.

Crew: A ship requires crew for 1/4 the number of stations at a minimum, skeleton crew, minimum of 1. A full staff is equal to the number of stations.

Chassis

While building a Ship, mare in mind the function and cost. Cargo ships are rarely built on a light chassis, but almost all fighters are. The Chassis will determine the piloting skill needed to operate the ship.

Light Chassis

Anything with 50 or less spaces. Base Credit cost of +1/space

Light Chassis Statistics. HPs are 10x Space, Hull HPs are equal to the total Space. Toughness is equal to 1/4 space. AC is 8+1/2 toughness.

Light Shuttle: Space 8, HPs 80, Tough 2, Hull 8, AC9

Heavy Shuttle: Space 14, HPs 140, Tough 3, Hull 14, AC9

Light Yacht: Space 22, HPs 220, Tough 5, Hull 22, AC10

Light Fright Space 30, HPs 300, tough 7, Hull 25, AC11

Fighter: Space 20, HPs 200, Tough 5, Hull 20, AC10

Medium Chassis

50 to 500 Spaces. Base Credit cost of +2 per 10 Spaces

Medium Chassis Statistics. HPs 2x Space, Hull HPs are 1/10 Space. Toughness is 1/16 Space. AC is 8+1/3 toughness.

Heavy Fright: Space 150, HPs 300, Tough 9, Hull 15, AC11

Escort: Space 125, HPs 250, Tough 7, Hull 12, AC10

Destroyer: Space 225, HPs 450, Tough 14, Hull 22, AC12

Superyacht: Space 200, HPs 400, Tough 12, Hull 20, AC12

Explorer: Space 300, HPs 600, Tough 18, Hull 30, AC14

Heavy Chassis

1000 to 5000 Spaces. Base Credit Cost of +5 per 100

Heavy Chassis Statistics. HPs are 1/4 Space, Hull HPs are 1/100 Space. Toughness is 1/128 Space, AC is 8+1/4 toughness.

Super Fright: Space 1800, HPs 450, Tough 18, Hull 18, AC12

Carrier: Space 5000, HPs 1,250, Tough 39, Hull 50, AC17

Capitol Chassis

10,000 to 50,000 Spaces. Base Credit Cost of +10 per 500 Spaces

Capitol Ship Statistics. HPs are 1/10 Space, Hull HPs are 1/250 Space, Toughness is 1/400 Space. AC is 8+1/5 toughness.

Capitol Ship: 20,000 Space, HPs 2,000, Tough 50, Hull 80, AC18

Power Plants

All ships require a power plant to run its systems, but not necessarily all systems at the same time. Many ships save space by having power enough to run only their core systems and disable things like weapons and sensors in Horizon Space.

Space. This is the number of spaces the power plant occupies on the ship.

Output. This is the total amount of power that a specific power plant can produce in any give interval.

Max Pull. This is the most power any single device can draw from the power plant regardless of the total available power.

Credits. This is the cost for each Supply.

Micro Fusion

Space 1, Credit +6

Output: 15 power. Max Pull: 4

A micro fusion power supply uses a mixture of Promethium and Thorium in a small containment vessel to produce fusion plasma using graviphotons, and feeds this plasma hydrogen and deuterium to sustain the reaction. These reactors can generally operate for around a year non-stop before requiring refueling.

Macro Fusion

Space 3, Credit +9

Output: 45 Power. Max Pull: 20

This is a standard form of inertial electrostatic confinement fusion reactor. These large and reliable reactors create a tritium and deuterium fusion plasma and capture virtually all of the energy through direct energy conversion. On average a fuel canister for this type of reactor will last 3 to 5 years.

Plasma-antimatter

Space 15, Credit +14

Output: 200. Max Pull 150

An advanced Power generation system most employed by the empyreans, a Plasma-Antimatter Reactor is a three-stage direct conversion reactor that feeds antiprotons into a reaction mass, and then captures the annihilation energy through in a fission-fusion dual stage reaction. Most Reactors are capable of generating their own antimatter after initial fire up, but require significant refueling each year.

Neutronium Graviphoton

Space 300, Credit +28

Output: 1500. Max Pull 500

These Reactors practically qualify as protogen artifacts, as each is built using ancient technology which uses bursts of Graviphotons to compact heavy stable elements into a neutronium sphere, and then create as magneto-dynamo that extracts free energy from the quantum vacuum. Once initiated, the reaction will continue indefinitely, but the reactor can violently implode of containment is damaged.

Drives

Propulsion is what makes a ship more than a floating metal can in space. All Ships require at least electromagnetic thrusters to function as shuttles or transports. Any ship that has a Horizon Drive is capable of interstellar transit, although KZM Shields are required in that case.

Electromagnetic Thrusters

The primary method of propulsion used throughout the Arc generates thrust via radio-frequency cavity resonance. For subluminal space travel this propulsion is ideal. It has high specific impulse, medium thrust, and high weight

to thrust ratio. Graviphoton jets even allow of planetary lift off for some ships.

Electromagnetic Thrusters provide a set acceleration per second divided by the space of the ship. For example, a Mark II thruster on a light shuttle with a size of 15 spaces provides 1 meter per second of acceleration. Far too little for escape velocity, but fast enough that an inter planetary trip could be done in weeks. A ship can have multiple Electromagnetic thrusters active simultaneously, to reap the benefits of increased acceleration.

Mark I Thruster

1 Space, 1 power

The humble Mark 1 thruster is similar to devices that emerged near the end of the 22nd century. Simple, efficient, and compact, the drive is usually mounted on a gyroscope near the vessels center of mass allowing it to provide thrust in any vector. Acceleration is 10m/s /Spaces per drive.

The Mark II Thruster

1 Space, 2 power

This describes a range of thrusters that are widespread in the Corporate Colonies. These combat thrusters require considerably more power but are more efficient in terms of space. Mark II thrusters provide and Acceleration of 15m per second per spaces.

EM-Graviphoton Thruster

15 Spaces, 60 Power

This powerful landing thruster is used on medium and heavy landing ships due to its powerful output and specific thrust, as you only divide the acceleration by 1/10th the Ship's total size in spaces. However, it requires tremendous amounts of power. Acceleration is 10m/s base.

EM-Graviphoton Jet

2 Space, 20 power

Used on fighters and interceptors these compact hyper-fast jets are usually fixed vector drives. The major downside of these engines is in that their specific thrust is not actually that high, limiting them to ships under 50 spaces in size. However, their rapid spin up provides the ship with a +1 Maneuver bonus. These drives provide a base acceleration of 70m/s divided by the number of Spaces per drive.

Horizon Drives

The advance that changed the galaxy, Horizon drives exploit manipulations of spacetime to create a pocket of "Horizon Space" a few plank lengths across with an interior space the size of the hip that is moved through space at super luminal speeds. Unlike Electromagnetic thrust drives, a ship can only have one active Horizon drive at a time, they cannot be combined to increase speeds.

N Class

35 power, 6 Space.

The Newton Class Horizon Drive is a smaller device that usually forms a ring around the exterior of the ship. This is the class of the first Horizon Devices and make up the majority of small to light drives in production. A Newton Class Horizon Drive has a displacement rate of 0.1ly/hour.

R Class

80 power, 20 Space

Also known as the Relativity Class horizon Drive, this large production model is standard issue on most Ixaxian exploration ships, and by extension many of the Corporations heavy ships. A Relativity Class drive can achieve displacement of up to 0.3ly per hour.

Z Class

200 Power, 100 Spaces

The Zeketixi Class Drive is the most powerful and efficient drive the Ixaxians have managed to create, however, it is prohibitively large and requires extreme power to operate limiting it to massive ships. The standard Z Class Horizon Drive has a displacement of 0.5ly/hour.

Features

Once the core components of a ship are determined, what remains is to add the features and accessories that give the shit it's unique functionality. An exploration vessel with minimal sensors makes no sense, just as a warship needs arms and armor. Most Features are described in detail in the Advent Horizon Core Rulebook, beginning on page 167.

Atmospheric Control System

2 space, 1 power, +6 Credit

This is feature consists of a series of components that include aerodynamics, ailerons,

and heat shielding specifically to allow the ship to fly in an atmosphere. Most ships are limited to a speed of Mach 3.

Crew and Passenger Space

This is accommodations for as many passengers to fit comfortably and not put strain of the ship's life support and environmental systems. Passenger spaces use environmentally pressurized cargo spaces, rather than standard spaces in the ship. The cost and power requirements depend on the Ships chassis classification. Larger ships require more space for passenger as it becomes living and sleeping quarters.

Light: 1 Pressurized cargo Space per person, 1 power person

Medium: 2 Pressurized cargo Space per person, 1 power per 3 persons

Heavy: 2 Pressurized cargo Space per person, 1 power per 5 persons

Capitol: 6 Pressurized cargo Space per person, 1 power per 10 persons

Cargo

Spaces and compartments used as pure storage. Drone and Pressurized Cargo requires 1 power for every 5 spaces dedicated to this type of storage.

Each Space dedicated to unpressurized cargo can hold 18 spaces, or 72 tons. +2 Credits

Each Space Dedicated to carrier space or drones can hold 15 spaces of fighters or Drones. +4 Credits

Each spaced dedicated to pressurized shielded cargo can hold 4 spaces, 16 tons. +3 Credits

Armor

With the development of KZM Sheilds, conventional armor plating is not widly used as it sonsumes space and resources for minimal protection. That said, heavy battel carriers often feature significant armor plating to act as a second line of defense, or as a hidden defense when the ship appears powered down. Most armor plating is made from multiple stacked layers of ablative self-repairing materials.

Light. +1 AC, +2 Tough, 1 Space, +3 Credit

Medium. +3 AC, +5 Tough, 3 Space, +5 Credit

Heavy. +5 AC, +11 Tough, 15 Space, +8 Credit

KZM Shields

One of the most crucial developments in space travel, the KZM Shield protects ships from particulates and radiation while traveling at high speeds, and the exotic environment inside Horizon Space. Even station hopper shuttles require a KZM Shield or risk exposing the crew and passengers to potentially lethal cosmic radiation.

Miniature KZM Screen

5 Shield.

2 power, 1 Space. Credit +3

This miniature radiation defense screen is primarily used a bulky exosuits and small shuttles and is made up of multiple microemitters. While the shield is light, low power, and small, it can only protect 10 spaces of ship, making it useless for larger craft. It cannot be combined with larger emitter matrixes.

Micro KZM Emitter

10 Shields per emitter

10 Power, 1 Space each. Credit +5

These miniature small emitters are usually placed around the ship to create a matrix. While compact, they have a high power and cost.

Standard KZM Emitter

15 Shields per emitter

5 power, 3 Space. Credit +3

Larger, cheaper, and slightly more powerful, these standard KZM emitters are used on most medium and larger ships.

High Power Emitter

20 Shields per emitter

10 Power, 4 Spaces. Credit +8

Usually found on Exploration ships and Large battel carriers these massive emitters can create extremely powerful defensive screens but require a great deal of power and space.

Sensor Systems

Sensors are essential to gain additional information about the environment.

Additional Array

Credit +2

Purchased along with a sensor package, each additional array requires 1 space, 1 power and provides a +1 bonus to the sensor package, up to +3. If an array is destroyed it drops the bonus by 1.

Sensor Package, Exploration

50 spaces, 20 power. Credit +9.

Sensor Package, Simple

0 Spaces, 1 power. Credit +2.

Sensor Package, Sophisticated

5 spaces, 5 power. Credit +5.

Sensor Package, Tactical

1 space, 8 power. Credit +8.

Computer systems

Computers are essential to run any ship.

Astral Node

1 space, 1 power. Credit +9.

Computer Station

See Stations, below.

Computer Package, Advanced

1 space, 1 power – plus stations, above. Credit +4.

Computer Package, Combat

1 space, 4 power. Credit +5. Adds +1 Targeting bonus.

Computer Package, Shipboard Intelligence

4 Space, 8 power. Credit +9.

Drones

Automated or semiautonomous robots that can move around and operating within the ship, virtually every Imperium ship operates drone contingents.

Drone Control

1 Space, 1 power. +4 Credit

This serves as a control hub for shipboard drones.

Combat Drones

+3 Credit per drone. Requires a Drone Hangar.

Damage Control Drones

+1 Credit per drone. Requires a Drone Hangar.

Stealth

A stealth system allows the ship to move concealed and become extremely difficult to detect.

Stealth, Active

5 space, 25 power. +8 Credit.

Active stealth includes EM and Thermal dampening systems as well as optical camouflage plating across more than 90% of the ships surface. This allows the craft to completely disappear when engaged.

Stealth, Passive

2 space, 1 power. +4 Credit.

Passive Stealth is a series of components that minimize the ships radar and mass cross section, and mute IR and EM emissions from the ships systems.

Communications

Coms systems include laser and radio transmission systems.

Additional Array

Each additional array requires 1 space and 1 power and provides a +1 bonus to the Communications package, up to +3. If an array is destroyed it drops the bonus by 1.

Communications Package, Primary

0 space, 1 power. +2 Credit

Communications Package, Tactical

1 space, 3 power. +4 Credit

Stations

Stations are required to control ship systems. A station can have up to five Systems associated with it.

Advanced Helm

+1 Maneuver bonus, 1 space, 2 power. +1 Credit

Advanced Tactical Station

+1 Targeting Bonus, 1 space, 2 power. +2 Credit

Standard Station (any)

1 space, 1 power. This is also a workstation computer. +1 Credit

Medical Bay

8 Space, 6 Power. +10 Credit

This is a complete medical facility with two beds. Each additional space adds 2 beds and costs 1 power but adds +2 Credit to the cost.

Engineering Bay

10 space 5 power. +11 Credit

This is a complete fabrication facility.

Science Bay

8 space, 8 power. +16 Credit.

This is a complete laboratory.

Mess Hall

16 Space, 2 power. +6 Credit

This is a complete kitchen and cafeteria. Each additional space seats 2 more crew.

Weapons

Ship Weapon	Damage	Space	Credit Mod	Power
Light PDC Lasers	3d10 thermal	1	+8 uncommon	1
Heavy PDC Lasers	5d10 thermal	5	+10 uncommon	3
Light HI Laser Cannon	10d10 thermal	1	+10 uncommon	8
Heavy HI Laser Cannon	20d10 thermal	5	+14 rare	20
Particle Accelerator	10d12 radiation	5	+16 restricted	30
Heavy Accelerator	15d12 radiation	10	+18 restricted	50
Graviphoton Beam	20d10 force	5	+16 restricted	30
Graviphoton Cannon	20d10 force	30	+18 restricted	60
Light Grapple	–	5	+6 common	10
Medium Grapple	–	10	+8 common	20
Heavy Grapple	–	10	+10 uncommon	35
Light Autocannon	10d12 impact	1	+8 uncommon	5
Medium Autocannon	20d12 impact	5	+11 uncommon	15
Heavy Autocannon	30d12 impact	10	+14 rare	35
Ballistic Railgun	20d8 impact	10	+18 restricted	50
Tactical Railgun	50d8 impact	30	+22 restricted	120
Chaff Launcher	–	1	+2 uncommon	1
Missile mount	–	1	+6 uncommon	1
4-tube Small Pod	–	5	+8 rare	5
4-tube Medium Pod	–	10	+8 restricted	12
MIRV Missile tube	–	30	+16 restricted	20

