Starships and Space Craft

Starships are the means by which all star fairing races ply the galaxy between the stars. There are five general types of craft encountered in space. The five ship classes are civilian, military, corporate sector, police, and pirating. By far the most common craft are civilian sector ships. It is relatively easy for civilians to acquire ships either new or customized. Orbital salvage yards are commonplace as is retrofitting.

Civilian Star Ship Corp.

Civilian star Ship Corporation is a division of the Lockheed Boeing Group and is the only approved manufacturer for civilian interest and corporate sector spacecraft in the Earth System. There are three lines of production for civilian interest. The three lines of craft offered to civilians are the Cargo Class, Luxury Class, and Independent Transport Class. All ships must be registered with the government and home world where they have been purchased. The following is a listing of ships, their base price, cargo capacity in metric tons, and total length in meters.

Financing a Star Ship

A star ship may be financed by the player characters when play begins. The expanded rules on money allows for additional starting money for characters that spend time in their careers prior to their adventuring career. The standard down payment for a star ship is 10% plus a 3% tax. Financing and interest is dependent not on a floating rate but a fixed payment plan. Payments may be made on a ship monthly, twice a year, or yearly. The extended periods between payment is available due to the time it may take a merchant to go from system to system and deposit money for a payment. If payment is not made the ship is reposed by the financing institution at first opportunity following a three-month grace period. Payments are calculated by taking the principle balance multiplied by interest and time divided by the number of payments.

Cargo Class Vessels

Cargo Class ships are general transports used throughout the Galaxy to carry freight from one destination another. These ships are very slow at sub light but can match military vessels with a star Drive rated at 4.75 Power is minimal on these ships. Crews range from 3 to 10 beings and 2-8 standard labor protocol service robots for manual labor. These ships are easily spotted, as they are bulb like in shape and slightly longer than wide or tall.

Cargo Class Vessels	Base Price	Cargo Capacity	Length
Z111 Intergalactic Class Cruiser	$18,000,000	35,000	375
VT 98 Super Transport	$7,000,000	11,000	120
XL3 Standard Starway Transport	$5,000,000	5,500	95
W1 Warrant Class Transport	$4,000,000	5,100	90

Standard Class Sub Galactic	$4,500,000	5,300	85
Lunar Class Sub Light	$3,200,000	5,100	85
System Class Streamliner	$3,400,000	4,000	80

Transport Class Vessels

Endlessly modifiable streamlined ships are marketed to independent traders. Pirates favor these ships often sporting upgraded drive motors and weapons that exceed civilian limits. They are very swift and agile at sub light speeds, however their Star Drives are generally rated at 2.0 or lower. Their slow Star Drive Rating can remedied with optional upgraded units. Their weapons systems also are easily modified to bypass the civilian laser power generator limits with a tie in directly to the ships power core. Lasers tied directly to the power core can exceed the firepower of some military grade weapons. The penalty for weapon upgrades however is impound of the ship and a speedy trial as such modifications when made are usually be made by Pirates. Transport Class vessels all have accommodations for a crew of three with five additional passengers.

Transport Class Vessels	Base Price	Cargo Capacity	Length
TY1100	$750,000	100	40
TY110	$500,000	75	30
TY100	$450,000	70	30
TY90	$425,000	50	28
TY80	$400,000	45	28
TY50	$300,000	35	28
TY10	$250,000	20	25

Luxury Class Vessels

These space Yachts feature upgraded entertainment and video recreational devices as well as servants quarters, bars, and theaters. Many sport Gold trim and leather seats within. To expensive to be practical, these ships are not very modifiable and only have one mount for a laser cannon. The do have a relatively fast Star Drive at 5.0 which is faster than many military grade vessels. Their sub light speed is on par with the fastest standard production ships. Upgraded engines are standard on these ships.

Luxury Class	Base Price	Cargo Capacity	Length
LU 1200	$5,000,000	50	50
LU 950	$4,500,000	40	45
LU 900	$4,000,000	40	45
LU 700	$3,400,000	35	40
LU 300	$3,250,000	30	40

Building your own starship

The other option characters have in purchasing a starship is custom ordering from the salvage yards and then adding components, drives, and other options to a basic hull. Hull cost should be $3,000.00 per cubic meter of space the hull takes up.

Utilizing Space When Upgrading A Starship

Many upgrades for starships not only cost more but also utilize space in a ship. When a ship is purchased 60% of the hull cavity is considered upgrade space. If this space is not used it can be converted into cargo space. Upgrades may not exceed the 60% of additional space available unless cargo space is utilized. Standard cargo space on a vessel, unless it is a bulk cargo vessel, is 40% of the interior hull. Cargo space in a standard 20 meter long ship is a scant 8 by 8 meter area.

Star Drive Types

Fusion- Fusion powered star drives are considered the best as they are generally more stable than the other types and produces more power. Fusion powered star drives however cost the most. Fissionable material is encased in a magnetic bubble as the plasma is super conductive at the temperatures necessary to generate fusion.

Fission- Also called the "Dirty Drive" is the most economical power plant that can be installed in a ship. The generally take up more space than a fusion drive. Radiation shielding is needed to maintain the plutonium core of this type of Star Drive. Many older ships are powered by fission drives.

Matter/Antimatter- This type of drive is found only on the newest military Star ships. Although slightly less reliable than a fusion drive, power output is up to ten times greater. A matter antimatter Drive is illegal for civilian use.

Star Drive Rating

The Star Drive rating measures the distance a ship can travel in a given amount of time. A star drive rating coincides directly with the amount of time it takes a ship to travel one light year. A star drive rating of one will allow a ship to travel one light year in one day. A rating of two allows the ship to travel the same distance in half a day or two light-years in one day. This continues up to a rating of 8.5 where a ship is traveling 8.5 light years in one day. The fastest military grade star drives have a rating of 8.5. No star drive has ever exceeded a class 8.5 rating. Only a Matter/Antimatter system can produce the power needed to exceed a 7.5 rating. A calculator can be used to figure time to distance.

How Star Drive Works

Star Drive generates a magnetic field around a ship that reacts with the gravitational constant of the universe. By making the area within the bubble have a lower

gravitational constant, a ship is propelled beyond the speed of light while never actually exceeding the speed of light within the bubble. The bubble is, for lack of a better term, moving space around the ship in the opposite direction that the ship is moving.

Engaging a Star Drive

In order to engage a star drive a craft must be at least two diameters distant from a gravitational body. Attempts to engage a star drive in a gravity well will cause the entire unit to fail and force a roll on the mishap table. A gravitational body that is close by will cause the drive field that surrounds the ship to collapse in upon itself. Most systems laws require that ships be a minimum of 1 AU (astronomical unit or 146,600,000 km) distant from any settlements before the star drive is engaged.

Star Drive Power Plant Upgrades

In order to upgrade a star drive, hull space must be used. This space reduces the total cargo capacity a ship has. Bellow is a list by type of star drive, the rating, and the additional space it takes in a ship by percentage of total cargo capacity. Cost above base price of a ship is also listed. Certain Drives come at a discount to the base price of a ship and are considered a downgrade.

Type	Rating	Space	Additional Cost/Discount
Fission Standard	1.0	0	-25%
Fission Upgrade 1	2.0	0	-15%
Fission Upgrade 1	2.5	0	-10%
Fission Upgrade 3	3.0	5%	-5%
Fission Upgrade 4	3.5	10%	0
Fission Upgrade 5	4.0	20%	+10%
Fission Upgrade 6	4.5	25%	+15%
Fission Upgrade 7	5.0	35%	+25%
Fusion Standard	2.0	0	-10%
Fusion Upgrade 1	3.0	0	-5%
Fusion Upgrade 2	4.0	0	0
Fusion Upgrade 3	5.0	5%	5%
Fusion Upgrade 4	5.5	10%	10%
Fusion Upgrade 5	6.0	15%	20%
Fusion Upgrade 7	6.5	20%	25%
Fusion Upgrade 8	7.0	30%	35%
Fusion Upgrade 9	7.5	35%	50%

Sub light Drives

Like Star Drives sub light drives are needed to propel a ship when the star drive is not in use. Like Star Drives they can increase or discount the price on a ship. They may also take up additional space on a ship. Premium space is discounted from the hull cavity

or cargo hold. G rating is the maximum amount of acceleration the sub light drives creates.

Type	G rating	Space	Additional Cost/Discount
Chemical Rockets	8	45%	-35%
Ion Drives	12	20%	-25%
Plasma Drives	26	20%	+10%
Magnetic Repulsors	24	0	+45%
Fusion Drives	28	20%	+45%

Maximum Speed/Time to Distance for Sub-light Drives

Because a ship cannot reach the speed of light in normal space without a star drive being engaged there are limitations to the maximum attainable speed in system with conventional thrusters. Speed is measured in time to AU (astronomical unit) or the amount of time it takes a ship to travel 146,600,000 km. The chart bellow shows the maximum velocity in time to AU for each thruster type.

Type	Time to 1 Astronomical Unit	Approximate km /Day
Chemical Rockets	26 days	5.638 mil
Ion Drives	19 days	7.716 mil
Plasma Drives	9 days	16.289 mil
Magnetic Repulsors	10 days	14.660 mil
Fusion Drives	8 days	18.325 mil

Maneuver Drives

Maneuver Drives are Thrust Vectoring Nozzles and fins that are tied in with the sub light drives. Magnetic Drives do not need thrust vectoring technology to provide maneuverability as this type of drive plays off of the natural gravitational and magnetic fields of space. Below is a list of drive types and the cost to increase maneuvering G by a factor of one. Maneuver drives are built directly into the sub-light unit and take no additional space on a vessel.

For ships 100 meters in length, and for every additional hundred meters over 100 meters of length, a ship reduces its maximum maneuverability rating by 1 G. Maneuverability may never be less than 1 G even for the largest Star ships.

Type	Cost Per G	Max Maneuvering G
Chemical Rockets	+10%	4
Ion Drives	+10%	8
Plasma Drives	+15%	22
Magnetic Repulsers	0%	24
Fusion Drives	+15%	25

Maximum Speed By Drive Type

Drive Type	Maximum Speed in KM per second	Acceleration
Chemical Rockets	32	8 G
Ion Drive	325	12 G
Plasma Drive	880	26 G
Magnetic Repulsor	750	24 G
Fusion Drive	975	28 G

Power Plant Refueling Schedule

A spacecrafts power plant is tied in with the Star Drive. The Star Drive Power Plant supplies all of a ships power needs. The fuel that powers the Star Drive and powers the ship is expressed in months of use. A ship can operate on reserves for seven days once the main power plant is bled.

Power Plant Type	Months of Operation
Fission	10
Fusion	26
Matter/Anti Matter	75

Basic Star ship Components

All starships come with basic accommodations and life support. Some additions come at a premium to the space available on board. A list of basic ship systems is provided bellow. Additional systems are listed by price, cost, and additional space below. Cost and space is again calculated as a premium in percentage over the base cost of a ship.

Standard Equipment.
Standard Navigation Consul.
Flat video Display Screen
Stainless Steel Seating
Radar 10,000 KM Range
Radio Communicator 12,000 Channel
Internal Radiation Sensor
External Radiation Sensor
Standard Life Support System
Video Communicator

Optional Equipment	Space	Cost
Back up life support system	2%	7%
Back Up Generator	10%	12%
Padded Seating	0	1%
Heads Up Display Panel	0	2%

Holographic Display Panel	0	3%
Microwave Communicator	1%	1%
Planetary Scanning Array	1%	1%
Radar Jammer	1%	2%
Communications Jammer	1%	2%
Gravity Generator	3%	15%
Atmospheric Testing Array	1%	2%
Internal Security System	1%	1%
Active Energy Scanning Array	1%	4%
Passive Energy Scanning Array	1%	3%
External Biological Activity Scanner	2%	4%
Inertial Dampeners	1%	5%
Internal Weapons Scanner	0	1%
G Shock Couch	1%	1%

Definitions of Standard and optional equipment

Standard Navigation Consul- A consul where the navigation calculations are entered into the ships computer.

Flat Video Display Screen- Built in monitor for communications and weapons targeting.

Stainless Steel Seating- Standard Seating for star vessels.

Radar- Range of 10,000 KM, used to scan for incoming ships and debris fields.

Radio Communicator- Standard Analog and Digital Communications device. Does not encrypt or decipher encrypted messages.

Internal Radiation Sensor- Measures the radiation levels inside the craft.

External Radiation Sensor-Measures radiation levels out to a range of 2,000 Kilometers.

Standard Life Support System- Can be used as a back up if the Star Drive Powers Down. Has a standard operating time of 1 week in the event of a shutdown of the main drive. May also be linked to the thrusters to provide standard sub light thrust. Linking to the sub light drive decreases the operating time to 2 days.

Video Communicator- Standard Flat Screen Communications device located in the cockpit of star craft.

Back Up Life Support System- Additional Life Support System with an operating life of two weeks. May also be linked into the sub light drives to power thrust. Linking to sub light drives decreases the operating life to one week.

Back Up Generator- In the event of a star drive system failure or shutdown this system will provide power for the sub light drives and other ships systems for 2 weeks. A back up Generator will power shields and weapons.

Padded Seating-Leather or cloth upgrade for standard seating.

Heads Up Display Panel- Heads up display for pilots, gunners, and navigators.

Holographic Display Panel- Three dimensional cockpit consul and display panel.

Microwave Communicator-Incorporates radio and microwave communications. Has a range of 300,000 KM.

Planetary Scanning Array- Allows an active scan of a planets composition from an orbital range of 2000 KM.

Radar Jammer- Jams the radar of other vessels causing a target roll penalty of 5 for all incoming missile weapons.

Communications Jammer- Jams the communications array of vessels within 3000 KM.

Gravity Generator- Sets up an artificial field that simulates gravity up to 2 G.

Atmospheric Testing Array-Measures the amount and types of gasses present in the atmosphere of a world.

Internal Security System- Alerts crew of intrusion and locks a ship down if it is broken into. Also detects for explosives planted on board. Also actively keeps a video record of people entering and leaving the ship.

Passive Energy Scanning Array- Detects the neutrino signature and identifies the location of the neutrino emissions. Can detect a source out to 2,000,000 KM.

Active Energy Scanning Array- Detects the cause of neutrino emissions out to 1,000,000 KM. Can identify the size of the Star Drive and Drive type but not the ship type. Can estimate to within 200 meters the size of the ship.

External Biological Activity Scanner-Scans for biological life forms on a planets surface. has a range from an orbit of 600 KM.

Inertial Dampeners- Sets up an artificial gravitational field that cancels out the effects of inertia and acceleration.
Internal Weapons Scanner-Scans for hidden weapons on life forms entering the ship.

G-Shock Couch- Needed for rapid acceleration and maneuvering if no inertial dampeners are present.

Defenses

Craft have the option to install two types of defenses. The cheapest type of defense is additional Hull Plating. Ships under 50 Meters in length may have a maximum hull armor value of 10. Once a ship is depleted of its total armor value it begins taking damage. Armor Value is expressed in hull points.

The second type of defense that a ship may install is an energy shield. An energy shield provides protection by absorbing incoming energy weapon fire. Energy Shields do not protect a ship from physical weapons such as missiles or projectiles. The maximum Energy Shield rating a ship less than 50 meters may have is 15. Once a shield goes down the ships armor begins taking damage.

Armor Point and Shield Point increases are expressed in percentage premium of cost over base price of a ship per point.

Type	Cost per point
Hull Plating	+5%
Energy Shield	+3%

Base Hull Values for ships are expressed in meters of length and maximum Hull Values are listed Bellow. The last field is populated with the maximum shield value a ship of a given length may have.

Length	Max Armor	Max Shield	Size Classification
50	10	15	1
51-100	10	20	2
101-200	15	30	3
201-300	20	35	4
301-400	30	40	5
401-500	45	55	6
501-600	60	75	7
601-750	75	100	8
751-1000	150	200	9
1001-1250	210	350	10
1251-1400	350	750	11
1401-1550	550	850	12
1551-1600	750	1200	13
1601-1800	1050	1500	14
1801-2100	2000	3000	15

- A ship must be at least 20% as wide as it is long and 10% as tall as it is long. Any ship failing to meet these dimensions must be treated as the next lower size class of ship in terms of weapons, armor, and shields. Ships less than 10% as wide as they are long and 5% as tall as they are long may only support a maximum amount of weapons and shields equal to two size classes less.

- Due to star-drive-to-mass requirements, a ship may not be less than 10% wide as it is long or 5% as tall as it is long.
- Ships more than 35% as wide and 25% as tall then they are long may be treated as a ship one size category larger than they are in length.
- Ships larger then 2100 meters gain 10% more armor and 10% in shield upgrades for every 10% increase in size.

Starship Weapons

Starships generally are armed with two classes of weapons. The first class is laser weapons and energy weapons and the second is physical weapons. Energy Weapons are lasers and Particle Weapons. Physical Weapons consist of Concussion Missiles, rail or magnetic driven mass driver weapons and Atomic Weapons.
Civilian ships may not carry atomic weapons of any kind nor be armed with a laser in excess of a class three-laser canon.

The class level of the weapon represents how many energy shield or armor points of damage it does to opposing ship. Points in excess of shielding or armor roll either into armor or if no armor is left into damaging the craft itself. For example, if a weapon with a class three rating hits a ship with no armor or shields it will score three hits on the damage table. If in this same example the ship still had two armor points it would score only one hit.

A civilian laser canon cannot be boosted above a class three rating unless the lasers power supply is hardwired directly into the power core. For every hardwire linked to the core the power is boosted by 1 class. Power boosting can never exceed more than five over the original manufacturers weapon limit without causing a power feed overload and explosion that will score five hits on the ship it is attached to. Maximum Weapon Ratings do not take into account a boost in laser efficiency with a hardwire link to the power core.

Ship Size	Maximum Weapons	Maximum Rating	Special Max Rating
100 meters or less	4	7	
101-200	8	8	
201-300	12	10	
301-400	15	10	
401-500	20	10	
501-600	25	10	
601-700	35	12	
701-800	40	12	Quad Class 15
801-900	40	13	Quad Class 16
901-1000	45	14	Quad Class 17
1001-1200	55	14	Quad Class 20
1201-1300	55	15	Quad Class

1301-1400	60	15	20X2 Quad Class
1401-1500	65	15	20X3 Quad Class
1501-1600	70	15	20X4 Quad Class
1601-1700	70	16	21X4 Quad Class
1701-1800	75	16	22X4 Quad Class
1801-1900	75	17	22X4 Quad Class
1901-2000	75	18	25X4 Quad Class
2001-2100	85	20	35X4 Quad Class
			45X4

* Special Max rating is additional quad turrets beyond the maximum number of weapons a ship may have. These super lasers are similar to the turrets of the old naval battle ships of Earth. These Lasers were intended for attacking larger ships.

Energy Weapons

Weapon Type	Rating	Cost	Range in km
Civilian Laser	1	10,000	500
Civilian Duel Laser	2	20,000	500
Civilian Quad Laser	3	30,000	500
Police Grade Single Laser	2	20,000	500
Police Grade Dual Laser	4	40,000	500
Police Grade Quad Laser	7	75,000	500
Military Grade Single Laser	8		1000
Military Grade Double Laser	10		1000
Military Grade Quad Laser	14		1000
Particle Accelerator	15		500
Laser Turbo Canon	16		2000
Double Turbo Canon	17		2000
Quad Turbo Canon	18		2000
Accelerator Canon	19		800
Dual Accelerator Canon	20		800

Starship Weapons Technology Ratings and Rate of Fire

The Human Republics Starship Class energy weapons are the highest rated weapons in the known galaxy. Human Republic Laser Technology is vastly superior to any of the more distant empires as well as the weapons of the Deynocim Empire. This is

mostly due to advances in cooling technology that allow a higher rate of fire when employing larger laser weapons of class 9 and higher. The following is a listing of technology level and rates of fire for laser weapons.

Class Rating	Technology Rating	Rate of Fire
1-8	all	1/1
9-12	1-4	½
9-12	5-6+	1/1
13-16	1-4	1/3
13-16	5-6	½
13-16	7+	1/1
17+	1-4	¼
17+	5-6	1/3
17+	7-9	½
17+	10+	1/1

* The maximum technology rating for energy weapons is 9 in the Human Republic
**The maximum technology rating for energy weapons in the Deynocim Empire is 7

Passive Weapons

Passive weapons are weapons that are intended to disable incoming enemy craft and weapons. These weapons include magnetic tractor beams and EMP Pulse Cannons. Cloaking devices as well as sensor jamming devices could also be considered passive weapons. Only ships that are more than five hundred meters in length have power sufficient to support tractor beams and Electro Magnetic Pulse Cannons. Passive Weapons tend to take up additional space in a starship due to power supply requirements and the additional fittings needed to support them.

Weapons Type	Cost	Range	Space Premium
EMP Cannon	85,000	400 KM	5%
Magnetic Tractor Beam	25,000	10 KM	10%
Sensor Jamming Array	120,000	1000 KM	5%
Cloaking Technology	120,000	n/a	7%

EMP Cannon (Electro Magnetic Pulse Cannon)- An EMP array is standard on most military grade vessels over 500 meters in length. It may be used once every other combat turn. Use of and EMP weapon will disable any and all electronics including incoming star fighters and missiles out to a range of four hundred kilometers. Unification Dreadnoughts Typically employ this weapon when an incoming missile threat is detected. A pilot caught in an EMP blast must make a piloting skill check to re-start his or her ship. A total of three attempts may be made to re-start a ship, if all these fail the pilot will die either from the cold of space or lack of oxygen due to total environmental system shut down.

Magnetic Tractor Beam- Is employed on military grade ships over 500 meters in length. It can be used to real in a ship up to 25 meters in length for every 200 meters in length the ship so equipped is. A successful Pilot Skill check at -4 will allow a ship to escape from a tractor beam.

Sensor Jamming Array- Military Grade sensor jamming technology when employed will shut down incoming ships external sensors. A successful stellar navigation roll modified by -4 will allow a pilot to regain control of the ships sensors.

Cloaking Technology- Currently cloaking technology will only allow a ship to conceal up to 70% of its mass making a 300-meter long ship appear to be only 90 meters in length. No roll can be made to negate cloaking technology, however neutrino emissions may still be measured, allowing a pilot or navigator to guess the size of a ship within 20% of its actual mass.

Physical Weapons

Type	Factor Rating	Cost	Range km
Concussion Missile Civilian	3	5000	1000
Concussion Missile Police	5	10000	1200
Concussion Missile Military	10		5000
Rail Gun 40 mm	3	20000	500
Rail Gun 50 mm	5	50000	500
Fission Missile	150-10,000		5000
Fusion Missile	200-15,000		5000
Anti Matter Missile	200-20,000		5000

Set Backs of Physical Weapons

Missiles can be shot down before they hit their target. An unmodified roll of 10 or better adjusted for skill level is needed to destroy an incoming missile. They are easier to target than star fighters due to the fact that they cannot make evasive maneuvers as skillfully as a pilot.

In addition missile, weapons take 1 turn to reach their target for every 10 kilometers they must travel to their target allowing most ships several turns to destroy or deflect incoming missiles. Missiles are also rendered inert by an EMP Blast.

Rail guns generally carry 10,000 rounds of metal projectiles and must be re-loaded after every 20 firings. For every 500 additional rounds a rail gun may be fired and additional time.

Damage To Individual Targets

Some players may wonder how much damage a starship weapon can do to an individual. Starship weapons generally effect an area and do strait damage rather then hit location damage. The following chart is a guide to the amount of damage that starship based weapons can do and the area of effect for those weapons.

Weapons Damage Chart

Weapon Type	Damage D-10	Area of effect
Energy Weapons	10 D per factor	½ meter per factor
Missiles	10 D per factor	20 meters per factor
Rail Guns	10 D per factor	point target only
Fission Missile	10 D per factor	10 Km
Fusion Missile	10 D per factor	20 Km
Anti matter missile	10 D per factor	45 Km

- Starship Weapons ignore all personal body armor.

Maneuvering and Landing a Starship

Starships that are greater than 700 meters in length cannot enter the atmosphere of a planet, and ships greater than 150 meters in length cannot touch down on a planets surface. Ships that can touch down expend 20% of their fuel leaving a planets surface. This reduction in fuel is reflected in a reduction in the amount of operating fuel life the ships main drive has. For example, a ship with a drive that can power it for 10 months lands on the surface of a planet, it must expend 2 months of fuel in order to lift off from the surface. Ships that are greater than 100 meters in length expend one month of fuel for every hour they operate in an atmosphere. Inordinate amounts of energy must used in order to keep a ship stable within a planets atmosphere. Military grade star vessels such as the 650 meter long atmospheric landing craft generally enter an atmosphere and then drop equipment and gear by parachuting it out of the cargo bay. Ships larger than 100 meters must generally dock at an orbital space port where transport to the surface is provided or must have a landing shuttle in a docking bay.

Starship Combat

The target number to hit a spacecraft for a character with skill in artillery or Starship weapons is dexterity with a bonus modifier of 1 for every skill level in starship weapons skill a character has. Skill in artillery does not allow for modifiers. A negative modifier of 1 is applied for every 5 G of maneuverability an opposing ship has. For example, a weapons officer with a dexterity of 10 has a skill of 1 in starship weapons increasing his target number to 11 however the target ship has 20 G of maneuverability decreasing his modifier by 4. The target number needed to hit the enemy ship in this case would be 7 or less on a 3D10.

Weapons Factor Verses Shields and Armor For Energy Weapons

When firing on an enemy ship the rating of the energy weapon, generally a laser, reduces a shield factor by as many factors as the laser weapon has. For example, a ship with a shield rating of 5 hit by a class three laser would reduce the shield rating to 2. An additional hit will remove the remaining shields and begin to damage armor.

Once all of a ships shields and armor are destroyed a ship takes a number of hits equal to the rating of the laser less any remaining shield or armor factors.

A shield must spend one hour recharging for every factor of damage that it takes from an energy weapon. Energy shield operate by absorbing and dispersing energy.

Weapons Factor Verses Shields and Armor for Physical Weapons

Physical weapons such as concussion missiles and other weapons such as rail guns ignore energy shields and damage armor only. Once a ships armor has been disabled the ship begins taking hits equal to the weapons factor of the weapon striking it.

Repairing Armor

Ship armor can be repaired for 1,000.00 Unified Human Republic Dollars for every point of armor damage a ship has taken.

Starship Combat Tables

After a starships weapons and shields have been disabled it begins taking damage. Each hit to a system increases its damage level so 2 rolls for minor damage will increase the damage level to moderate. Once a ship system has been destroyed the next hit to that system will roll into another system of the ship if the ship is not destroyed. If a star drive or fuel system of a ship is destroyed the ship has been destroyed. A Star drive with minor damage may still function but if it is not repaired a roll on the mishap table must be made. If a system is destroyed it may not be repaired but must be replaced. A minor repair takes 1-4 days, moderate takes 2-8 days and heavy damage will take 1-4 weeks.

Roll	affected Ship System
1.	Ships computer
2.	Ships communications
3.	Weapons
4.	Maneuver Drive
5.	Fuel
6.	Star Drive
7.	Life Support
8.	Cargo

Damage Roll
1. Minor
2.moderate
3.heavy
4.destroyed

Star Fighters

Star fighters come in three classes. A star fighter is an armed ship that is smaller than a starship. Starships with a class three rating may have an optional Star Drive installed. The following classes of starship and their weapon options are listed bellow. The target number listed at the right is maneuverability G rating which is used to determine the target number needed to hit the ship. Star Fighters are far more

maneuverable than starships. Any hit will destroy a star fighter with the exception of a class three fighter. A Class Three Fighter has a shield level of 3 so a class four laser would be needed to destroy a class 3 fighter.

Class	Weapon Options	Star Drive	G Rating
1. Interceptor	Class 1 Laser	no	35
2. Attack Craft	Class 1-2 Laser	no	30
3. All Purpose	Class 3 + 4 Class 4 concussion missiles	yes	25

Combat Between Craft

- Declare Actions
- Roll/Determine Initiative
- Defend against physical weapons
- Fire Weapons

Maneuvers and Limitations on Star Craft

Atmospheric Entry: Ships larger than 700 X 400 meters cannot enter an atmosphere. Any ship larger than the 700 X 400 meters will break up when hitting a planets atmosphere. A ship consumes a 10% supply of fuel for every hour spent a planetary atmosphere.

Landing on a Planet: Craft that are greater than 150 meters X 75 meters cannot land on a planetary surface. A starship will expend 10% of its fuel safely landing on a planets surface and will expend 20% of its fuel blasting off from a planets surface.

Space Port or Space Dock: Any ship can dock at a space-port provided the port is large enough to accommodate the craft.

Airless moons and worlds: Any ship can land on a body that lacks an atmosphere provided there is a safe place to put down the craft.

Orbital Breaking: A ship that has not successfully slowed may attempt an orbital break by skimming a planetary atmosphere. This is a moderate task and requires a piloting skill check to complete successfully. If the skill check is failed a ship will take a hit as if struck by weapons fire.

Robotics

Robotics are used extensively by advanced cultures throughout known space. In the Unified Human Republic robots can be found laboring in space yards, performing menial tasks, and working in hazardous environments. However none of the cultures in known space use robots as extensively as the Veragin do. Veragin robots perform tasks ranging from labor to military and security applications.

Most of the human cultures fear robots and strict laws are in place governing their design parameters and use specifications. Human do use artificially intelligent cybernetic machines for some assassination missions however manufacture of AI cybernetic beings has been outlawed. The Procyon empire uses robots for military applications but far less extensively then the Veragin do. The Deynocim use robotics very little, this is in part due to their racial pride and natural physical strength. Robots created by the Grey are virtually indistinguishable mentally from the other intelligent races having a wide range of emotional and analytical abilities. Only the Grey have the technology available to program emotion into machines. AI machines created by the other intelligent races can become dangerous, using only logic in the decision making process. As a result AI has been largely outlawed.

Types of Robots

Standard Labor: Standard labor robots are used extensively for menial tasks such as cleaning and janitorial work. These robots range in size from less than a hundred kilograms in weight to one hundred kilograms. Standard labor robots can also be programmed as medical robots.

Heavy Labor: Heavy labor robots are used for heavy construction and manual duties. Heavy labor robots range in size from one hundred kilograms to several thousand kilograms for heavy strip mining and processing robots.

Law enforcement: Law enforcement robots range in size from enforcement class security robots weighing in at two hundred kilograms to small enforcement bots that weigh in at five to seven kilograms and zip along on hover units issuing citations for minor infractions.

Military: Military robots generally weigh in at two to four hundred kilograms in size for infantry robots and can be as large as several metric tons for robotic tanks and assault units. Although these robots are not as creative as their human counterparts they can be useful in suppressing hostile forces.

Robotic Structural Points

All robots have structural points. Structural points for robots work in the same way as constitution does for living beings and AI cybernetic organisms. Structural points

for robots also works the same way as structural points for body armor do in that a shot must penetrate to do damage unless the weapon itself causes structural damage.

Damage for human shaped robots is rolled on a hit location chart as if it were a human with the structural points replacing constitution. For non human shaped robots a roll on the damage chart must be made any time a robot is hit with penetrating fire or with a weapon that does structural damage. Any shot that hits a robots armor (any roll that would normally hit an unarmored opponent, regardless of penetration.) can score knockdown on a robot. Knockdown is penalized by a –1 for every 100 kilograms a robot weighs. When a robot has no more structural points it has been destroyed. A robot has 1 structural point for every kilogram in weight it has. Armor value can be as little as 1 or as high as factor 1 armor. A robot must weigh a minimum of 1 metric ton to support factor 1 armor. Factor 1 armor cannot be penetrated by small arms that do not do structural damage. Factor 1 armor also grants a robot an additional 100 structural points for the armor itself. The armor must be worn down before a robot with factor 1 armor begins taking damage or a factor 1 weapon must be used to damage it.

Designing A Robot

Purpose

A robots purpose is defined by the job it does. A robot is Defined as light labor, heavy labor, law enforcement, or military.

Weight

Weight is in part determined by the robots purpose. Light labor robots very rarely exceed 100 kg. Heavy labor robots always weigh more than 100 kg. Law enforcement robots can weigh as little as three kg and as much as 200 kg and military robots as a general rule always weigh more than 100 kg.

Structural Points

Structural points are determined by weight. A robot has 1 structural point for every kilogram in weight it has. A robot may have factor 1 armor and be granted an additional 100 structural points for the armor if it weighs more than 1 metric ton.

Armor Value

Civilian light labor robots may have a maximum value of 4. Larger robots and robots Used for other purposes may have an armor value up to factor 1 armor if needed.

Physical Strength

As needed to perform function. Civilian light labor robots may have up to a maximum of 20.

Skills

Robots may be programmed with any skill up to a level of 2 and have a maximum of three different skills. AI machines may have a maximum of level 8 skills without limit to the number of skills they may have.

Built in tools/Weapons

As needed by function

Power Supply

Robots may be equipped with the following power supplies according to weight and size. The life of the power supply is listed before refueling or recharging is needed.

Size	Available Power Supply	Life
1-100 kg	battery or solar cells	1 week
100-200 kg	Fuel Cell	1 month
200-500 kg	Fuel Cell	3 months
500 kg +	Fusion Cell	10 months

Drive Unit

Robots can be powered by the following drive units according to weight.

Size	Drive Type Available
1-50 kg	hover unit/hydraulics
51-100 kg	hydraulics
100 +	hydraulics/drive train for larger units 500 kg+

Target Number

The target number is the base number a robot needs to accomplish a task. The base number is always 15. Robotic skill points are added to the target number. A target number is a measure of the robots vital statistics except strength and dexterity. Robotic skills are added to the target number in the same way that target numbers are added to vital statistics for organic beings. AI will allow the target number for robots to increase to 20.

Speed

Speed is measured in the maximum speed a robot can move in combat. This is determined in meters per second. Robots are not penalized when firing a weapon at maximum movement as organic beings are.

Robotic Stats Example Sheet

Purpose: As defined above

Weight: 1-100 kg (Light labor), 1-200 kg (law enforcement), 100 kg + (heavy labor or military)

Structural Points: As determined by Weight

Armor Value: 1-4 (light labor), 5-100 (heavy labor), 1-20 (law enforcement), 15 + (Military)

Physical Strength: (Same table as listed for biological beings) 3-20 (Light labor), 3-30 (law enforcement), 20 + (military or heavy labor)

Skills: (As determined by job function, never to exceed skill level two unless AI programming is used. AI allows a maximum of 8)

Built in tools/Weapons: (As determined by function)

Power Supply: (As determined by function)

Drive Unit: (As determined by form and function)

Target Number: 15 or less depending on programming level. Can be as high as 20 for AI machines.

Speed: By drive unit. Legs up to 60 kph,(20MPS), wheels up to 100 kph (25MPS), Hover Unit up to 320 (80 MPS).

Military Technology in the Human Republic

The human republic divides its military into five segments under the Joint Chiefs of the Military Council. Although the military ultimately reports to the senate, the joint chiefs enjoy almost unhindered control over military action. The joints chiefs are composed of the High Admiral of Star Fleet, The Field Marshal of the United Ground Army Forces, The General of the Marine Forces, and the Commander of the Air Corps. and the Fleet Admiral of Ocean Forces.

Star Fleet it responsible for combat in space, deep space ship-to-ship actions, and the transport of ground forces as well as the invasion and suppression of hostile worlds. The largest warships in the Human Republic Star fleet are called Unification Dreadnaughts. A Unification Dreadnaught is a 2100-meter long ship. Each Unification Dreadnaught is supported by three carrier class vessels and twenty additional support ships. The Flagship of the Human Republic and the most famous of the Unification Dreadnaught's is called "The Anvil of Crom" and is captained by Admiral Shella Nitari. Other well Known Unification Dreadnaughts are the HR America, the HR Lincoln, the HR Hammer of Thor, and the HR Dragoon.

The United Ground Army Forces are responsible for maintaining a military presence for defense on the worlds of the Human Republic. They are used as an attack and occupation force when needed. The United Ground Army Forces are also considered the last line of defense in the event of invasion. The Standard soldier is armed with Full Kevlar Body Armor and an Assault rifle.

The Marine Corp. has the primary mission as a force in readiness. They are the first in line as an invasion force on hostile worlds and systems. Marines also perform boarding actions onto enemy starships. Once an area is secured the army will generally move in and take command. Marine standard equipment is sealed Tritanium Body Armor and an Auto Laser Rifle. A marine presence is required on all Star Fleet ships.

The air force is responsible for world defense. World based laser systems are manned by the air forces on the various worlds of the Human Republic as are missile

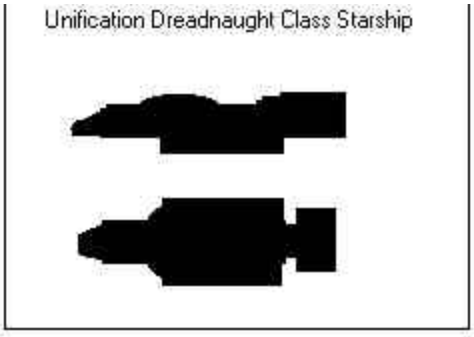
systems. The primary vehicle used in defense of a world is the Hypersonic Fighter Craft. Although vehicles exist that can repel gravity they cannot attain the speed of Hypersonic Aircraft and are less effective. Hypersonic Planes can achieve Low orbit and are more effective than star fighters in an atmosphere. The standard hypersonic fighter is armed with a 20 mm auto feed rail gun that is as effective as a class 2 laser and up to eight concussion missiles. Hypersonic Craft are powered by Plasma thrusters. A pilot must wear a fully sealed flight suit.

Ocean forces are responsible for the sea craft and defense of undersea cities on Human Republic Worlds. They have full command of sea-based laser and missile based systems as well as command of a fleet of submarines. Age-old aircraft carrier technology is still effective and a force of Hypersonic Craft is sea based at all times.

Military Hardware

The following are examples of military grade vessels and vehicles. The game master is encouraged to developed his own.

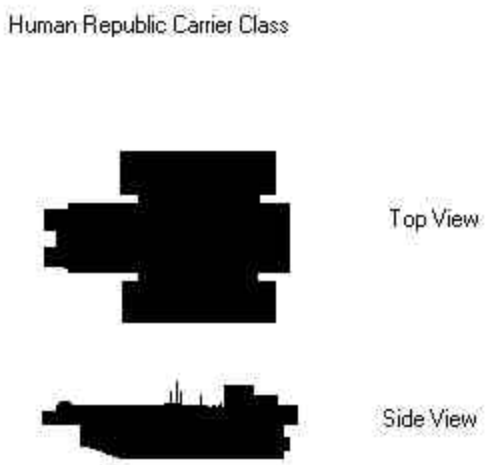
Unification Dreadnaught



Size: 2100 meters long 600 meters wide
Engine Type: Matter/Antimatter
Star Drive Rating: 8.5
Armor Rating: 2000
Shield Rating: 3000
Weaponry: 30 Class 7 Lasers
20 Class 15 Particle Accelerators
20 Class 18 Quad Turbo Cannons
10 Class 20 Dual Accelerators
4 Quad Class 45 Super Lasers
5 Missile Ports: 10 Class 2000 Fusion Missiles
200 Class 10 concussion Missiles
1-4 Class 250,000 Anti Matter Missiles (World Killers)

Passive Weaponry: 3 magnetic Tractor Beam Projectors. 4 EMP Cannon range of 400 Kilometers 360 degree coverage of ship.
Sensors: Full Sensor Suite (All Available), Cloaking Device, Sensor Jamming Array
Landing Bay: 400 X 300 Meters: 30 Class 1- interceptor fighters
10, 20 meter transports (landing craft)
2 100 Meter transports
Minimum Crew: 750
Maximum Crew: 3500

Human Republic Star Fleet Carrier



Size; 1800 Meters X 800 Meters
Engine Type: Matter/antimatter
Star Drive Rating: 8.5
Armor Rating: 500
Shield Rating: 500
Weaponry: 30 Class 5 lasers
10 Class 20 Duel Accelerators
Passive Weaponry: EMP Canon 400 Km Range.

Sensors: Full Sensor Suite, Cloaking Device,
Landing Bay: Bay One: 1000 X 400 Meter Landing Bay: 70 Class 1 interceptor Fighters
Bay Two: 500 X 200 Meter landing Bay: 20 Class 3 Fighters
Bay Three: 500 X 200 Meter Landing Bay: 20 Class 3 Fighters
Bay Four: 800 X 300 Meter Landing Bay: 10, 50 meter Landing Craft
Minimum Crew: 310
Maximum Crew: 1,200

Human Republic Heavy Cruiser

Size: 1100 Meters X 400 Meters
Engine Type: matter/antimatter
Star Drive Rating: 8.5
Armor Rating: 210
Shield Rating: 350
Weaponry. Quad Class 20 Lasers
40 Class 7 Lasers
15 Class 14 Lasers
Passive Weaponry: EMP Cannon 400km range, magnetic tractor beam
Sensors: Full suite, Cloaking Device, Sensor Jamming Array
Landing Bay: 200 Meters X 75 meters: 20 Class 2 fighters
Minimum Crew: 410
Maximum Crew: 1675

Human Republic Destroyer Class

Size: 800 Meters X 250 meters
Engine Type: Matter/antimatter
star Drive Rating: 8.5
Armor Rating: 150
Shield Rating: 200
Weaponry: 20 class 5 lasers
10 class 10 lasers
10 class 12 lasers
1 quad class 15 laser
Passive Weaponry: EMP array range 400 Kilometers.
Sensors: Full Suite
Landing Bay: 100 Meters X 50 Meters: 2, 50 meter transports or 10 class 1 fighters
Minimum Crew: 50
Maximum Crew: 750

Human Republic Atmospheric Transport and Landing Craft

Size: 650 X 300 Meters
Engine Type: matter/antimatter
Star Drive Rating: 8.5
Armor Rating: 75
Shield Rating: 75
Weaponry: 10 Class 7
10 Class 8
5 Class 10
Passive Weaponry: EMP Array Range 400 Km
Sensors: Full Suite

Cargo Bay: 200 X 150 Meters: 40 Heavy Tanks and/or 40 Hover Tanks and/or 20 mobile transports/or mobile deployment base.
Minimum Crew: 45
Maxim mum Crew: 100 + 700 mobile infantry

Army/Marine Vehicles

Tracked Vehicles

Heavy Tank

Armor Rating: 4
Weapons: Heavy Rail Canon/ Class 7 weapon
Light auto rail cannon/Class 1 weapon
Power Plant: Fusion
Maximum Speed: 103 MPH

Although hover tanks exist they are ineffective on worlds with unstable magnetic or gravity fields. In addition hover tanks can not be as heavily armed.

Hover Tank

Armor Rating: 3
Weapons: Class 3 Laser Cannon
Power Plant: Fusion
Maximum Altitude: 12,000 feet
Maximum Speed: 176 Knots

Standard Transport

Armor Rating: 1
Weapons: Class 1 Auto Rail Cannon
Power Plant: Fusion
Maximum Speed: 115
Crew: 2 + 20 troops
tracked vehicle

Standard Human Republic Suppression Fleet

The example provided bellow is the Far Reaches military away force. It is one of forty-seven suppression fleets in the Human Republic. The mission of suppression fleets is the invasion of hostile worlds and the suppression of breakaway worlds in the Unified Human Republic. The Human Republic has an additional 20 Full Battle Fleets that are three times the strength of a standard suppression fleet.

Far Reach/ The 47th Fleet

Unification Dreadnaught: BB-Hornet
Unification Dreadnaught: BB-Aladdin
Fleet Carrier Craft: FL-United States of America

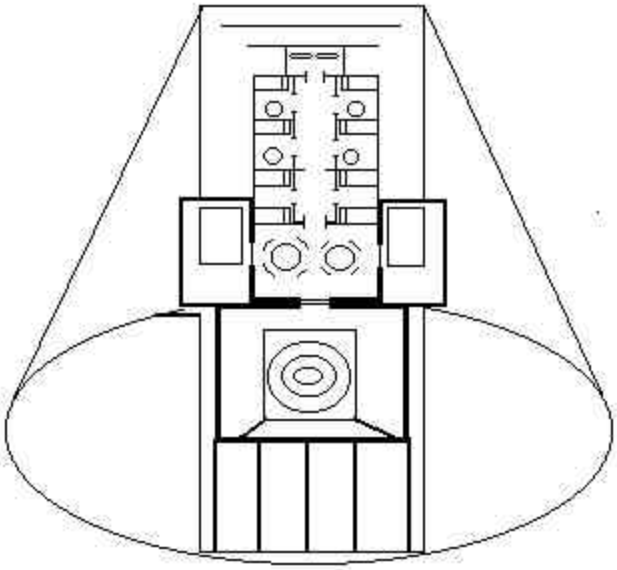
Fleet Carrier Craft: FL-Pacific Rim
Heavy Cruiser: HC- Bulldog
Heavy Cruiser: HC-Oceanic
Heavy Cruiser: HC-Battan Bay
Heavy Cruiser: HC-Apocalypse
Heavy Cruiser: HC-Marylyn Monroe
Heavy Cruiser: HC- Designation Point
Destroyer: DC- Washington
Destroyer: DC - Anvil
Destroyer: DC - Stinger
Destroyer: DC- Mockingbird
Destroyer: DC - Wall street
Destroyer: DC - Caliber
Destroyer: DC - Michigan
Destroyer: DC - Sherman
Destroyer: DC - Cosmonaut
Destroyer: DC - Panama Canal
Destroyer: DC - Cerebus
Destroyer: DC - Germany
Transport: TC – Anchors Bay
Transport: TC - Firefly
Transport: TC - Dragonfly
Transport: TC - Explorer
Transport: TC - Vegas
Transport: TC - Highway
Transport: TC - Polynesian
Transport: TC - Aragorn
Transport: TC - Mantis
Transport: TC - Lighting

Additional Fighter Craft: 320 Class 1 Fighters
120 Class 2 Fighters
80 Class 3 Fighters
total = 520

Additional Landing Craft: 20/ 20 meter landing craft
4/ 100 meter landing craft
20/ 50 meter landing craft
total = 44

Ground Vehicles/forces: 240 Heavy Tanks, 240 hover tanks, 80 mobile transports
2 Mobile Bases, 14,500 Ground Troops

Standard Thirty-Meter Transport Class Vessel



Starship Statistics

Drive System

Fusion Drive – Upgrade 5/ rating 6.0/ additional space 15%
Sub-Light Plasma Drives – G-Rating = 26/ Additional space 20%
Plasma Maneuver Drive – G Rating = 20/ Additional space 0%

Optional Equipment Upgrades

Back up life support system/ additional space = 2%
Back up generator/ additional space = 10%
Microwave communicator / additional space = 1%
Gravity Generator/ additional space = 3%
Inertial Dampeners/ additional space = 1%
Atmospheric Testing Array/ additional space =1%
Active Energy Scanning Array/ additional space = 1%
Passive Energy Scanning Array/ additional space =1%
Internal Security System/ additional space = 1%

Ships Defensive Systems

Armor Upgrade/ hull rating 8
Optional Shields/ rating 10
Civilian Quad Laser/ Weapon rating 3
Civilian Dual Laser/ Weapon Rating 2