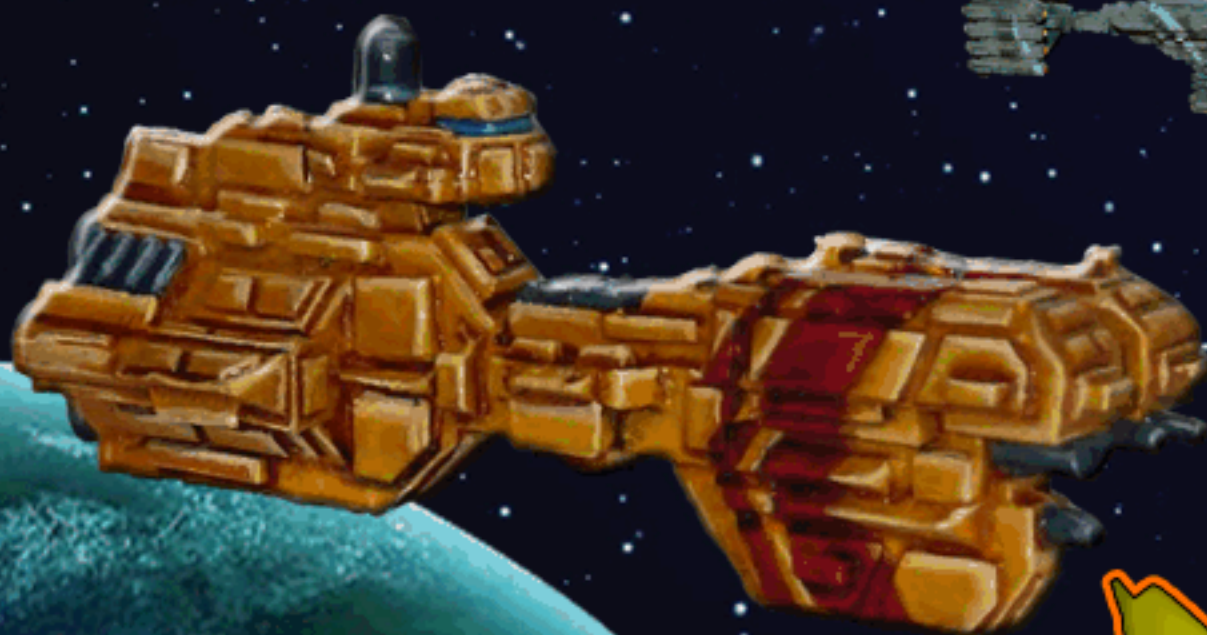


FULL THRUST

PROJECT CONTINUUM



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COVER DESIGN BY J. GASKINS



Full Thrust

Project Continuum

The next Cross Dimension

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Updated April 2017
Version 1.1.4

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Cross Dimensions developed by: *Hugh Fisher*

Thanks to the Emerald Coast Skunkworks crew, Clint Kozell, Kelsey Sealey, Barry Kiker, and Thomas Beliech. To our play testers and evaluators, Ben Blohn, Liam Thompson, Aaron Gimblet, Dean Gundberg, Owen Montgomery and to everyone who contributed ideas or feedback. Also to Jon Tuffley and GZG for permission to distribute this book, and to Hugh Fisher for granting us permission to re-write his original Cross Dimension Rules and combine them with Continuum. This does not mean that they agree with everything (or anything) that we've done!

Also, a special thanks to William Stec for all his diligent work in editing this and putting up with all my fussing. Without his diligent work this project would never have been accomplished.

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This version would not exist without the earlier inspiration and hard work of Jon Tuffley and all the previous contributors to Full Thrust.



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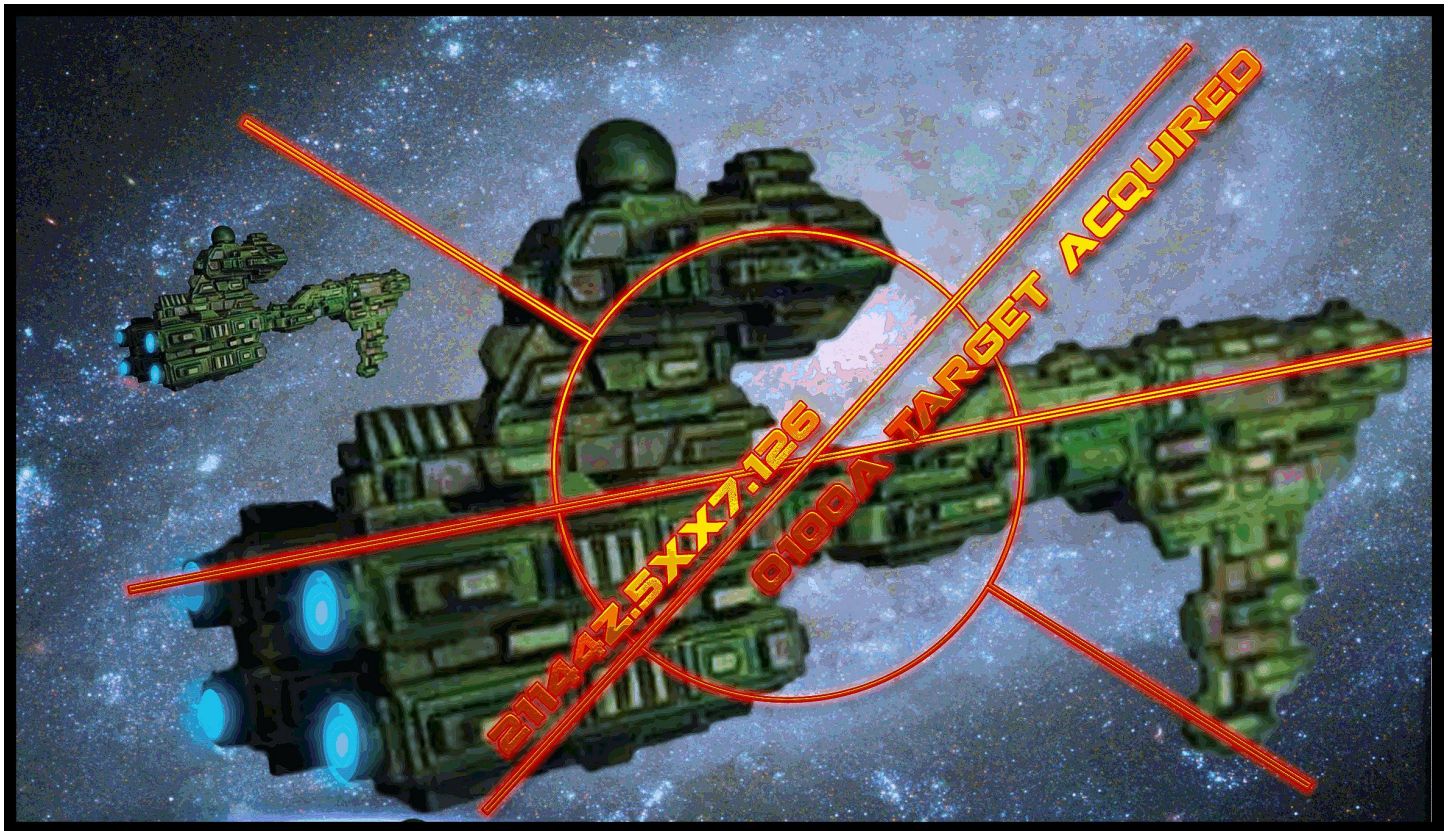
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“Sound general quarters! Set condition one throughout the ship! This is not a drill!!!”

-Capt Holtz, HMS Queensbridge

1 Disclaimer

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Credit goes to John Tuffley (creator of Full Thrust and More Thrust), Stephen Mulholland (author of the Full Thrust Warlord from which much of this work has been copied), Michael Hoyt (author of Extreme Thrust), Star Ranger (Dean Gundburg) for his Light Fighter and Emergency Thrust rules and the gang from the Mechworld Development Group www.mechworld.de for inspiring the Flak barrage rules. Most especially credit goes to Hugh Fisher (author of Full Thrust: Cross Dimensions) whose permission to combine our rules with his permitted this book to become reality.

1.1 From the author

A few years ago our game club got back into Full Thrust after a 'hiatus' of several years. It was then we discovered Full Thrust: Cross Dimensions, Full Thrust Warlord and others. We decided to primarily use Cross Dimensions in our rules and to incorporate a few select ideas from the other rule sets. Most of these "house rules" were never really formalized but mostly a series of notes on scrap paper. We also began adding a few 'tweaks' of our own to better simulate what certain ships from various sci-fi shows could do.

At some one point we decided to write up a couple of battle reports and posted them on The Miniatures Page. Several people asked how we combined the various rule sets and made them workable. We decided to set about writing down our ideas and the result was the Continuum Supplement for Cross Dimensions.

I thought that would be the end of our labors, but

many people then began asking for a book that actually combined Continuum with Cross Dimensions. We didn't feel this was even an option without asking Hugh Fisher for his permission to rewrite his rules. We also felt it would be necessary to get Jon Tuffleys's permission and support. We began corresponding with both and to our happy surprise, they both liked the idea. Both have offered their support, guidance, and the occasional suggestion and I will be forever grateful to both of them. Without their help this book would not have been possible.

1.2 Playtest credits

I'd like to recognize our play testers from the Emerald Coast Skunkworks: Clint, Thomas, Barry, Kelsey and Ben for all their hard work. I'd also like to thank William Stec for his tireless editing efforts. His dedication turned the first draft copy of mostly gibberish into the book you have now. Any errors you find are, however, are entirely mine.

1.3 Introduction

Full Thrust: Project Continuum is not Full Thrust 3.0, nor is it exactly Full Thrust Cross Dimensions 2.0.

This work is an attempt to pull in many of the great fan made works out there (plus add a few 'tweaks' of my own), and incorporate them into Full Thrust Cross Dimensions. Many of those tweaks I cannot take sole credit for and were the result of many player comments from not only our local gaming group but the players on the Face Book Full Thrust page and Yahoo groups.

If you are new to Full Thrust this work may seem overwhelming at first but keep in mind you can use what you wish and discard the rest. If your 'universe' does not utilize gunboats, or Phasers (for example) feel free to not use them. You will not upset game balance.

For veteran players this work will, hopefully, make it easier for you to make your ship designs more genre-specific whether they are from another starship combat game or any of the popular sci-fi movies and TV series.

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Players should look on all the options available to them in a similar way an artist looks upon his color palette. He has many, many, color choices available to him but not all the colors would be appropriate or even desirable to the work of art he is creating. Designing your ships is very similar. Project Continuum will give you a wide range of choices but including them all in your fleet is neither desirable nor recommended. While Jon Tuffley authorized and contributed to the creation of these rules, this is not a Ground Zero Games publication. Any questions should be directed to The Emerald Coast Skunkworks.

<http://emeraldcoastskunkworks.wordpress.com/>

You can also seek us out at the Full Thrust group page on Face Book or email us directly at:

Emeraldcoastskunkworks.com@yahoo.com

1.4 For new players

The premise of Full Thrust has always been that this is not a “super-realistic” simulation that takes hours to make a single move. It is a system for fast, fun games with fairly large numbers of ships (a dozen or more per side is no problem), which can be played in a reasonable length of time. Full Thrust puts you in the role of squadron or fleet commander. The commander decides what to do and when based on knowledge of the ships’ own capabilities and those of the enemy, but doesn’t personally tune the laser frequencies or tweak the ECM programs. In the vast majority of science fiction battles are not won by re-modulating the coffee maker diodes or other forms of technobabble, and Full Thrust is no different. You may be surprised by how simple the rules are but this doesn’t make the game any less challenging. Full Thrust has an original setting and range of miniatures, but you are not obliged to use either. This seems to surprise many gamers so is worth repeating: you don’t have to use the ‘official’ miniatures. Nor is there a monthly magazine or endless stream of supplements that you need to keep up with. Obviously the more GZG products you buy the happier GZG will be, but buy them because you want to, not because somebody says you have to. Above all, Full Thrust is intended to be an enjoyable game. If you are not happy with a

rule or system, throw it out and use your own – that is what science fiction gaming is (or should be) all about!

1.5 How to use this book

This section and the next three give an overview of how Full Thrust: Project Continuum is played, an introduction to the cinematic movement system, and to beam weapon combat. Once you have read those, you will be ready to try an Introductory Scenario – like most games, the best way to learn is by actually playing. This shouldn’t take more than an hour. After that read the remaining sections which describe additional weaponry and defensive systems, faster than light (FTL) drives, fighters, ship design, and various other topics.

Throughout this book you will see that some rules are labeled optional. (While every rule in Full Thrust is optional, some are more optional than others.) Pick and choose which of these you wish to use, but just remember to agree with your opponent which ones are in play and which are not.

1.6 Playing equipment

To play Full Thrust you need a medium sized table, some space ship models or counters, corresponding SSD sheets, a tape measure, some standard six-sided dice, pens or pencils and some paper for writing movement orders.

Playing area

One of the great advantages of starship combat games is that you do not need any “terrain”. A table about 6’ by 4’ (1.8m by 1.2m) is best, but you can use any suitable flat area for the game or even the floor. (Pets, small siblings, and vacuum cleaners notwithstanding) If you want maximum visual appeal, obtain a large piece of black cloth, paper or card to cover the playing area and speckle it with varying-size dots of white and yellow paint. A ‘star field’ can be produced in about half an hour and looks surprisingly effective.

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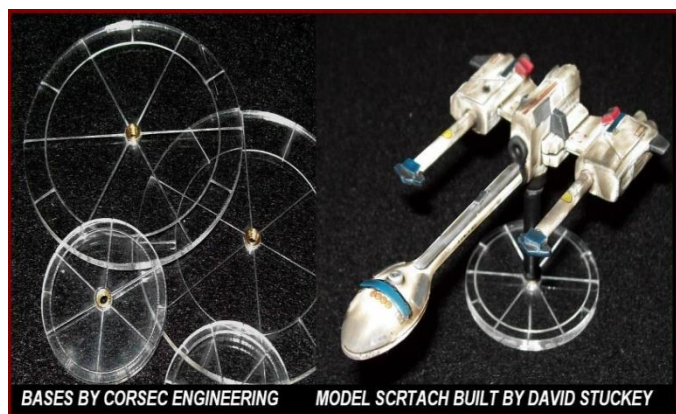


For a really “dynamic” look to your space battles many companies make “space mats” that use real space imagery. Corsec Engineering has some excellent mats: <http://corseceng.com/>

Although terrain is not needed, once you are accustomed to the rules you will find that battles involving space stations, asteroids, or other features are more interesting.

Space ship models

As this is primarily a miniatures game, we obviously recommend that it is played with actual starship models. These can be placed flat on the table, but we recommend they be mounted on hexagonal base stands or stands with 30 degree markings.



Ships on stands look better, acquire fewer fingerprints, and the center of the stand gives a useful reference point for measuring distances in play.

If you do not wish to use model ships, the game will

also run perfectly well using card or plastic counters to represent ships; all you need is some identification mark or code on each counter, a mark to indicate the center of the counter for measurement, and something to show the facing (present direction) of the ship. We have supplied enough copy-and-cut-out counters in the back of the book to enable you to play out the Introductory Scenario. We hope this will get you sufficiently interested in the game to start collecting your own fleet of models.

Every ship needs a matching system status display (SSD) which shows all the weapons and systems that a ship is fitted with and records damage. SSDs for the Introductory Scenario are provided in the back of the book. Photocopy these, and if you wish you can then put the copies in clear plastic document wallets and record orders and damage with erasable markers, so the sheets can be re-used.

If you are using fighter groups in the game, there are a number of ways these can be represented. To give maximum visual appeal you can mount the correct number of individual fighter models on a single base so that they are removable in some way to indicate losses. A simpler way is to permanently mount a few fighter models (or even a single one) on a base and use a separate counter to indicate the actual number of fighters it represents.

Although not compulsory, the Full Thrust starship miniatures line now includes over 200 different models and is highly recommended. For sales in the UK, Europe, or the Americas, contact Ground Zero Games: <http://www.gzg.com>

1.7 Dice

Six-sided dice are used in this game and you will need a number of them. These will often be referred to as a d6. In some cases a 3-sided dice (d3) is required, in this case simply roll a d6, with 1-2 =1, 3-4=2, and 5-6=3.

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Die Roll Modifiers (DRMs)

Some weapons, defensive systems, and terrain features can affect the outcome of a die roll. This is expressed as a DRM. A positive (+) DRM adds to the total of a die roll, while a negative (-) subtracts from the total. A DRM cannot increase the result of a die roll above 6 or decrease it below 1. In situations where a re-roll is allowed (such as after a penetrating hit with a beam weapon), the DRM will not normally be applied to the re-roll as well. Exceptions will be listed in the rules for particular systems affected. A DRM can result in automatic hits or misses.

1.8 Measurements

You will need a tape measure or long ruler, graduated in whatever units you are using for play (inches or centimeters); a ruler or straight edge can also be useful for checking lines of fire.

The Course and Fire Arc Gauge posted on the Skunkworks site can be printed out to make maneuvering your ships easier and more accurate, and should also reduce any arguments about firing arcs.

Corsec Engineering also makes Turn Gauges for Full Thrust.

1.9 Updates

Any updates will be posted on the Emerald Coast Skunkworks site.

1.10 Final thoughts!

The Introductory Scenario can be played against an opponent or solo. After that, ask around at your local gaming club, or venture online and search for GZG and Full Thrust related web sites, such as ours.

There is an active worldwide community of Full Thrust gamers, happily creating new rules and new ships for all manner of purposes. Join us and add your distinctiveness to the collective or something like that.

Everything presented here has been play tested by our group but others may not find the same game balance we have. By all means change what you wish. Our only request is you tell us about your experiences.



Don't play the rules, play the game and most importantly, have fun!



2 Rules overview

2.1 Distance and direction

Full Thrust measures distance and velocity in Measurement Units (MU). One MU on the table represents hundreds to thousands of kilometers, depending on player preferences. For tactical purposes:

- 0 – 6 MU is ‘point blank’ range where fighters attack, and missiles home in.
- 0 – 12 MU is close range, where weapons fire will be particularly deadly.
- 12 – 24 MU is medium range where the smallest weapons cannot fire.
- 24 – 36 MU is long range where most light ships cannot fire. Only unusually powerful (and expensive) weapons can fire at ranges beyond 36 MU.

Using the common 1 inch = 1 MU scale, an average 6’ by 4’ table is 72 x 48 MU, a good size for a typical battle. It is just as valid to have a scale of 1 MU = 1 centimeter if you are playing on a small tabletop, or if you want a game with very high speeds and lots of maneuvering room on your normal size of table. Basically, 1 MU can be any distance you want it to be according to the size of playing area you have, the size of models you are using, and simply personal preferences. If you have a whole sports hall to use, then why not try using giant ship models and 1 foot (or even 1 metre) units?

The ship models used in Full Thrust (and indeed any tactical space game) are actually vastly over-size compared to the distances represented in the game; in true scale, the actual ships would be so tiny you probably couldn’t see them.

All measurements and arcs of fire are therefore relative to a designated center point on the model, not the edges or corners. For the same reason there are no line of sight or inter-penetration rules for ships; they can freely fly or shoot ‘through’ each other.

In addition to the actual ships, there are a number of other items that can be represented either by counters or models (depending on your time, resources, and

the overall visual impression you are aiming for). These include asteroids and “bogeys” (unidentified sensor contacts). Suggestions on how to model these are included in the appropriate sections.

Heading

Ship heading, or course, is measured in clock points. (For our younger readers, we mean the analog clocks that were common in the previous millennium.) Each point is equal to 30°. Courses are measured relative to the table edge a fleet starts from, so 12 is straight ahead, 3 90° to the right, and so on. Ship orders are given relative to the current course: ‘Starboard 2’ would change from 12 to 2, or 7 to 9. See section 3.1 for how facings are used in movement and section 4.2 for weapons fire. Ships mounted on hex bases are easy to align. Ships with course 12, 3, 6, or 9 will have the front edge parallel to a table edge; for the courses in between one pair of opposite edges must be aligned to table edges.

Ship course represents the average or majority direction in a single game turn, not that the ship is precisely following that line.

Full Thrust uses the naval terms port, starboard, fore, and aft for directions, but you can use left, right, front, and back if you prefer.

2.2 3D, or not 3D?

Some starship combat games have made attempts to simulate 3-dimensional movement and combat, with varying degrees of success. The Full Thrust authors believe that while it can be done, it is not worthwhile. Tables are 2D surfaces: adding a 3rd dimension requires special stands, is harder to follow, and the extra complications remove one of the major elements of the game – having fun!

In an aerial combat game the third dimension (height) is vital, because atmospheric craft behave differently in the vertical plane than they do in the horizontal. Once you move into space, however, all the dimensions are essentially the same, and while the front and back of a spacecraft are different the sides, top, and bottom are usually almost identical. Very little is lost by compressing the game to only two dimensions, and a great deal is gained in the way of

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simplicity and playability.

2.3 Ship classifications

Mass

Ship size in Full Thrust is measured in abstract mass units. The total mass of a given hull is a representation of the capacity of that hull for outfitting it with drives, weapons, defensive systems, etc. This total mass figure is used to refer to the size of the ship; a size 24 ship could be fitted with a maximum of 24 mass of systems.

Mass ratings indicate the required volume, power requirements, crew stations, etc. rather than being an exact measure of the bulk or weight of a single piece of equipment.

In the GZG setting, one mass unit represents about fifty to one hundred actual tons.

Points

All the systems and equipment fitted to a ship have a points cost, calculated from the mass. The more effective or 'high tech' systems have a higher points cost for a given mass, so it is possible for two ships of the same total mass to have different points costs due to differences in systems carried.

As in many games, the points system is used for one-off and tournament battles to ensure roughly equal forces on each side despite a variety of ship designs. See section 13 for ship design and section 18 for suggestions about fleet composition.

The Full Thrust ship design and points system is very easy to work with and does not require a spreadsheet however one is available on the Emerald Coast Skunkworks website.

<http://emeraldcoastskunkworks.wordpress.com/>

Modifying existing ships and designing new ones is common among Full Thrust players and is the 'heart and soul' of the game.

Classes

Full Thrust, like most science fiction, uses 20th century Western naval terms to describe spacecraft.

Fighters are the tiny spacecraft that are carried into battle by larger starships, individually very weak but dangerous in large numbers. Fighters do not need SSDs, and are not referred to as 'ships' in these rules.

Gunboats are slightly larger than fighters but smaller than most escort ships. They are rarely FTL capable and, at least in Human Space, are typically used for in-system patrols and policing duties.

Combat starships are divided into three broad groups: escorts, cruisers, and capital ships.

Escorts are the smaller ship classes, ranging from the tiny couriers through corvettes and frigates up to destroyer class ships. Escorts are frequently used on detached duty in low threat areas, or patrol missions and courier duties, and to support heavier ships of cruiser or capital class. Ships of the escort group are lightly armed and protected; they are effective against their own kind, but of relatively little use against heavier ship units.

Cruisers are the medium sized warships, used to support the heavy line of battle ships but also capable of holding their own on independent operations. Cruisers are often further divided into light, escort and heavy cruiser classes. They are reasonably agile and well protected, with heavier weaponry than the small escorts.

Capital ships are the heavy line-of-battle classes, from battlecruisers and battleships up to the vast super dreadnoughts and fleet carriers. These ships are leviathans, bristling with heavy weaponry and defenses against attack.

Capital units form the core of a battle fleet or task force and many carry their own onboard fighter groups as both an offensive and defensive weapon.

In addition to these classes, a carrier is any ship with hangar space for two or more squadrons of fighters, even if that is not its primary role in battle. In addition to carriers, and considerable rarer are the Gunboat Mother Ships. These giants carry anywhere between 6 and 18 gunboats.

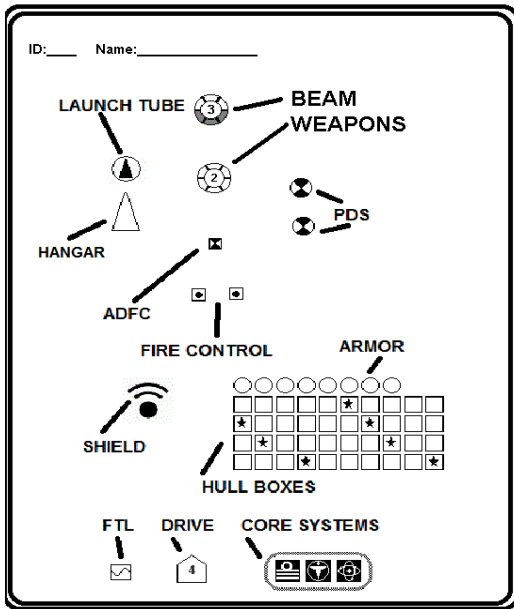
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See section 13 for more refined ship designations within each class.

2.4 Ship System Status Display

The system status display (SSD) for each ship has symbols for all the drives, weapons, and systems fitted.

In the bottom row of the SSD are the symbols for the FTL and main drive, and the optional Core Systems. The rows of small boxes above the drive symbols are the hull or damage track that shows the actual damage point total that the ship can take. When damage is inflicted, these points are marked off the target ship's hull boxes on its SSD, starting at the top left and crossing out one box per damage point inflicted. When you reach the end of one line of boxes, this is a threshold point (section 4) and each ship system must make a threshold check.



Immediately above the hull are some round armor symbols, which absorb damage, and above those and to the left the various offensive and defensive weapon systems carried. If a system is knocked out as a result of a threshold point check, it is crossed off the diagram.

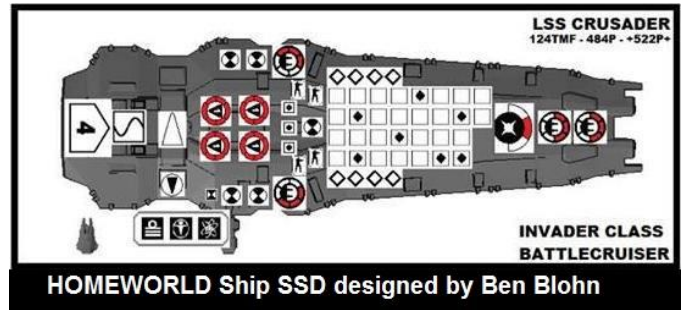
When a ship has had all of its hull boxes crossed out (i.e. it is reduced to 0 damage points or less) then it is considered destroyed and removed from play.

Individual symbols will be explained in the following

sections.

2.5 Game turns

Full Thrust, like most tabletop games, divides time into turns. A game turn in Full Thrust represents about five to ten minutes of action; enough time for the commander to order a change of course and have it carried out, a ship to aim and fire an effective salvo or volley, and take defensive measures against incoming fire, or a fighter group to make an attack run against a ship.



A typical six to twelve turn battle therefore represents an hour or two of actual combat. A ship with velocity 8 will go from long range to close range in 3 or 4 game turns, assuming that the target is standing still, and will cross from one end of a typical table to the other in 9 turns, assuming no further acceleration.

Both (or all) sides perform the same actions in a single turn. When the order matters, players alternate one ship at a time, not by entire fleet.

Turns exist only to make the game playable, and should not be regarded as a rigid division of non-overlapping time. The sequence of engine burns and course adjustments that are represented by one turn of movement would really start about half way through the previous turn and be completed by the half-way point, while the weapons fire in one turn starts at about the middle of the turn and continues into the next.

Resource management

Full Thrust does not track power consumption, fuel consumption, or ammunition supply other than for one-shot weapons. Ships are assumed to enter battle with sufficient fuel and ammunition to fight a normal battle.

2.6 Sequence of play

A game turn consists of phases. Each phase represents a different kind of action (move, shoot, etc.) carried out by all the ships on the board. Each turn, all players move and fire their ships in the sequence given below.

For the Introductory Scenario you will need only phases 1, 2, 5, 11, and 13. The game turn sequence is not as complex as it may appear at first sight, and performing actions in the correct order will soon become second nature.

1. Write orders Phase.

Each game turn starts with both players simultaneously (and secretly) writing the movement orders for all the ships they control.

Announce ships entering by FTL and place markers at each designated entry point.

Announce ships entering or leaving a squadron.

2. Roll for initiative Phase.

Players roll a D6 each; highest roll has initiative for this turn. (If there are more than two players, the winner decides the order for the others.)

3. Launch missiles, ordnance, fighter groups, or gunboats Phase.

Both players alternate in announcing and placing Heavy Missiles, Salvo Missiles, or any similar ordnance weapons as well as fighters/gunboats. Players alternate by ships, not by missile salvo or squadron. The player who lost initiative launches first.

4. Move fighter groups/gunboat squadrons Phase.

Both players alternate moving one previously launched fighter/gunboat group each, until all fighter groups in play have been moved (if desired). All fighter groups being launched this turn must be moved before those already in flight. The player who lost initiative moves first.

Any group may declare it is screening or pursuing instead of making a normal move.

5. Ship movement Phase.

Any asteroids, starbases, or other objects with fixed movement paths are moved first.

Both players simultaneously move their ships strictly in accordance with orders written in phase 1. Ships laying mines are moved before all others. Screening or pursuing fighter groups are moved at the same time with the appropriate ship.

Ships entering or exiting FTL are moved or placed last.

Resolve collisions, mine sweeping, or mine attacks as they occur.

6. Secondary fighter/gunboat moves Phase.

Fighter groups may, if desired, make a secondary move in this phase.

7. Allocate missile and fighter/gunboat attacks Phase.

All missiles and fighter groups that are within the specified attack ranges of suitable targets (and wish to attack, in the case of fighters or gunboats) are moved into attack positions. Fighter and gunboat models are pointed at the intended target model, so it is clear exactly what they are attacking. Missile salvos and Heavy Missiles are moved next to their intended targets so it's clear what they are attacking. See section 6 and 7 for a few exceptions.

8. Fighters against fighters or missiles Phase.

Fighter vs. fighter actions (dogfights), attempted fighter interceptions, fighter groups defending against missile attacks, and screening actions by fighters are resolved before actual point defense fire is allocated to surviving ships. Gunboat vs missiles or fighters also take place in this phase.

9. Point Defense fire Phase.

Any ship under missile and/or fighter/gunboat attack allocates its defenses against attacking elements, then rolls for effect. As with ship fire, announce all targets before rolling any dice.

Ships with ADFC may choose to fire in defense of other ships, even if they are not under attack

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themselves. See the rules for ADFC and AADFC in section 5.

A ship that wishes to shoot at multiple fighter groups or missiles must divide point defense weapons between them before rolling any dice.

10. Missile and fighters attack ships Phase.

All missiles and fighter/gunboat groups that survived defensive fire in the previous phase now have their attacks resolved.

Damage resulting from these attacks is applied immediately, including threshold point checks if applicable.

11. Ships fire Phase.

Starting with the player who won initiative, each player alternates in firing any/all weapon systems on one ship at one or more targets (ships or fighter/gunboat groups) subject to available fire control. Armor and hull damage caused is applied immediately but all fire is considered simultaneous.

The player must declare all the fire for his ship, before any dice are rolled for fire effects; for example: "I am firing both beam 3 batteries at the heavy cruiser in my fore arc, and the beam 2 battery at the frigate to starboard".

After a ship has fired some or all of its weaponry and play has moved on to another ship that ship may not fire any other ship to ship weapons in that game turn.

A single target ship may, of course, be fired on more than once in the turn by different attackers.

12. Boarding actions Phase.

All ships that have enemy boarders onboard roll for effects in accordance with the Boarding rules.

13. Threshold checks Phase.

All ships roll threshold checks from damage incurred in phase 11 and 12 if required. Note - do not roll for enemy boarders that 'landed' on the current turn.

14. Damage control Phase.

Make any Damage Control repair rolls. If the Core

System rules are being used, proceed to the next step.

15. Roll for Reactor explosions Phase.

If the reactor explodes apply damage to adjacent ships if necessary and roll additional threshold checks for them.

In Full Thrust weapons can only be used once per turn, so any system used for point defense can only be directed against a single fighter group or missile, and cannot be used again in that turn against a ship.

Variations

Many players combine the Point Defense Phase and Missile/Fighter attack Phases. Once all the defensive fire has been allocated, it is easier to carry out the Point Defense Phase and Missile/Fighter attack Phases one ship at a time.

Information

Before writing movement orders, players can ask opponents for the last known velocity and course (i.e. at the end of the previous turn's Ship Movement Phase) of any ships. Ships that were under cloak the previous turn are exempt from this requirement.

Most games are played as 'open book' where players can look at the SSDs of enemy ships at any time. This is because they are assumed to have intelligence briefings (military secrets are the most fleeting of all!) and various types of reconnaissance platforms, sensors, computer predictions, etc. that give quite accurate knowledge about the current state of the enemy fleet. In space, there isn't any place to hide so this is quite reasonable.

Players do not have access to enemy SSDs when using the optional Sensors and ECM rules in section 12.0, or if the designer of a scenario specifies otherwise. Velocity and course can only be hidden under exceptional circumstances.



**Federal States of Europa Battle Fleet.
Models by Ground Zero Games**

3 Cinematic movement

3.1 Ship movement

Full Thrust uses a cinematic set of rules for ship movement which allows ships to move as they are most often depicted in the sci-fi media, with little regard for the laws of physics.

The movement of a ship in any given game turn is defined by two factors: the ship's course and velocity. The current course indicates the direction in which the ship will move, and the velocity shows how far it will move along that course.

Ships obey one of the basic Laws of Motion, in that once they are moving in a particular direction they will continue to move in the same direction and at the same speed until they apply thrust to alter course and/or velocity.

This means there is effectively no maximum speed for any ship – theoretically it can continue to accelerate each game turn if the player so wishes, and will maintain whatever velocity it reaches until it applies more (reverse) thrust to decelerate again. At higher velocities, however, a ship may not be able to maneuver quickly enough to remain on the playing area, so think carefully before going too fast.

Ships may not have negative velocities, i.e., they may not move backwards. To retrace its course, a ship must be turned around.

Velocity

The current velocity of a ship is defined as the number of Movement Units (i.e. inches or centimeters) that the ship will move in that current games turn. A ship travelling at velocity 8 will move 8 MU in that game turn, unless it applies any thrust to alter that velocity.

Ships must always move the full distance specified by their current velocity.

Velocity changes take effect immediately at the beginning of each game turn: a ship ordered to change from 8 MU to 12 MU velocity moves the full 12 MU in that turn. (This is not in accordance with the Laws

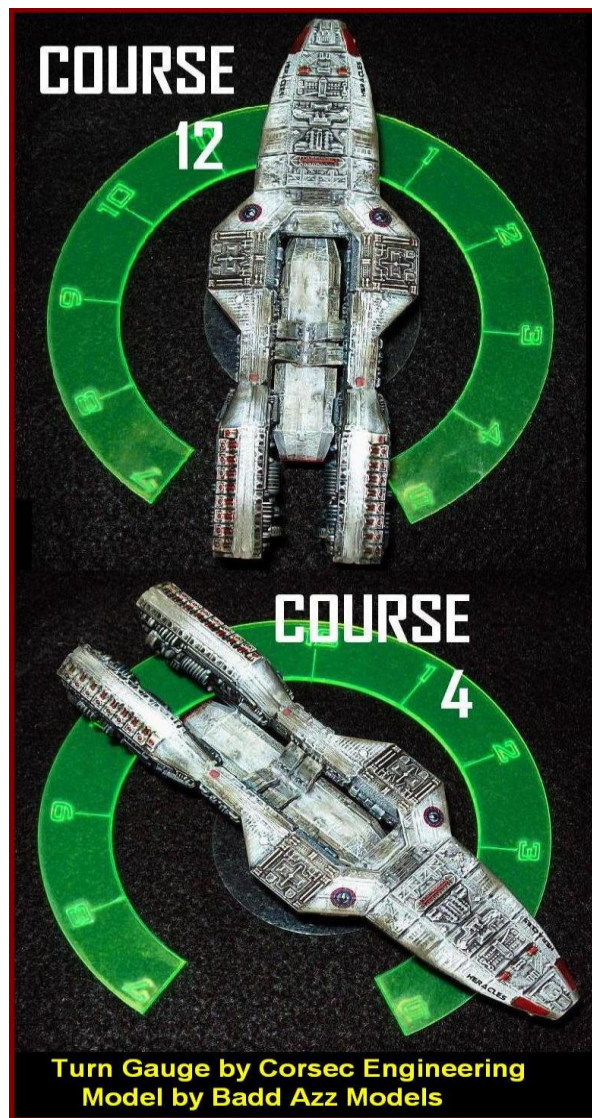
of Physics, but it is easier.)

Course

A ship may only move on one of twelve courses, which are defined by the clock face method. At the start of the game, each player should decide which direction represents course 12 – usually away from the base edge of the play area is convenient – and then work out each course from this reference point.

The direction that the nose or bow of the ship is pointing to is the facing. In the cinematic movement system, the course and facing are always identical.

Example: In the photo below, ship A is travelling on course 12 and ship B is on course 4.



Turn Gauge by Corsec Engineering
Model by Badd Azz Models

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3.2 Thrust ratings

Each ship has a Thrust Rating, which is a measure of the output of its drive systems relative to the mass of the ship.

The thrust rating of the ship is the combined acceleration, deceleration, and course changing that can be performed in one turn. The higher the rating, the faster and more “agile” the ship will be.

The ship SSD has a symbol for the main drive and thrust rating as shown here:



Up to the full rating may be used to accelerate or decelerate, changing the velocity of the ship.

Up to half the rating, rounded down, may be used to change facing. Each point of thrust applied to course changes will alter the ship's course by one course point during the game turn. A ship with a thrust rating of 4 could accelerate or decelerate by up to 4 MU per game turn, or could apply up to 2 points of thrust to course changes and still be able to make a 2 MU change to velocity in the same turn. The ship cannot however, apply more than 2 of its available thrust points to changing course.

Example: A ship with thrust rating of 6 decides to apply 3 points (its available maximum) to altering course. The ship is currently traveling on course 10; if it is to turn to port it will turn anticlockwise, ending up on course 7. Should the turn be made to starboard (clockwise), the final course will be 1.

A ship that has a thrust rating of 1 can change facing by 1 point, but not on consecutive game turns. Such a ship can accelerate or decelerate by 1 MU each game turn, or change facing by 1 provided it did not change facing on the previous turn.

3.3 Advanced Drives

Unusual species or ships may be capable of amazing spins and turns due to their Advanced Drives. These are rare: it is not enough for such ships to be more agile than others, but to be able to perform maneuvers impossible to normal ships.

To differentiate Advanced Drives from normal drives, a slightly different symbol is used on the System Status Display:



Ships with Advanced Drives move and maneuver in exactly the same way as other ships with one exception: they are permitted to use up to all of their thrust rating to change course instead of half. A ship with an advanced drive with a thrust rating of 6 could actually make a full 180° about-face in a single turn, though its path would in fact be an L-shaped maneuver rather than a turn in place, as it is still bound by the normal rules about splitting course changes between the start and midpoint of the movement.

Typical thrust ratings

Thrust 0: Space habitats, satellites, asteroid bases, and giant battle stations. Thrust 0 doesn't mean it can't move or turn, but that any change of course or speed takes planning and a few hours or days to take effect. The captain doesn't just shout “Helm, hard a-port!”

Thrust 1: Orbital defense platforms or satellites with minimal ability to change position, primitive spaceships, and enormous bulk cargo carrying merchant ships. Warships don't have thrust 1 drives: it is just too dangerous to be so limited in movement.

Thrust 2: Many civilian ships, and huge and lumbering warships that rely on power and brute force, not maneuver.

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This doesn't necessarily mean slow, as they can build up quite a speed over a long straight stretch, but nobody would describe such a ship as a graceful mover.

Thrust 3: Still clumsy on the turn but with better straight line speed and acceleration.

Thrust 4: A common velocity for capital warships that allows a good balance of speed, protection, and firepower.

Cruisers or escorts with thrust 4 are expected to stand and fight rather than dodge or chase.

Thrust 5: Faster than average capital ships used by fleets that value rapid strikes and ambushes. Also a good speed for cruisers that need just enough margin to be able to escape the typical thrust 4 capital warship.

Thrust 6: Ships that rely on speed and agility, often at the expense of protection. There are a few very fast and maneuverable capital ships, which are much larger than their equally well armed thrust-4 equivalents. Most fast cruisers and destroyers, and escort sized pirates or ships designed to catch pirates.

Thrust 7-8: Very fast scouts, couriers, and reconnaissance ships; usually lightly armed and not intended for serious fighting.

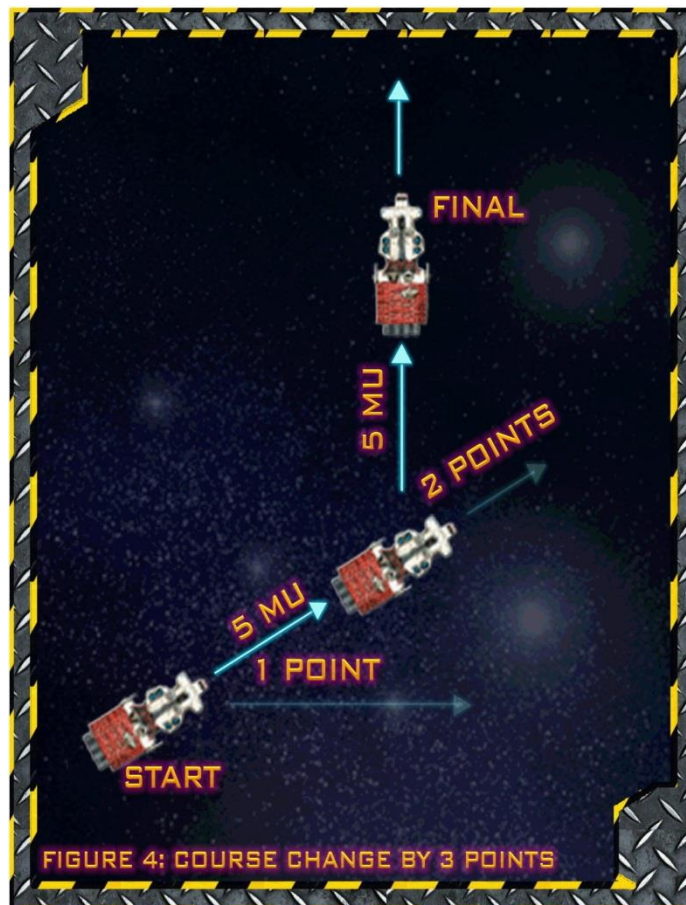
Thrust 9+: The space going equivalent of turbocharged street racers, probably with chrome paint job and extremely loud sound system or it may look like "A hunk of junk!"

3.4 Making course changes

A ship making a course change is assumed to be applying a sideways thrust vector throughout the movement in that game turn, and would therefore move in a curved path ending the turn pointing towards its new course.

To simulate this when moving the ship model, half of the course change is made at the start of the ship's movement, and the remaining half at the mid-point of the move. If the total course change is an odd number,

then round down the initial part of the change and round up the mid-move part.



Example: The ship in Figure 4 above is currently moving on course 3 at a velocity of 10. The player decides to alter the ship's course to 12, by turning 3 points to port. At the start of its movement, the ship is turned one point to port (half the total course change, rounded down) bringing it to course 2. It is then moved half its velocity – 5 MU – along course 2, 1 then turned again through two course points, bringing it round to course 12 as intended. Finally, the ship completes its movement by travelling its remaining 5 MU along course 12. All measurements are made from a point on the model.

If the ship's velocity is an odd number, also round down the first half of the distance and round up the second half.

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Example: The ship in Figure 5 below is moving on course 7 at a velocity of 6, and is to accelerate by 5 to velocity 11 and make a one-point turn to starboard to bring it on to course 8. At the start of its movement the ship does not alter course (half of one being rounded down to zero), so it moves half its distance (5 MU after rounding down) along course 7. Now the ship makes its one point of turn to course 8, and then moves the remaining 6 MU.



Figure 5: Course change by 1 point

3.5 Orders

At the start of the turn, each player must write orders for each ship. If you wish a ship simply to move ahead at its current speed, no orders are necessary; but we recommend that you at least write down the (same) final velocity. Any ship with no orders will move straight ahead at an unchanged speed, as will any that are given impossible orders, such as one that would exceed the ship's thrust rating.

The actual orders are written in brief notation, giving course change (if any) and direction (port or starboard), plus any acceleration (as a +) or

deceleration (as a -). The new final velocity is then written after the order, as reference for the next turn.

For example, an order of 8P2+4: 12 would indicate a ship with an initial velocity of 8 making a two point turn to port (P), plus acceleration of 4 MU, with a new final velocity of 12 (8+ 4).

Orders can be either written on SSD sheets or on a separate order sheet as desired. A sample Movement Order Sheet is available on the Emerald Coast Skunkworks Site under Game Aids.

Although not strictly movement orders, certain other actions such as launching fighters, turret facings, and FTL entry or exit must be written down as well.

Halted ships

A halted ship is still restricted to pivoting no more than half the drive rating.



Alternate turn gauge, which is available from Corsec Engineering by special order.

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Double course change

A ship with a sufficient thrust rating may make a double course change in one turn. A ship making a double course change always makes the first course change before moving and the second at the half way point, even if the first change is greater than the second.

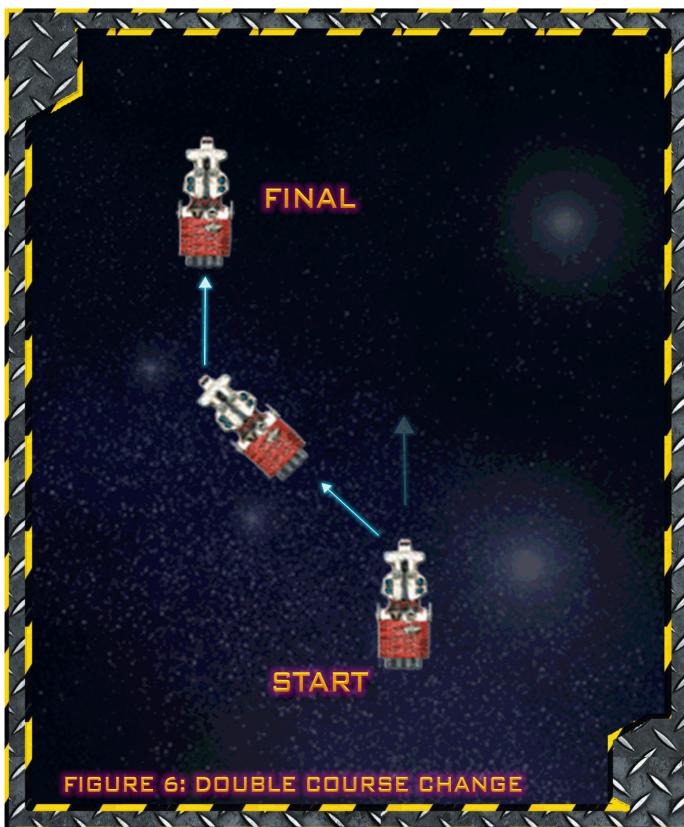


Figure6: Double course change

Example: The ship in Figure 6 has orders P1 S1 to first turn to port and then back to starboard, resuming the original course but at some distance to port.

3.6 Emergency thrust (optional)

These rules allow ships to use up to 150% of their main drive's current rating, and/or use more thrust points for turning than would normally be allowed. However, these bonuses come with the risk of damaging the main drive. These Emergency thrust rules can be used for either cinematic or vector movement systems.

Emergency Thrust (ET) may be used for any of the following:

- 1) Gaining additional thrust points equal to 50% of the drive's current rating, rounded down. Thus, a ship with a main drive of 4 could use up to 6, or a ship with a main drive of 3 could use up to 4.
- 2) Using thrust points over half the drive's current rating for turning. Thus, a ship with a main drive of 6, which would normally be allowed only 3 thrust points for turning, could then use 6.

Immediately after Step 1 - Write Orders, dice are rolled for any ship using ET to determine if it was successful and/or the ship's main drive was damaged. Roll the number of dice as indicated below:

Thrust points over rating - Plus 1 die.

Thrust points to turn over 1/2 rating - Plus 1 die.

Each prior use of ET during the current scenario - Plus 1 die.

These dice are scored as beam dice (i.e. 1-3 results in 0, 4-5 results in 1, and 6 results in 2 but with NO re-roll). Compare the results with the following chart:

0 - ET is completely successful with no damage to the main drive.

1 - ET is successful, but main drive takes damage as if it had failed a threshold roll.

2-3 - ET fails, and main drive takes damage as if it had failed a threshold roll.

4+ - ET fails, and main drive takes damage as if it had failed TWO threshold rolls.

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A ship that fails in its attempt to use ET must immediately re-plot its movement using standard thrust limitations. Damage to the main drive from ET may be repaired normally by Damage Control Parties.

Example: an undamaged heavy cruiser with a main drive of 4, using cinematic movement, plots "P3+3," using 6 thrust points. The ship has used more thrust points than its rating (+1 die), and has applied more than 1/2 of its rating to turn (+1 die). Thus, the ship rolls 2 dice.

If the rolls resulted in 2 (giving 0) and 3 (giving 0), the ship would move as plotted with no damage.

If the rolls resulted in 1 (giving 0) and 5 (giving 1), the ship would move as plotted, but would also halve its main drive rating as if it had failed a threshold check.

If the rolls are a 4 (giving 1) and 5 (giving 1), then the ship must re-plot its movement, adhering to normal thrust limitations and it takes threshold damage as above.

If the roll is 6 (giving 2) and 6, (giving another 2, 4 total), then the ship must re-plot, and it takes damage as if it had failed TWO thresholds (essentially destroying the main drive).

If, on the following turn, the same ship plotted "S3+1," using its regular limit of 4 thrust points, but using more than half for turning (+1 die), it would again roll 2 dice because it is the ship's second attempt at using ET (+1 die) in the scenario.

3.7 Squadron operations

Orders and movement can be sped up by dividing all or part of each fleet into squadrons of several ships each, which then move as cohesive units.

Squadron operations are especially suited to groups of smaller escort ships, though there is no reason why major craft could not also operate in this way. A squadron is two to four ships in line ahead, line abreast, wedge, or diamond formation; but it could also be one large ship surrounded by a ring of up to six escorts. The models must be as close together as

practical.

A squadron of ships once announced as such, all move together, using just one movement order. The lead ship moves as normal, while the others maintain the same relative position to it throughout the maneuver. The lead ship is often but not always the one at the front. The player has only to write the one set of orders for the squadron each turn, rather than orders for each individual ship.

For ships in line ahead, always move the lead ship according to orders with the others staying in formation behind it.

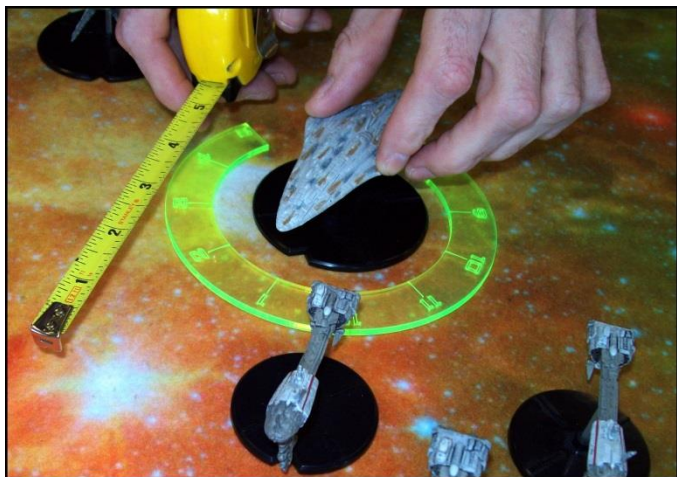
For ships in other formations, the lead ship is the ship that has to move furthest, which is the leftmost for starboard turns, the rightmost for port.



Figure 7: Squadrons turning 1 point to port

Squadron acceleration/deceleration and turning is restricted to that of the ship with the lowest drive rating in the squadron. Squadrons cannot mix ships with standard and Advanced Drives.

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**Corsec Full Thrust turn gauge.
Star Wars model by WizKids**

Squadrons can be formed or broken at the start of the game turn, before writing movement orders. (This is necessary because if the ships in the squadron start moving individually, they will move to slightly different locations than they would as a squadron, and missile launching players worry about such things.)

Very small ships such as corvettes or any ships with very few hull boxes (two for example) may be mounted on a base together. There are several companies that make larger “fighter stands” that will hold bigger models. Players mounting a squadron in such a way would write a single order for the whole group but may not split the group up. We will



**Three corvette squadrons close on a heavy battle cruiser.
Models by Amarillo Design Bureau and Bergstrom Studios**

typically mount up to three ships on a stand and use a die to represent how many are in the group in the same way you would for a fighter squadron. Of course you must have an SSD for each. If any single ship cannot keep up with the rest of group due to

engine damage or some other issue it is considered destroyed.

3.8 Collisions

The distances represented by the movements and ranges in the game are so vast that the risk of an accidental collision between two ships is incalculably small, and is therefore ignored for all game purposes. (Collisions with asteroids and other large bodies are possible, see the Terrain section.)

Ships can freely move “through” both friendly and enemy ships and fighter groups. If two ship models would actually be touching at the end of all movement, they should simply be arranged as closely as possible, to the agreement of both players.

3.9 Ships leaving the table

As there is no maximum speed for any ship (they can theoretically keep accelerating each turn without limit), sometimes a ship may find it impossible to turn enough to avoid flying off the playing area. This is usually considered a retreat from the battle unless using the moving table rules (section 16.4) or fighting an orbital scenario (section 17.8).

As an optional rule roll 1 die: on a roll of 1, 2, or 3; the ship may not return to play during the game. A roll of 4, 5, or 6 indicates the ship may re-enter the table after the equivalent number of turns have elapsed (e.g. 5 turns if a 5 is rolled). Ships will always re-enter play from the same side of the playing area as they left, though the actual point of entry is up to the player.

Ships can also leave the playing area from any location by use of FTL as explained in section 11.

3.10 Vector movement

For those players desiring a more realistic movement system see the Vector Movement rules duplicated from Fleet Book 1 in section 12)

4 Cadet Training

4.1 Beam weapons

Beams are the primary armament of science fiction warships in Full Thrust, whether called lasers, particle beams, turbo lasers, heavy auto cannon, etc. Beams travel at light speed (although some TV and film sci-fi beams appear to be slower!) so they cannot be dodged, but as the range increases it becomes more difficult to keep the beam from spreading and focused onto a precise spot.

Continuous or rapid fire plasma weapons and most fighter weapons are also treated as beams in Full Thrust.

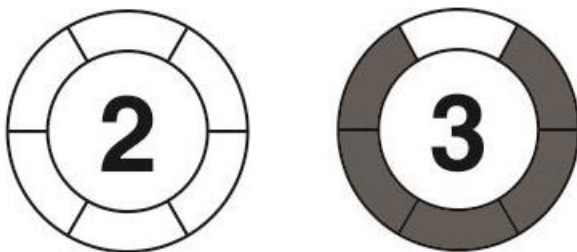
Beams are classed numerically. The higher the class, the longer the effective range and the more damage inflicted at closer ranges.

Class 1 beams, or Beam-1, are the shortest ranged and the least powerful. They are the only armament for the smallest ships, and are able to track rapidly enough to be also used against missiles and fighters.

Class 2 beams, or Beam-2, are medium weapons, the primary armament for light warships and the secondary for major warships.

Class 3 beams, or Beam-3, are the largest usually carried by warships with the longest range. Class 4 beams are occasionally found on very large vessels, while class 5 beams are usually restricted to starbases.

The standard symbol for a beam weapon is a circle with the beam class inside it, segmented to show which arcs (section 4.2) it can fire through. The clear or white segments are the arcs it can fire through.

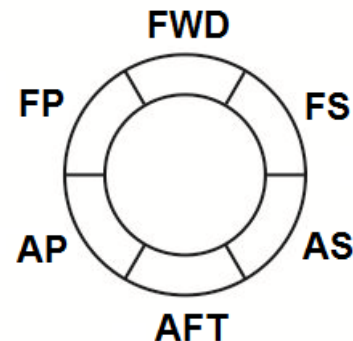


Each beam on a ship can potentially fire independently of the others, but the total number of different targets that can be engaged during one turn of firing depends on the number of FireCon systems the ship is equipped with, as explained in 4.4.

4.2 Fire arcs

The 360 degree space around each ship is divided into six arcs, each of 60 degrees. The arcs are indicated in Figure 9, and are designated Fore (FWD), Fore Starboard (FS), Aft Starboard (AS), Aft (AFT), Aft Port (AP), and Fore Port (FP). Each fire arc covers the angle between two of the course facings used in movement, and can be judged by eye from hexagonal ship bases.

These fire arcs determine which of a ship's weapons may be brought to bear on a particular target, as some will be Fore, Aft, Fore Starboard, Aft Starboard, Fore Port, Aft, etc.



Some weapons will be unable to fire through certain arcs. A given target ship may only be in one fire arc of the firing ship. (If the line dividing the arcs passes so nearly through the center of the target that it is impossible to determine which arc it is in, then decide by a random D6 roll, odds = one arc, evens = the other.)

Note that it is the center of the model, or the center of the stand if it is mounted on one that is used to determine the exact location of the ship itself; all distances and ranges are similarly measured to and from this center point. Other ships do not block lines of fire – no ship can hide behind another.

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All weapons that are capable of bearing through more than one arc have this indicated by putting a ring of segments around the system symbol, with white segments showing the arcs that the weapon is permitted to fire through. See below

ARCS THE WEAPON CAN FIRE THRU



Weapons or systems that can only bear through one arc have this indicated by the orientation of the system symbol on the ship diagram – ensure that it is pointing clearly towards the relevant arc. Systems that have no ‘directionality’ to their symbol, e.g. PDS, have all-round (6-arc) fire capabilities.

Aft arc

No ship may fire offensive weaponry through its aft arc due to the interference of the ship’s main drive, which makes it impossible to accurately track a distant target through the rear 60° of the ship’s arcs. Advanced Sensors may mitigate this to some degree (see section 13.)

Optional rule: Aft arc fire is permitted on any game turn in which the firing ship did not use any thrust from its main drive to accelerate, decelerate, or change course

Spinal mounts

Spinal mount weapons are considered to be Fore arc weapons in Full Thrust. The game turn is long enough for the ship to make small course adjustments and bring the weapon to bear on any target within the 15° either side of straight ahead. See Chapter 5 for more information on Spinal mounts.

Broadside arcs

Some weapons fire through broadside arcs, the two

Port and two Starboard arcs but not the Fore and Aft.



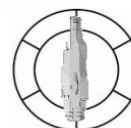
Optional firing arcs

The design, construction, and physics of many weapons limit their effective arcs. While some weapons can be mounted in such a way that they can fire in any directions, most are limited in their field of fire. There are six 60-degree arcs around a ship. These are normally situated so that the front 60-degree arc faces directly forward, extending 30- degrees to either side of the centerline. This is known as the front arc. To left and right are the left-forward and right-forward arcs. Behind them are the left-rear and right-rear arcs. Directly behind the ship is the rear arc. This is called the Alpha orientation and is considered the ‘default’ for most ships.

Fire arcs can be offset by 30 degrees. This is most often done in ships configured for broadside-combat, as opposed to front-assault combat. This is called the Beta orientation.



Alpha orientation



Beta orientation

4.3 Range bands

A range band in Full Thrust is a minimum and maximum distance over which a particular weapon type is considered equally effective. Some weapons have only a single range band, but ship to ship beams have a number of range bands equal to their class.

(Range bands are another simplification necessary for a tabletop game. In reality the effectiveness of weapons declines gradually over distance instead of

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suddenly changing.)

Typically each beam range band is 12 MU but there are a few exceptions. See individual weapon descriptions for details. The class of a beam (for example) is the number of range bands that it has, so a Beam-1 (class 1 beam) has a maximum range of 12 MU, a Beam-2 maximum range of 24 MU, and so on.

The Full Thrust range of a weapon is not the maximum range, but the range at which it can be fired with a reasonable chance of hitting and effectively damaging a target. In space, a scout ship Beam-1 can still hit a target at the same range as a battleship's Beam-3, but the Beam-1 will have dispersed too much to do any actual damage.

4.4 Fire control systems

The fire control systems (FireCon or FCS) of a ship are some of its most important fittings. Each FireCon represents a suite of sensor systems and computer facilities to direct the fire of the ship's offensive weaponry. Without these, ships are unable to locate and track an enemy with the precision required to fire at it.

Each FireCon system permits the ship to engage one target during the firing portion of a turn. Thus if a ship has two FireCon systems operational it can split its fire between two separate targets in one turn if desired; these targets may be in the same or different fire arcs, and fire from the ship's various weapons may be divided in any way between the targets (depending on the arcs through which each weapon may bear, of course).

The more FireCon systems a ship has, the more targets it can engage simultaneously. In general, escort classes each carry a single FireCon as standard, cruisers have two systems, and capital ships have three or more. Merchant ships may have a single system.

Individual FireCon systems are not specifically linked to individual weapon systems. If a ship loses one of its FireCon, the remaining ones may still be used to fire any or all of the ship's weaponry.

Ship weapons can also be fired against fighter groups under some conditions: see section 8. Each fighter group targeted requires a FireCon as if it were a ship.

Point defense fire against fighters or missiles does not require the use of the ship's main FireCon systems.

4.5 Beam fire

A beam weapon rolls a number of dice equal to the class, minus 1 die for each range band beyond the closest.

Example: A class 3 beam rolls 3 D6 at less than 12 MU, 2 at 12-24 MU, and 1 only at 24-36 MU. At ranges greater than 36 MU the weapon is out of range. A class 1 beam rolls 1 D6 at ranges 0-12 MU, and is out of range beyond 12 MU.

For every die rolled, damage is inflicted on an unscreened target ship as follows:

- Every 1, 2, or 3 rolled = no effect. (A miss or insignificant surface damage).
- Every 4 or 5 rolled = 1 damage point to the target.
- Every 6 rolled = 2 damage points to the target.

These damage levels can be reduced by the use of screens, armor and a few other systems, on the target ship (see section 7).

No single weapon may split its die rolls between targets in any circumstances, e.g. a Beam-3 at close range must roll all three dice against the same target ship. Two separate Beam-3 weapons may each engage a separate target, provided that two FireCon systems are available.

4.6 Re-rolls

Most beam weapons are capable of penetrating damage. Such weapons will be designated as BD* or (P). If a beam type weapon does not cause re-rolls it will be designated simply BD. Any roll of six inflicts the usual damage and allows a re-roll: roll an extra D6, and apply any further damage that is indicated by the result. The re-rolls ignore any defensive screens or armor and damage is applied directly to the hull. If a re-roll is also a six, then apply the damage and roll again. There is no limit to the number of re-rolls you

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can make if you keep throwing sixes.

Re-rolls are made for a natural (unmodified) 6 only. For example if the die roll is modified by +1 then a roll of 5 inflicts 2 damage points as if it were a 6, but does not reroll. If the target ship has screens active, then the effects of the screen are deducted from the initial attack dice as usual (if applicable) but not from the result of any re-roll dice – the re-roll is assumed to have already penetrated the screen, and any further damage is applied directly to the ship itself.

Re-roll damage is applied to armored ships in a similar manner: any damage from the initial die rolls of an attack can be taken on armor boxes on the ship, but if a 6 is rolled then any damage caused by the re-roll die(s) is applied directly to the ship's ordinary hull (or next layer of armor if it has multiple layers) damage track irrespective of whether it still has armor remaining.

Example: A ship fires at an enemy vessel at a range of 18 MU. The firing ship can bring two beams to bear through the arc containing the target, one Beam-3 and one Beam-2.

(Whether the ship also carries any Beam-1 weapons is not relevant to this example, since they would be out of range.)

The Beam-3 has firepower of 2 dice at a range of 12-24 and the Beam-2 has 1 die at the same range; thus the firepower total against the target is 3 dice.

Rolling the 3D6, the firing player scores 1, 5, and 6. This inflicts a total of three points of damage on the target – the 1 is a miss, the 5 does 1 point of damage and the 6 does 2 points and a re-roll. The re-roll is 4, inflicting 1 more point.

Note that this example assumes that the target ship does not have any screens to protect it.

4.7 Defensive screens

Screens are the primary defense against beam weapons. Screens are force fields or magnetic fields that deflect or defocus beam energy, but also include materials that reflect energy or interfere with beam

targeting.

Screens can be burnt through, but quickly rebuild or recharge themselves. The actual degree of protection given depends on the level of screens that the target ship is carrying. Each level is represented on the SSD by a screen generator symbol, so a ship with level-1 screens would have a single screen generator.

If a ship that is protected by screens is fired on by beam weapons (of any class) the damage inflicted by each die is reduced as follows:

- For level-1 screens, rolls of 5 inflict one point of damage and rolls of 6 do two points. In other words, ignore any rolls of 4 that would have damaged an unscreened ship.
- With level-2 screens, rolls of 5 and 6 each inflict only one point of damage.

Example: A ship fires six dice of beams at an enemy vessel with level-2 screens. The player rolls 2, 3, 3, 4, 6, and 6. Against level-2 screens the 4 is a miss and each 6 does 1 damage point, for a total of 2. The re-rolls are 4 and 6, and the further re-roll is 3: because this is penetrating damage which ignores screens, the 4 inflicts 1 damage point and the 6 another 2 for a total of 5.

4.8 Armor

Armor is ablative, metal, ceramic, or similar outer layers that absorb weapons fire but are broken or consumed in the process. Armor also includes force fields that cannot be recharged in the time frame of a battle.

Armor is represented as additional damage boxes that absorb hits, indicated on the ship diagram as a row of circles placed above the top row of hull boxes. (Yes, calling round circles 'boxes' is a little strange, but it's traditional.)

As damage is taken, some of the armor boxes are crossed off on the SSD. There is no threshold check roll (see below) made at the end of the row of armor, but any further damage is applied to the first row of hull (or next row of armor if the ship has Layered/Shell Armor).

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When one ship fires on another, add up the damage inflicted (except for re-rolls). All of this damage is taken on armor. Any excess damage is applied directly to the hull.

4.9 Ship damage and how weapons inflict damage

It is important to first distinguish between hits and damage. The hit determines if, and how many times, the gunners have successfully directed their weapons into the target. The damage inflicted by those hits depends on the nature of the weapon used. Some weapons inflict damage that partially bypasses armor. Others do no physical damage to the ship; rather they cause disruption of the electronic systems on board. Damage is normally applied from left to right, starting with the armor. Once all the armor is gone, damage is applied to the first row of hull boxes. If the last box in a row of hull is destroyed, the ship will need to make threshold check rolls for all its systems (see below). If the ship loses its last hull box, it is destroyed.

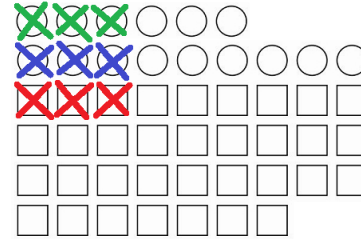
Some weapons and damage effects can skip some or most of the armor, and do their damage directly to the hull. This is important for ships with large amounts of armor, especially Regenerative Armor.

Penetrating damage (P)

As discussed above beam-type weapons that roll a natural 6, can penetrate armor and cause additional internal damage. The damage from that initial roll of 6 is applied to the armor, but any subsequent damage from rerolls is applied directly to the hull (or next row of armor if the ship has Layered/Shell Armor).

Example: A typical cruiser with one Standard Screen is hit by a Class 3 Beam at 12mu. The attacking player rolls a 4, a 5 and a 6. The 4 is would cause one point of damage against an unshielded ship but since this cruiser has one screen is is discounted. The 5 cause's one point of damage and the 6 causes two points all scored against the first layer of armor (marked in green in the illustration below). The 6 grants a re-roll and the result is another 6. The result is another 2 points of damage that penetrate to the next row of armor (marked in blue). The 6 grants another re-roll resulting in another 6 (the attacking player is lucky!). This results in another two points of

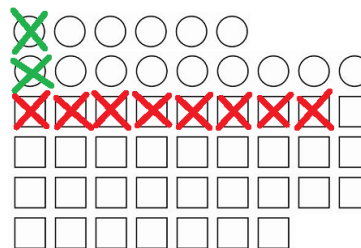
damage which penetrates directly to the hull. The attacking player then re-rolls the 6 and the result is a 4. The 4 does one point of damage (all marked in red) as re-roll damage from penetrating weapons takes place "inside" the ships screens.



Armor Piercing (AP)

Armor Piercing weapons are designed to efficiently punch through armor and deliver most of their damage to the hull. If an AP weapon causes multiple points of damage from a single hit, one point of damage is applied to each layer of, if the ship carries layered armor, with the remaining being applied to the hull.

Example: a large kinetic gun hits a ship with two rows of layered armor. The hit scores 10 damage points. 1 is applied to each layer of armor (marked in green in the illustration) with the remaining 8 (marked in red) to the hull.



Semi-Armor Piercing (SAP)

Semi-Armor Piercing weapons have some ability to penetrate armor. If a SAP hit inflicts multiple points of damage, then half is applied to the armor (rounding up), and the remainder to the hull OR next layer of armor if present.

Example: a missile strikes a ship for 7 points of damage. 4 points is applied to the armor (marked in green), remaining 3 points (marked in red) are

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Drive Damage (optional)

In the original version of Full Thrust a ship made threshold checks every time it crossed off one row of hull boxes instead of rolling at the end of the turn. Ships also fired at each other in initiative order as opposed to simultaneously. This made it more likely for ships to lose their drives than the current system. To correct this, players should make two threshold rolls for the drive during phase 13 IF the ship lost two or more rows of hull boxes. The first hit reduces the available thrust by half; the second reduces it to 0.

Rolling dice

We encourage you to roll for all weapon systems of a particular type together and add up the results instead of rolling weapon by weapon. If a ship is firing two Beam-1s, four Beam-2s, and one Beam-3 at an enemy ship 9 MU away, just roll $2 + 8 + 3 = 11$ dice at once (provided you have that many) instead of worrying about which are which.

To keep track of normal and re-roll damage, we recommend putting all dice in the initial volley that score hits to one side, then roll new dice for any re-rolls. (And if any of those are also sixes, roll more dice ...) At the end you will have two clumps of dice to add up, the initial damage that can be absorbed by armor or screens and the penetrating damage from re-rolls.

In the same way you should roll as many threshold checks at once as you can, rather than one by one. If a ship has three PDS, or FireCon, or similar systems, just roll three dice at once and cross off the destroyed systems from left to right.

For weapons with limited fire arcs, it does matter if, for example, the port beam is knocked out rather than the starboard.

You can still roll for multiple systems at once by matching the fall of the dice to the symbol positions on the SSD. If there are three Beam-3 symbols arranged left to right, then roll three dice: the one that lands most to the left is for the corresponding leftmost symbol, etc.

4.12 Introductory Scenario

You are now ready to play the Introductory Scenario.

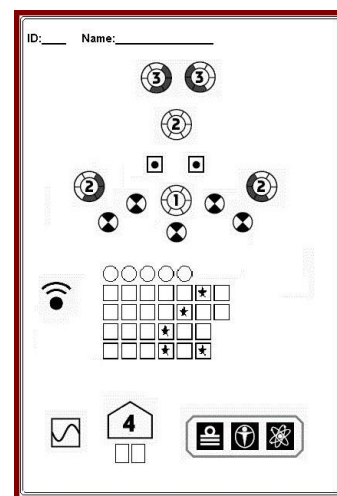
This is a very simple, quick game designed to allow players to familiarize themselves with the basic mechanics of movement and combat in the game. The two forces involved are evenly balanced and the situation is a simple 'meeting engagement' between two fleets. At the end of the book in the Appendix section you will find a full set of counters and SSDs to represent the ships used in the battle, so you can set up and play almost immediately without needing any ship models.

All you need to do is make two copies of that page (one copy for each player) and fill in names for your ships if you desire. (You may wish to glue the ship counters onto some heavier card stock to stop them moving too easily by accident.) The game is then ready for play.

Each side has the following forces:

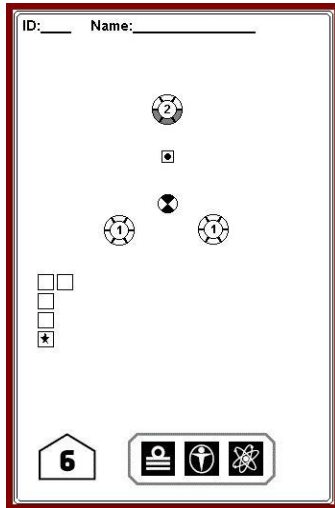
Two cruisers, each with a thrust rating of 4, armed with three class-2 beams, one class-1 beams and two class-3 beams, two FireCon, defended with level-1 screen and grade 5 armor. They also have multiple PDS, though these will play no part in this scenario as there are no fighters or missiles. Each cruiser has 26 damage points. The SSD for one of these cruisers is shown in below.

Three frigates. Compare the SSD for a frigate with the cruiser and note the differences in thrust, number of Fire-Con and weapons, lack of defenses, and fewer hull boxes.



Heavy cruiser SSD

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Frigate SSD

Once you have played through this small battle, read the rest of the rules and then try the same battle again with some different weapons. Experiment with giving the cruisers a torpedo or missile rack instead of beams, or allow each side to use a fighter group or two. (Assume the fighters are based at a nearby starbase.)

4.13 Strange events

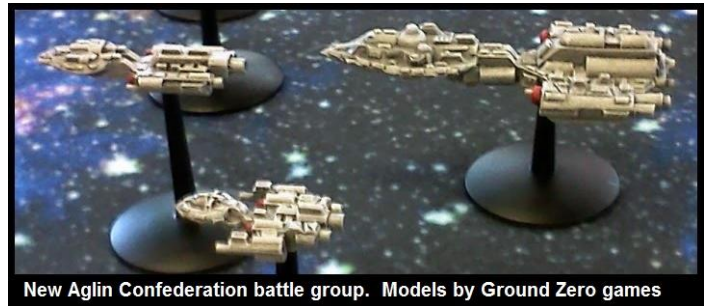
The Full Thrust turn sequence can sometimes lead to unusual events. One example is the 'fly-by', where two spaceships start the turn out of range, move past each other in the Ship Movement Phase, but in the Ship Fire Phase are unable to shoot because they are now out of range again or each is in the rear arc of the other.

The initial reaction from players is always "Huh? But we flew right past each other!" This only happens when ships are moving at very high speed. The closing velocities of the two ships are enormous, and, importantly, beyond the capability of fire control systems. Each 'shot' in Full Thrust represents a few minutes of sustained beam fire or a burst of torpedoes, which need accurate target tracking and concentration of fire. A quick snap shot during the few seconds of actual time in range is incredibly unlikely to do any actual damage.

What has really happened in such cases is that both commanders have failed to correctly anticipate the

enemy movement. Making a high speed strike run against a stationary target is difficult enough; against a moving target it takes skill and luck to obtain a good (not fleeing) opportunity to fire.

You may not find this convincing. The other explanation is that no set of game rules is ever perfect. Adding more and more rules to try and solve rarely occurring problems would be more trouble than it is worth.

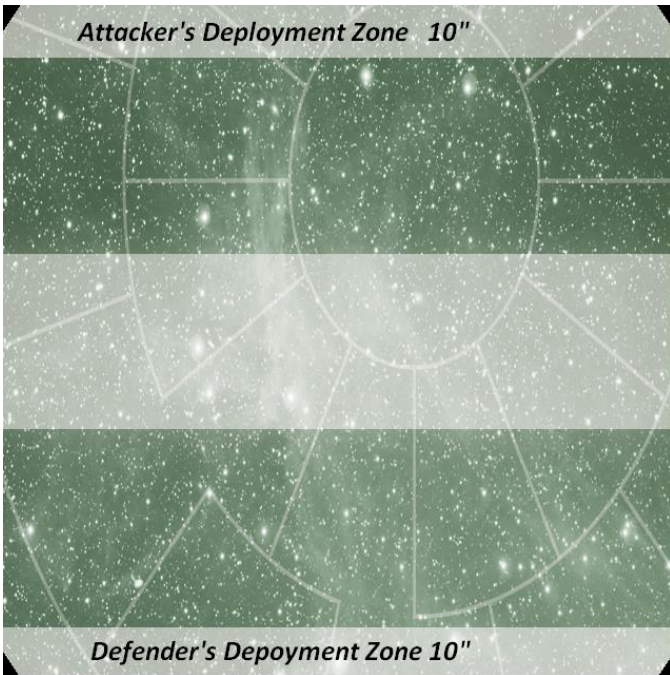


Introductory Scenario

Fleet engagement:

Mission objective:

Your forces have found the enemy and they are yours!
Man battle stations, clear for action!!!



Ship Crippled: Ship has at least the first two rows of hull boxes checked off OR has no offensive weapons (expendables do not count), OR has no Fire Con remaining OR has no thrust remaining: 50% of points (round down)

Ship Destroyed: Totally obliterated - worth 100% of points. Ships still under cloak at end of game count as destroyed.

Game length:

6 rounds or 90 minutes



Set Up

Both players roll a die. The player with the lowest roll sets up one heavy cruiser. The player with the higher roll then sets up one heavy cruiser. Repeat until both players have set up their cruisers then do the same with the frigates. Placement alternates back and forth with each player has deployed all their ships.

Winning:

The player who inflicts the most losses on his opponent wins. Ships that disengage, either by FTL or leaving the board, are worth 100% of their points to the enemy.

Ship Damaged: Ship has at least one hull box checked off but less than two rows destroyed 25% of points (round down)

5 Command School

Direct fire weapons - Advanced rules

This section describes most of the additional offensive and defensive systems that can be fitted to ships. Gunboats and fighters have their own sections. There are a large number of different systems described here. Players should not view this as some sort of 'tech supermarket' but rather a list of options to enable a player to simulate a ship from their favorite TV show, movie or other space ship combat game.

This section also includes the mass and points cost for each system. This will be explained in more detail in Ship Construction and Design (section 14) and may be ignored for now.

5.2 Targeting systems

Standard FireCon

- An operational FireCon is needed for each of the following in each phase of a turn:
 - Firing ship weapons (not point defense) at a single ship or fighter group.
 - Firing Needle Beam weapons against a single ship system.
 - Launching Salvo or Heavy Missiles. To avoid the need for record keeping these limitations are per phase, not per turn, so a FireCon used to launch missiles can also be used to direct other weapons in the Ship Fire Phase of the same turn.

Standard FireCon cost 4 per mass.
Standard FireCon mass 1

Advanced Fire Control

- Advanced FireCon packs more range and tracking capability into the space of a normal FireCon setup. Advanced FireCon systems can track two separate targets each, acting just like two normal FireCons. Note: some weapon systems


require AFCs to function. See individual weapon descriptions.

Advanced FireCon can also track and scan enemy ships out to a range of 72 MU for detection purposes.

Advanced FireCon cost 5 per mass.
Advanced FireCon mass 1

Direct fire weapons

5.3 Beam weapons (P)

-  Beams follow all the rules as laid out previously with the following additions:


Class 2 beams may be purchased with two arcs but may only be placed in broadside positions. This addition is to allow players to bring ships with similar weapons arrangement used in other game system over to Full Thrust.

Beams cost 3 points per mass

- Beam-1 mass 1 6-arcs
- Beam-2 mass 2 3-arcs, +1 for 3 additional arcs
- Beam-3 mass 4 1-arc, +1 mass per additional arc
- Beam-4 mass 8 1-arc, +2 mass per additional arc
- Beam-5 mass 16 1-arc, +4 mass per additional arc

Class 2 'Broadside Beams' (2 arcs) are 1 mass and cost 3 points per mass

5.4 EMP Projectors (Ion Cannons)

-  These are a type of beam projector which fires small packets of super-energized ions at enemy ships. These can cause overloads in some electronic systems, disabling systems. EMP projectors are the same size and mass as beam weapons, and generate a similar number of BD* in each range bracket. Their hits do not damage the hull and armor of target ship, rather they make that ship take threshold tests against some systems. They also ignore Standard screens and armor.

The difficulty of the threshold tests depends on how many EMP hits the target ship has suffered that turn and how many rows of hull boxes were destroyed. EMP hits from multiple ships can be combined to

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produce more dramatic effects. A single EMP hit requires a threshold test on a 6, two hits require a test on a 5+, and three or more hits require a test on a 4+. Modify the roll by +1 for each row of hull boxes checked off in phase 11 and 12 (ships fire and boarding phases).

The number of systems that can be affected is equal to the total number of EMP hits delivered that turn. The attacker (person who fired the EMP weapon) chooses the allocation of EMP hits to valid target systems.

The systems that can be affected are: drives, FTL, FireCon, screens, turrets, ECM, Area ECM, any fields (Stealth, HoloField), and cloaking systems.

For example a battlecruiser sustains 7 EMP hits in a single turn. The battlecruiser commander will need to make 7 threshold tests on a 4+. The battlecruiser has three FireCon systems. The attacker decided to put two EMP hits on each FireCon (requiring each to make two tests on a 4+), and places the last EMP hit on one of the screen generators (requiring it to make one test on a 4+). The attacker could have chosen a different pattern of systems that need to take tests. Allocating all 7 hits to the drive would have almost certainly taken the drive out (7 chances of a 4+ threshold, with two hits being necessary to completely cripple the drive). If the ship must also take threshold checks then each row crossed off modifies the die roll by +1 DRM.

Systems knocked out by EMP attacks can be repaired by damage control like any other threshold damage.

EMP pulses can also effectively burn out the smaller electronic systems on missiles, fighters and gunboats, effectively "killing" them. EMP-1s can be used in point defense like a beam 1, inflicting a BD hits with a -1 DRM.

EMP projectors cost 3 per mass.

EMP-1 mass 1 6-arcs

EMP-2 mass 2 3-arcs, +1 for 3 additional arcs

EMP-3 mass 4 1-arc, +1 mass per additional arc

EMP-4 mass 8 1-arc, +2 mass per additional arc

5.5 Plasma Cannon



Plasma Cannon are powerful weapons that send dense streams of plasma at their targets. These weapons can inflict massive amounts of damage very quickly, reducing even a heavily armored battleship to scrap.

Plasma Cannon roll on the Beam Hit Probability Table in a similar way to beams but with some differences. Plasma Cannon inflict 1d6-2 (plus an additional -1 per level of screen) hits, with each hit inflicting 1 damage. So, on a roll of 3 it inflicts 1 hit, on a 4 it inflicts 2 hits, on a 5 it inflicts 3 hits, and on a 6 it inflicts 4 hits, penetrates, and gets a reroll! Like beam weapons, they generate a number of dice equal to the size class of the Plasma Cannon up to 12 MU, and lose one dice of damage for each additional 12 MU.

Plasma Cannon are double the mass of normal beam weapons. Because of their heavy and somewhat unwieldy mounts, Plasma Cannon cannot be effectively used in defensive fire mode.

Plasma Cannon cost 3 per mass.

Plasma-1 mass 1 3-arcs

Plasma-1 mass 2 6-arcs

Plasma-2 mass 4 3-arcs, +2 for 3 additional arcs

Plasma-3 mass 8 1-arc, +2 mass per additional arc

Plasma-4 mass 16 1-arc, +4 mass per additional arc

5.6 Standard Grasers (SAP)



Grasers are gamma-ray lasers, a very potent laser weapon system. Functionally Grasers have two key differences from beams. First, they do 1d3 damage per hit, not the 1 damage per hit of conventional beams. Second, Grasers are Semi-Armor piercing weapons.

As with beams Grasers hit with BD* and so they cause penetrating damage and get rerolls on a natural 6. Grasers inflict a number of BD* hits in the closest 12 MU range bracket as the size of the Graser. So a Graser-3 would inflict 3 BD* to 12 MU, 2 BD* to 24 MU, and 1 BD* to 36 MU, with each hit doing 1d3 damage semi-AP.

Grasers cost 3 per mass.

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Graser-1 mass 1 3 arcs

Graser-1 mass 2 6 arcs

Graser-2 mass 4 3 arcs, +2 for 3 additional arcs

Graser-3 mass 8 1 arc, +2 mass per additional arc

Graser-4 mass 16 1 arc, +4 mass per additional arc

5.7 Heavy Grasers (SAP)



Heavy Grasers are a more advanced and especially destructive beam weapon. Like beams, Heavy Grasers have numeric classes, although the increasing cost means that class 3 and above Heavy Grasers are less common.

The range bands for Heavy Grasers are 18 MU, not 12, so a class 2 Heavy Graser rolls 2D6 at 0-18 MU, 1D6 at up to 36 MU.

Heavy Grasers score hits as beam weapons: against unscreened targets rolls of 4 or 5 inflict 1 hit; rolls of 6 inflict 2. Against level-1 screens rolls of 4 do no damage, and against level-2 screens rolls of 5 or 6 inflict only 1 hit. Heavy Grasers are not penetrating weapons and do not re-roll on a 6.

However Heavy Graser may be upgraded to weapons that re-roll on 6s. These "High Intensity Grasers" (HiGs) are devastating and cost more than normal Heavy Grasers.

Unlike beams each hit from a Heavy Graser inflicts 1D6 points of damage.

Example: A ship with two Heavy Graser-2 mounts fires at a target with level-1 screen and is 24 MU away. The Heavy Graser-2s get 1D6 each. The player rolls 4 and 6. The 4 is a miss because the target has a level-1 screen and the 6 scores two hits but no re-roll. The player now rolls 2D6 for damage, getting 4 and 3 for a total of 7.

Heavy Graser-1s cannot be used for point defense.

Heavy Grasers cost 3 points per mass
(4 points per mass for HiGs)

Graser-1, mass 2, 1-arc

Graser-1, mass 3, 3-arcs

Graser-1, mass 4, 6-arcs

Graser-2, mass 9, 1-arc, +3 mass per additional arc

Graser-3, mass 24, 1-arc, +6 mass per additional arc

5.8 Phasers (SAP)



Phasers are highly focused weapons combining lasers and particle beams together.

Phasers have several key differences from beams or other energy weapons. First, they do 1d3 damage per hit, not the 1 damage per hit of conventional beams. Secondly, Phasers are Semi-Armor piercing weapons.

Like beams, Phasers hit with BD*, so they can cause Penetrating damage and get rerolls on a natural 6. Phasers inflict a number of BD* hits in the closest 12 MU range bracket as the size of the Phaser. So a Phaser-3 would inflict 3 BD* to 12 MU, 2 BD* to 24 MU, and 1 BD* to 36 MU, with each hit doing 1d3 damage semi-AP.

Phasers also have other targeting modes. They may also be used as a Needle Beam weapon of the same class if the ship also mounts an Advanced FireCon (AFC).

Lastly each mount may be used as a single PDS instead of firing in anti-ship mode. If the ship also mounts an Advanced FireCon (AFC) each Phaser may be used as an ADS instead. One AFC must be dedicated if used in this way and will provide enough control for unlimited targets.

Phasers cost 3 points per mass +2 for each weapon.
(6 points per mass if ship has AFC)

Phaser-1 mass 1 3-arcs

Phaser-1 mass 2 6-arcs

Phaser-2 mass 4 3-arcs, +2 for 3 additional arcs

Phaser-3 mass 8 1-arc, +2 mass per additional arc

Phaser-4 mass 16 1-arc, +4 mass per additional arc

For example a Phaser-2 (3 arc) would be mass 4 and cost 14 points, 24 points if the ship had AFC.

Author's notes: Full Thrust never allowed players to quite simulate what the Phasers on Star Trek Next Generation, DS9 etc., could do. They seemed able to operate in any capacity desired from destroying an enemy ship's shields, mine sweeping, boring shafts on a planetary surface, to whole sale destruction. It is

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my hope these rules will provide some of that flavor.

5.9 Transporter Beams



Transporters are an arcane technology that, though careful atomic manipulation and quantum calculation, can create a macroscopic “tunneling” event. The real-world effect is that it allows troops to be sent in an instant onto the deck of an enemy ship, where they can then fight to take control of that ship. Weapons of Mass Destruction (ex: Nuclear Bombs) cannot be sent via the transporter, as the probability junction cannot transport high-Z materials, so the uranium or plutonium of a bomb would be left behind.

Transporter Beams generate a BD hits (no rerolls) against targets within range. Their number of BD at range is the same as any other beam mount. Every hit generated allows the player to send one unit of Marines or a Damage Control Party over to the enemy ship. One may either transport units to the enemy ship in an attempt to capture it (see section 12.7), or a “Commando Raid” may be conducted against a specific system icon on the target ship’s SSD using the procedure in section 5.8.1.

If a ship runs out of Damage Control Parties and Marines, it may no longer use transporters. The transporters can be used to send Marines to help in the defense of an allied ship. Roll to hit normally.

Sending Marines on Commando Raids:

Marines can be sent to an enemy ship to destroy any one system on the SSD. If successful the system is destroyed and may not be repaired during the battle.

Only Transporter Beams may send Marines on Commando Raids and ONLY Marines may be used for such actions. Regular crewmen (DCPs) do not have the equipment or training for such operations.

To conduct a Commando Raid, choose a system(s) on the SSD and roll the Transporter Beam attack as normal. They cannot be used to target fighters, gunboats or other ordnance, and thus cannot be used in defensive fire.

Any ONE hit from each Transporter Beam sends over

ONE Marine Boarding Party and grants the player a 1D6 roll on the chart below:

- 1 Nothing happens. The Transporter technician is unable to lock onto the target system. Nothing happens.
- 2-3 The Marines transport onto the ship but are unable to reach the target system and are killed.
- 4 The Marines transport onto the ship but are unable to reach the target system. On a 4+ they return to the ship otherwise they are killed.
- 5 The Marines transport aboard and destroy the target system but are killed in the process.
- 6 The Marines transport aboard and destroy the target system and return safely to the ship.
 - Marines may not be sent to attack any Core or otherwise protected systems, such as Antimatter Suicide Bombs

Transporter Beams are affected by screens like normal beams. Transporter Beams are the same size as normal beam weapons.

T-beams cost 3 per mass.

TB-1 mass 1 6-arcs

TB-2 mass 2 3-arcs, +1 for 3 additional arcs

TB-3 mass 4 1-arc, +1 mass per additional arc

TB-4 mass 8 1-arc, +2 mass per additional arc

5.10 Gatling Battery (P)



The Gatling battery is a specialist short-range beam mount capable of delivering a rapid burst of fire. The more advanced aiming and control systems of the battery can also be used very effectively in point defense fire.

A Gatling Battery used in anti-ship fire generates 6 beam dice (BD*) out to a range of 12 MU. These dice must all be directed at the same target. The Gatling Battery may also be used as a PDS, at which point it fully follows the rules for PDS. The one exception is

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that the Gatling Battery may have limited fire arcs, and if the ordnance or fighter is attacking from outside its arc, the Gatling Battery cannot fire in PDS mode. Gatling Batteries with arcs to the rear of the ship may fire in PDS mode into the aft arc, but they may not fire in anti-ship mode into the aft arc.

Gatling Batteries cost 4 per mass.

Gatling Battery mass 2 1 arc

Gatling Battery mass 3 3 arcs

Gatling Battery mass 4 6 arcs

Broadside Gatling Batteries may be purchased for 5 mass for two batteries. Each Gatling Battery will have only two arcs firing either port or starboard.




Port



Starboard

5.11 Twin Particle Array (P)

 The Twin Particle Array is a more developed version of the conventional beam weapon. By careful focusing and control of the particle stream a more consistent beam can be maintained. The TPA generates 2 beam dice (BD*) to a range of 24 MU. The TPA can also be used in PDS mode very effectively. In this mode it acts just as a PDS, with the exception that if the TPA has limited arcs, then the point defense coverage is also limited to those arcs, like the Gatling Battery above.

Twin Particle Arrays cost 4 per mass.

Twin Particle Array mass 2 1 arc

Twin Particle Array mass 3 3 arcs

Twin Particle Array mass 4 6 arcs

Broadside Twin Particle Arrays may be purchased for 5 mass for two batteries. Each Twin Particle Array will have only two arcs firing either port or starboard.




Port



Starboard

5.12 Meson Projector (P)

 Meson Projectors are a further refinement of the particle technologies in the Twin Particle Array, allowing a narrow beam of energetic mesons to be projected to great distances. The Meson Projector generates 1 BD* out to a range of 48 MU. Like the Gatling Battery, the Meson Projector can also be used as a PDS, limited only by the arc of the projector.


Meson Projectors cost 4 per mass.

Meson Projectors mass 2 1 arc

Meson Projectors mass 3 3 arcs

Meson Projectors mass 4 6 arcs

5.13 Needle Beams

 Needle Beams are a specialist weapon system that uses a high intensity, super-focused particle beam to punch a small hole deep into an enemy warship to cripple key systems. The accuracy of the targeting depends on good intelligence. The more you know about the enemy ship, the more accurately you can target the intended system.

With basic sensors you know what types of weapons the opponent has, but not the particulars of the mounts (size, arc). So for example, with that limited information you could target “a beam mount”, and if a hit was scored, a random beam mount would be destroyed. Better information from improved sensors allows for more exact targeting. Without at least the information of basic sensors, the Needle Beam is relatively ineffective. While it can still do a point of damage to the target, rolls of a 6 do not damage the targeted system.

For a ship to use Needle Beams effectively beyond 12 MU it must have Enhanced Sensors. If the weapon is fired at a target more than 24 MU it must mount either Superior Sensors or two Enhanced Sensors. Like the restrictions for FireCon these sensors may only focus the Needle Beam weapons on one enemy ship’s system per turn. If a ship is facing a foe protected by Stealth or ECM the Needle Beams will be affected as normal so they will only be useful at very close range.

Needle Beams can be used to target any system that

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appears on the SSD (the only exceptions being Stealth Hulls, Biotech generators and Core Systems). The accuracy required for such targeting means that extra fire control needs to be dedicated to the attack. A FireCon must be designated for every Needle Beam target, though multiple Needle Beams firing at the same target may share a FireCon. Other weapons can share the FireCon to target the same ship normally.

The focus and intensity of Needle Beams means that they are not affected by screens. The distortions of a Holofield (-1 DRM) prevent the Needle Beam from being aimed accurately enough to hit a targeted system.

Needle Beams have range bands of 12 MU, like all other beam weapons. Larger Needle Beam mounts generate extra Needle Beam dice at close range. On a roll of 4+ they inflict a single point of damage. On a roll of a natural 6 they inflict a single point of damage, and destroy the targeted system.

Systems destroyed by Needle Beam fired cannot be repaired by Damage Control Parties, as the damage requires repair resources and spare parts that ships do not normally have on hand.

Needle Beams cost 3 per mass.

NB-1 mass 2 2 arc, +1 mass per additional arc, 3 arcs maximum

NB-2 mass 4 1 arc, +2 mass per additional arc, 3 arcs maximum

NB-3 mass 8 1 arc, +4 mass per additional arc, 3 arcs maximum

NB-4 mass 16 1 arc, +8 mass per additional arc, 3 arcs maximum

5.14 Pulse Torpedoes (SAP)



Pulse Torpedoes are one of the most common projectile weapons in use. At short range they are very accurate, and a lucky hit can deliver a large amount of damage. Pulse Torpedoes are Semi-Armor piercing weapons.

As a projectile weapon, Pulse Torpedoes ignore Standard Screens. If a Pulse Torpedo hits, it inflicts 1d6 point of damage, Semi-Armor piercing (SAP). The chance of a hit decreases with range. Pulse

Torpedoes use the Projectile Weapon Hit Probability Table (page 153). Pulse Torpedoes also come in standard, long range (LR), and short range (SR) versions. All Pulse Torpedoes cost 3 per mass.

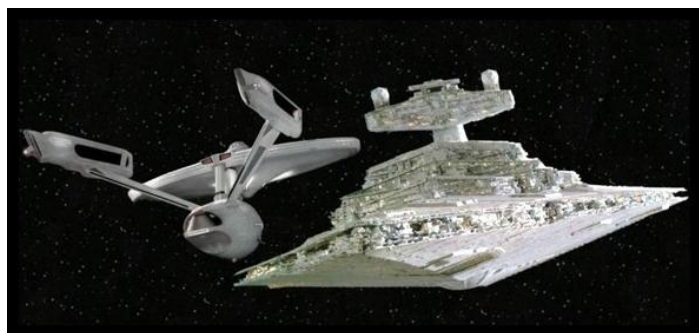
LR Pulse Torpedo mass 8 1 arc, +2 mass per additional arc, 3 arcs maximum

Pulse Torpedo mass 4 1 arc, +1 mass per additional arc, 3 arcs maximum

SR Pulse Torpedo mass 2 1 arc, +1 mass for 2 additional arcs, 3 arc maximum



Alternative Pulse Torpedo Icons



Overloaded Pulse Torpedoes (AP)

Some games allow Pulse Torpedo type weapons to be fired with a stronger 'warhead' than normal. Such overloading can potentially do considerable damage but carries with it great risk.

To fire a Pulse Torpedo overloaded it must be noted in the orders and the Pulse Torpedo may not have fired in the previous turn.

Roll to hit as normal but the Pulse Torpedo uses the Projectile Weapon Hit Table of the next smaller class of weapon. In other words, a Long Range Pulse Torpedo uses the standard Projectile Weapon Hit Probability Table and a standard Pulse Torpedo uses the short range Projectile Weapon Hit Probability Table. Short Range Pulse Torpedoes may not be fired overloaded.

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If the Pulse Torpedo hits, roll a 1D6 as normal with a +2DRM, giving a damage range between 3 and 8 points of damage. If the Pulse Torpedo rolls a 1, roll a second 1D6. On a second result of 1 the Pulse Torpedo tube is destroyed and may not be repaired by DCPs.

If the Pulse Torpedo is not fired it is ejected by the crew and counts as having fired. Nobody wants to keep that hot a warhead sitting around any longer than they have to.

The overload upgrade costs +1 point per mass. Every Pulse Torpedo in the fleet must be upgraded (except Short Range Pulse Torpedoes) or none at all. If all players agree some designs representing older ships may be granted an exception.



Variable Strength Pulse Torpedoes (SAP/AP)

 This is a highly advanced Pulse Torpedo system which allows the weapon to be fired in in either long range, standard or short range mode.

At long range the Variable Pulse Torpedo (VPT) uses the Long Range line on the Projectile Weapon Hit Probability Table. When it hits, the Variable Pulse Torpedo inflicts 1D3 points of damage (Semi-Armor piercing), which will bypass Standard Screens.


At standard range the Variable Pulse Torpedo uses the Projectile Weapon Hit Probability Table. When it hits the Variable Pulse Torpedo inflicts 1D6 points of damage (SAP) and will bypass Standard Screens just like a normal Pulse Torpedo.

At short range the Variable Pulse Torpedo uses the Short Range Projectile Weapon Hit Probability Table. When it hits the Variable Pulse Torpedo inflicts 1D6+2 points of damage (AP) and will bypass both Standard and Advanced Screens.

The player must select which setting his Variable Pulse Torpedo Launchers are set at during the Write Orders Phase. A small note on the SSD is sufficient: "S" for short, "L" for long. If a setting is not selected it is assumed the VPT is set to standard.

VPTs are mass 8 1 arc, +2 mass per additional arc, 3 arcs maximum and cost 5 points per mass.

5.15 Turreted Submunition Pack (P)

 Submunitions are one-shot weapons designed to deliver heavy damage at close range. The power and intensity of Submunition Packs means that they ignore the effects of Standard Screens. Once a Submunition Pack has been fired, it is crossed off the ship SSD and cannot be used again.

The number of BD a Submunition Pack generates is based on the range. They inflict 3 BD hits to 6 MU, 2 BD to 12 MU, and 1 BD to 18 MU, and re-roll 6s.

Submunition Packs cost 3 per mass.
Submunition Pack mass 1 3 arcs



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5.16 K-Guns (AP)



Kinetic guns (K-Guns) are slug-guns that use Gravitic technology to throw solid projectiles at very high speeds, making them accurate at the ranges of typical space combat, and capable on inflicting massive damage. K-Guns are projectile weapons, and as such their chance of hitting decreases with range, but they are unaffected by screens. All K-Guns are Armor Piercing (AP) weapons, as the hypervelocity slugs easily punch through most armor.

Long range and short range versions of the K-Gun are available, though these are sometimes referred to as high velocity and low-velocity versions.

The damage inflicted by a K-Gun depends on its size/class. The base damage inflicted is equal to the class of the K-Gun, so a hit from a K-3 will inflict at least 3 points of damage. All K-Guns have a chance of doubling the damage they inflict, as the projectile slams deep into the enemy ship.

Roll a d6, if the result is equal to or less than the class of the K-Gun, the damage done is doubled. A roll of a 6 is always a failure, so K-6's and larger do not automatically double, but a K-6 that does (on a roll of 1-5) inflicts 12 points of armor piercing damage!

K-Guns still ignore standard screens. Kinetic guns (K-guns) are affected by advanced screens. When rolling to see if damage is doubled, deduct the advanced screen level from the class of the K-gun to give the final number for the die roll. For example if a ship with level 2 advanced screens is hit by a class 4-Gun the K-Gun would need to roll a 1 or 2 to double its damage instead of the normal 1-4. In this example a class 1 or 2 K-Gun would not be able to get doubling damage at all.

K-1's (normal, long and short ranged) are nimble rapid-fire mounts, well suited to defensive work. Like a Beam-1, a K-1 can be used as a PDS, but with a -1 DRM. It cannot fire into the aft arc of the ship, however.

When engaging missiles and other attacking ordnance the K-1 gunner always waits until the missile has

entered the closest range bracket to achieve the best chance of hitting. When engaging fighters or gunboats (which are not attacking the ship) the hit probability of the K-1 is based on the range bracket of the target. K-Guns use the Projectile Weapon Hit Probability Table (page 153)

K-Guns cost 4 per mass.

K-1 mass 2 6-arcs

K-2 mass 3 1 arc, +1 mass for an additional arc, 2 arcs maximum

K-3 mass 5 1 arc

K-4 mass 8 1 arc

K-5 mass 11 1 arc

K-6 mass 14 1 arc

SRK-1 mass 1.5 6-arcs

SRK-2 mass 2 2 arcs

SRK-3 mass 3 1 arc

SRK-4 mass 4 1 arc

SRK-5 mass 6 1 arc

SRK-6 mass 7 1 arc

(Short range K-Guns are half the mass, rounded up, of a conventional K-Gun)

Short range K-1's can be bought in pairs for 3 mass, or they can be excluded from your game.

LRK-1 mass 4 6-arcs

LRK-2 mass 6 1 arc, +2 mass for an additional arc, 2 arcs maximum

LRK-3 mass 10 1 arc

LRK-4 mass 16 1 arc

LRK-5 mass 22 1 arc

LRK-6 mass 28 1 arc

(Long range K-Guns are double the mass of a conventional K-Gun)

Flak Ammunition (barrage fire)

K-Guns of class 2 or larger can be equipped to fire high explosive shells timed to detonate away from the ship

At the beginning of the Launch Missile Phase, for each K-Gun conducting a Flak barrage, a single 'Blast Marker' is placed up to 24 MU away for long range guns, 18 for standard and 12 for short. One FireCon is

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required to fire a barrage.

The Flak round will detonate against any fighter or missile travelling through or within 2 MU of the Blast Marker and are attacked with a number of PDS dice equal to the class of the gun that fired the barrage (at a -1 DRM). It is possible to affect multiple targets including your own ordnance or fighters. In the case of missiles do not roll for the number of missiles that lock on until the Missile Attack Phase. Simply roll to see how many hits the Flak barrage scores on the missile marker and keep track of it until the Missile Attack Phase. Then subtract that from the number of missiles that lock on. If a ship, friendly or enemy, is within the blast range it will take a single point of damage on a roll of 1.

All 'Blast Markers' are removed at the end of the turn.

For an additional 2 points a K-Gun may be equipped with Flak ammunition. All the K-Guns on a ship (except K-1s) must be so equipped.

5.17 Multiple Kinetic Penetrators


 The Multiple Kinetic Penetrator is derived from research into hyper-kinetic penetrators and K-Guns. They are one shot weapons that launch a projectile at very high speed towards the target, inflicting great damage if they hit. As projectiles, MKPs ignore screens; furthermore they are armor piercing weapons.

An MKP has a range of 12 MU, and hits on a roll of 4+. On a roll of a 6 it hits twice. Each hit inflicts 4 points of damage (AP).

MKPs cost 4 per mass.

Multiple Kinetic Penetrators are mass 1, 1 arc

5.18 Boarding Torpedoes

 The Boarding Torpedo is a specialist projectile weapon designed to deliver boarding parties onto an enemy ship.

These boarding parties could be stasis-protected Space Marines, killer Warbots, nano-technological swarms, or blood thirsty Reavers, depending on the particular flavor of your game universe.

The Boarding Torpedo is different from other

projectiles in one key respect - it is a magazine fed weapon. Every time it fires, hit or miss, it expends one of the Boarding Torpedoes in the magazine. When all the Boarding Torpedoes are used up the weapon can no longer fire. If either the magazine or the launcher is disabled due to threshold/Needle Beam damage, it cannot fire until the damage is repaired. Multiple launchers can be fed from a single large magazine, or smaller magazines can be tied to each individual launcher, each has its own tactical advantages and disadvantages in terms of resistance to battle-damage.


Boarding Torpedoes use the Projectile Weapon Hit Probability Table (page 153). There are no long-range or short-range versions available. If a Boarding Torpedo hits it does one point of damage to the target's hull, bypassing any armor, and two "Marine" markers are placed on the enemy ship.

Boarding Torpedoes cost 3 per mass.

Boarding Torpedo Launcher 2 mass 3 arcs

Boarding Torpedoes 1 mass each

5.19 Fusion Array

 The Fusion Array is a somewhat complex weapon that fires and hits as a modified projectile weapon, yet does damage in BD*.

It is possible for a fusion projectile to hit, and yet do no damage.

The Fusion Array may be set in one of two modes, either as a Fusion Flare launcher, or as a Fusion Torpedo Launcher. The array must be configured before combat begins. It can be changed during a game by taking the weapon 'off line' for one turn. Switching modes must be written on the ship orders or noted on the SSD.

Because the Fusion Array hits as a projectile, it ignores Standard Screens. Advanced Screens will prevent damage the same way they would against beam weapons. For purposes of targeting fighters, both the Flare and Fusion Torpedo deliver a single hit, on a 6+ destroying one fighter.

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Fusion Flare

Range	Hits on	Damage
0 to 6 MU	1+	1 BD*
6 to 12 MU	2+	2 BD*
12 to 18 MU	3+	3 BD*
18 to 24 MU	4+	4 BD*
24 to 30 MU	5+	5 BD*
30 to 36 MU	6	6 BD*

Fusion Torpedo

Range	Hits on	Damage
0 to 6 MU	6	6 BD*
6 to 12 MU	5+	5 BD*
12 to 18 MU	4+	4 BD*
18 to 24 MU	3+	3 BD*
24 to 30 MU	2+	2 BD*
30 to 36 MU	1+	1 BD*

Fusion Arrays cost 3 per mass.

Fusion Array mass 3 1 arc. +1 mass per additional arc, 3 arcs maximum.

5.20 Gravitic Guns



The Gravitic Gun is an application of drive technology that creates a propagating wave of gravitational disturbances and eddies. While this does not affect normal space very much, it can have profound effects on ships and other small craft using reactionless drives.

Gravitic Guns generate beam dice, and hit like a normal beam weapon. The damage inflicted by the hits depends on the speed of the target, as a quick moving object in a reactionless drive field can experience sudden tidal surges that can cause severe internal damage (which is why the weapon is sometimes known as a “Gravy Gun” for the effect it can have on a crew).

As a beam-type weapon, the effects of a Gravitic Gun can be reduced by screens.

Target Speed:	<i>under 6 mu/turn</i>	<i>under 12 mu/turn</i>	<i>under 18 mu/turn</i>	<i>under 24 mu/turn</i>	<i>over 24 mu/turn</i>
Damage per hit	0	1	2	3	4

Gravitic Guns cost 3 per mass.

Grav-1 mass 1 6-arcs

Grav-2 mass 2 3-arcs, +1 mass for 3 additional arcs

Grav-3 mass 4 1-arc, +1 mass per additional arc

Grav-4 mass 8 1-arc, +2 mass per additional arc

5.21 Pulsers (P)



Pulsers represent the pinnacle of beam technology. The Pulser is an adaptable weapon system that can be configured before a battle to optimize it for long, short or medium range combat. A captain who chooses his Pulser settings wisely before a battle will have a decisive advantage. Also, because the Pulsers can be reset between battles, a single design of ship is capable of carrying out a variety of battlefield roles.

The Pulser, in any mode, can also be used as a PDS. In PDS mode the Pulser is limited to the fire arcs of the weapon mount, but if the arcs permit it may fire into the aft arc of the ship. In PDS mode the Pulser delivers a single dice of point defense fire. A Pulser configured for short range cannot use its beam dice for defensive fire.

Set as a short range weapon a Pulser generates 6 BD* to 12 MU.

Set as a medium range weapon a Pulser generates 2 BD* to 24 MU.

Set as a long range weapon a Pulser generates 1 BD* to 48 MU.

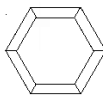
Pulsers cost 5 per mass.

Pulser mass 2 1 arc

Pulser mass 3 3 arcs

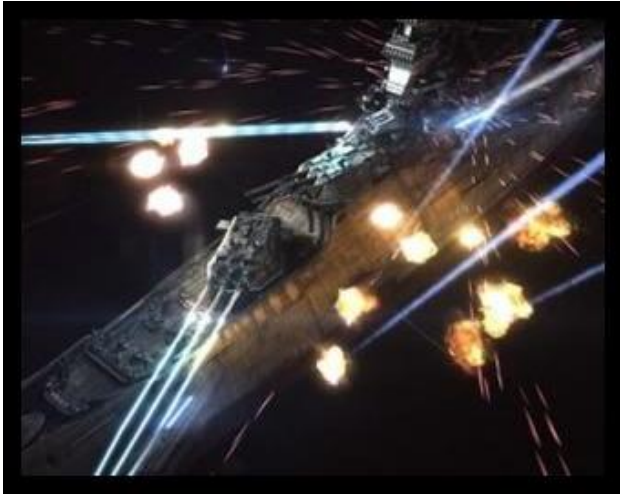
Pulser mass 4 6 arcs

5.22 Turrets



While not technically a ‘weapon system’, turrets are mechanical assemblies into which entire weapon mounts are fitted. By rotating the turret, the weapon may be brought to bear into a variety of arcs. While turrets allow some limited arc weapons a wider field of coverage, they have a number of operational restrictions. Like multi-arc weapons, turret arcs do not have to be contiguous.

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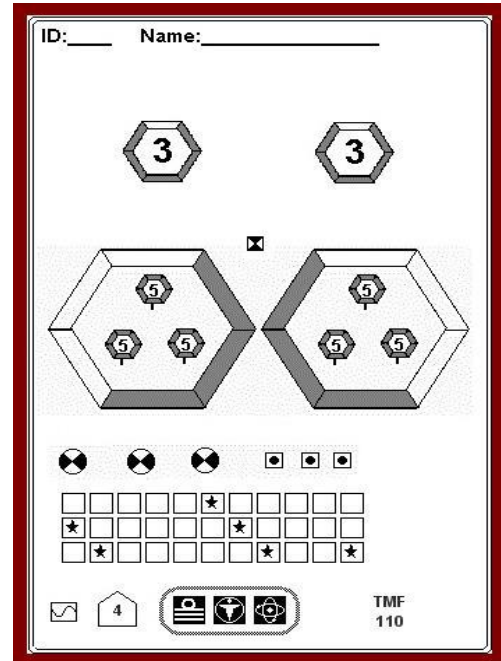
A turret is a system that appears on the SSD with the weapons within. If the turret is damaged due to a threshold test or a Needle Beam hit, it remains stuck in its current facing until repaired.

Turrets can bear into a number of arcs (the exact number depending on the construction of the turret). During the Write Orders Phase the facing of each turret must be recorded. The simplest way to do this is to put a 'tick' mark on the SSD for each turret indicating its facing. Turret facing is revealed after ship movement before fighters take any secondary moves.

The weapons in a turret can fire into the single 60-degree arc that the turret is facing. Weapons with more than 1 arc that are mounted in a turret lose their additional arcs, and are limited to the single turret arc. All the weapons mounted in a single turret must be fired at the same target. A ship is limited to one turret per size 50 mass of ship.

Turrets cost 3 per mass. Turrets are purchased based on the size of the weapons installed, and the number of arcs the turret can bear into. When determining turret size, round all fractions up.

- 6 arc turret: 1 mass of turret holds 2 mass of weapons.
- 5 arc turret: 1 mass of turret holds 3 mass of weapons.
- 4 arc turret: 1 mass of turret holds 4 mass of weapons.
- 3 arc turret: 1 mass of turret holds 5 mass of weapons.
- 2 arc turret: 1 mass of turret holds 6 mass of weapons.



Example of an SSD with turrets

5.23 Spinal Mounts

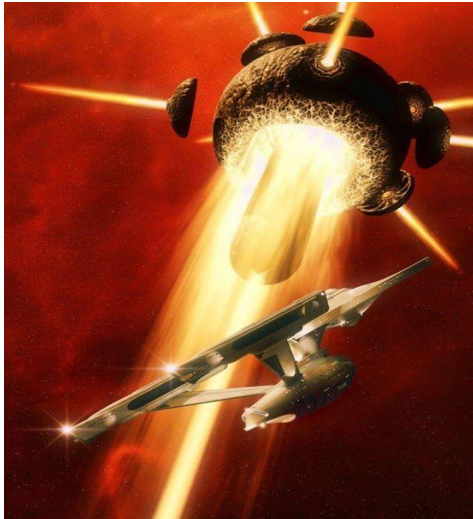
Spinal Mounts are weapons so immense and powerful that the gun forms the central core around which the rest of the ship is assembled. The devastating firepower of Spinal Mounts comes with some considerable tactical costs and limitations.

--A ship may only mount up to 16 mass of Spinal Mount weapon per 50 mass of ship. So a battleship (mass 101-150) could mount up to three Medium Spinal Mounts.

--Spinal Mounts must face forward, cannot be turret mounted, and have a fire arc that is half the normal width (30 degrees).

--The turn after a Spinal Mount if fired a ship cannot maneuver at all, apply thrust, nor can it charge its FTL drive.

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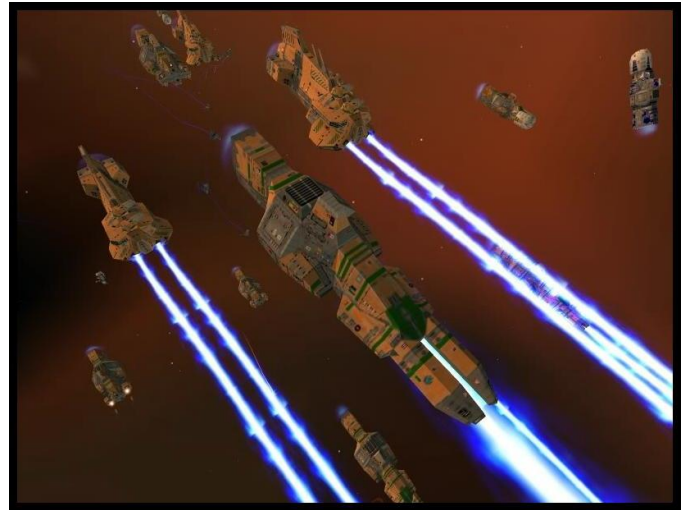
Spinal Mounts may only be fired every other turn, though a ship with multiple Spinal Mounts could alternate firing the weapons to keep up a continuous barrage.

Spinal Mounts all fire a beam of energy that can hit any model caught within. Larger Spinal Mounts generate beams that are longer and wider. The tight focus of the beam means that little power is lost with distance, so Spinal Mounts deliver the same number of damage dice along their entire range. Missiles, fighters, gunboats and even Plasma Bolts caught within can also be hit. Their chances of being hit are the same as for a ship; there is no negative DRM for shooting anti-ship weapons at small targets. If multiple ships are within the beam area, they all sustain the same number of dice of hits, but roll dice separately for each target. Only a planet or other large body can block a Spinal Mount, and even then it does bad things to the surface of the planet.

Spinal Mounts ignore the range reduction of Stealth and DRM of Holo-fields. Screens can provide some protection against the beam and plasma Spinal Mounts. Spinal Mounts can be targeted at an “empty point of space” so to catch more ships in the beam, or sweep away undetected mines. It still requires a FireCon to target the Spinal Mount on the point in space.

<u>Spinal Mount</u>	<u>Mass</u>	<u>Range</u>	<u>Beam Width</u>
Small	8	24 MU	1 MU
Medium	16	36 MU	1.5 MU
Large	32	48 MU	2 MU

The damage they inflict depends on the type of Spinal Mount being used.



Point Singularity Projector (AP)



This exotic and highly dangerous weapon creates and fires a miniature black hole. While it is unlikely that the black hole will directly strike an enemy ship, the steep gravity gradient and tidal forces caused by the singularity can rip ships apart.

The PSP only generates 2 BD (no rerolls) of hits along its flight path. The damage these hits can generate, however, depends on the size and mass of the target. The bigger the ship is, the worse the damage inflicted. It does 1 damage point per hit to small craft, missiles, fighters, and gunboats.

Against ships the damage per hit is 1d6 per 50 mass of ship. So if two hits were scored against a mass 100 BC it would suffer 2d6 damage. The damage from a PSP is armor piercing, and is not affected by screens of any type.

PSPs cost 5 per mass.

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Beam (P)



The Beam Spinal Mount is a natural evolution and development of beam technology: gigantic particle cannons capable of delivering crippling blows at long range. Beam Spinal Mounts generate 12 BD* hits within the beam area. Screens have their normal effect on these hits.

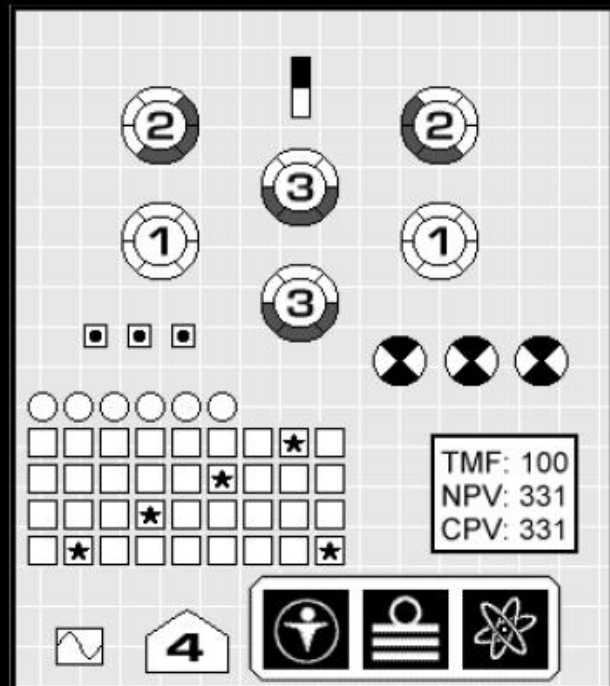
Beam Spinal Mounts cost 4 per mass.

Plasma



Plasma Spinal Mounts are a very large and super-efficient Plasma Cannon. They generate 6 Plasma Cannon dice within the beam area. These inflict 1d6-2-screens hits to all targets within the beam area, with rerolls on sixes. Note that there is no -1 for Holo-fields, which are ignored by area of effect weapons.

Plasma Spinal Mounts cost 4 per mass.



**Scan Fed Battlecruiser
SSD from StarRanger.com
Model by
Ground Zero Games**

6 Command School

Ordnance weapons- Advanced rules

6.2 Missiles (SAP)

Missiles are long range homing weapons with nuclear, bomb-pumped laser, or simple kinetic warheads. Missiles are large enough to have very dangerous warheads, but this also limits the number that can be carried by a ship. The missiles are slower than beams or torpedoes, so fast target ships may be able to dodge the missiles entirely and others use short range point defense weapons to intercept them.

A Salvo Missile Launcher (SML) system fires salvos of anti-ship missiles. Normally there are six missiles in one salvo, either fired as a cluster, in quick succession from a smaller number of launchers, or as multiple warheads from a single missile; but can also represent a smaller number of more powerful warheads with accompanying decoys and jammers.

Fleets with lighter or unreliable missiles are assumed to fire more in each salvo for equivalent effect.

Salvo Missiles can be fired from a rack, a single salvo launcher, cluster, or pod that can be used only once; or from launcher tubes or cells supplied by magazines that can fire each turn until the supply of missile loads is exhausted.

While each salvo is considered equally dangerous, ships vary in the number of racks or launchers and the capacity of magazines.

Heavy Missiles are long range homing weapons fired individually, with more powerful warheads and armor or counter measures that make them harder to shoot down. Heavy Missiles are always fired from one-shot launcher racks.

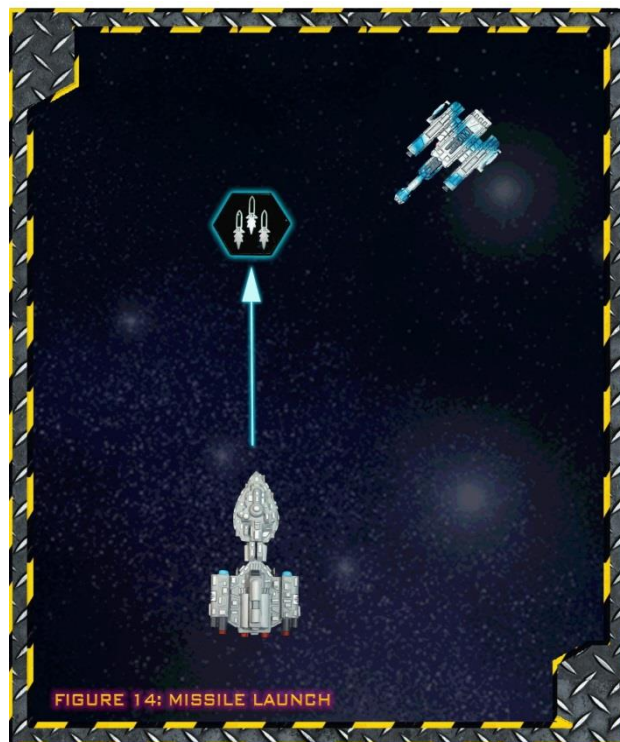
There are two grades of missile available: standard and extended range (ER). Both grades work in the same way, but the ER missiles have (as their name implies) a greater range than the standard, and are larger and more expensive.

Missiles in Full Thrust are not like current day guided

or homing missiles used by ground troops and aircraft, which by space combat standards are far too short ranged and cannot change course without atmosphere. The nearest equivalent today are the anti-ship cruise missiles that are fired to where the target is expected to be, fly for some time, and finally search for a target when they arrive in the right area.

6.3 Launching missiles

Ships launch missiles in phase 3 of the turn. The firing player selects a ship, announces the launch of a missile or salvo, and places a Salvo Missile marker at the intended point of aim. This may be anywhere up to a maximum range of 24 MU from the firing ship, or 36 MU for extended range missiles, but must be within the boundaries of the fire arcs through which the launcher system may bear. (And not obstructed by any asteroids, planets, or similar obstacles.) The missile salvo marker is left in place while all ships are moved.



An operational FireCon is necessary to launch Heavy Missiles, Salvo Missile Racks, or Salvo Missile Launchers (Section 6).

If after ship movement there is an enemy ship within

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6 MU of the marker (in any direction) then the missile(s) will attack it. If there is more than one potential enemy target within 6 MU then the missiles will go for the closest of them.

Move the missile marker next to the target ship and apply point defense fire before resolving missile hits. Note that if there is no valid target within 6 MU at the end of movement, the missile launch was wasted and the marker is removed from play.

Optional: If you choose to use vector movement instead of the standard cinematic movement rules, then we strongly suggest reducing the attack radius of missiles from 6 MU to 3 MU – this will prevent the missiles becoming too accurate against the more predictable maneuver envelope of a vector movement ship. If a particular scenario calls for the mixing of vector and cinematic movement ships, then allow missiles to attack if within 6 MU of a cinematic drive ship but only within 3 MU of a vector drive ship. If you want to justify this, assume that the cinematic drive movement ships have a higher drive signature for the missiles to home on than the drives of the vector movement ships



After movement

6.4 Point defense vs. missiles

When resolving missile fire, the defending player must first decide what defenses to allocate against each Heavy Missile or Salvo Missile marker. Once that has been done for all ships, resolve defensive fire as follows:

Against Salvo Missiles, the defending player rolls per point defense weapon:

- Each PDS rolls a D6, ‘killing’ one missile on a roll of 4 or 5. Rolls of 6 kill two missiles and re-roll.
- Each Beam-1 or fighter rolls a D6, killing one missile on a roll of 5 or 6, with a re-roll on 6.
- Other defensive weapons have additional rules

The attacking player then rolls a D6 for each Salvo Missile marker. The result is the number of missiles in the salvo that are actually on target. Subtract the number of missiles killed from the D6 score that the attacker rolled. Any positive number is the number of missiles that actually get through the defenses and hit the target.

If defensive fire killed more missiles than were in the salvo then the extras are ‘overkill’; they cannot be allocated to other salvos or Heavy Missiles. If there are no defenses at all, at least one missile in a salvo will always get through.

Against Heavy Missiles:

- Each PDS rolls a D6 and kills the missile on a roll of 5 or 6.
- Each Beam-1 or fighter rolls a D6 and kills the missile on a roll of 6.
- See rules in section 7 for other defensive systems.

Note that fighters get one roll each in screening groups, so a full strength group will roll 6 dice. For each Salvo Missile or Heavy Missile killed by a fighter roll an additional D6: on a roll of 6 the fighter is destroyed as well. (Trying to take out missiles is a tricky and dangerous job at high speeds and very close quarters.)

As detailed in Section 7 there are other defensive systems that will effect, or destroy, missile attacks as well.

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6.5 Damage (SAP)

Each Heavy Missile inflicts 3D6 of damage on the target. (As usual, half rounded up can be taken on armor, the remainder on the hull.)

Each missile in a salvo that hits the target ship inflicts 1D6 of SAP damage. Standard Screens have no effect on missiles. Advanced level-1 Screens subtract 1 from each damage roll, Advanced level-2 Screens subtract 2.

If using the optional rear arc attack rule (section 4), missiles do not do ignore armor.

Example: Two missile salvos are fired at a single target ship. The ship has the following systems that can defend against missile fire: one Point Defense System (PDS) and two Beam-1 batteries that can function in a defensive role.

Before the defender knows exactly how many missiles will actually strike home, the ship's captain has to decide how to allocate defenses.

The defender chooses to use the PDS alone against one incoming salvo, and the 2 Beam-1 batteries to combine fire against the second salvo. The attacking player now rolls for each missile salvo. For the first the roll is 2, but the second is luckier and rolls 5.

The first salvo has only two missiles on target, and the defending player rolls the PDS die and gets a 6, thus shooting them both down. (There would be a re-roll for the six, but there is no point as both target missiles are already stopped.)

For the second salvo with five missiles incoming, the defender gets to roll 2 dice for the 2 Beam-1 batteries, and rolls a 4 and a 6. The 6 allows a re-roll, but this only gets a 2. So the defender has killed only one incoming missile from this salvo of five.

The end result is that four missiles of the second salvo get past all the defenses, and deliver their warheads in a blaze of energy. A D6 is rolled for each of them, scoring 3, 1, 3, and 6; missile hits don't re-roll so this gives a grand total of 13 damage points to the target ship. This is enough to cripple a smaller warship and

cause serious harm to even a large one. If the ship has four boxes of armor, 4 points of damage will be taken on the armor and the remaining 9 on the hull boxes.

6.6 Mountings and magazines

Heavy Missiles and Salvo Missile Racks (SMR) have individual symbols on the ship SSD. Once fired, it is crossed off and cannot be used again. Each counts as one system for threshold point checks.

A Salvo Missile Launcher (SML) may fire one salvo per turn provided ammunition is left in the magazine. The magazine symbol is a box linked by lines to the SML(s) it feeds.

Each magazine has a mass rating, which determines the number of Salvo Missile loads carried: mass 2 for a standard salvo, mass 3 for ER. Salvo Missile loads are indicated by small arrowhead symbols within the box which are crossed off as they are fired. Magazines and launchers are considered separate systems for threshold point checks.

Standard grade Heavy Missiles, SMRs, and Salvo Missile loads are white; extended range shaded in black. Launchers have a black arrowhead in the actual launcher symbol, but this has no bearing on the load carried in the magazine.

Once fired, racks and magazines are empty until replenished after the battle from a base or fleet auxiliary.

In general, SMRs tend to be fitted to smaller craft where the saving in mass is critical (and the ship may well not survive long enough to fire more than one or two salvos anyway!), while SMLs and magazines

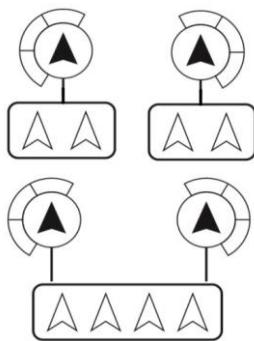


are used more on larger classes which need sustained fire capacity. Heavy Missiles can be carried by all classes.

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Magazine capacity

The mass allocated to magazine space during a ship's design stage may be broken down into separate magazines at the designer's discretion, but with the following important limitation: any one launcher system may only be fed from one magazine, though a single magazine may feed more than one launcher. Thus if a ship has 2 SMLs and 8 mass of magazine space, the designer may decide to fit just a single 8 space magazine feeding both launchers, or could give each launcher its own 4 space magazine instead, as shown below:



SMLs and magazines

The disadvantage of the single magazine is that all the missile loads could be lost with one bad threshold roll (as one magazine is rolled for as a single system, regardless of its capacity or the number of Salvo Missile loads in it); on the other hand, with two smaller magazines the player does not have the option to feed missiles to either launcher – if one launcher is lost while it still has missiles in its dedicated magazine, those missiles are useless, they cannot be fired by another undamaged launcher that was not originally fed from that magazine.

The intended type of load is another factor to consider when installing missile magazines. In the example above, the ship with a single mass 8 magazine could choose its load as 4 standard salvoes, or 1 standard and 2 ER salvoes. (A 2 standard and 1 ER load is also allowed, but wastes 1 space in the magazine.) If the same ship had two mass 4 magazines, however, carrying any ER salvoes would be much less efficient as the spare space in each magazine would be wasted.

The ship designs in the Fleet Books assume standard salvo loads in the magazines. If you wish to load a ship with ER salvoes then shade in the required number of salvo symbols and delete any excess – if a ship design shows 3 standard salvo symbols in a mass 6 magazine and you wish to use 2 ER salvoes instead, shade two symbols black and cross off the third one.

All missiles have 3 arcs.
Single shot SMLs are 4 mass
SML launchers are 3 mass
Extended range single shot SMLs

Standard missiles are 2 mass
ER missiles are 3 mass

All SMLs and missiles are 3 points per mass

Optional: Multi-Stage Missiles

An extra stage for a Heavy Missile, Salvo Missile Rack, or Salvo Missiles increases the mass by 2 and doubles the points cost. Only standard missiles may be multistage, not ER; and a magazine may only carry either regular missiles or multi-stage missiles, not a mixture.

The extra stage increases the range by 24 MU and the 'duration' by 1 turn.

On the turn fired, a two stage missile marker is placed between 16 and 24 MU from the launching ship and within the normal 180° arc for missile launch. The marker itself has a facing, which must be the nearest clock facing to the direction from the launching ship to the missile marker.

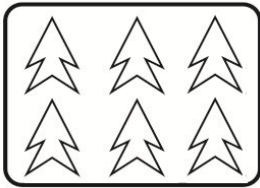
If no enemy ship is within 6 MU of a missile marker at the end of ship movement, it is not removed. Instead in the Missile Launch Phase of the following turn the missile marker is placed at the intended point of aim, anywhere from 16 to 24 MU within the 60° front arc of the marker.

Multi-stage missiles only have the full 180° firing arc on the launch turn, and must always be moved at least 16 MU each turn.

After ship movement, the missile or salvo then homes


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in on the nearest enemy target as usual, or is removed if none is within 6 MU. While the missile is 'in flight' the marker may be fired on by fighters or ADFC.



Multistage Missiles in Magazine

Anti-Matter Missiles (AMT Torpedoes)

 Antimatter Missiles are a Heavy Missile body fitted with an antimatter warhead. Due to the inherent danger of carrying antimatter into a combat environment, Antimatter Missiles are mounted in external racks.

The Antimatter Missile rack has 3-arc coverage, with a range of 18 MU. The unique decay products of the antimatter warhead makes the Antimatter Missile distinguishable from other capital missiles, so enemy point defense may concentrate on them.

Antimatter Missiles may also be fused to detonate in open space, without making an attack run. This can be done to try and destroy large waves of incoming missiles, or blow holes in dense minefields. Any enemy ship and fighters may still fire at the missile if it is within 3 MU range, before it detonates. This is done in a similar manner to firing at PBLs.

Making antimatter explode in the vacuum of space is more difficult than most people image. If not done right, a small amount of energy is released, just enough to blow apart the warhead and send chunks of antimatter flying off into the void of space. To help overcome this antimatter warheads are fitted with sensors which will attempt to detonate the warhead if they detect any damage that may cause the warhead to fail.

As a proper explosion from an Antimatter Missile has a large blast radius, stopping an Antimatter Missile

just before impact may not be enough. To simulate this, Antimatter Missiles take multiple "hits" to kill. Each hit from point defense fire reduces the warhead strength by 1d6 and the blast radius by 1 MU. Three hits will disrupt the warhead sufficiently to prevent any meaningful explosion. If firing at Antimatter Missiles in free flight (missiles that are not making attack runs, and are fused to detonate in free space) the same 3-hit requirement applies.

If an Antimatter Missile impacts at full strength it explodes, doing 3d6 damage to the target ship and any other unit within 1 mu. It does 2d6 damage to any ship or unit within 2 MU, and 1d6 damage to any ship or unit within 3 MU.

Screens reduce the damage of Antimatter Missile blasts. Apply a -1 DRM to each die of Antimatter Missile damage per level of screen. So a ship with screen-2 caught in a 3d6 Antimatter Missile blast would only take 3d6-6 damage.

If an Antimatter Missile fails a threshold test it explodes on the rack, immediately doing 1d6 damage to the carrying ship, and 1d6 damage to any unit within 1 MU. A missile that explodes on the rack obviously cannot be later repaired by damage control. Screens and armor will not protect a ship from its own exploding missiles.

Antimatter Missiles cost 5 per mass.
Rack-mounted Antimatter Missile mass 2 3 arcs

6.7 Rocket Pods



Rocket Pods are short-range direct attack ordnance weapons. They are most effective in high-speed close-in maneuvering battles, a place where other types of ordnance often has trouble tracking and attacking enemy ships.

Rocket Pods are one-shot weapons that are crossed off the SSD once fired. They are fired during ordnance launch, but they use a different attack mechanic. Select an enemy ship within range and firing arc of the rocket pod. The Rocket Pod fires TWO rockets at the target ship.

Roll 1D6 for each rocket to see if its hits.

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Range up to 6 MU up to 12 MU up to 18 MU

Hits on: 2+ 3+ 4+

If the rockets "hit" then place an appropriate number of rocket markers next to the ship. These will attack at the same time as other missiles, and the rockets can be shot down by point defense weapons as if they were conventional missiles. As the rockets fly straight in, they hit in the arc visible at the moment of launch. This will affect which defensive weapons are in arc. Placing the rocket markers next to the ship in that arc is a good way to keep track of this. Rocket Pods can be fired at gunboats. They suffer a -1 DRM to target the gunboat.

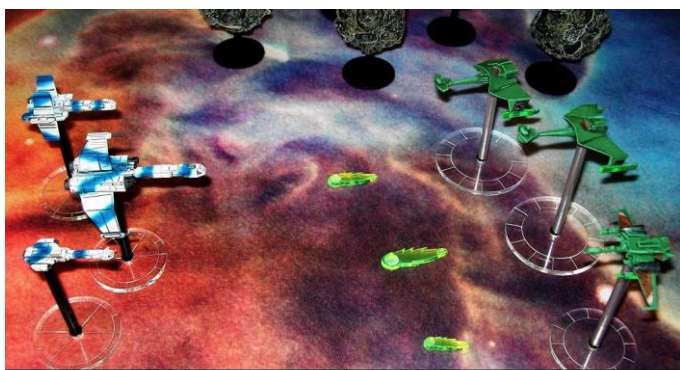
Rockets do 1d3 damage (Semi-AP) each.

Mass 1 and cost 3 points

6.8 Plasma Bolt Launchers



While not technically ordnance, in that PBLs have no expendable ammunition, they follow similar mechanics to missiles and are thus listed here. The Plasma Bolt Launcher (PBL) loads and fires bombs which then explode at range, bathing a huge area of space in superheated plasma. These plasma bombs are very difficult to destroy because they move quickly, have a small signature, and just tend to explode anyways if not destroyed quickly and completely.



A Romulan Fleet launches a spread of PBLs.
Models by Brigade Miniatures, ADB and FASA
PBL markers by Corsec Engineering

Plasma Bolt Launchers have two significant restrictions. Firstly, a ship can mount only one launcher per 50 mass of ship. So a mass 101-150 ship could mount 3 launchers, while a mass 1-50 ship could only mount 1. These launchers may be any size,

within the available mass limit; it is the total number of launchers that is limited. The second limitation is that a PBL may only fire every other turn.

The PBL is fired during the Ordnance Launch Phase. A marker showing the detonation point is placed anywhere within arc and line of sight of the launcher, out to a range of 30 MU. PBLs explode with a blast radius of 6 MU (12 MU diameter), and every ship, missile, fighter and gunboat within the blast radius will be damaged. Any ship or other unit within the blast radius may fire at the PBL to try and shoot it down, but this is quite difficult. PDS fire suffers a -2 DRM, so they only score hits on a die roll of a 6. Scatterpacks and Interceptor Pods do 1 BD* of hits. Each hit on the PBL reduces its strength by 1. So a class 1 PBL is destroyed by a single hit, while a huge class 6 will take 6 points of damage to completely destroy.

Class 1 beams and class 1 K-guns may NOT be used in their secondary PDS role against Plasma Bolts, but Kra'vak Scatterguns may, and they are even more effective than standard PDS: they roll like a "beam" die, removing 1 strength from a bolt on a 4 or 5 result, and 2 strength classes on a 6 (NO reroll). Sa'Vasku Interceptor Pods may also engage Plasma Bolts, with the same die roll as a Kra'vak Scattergun.

Fighter groups may target Plasma Bolts if they are within 6 MU; roll for each fighter as if it was a PDS (i.e.: each roll of 6 counts as a hit).

Ships with ADFC capability may add their PDS fire in support of any ships within 6 MU of them that are within the effect radius of a Plasma Bolt, even if the ADFC-equipped ships is itself outside the danger area.

Every class (1-6) of PBL uses the same damage radius, but the amount of damage inflicted depends on the class of the bolt. Plasma Bolts do 1d6 damage per class to every target within the blast radius. So an undamaged class 6 Plasma Bolt will do 6d6 damage to everything within the blast radius. Roll for each target separately, as the randomness of the blast may bathe targets in more or less plasma. Fighters and Heavy Fighters take 1d6 casualties per dice of plasma damage. Missiles and gunboats are destroyed.

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Screens do provide significant protection against Plasma Bolts. Each level of screen (2 maximum) provides a -1 DRM to each die of plasma damage. Stealth and Holo-fields provide no defense from Plasma Bolts.

PBLs cost 3 per mass. PBL mass is equal to 3 mass per class + 1 mass x class per extra arc (max three arcs)

Class 1 PBL mass 3, one arc + 1 for each additional arc (max of 3 arcs)

Class 2 PBL mass 6, one arc + 2 for each additional arc (max of 3 arcs)

Class 3 PBL mass 9, one arc + 3 for each additional arc (max of 3 arcs)

Class 4 PBL mass 12, one arc + 4 for each additional arc (max of 3 arcs)

Class 5 PBL mass 15, one arc + 5 for each additional arc (max of 3 arcs)

Class 6 PBL mass 18, one arc + 6 for each additional arc (max of 3 arcs)

As an option a PBL may be fired as a type of shaped charge projectile. If fired in this mode it must be noted the turn of firing during the Write Orders Phase.

The firing player uses the Projectile Weapon to Hit Chart to determine if the PBL hits. A hit will generate 1D3 points of damage per size class of the Plasma Bolt. Standard Screens will have no effect but Advanced Screens will at -1 DRM for each level of screens. Damage is Semi-Armor Piercing.

6.9 Mines and mine racks

★ The ‘mines’ used in Full Thrust are actually more like dormant missiles or small drones equipped with detonation beam warheads. When a hostile ship (i.e. one not answering the correct IFF codes) comes within a certain distance of the mine the warhead charge will detonate, directing a focused pulse of energy into the target ship in the microseconds before the mine itself is consumed by the blast. If the resulting beam hits that target, it does similar damage to a close range hit from a beam weapon.

The detection range of a mine is 3 MU. All enemy

vessels that enter the radius from the mine marker, at any point during movement, not just at the end of a move, will be detected and fired on by the mine. Roll 4D6 and apply damage as for normal beam fire, reducing accordingly if the target is screened. After a mine has detonated, remove its marker from the table at the end of the movement phase.

6.10 Minelaying

Ships equipped with minelaying systems may deposit mine markers on the table during the Ship Movement Phase. The player must note in the order for that ship that it will deploy mines in that turn by writing “mine” in the order box.

Individual mines are carried as loads within a magazine. Each minelayer system fitted may deploy one mine per turn, so a ship with two mine systems may drop two markers during its movement, either both at the same spot, or at different points. The mines may be placed anywhere along the ship’s course during that movement. Ships dropping mines are moved first after writing orders, so there can be no question of a player positioning mines in response to the enemy’s movement in that turn.

Each minelayer system carries a number of mines – as each one is deployed, cross out one load on the minelayer magazine symbol.

A mine marker does not become active until the game turn after the one in which it is deployed. Once placed, the marker will remain on the table (completely stationary) until it detonates, or is cleared by a minesweeping system.

Mine Racks are 2 mass and cost 3 points per mass. Mines are 1 mass and cost 2 points each. (2 mines min per rack)



7 Command School

Defensive systems- Advanced rules

7.2 Defensive Screens (i.e. shields)



The maximum active screen level for any ship is 2. Extra screen generators may be fitted but will only be useful as backups should one of the main screens be lost through damage.

Screens only protect against fire from beams and similar weapons such as Grasers and fighters. Other weapons such as Pulse Torpedoes and missiles are able to penetrate screens with no degradation of their damage effects. See the description of each individual weapon system type for whether they are affected by screens.

Screens mass 5% of the total ship mass per level with no minimum Mass requirement.

They cost 3 per mass.

7.3 Advanced Screens



Advanced Screens not only protect against beam weapons, but also against Pulse Torpedoes, missiles, and other weapons that normally ignore screens.

Beams, Grasers, fighters, and other weapons that are affected by Standard Screens are affected in the same way when attacking a ship with Advanced Screens.

SMPs and similar weapons that ignore Standard Screens and roll a combined hit and damage D6 are affected by Advanced Screens as if they were beams. Against level-1 Advanced Screens a roll of 5 inflicts 1 damage point, and a roll of 6 inflicts 2. Against level-2 Advanced Screens a roll of 5 or 6 inflicts 1 damage point.

Pulse Torpedoes, missiles, and other weapons that are unaffected by Standard Screens and roll one or more D6 for damage subtract 1 from each damage die against level-1 Advanced Screens. Against level-2 Advanced Screens, subtract 2 from each die. Negative damage is treated as zero; the target ship cannot regain damage points!

A ship cannot be fitted with both Advanced and Standard Screens, as they are assumed to represent different types of technology.

As with Standard Screens, a ship cannot have an Advanced Screen level greater than 2, even if it has additional generators.

Advanced Screens mass 7.5% of the total ship mass per level with no minimum mass requirement.

They cost 4 per mass.

7.4 Stealth Hull



Stealth technology reduces the emission signature of the ship, making it more difficult for weapons systems to lock-on to the ship. This is represented by reducing the range bands of opponent's weapons.

Level 1 Stealth reduces the size of range brackets by one-sixth. Level 2 Stealth reduces the size of range brackets by one-third.

Example: A class 3 beam normally has a range of 36 MU. Against a Stealth-1 target it would have a range of 30 MU; against a Stealth-2 target it would have a range of 24 MU. The reduction of effective range also applies to missile lock-on range.

<u>Original range:</u>	<u>Lvl 1 Stealth</u>	<u>Lvl 2 Stealth</u>
12 MU	10 MU	8 MU
9 MU	7.5 MU	6 MU
6 MU	5 MU	4 MU
4 MU	3.33 MU	2.66 MU

Stealth Hulls are marked on the SSD. Damage to the hull may result in a loss of Stealth. A Stealth-1 ship has a Stealth marker at the end of the second row of hull boxes. Once the second row of hull has been destroyed it negates the ship's stealth. A Stealth-2 ship has a marker at the end of the first and third rows of hull boxes. The loss of the first row reduces the ship to Stealth-1; the loss of the third row removes all stealth benefits. Note: these markers are placed on the hull rows as indicated here regardless of how many rows of hull the ship has.

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Stealth-2 equipped ships must rely more on passive sensors, as powerful active sweeps would reveal the ship's position. To gain the benefits of Stealth-2 the ship may only target units out to 24 MU.

A Stealth-2 ship can write orders to "go active," this brings the FireCon systems into full-power active-scan mode, allowing the ship to target its weapons out to the normal FireCon range of 54 MU. This does reduce much of the protective power of the Stealth systems, however, and the ship is only treated as being Stealth-1 as long as the FireCon is in active mode.

Stealth-1 adds a cost of +2 for every point of hull and armor. Stealth-2 adds a cost of +4 for every point of hull and armor. Neither type of Stealth Hull has any mass requirement. Stealth-2 is the maximum a ship may mount.

7.5 Stealth Fields



The Stealth Field is a powerful yet subtle ECM system that seeks to mask the emissions of a ship, making it more difficult to target and attack. In practice, the effects of Stealth Fields are identical to a Stealth Hull of the same level (see above). Stealth Fields are systems that require mass, however, and have an icon on the SSD that can be damaged by threshold tests, and can be targeted by Needle Beam fire (unlike Stealth Hulls which are only disabled by loss of complete rows of hull boxes).

Like a Stealth Hull, a ship with level 2 Stealth fields cannot target enemy ships beyond a range of 24 MU without negating the effectiveness of the Stealth systems. Stealth Fields can be turned on and off by writing appropriate orders. Stealth Fields and Stealth Hulls can be combined, but the aggregate Stealth level cannot exceed 2.

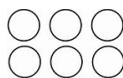
Stealth Field generators are 5% of ship mass per level. They cost 6 per mass.

7.6 Armor

○ ○ ○ ○ Armor requires 1 mass per box of protection. The total number of armor boxes is called the grade.

The points cost of standard armor is twice the grade; 2 points per box.

7.7 Shell or Layered armor



Armor can be configured in multiple layers, making it better able to stop Penetrating damage. Armoring a ship under multiple shells is difficult and expensive, but it can prove decisive by countering armor-piercing weapons.

An Armor-Piercing weapon that strikes Shell Armor does one point of damage to each shell, and then deposits the remainder of its damage into the hull.

Semi-Armor Piercing weapons do half their damage to the outermost layer of Shell Armor (rounded up), and the remaining half of their damage to the next shell layer.

Shell Armor and Regenerative Armor can be combined, simply add +2 to the cost of the Shell Armor to make it Regenerative Shell.

Like normal armor, Shell Armor requires one mass per point of armor.

Shell Armor costs +2 points per mass per layer of shell.

Inner layer - 2 per mass

First shell - 4 per mass

Second shell - 6 per mass

Third shell - 8 per mass

Fourth shell - 10 per mass

7.8 Regenerative Armor



A more advanced form of armor is available that has a limited capacity for self-repair. This can take the form of an organic carapace that seals over its wounds, or nanotech self-assemblers that quickly repair and reassemble broken components.

During the End Phase roll a d6 for each point of Regenerative Armor that has been damaged. On a 5 or 6 the armor box is repaired. On a 1 the armor has

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sustained too much damage and it cannot regenerate further this battle.

Ships with large amounts of Regenerative Armor can be very difficult to kill. Regenerative and non-Regenerative Armor can be combined on one ship. Regenerative Armor requires one mass per point.

Regenerative Armor adds 2 to the cost of standard armor. Cost is 4 per mass.

Inner layer - 4 per mass

First shell - 6 per mass

Second shell - 8 per mass

Third shell - 10 per mass

Fourth shell - 12 per mass

7.9 Antimatter Suicide Charge



Some species and civilizations have developed a rather fatalistic attitude towards combat that can be summarized as “we die - I win!” For these people, there is the Antimatter Suicide Charge. This is a system mounted deep within the hull of the ship that can be detonated, destroying the ship and damaging any unit within 3 MU.

As the Antimatter Suicide Charge is buried deep within the hull of the ship, even if the warhead is broken apart by battle damage there is plenty of matter around (the remains of the ship) for the antimatter to annihilate and generate a satisfactory explosion. So the loss of an Antimatter Suicide Charge may result in a detonation. Mark the Antimatter Suicide Charge as damaged as you would any other system. During the Damage Control Phase the player may attempt to repair it. If the Antimatter Suicide Charge is not repaired by the end of the turn roll a die. On a 5 or 6 the Antimatter Suicide Charge explodes and results in a 3 MU blast radius, 3d6 explosion like a full strength Antimatter Missile. Roll every turn until the damage is repaired or an explosion occurs.

Antimatter Suicide Charges are well armored and protected against accidental detonation, and thus get a -1 DRM whenever they take threshold tests (like Core Systems). They can be targeted by Needle Beams normally.

A ship may write “detonate” orders during phase 1. At the beginning of phase 13 just before threshold checks are rolled, the ship explodes. A ship with multiple Antimatter Suicide Charges gets the additive damage of all the charges, but no increase in blast radius. So a ship with 3 charges would do 9d6 damage to 1 MU, 6d6 to 2 MU and 3d6 to 3 MU. If the ship was destroyed prior to phase 12, it explodes at the end of the phase in which it was destroyed, with the full strength of all the Antimatter Suicide Charges.

The detonation of an Antimatter Suicide Charge causes damage directly to the hull of the carrying ship, it is not reduced by armor or screens (the explosion starts within). A large ship might survive the accidental detonation of a single Antimatter Suicide Charge.

AM Suicide Charges cost 5 per mass

AM Suicide Charge is mass 1

7.10 ADFC




Area Defense Fire Control (ADFC) is a high speed computer controlled tracking and data assimilation system designed to allow point-defense weapons (PDS, ADS and weapons that can fire as a PDS - Pulsers, Gatling Batteries, Twin Particle Arrays and Meson Projectors) to engage fighters and missiles making attacking runs against allied ships within 6 MU. A ship with ADFC may support ONE allied ship within 6 MU, with each PDS/ADS etc., only firing once per turn.

An ADFC may not be used if the ship launched or recovered any fighters (section 8) during the turn.

ADFC has a mass of 2, and costs 4 per mass.


Optional: If all players agree, the ADFC costs no mass for ships larger than 20 mass, but still costs points (i.e. 8 points). This rule is to help facilitate the transition for ships from other game systems where the games mechanics allow ships to cover each other. Also for those of you that believe fighters are a tad over powered in the game will find this evens things out a little. Our group has used this rule for years without upsetting game balance.

7.11 Advanced ADFC

 Advanced Area Defense Fire Control (AADFC) is an advanced version of the standard ADFC. It allows FireCon system designed to allow point-defense weapons (as described above) to engage fighters and missiles making attacking runs against allied ships within 6 MU. A ship with AADFC may support ANY number of allied ships within 6 MU, though each PDS/ADS etc., may still only fire once a turn.

AADFC has a mass of 2, and costs 5 per mass.

7.12 Point Defense Systems

 Point Defense Systems are designed for shooting down incoming missiles or fighters. See sections 7 and 8 for details.

Point Defense fire does not require a FireCon. Point Defense Systems (PDS) include light beams, auto cannon, or counter missile launchers with a large number of reloads. The more PDS symbols a ship has, the stronger the point defense.

Beam-1 systems, K-1 guns and other small weapons are dual purpose and can also be used for point defense as noted in their descriptions. In this role they do not require a FireCon.


Point Defense Systems can be fired through any arc, including the rear arc even if the ship has used the main drive in this turn. The range is shorter and the incoming missiles or fighters must themselves avoid the energy output of the drive.

Point Defense Systems can be fired against ships with a maximum range of 6 MU, and do not require an operational FireCon to do so.

Point Defense Systems can only be fired against ships without an operational screen/field (of any type) or any remaining armor boxes – i.e. undamaged warships are not vulnerable to such light weapons.

Each Point Defense System rolls only 1D6, with a roll of 6 inflicting 1 damage point with no re-roll. PDS has a mass of 1, and costs 3 per mass.

7.13 Area Defense System


 The Area Defense System (ADS) is a modified version of the PDS that is capable of engaging enemy units out to a range of 12 MU. This is very useful when coupled with ADFC, as a central “Aegis Cruiser” which can cover a ship up to 12mu away. The ADS system fires like a PDS. It can fire once to a range of 12 MU, or twice to a range of 6 MU. Inside 6 MU the two PDS dice may be targeted at different enemy units. ADS can also be used to target enemy ships; like a PDS it inflicts one hit on a roll of 6.

The ADS system is mass 2, and has 3 arcs of fire. For +1 mass the system can be made to fire into all 6 arcs.

Like PDS, the ADS may fire into the ships aft arc, if its arcs extend there.

ADS costs 3 per mass.

7.14 Scattergun

 Scatterguns (also known as Scatterpacks) are a one-shot weapon derived from Gravitic/kinetic weapon technologies. Small semi-guided projectiles are launched at the target at very high speed. The spray of pellets is very effective at ripping apart attacking fighters and missiles. The Scattergun has its own miniature integral FireCon system, and does not require data from the ships own FireCon. Furthermore, Scatterguns have an in-built ADFC capability, and they can be used to support allied ships within 6 MU.

Scatterguns may fire into the aft arc behind the ship, like PDS. The range of a Scattergun is 6 MU. They inflict 1d6 hits on fighters and missiles (including Salvo Missiles), 1d3 hits on Heavy Fighters, and 1 BD* hits on Plasma Bolts and gunboats.

Scatterguns used in ADFC-mode have a chance of causing some damage to the ship being assisted. On a roll of “1” the allied ship suffers one point of damage, in addition to the effect of the Scattergun on the attacking fighter/missile. Scatterguns can be used in direct-fire mode against enemy ships. They inflict 1 BD* hits, and are unaffected by screens.

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When a Scattergun is used, cross it out. It is a one-shot weapon and may not be used again during this battle.

Scatterguns have a mass of 1, and cost 5 per mass.

7.15 Grapeshot



Grapeshot Launchers are similar in function to a Kra'vak Scattergun but not quite as effective. When fired the player rolls 4 PDS dice for each launcher.

Mass: 1, cost 4 each and is one-shot only.

7.16 Area Screens



Area Screens represent huge screen projectors that create an umbrella to provide protection for ships under it. An area screen counts as one additional level of screen for the generating ship and any ship inside its 6mu 'bubble' and will 'stack' with any screens those ships have up to a maximum of three.

Example: a frigate with a level one screen is being protected by a ship generating an area screen. The frigate would count as having a level two screen against any incoming fire. Note the 'bubble' will not affect any fire coming from inside the 6mu radius. In the case of ships with level two screens being protected by an area screen weapons that would normally penetrate do not get their re-rolls. Plasma weapons would be at -3 on their die rolls in addition to any shields the target ship mounts. .

Area Screens are 20% the mass (15 min) of the ship or 30% for Advanced Screen (20 min) per level (max of 2), and costs 3.5 per mass.

7.17 HoloField



HoloFields are high-tech devices that use field generators and powerful ECM systems to create a complex pattern of sensor ghosts around a ship. This confuses enemy FireCon systems, making the ship more difficult to hit.

Shooting at a ship with direct fire weapons that use beam dice will only score one hit on a 5 or 6 with a re-roll for the 6 if applicable. The HoloField will

affect all re-rolls as well. Weapons that do not use beam dice add 12mu to the range. If this modifies the range beyond the weapons maximum range the shot automatically misses. Needle Beams and similar weapons, are ineffective against a ship protected by HoloFields.

Graviton Beams and any area effect type weapons (i.e. Spinal Mounts, PBLs etc.) ignore HoloFields.

The closer the firing ship is the less effective the HoloField will be. Any ships firing at 6 MU or less will ignore HoloFields.

HoloFields also confuse the miniature FireCon systems used by missiles, fighters and ordnance. Their attack range is reduced by 1 MU. HoloFields cannot be combined with other screen or field technology. HoloFields can be combined with up to 3 levels ECM; this would reduce fighter/missile lock-on range to 2 MU.

HoloFields require 10% of ships mass. They cost 5 per mass.

7.18 ECM



Electronic Counter Measures (ECM) use powerful broad-band electromagnetic noise generators, along with chaff and multi-spectrum flares, to confuse enemy targeting sensors.

ECM suites come in different sizes (levels); the larger the ECM suite the more effective it is.

ECM has two effects in game. First, it confuses enemy sensors, making it difficult to gain accurate information about your ship.

For every level of ECM your ship has subtracts 6 MU from the "de-blip" range of enemy sensors. This will also decrease the effective information range of the more advanced sensors by a similar amount.

Secondly, ECM can badly confuse the low-power miniature targeting sensors on missiles, fighters and gunboats. Every level of ECM reduces the lock-on range by 1 MU, meaning missiles and fighters need to be closer to attack.

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The aggregate ECM level of a ship (its own plus any Area ECM) cannot exceed 3. ECM can be combined with Holofields to produce a net -4 MU range reduction for missiles, fighters and gunboats. ECM has no effect on rockets.



**Japanese warship by
Ground Zero Games**

ECM is 1 mass per level, and costs 3 per mass. Each ECM system is displayed individually on the SSD, so it can be lost progressively by damage. ECM can be targeted by EMP attacks.

7.19 Area ECM

 Area Electronic Counter Measures use even larger and more powerful electronic “noise” generators than standard ECM, and can cover an area around the ship.

Area ECM is usually mounted into specialist electronic warfare ships in support of a fleet.

Area ECM functions like conventional ECM, however it covers the ship mounting the system and all allied ships within 6 MU. The aggregate ECM level of a ship (its own plus any Area ECM) cannot exceed 3.


Area ECM has one major side-effect. The jamming systems are so powerful they also blind the carrying ships own sensor systems to some degree. When Area ECM is turned on, the carrying ship cannot use its own FireCon systems. The shorter-range FireCon systems in PDS, ADS, Scatterpacks, Grapeshot, and

ADFC still function normally.

Area ECM is 2 mass per level, and costs 3 per mass.

Each Area ECM system is displayed individually on the SSD, so it can be lost progressively due to damage. Area ECM systems can be targeted by EMP attacks.

7.20 Cloaking Device

 Cloaking Devices uses an energy field and a space distorting ability to bend light and other energies around the ship.

The basic Cloaking Device listed here is a fairly primitive early generation version that provides only limited invisibility.

When orders are written, the player must note if the ship will cloak or not. When a ship wishes to ‘cloak’ the player must note this in orders for that turn, and the number of turns the ship is to remain cloaked, e.g. 3 turns.

Ships will cloak and uncloak at the end of the Ship Movement Phase. Note: The player does not remove the ship model from the table and moves it in the Ship Movement Phase as normal. Place a ‘Cloak Marker’ on the ships base. For aesthetic purposes the player may replace the model with a clear plastic version or a “blip” marker if he wishes.

While the Cloaking Device is active the ship is partially blind, it cannot launch or land fighters, fire its weapons, enter hyperspace, receive communications or raise its screens. Area ECM will not function as well. If the ship strikes a planet or other large solid object while the Cloaking Device is active, the ship is destroyed. Also the ship velocity may not exceed a speed of 24 without voiding the Cloaking Device.

The Cloaking Device will prevent an enemy from getting an accurate lock on to the ship. Missiles and fighters will not lock at all. All direct fire weapons are considered to be at twice the actual range to the target and are at -2 DRM including re-rolls for penetrating weapons. If the cloak is hit due to a threshold check

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the ship uncloaks at the end of the turn. Needle Beams may not target any specific systems while the ship is under cloak.

The Cloaking Device may not be combined with any fields or screens. The ship does not gain any bonuses for stealth while the cloak is active. A ship will de-cloak at the end of the Ship Movement Phase.

A standard Cloaking Device is 1 mass.

The point cost is equal to 50% of the ships mass. For example a 100 mass ship would pay 50 points for a Cloaking Device.

7.21 Cloaking Field



Cloaking Fields are systems that render ships totally invisible and undetectable on all forms of sensors and visual scanning. They are thus very useful under certain circumstances, but they have one big disadvantage as well: though the cloaked ship cannot be seen, it also cannot see out.

While the Cloaking Field is active it is in its own little world, with no interface to outside reality. The cloaked ship is thus reduced to navigating inertially, based on the data it had when entering cloaking mode – it has no idea what is going on around it until it de-cloaks again. The suggested way of simulating this is that when a ship wishes to ‘cloak’ the player must note this in orders for that turn, and the number of turns the ship is to remain cloaked, e.g. 3 turns.

At the start of its movement for that turn, the ship model is removed from the table and a marker of some kind is placed to mark its location on entering cloaked mode. This marker then remains stationary until the ship de-cloaks, when it can be removed.

For each turn the ship is in cloaked mode, the player writes movement orders for it exactly as normal, although of course nothing is placed on the table to indicate its movement.

After the required numbers of turns in cloak have elapsed, the player returns to the cloaking marker and proceeds to plot out all the moves written for the ship while cloaked, finally placing the ship wherever it

actually ends up.

Properly planned it will still be on the table, if not it may well be halfway into the next room!

Of course, the player has an advantage over the imagined captain of the cloaked ship, in being able to see the flow of the battle and write orders accordingly – however this is balanced somewhat by having to specify in advance the number of turns in cloak, to prevent ships choosing to de-cloak just because a juicy target has wandered into range.

A Cloaking Field has two “damage points” or boxes. If both boxes remain unchecked the system operates as above. If one of its damage boxes has been checked off for any reason the cloak operates as a standard cloak.

When making threshold checks roll for BOTH damage boxes, it is possible, and perhaps likely, that a ship receiving crippling damage in a single turn will lose its cloaking ability altogether.

A Cloaking Field is 1 mass.

The point cost is equal to the mass of the ship.



**Crusty Battle Squadron.
Models by Ground Zero Games**

7.22 The Tuffley Cloak



The Tuffley Cloak (named after its creator Jon Tuffley) works exactly as the Cloaking Field but does not have a ‘damaged level’. If the Tuffley Cloak is damaged it ceases to function.

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The mass of the Tuffley Cloak is 10% of the ships mass and cost 10 points per mass.

Note: This version of the Cloaking Device is included here for those players wishing to use the original rules. It is possible for a player group to use both versions but should do so with caution. While it shouldn't create any balance problems this hasn't been fully play tested.

Science Fiction Fiction!

Even in science fiction there are things that are considered wild and totally unrealistic. Still, that's why we love it.

The intention behind these optional (extremely optional) rules is to simulate some of the weird and wonderful weapons seen in television and film that operate with a blatant disregard for the laws of physics and common sense. As they were never meant to fit in with the basic game system, they can do very strange things to the game balance.

We strongly recommend that these systems are used with discretion, and then only with the express agreement of all players. They are not recommended for games where there is any kind of competitive element in play or in fleet design.

Please note that we're not telling you not to use any or all of these systems if you wish. Just be aware that their indiscriminate use may throw up anomalies in the game, and you should be prepared to deal with these as you see fit.

7.23 Spinal Mount Nova Cannon



This is probably the single most deadly system available; however it does have its disadvantages as well – by all means experiment with fitting one to your largest ships. But don't say we didn't warn you!

The Nova Cannon is a massive weapon that can only be mounted in the spinal core of a capital ship, and fires only directly forward – not just through the fore arc, but actually on the center line of the ship only. In other words, the weapon fires in whatever direction the ship's bow is pointing.

Firing a Nova Cannon draws a massive amount of power from the ship's power plant. On the turn it is to be fired, the player must note this in orders for that ship, and the ship may not expend any other power at all for that turn: it may not apply any thrust to accelerate or maneuver, it may not fire any other weapons, and even its screens do not function for that turn! If the Nova Cannon is then not fired that turn, for any reason, then its 'arming' is lost and it must be re-armed the next turn the player wishes to use it.

When the Nova Cannon actually fires, it launches a round of compressed plasma in a containment field and a nuclear or antimatter explosive core. The projectile is hurled out to 6 MU in front of the ship (its minimum arming distance) and the core is detonated, with the field holding the contents long enough for it to form a self-sustaining reaction, like a miniature sun.

Place a 2 MU diameter template at the arming point (6 MU from the ship's bow) and then move the template 18 MU outward along the line of flight. Any and all ships or other objects that are contacted by the template during its flight immediately suffer 6D6 of damage! At the end of its total 24 MU move, the template is left in place on the table.

On the next turn, at the start of the firing phase, the 2 MU template is replaced by a 4 MU one, which is then moved 24 MU along its original course. Anything hit by this new template is subject to 4D6 of damage. Finally, on the third turn, the 4 MU template is replaced by a 6 MU one which is then moved another 24 MU, damage from this template being 2D6. At the end of the third turn of movement the nova reaction exhausts its fuel and burns out – the template is removed from play.

Damage from a Nova Cannon is Penetrating damage; neither type of screen nor armor has any effect.

A Nova Cannon is 20 mass and costs 60 points

7.24 Wave Gun



The Wave Gun is a smaller and slightly less over-the-top variant of the Nova Cannon.

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The system fires a plasma charge that expands as it travels along its line of flight, causing damage to any vessels in its path.

As with the Nova Cannon, the Wave Gun may fire only along the main axis of the carrying ship, i.e. in a straight line bearing directly forward along the ship's current course. The ship may not fire any other weaponry in the turn that it fires the Wave Gun, and also counts as being unscreened through its entire frontal arc while the weapon is being fired.

The Wave Gun needs to be charged prior to firing. Each turn that the player orders the weapon to charge, roll one D6 and write the result down; when the accumulated rolls reach six or more the weapon is fully charged and may then be fired on any turn. Firing the Wave Gun totally discharges the capacitors, which must then recharge from zero again.

Note that a ship fitted with a Wave Gun may apply thrust or change course in the same turn that it fires the weapon, unlike the Nova Cannon.

Unlike the Nova Cannon, the Wave Gun burst has a life of only one turn. Its full range is 36 MU. Over the first 12 MU, move a 2 MU diameter template along the line of fire, at 12- 24 MU the template expands to 3 MU diameter and then from 24-36 MU it expands again to 4 MU diameter. This all happens in the one turn, after which the template is removed.

Any ship touched by the template during its flight suffers damage: 4D6 at 0-12 MU range, 3D6 at 12-24 MU and 2D6 at 24-36 MU.

Advanced Screens affect Wave Gun damage rolls (-1 DRM per level), but will ignore Standard Screens and armor.

If the Wave Gun is knocked out by a threshold roll or a Needle Beam hit while it is charging or charged, the carrying ship suffers damage equal to the current charge in the weapon's capacitors.

A Wave Gun is 12 mass and costs 36 points.

7.25 Reflex Field



The reflex Field is a variation on conventional screen technology in that it protects its carrying ship (partially) against attack from energy weapons such as standard beam batteries.

The interesting aspect of the Reflex Field is that it has the capability to actually 'return' some or all of the attacking beam energy back to its source, causing damage to the firing vessel! 'Energy weapon' includes beams, Grasers, fighters, and any other weapon affected by Standard Screens.

This nasty little device may be activated in any desired turn, but it must be written in the carrying ship's orders that the field device is to be activated. On any turn that the player does not order the field to be in use, assume it is turned off. The opposing player is not told of the field's status until the ship is fired upon, by which time it may be too late.



Federal Cruiser by Kurusan Miniatures

If the Reflex Field is activated, the carrying ship may not use any weaponry of its own that turn, though it may move and maneuver normally. Other specialized actions, e.g. launching or recovering fighters, are also prohibited while the field is active.

When a ship with an operating Reflex Field is fired on by energy weapons, roll for hits and damage in the normal way.

Now the player owning the target ship tells the attacker that the ship has an active Reflex Field, and rolls 1 D6.

- On a roll of 1 the field has no effect: full damage is applied to the target ship as normal.

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- On a 2 the field stops some damage: the target receives only half the normal damage, rounded up.
- On rolls of 3 or 4, the field absorbs all the damage and none is applied to the target.
- On a 5, no damage is applied to the target, but half (Rounded up) is reflected back to the firing ship.
- On a 6, the field reflects the full damage back to the firing ship!

If a fighter group attacks a ship with an active Reflex Field roll a single D6 for the entire group after rolling fighter attack damage. Rolls of 1-4 have the effect described above.

On a roll of 5 or 6, each fighter that inflicts any damage is destroyed by the reflected energy.

A Reflex Field is 10% of the ships mass and costs 6 points per mass



**Federation Battle Carrier and escorts.
Models by Amarillo Design Bureau**

8 Flight operations - fighters

Fighters are small combat craft that are not capable of operating for any time or distance on their own. They are carried between stars by true starships, either by specialized fighter carriers or some of the larger ship classes. Fighters usually have a pilot and possibly one or two other crew, but can be remotely controlled drones or fully autonomous robotic craft with AI pilots.

Fighters operate in groups of 1 to 6 craft, with each group moving and firing as a single unit. As fighters are very small craft, it is assumed that they will carry only a limited amount of fuel, ammunition, and even life-support for their crew. They will not be capable of prolonged operation away from their carrier or base, but rather are launched for a specific mission or attack and will return quickly to the carrier following completion. The endurance limit is six *Combat Endurance Factors (CEF)* per standard fighter group.



Homeworld Light Carrier.
Designed and painted by Ben Blohn

8.1 Launch and recovery

Fighter groups may be launched from a carrier in any turn.

A ship that is launching fighters cannot use the main drive to perform any velocity, course, or facing

changes, so you need only write “Launch” as the movement order for that turn.

Recovery (‘landing’) of fighters back on their carrier is similar to launching: The carrier must move at a constant course and velocity for that turn. The fighter group moves into contact with the carrier in the Fighter Movement Phase.

Launching fighters move before all others in that game turn. The launching group may immediately form a screen for the carrier, attack other fighters or ships, or carry out any other normal action. Move distance on the launch turn is only half normal, representing time lost for successive launches and/or to form up.

All carriers are allowed to launch (or recover) as many groups per turn as they have operational launch tube/flight decks. See section 13 for using hangars and launch tubes combined into one system. Launching and recovery operations may both be performed by one ship in the same turn if desired, provided each hangar bay is only used by a single fighter group.

8.2 Launch tubes / flight deck

Launch tubes are connected to hangar bays and are used to launch and recover fighters. A single launch tube may serve multiple hangar bays. These are included in the game to allow players to design ships from certain TV shows whose fighter maintenance and re-arming areas are distinctly different than its launch areas. Note: if the ship applied thrust that turn it may not launch any fighters unless the tube/flight deck has been upgraded with catapults (see sect. 13)

8.3 “Scrambling” fighter groups:

If a fighter-carrying ship comes under attack from an enemy fighter group while it still has some or all of its own groups on board, it may attempt to hastily scramble one or more groups into flight in a desperate attempt to intercept the attackers. This is the only time that fighter launches may take place when they have not been pre-planned in the player’s movement orders for the turn, and it may be attempted ONLY when the opponent has just moved one or more fighter groups into position to attack the carrier itself.

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To attempt to scramble fighters, roll 1 die:

On a roll of 1, the hasty launch attempt causes a mishap in the launch tube – one complete fighter bay (and its occupying fighters) is out of action for the rest of the game, unless a Damage Control Party can repair the damage!

On a roll of 2 or 3, no groups may be launched this turn;

On a roll of 4, one group gets away but too late to intercept the attackers – the enemy group(s) may fire on the carrier BEFORE the scrambled group may attack them;

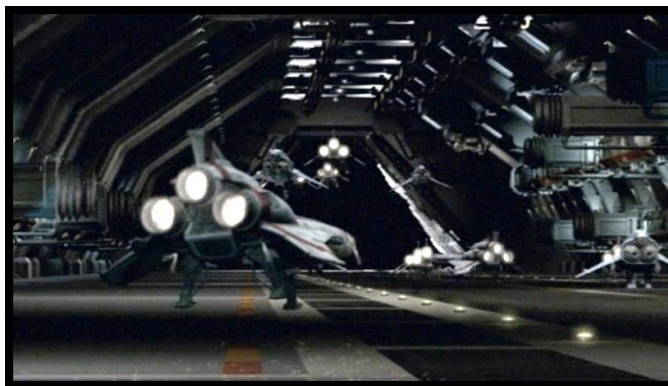
On a roll of 5, one group scrambles in time to intercept – it may engage an attacking group in a dogfight to prevent them firing on the carrier;

On a roll of 6, TWO groups manage to scramble in time to intercept the attackers.*

*Note that this is only possible for ships which have the ability to launch two or more groups in a turn – other ships that can launch only one group per turn under the normal rules can only “scramble” one group at a time. Also the ship may not ‘scramble’ any fighters if it applied thrust.

If a group is “scrambled” successfully in time to intercept, it may engage the enemy fighters in a dogfight immediately, thus preventing them from attacking the carrier in that turn. Should the group scramble just too late (a roll of 4); the attackers may press home their assault on the carrier, AFTER which the scrambled group may (in the same turn) immediately engage them in a dogfight, which is resolved as per normal rules, despite the fact that the attacking fighters have already “fired” once that turn.

If the scrambling fighters are in the process of rearming they launch with only half the fuel load and with none of their reloadable ordnance. For example a standard fighter group would launch with 3 CEF and a Long Range Fighter group would launch with 4 CEF.



8.4 Combat landings

Normally carriers may only recover fighters equal to the number of launching and landing facilities (the launch tubes or flight decks). Sometimes however a carrier may need to recover all of its fighters quickly, perhaps before making a jump for example. To do this a carrier may simply recover all of its fighters in one turn. However, these are not normal organized landings but a frantic recovery that ‘fouls’ the deck. The carrier may not launch any recovered fighters for the rest of the game. Any critical hit on hangar bays adds +1 to the rolls for collateral damage (see below) after the recovery. Ships that applied thrust may not conduct Combat Landings.

A ship that launches or recovers fighters cannot use an ADFC (section 7) in that turn.

8.5 Movement

Fighter group movement is performed after both players have written their ship movement orders, but before the ships are actually moved.

If using cinematic movement, a fighter group can move any distance up to the maximum allowed and in any direction, without needing to write orders or record course and velocity. A fighter group does have a facing, which need not be the same as the course or direction of movement. All fighter groups generally have a maximum move distance of 24 MU but there are exceptions depending on the fighter type or modifications.

Players alternate in moving one fighter group each until all have been moved (if desired), with the player who won initiative for this turn moving second.

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Once all ship movement has been made, players have the option of making a secondary move with any fighter groups they wish, of up to 12 MU. As with the basic move, this can be in any direction up to the maximum 12 MU, even if the group moved its full distance in the first Fighter Movement Phase. Any fighter group that makes this secondary move immediately expends 1 CEF.

The secondary move may be used to bring a group into range of a target that would otherwise have evaded it, or in some cases to get them out of trouble – but it may not be taken if the group has already been engaged in a dogfight by another group.

Whoever moved first in the main Fighter Movement Phase must also move first in the Secondary Move Phase.



Example: In figure 18 above one of player A's standard fighter groups is moved 20 MU in the first Fighter Movement Phase, being placed in a position that A hopes will allow it to intercept the enemy ship. Both players now move their ships in accordance with their orders. Player A sees that the fighter group is

now out of position to attack its intended target (having anticipated well and changed course), but by taking a secondary move with the group then it could either follow its original target or it could move to attack a different target. Player A has a free choice as to which option to take (if any), but if A chooses to move the fighter group then 1 turn worth of combat endurance for the group must be marked off.

8.6 Screens and pursuits

Screens

Fighter groups may be assigned as close escorts for larger ships, specifically to ward off enemy fighter attacks on that ship. When used in this role, the fighter group is said to be acting as a fighter screen for the ship it is escorting.

When assigned as a fighter screen, the fighter group must remain adjacent to the ship it is escorting at all times. If it is moved further away, then it has broken off from its escorting duties, and no longer functions in a screening role.

A fighter screen (which may be a single group or several) always moves at the same time as the ship it is screening, rather than being moved in the first Fighter Movement Phase. Screening fighters can exceed the normal fighter movement allowance if the ship they are screening is moving faster than the fighters could normally move.

Fighters may also screen other fighter groups, for example one or more Interceptors could screen a Torpedo Fighter group to protect them from enemy fighters. Fighter cannot screen fighters which are themselves screening.

Whenever a ship or group that is being escorted by a fighter screen comes under attack from enemy fighters, the attacking group(s) must engage the screening fighters using the dogfighting rules instead of attacking the ship or escorted fighters in that turn. Each group of screening fighters must be engaged by at least one attacking fighter group, but once this condition has been satisfied any further uncommitted attacking groups may fire on the escorted ship.

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Example: A NAC transport ship is being escorted by a screen of 3 groups of fighters. 4 groups of ESU fighters move to attack the transport – three of them must ‘pair off’ against the three groups of screening fighters and engage them in dogfights, while the fourth is then free to attack the ship directly.

The ESU player might prefer to instead allocate all four groups against the screening fighters (two onto one, and one each onto the other two) in an attempt to destroy as many as possible, leaving the transport without fighter cover for the rest of the game.

Pursuits

A fighter group that attacked an enemy ship or an enemy screening fighter group last turn can declare it is pursuing the ship. Like a screening group, the pursuing fighters move with the ship being pursued in the Ship Movement Phase even if the distance is greater than the fighter group normal move.



Ship fire against fighters

In the Ship Fire Phase, fighter groups that are not engaged (dog fighting other fighters or attacking a ship for example) can be fired at with ship to ship weapons.

As with ships, the fighter group must be in range and firing arc and each fighter group targeted requires a separate FireCon. Ship to ship weapons roll 1D6 only against fighter groups, regardless of range band or normal damage inflicted. A roll of 6 kills one fighter, no re-roll. (Fighters are very difficult to target with ship weapons, but any hit will be certain to destroy the fighter.)

After a player has announced fire against a fighter group but before actually rolling the dice, the fighter group can choose to evade the attack by spending a CEF. Choosing to evade automatically negates the

attack against the fighter group and any further ship weapon fire in that turn. Evading does not cancel any casualties already inflicted.



Example: A fighter group has moved within range for an attack on a battleship. The opposing player announces that a destroyer 9 MU away will fire two Beam-2 weapons against the group. The fighter group chooses not to evade. Each Beam-2 would normally roll 2D6 at this range, but against fighters it is always 1D6. The destroyer rolls 4 and 6, killing one fighter.

Later in the Ship Fire Phase, the opposing player announces that the battleship will fire ten of its beam weapons against the fighter group. This time the fighter group chooses to spend 1 CEF and evade. The ship weapons automatically miss (and cannot be fired against another target), but the group has been forced to expend a CEF.

Evades must be declared quickly: the fighter group player can ask ‘How many?’ but if they reach for a calculator or otherwise start mumbling and counting, it is too late! If a player announces ship fire against an already evading fighter group and hence would automatically miss, the player must be told and can switch targets. Point defense fire cannot be evaded.

8.7 Target selection

After fighter movement and secondary moves a

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fighter group may declare an attack against any ship, missile marker, or other fighter group within 6 MU and within its front 180° arc. All fighters in the group must engage the same target.

Fighters attacking other fighters are dogfighting; fighters declaring attacks against ships (or starbases, etc.) are making an attack run. Any fighters attacking or being attacked are engaged. Attacks are not resolved until after point defense fire (if any).



8.8 Point defense

Allocating point defense

Each Point Defense System (PDS), ADS, Scattergun, Grapeshot, etc. on a ship may fire once per turn, either as an anti-fighter or antimissile defense weapon. The defender allocates all point defense fire against missile and fighter attacks before resolving any.

Ships without ADFC systems may only target fighters (or missiles) attacking them directly. Ships with ADFC or AADFC (section 7) may provide area defense in support of one other ship per ADFC carried, dividing their point defense among ships as desired by the defending player. In either case, the fighter group targeted must not be engaged by other fighters.

Ships with ADFC may also target unengaged fighter groups within 6 MU. Each group targeted requires one ADFC.

Class 1 Beams may be allocated for point defense of the ship itself however if they do so they may not fire in the Ship Fire Phase. Beam-1s may not be used for area defense.



Example: Ship A is under attack by fighter group X which is 2 MU away. Fighter group Y could attack ship B but has chosen not to, and Z is too far away. Ship B is carrying PDS and an ADFC, while ship A has PDS only. Ship A can engage fighter group X with its own PDS. Ship B can also engage group X, as although the fighters are more than 6MU away, they are currently attacking a ship which is within ship B's protective ADFC range of 6 MU; or group Y because it is within 6 MU. Fighter group Z is safe from point defense fire.

Point defense fire

For each point defense weapon firing:

- A PDS rolls a D6 and kills one fighter on 4 or 5. A 6 kills two fighters and re-roll the die.
- A Beam-1 rolls a D6 and kills one fighter on 5 or 6, with a re-roll on 6.
- Grapeshot rolls four D6 with results as for PDS.

'Wasted' shots when point defense fire kills more fighters than are in the group may not be reallocated to other groups.

8.9 Fighter combat

Attack runs

For each group attacking a ship, roll 1D6 per remaining fighter in the group. Hits and damage are scored per die using the same procedure as Beam-1 weapon fire (section 4): Fighters that use beams are affected by screens, and re-roll for penetrating damage on a 6. Fighters that use cannon ignore Standard Screens, and do not re-roll on a die roll of 6.

If using the optional rear arc attack rule (section 4), fighters can attack ships from the rear arc, but like missiles gain no advantage from doing so as it is assumed that they must avoid being melted by the drive. If a fighter group making an attack run is engaged by other fighters, the fighters attacking the ship have the choice of either breaking off the attack and engaging in a dogfight, or continuing the attack. In the latter case, the ‘intercepting’ fighter group fires as if in a dogfight, and the survivors carry out the attack against the ship.



8.10 Dogfights

All fire between fighter groups in a dogfight is considered simultaneous. Roll 1D6 per fighter and inflict casualties as for Beam-1 fire against an unscreened target: 4 or 5 kills one fighter, 6 kills two fighters and re-roll.

If one player moves a group into base contact with an enemy group, and the opponent does not wish to engage in the dogfight, the enemy group may move away provided it has not already moved that turn. If it does not have a higher speed (maximum move) the attacking group gets a free round of attack rolls before contact is broken. Ships may not fire into a dogfight:

The fast action and sensor interference risks too many ‘friendly fire’ casualties.

Example: Player A moves a group of 5 fighters into contact with an enemy group of 4 fighters which has already taken its movement for that turn. As player B’s group cannot evade, it is forced to engage in a dogfight. Player A rolls 5 dice, scoring 2,2,6,4,1 and a re-roll of 3; therefore getting three kills. (One with the 4, two with the 6.) In retaliation, player B rolls 4 dice – combat in dogfights is simultaneous, so all four fighters get to engage even though three have been hit – and scores 3,1,5,5 for two kills. (One with each 5.) Both players now remove the lost fighters, leaving A with three and B with only one.

8.11 Multiple group dogfights

There will be cases, especially when fighters are screening larger ships, where multiple group dogfight situations (known to fighter pilots as ‘furballs’) may occur. In such combats, all groups engaged in the dogfight may fire only once per turn, but may choose to attack just one enemy group or to split their kills between two or more. If the player chooses to split fire, the dice are rolled as normal and the casualties then divided as equally as possible between the relevant groups.

8.12 Interception of missiles

A fighter group may attempt to intercept and engage any missile or salvo that is within 6 MU and front 180° arc of it at the end of either the fighter’s main or secondary movement.

Simply move the group up to the missile marker. See section 6 for the die rolls required. Attack or Torpedo Fighters cannot intercept missiles; neither can any fighter group that has exhausted its combat endurance.

8.13 Endurance

A group will use up 1 CEF each turn it engages in combat, whether attacking a ship, another fighter group, or missiles.

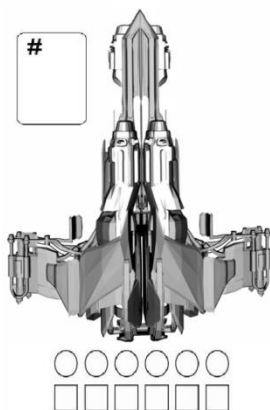
A fighter group also uses 1 CEF every time it makes a secondary move or evade. Normal movement during the first Fighter Movement Phase does not

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consume combat endurance factors.

When all combat endurance is exhausted, the group may still move normally (though it may make no secondary moves) but may not make any attacks. There is no time limit on a group returning to its carrier after exhausting its CEF. A group that is engaged in a dogfight by an enemy group after exhausting its CEF may return fire, but only scores one kill on rolls of 6.

We recommend recording the remaining combat endurance and the number of fighters left in each group with two small D6, in different colors, which may be placed either behind or on the stand of the fighter group they relate to. An alternative to this is to have a single fighter group roster sheet on a piece of paper, with each group having two rows of six boxes – one row represents the number of fighters left in the group, and the other the remaining CEF.



Example of a fighter diagram: Circles are used for tracking the number of fighters left in the squad and the squares are used for tracking how much endurance the squadron has used thus far.

8.14 Specialized types

Fighters are assumed to be good average, basic types – moderately fast, with reasonable anti-ship and anti-fighter capabilities; an all-round ‘multi-mission’ type of craft. The rules that follow modify fighters into rather more specialized or improved types.

All fighter groups, regardless of type, have the same

mass and hangar space requirements in the carrier or mother ship, and operate under all the normal rules for launching, recovery, and turn sequence.

Fighter types must be specified before the battle begins in one-off games. In a campaign the ability to change fighter types will depend on your chosen replenishment and re-equipment rules.

Some fighter ‘systems’ here are actually modifications applied to any fighter type. These will be listed as (+Mod). Heavy Fighter below is one such example.

8.15 Fighter types

Standard

As stated previously standard fighters have good capabilities in both anti-ship and point-defense fire modes. Against ships a full strength fighter wing (6 fighters) inflicts 6 BD* hits. Against other fighters or missiles, they inflict 6 BD* hits (equivalent of a Beam-1 against ships, and a PDS against fighters/ordnance). This combination makes the standard fighter the most balanced option for engaging a wide variety of different targets.

Standard fighters can be equipped with either beams or cannon. If equipped with beams they inflict BD* hits. If equipped with cannon they inflict BD hits (do not re-roll 6s), but ignore the effects of screens.

Standard fighters cost 3 points each, 18 per wing.

Heavy Modification (+mod)

The Heavy modification includes a variety of different possible modifications such as miniature screen generators, armored strengthening of the fighters frame, ECM, and stealth technology. All of these modifications produce the same net result: making the fighters harder to kill. Heavy Fighters are much more resistant to light point defense type weapons.

This technology slot offers the “Heavy” option which may be applied to other fighter types. Heavy Fighters attack and move in the same manner as conventional fighters.

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Point defense weapons, including other fighters, suffer a -1 DRM when engaging Heavy Fighters. Scatterpacks and Interceptor Pods do 1d3 hits, not 1d6.

Heavy anti-ship weapons used in defensive fire (beams, K-1) have only their normal -1 DRM, as while the minor strengthening of the heavy fighter might protect against the light fire of a PDS mount, it does little against a full strength anti-ship weapon.

The Heavy modification may be added to other fighter types at a cost of +3 per fighter (+18 per wing).

Fast (+mod)

The Fast modification is a supercharging of the already fast fighter engine system to push the fighters right to the theoretical speed limit of the drive technology. The base move of a Fast Fighter is increased from 24 MU to 36 MU. Fast Fighters may also may a secondary endurance move, but like normal fighters the range of this move is limited to 12 MU.

The Fast Fighter technology slot makes available both Fast standard fighters, and the “Fast” modification which may be added to other fighter types.

Fast standard fighters cost 4 each, 24 per wing.

The Fast modification may be added to other fighter types at a cost of +1 per fighter (+6 per wing).

Long Range (+ mod)

The Long Range modification gives fighters extra fuel-cells, allowing them to fly farther and stay in battle longer. The fighter has 9 points of combat endurance, not the normal 6. This modification can only be applied once; a fighter cannot have more than 9 endurance. The extra endurance is consumed as normal for fighters, by engaging in extra 12 MU secondary moves and firing weapons.

The Long Range Fighter technology makes available both Long Range standard fighters and the “Long Range” modification which may be added to other fighter types. Long Range standard fighters cost 4 each, 24 per wing.

The Long Range modification may be added to other fighter types at a cost of +1 per fighter (+6 per wing).

Interceptor

The Interceptor is a fighter that has traded off anti-ship firepower in order to maximize its killing ability against other fighters, missiles and other ordnance. It delivers BD* hits with a -2 DRM against ships, and BD* hits with a +1 DRM against fighters, missiles and ordnance.

Like the standard fighter, Interceptors can be armed with either cannon or beams. Cannon lose the reroll of beams, but ignore screens.

Interceptors are the same cost as standard fighters, at 3 per fighter, or 18 per wing.

Attack Fighter

Attack Fighters are the opposite of Interceptors; they have traded away their anti-fighter/missile abilities in order to maximize their anti-ship firepower. Attack Fighters generate BD* hits with a +1 DRM against ships, If firing on an unscreened target ship they would inflict one damage point with rolls of 3 or 4, and two damage points with 5 or 6. They have a -2 DRM against fighters, missiles and ordnance.

Like the standard fighter, Attack Fighters can be armed with either cannon or beams. Cannon lose the reroll of beams, but ignore screens.

Attack Fighters cost 4 points each, or 24 per wing.

Torpedo Fighter

Torpedo Fighters trade away most of their conventional beam (or cannon) firepower to mount a powerful 1-shot Pulse Torpedo Launcher. Torpedo Fighters can attack using their beam armament. They generate BD* hits with a -2 DRM against either ships or fighters. Firing these weak weapons still consumes a point of endurance.

The Pulse Torpedoes may also be launched for 1 point of endurance. These have a range 6 MU, like other fighter weapons. The Pulse Torpedoes hit on a 4+, and do damage equal to their die roll. So a roll of a “5” would both hit and inflict 5 points of damage. As these are Pulse Torpedoes, they ignore screens and inflict Semi-Armor Piercing damage.

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The Pulse Torpedoes may only be fired once, and they must all be fired on the same turn, and at the same target. The Torpedo Fighters secondary beam weapons cannot be fired the same turn as the Pulse Torpedoes are launched.

Torpedo Fighters cost 6 points each, 36 per wing.



Heavy Carrier battle group.
Models By Ravenstar Studios
and Federation Models

Graser Fighter

Graser Fighters are a specialized ship-killing version that mounts short ranged Graser mounts onto the small fighter frame. While they are quite capable of eviscerating a ship, they have very limited abilities when engaging other fighters or ordnance. A full strength wing delivers 6 BD* hits with the Graser against ships, with each hit inflicting 1d3 damage, semi-AP. Against other fighters or ordnance, the fighters are limited to secondary cannon that inflict only BD* hits with a -2 DRM.

Firing the Graser is very energy intensive, and drains 2 points of combat endurance.

Graser Fighters cost 7 points each, 42 per wing.

Plasma Fighter

Plasma Fighters are extremely dangerous fighters that mount a miniaturized Plasma Cannon and are optimized for ship killing. The Plasma Cannon can be fired like other fighter weapons, except against ships they inflict plasma dice for damage; that is they inflict 1d6-2 - screens/DRM hits with rerolls on a 6. A full strength wing of Plasma Fighters can inflict enough damage to cripple a cruiser in a single volley.

Plasma Fighters have very limited abilities against other fighters or missiles, as the Plasma Cannon do not target such nimble targets easily. If used against other fighters the Plasma Cannon inflict BD* hits with a -2 DRM.

Firing the Plasma Cannon is very energy intensive, and thus consumes 2 points of combat endurance.

Plasma Fighters cost 7 points each, 42 per wing.

MKP Fighter

MKP (Multiple Kinetic Penetrator) Fighters carry one-shot kinetic attack packages that are very effective against enemy ships. Like the Torpedo Fighter, the MKPs may only be fired once, must all be fired on the same turn, and all must target the same enemy ship. They have a range of 6 MU, and inflict damage just like a ship-mounted MKP (1 hit on 4+, 2 hits on a 6, and each hit inflicts 4 points of AP damage).

The MKP fighter carries a small secondary beam (or cannon) armament that gives it limited anti-ship and anti-fighter capabilities. Against either ships or fighters/ordnance it generates BD* hits with a -2 DRM. These fighters cannot fire their secondary weapons and the MKPs in the same turn.

MKP Fighters cost 6 points each, 36 per wing.

Missile Fighters

Missile Fighters are specialized anti-ship attack craft that have been configured to carry a one-shot standard missile into combat. By combining the seeker head of the missile with the fighters own sensors, the engineers have managed to extend the normal fire control range of the fighter from 6 MU to 12 MU. The missile fighter must approach within 12 MU of

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an enemy ship before it can provide enough tracking data to safely launch its missiles. It also must not be engaged by other fighters at time of launch.

These missiles are launched during the Ordnance Launch Phase (phase 3). The six (if squadron is at full strength) missiles do not all have to be launched in the same direction, a spread can be used to increase the chance of a successful intercept. Launching the missiles consumes one Combat Endurance Factor (CEF).

Missile Fighter squadrons carry a single Salvo Missile salvo (similar to the ship mounted salvo missile system), so a full group of six fighters would launch 6 missiles, minus any destroyed fighters. To determine how many missiles lock on to the target ship roll a D6 and subtract 1 for each fighter that was destroyed prior to launch.

Missile Fighters do have a limited beam (or cannon) armament for anti-ship or anti-fighter fire. These weapons generate a BD* hits with a -2 DRM against either ships or fighters/ordnance. These weapons are limited to a 6 MU range.

Missile Fighters cost 4 points each, 24 per wing.

Multi-Role Fighters

Multi-Role Fighters (MRF) are an evolutionary improvement over many of the more specialized fighter types. The MRF is based around a central weapon bay to which a wide variety of attack payloads can be fitted. By changing this weapon load the fighter can launch and fight as a standard fighter, Interceptor, or Attack Fighter. When Multi-Role Fighters are being refueled and rearmed in a hangar bay, they may be reconfigured for another mission. This takes place simultaneously with the refueling. Multi-Role Fighters may also be rearmed in either cannon or beam-attack mode, as both type of weapons pods are available.

As an option if all players agree you may choose three fighter types a Multi-Role Fighter could be configured as. For example if a Heavy Shuttle type fighter, from a popular TV series, is often seen carrying troops or heavy ordnance you can make it

Multi-Role Attack, Missile, or Assault Shuttle. Multi-Role Fighters cost 5 each, or 30 per wing.

Light Fighter

Each group of Light Fighters consists of 8 fighters instead of the normal 6. Light Fighters move and attack just like normal fighters, so a full strength group of Light Fighters can roll 8 attack dice. A group of 8 Light Fighters costs the same as a group of 6 regular fighters. The disadvantage of Light Fighters is that they are easy to kill and they only have 4 turns of endurance. Any attack at a group of Light Fighters gets a +1 bonus so normal fighters attack Light Fighters like Interceptors attack normal fighters (1-2, no kills; 3-4, 1 kill; 5, 2 kills; 6, 2 kills and a re-roll). Interceptors are very deadly against Light Fighters. PDS systems, Class 1 Beam Batteries, Class 1 K-Guns, Spicules, and Pulsers in Point Defense Mode all get the +1 modifier. Scatterguns and Interceptor Pods kill d6+1 Light Fighters.

Light Fighters may have Fast, Interceptor, or Attack modifications. Heavy, Torpedo, and Long Range options are not available for Light Fighters. Light Fighters may also be bought as Missile Fighters. Light Missile Fighters cannot mount a regular missile and must mount a light missile instead. The light missile is more easily destroyed, and so all PDS or fighter attacks against light missiles are at +1 to the die roll.

Light Fighters cost the same as other fighter types. 18 for standard, 24 for attack, etc.

FTL Fighters (+mod)

With advanced miniaturization, a FTL Drive unit can be (just barely) crammed into a fighter. This allows the fighter to enter and leave FTL like a ship.

FTL Fighters may begin the game deployed within 6 MU of their carrier instead of having to be launched if the player wishes. However, 1 point of endurance will be checked off to represent the fuel used in getting to the battle area.

FTL Fighters cost an additional +1 point per fighter

Assault Shuttles

Assault Shuttles are one-use attack craft designed to

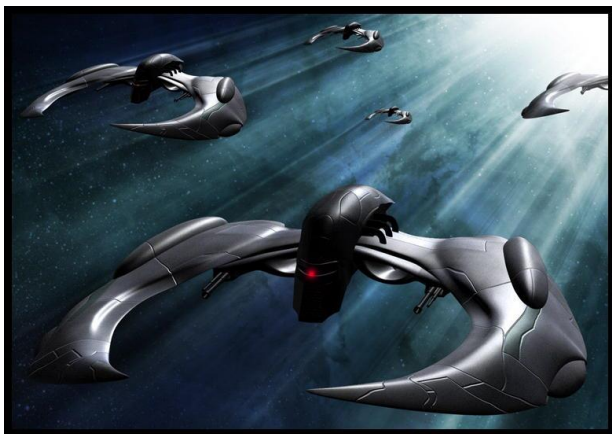
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deliver Marines and Boarding Parties onto enemy ships. These craft also mount secondary weapons that have a -2 DRM to hit fighters. They may dock or breach enemy hulls in the same manner as fighters attacking ships but must be in contact with the models post (or as close as possible if the model does not make this practical).



Standard Screens will not stop this attack but Advanced Screens will. The shuttles are fired upon by PDS as normal with the survivors may attempt to 'land' one Boarding Party (DCP) or Marine by rolling a 3+. (Marines get a +1 DRM). Failed rolls results in a casualty either from automated defenses, bad timing or some other mishap. The Boarding action is then resolved in accordance with the Boarding Enemy Ships rules in section 12.

Assault Shuttles cost 6 points per wing. Marines or DCPs must be purchased separately or loaded from the ship's crew.



Robot Fighters (+mod)

Robot Fighters remove the cockpit and pilot of a normal fighter, replacing it with a computer control system. This reduces the cost and complexity of the fighter, but at a cost of some combat abilities. Robot Fighters is a modification that can be applied to any other fighter type. Purchasing the Robot Fighters technology comes with standard Robot Fighters. Robot Fighters cost 1 less per fighter (6 less per wing) than normal piloted fighters.

Because computer control systems are not as creative and adaptable as a living pilot, they take their secondary (endurance-burning) move at the end of the end of phase 4 after all fighters and missiles have made their moves. This means that Robot Fighters cannot react to ship movement; they must complete their move before any ships move. Also, Robot Fighters can make some stupid decisions. If they are flying in escort of a ship that runs into a planet or hyper wall, the robots will blindly follow the ship to their destruction, whereas crewed fighters would have the option of using their reserve move after ships move to escape the collision.

Standard Robot Fighters cost 2 each, 12 per wing. The Robot Fighters modification cost -1 per fighter, -6 per wing.



8.16 Re-arming

When a fighter group is recovered by its carrier, roll 1 D6.

On a score of 1, the group may not be re-launched in this game (severe damage to returning fighters, crew fatigue, etc.). On 2-5 the group will be patched up, refueled, and rearmed after 1 full turn, so it may

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launch in the second turn after recovery. On a 6, the group makes a crash turnaround and may launch on the turn immediately following that of recovery.

If depleted groups are combined to make full strength groups, roll for each partial group and the worst case result applies to the entire new group.



8.17 Fighter morale (optional)

The rules for fighter morale are not used. Historically fighter squadrons have carried through with their missions despite sustaining horrendous casualties. However players that wish to play with fighter morale we recommend the following rules.

A fighter group is a collection of individual pilots and their craft, and as such is much less predictable in its actions than a single ship with a captain and crew. If there are only two fighters left out of a group of six, it is by no means certain that they will press home an attack on a battleship that is spitting flak at them – they may well decide that it is a lot safer somewhere else!

Any fighter group that has lost one or more members must roll a D6 before making an attack. If the roll is less than or equal to the number of fighters remaining in the group, the attack is carried out; if greater than the number of remaining fighters, they abort this attack and do not fire.

Any group that fails an attack roll is not considered to have expended combat endurance for that turn, as they never went through with the attack.

Kra'Vak fighters (Fleet Book 2) have their own

Ro'Kah morale rules. Robot Fighters are always immune to the morale rules.

Note: These rules will make fighters much less effective so players should use them with caution.

8.18 Fighter pilot quality: Aces and Turkeys (optional)

While most fighter groups are classed as “average” in pilot performance, you do get the occasional outstanding pilot (the Ace); at the other end of the scale you can have the really raw, inexperienced or just plain bad pilots – the Turkeys.

An Ace is an individual – the crack pilot attached to an otherwise average group. Turkeys, on the other hand, tend to come in flocks; the whole GROUP may be classed as a Turkey group due to low experience, poor training or a multitude of other factors.



If you wish to allow Aces to be “bought” with points, then by all means do so; we would recommend, however, that a random roll is made for each fighter group in a fleet at the start of the game or campaign: if a 6 is rolled, the group contains an Ace; a roll of 1 indicates the group is a Turkey group. Rolls of 2 – 5 give normal, average groups.

If an Ace pilot is present in a fighter group, the group gets ONE EXTRA DIE during all normal attacks – so

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a full strength group of six fighters including an Ace would roll SEVEN dice instead of the usual 6

The Ace pilot himself also has the ability to make one SPECIFIC SYSTEM ATTACK per turn if desired: When the group attacks a ship, while the other members of the group attack as normal for fighters with one die each, the Ace may choose to attack as a Needle Beam instead of his normal attack – in this case he may choose to target ONE SPECIFIC SYSTEM on the ship being attacked, rolling just ONE die and treating the attack as a Needle Beam shot. Note that in this case the rest of the group does NOT get the “extra” die that the Ace would normally contribute towards the attack – for example, a group with five fighters including an Ace could choose to either attack normally with SIX dice, or to have the four average pilots attack normally (4 dice) while the Ace attacks a specific system with just ONE die roll.

This option also extends to dogfighting between fighter groups – an Ace may either add an extra die to the group’s overall attack, OR may choose to specifically target an opposing Ace if there is one present in the other group – in this case he rolls just one die as normal.

SPECIAL NOTE: For simplicity, it is assumed that in normal losses the ACE in a group will always be the LAST fighter left surviving – after all, he/she is supposed to be the best, and getting the hero killed in the first dogfight is not good Space Opera!! The only case in which an Ace may be killed before other members of the group is if he is specifically targeted by an opposing Ace in an enemy group, in the best movie traditions (Lukewarm Jaywalker ignores the rest of the Imperial fighters, and goes straight for the ship of his arch-enemy, Duck Wader.....).

Turkey groups attack target ships as normal (such attacks are largely computerized anyway), but when they are engaged in a dogfight with other fighters or try to intercept missiles, PPTs etc., they modify their attack rolls with a -1 DRM from every die roll they make.



9 Flight Operations - Gunboats

Monsoon Class Gunboat

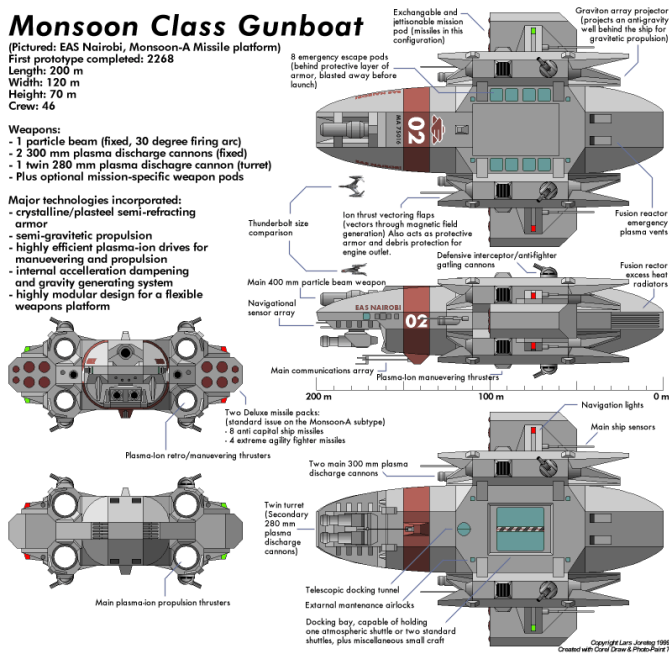
(Picture: EAS Nairobi, Monsoon-A Missile platform)
 First prototype completed: 2268
 Length: 200 m
 Width: 120 m
 Height: 70 m
 Crew: 46

Weapons:

- 1 particle beam (fixed, 30 degree firing arc)
- 2 300 mm plasma discharge cannons (fixed)
- 1 twin 280 mm plasma discharge cannon (turret)
- Plus optional mission-specific weapon pods

Major technologies incorporated:

- crystalline/plasteel semi-refracting armor
- semi-gravitetic propulsion
- highly efficient plasma-ion drives for maneuvering and propulsion
- internal acceleration dampening and gravity generating system
- highly modular design for a flexible weapons platform



9.1 Gunboat Rules

Gunboats are an interesting military unit. In design and tactical use, they straddle the line between a very small ship, and a very large fighter. Gunboats are carried on hull mounted racks, and are launched at the same time as other ordnance/fighters. They operate in squadrons of six, like fighters.

Gunboats have a speed of 18 MU, and move like fighters. They can fly in escort of a ship like fighters. Gunboats have six points of combat endurance. This endurance is used to make attacks on enemy ships, fighters or ordnance. It can also be used to make a secondary move of 9 MU during the Fighter Secondary Movement Phase.

The larger size of gunboats means that they are engaged by anti-ship weaponry more easily than fighters. They may be engaged in the Point Defense Phase by any ship weapons or PDS in range. Direct Fire Anti-ship weapons may fire at gunboats normally, with each HIT destroying ONE gunboat. In the case of weapons that do multiple points of damage (Grasers or Pulse Torps for example) do not roll

damage. Gunboats are well armored against lighter PDS type weapons. PDS weapons engage gunboats like Plasma Bolts only scoring one hit on a 6.

Scatterguns/Interceptor Pods cause 1 BD* of hits. To determine which gunboat(s) in a squadron are destroyed the owning player should roll randomly. Gunboats then make their attacks in the Fighter Attack Phase (phase 10). Gunboats may also be attacked in The Ship's Fire Phase using the same rules as for fighters (See page 69)

Gunboats mount slightly larger and more powerful fire control systems than those on fighters, allowing them to engage targets up to 12 MU away. The entire gunboat squadron must all target the same enemy ship. If the gunboat squadron is engaging enemy fighters or ordnance, it may split its fire among eligible targets within range, just like fighters. Gunboat armaments vary widely. The weapons in use on ships by the building empire may be modified to fit onto gunboat hulls. See the gunboat system description for options and costs.

FTL Gunboats can enter the table using their FTL like ships. This does not consume a point of endurance. Like a ship the FTL Gunboat enters with a speed between 1 and 10, and makes a half-move straight ahead. The FTL Gunboat can then use a point of endurance to make a second move of 9 MU in any direction. FTL Gunboats are very vulnerable to distortion effects on their miniaturized drive systems, if they jump or arrive within 6 MU of a "massive object", they are automatically destroyed.

Gunboats may only be armed with weapons and other technology your fleet uses. For example if your fleet does not employ Grasers than you may not use Graser gunboats.

Note: You are not required to make all the gunboats in a squadron the same. You may mix and match types and weapons as you wish as long as all the gunboats use technology your fleet or empire possesses. i.e., a UNSC Gunboat could not mount a K-Gun.

Gunboat Racks are 18 mass for a squadron of 6 gunboats. The cost of the rack is included in the

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gunboat cost.

Gunboats cannot be refueled or rearmed in combat using their carrying rack, which limits the utility of some ordnance-carrying models. Gunboat-carrying ships with a boat bay of sufficient size to recover the whole squadron may use that boat bay to retrieve and rearm gunboats during combat. All gunboats expend 1 combat endurance point to fire their main weapon. All gunboats have 6 points of combat endurance. The cost of the gunboat depends on the type of weapons carried. Bays are 24 mass and cost 0 points

9.2 Gunboat Types

FTL Gunboats (+mod)

With advanced miniaturization, a FTL Drive unit can be (just barely) crammed into a gunboat hull. This allows the gunboat to enter and leave FTL like a ship, and make interstellar moves on its own. FTL Gunboats cannot be carried in racks. They count as being mass 4 for purposes of docking in boat bays.

It does not consume an endurance point to enter a battle from hyperspace. Unlike FTL fighters, FTL Gunboats do not need a carrying vessel.

FTL Gunboats can only mount normal FTL drives. More advanced FTL drives cannot be crammed into the tiny hull.

Gunboat FTL drives generate very weak “distortion waves” when the gunboat enters or leaves hyperspace; it is insufficient to damage any nearby units. The gunboats themselves are very vulnerable to distortion, however. If there is a ship, planet, asteroid or other object sufficient to cause distortion where the Gunboat engages its FTL, the gunboat is destroyed.

The maneuverability of gunboats means that they may elect to move in any direction while charging their FTL Drive, up to the normal maximum of 18 MU/turn. The next turn they make a half-move in that direction, and disappear into FTL-space.



The FTL Gunboat modification can be applied to any gunboat type, at a cost of +6 points for the squadron.

Heavy or Screened Gunboat (+mod)

Some gunboats are equipped with either screens or carry heavily reinforced hulls. All weapons fire against the gunboat has a -1 DRM

Heavy or Screened Gunboats cost +12 points for the squadron.

Beam Gunboat

Beam Gunboats carry 2 class-1 beams. These have a range of 12 MU, and both must be fired at the same target due to limited fire control.

Beam Gunboats cost 3 per mass (9 points each). These have a range of 12 MU, and both must be fired at the same target.

Plasma Gun Gunboat

Plasma gunboats carry 1 Plasma-1 with a range of 12 MU.

Plasma Gunboats cost 3 per mass (9 points each).

Graser Gunboat

Graser Gunboats carry 1 Graser-1 with a range of 12 MU.

Graser Gunboats cost 3 per mass (9 points each).

Gatling Gunboat

Gatling Gunboats carry a weapon that can generate 6 BD* against a single target within 6 MU, or 2BD* at 12 MU. Alternatively they can be fired once as an PDS at a target within 6 MU. The Gatling battery is fixed forward and may only fire in the forward 30 degree arc.

Gatling Gunboats cost 5 per mass (15 points each)

Needle Gunboat

Needle Gunboats carry a single Needle Beam. This weapon has a range of 12 MU.

Needle Gunboats cost 3 per mass (9 points).

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Pulse Torpedo Gunboat

Pulse Torpedo Gunboats carry a single short range Pulse Torpedo Launcher. The fire control of the gunboat limits the engagement range to 12 MU. The Pulse Torpedo will hit on a 2+ out to 4 MU, a 3+ out to 8 MU, and a 4+ out to 12 MU.

Pulse Torpedo Gunboats cost 4 per mass (12 points each).

Submunition Gunboat

Submunition Gunboats carry two 1-shot submunitions. These may either be fired singly (one per turn), or both may be fired simultaneously against the same target.

The submunitions each generate 3 BD* to 6 MU, or 2 BD* to 12 MU. Fire control limitations prevent them from being used beyond 12 MU. Once the submunitions are used up, the gunboat has no other weapons. Submunition attacks ignore screens.

Submunition Gunboats cost 4 per mass (12 points each).

MKP Gunboat

MKP Gunboats carry two 1-shot MKP packs. These may either be fired singly (one per turn), or both may be fired simultaneously against the same target. They each hit once on a 4+, and hit twice on a 6. Each hit delivers four points of AP damage.

MKP Gunboats cost 5 per mass (15 points each).

K-Gun Gunboat

The K-Gun Gunboat carries one short-range K-2 gun. The range of the weapon is limited to 12 MU by the fire control of the gunboat. The K-Gun will hit on a 2+ to 4 MU, a 3+ to 8 MU, and a 4+ to 12 MU. Like a normal K-Gun, the damage from a K-2 doubles on a subsequent roll of 1 or 2, and is Armor Piercing.

K-Gun Gunboats cost 4 per mass (12 points each).

Missile Gunboat

Missile Gunboats carry a single missile salvo of 4 missiles (not 6). Due to fire control limitations, these missiles can only be launched when an enemy ship has come within 12 MU. The missiles are launched

during the Ordnance Launch Phase. It also must not be engaged by other fighters/gunboats at time of launch. The ship may launch none, some or all of its missiles for a single point of combat endurance. Like Missile Fighters, these missiles do not all have to be launched in the same direction.

Missile Gunboats cost 4 per mass (12 points each).

Rocket Gunboat

Rocket Gunboats carry 4 rockets. Due to fire control limitations, these rockets can only be launched when an enemy ship has come within 12 MU. The rockets are launched during the Ordnance Launch Phase, and their chance of hitting depends on the range at the moment of launch. They hit on a 2+ to 6 MU, and a 3+ to 12 MU. The ship may launch none, some or all of its rockets for a single point of combat endurance. All the rockets must be launched at the same target. It also must not be engaged by other fighters/gunboats at time of launch. Rockets can be used to target other gunboats, with the normal -1 DRM firing modifier.

Rocket Gunboats cost 4 per mass (12 points each).

Point Defense Gunboat

The Point Defense Gunboat carries two PDS systems. The range of these weapons is limited to 6 MU. The small built-in fire controls of the PDS do allow them to be fired at different targets. The Point Defense Gunboat counts as having ADFC, and may fire in support of allied ships in units with 6 MU.

PDS Gunboats cost 3 per mass (9 points each).



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Area Defense System Gunboat (ADS)

The Area Defense Gunboat mounts a single Area Defense Array. This can generate 1 die of PDS fire out to 12 MU, or 2 dice of PDS fire out to 6 MU. The Area Defense Gunboat counts as having ADFC and may fire in support of friendly units within 6 MU.

Area Defense Gunboats cost 4 per mass (12 points each)

Electronic Warfare Gunboat (+mod)

Some gunboat designs mount very powerful stealth or active jamming technology. Every level of ECM reduces the lock-on range by 1 MU, for missiles and fighters.

ECM Gunboats cost +3 points each per level of ECM (3 levels max) for the entire squadron.

Scatterpack Gunboat

Scatterpack Gunboats carry two 1-shot Scatterpacks. These may be fired either individually, or both on the same turn. Because they have their own guidance systems, they can be individually targeted even if fired simultaneously.

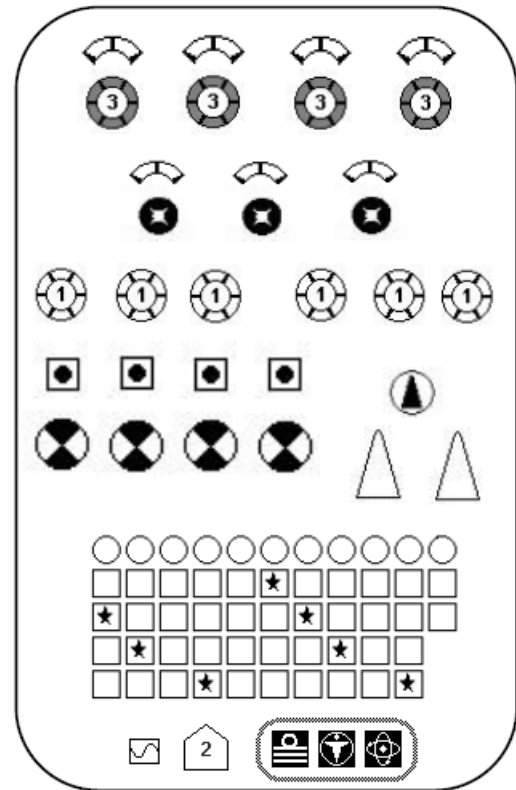
Scatterpacks count as having in-built ADFC.

Scatterpack Gunboats cost 5 per mass (15 points each)

Plasma Bomber Gunboat

The Plasma Bomber Gunboat carries two 1-shot size 1 Plasma Bombs (PBLs). These function exactly as ship-mounted Plasma Bolts. However these are dropped during the Ordnance Launch Phase. Note that they are not launched, they are dropped in the current location of the gunboat, which then must move away to escape destruction when they explode. One or both plasma bombs can be dropped in a single turn. If the Gunboat is engaged by other fighters/gunboats it may still drop its bombs but obviously may not move away.

Plasma Bombers cost 5 per mass (15 points each)



Earth Alliance Omega Class Destroyer from Babylon 5

10 Threshold Points

10.1 Damage to systems

The first threshold damage inflicted on a main drive halves the thrust rating of any drive rated above 1. Drives with thrust rating 1, or any drive that has already suffered threshold damage, are reduced to zero.

Each screen generator on a ship is considered a separate system when checking for system damage at threshold points, and may be knocked out individually either by threshold damage or Needle Beams. If a ship with screen level-2 has to make a threshold damage check and loses one of its screen systems, it drops to level-1 screen.

Ships carrying fighter groups have their hangar bays rolled for like any other system. When a hangar bay is knocked out any fighters still inside that bay are lost, and the hangar bay can no longer service fighters that are in flight. For example, if a fleet carrier has launched its full fighter complement and then loses two of its six hangar bays in a threshold point check, then if all six groups make it back, two of the groups will not be able to land! (However, the individual fighters may take spaces in other hangar bays available due to losses in other groups – basically the loss of a hangar bay simply reduces the carrier's capacity by six individual fighters.)

If the player is using the rules for launch tube/flight deck systems then a damaged launch tube/flight deck will not be able to launch or recover fighters. Hangar bays however can still re-arm or re-fuel fighters. However the ship may not launch, or recover, any fighters unless the ship has an operational launch tube/flight deck.

Weapons carried in a magazine, such as Salvo Missiles and mines, roll only once for the magazine rather than each load. All missiles and mines in a magazine are permanently destroyed when knocked out and cannot be repaired.

Heavy Missiles and Salvo Missile Racks roll once per launcher. If destroyed, this is permanent and cannot

be repaired

10.2 Critical hits on hangar bays (optional)

When a hangar bay takes a critical hit the fuel and ordnance stored there can explode, causing collateral damage. The situation can become even more dangerous if the hangar bay has loaded fighters present.

Threshold checks for hangar bays should be conducted before any other systems are rolled for. If an empty hangar bay suffers a critical hit due to a threshold check, roll a die. On a roll of 1-2 secondary explosions occur. This roll is modified by +1 for every row of hull boxes destroyed that turn (the same way normal threshold checks work). If an explosion occurs the ship takes an additional 1D3 points of damage. If this causes another row of boxes to be destroyed, adjust the threshold rolls for the remaining systems accordingly, but do not roll for the hangar bays again. If the hangar bay contains fighters that can carry ordnance (missiles and so on) or Pulse Torpedoes damage is doubled (the ready racks with the ordnance explode).

Note: ships using this rule will have the cost of their hangar bays reduced. See section 13.

10.3 Core Systems

Core Systems are optional but recommended. While weapons, fire control sensors, and screen emitters are all surface features and thus are very vulnerable to incoming fire, there are certain vital systems that are usually buried deep within the ship's hull. These are the Core Systems and consist of the Command Bridge (which also includes computer systems, electronics, etc.), the Power Core, and the Life Support system.

These three systems are grouped together on the ship system status display, with a box drawn around them.

Whenever the ship reaches a threshold point, the systems within the core box are each rolled for but subtract 1 from the die roll – thus at the first threshold point, where systems are lost on rolls of 6 only, the Core Systems do not need to be rolled for as the minimum score will be 7. At the second threshold

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point, where normal systems go down on rolls of 5 or 6, the Core Systems are only hit on rolls of 6, and so on for subsequent threshold points.

The Core Systems do not need to have mass allocated to them during ship design; they are assumed to be part of the essential structure of all ships.



Illustration 5: Bridge, Life Support, and Power Core

If using Needle Beams, the Core Systems may not be targeted by these weapons. Needle Beams may only fire at surface features on the ship such as weapons, sensors, or drives.

If you do not wish to use the Core System rules, simply ignore the systems within the Core box on the ship SSDs.

Command Bridge

If the Command Bridge takes a hit, then make a further D6 roll immediately. If the roll is 1 to 5, then the ship is 'out of control' for that number of turns, including the remainder of the current one, until command can be restored through backup links and secondary command systems. If the roll is a 6, then the ship is permanently out of control for the duration of the game.

While a ship is out of control it will continue on its present course and velocity, and may not fire weapons, launch fighters, or take any other offensive action. Passive defenses (screens, armor) are still operational, though active defenses (PDS) are not. Once control is regained after the number of turns indicated by the die roll or a successful repair roll, all undamaged systems comes back on line.

Damage Control Parties may be used on any turn to try and restore control, using the rules below.

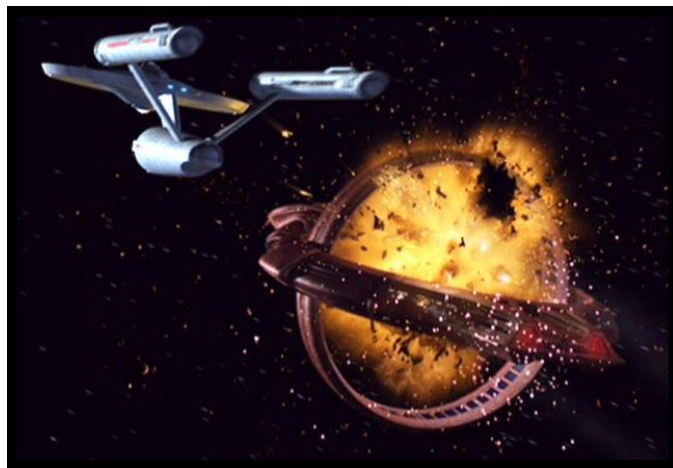
Life Support hit

If the Life Support systems take a hit, then a further D6 roll is made immediately. The number rolled indicates that the Life Support will fail after that number of turns.

Damage Control Parties may be allocated to try and repair the Life Support system as for any other system. If Life Support fails before being repaired, then the crew must immediately abandon ship or be killed. A ship without Life Support becomes a drifting hulk, though it may of course be recovered and repaired after the battle if it survives.

Power Core hit

If the Power Core takes a hit, it is damaged and may 'go critical' and explode. It continues to supply power for the ship, but the safety systems that control it are damaged or destroyed. At the end of each turn the player must roll a D6: on a 5 or 6, the Power Core explodes and destroys the ship.



Reactor Breaches (optional)

When a ship is destroyed as a result of a critical hit to its reactor the Power Core overloads in a spectacular fashion. Every ship, fighter/gunboat squadron and ordnance, in a 3 MU radius, will suffer 1D6 damage for every 25 mass of the exploding ship. This damage is considered Semi-Armor Piercing and ignores Standard Screens. Advanced Screens will provide protection as outlined in section 7.

For example: A battleship of 130 mass is destroyed after its Reactor Core breaches. The player rolls

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5D6 for every ship (friendly or enemy) within 3 MU and applies that damage (the total on each die) to each ship. Half of the damage would be applied to armor; the other half to the hull ignoring screens if any.

Damage Control Parties may be used as normal to try and stabilize the Power Core – such attempts are made before the roll for explosion for that turn, and success will bring the Power Core back under control and negate any further effects (Unless the Power Core is then damaged again, when the process will repeat all over).

Each turn, before rolling the die, the player may make a choice: ‘dump the Power Core’ or abandon ship.

Dumping the Power Core avoids the risk of explosion, but leaves the ship without power for anything but Emergency Life Support. The ship is intact, but unable to do anything further in this battle except continue to drift on its present vector.

If the player chooses to abandon ship, the ship continues to drift while still rolling each turn to see if the Power Core explodes– in this case, however, the die roll needed number for an explosion drops by 1 each turn as the Power Core is running out of control with no one to damp it down, thus it will explode eventually and the ship will be lost. A ship that dumps the Power Core will be of no further use for that battle, but may be salvaged afterwards and its Power Core replaced.

10.4 Damage Control Parties



The number of Damage Control Parties (DCP) a ship has is proportional to its crew size, which is in turn a function of ship mass.

This assumes that a certain percentage of the crew is allocated to form Damage Control Parties during combat. Military ships have one crew factor (CF) for every 20 mass or part thereof, and one DCP per crew factor. Thus a mass 1-20 ship has one CF and hence 1 DCP, a mass 21-40 ship 2 CFs and 2 DCPs, a mass 81-100 ship 5 CFs and 5 DCPs, and so on.

For merchant and civilian vessels, which usually have

much smaller crews than warships there will be one CF per 50 mass (or part thereof) of ship size. How many crewmen a single CF represents is entirely up to the kind of background you are using, but in the GZG setting assume that one CF represents about 20 personnel.

A single DCP might therefore be four or five crew, and usually includes medical personnel to assist crew casualties as well as engineers to patch up equipment. For ships with multiple DCPs, more than one may be allocated to a single repair job at one time. A system can be brought back online by rolling a D6 result less than or equal to the number of DCPs assigned. The maximum number of DCPs on a single job is three, so the highest chance of repairing a system is 50% (1-3 on a D6) if three DCPs are allocated to it. Note that all DCPs put on one system in a single turn make just the one roll.

Example: A mass 90 ship, with 5 CF and thus 5 DCPs available, is trying to repair systems lost at a threshold point. The player decides to combine 3 DCPs (the maximum allowed on one job) to try and get a FireCon back online, and use the other two to attempt to fix a damaged weapon system.

The FireCon will be fixed if the player can roll 1-3, and the weapon on 1 or 2.



10.5 Crew casualties

For simplicity, assume that crew casualties are proportional to the amount of hull damage suffered by the ship.

As damage is taken and crew casualties are suffered, CFs are lost, and the available DCPs are reduced accordingly.

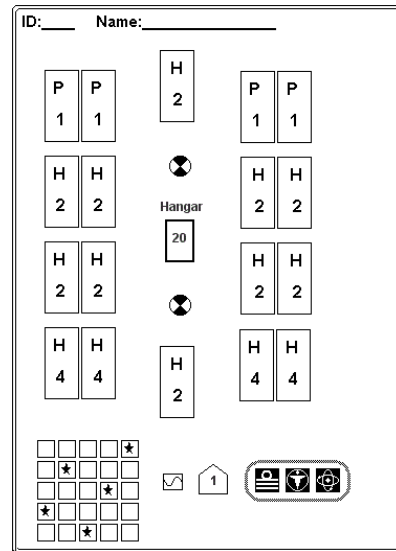
To record this on the ship SSD, dots or stars are placed in certain boxes on the damage track to denote the points at which crew factors are lost; a ship's current CF (and thus its current number of DCPs) is the number of dots still remaining in non-destroyed boxes on the damage track.

All the designs given in the Fleet Books already have the CF marked in their damage tracks, but if you are designing a new ship type from scratch then you will need to distribute the CFs correctly through the damage track. To do this, divide the number of hull boxes the ship has by the number of crew factors. Round the result up if it is not a whole number, then count along the damage track until you reach the number and place the first dot there. Count the same number again and place the second dot, and so on. When you reach the end of the damage track, put the last dot in the last box – assume that the last of the crew will be killed when the ship is finally destroyed, if they haven't abandoned ship by then.

Example: The mass 90 ship above, with 5 CFs, has an average hull integrity and thus has 27 hull boxes (30% of 90), arranged as 7/7/7/6. Dividing 27 by 5 gives us 5.4, which is rounded up to 6. The first CF dot will be placed in the sixth box of the damage track, the second in the twelfth (i.e. the fifth box of the second row), the third dot in the 18th box, the fourth in the 24th box, the fifth and final dot is placed in the last box on the damage track (the 27th). Each time the ship takes six points of cumulative damage, it will lose another CF and thus another DCP.

10.6 Cargo and passenger space

The holds and passenger space are arranged on the ship SSD as a row of boxes, containing an H, P or T identifier as appropriate and a number that represents the actual capacity of the space.



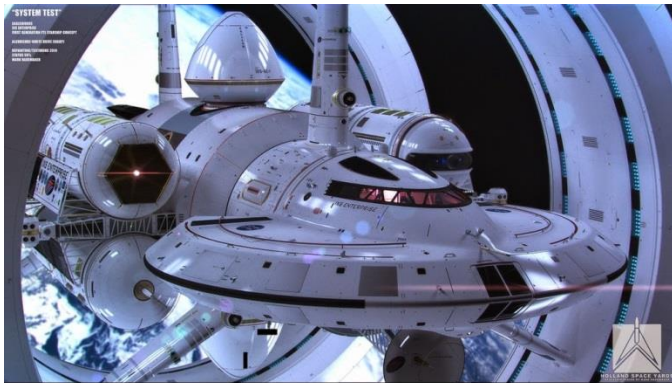
Example SSD of a repair ship with a lot of cargo

Holds and passenger areas are lost by threshold checks like any other system. When a hold or passenger space box is crossed off, any cargo stored in it is assumed lost and any non-evacuated passengers in that area are killed.

Note that specialist areas on other ships may be represented in the same way as cargo and passenger space using exactly the same rules – for survey ships devoted to science, staff and lab facilities can be represented by boxes marked S for example. Note, Marine Casualties and additional DC parties, have a slightly different mechanic.



11 Faster Than Light (FTL)



Concept faster than light starship by NASA

11.1 Faster Than Light Drives

The forces generated by FTL Drive units are very powerful, and result in spatial distortions that can be highly dangerous in close proximity to any other mass, including other ships. Most transitions to and from FTL are therefore made well out in open space, far from other shipping or planetary bodies. A fleet entering a system by FTL will generally perform normal space re-entry on the fringes of the star system, with the ships of the fleet widely dispersed for safety, and then assemble into formation before entering the inner system on normal drive.

Occasionally, however, it may be either necessary or tactically expedient to run the risk of an FTL transition while actually engaged with the enemy. Such a dangerous maneuver might be a frantic attempt by a threatened ship to escape from the action, or a surprise attack by dropping out of FTL directly into combat.

11.2 Hyper limit

In many science fiction settings decent sized planets or the local sun have a 'hyper limit' distance within which FTL travel is not possible. As most of the interesting bits of any solar system are on or near such planets, or relatively close to the sun, many battles will take place within the local hyper limit. In such a setting, FTL entry or exit is only permitted by

player agreement or scenario design.

11.3 Advanced FTL Drives

Certain ships may be able to enter or leave space very precisely without risk of collisions or scattering. These ships have Advanced FTL Drives.

Since these are not very useful in many friendly or competition games, such ships only have to pay the points cost for standard drives. The player may choose to pay extra points for Advanced FTL Drive capabilities for a one-off battle or tournament, and should always pay the extra points in a campaign.

11.4 FTL exit

If a ship attempts to engage its FTL Drive while on the table, the owning player must note this in movement orders for that turn. The ship may not apply any thrust in that move, nor may it use any offensive weaponry or ADFC. (PDS and screens may continue to be used.) When the ship is actually moved, the player must announce that the FTL Drive is being 'warmed up' – the energy emissions from the ship will be immediately obvious to enemy sensors. On the following turn, the ship moves half its current velocity on its present course, then disappears from the playing area, having gone into FTL space.

Note that ships exiting by FTL are moved after all other ships.

If any other ship-sized or larger object, but not fighter groups or missile salvos, are within 6 MU of the actual point of FTL exit (the point that the ship disappears from the table) then problems may occur.

The ship attempting to enter FTL rolls a D6:

- On a roll of 1, the FTL Drive fails to engage. The ship remains in normal space at its present course and velocity (and completes the current movement).
- On a roll of 2 to 4, the ship immediately suffers 1D6 of damage. Unless the ship is actually destroyed by this damage, it completes its FTL transition safely. (Any threshold point checks would be made 'off table'.)
- On a roll of 5 or 6, the ship attempting the FTL

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jump is completely destroyed. All other ships or starbases within 6 MU immediately suffer 2D6 damage, and any fighter group or missile marker within 6 MU is destroyed.

Non-FTL ships being carried by a tug or tender or battleriders carried by a Mothership (see below) also suffer 1D6 damage or are destroyed depending on the FTL entry roll.

Once a ship has left the table under FTL Drive, it may not return to play at any time during that battle.



11.5 FTL entry

Any ships that are to enter the game by dropping out of FTL onto the playing area must be noted as such at the start of the game, giving the number of the game turn in which they will enter, plus a specified point of entry on the table; the latter is usually most easily defined as a simple pair of coordinates measured from one corner of the table. The player must also note, at the same time, the starting course and velocity of the ship after its emergence from FTL space.

When the specified game turn arrives, the player must announce at the start of the turn (after writing movement orders) that the ship is making an FTL entry, and place a counter or other marker at the intended entry point.

In the Ship Movement Phase, for any ship without an Advanced FTL Drive (or without paying points for Advanced FTL capability), roll a D12 to give a direction on the course gauge and a D6 for distance. The marker is then moved in the direction rolled to a

distance in MU equal to the D6 roll. The resulting final location of the marker is the point at which the actual ship is placed on the table.

The FTL entry is the ship's movement for that turn, with its current velocity being applied from the start of the next.

Example: The two ships in Figure 21 attempt FTL entry side by side. Each rolls for direction and distance of error in their entry points. Ship A rolls 6 for direction and 4 for distance, and ship B rolls 10 for direction and 5 for distance.

Ships carried by a tug or tender or battleriders carried by a Mothership, or FTL-capable fighters screening a ship move the same distance and direction as their ship.



Optional rule: To add extra confusion and danger, if the distance D6 roll is a 6, then roll a second D6 and multiply the result by the original roll of 6. This gives a potentially massive error (up to 36 MU) and represents the dangerous inaccuracy of FTL exit – if this means a ship appears off table then that ship is deemed unable to enter the table during the battle.

As with ships leaving the table via FTL, those entering battle also risk damage if they appear too close to another object.

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Again, the danger radius is 6 MU around the actual point of appearance; if any ship or other body (not fighters or missiles) is within this distance when the ship enters normal space, roll a D6 for the ship:

- On a roll of 1 to 5, the ship being rolled for takes damage equal to the dice score.
- On a roll of 6, roll a second D6 and multiply the result by the original 6, giving from 6 to 36 points of damage.

Any other ship within 6 MU takes 2D6 damage, and any fighter group or missile marker is destroyed. Damage from FTL entry or exit cannot be absorbed by screens or armor. If sufficient damage is inflicted to reach a threshold point (and the ship remains on the playing area), roll threshold point checks as usual.



11.6 FTL tugs and tenders

There are times when ships are unable to travel in FTL Drive under their own power, but still must be moved between star systems. Obvious examples are System Defense Ships being transferred between duty stations, and starships that have suffered drive damage and loss of FTL capability which can only be repaired at a major naval facility.

For jobs such as these, most forces use FTL tugs or tenders. A tug is normally a ship designed to recover other large vessels, while a tender is more commonly a transport for several smaller ships such as light System Defense Ships. In game terms tugs and tenders operate, and are built, in the same fashion. The terms are used merely as a reference to the ships

function within a given fleet.

The main use for tugs and tenders will be in campaign games, for moving System Defense Ships around the map and for recovering crippled starships for repair. It is unlikely that a tug or tender would ever be risked in combat, but of course there is always the possibility of a scenario concerning the attempted recovery of a damaged ship in a hostile star system, or a surprise attack on a recovery mission.

Any ship can be made a tender by having internal bay space allocated to carry other ships (whether the carried craft are FTL-capable or not), at the same rate as for carrying fighters and other small craft: every 1.5 mass used for hangar bay space provides capacity for 1 mass of carried ship(s). Note that this allows for support and launching facilities, and is thus different from plain cargo space. A ship with 30 mass devoted to internal bay space could carry a mass 20 ship, or two mass 10 ships, etc. The points cost of such space is the same as for other hangar facilities, 3 × the total mass used.

Tugs, which are designed to carry other ships by extending their FTL Drive field around them, require massively overpowered FTL Drives. They need a FTL Drive equal to 10% of their mass just to provide their own FTL capability, plus for every 1 additional FTL Drive mass they can tow an additional 5 transfer mass of other ships. Thus to tow a ship of mass 108, the tug would need spare FTL Drive capacity of mass 22. If the tug itself was a mass 60 ship, it would need its own mass 6 FTL Drive plus the additional 22 – so it would have to devote a total of 28 mass to its FTL Drive package.

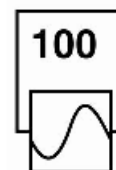


Illustration 6: Tug FTL drive

FTL tugs use a modified FTL Drive symbol that also displays the transfer mass capacity.

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Tugs with standard FTL Drives can haul any number of ships, provided that the total mass does not exceed the transfer mass capacity of the drive. Tugs with Advanced FTL Drives can also combine to haul ships larger than any individual ship capacity.

Example: A crippled battleship with mass 120 can be hauled off table by one tug with a standard FTL Drive with a transfer mass of 120 or more, or by two tugs with Advanced FTL Drives of transfer mass 60 each.

11.7 Battleriders and Motherships

Some warships are designed as battleriders without an FTL Drive of their own, transported into battle like giant fighters by Motherships.

The battleriders are designed in exactly the same way as other warships, except that they do not pay mass or points cost for an FTL Drive. The Mothership is treated as an FTL tug or tender, paying extra mass and points for internal bays or an oversized FTL Drive.

A fleet with battleriders must deploy the Motherships as well. If the Mothership makes an FTL entry, the battleriders cannot detach and move independently until the next turn.

The battleriders start with the velocity and course of the Mothership. Until they detach, only the Mothership can be fired at and battleriders are protected by the Mothership's screens (but not armor). Damage received can be applied to either the Mothership or battleriders at the choice of the defending player.

In one-off battles, battleriders are considered destroyed at the end of the battle if there are no surviving Motherships capable of transporting them.

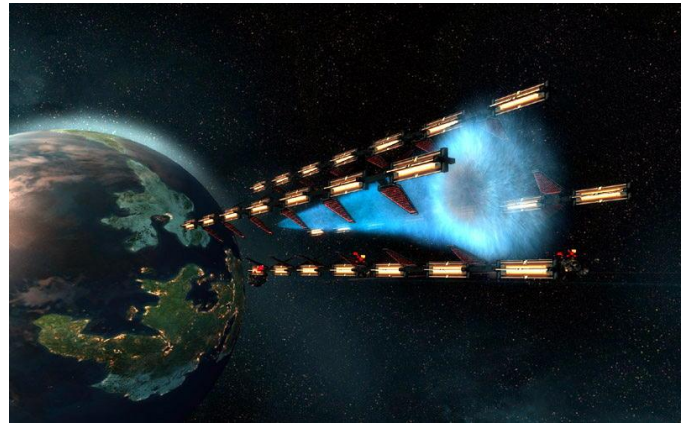
The maximum mass for any battlerider is 60, following the science fiction convention that battleriders are smaller than the FTL-capable Motherships.

11.8 System Defense Ships

Although most ships in the game are considered capable of FTL travel between star systems, there are many possible classes of non-FTL capable vessels

which operate entirely within a single star system. Typical examples are in-system freighters, System Defense Ships, and monitors (large, low thrust weapon platforms designed for close orbital defense).

Non-FTL ships – other than battleriders with a Mothership – cannot be part of fleets for one-off battles unless specifically permitted by player agreement or scenario design.



11.9 Jump Gates and Portals

Jump Gates and Portals are an alternative to standard FTL Drives. Instead of a ship moving itself with an internal FTL Drive, a stationary external object moves the ship to where it is going.

A Jump Gate is any natural 'wormhole' or artificial construct that provides entry or exit between hyperspace and normal space at a given point. A ship transfers from normal space to hyperspace through the Jump Gate, travels for some time through hyperspace to another Jump Gate, and there transfers back to normal space.

The two Jump Gates are not linked: once in hyperspace a ship can change destination, or the ship can use its own FTL Drive if it has one instead of a Jump Gate at either end.

A Portal, natural or artificial, creates a fixed connection between two points in normal space, either as a shortcut through hyperspace or some other dimension, by matter to energy to matter conversion and transmission, psionic powers, etc. What

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distinguishes a Portal from a Jump Gate is that the transfer is instantaneous or nearly so and cannot be changed in flight. Natural Portals usually connect two fixed points in space, while artificial Portals usually can be programmed for a specific destination.

Jump Gates are only found in space, near planets or space stations, as the equivalents of terrestrial railway stations or airports. Warships need to be able to go anywhere so they must have FTL Drives, but civilian cargo or passenger ships often just travel between fixed locations.

With Jump Gates, these ships can avoid the expense and overhead of their own FTL Drive. Even warships may choose to use Jump Gates when available, to reduce wear and tear on their own FTL Drives and to ensure a more accurate arrival point.

Portals can exist anywhere, although some technologies may require Portals to be in space to avoid problems with atmospheric displacement. A big Portal on an enemy world is a great way to invade without all the bother of troop transports, so there are good non-technical reasons to keep the larger Portals in space.

Whether due to technological reasons or simple caution, small Portals are far more common in science fiction than large ones.

Ships that enter or exit normal space through a Jump Gate or Portal never suffer from direction or distance errors, unlike normal FTL Drives.

Where the game rules are identical for both types the term gate will be used to mean 'Jump Gates and Portals'. In a setting where all FTL travel is through Jump Gates or Portals, artificial or natural, the FTL 'Drive' for starships should be considered as representing the mass required for the sensors, computers, navigation records, special construction, mutated psionic pilots, or whatever else is needed to locate and use gates and survive the journey.

Representation

In game terms a gate is a stationary object represented by an appropriate model or counter. (This is not to say

that they can never be moved, just that it won't happen within the time frame of a single battle.)

The capacity of natural gates is usually very high to unlimited, and the gate itself cannot be destroyed by normal weapons fire, so no record keeping is necessary.

Artificial gates have a transfer mass, the maximum capacity or mass that it is capable of handling in one turn. A gate must also have a certain number of hull boxes to represent essential control systems and structural elements. Armor, screens, and weaponry are optional, but even in settings where attacking gates is 'not cricket' it is sensible to have at least some protection against accidental damage.

An artificial Jump Gate must have an FTL Drive, which has 10 transfer mass points for every 1 point of FTL Drive mass, and does not need to include the mass of the Jump Gate itself. A Jump Gate should also have hull boxes equal to at least 10% of the transfer mass.

An artificial Portal should have the FTL Drive with mass equal to the transfer mass of the Portal, representing the (usually) higher cost and more advanced technology.

A gate takes damage in the same way as other ships. For each 10% of hull boxes marked off the current transfer mass is reduced in proportion: a Jump Gate that begins with a transfer mass of 60 and 6 hull boxes will be reduced to 50 at 5 hull boxes, 40 at 4, and so on as it takes damage.

Whenever a complete row of hull boxes is lost the gate must make threshold checks as usual for the FTL itself and other systems.

Operation

Artificial gates must be activated before used. The player writes a "Gate Activate" order at the beginning of the turn and announces the activation when ships are moved. The gate may be used for transfers on the following turn until deactivated again.

If the gate is under control of the player, usually the case when the gate is part of the infrastructure for a

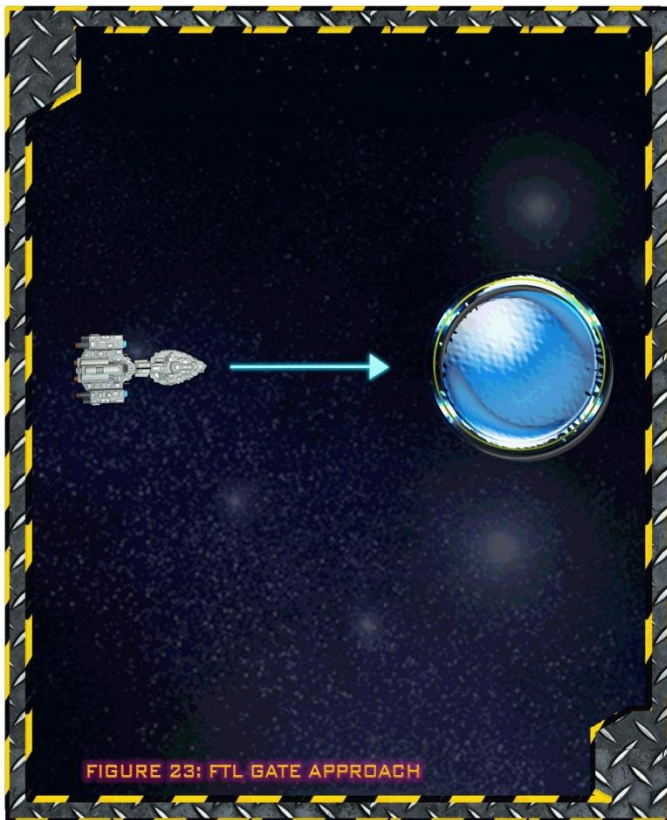
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home system being defended, activation is automatic. If the gate is not under control and an attacker wishes to activate it to transfer forces into the system the defender rolls a D6 in the Ship Movement Phase:

- On a roll of 1, 2, or 3 the activation is delayed that many turns.
- On a roll of 4, 5, or 6 the activation succeeds immediately.

(This assumes, as is usually the case that the gate is part of a general purpose transport network open to all so the attackers will eventually be able to override the control system.)

Some gates can be used from any angle, but more commonly they have one entry and exit facing. If this is the case the marker or model should be clearly marked and discussed between the players before the game begins.



At the end of the turn, the transfer takes place. If the transfer mass of the gate exceeds that of the combined ships entering, they all transfer successfully. If the

transfer mass was reduced due to damage or the gate FTL failed a threshold check, roll 1D6 die for each ship. On a roll of 1 the ship transferred successfully, on a roll of 2 it manages to back out in time and remains at the location of the gate with a velocity of zero, on a roll of 3 or higher it is destroyed.

To enter through a gate, a ship likewise writes a “Gate Entry” movement order with a velocity up to the maximum rating of its main drive. In the Ship Movement Phase the entering ship is placed on the gate with an initial course that is 180° opposite (3 in the example above) and then moves the distance specified by the velocity order.

If for some reason both ends of the Portal are on the playing area, a ship exiting through one and entering again through the other does so with the same velocity that it entered.

11.10 Natural Jump Gates or Jump Points (optional)

Many sci-fi novels make use of naturally formed jump points. Players using these can easily adapt the rules above to the though obviously a ship would not need to activate it. It is recommended that ships be ‘disorientated’ upon exiting a jump point. Ships exiting a jump point function as if they have taken a bridge critical hit until the next turn when they make function normally.



11.11 Battles in hyperspace

Full Thrust, like a lot of science fiction, assumes a clear distinction between faster than light travel, which exists because otherwise it would take years for ships to actually get anywhere; and ‘normal’ space

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where most of the action, including combat, takes place. Modifying the rules given here to match such a setting is not difficult.

If you do decide to allow battles at FTL speeds or in hyperspace, the challenge of designing suitable rules – and answering questions such as ‘what happens when a ship travelling faster than light fires a laser beam?’ – is entirely yours!



**Federation task force encounters a group of unknown hostiles.
Models by Ravenstar Studios and ADB.**

12 Optional Rules

12.1 Sensors and ECM

Sensors and ECM allow a basic form of “limited intelligence” to be brought into the game to make the initial fleet dispositions for a battle more interesting and tactically challenging.

When the opposing forces enter the playing area, the actual ship models are not placed on the table. Instead, each ship is represented by a Bogey Marker (either a simple counter or something like a ‘black globe’ made from a Ping-Pong ball or bead). These bogeys represent long range sensor contacts indicating the presence of a ship, but not revealing its exact type. All that can be deduced about the ship is its general classification (escort, cruiser, capital, or merchant) from its detectable drive emissions, and the course and velocity.

Each Bogey Marker should be identified with a code letter or number, which the owning player must secretly note as representing one actual ship. The bogeys should also be marked in some way to show the classification of ship they are representing. The easiest way to do this is with small adhesive colored stickers on the globe bases, using different colors for escorts, cruisers, etc.



During the opening moves of the game, players write orders and move their Bogey Markers just as if they were moving the actual ships. (They must of course

adhere to the maneuvering ability of the ship that each bogey represents.)

Bogeys may be ‘revealed’ (positively identified and replaced by the actual ship model) in one of two ways: either by passive or active sensor scans.

Passive sensors are carried by all vessels, civil and military. When any ship comes within 36 MU of an opposing bogey, its passive sensor array can identify the contact firmly: replace the bogey with the actual ship. (If both ships are represented by Bogey Markers, then they are both revealed simultaneously.) All military vessels also carry basic active sensor arrays as part of their FireCon systems. These are longer-ranged detection systems than the passive sensors, but have the side effect that when they are operated, the emissions from them will reveal the identity of the ship making the sensor scan, as well as the ship being scanned.

The maximum range for active sensor scans is 54 MU. If a player wishes to use active sensors on a ship, note this in the orders for that turn. If the ship is still represented by a Bogey Marker at that time, reveal it and announce that it is making an active scan. A ship may scan one opposing bogey per operational FireCon each turn. The player chooses which of the enemy bogeys to scan (of those within 54 MU range) and these must then be revealed.

12.2 Advanced sensors

If not playing an open book game, these optional rules for more advanced sensors can be used for disclosing information about ship capabilities and status to opponents.

Advanced sensor suites are classified as Enhanced or Superior grade.

Basic sensors immediately ‘illuminate’ the ship using them and the scanned ship, so models for both are placed on the table.

If Enhanced or Superior active sensors are used, the scanning player also rolls 1 D6. If the ship is using Enhanced sensors use the die score as rolled; for Superior sensors add 2 to the score. The final adjusted

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score gives a result from the table below:

- 1-2: No information disclosed
- 3: Mass only of ship disclosed
- 4: Data on mass, drive, and screen systems (original values)
- 5: Data on all onboard systems (original values)
- 6+: As for 5, plus current damage status and systems that are functional, i.e. all data about vessel.

The owner of the scanned vessel must disclose the required information verbally to the scanning player. The information should only be stated once per successful scanning attempt – it is up to the player to remember and/or note down information about the opposing ship.

Obviously a degree of trust is necessary here that true information is being given – if advanced sensors are being used in a competitive game we suggest the umpire should check and relay the information rather than the player.

12.3 Dummy bogeys and weasel boats

These are optional rules for adding extra confusion and uncertainty to the game. With the agreement of both players, each side may deploy a number of ‘dummy’ Bogey Markers alongside the real ones, representing drones equipped to output the signature of an actual ship and thereby confuse the enemy as to the actual strength and disposition of the fleet.

Each dummy bogey costs 20 points from the owner’s fleet budget, and emits the drive signature of an escort class ship. It can be moved on the table with the maneuvering ability of any main drive strength the owner chooses.

The dummy is removed from play as soon as it is scanned with active or passive sensors. The maximum number of dummy bogeys that may be employed in any battle is equal to the number of real ships in the player’s forces.

Weasel Boats are an alternative to drone decoys. These are small manned ships that are equipped with systems designed to emit the signature of a much larger vessel.

A Weasel Decoy System requires 2 mass to emit the signature of an escort or cruiser class, 4 mass to emit the signature of a capital ship. The points cost is mass \times 4.

While the Weasel Boat is represented by a Bogey Marker, that bogey is labelled as if it were the classification that the decoy system is emitting. Once it is scanned, the true nature of the ship is revealed. (The system can only confuse the initial long range sensor information, not close range sensor information.)

The Weasel Boat can of course maneuver as a normal courier, scout, or whatever class it really is, but remember to restrict its moves to those possible for what it is acting as – your opponent may become just a little suspicious if a ‘battleship’ suddenly makes a four point turn!



12.4 Electronic Counter Measures

These additional optional rules allow players to use ECM systems to jam enemy sensors.

Ships may be fitted with individual ECM packages (to protect that ship only). Alternatively, a ship may be fitted with an Area ECM package that can also protect other nearby ships against sensor scans. It should be noted that, in general, Area ECM is only fitted to dedicated electronic warfare ships that would accompany a flotilla of non-ECM equipped vessels.

Individual ECM systems can only jam sensors aimed at the actual ship carrying the system, while Area ECM systems can jam sensor scans against any friendly vessel that is within 12 MU of the Area ECM

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equipped ship. While an individual or Area ECM system is in active use, the carrying ship (or any ship covered by the area of jamming effect) also suffers the jamming effects if it tries to use its own active sensors to scan an enemy (The jamming produces a blanket effect that inhibits all active sensor use, friendly and enemy). For this reason, it is necessary to note in a ship's orders for a given turn that the ECM is active for that turn – otherwise it is assumed to be switched off.

When an active ECM system, whether individual or Area ECM, is protecting a ship, the player owning that ship may make a D6 roll whenever an enemy tries to scan the ship with active sensors.

This die roll is then subtracted from the roll the scanning player makes for sensor results, and the final figure applied to the sensor table above. Thus jamming is not always effective – if a player is using Superior Sensors (+2) and rolls a 6 giving a total of 8, while the opposing player only rolls a 1 for ECM, the final result will be 7; still enough to reveal everything about the scanned ship.

If a player is trying to make a sensor scan while being jammed by friendly ECM, simply roll twice, subtracting the second roll from the (modified) first roll.

12.5 Minesweeping

Just as certain ships may be equipped to lay mines, so others may be provided with systems to clear enemy mines safely.

To attempt to dispose of a mine marker, the minesweeping ship must have its minesweeper system activated by noting this in its orders for that turn. It must then pass within 3 MU of the mine during the course of its movement, and at that point 1D6 is rolled. On a score of 1, the mine immediately attacks the minesweeper, detonating and causing damage as normal. On a roll of 2, the mine does not attack, but is also not disabled; it remains in position and can attack other ships as normal. On rolls of 3 to 6, the minesweeper system succeeds in disabling the mine safely: the mine marker is removed from play.

A minesweeper can attempt to dispose of all the

mines it passes within range of in one turn. When a ship is using a minesweeping system in active mode it may not use any offensive weapon systems in that same turn; it may use defensive weaponry and any screens as normal.

12.6 Ortilery

This is orbital artillery or a planetary bombardment system used for ground support fire from orbiting starships. It has no function in space combat, and cannot be used as an anti-ship weapon (Unless a ship has landed in the target area). Effects should be determined by players according to the ground combat system rules in use.



12.7 Boarding enemy ships

It is possible to deliver Boarding Parties or Marines onto enemy ships, either by use of Boarding Torpedoes, moving along side, by using Transporter Beams (pg 39), or with Assault Shuttles (chapter8) . Once on board, the Boarding Parties try to disable key systems, disrupt the ship's internal communication, kill the crew, and knock out power systems. A ship's Damage Control Parties may be used in a Boarding Party role. Marines (troops with special shipboard combat training) may be purchased separately. In the following rules the term DCPs and Boarding Parties are used interchangeably.

Marines delivered to a ship via Transporter Beams that are attacking a system icon on the ship's SSD do not use the combat procedure in this section; they use

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the Commando Raid procedure in section 5.9 instead.

Boarding Parties (DCPs)

Once a ship is boarded, the ship's crew fights back, trying to kill the invaders. A ship's crew may attempt to destroy invading Boarding Parties and Marines as a damage control action. Each enemy Boarding Party or Marine must be targeted separately. As with repairing systems, the chance of killing an enemy Boarding Party or Marine depends on how many DCP units are assigned to the action. One DCP will kill an enemy Boarding Party or Marine on a die roll of "6", two DCPs will kill it on a 5 or 6, and three DCPs will kill it on a 4+. Attacking Boarding Parties or Marines cannot target and kill the ship's DCPs; they can only kill the crew by destroying hull boxes.



Marines

Marines are highly specialized troops equipped and trained specifically for seizing enemy ships and space stations. A ship with embarked Marines may use them to destroy attacking enemy Boarding Parties or Marines. They are much more effective at this role than the ship's own crew, as they have the training and equipment for close combat. One Marine will kill

another Boarding Party or Marine unit on a 4+.

Attacking Marines may target defending Marines or attempt to do damage to the ship's hull boxes. They hit and kill defending Marines on a die roll of 4+. Combat between defending Marine units and attacking Marine/Boarding Parties is simultaneous.

Resolve Boarding Combat during phase 12. Use the following procedure to resolve Boarding Combat:

Step 1: First allocate attacking Boarding Parties and Marines to attack defending Marines or attempt to damage the ship's hull boxes. Secondly allocate defending DCP and Marines to a particular enemy Boarding Party or Marine.

Defending DCPs now attempt to kill enemy Boarding Parties or Marines as a Damage Control roll. Remove any enemy Boarding Party or Marine casualties. Enemy Boarding Parties or Marines may NOT attack defending crew (DCP) units in this phase.

Step 2: Defending Marines (not DCPs) may fire on enemy Boarding Parties and Marines, inflicting kills on a die roll of 4+. Attacking Boarding Parties and Marines engage defending Marines. Combat and kills inflicted are simultaneous.

Step 3: Any remaining enemy Boarding Parties that did not attack the defending Marines do one point of damage per DCP or Marine to the ship's hull boxes. This damage may require the ship to take threshold tests if a row of hull boxes is destroyed.

Marines and Boarding Parties cannot be killed in a threshold test caused by boarding combat. Both Marines and Boarding Parties are vulnerable to being killed in threshold tests caused by weapons fire against the ship. In the case of attacking Boarding Parties and Marines, they cannot be lost to threshold checks caused on the turn they boarded the ship.

If a ship is "destroyed" by Boarding Parties or Marines it is considered captured. While the ship cannot be used in that combat (it is too badly shot-up to be of much use), if the boarder's side wins and holds the field they can take the ship home for study,

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or as a trophy. Captured ships can still be targeted by ships and ordnance, so an empire may fire upon and destroy their own captured ships to prevent them from falling into enemy hands. A single point of damage is sufficient to destroy the captured ship.

If a ship jumps away into FTL with enemy boarders on board, the battle for control of the ship continues. Resolve the boarding action until either all the boarders are killed, or the ship has been captured. If it is captured the player receives the full victory points for it if the scenario being played is using victory points. In a campaign the ship may or may not be returned to the capturing player depending on the nature of the campaign. Most Marine units will have a small cadre of naval personnel accompanying them as advisors and to help crew the prize ship in the event of victory. Some navies will even cross train a few select Marines in basic ship functions so they may get a captured vessel under control, perform basic Damage Control and so on.



Example of Boarding Combat

During the turn the IKV Kiang managed to get 4 Marines aboard the United Do Gooder starship Wulkan. The Wulkan has 6 DCPs and 2 Marines. With no damage to repair, the Wulkan player decides to use all of his DCP and the 2 Marines, to repel the IKV troops. The IKV player decides to assign two of his Marines to attacking the defending Marines. The other two will 'destroy' two hull boxes if they survive. The Wulkan player decides to assign his 6 DCP to attack (repel) the Marines assigned to damaging hull boxes (three for each Marine) and his 2 Marines to engage the other two enemy Marines. The DCPs

need a 4+ to destroy a Marine. The player rolls a 2 and a 5, killing one Marine. The IKV Marines and the Wulkan Marines each need a 4+ to kill one another. The IKV Marines wipe out the Wulkans with only one loss.

Combat is now over for the turn. The IKV Marine assigned to attacking hull boxes has survived, and now destroys one hull box. The other surviving Marine does not eliminate a box since it was engaged against the ships defending Marines.

12.8 Fleet morale

The question of morale in naval games, whether science fiction or historical, is always a bit of a problem. Will a fleet fight to the last ship, or will it turn tail and run (or even surrender) after relatively few losses?

The answer to this really depends on the kind of scenario being played, as the reactions of the fleet and its overall commander will be heavily influenced by what is at stake.

If a force is defending a colony world against an invading fleet, it may well fight 'to the death' in a desperate attempt to protect the colony. On the other hand, if it is a meeting engagement in a relatively unimportant star system, then it would be quite likely that the admirals on either side would consider the preservation of their own ships and crew to be quite a high priority.

If playing a simple engagement (or a competitive game), we suggest that the loss of 50% of a player's overall force (calculated in mass of ships destroyed) would be enough to cause the commander to withdraw from battle.

For other games we recommend that the level of losses to force a withdrawal should be written into the scenario when it is designed, bearing in mind the story-line being used.

12.9 Striking the colors

The surrender of an individual ship is a slightly

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different matter to the withdrawal of the complete fleet. There are many possible circumstances where the captain of a ship may decide that, orders notwithstanding, the survival of the crew is more important than continuing to fight in a hopeless situation.

One possibility is to make an extra roll at the same time as any threshold check, using the normal scores for losing systems at threshold points, i.e. 6 the first time, 5 or 6 the second, etc. If the ship fails this roll then its captain decides to 'strike the colors' and surrender to the nearest enemy vessel.

Using this rule can result in the surrender of a vessel that has taken relatively little damage – however naval history is rife with precedents for this where colors were prematurely struck due to damage suffered being grossly overestimated.

Players may prefer to roll as if for a Core System threshold check, in which case ships will never surrender on the first row of damage.

One point must be made here – the use of this rule is strongly dependent on exactly who the two fleets are; for example, if using the GZG background then it is very unlikely that any human ship would even attempt to surrender to a Kra'Vak or vice-versa, simply because they would not expect to survive capture.



12.10 Civil wars (Optional)

There may be some situations where 'blue on blue' battles take place such as civil wars, rebellions etc. If

both fleets are composed of ships built by the same navy then all ships and squadrons roll a +1 on their direct fire weapons. The crews of these ships are well aware of the enemy ships vulnerable areas.

12.11 Knocked off course (by Rich Mcgee)

Whenever a ship passes a damage threshold, while using the cinematic movement rules, after checking for systems failures make one further roll at the same odds (so 6+ for first threshold, 5+ for second, etc.) to determine if the ship has been knocked off course. This may be the result of misfiring thrusters, a shaken crewman bobbling the helm controls, or a kinetic reaction to having a significant chunk of the hull turned into expanding plasma. Regardless of the exact cause, if the threshold is failed, then roll 1d6. On a 1-3, immediately change the ship's facing by 30 degrees to starboard, on a 4-6 change facing 30 degrees to port.

Under the vector movement rules a ship's facing (the direction its prow points toward) may not be the same as its heading (the direction its momentum is moving it in). In this case, make two threshold checks. If failed, the first check will change the facing of the ship as described above. The second check determines whether the ship's heading changes. If failed, roll a further 1d6. On a 1-3 move the vector marker (but not the mini) 30 degrees to starboard. On a 4-6, move the vector marker 30 degrees to port.

12.12 Vector Movement System

Excerpt from Fleet Book 1

This is a completely OPTIONAL alternative movement system, which players may use instead of the standard FT movement rules described in the basic rulebook.

The Vector movement rules give a much more accurate portrayal of how objects really maneuver in space; they are also a little more complicated than standard FT movement, though far less so than certain other rules' attempts at the same thing!

Whether you choose to use them or not will depend entirely on personal taste and whether they fit the particular background you are using - if you are

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recreating a film or TV series where the ships clearly do NOT move in a true vector fashion, then you will obviously not want to use these rules.

Using the vector movement rules will become very straightforward once you are used to it, but we suggest taking a short while to read through the rules and examples carefully, and to plot a few movement examples out with a ship model to get the feel of the system before starting your first game. Radical course changes become much more difficult to do under the vector rules, especially at high velocities – remember that the faster you are moving, the less manoeuvrable your ship will be under the vector system. It may also take you a while to get used to the fact that the ship is not always pointing in the direction it is moving!

If you are using the “official” GZG background, or one of your own devising, then you may feel free to use either system at the agreement of your players, or even to mix the two to reflect older and newer ships in the timeline or differing levels of technology.

Because the Thrust Ratings of ships are used in similar ways in both systems, any given ship design may be used with either movement system without modification - the only thing to be aware of is that ships with low thrust ratings may prove VERY unmanoeuvrable under the vector system.

It is perfectly possible to mix both vector and cinematic movement in the same game, to represent ships with different drive systems or technology levels - each ship simply follows the relevant rules according to its own drive system.

Course and Facing

Under the standard Cinematic FT movement, a ship will always be facing in the same direction that it is moving; under the VECTOR system the ship may be moving one way and facing another. The direction in which the ship is actually MOVING is termed its COURSE, while the direction in which the ship model is actually pointing is called its FACING. The current COURSE is indicated by a small arrow marker placed next to the ship’s stand, and this marker is also used as a reference point during the process of moving the model. It should be noted that

the FACING of a model should always be one of the 12 “clockface” points, though the mechanics of the vector movement mean that the COURSE will usually NOT correspond exactly to a clockface direction.

Main Drive Thrust

The THRUST RATING of any ship is the amount of thrust that can be produced by its MAIN DRIVE - the “big engine” at the back. Each point of thrust applied in a turn will accelerate the ship by 1 inch (or other movement unit) ALONG THE AXIS OF THE SHIP, so if a ship that is facing in its direction of travel (i.e. its “course” and “facing” are the same) and currently moving 6" per turn applies 4 points of thrust from its main drive, it will end up moving at 10" per turn. If the ship’s facing and course are NOT the same (i.e.: the model is pointing one way and moving another) then the application of thrust from the main drive will alter the ship’s course AND velocity. To DECELERATE using the main drive (as opposed to using the forward “retro” thrusters), the ship must be turned so that it is pointing “backwards” relative to its current course. When writing orders for your ship, Main Drive thrust is written as MD followed by the number of thrust points being applied - so MD4 will move the ship 4" in the direction of its present facing. If using existing ship designs (whether from this book, from FT2 or elsewhere) then the thrust level shown in the ship’s drive icon is the rating used for the main drive.

Maneuvering Thrusters

In addition to the main drive, all ships have THRUSTERS - small drives positioned in clusters around the ship, pointing forward, port, starboard etc. (in reality ships would also of course have “up” and “down” orientated thrusters, but as we are not concerned with 3D movement in FT we can ignore these except for their use in rolling the ship).

The thrusters may be used to “push” the ship to alter its course, or to rotate the ship onto a new facing. The power available to the ship’s thrusters is equal to half the thrust rating of the main drive - so a ship with a main drive TR of 6 would have 3 manoeuvre points available from its thrusters; unlike the Cinematic movement rules, thruster use is allowed in addition to applying full available thrust with the main drive - so

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that a ship with a Thrust Rating of 4 could apply 2 points of thruster use and still use all 4 thrust points from its main drive.

We have not depicted the Thruster systems as separate icons on the ship diagrams, in order that any design may be used with either movement system without alteration.

For the purposes of damage, assume that the thrusters are driven by the same power systems as the main drives - when the main drive takes damage, thruster power is halved or lost accordingly.

Rotation

Rotation of a ship around its axis requires much less power than actually changing its vector. When the thrusters are used to rotate a ship onto a new heading, ONE maneuver point from the thrusters allows the ship to be rotated by any desired number of facing points. Thus, for the expenditure of one point of thruster power a ship can be rotated to face in any of the 12 possible facing directions, regardless of the thrust rating of its drives (the only difference between rotating 30 degrees and rotating 180 degrees is simply that, once the thrusters have started the ship spinning, the ship is allowed to rotate for longer before the thrusters burn again to cancel the spin). Note that a ROTATION changes the ship's FACING only, and never its COURSE.

Note: when thrusters are used to rotate the ship onto a new facing, it is assumed that several of the ship's thrusters are fired in unison to achieve the desired effect – for example, to rotate the ship to starboard it would fire the PORT FORWARD thrusters and the STARBOARD REAR ones simultaneously to spin the ship around its centre of mass. It is assumed that, in the same turn, a compensating burst is applied as the desired new facing is reached in order to stop the ship's rotation - the combined effect of these operations constitutes one "rotation" action. ROTATION orders should be written down as TP (Turn Port) or TS (Turn Starboard), followed by the number of points of heading change - thus TP2 indicates a rotation to port of 2 clock face points (ie: 60 degrees).

Thruster Pushes

A thruster "push" is firing a combination of maneuver thrusters to alter the course and/or velocity of the ship, WITHOUT affecting its actual facing (i.e.: the ship ends the turn with its model pointing the same way it started, although its course may have changed). Pushes may be made to PORT, STARBOARD or REVERSE (using the forward "retro" thrusters to slow the ship down without having to spin it round and use the main drive). It requires ONE maneuver point of thrust applied to displace the ship by one movement unit; a push of 3 with the port-side thrusters will shift the ship 3" to starboard (for simplicity of play, this is referred to as a STARBOARD PUSH - to avoid confusing of orders we always use the direction of the EFFECT rather than the location of the thrusters being used). Note that a PUSH changes the ship's COURSE (and/or VELOCITY) only, and never its FACING.

PUSH orders should be written as PP (Push to Port), PS (Push to Starboard) or PR (Push in Reverse), again followed by the number of thrust points applied - so PR3 would be using 3 maneuver points from the retros to push the ship 3 units "backwards" relative to its current heading. Pushes may only be applied directly to port, starboard or rearward relative to the ship's facing at that moment.

Combining Maneuvers

If desired, a ship may combine both ROTATION and PUSH uses of its maneuvering thrusters in a single game turn, but no more than ONE of each, provided the TOTAL of maneuver points expended does not exceed the total available. It is quite acceptable for a ship with (say) 3 maneuver points of thruster power available to make a rotation (using up 1 thruster point), then apply a main drive burn, then use the remaining 2 maneuver points for a 2" thruster push to port, starboard or aft as desired. The final position, course and velocity would be measured after ALL maneuvers are completed.

Order Sequence

The actual sequence in which thruster and main drive burns are applied in a single turn will make a difference to the final course and velocity of the ship, so it is necessary to rule on what order things are done in. Each effect is applied to the ship strictly IN THE ORDER THEY ARE WRITTEN DOWN BY THE

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PLAYER. If the player writes TP2, MD6 then the ship will first be moved according to its starting vector (as always), then turned 2 points to port (TP2) and then moved 6" along its new facing (MD6). If, on the other hand, the order is written MD6, TP2 (thus applying the main drive burn BEFORE rotating the ship to its new facing) then the result will be VERY different in terms of the ship's final vector and position - plot each one out and you'll see what we mean!

Collisions

If there are any objects on the board that are deemed big enough to pose a collision risk, such as asteroids or very large space installations, such a risk will only occur if the line between the ship's STARTING and FINAL positions intersects with the object. In effect, it is this line (as shown by the tape or rule when measuring the final velocity of the ship) that most nearly approximates the "true" path followed by the ship during the turn - the position of the ship model at any other time during the movement sequence is merely for calculation purposes and does NOT indicate that the ship actually occupies that point at any time. Of course, even doing it this way is an oversimplification of the true mechanics - but we feel it is close enough for game purposes!

Moving Ships Under The Vector System

Once the orders are written by all players, all ships are moved simultaneously in accordance with their starting vectors and any relevant manoeuvre orders. When moving a particular ship, ALWAYS start by moving it according to its starting vector - i.e. move the model in the direction of its present COURSE (as indicated by its course marker arrow) a distance equal to its current VELOCITY, being very careful to keep the FACING of the model exactly the same as at the start of the turn; at this stage, LEAVE THE COURSE MARKER IN ITS STARTING POSITION. Now apply any thrust (main drive and/or thrusters) indicated in the ship's orders, making sure to apply each effect in the sequence it is written down. Where the model ends up after all thrust has been applied is its finishing position for that turn; now place the tape measure or rule between the course marker and the ship's final position, and read off the distance - this (rounded to the nearest whole inch or other movement unit) is the ship's final VELOCITY for the turn, and

should be written in the "V" box on the order sheet ready for the next turn.

Finally, move the course marker up to the stand of the model again, with its arrow pointing in the direction of the ship's new COURSE - i.e.: parallel to the tape-measure.

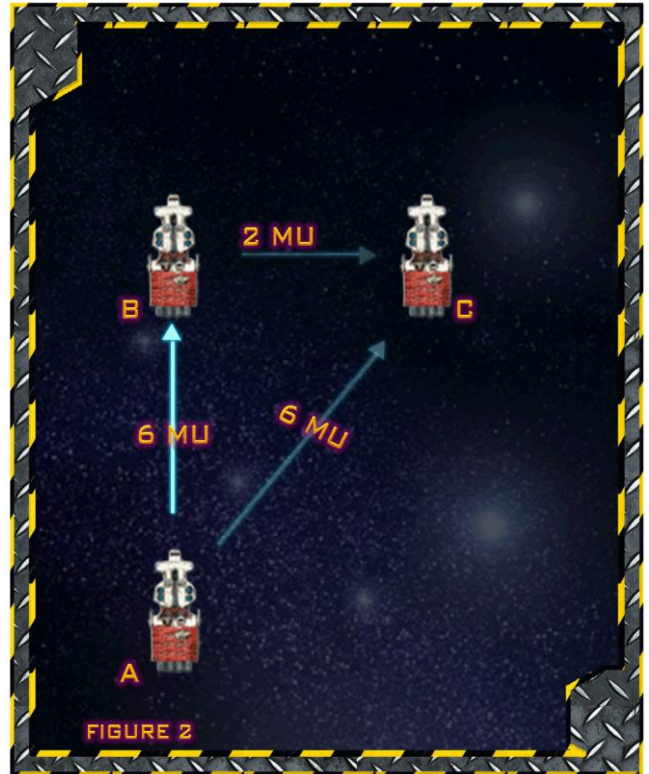
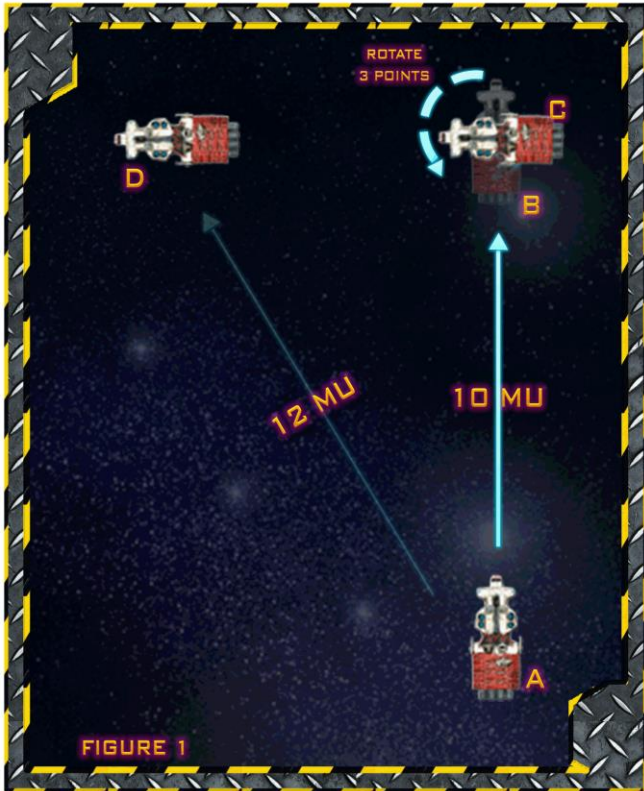
The ship's VECTOR at the start of the next turn will now be in the direction of the course marker arrow, at the new velocity written down.



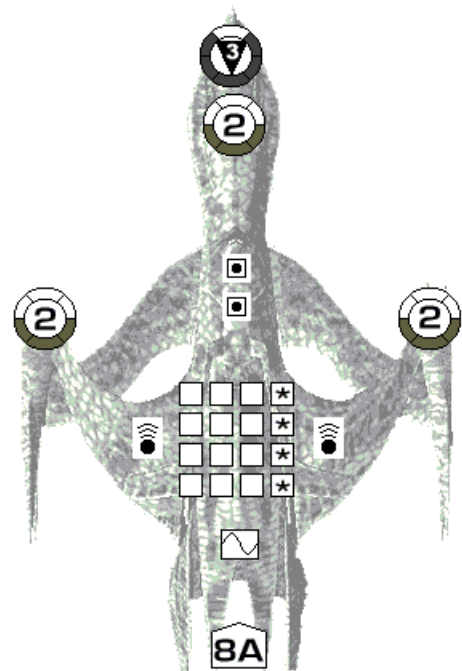
Vector Movement Examples:

The ship in Figure 1, below, is facing in the same direction it is moving (ie: its COURSE and FACING are currently the same), and its current velocity is 10. The ship starts the turn at position A. The player writes movement orders of TP3, MD6. Firstly, the ship is moved along its present course by 10", to position B - it is then rotated 3 points (90 degrees) to PORT, to position C. Now, it is moved along its new facing by the amount of its Main Drive burn, ie: 6", to its final position D. Finally, the distance between starting and finishing positions (A and D) is measured - rounded to the nearest whole number it will be 12", and this is recorded as the starting velocity for the next turn - and the course marker is moved up to the model again parallel to the line between positions A and D.

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The ship in Figure 2 is facing in the same direction it is moving, and its current velocity is 6. The ship starts the turn at position A. The player writes movement orders of PS2. Firstly, the ship is moved along its present course by 6", to position B. Now, the ship's side thrusters fire to push it 2" to starboard, to the final position C, without changing its facing. The distance between starting and finishing positions is measured- rounded to the nearest whole number it will be 6", and this is recorded as the starting velocity for the next turn - and the course marker is moved up to the model again parallel to the line between positions A and C.



White Star from Babylon 5. SSD by Star Ranger

13 Ship design and construction



13.1 Overview

Most players will probably run their first few games using just the basic ship types. Sooner or later, however, many of you will want to start modifying the designs provided or else design your own ships from scratch. Experimenting with different weapons fits, hull sizes, and so on can be fun.

Ship design since the Age of Sail has always been about achieving a balance between three essential factors: mobility, firepower, and protection.

Mobility is represented by the thrust rating available to the ship, firepower by the amount and types of weapons carried, and protection by the screens, armor, and other systems, plus the overall damage points.

The ship design rules detailed in this section are constructed so that every ship has to be a compromise between the three basic factors. Although a near-perfect superfast, ultra-heavily armed, and heavily protected ship is theoretically possible, it will turn out to be so incredibly expensive in points cost that just one will take most of your fleet budget! Remember that, especially in a campaign, a ship can only be in one place at one time – for most purposes a balanced fleet of lighter craft will be more cost effective than just a few super-ships.

Designing a ship involves two main considerations: the ship's mass, which is a measure of its overall size, and its point cost.

The mass of the ship determines its class and how much in the way of systems (weapons, screens, fighter bays, etc.) can be fitted into the hull.

The cost of the ship is the total of the mass cost, the hull cost, the drives cost, and the individual costs of all the systems that you decide to install.

13.2 Scale

Full Thrust is deliberately vague about scales: There is no exact definition of how many tons a mass unit represents, or how many kilometers per MU. Ships are defined by their role, and the relative value of their weaponry and protection is in abstract mass units rather than a specific tonnage number. These are a fairly generic set of rules that you can adapt to your own setting, so these abstractions – or fudge factors if you prefer – are necessary.

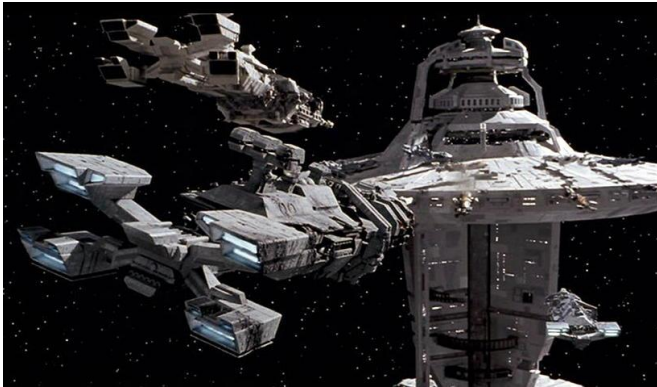
For example, consider fighters. In most science fiction TV and films these resemble space going versions of current jet fighters, with a pilot and sometimes one or two other crew. This does not mean that your fighters cannot be much bigger and with sizeable crews. What matters in Full Thrust is how they behave: if they are launched in swarms from carriers, zip about at speed, are very difficult to hit with normal ship weapons but easily destroyed, and attack enemy ships or fighters at very short range; then in Full Thrust terms they are fighters.

Scaling also applies to numbers. Nominally each

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fighter group in Full Thrust has six fighters, but you are free to declare that each 'fighter' represents 2 or more actual vessels.

It is standard in Sci-fi for a single Heroic Good Guy (of any gender or species) to be worth several of the, low quality, cannon fodder troops used by the Evil Bad Guys. In such a setting fighter groups belonging to the Good Guys would be just six fighters each, while fighter groups belonging to the Bad Guys would represent three dozen unfortunates whose destiny is to be shot down six at a time!



Going the other way, Full Thrust takes a large scale 'bang you're dead' approach to fighter combat. But you could easily design various types of fighters as small corvette or frigate sized ships, each with their own unique combination of thrust, weaponry, and protection. Shorten the game turn to 5 seconds, add in one or two giant warship models to fight around, and you have a dramatic dogfight.

Really big ships are also found in science fiction, such as the superdreadnoughts in the Honor Harrington books or the Super Star Destroyer that Darth Vader uses as his flagship.

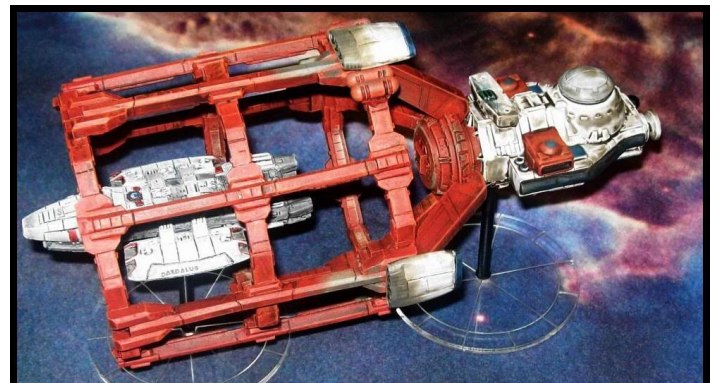
Project Continuum imposes a theoretical upper mass limit on ships, which would be far too low if mass units represented a fixed number of tons. Instead you can assume a sliding scale from perhaps fifty tons per 1 mass for the smallest escorts, increasing to several hundred or even thousands per 1 mass for the largest superdreadnoughts.

There are three reasons for this. Firstly, the combat

effectiveness of larger ships in Full Thrust increases at a faster rate than the mass does, so one ship of mass 200 is (almost always) superior to two ships of mass 100. The mass represents weaponry and protection, not just volume.

Secondly, you can always scale everything else around the really big ships down. The smaller sized combatants in such a fleet would normally be considered dreadnoughts themselves, but in a fleet with such monsters (and presumably equally formidable opposition) would be reduced to the role of escort cruisers.

Lastly and much less seriously, the really big ships are usually constructed by the megalomaniacal Evil Overlords and they never work as well as expected, often being destroyed by nothing more than a puny fighter! The Project Continuum suggested mass limit represents the actual performance of the ship, not that promised by the (terrified or over-optimistic) designers.



**Forge Class space dock
Model by Ravenstar Studios**

13.3 Systems

When designing ships, there is not necessarily a 1:1 match between Full Thrust system symbols and individual weapon systems. For example, a single Beam-1 symbol represents the ability to deliver a certain amount of firepower in all directions, which on all but very small ships will require more than one actual weapon mount.

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Each beam on a ship SSD can represent an individual mount, or a battery consisting of a number of projectors slaved together under a single control system.

A beam system that is twice as damaging as another but no longer ranged would be represented by two symbols instead of one. A powerful alien beam that is also very accurate against fighters would be represented by a Graser symbol for fire against ships and a PDS symbol for use against fighters or a Pulsar, for example.

A broadside symbol can represent an actual weapon battery unable to fire Fore or Aft (as seen on the Sulaco); or two weapons, one on each side, that share a common fire control or ammunition supply; or that the ship is able to roll quickly enough to combine the fire from two individually weaker weapons in either direction.

13.4 Mass rating

The total mass of a given hull is a representation of the capacity of that hull for outfitting it with drives, weapons, defensive systems, etc. This total mass figure is used to refer to the size of the ship: a size 24 ship could be fitted with a maximum of 24 mass of systems.

Note: The mass ratings of systems are abstract figures used to indicate the required volume, power requirements, etc., rather than being an exact measure of the bulk or weight of a given system. If you assume that in a given background, one mass is equivalent to around 100 tons, then a mass 1 system (such as a point defense installation) will not necessarily weigh in at 100 tons; it will, however, require 100 tons of hull capacity to mount the system and its infrastructure, control and power requirements, sensors, crew, etc.

Escorts have a maximum mass of 44; cruisers have a maximum mass of 90. Anything over mass 90 is a capital ship.

The maximum suggested mass for a ship is 300. If you do decide to design larger ships, consider using

the rules for starbases and monster ships (see below) with multiple individual sections and SSDs.

The table below shows the standard basic ship classifications, along with the common designations and a rough guide to the typical mass ratings of each. These figures are very loose, as most navies tend to classify ships by function rather than by tonnage: one fleet's destroyer may, in reality, be a bigger and more powerful ship than another's light cruiser.

Ship class	Abbreviation	Mass
Scout or Courier	SC	4 - 10
Corvette	CT	8 - 16
Frigate	FF	14 - 28
Destroyer	DD	24 - 36
Heavy Destroyer	DH	30 - 44
Light Cruiser	CL	40 - 60
Patrol/Escort Cruiser	CE	50 - 70
Heavy Cruiser	CA	60 - 90
Battlecruiser	BC	80 - 110
Battleship	BB	100 - 140
Heavy Battleship	BDN	120 - 160
Dreadnought	DN	140 - 180
Superdreadnought	SDN	160 - 300
Escort Carrier	CVE	60 - 140
Light Carrier	CVL	120 - 180
Heavy Carrier	CVH	160 - 300
Attack Carrier	CVA	150 - 300

Names

Historically the term 'battlecruiser' has been used both for fast, heavily armed, but lightly protected British and American ships; and for lighter armed but better protected French and German ships. This is true in many sci-fi genres as well. The TV series Babylon 5 is a good example: The Earth Omega class 'destroyers' were much larger than cruisers. In Full Thrust it is used for ships bigger than heavy cruisers but smaller than most capitals.

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'Escort cruisers' and 'escort carriers' are cruisers or carriers, not escorts. The designation simply indicates that its primary function is that of supporting (escorting) other ships rather than independent action.

These names are used in the GZG setting but are not at all compulsory. Other navies have different ship classifications, for example Escorteur d'Escadre or Raketny Kreyser; or you could adapt aircraft terminology. This is an area where a little research and imagination can go a long way. (As a matter of courtesy, you should always be willing to inform your opponents whether a ship is an escort, cruiser, capital, or carrier.)

Note that if you are using commercial model ships, just because a manufacturer happens to classify a particular model in the range as a 'Destroyer' in no way prevents you calling it a cruiser, or anything else that fits in with your fleet structure.

13.5 System mass

The total mass includes the Core Systems (section 11) and passive sensor arrays (section 12). No extra points are paid for these systems.

Some systems, e.g. weaponry, are a fixed mass per system, regardless of the size of the ship on which they are mounted. Other systems including drives and screens are a percentage of the total mass, and thus become more expensive as the mass of the ship goes up (As of course does the cost of the hull itself).

Because they are calculated as percentages of the overall ship mass, choosing a hull size that is not an exact multiple of 10 will mean that some system masses may not be whole numbers. Some of these will be rounded up and some down: in general terms, decimals of .49 and less should be rounded down, while those of .5 or higher should be rounded up.

For example, if you are building a mass 64 ship then the 10% required for the FTL drive will be 6.4, which will round down to 6. If the same ship's main drive is thrust-4, however, this will take 20% = 12.8 which will round up to 13 mass. In general, most designs will come out about even in the rounding; occasionally a ship may end up fractionally better or

worse off than another of broadly similar design, but that shouldn't be a serious problem. Besides, if we don't give the maximizers and number crunchers something to work at they'll all get bored!

Important: No single system can ever be rounded down to mass 0. A very tiny ship of (say) mass 4 will still have to pay 1 mass for an FTL Drive, even though 10% for it is only 0.4. Thus the smallest possible FTL-capable ship is actually a mass 3 scout or courier boat, that will use 1 mass for hull integrity, 1 mass for FTL Drive (the smallest unit available) and 1 mass for main drive (for which it could get thrust-6). The boat would be unarmed, and have just 1 damage box.

The smallest usable combat ship will be around 5 or 6 mass which will get you a tiny armed scout or light corvette with only a single fire control and probably only a single small weapon system, crewed by a handful of very brave spacers.

13.6 Primary ship systems

Primary ship systems represent the heart of a ship: The engines, frame work, etc.

13.7 Hull strengths

The hull integrity represents the amount of the ship's structure that is devoted to reinforcing the basic hull envelope, including bulkheads, compartmentalization, internal strengthening, etc. It is entirely separate from the armor used (if any), which is external protection. It is perfectly possible to have a ship with a fragile hull structure but lots of armor and screens: such a ship will be fine until some damage manages to get through, at which point the hull integrity will fail very quickly!

There are no fixed percentage limits on hull integrity. Ship designs may have as many or as few hull boxes as the designer wishes, subject only to a lower limit of a minimum of 10% of the total ship mass. The actual number of hull boxes chosen does not have to exactly equal any given percentage of the ship's total mass, but the following terms may be used to describe the kind of structure a ship has:

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Fragile hull	10% of total mass
Weak hull	20% of total mass
Average hull	30% of total mass
Strong hull	40% of total mass
Super hull	50% of total mass

The mass used for hull integrity is the number of hull boxes that the ship has to absorb damage points. For standard ships, the hull boxes are arranged in four, five or six rows to form the damage track for the ship.

Four rows are what the typical warship would have. Five rows would be fairly typical of civilian ships or old warships. Six rows would be for large open framed type bulk carriers, very antiquated starships or large bases. The more rows a ship has the more vulnerable it will be to critical damage.

Example: For a mass 60 ship with hull strengths chosen to be exact multiples of 10%, a weak hull, for a four row ship, would be 12 hull boxes arranged in rows 3/3/3/3; while a strong hull would be 24 hull boxes in rows 6/6/6/6.

Each row should be of equal length, but if the number of hull boxes does not exactly divide by the number of rows the extra boxes are placed in the upper rows. For a standard four row design, a ship with just 2 hull boxes has one box in each of the first two rows and nothing in the last two, and a ship with 15 boxes has three rows of 4 boxes and one of 3.

The points cost of a standard four row hull is mass \times 2.

The points cost of a five row hull is mass \times 1.5.

The points cost of a six row hull is mass \times 1.

13.8 Advanced Hulls

Some ships have superior construction technology or internal protection and are therefore much more resistant to the initial effects of damage. Such ships have Advanced Hulls with the boxes arranged in three rows, not four.

In the example above a strong hull would still have 24 hull boxes but arranged in three rows 8/8/8, requiring more damage to inflict a threshold point check than

before – but still only the same amount of total damage to destroy.

The points cost of an Advanced Hull is mass \times 3 instead. Ships with less than four hull boxes are always considered standard hulls, not Advanced Hulls.

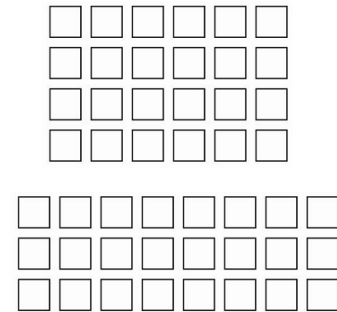


Illustration 7: Strength 24 standard and Advanced Hulls

13.9 Drives

The FTL Drive for interstellar capability requires 10% of the total mass. Non-FTL ships may only be used in certain scenarios: see section 11. Tugs, tenders, and Motherships use more than the standard mass for their FTL Drives

A standard FTL Drive has a cost of mass \times 2. For ships that choose to pay the extra cost of Advanced FTL capability the cost increases to mass \times 3.

The ship's main drive requires 5% of total ship mass per thrust rating. Add the percentages together and then determine the mass required.

Example: A cruiser has total mass 64. A main drive rating of 4 would be 20% of 64 = 12.8, rounded up to 13. Main drive rating 6 would be 30% of 64 = 19.2, rounded down to 19.

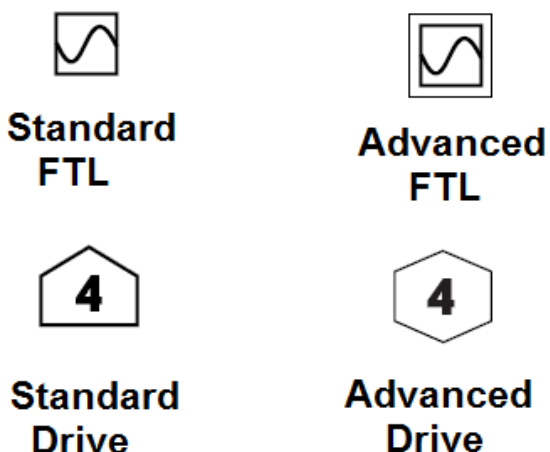
The points cost of the main drive is mass \times 2 for standard, mass \times 3 for advanced. Ships with Advanced Drives never have the choice to 'turn off' advanced capability to reduce points cost.



Romulan Battle Squadron painted By Clint Kozell
Models by Star Fighter Shipyards and Bergstrom Studios

13.10 Advanced Drives and FTL

Advanced Drives or FTL represent new ‘tech levels’ or different mechanisms, not just that one ship is a bit better than another. All the ships built by a given species, culture, or state are expected to have the same kind of main drives and same kind of FTL. Exceptions can be made when a fleet has acquired ships from a different source, or is undergoing some kind of major technological transformation.



Ship drives and FTL

13.11 Atmospheric streamlining


Streamlining allows ships to safely enter a planet’s atmosphere as described in section 13. Partial streamlining requires 5% of the ship’s total mass, while full streamlining requires 10% of the total mass. The points cost of streamlining is 2 points per mass used for the aerodynamics.

Example: To give a mass 50 ship partial streamlining will use 3 mass. Full streamlining will use 5 mass.




13.12 Additional primary ship systems

Hangar bays

 Hangar bays hold fighters when they are not in flight. They contain all the equipment that is necessary to re-arm and refuel fighters but they may not launch or recover them: that is the job of the launch tube. Each hangar bay holds a single squadron (wing) of 6 fighters.


Hangars cost 3 per mass, and are six mass each. If using the optional Critical hits to hangar bay rules then the points cost is reduced to 2 per mass.

Launch tubes / flight deck

 Launch tubes are connected to hangar bays and are used to launch and recover fighters. Launch tube technology is available to all species. A single launch tube may serve multiple hangar bays.

Launch tubes cost 3 per mass, and are 3 mass each.

Launch catapults (optional)

 Some launch tubes or flight decks are equipped with catapults that propel the fighters

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away from the ship in a similar fashion to firing a gun. This enables a ship to launch fighters while maneuvering (i.e. applying thrust).

This upgrade is included here to allow players to build ships that operate in a similar way to the Battlestars from the TV series Battlestar Galactica. Players should only apply this upgrade to ships from a genre or background that has them and then only if everyone agrees.

Cost per launch tube or flight deck is 1 point, 0 mass and if one launch tube/flight deck is upgraded they all must be.

Combined Bays and Launch Tubes (optional)

The original Full Thrust rules combined fighter launching requirements and their support equipment together into a single system (i.e. hangars). If players prefer, they may still use the original system. There is certainly a precedent in some sci-fi shows for this. For example, in Star Wars, many ships have fighter hangars simply open to space with no clear launching mechanisms required. You will not upset game balance if you use these and your opponent does not. However we do not recommend combining both of these approaches in the same fleet.

Ships using combined hangars may launch all their available fighter groups in one turn but may only recover fighters equal to half of their available hangar bays.

A combined hangar bay is 9 mass
Point cost is 3 per mass

Fighter racks



Fighter racks allow robot fighters to be carried on the hull of a ship. This provides the advantage of rapid launch (no limitation of the number of launch tubes), and is a very cheap way for a warship to carry some fighters into combat.

Any type of robot fighter can be rack-mounted. Robot fighters cannot be refueled or rearmed in the carrying rack. A launch tube and hangar bay equipped ship with the proper type of hangar bay for the fighter type being used is required for combat

reloads.

Fighter racks cost 1 per mass.

Fighter rack mass 6 can carry 1 wing of robot fighters

Gunboat rack



Gunboat racks are 18 mass and will carry a squadron of 6 gunboats. The cost of the rack is 0 points

Boat bay



Boat bays are for housing non-combat shuttles, drop ships, small survey craft etc. They will have little combat value but may be used to refuel and re-arm gunboats if they are large enough. Most gunboat carriers will have one or at most, two bays.

Boat bays 1.5 mass per mass of the craft to be carried and cost 0 points.

13.13 Secondary systems

Secondary systems are those systems that enhance a ships capability but are not necessarily endemic to its primary mission.

Cargo and passengers



Mass devoted to cargo or passenger space costs no additional points during the ship costing procedure, though of course the actual hull that encloses them is paid for in the normal way.

Each mass factor used provides one factor of hold space (H) passenger space (P), or Marines (T).

Troop berthing



In some cases a ship may wish to routinely carry additional Marines beyond that which the vessels own life support capacity will allow.

In those cases, ships will be equipped with extra troop compartments. Such compartments are very common on troop ships. These areas will contain extra sleeping and messing facilities as well as specialized training area for weapons practice, tactics familiarization, mission briefings and so on.

1 mass of troop berthing will allow a ship to carry up 3 additional Marines and cost 0 points per mass. The Marines must be purchased separately.

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Passenger berthing

P In some cases a ship may wish to routinely carry additional personnel or crewmen beyond that which the vessels own life support capacity will allow. In those cases ships will be equipped with extra berthing compartments. These areas will contain extra sleeping and messing facilities as well as specialized laboratories, emergency supplies, mission briefings and so on. Such additional personnel are often utilized as extra Damage Control Parties in emergencies.

1 mass of passenger berthing will allow a ship to carry up 4 additional Damage Control Parties or passengers, and costs 0 points per mass. The Damage Control Parties must be purchased separately.

Marine Boarding Parties



Ships can be fitted to carry embarked Marines. Marines cost 5 points each, and are 0 mass

Marines appear on the SSD as a 'system' of their own, and can be lost to threshold damage. Damaged (killed) Marines cannot be 'repaired' during a battle as killed and injured personnel take longer to repair than damaged machinery.

A ship may not mount more Marines (and additional Damage Control Parties) than the number of crew it was initially designed with. For example, if a heavy cruiser has four crew 'units', the player may purchase up to four additional Marines or Damage Control Parties or any combination of the two. Marines may not be targeted by Needle Beams but they may be the target of a Commando Raid by Transporters

Additional Damage Control Parties



Ships can be fitted to carry additional crew. Most commonly these are used as extra Damage Control Parties, increasing the number of available crew units to try and repair systems lost to threshold tests. The DCPs can also act as Boarding Parties for repelling enemy boarding parties or can be used offensively to board an enemy ship to capture it.

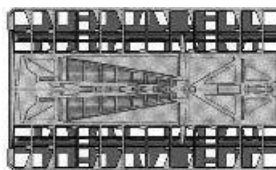
DCPs cost 5 points each, and are 0 mass. DCPs appear on the SSD, and can be lost to threshold

damage. Damaged (killed) DCPs cannot be repaired during a battle as killed and injured personnel take longer to repair than damaged machinery.

A ship may not mount more Damage Control Parties (and or additional Marines) than the number of crew it was initially designed with. For example if a heavy cruiser has four crew 'units', the player may purchase up to four additional Marines or Damage Control Parties or any combination of the two.

DCPs may not be targeted by Needle Beams but they could be the target of Commando Raids by Marines using Transporters.

Shipyards facilities



Shipyards facilities provide the ability to build and modify ships in the frontiers of an empire. In the campaign system, the only shipyards are present at start are in the home system, so all newly built ships must start there. Shipyards also allow an empire that has lost its capital to continue ship construction and provide vital supplies from the frontier.

Shipyards can only built into space stations, not into ships or System Defense Boats. Shipyards are a single system of any mass desired. The size of the shipyard determines the maximum size and the total mass of ships that can be built in a single strategic turn. A shipyard can build a ship that is up to double the mass of the shipyard. So the 50-mass shipyard mentioned could build one 100-mass BC, or two 50-mass CLs, or three 33-mass DDs.

Shipyards cost 2 points per mass. They can be of any size.

Enhanced Sensors



Enhanced Sensors are more sensitive the normal detection packages found on ships with standard sensor equipment. They are also fairly fragile and easily damaged.

They can be used to augment a ship's normal fire control sensors or to reveal tactical information (if

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you are using the double blind rules) but not both on the same turn.

Augmenting the ships fire control system allows the ship to fire into its Aft arc, to some degree, if it applied thrust that turn.

Any weapons fired through the Aft arc are limited to a range of 24 MU and will only cause a hit on a die roll of 6. Weapons that are penetrating will re-roll their hits but will only inflict one point of damage on a 5 and two points on a 6 (with another re-roll).

If you using the double blind rules, Enhanced Sensors can be used to gather enemy intelligence and may reveal the following:

At 24 to 36 MU they provide the same information as basic sensors. Inside of 24 MU they provide the following additional information:

- The exact number, size and arc of enemy weapon mounts.
- The exact type of all missiles and fighters
- The drive power of a ship (total thrust and presence of Advanced Drives).

Enhanced Sensors are very fragile and easily damaged. Anytime the ship must take a threshold check the sensors are damaged at +1 on the die roll. If a natural 6 is rolled the sensors are destroyed and cannot be repaired during the game. For example, if the ship must make a threshold check for its first row of hull boxes the sensors would be damaged on a die roll of 5 and destroyed on a 6.

Enhanced Sensors are mass 2 and cost 8 points

Superior Sensors



Superior Sensors are more sensitive than the normal detection packages found on ships with standard sensor equipment. They are also fairly fragile and easily damaged.

They can be used to augment a ship's normal fire control sensors or to reveal tactical information (if you are using the double blind rules) but not both on the same turn.

Augmenting the ships fire control system allows the ship to fire into its Aft arc, to some degree, if it applied thrust that turn.

Any weapons fired through the Aft arc are limited to a range of 36 MU and are at -1 to hit. Weapons that are penetrating will re-roll their hits as normal.

If you using the double blind rules Enhanced Sensors can be used to gather enemy intelligence and may reveal the following:

These sensors have a range of 48 MU. At 36 to 48 MU they provide the information available to basic sensors. From 24 to 36 MU they provide the following information:

- You may see the opponents SSD at any time. You know the exact status of the ship, including how much ammunition remains in magazines, how many Marines are embarked, and what the captain had for breakfast.
- You can detect Biotech power allocation. This is revealed after all orders are written, but before movement and fire.

Superior Sensors are very fragile and easily damaged. Anytime the ship must take a threshold check the sensors are damaged at +1 on the die roll. If a natural 6 is rolled the sensors are destroyed and cannot be repaired during the game. For example, if the ship must make a threshold check for its first row of hull boxes the sensors would be damaged on a die roll of 5 and destroyed on a 6.

Superior Sensors are mass 4 and cost 16 points

Minesweeper system



See the rules for sweeping mines (section 6)
Minesweeping systems require 5 mass and cost 15 points

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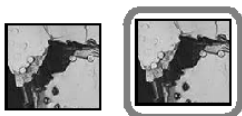
Ortillery systems



Ortillery, or Orbital Artillery, is a specially designed system for directly supporting ground troops with precision strikes against opposing ground targets.

Ortillery is 3 mass and costs 9 points.

Flawed design (Optional)



Some ships are so badly designed, ill-conceived or just plain unlucky, that the slightest damage will make them explode. There are many historical precedents for such ships: HMS Hood for example.

Flawed design is a special icon or 'system', on the SSD itself. If the ship is a capital ship (any ship over 90 mass) than the system is considered to be protected. If it is on a cruiser of mass 60 or more, it is not a protected system. Cruisers under 60 mass, ships with Advanced Hulls, and all escort ships cannot be built as a flawed design.

Whenever a ship is required to take a threshold check roll for the flawed design system the same as you would any other system. If it takes a critical hit the ship is completely destroyed.

Any ship built as a flawed design is discounted by 20%

13.14 Ship design procedure

The easiest way to begin your career as a warship designer is by taking an existing ship design (the SSD) and modifying it in some way. Ships can be tailored for particular missions by changing the weapons while keeping the original hull and drives, for instance replacing beams with missiles.

Or you could try reducing the mass spent on weapons and defenses to increase the drive rating and hence agility.

For this example, though, we will dive in and demonstrate the entire process from beginning to end.

1. Decide on the overall size of your ship, the total

mass rating.

Example: We are building a heavy cruiser, and decide on a total mass of 86. The basic points cost will be the same, 86 points.

2. Choose the hull integrity for the ship.

Example: We decide to give our heavy cruiser a standard hull of average strength. This will use up 30% of the total 86 mass, or 26 mass (actually 25.8, rounded up). The points cost of the hull will be $26 \times 2 = 52$. The chosen hull integrity gives the ship 26 hull boxes that will be arranged in rows of 7/7/6/6.

3. Choose and fit drives to the ship.

An FTL Drive to give the ship interstellar capability will require 10% of the total mass.

Decide on the required thrust factor for the ship's main drive which requires 5% of total ship mass per thrust factor.

Example: Our heavy cruiser needs an FTL Drive (8.6, rounded up to 9); we also decide on thrust-4 for the main drive, which takes $4 \times 5\% = 20\%$ of ship mass (17.2, rounded down to 17). Total mass of the drive package is thus 26, and points cost for the drives is $26 \times 2 = 52$. We now have a hull with drive systems installed. The total mass used so far is $26 + 26 = 52$, leaving $86 - 52 = 34$ for other systems. The points cost so far is $86 + 52 + 52 = 190$.

4. Select the desired mix of offensive and defensive systems to fit to the ship, according to its intended role. See section 5, 6 and 7.

Example: Our heavy cruiser is intended as a multi-role ship, so we decide on a balanced mix of offensive and defensive systems to cope with a wide variety of possible threats.

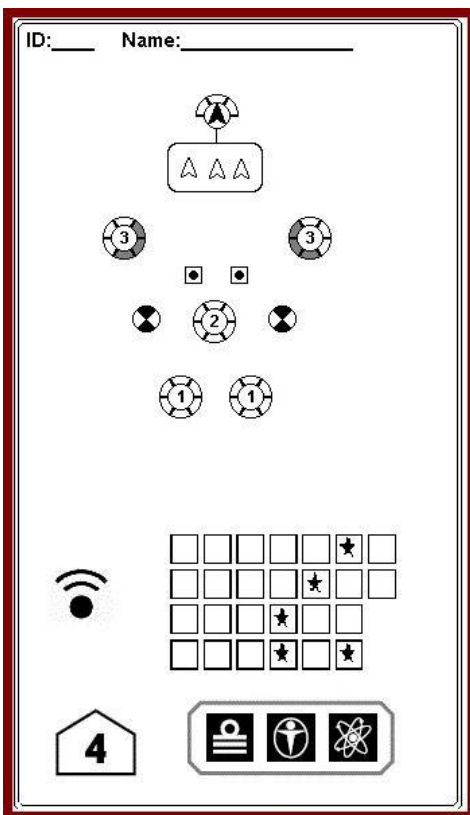
Two standard FireCon systems use 1 mass each and cost 4 points each. This leaves us 32 mass. The main offensive punch of the ship will be a mix of beam batteries and Salvo Missiles. We decide on two Beam-3 batteries each bearing through 3 arcs (Fore arc and two side arcs, Port and Starboard respectively, to give an overlapping coverage), at 6 mass each; one Beam-2 with all around fire (3 mass), plus a backup

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armament of 2 Beam-1 at 1 mass each.

A single Salvo Missile Launcher is mounted forward, covering the front 3 arcs or 180° zone at 3 mass, with a magazine holding 3 standard salvoes (3 x 2 = 6 mass). Total offensive systems mass is 6 + 6 + 3 + 1 + 1 + 3 + 6 = 26, with all offensive systems costing mass x 3 = 78 points.

We have 6 mass left for defensive systems to protect the ship: we decide on an active defense capability of two point defense systems (PDS) at 1 mass each, leaving 4 mass to use up. We decide to fit a level-1 screen generator for 4 mass. (5% of 86 = 4.3, rounded down to 4); alternatively, we could spend this on 4 boxes of hull armor which would be slightly cheaper. Total defensive systems mass is 6, costing mass x 3 = 18 points.



Heavy cruiser SSD

So, the total systems fit for the ship is:

Basic hull 86 mass 86 points

Hull integrity 26 mass 52 points

FTL Drive 9 mass 18 points

Main drive thrust-4 17 mass 34 points

Sub-totals 52 mass 190 points

2 x Beam-3 (3 arc) 12 mass 36 points

1 x Beam-2 (6 arc) 3 mass 9 points

2 x Beam-1 2 mass 6 points

2 x FireCon 2 mass 8 points

SML 3 mass 9 points

Magazine (3 loads) 6 mass 18 points

Level-1 screen 4 mass 12 points

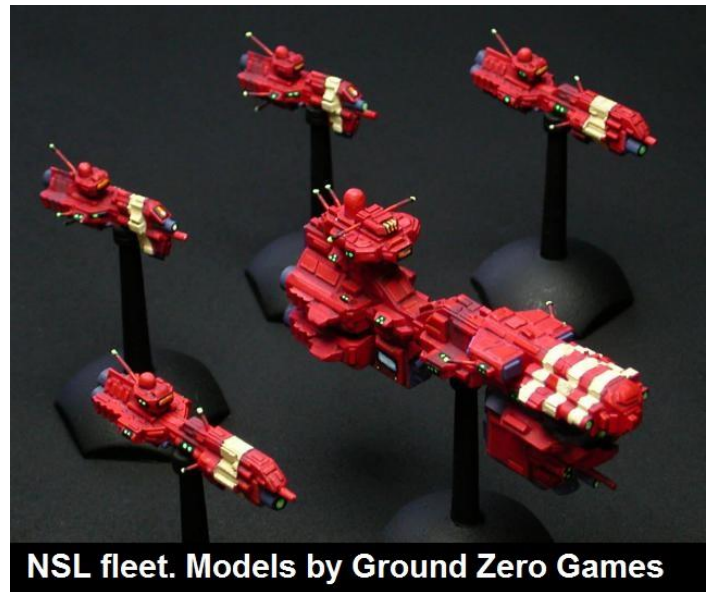
2 x PDS 2 mass 6 points

Sub-totals 34 mass 104 points

Totals mass 86 294 points

Monster ships and bases

For players wishing to build truly massive ships or large space stations this section will give you a few options

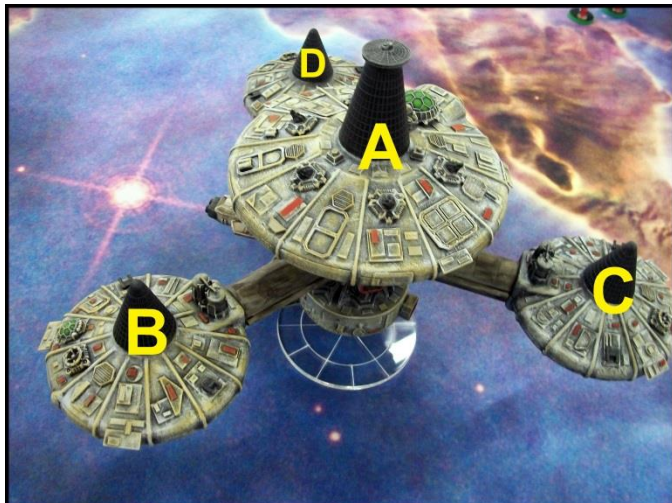


13.15 Starbases

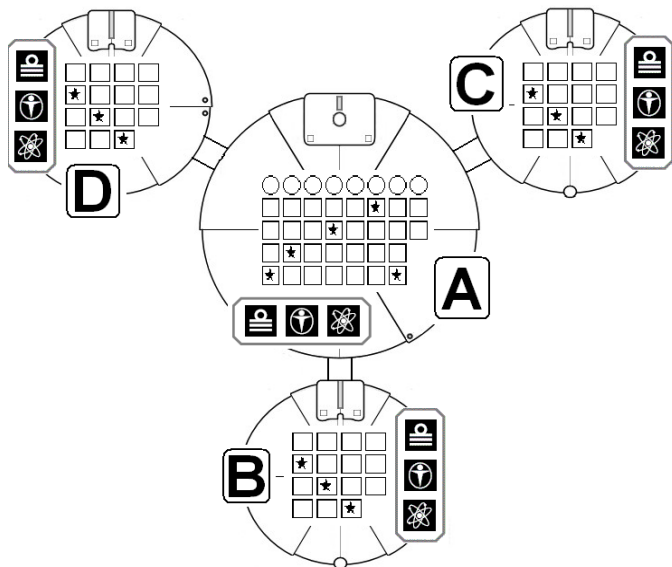
A starbase is any space station, habitat, drift, orbital, asteroid base, or other artificial construct large enough to be treated as terrain rather than a ship. A starbase is always thrust 0 for movement.

A starbase has one or more sections, each with its own SSD.

Each section of the model should have a central 'point' that attacking ships may attack. See the illustration below.



Starbase model converted from an AMT model.



Starbase and SSDs

Each section has at a minimum, icons for Core Systems and a hull damage track, plus weapons or defenses as appropriate.

Non-military starbases should have many small sections to represent their less robust construction.

Like asteroids, weapons may not be fired, nor missiles launched by ships through the space occupied by a starbase.

Individual sections may fire or be fired at if they have a direct point to point line of sight, or through sections that have already been destroyed. 'Interior' sections are therefore immune to attack until at least one outer section has been lost.

In Figure 33, the ship and sections 2 and 4 can fire at each other, but sections 1 and 3 cannot. Sections either have no drive or a comparatively much smaller drive than a ship, so are not affected by Aft arc firing limitations or vulnerability.

If a section of a starbase is destroyed by a reactor core explosion, all immediately adjacent sections take 3D6 of penetrating damage. If this also destroys those sections, repeat the process again: This can create the chain reaction of explosions so often seen in sci-fi television and film.



FIGURE 33: STARBASE COMBAT

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Movement and starbases

The mass of a starbase represents only that used for ship equivalent systems. The true mass would be many times higher: you cannot use a tow ship or FTL tug to steal a starbase or sections thereof!

While a ship is docked to a starbase the ship may be fired on as normal unless it is actually docked internally. (Some very large stations will have bays large enough to take smaller vessels.) An externally docked ship is, however, protected by any screen systems that the starbase has while docked. Whether a ship docked externally to a starbase can fire any of its own weaponry is up to the players or scenario designer.

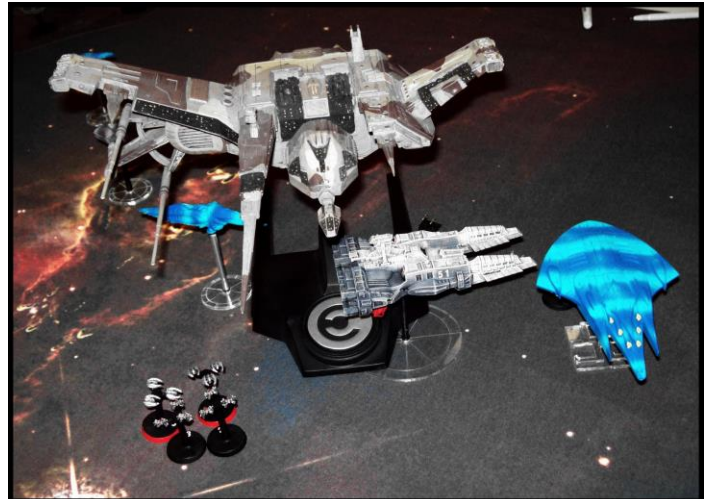
Should a starbase happen to have an FTL Drive, the symbol should be in the innermost or best protected section. Assume that it has enough excess capacity to carry along any docked ships with it.

A starbase is the same collision risk as an asteroid. If a collision occurs the ship is destroyed and the nearest starbase section takes $D6 \times$ ship hull boxes damage as if it had been rammed.

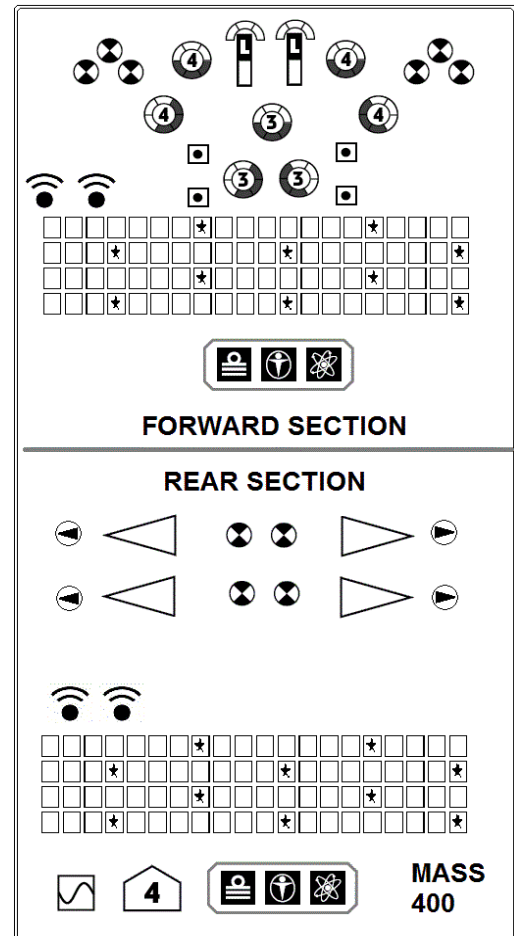
Monster ships

Very large ships can be built in sections the same manner as starbases. The biggest difference is one section, typically the aft section, will have all drive systems installed in it. Be sure to remember that the FTL Drive and main drive masses must be calculated for the entire ship, not just the section containing the drive.

If a section is destroyed, the remaining sections can still fight until they themselves are destroyed. In effect each section is treated as a separate ship.



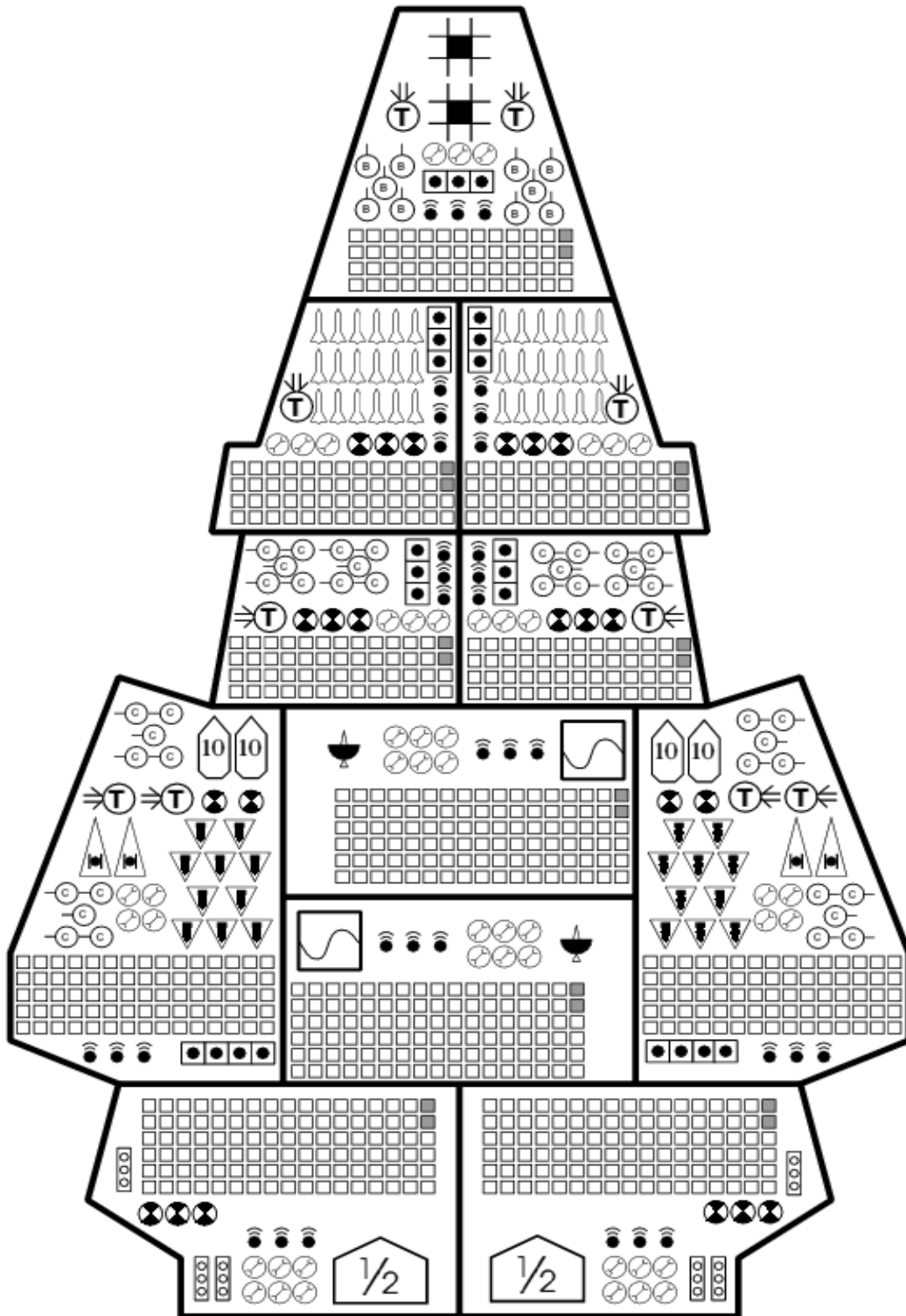
A massive alien vessel takes on an enemy task force



Example of a Monster ship SSD

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Extreme example of a monster ship. Note: this particular SSD is very old and dates back to the original second edition of Full Thrust. We wanted to include it here for its sheer 'awesomeness'!



14 Ship construction summary

14.1 Primary ship systems

System	Mass	Points
Basic hull	total mass of ship	x1
Advanced Hull Integrity % of total mass	3 rows	X3
Standard Hull Integrity % of total mass	4 rows	X2
	5 rows	x1.5
	6 rows	x1
Stealth Hull -Level 1	None	2 per Hull/Armour Box
Stealth Hull -Level 2	None	4 per Hull/Armour Box
Standard drive	5% total per factor	x2
Advanced drive	5% total per factor	x3
FTL drive	10% Total mass	x2
Advanced FTL drive	10% total mass	x3
Partial Streamlining	5% of total mass	0
Full Streamlining	10% of total mass	0
Fire Control	1	4
Advanced Fire Control	1	5
Cargo/Passenger	1 per Space	None
Hangar Bay	6 Note: if not using Launch Tubes/Flight decks, mass is 9	x3 (x2 if using optional Critical hits to Hangar Bays rule)
Launch Tube/Flight Deck	3	x3
Add Catapult		+1 (per Tube/Flight Deck)
Robot Fighter Rack	6	x3
Gunboat Rack	18	None



14.2 Defense Systems

System	Mass	Points
Hull Armour, per box	1	2
Shell Armour – each Layer	1	Inner layer-2 per mass First shell-4 per mass Second shell-6 per mass Third shell-8 per mass Fourth shell-10 per mass
Regenerative Armour	1	Inner layer-4 per mass First shell-6 per mass Second shell-8 per mass Third shell-10 per mass Fourth shell-12 per mass
Screen Generator	5% total mass	x3
Advanced Screen	7.5% total mass	x4
Area Screens-Standard Screen	20% total mass	x3.5
Area Screens-Advanced Screen	30% total mass	x3.5
Anti-Matter Suicide Charge	1	5
ADFC	2 (OR 0)	8
Advanced ADFC	2	10
PDS	1	3
ADS	2 for 3 arcs +1 mass for 6 arcs	x3
Scattergun	1	5
Grapeshot	1	4
Stealth Fields	5% total mass per level (max 2)	x6
Holofield	10% total mass	x5
ECM	1 per level	3 each
Area ECM	2 per level	6 each
Cloaking Device	1	Ship's mass /2
Cloaking Field	1	Ship's mass

14.3 Secondary ship systems

System	Mass	Points
Mine Sweeper	5	15
Damage Control Party	0	5
Marine Boarding Party	0	5
Passenger Berthing	1 Mass per 4 DC parties	0
Troop Berthing	1 Mass per 3 MBPs	0
Enhanced Sensors	2	8
Superior Sensors	4	16
Weasel Cruiser Emitter	2	8
Weasel Capital Emitter	4	16
Ortillery System	3	9

14.4 Direct fire weapons.

Weapon	Class	Mass	Points
Beam	1	1	x3
	2	2 for 3 arcs 3 for 6 arcs	
	3	Broadside (2 arc weapon) 1 mass	
	4	4 for one arc +1 each additional arc	
EMP projectors (Ion Cannons)	EMP 1	1/6 arcs.	x3
	EMP 2	2/3 arcs. +1 for 3 additional arcs.	
	EMP 3	4/1 arc. +1 mass per additional arc.	
	EMP 4	8/1 arc. +2 mass per additional arc.	
Plasma Cannon	Plasma 1	1/3 arcs.	x3
	Plasma 1	2/6 arcs.	
	Plasma 2	4/3 arcs. +2 for 3 additional arcs.	
	Plasma 3	8/1 arc. +2 mass per additional arc.	
Standard Grasers (SAP)	Plasma 4	16/1 arc. +4 mass per additional arc.	x3
	Graser 1	1/3 arcs.	
	Graser 1	2/6 arcs.	
	Graser 2	4/3 arcs. +2 for 3 additional arcs.	
Heavy Grasers (SAP)	Graser 3	8/1 arc. +2 mass per additional arc.	x3 OR x4 for High Intensity Grasers
	Graser 4	16/1 arc. +4 mass per additional arc.	
	Graser 1	2/1 arc.	
	Graser 1	3/3 arcs.	
Phasers (SAP)	Graser 1	4/6 arcs.	x3+2 OR x6 if ship also mounts Advanced fire control
	Graser 2	9/1 arc. +3 mass per additional arc.	
	Graser 3	24/1 arc. +6 mass per additional arc.	
	Phaser 1	1/3 arcs.	
Phasers (SAP)	Phaser 1	2/6 arcs.	x3+2 OR x6 if ship also mounts Advanced fire control
	Phaser 2	4/3 arcs. +2 for 3 additional arcs.	
	Phaser 3	8/1 arc. +2 mass per additional arc.	

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	Phaser 4	16/1 arc, +4 mass per additional arc.		
Transporter Beams	TB 1	1/6 arcs.	x3	
	TB 2	2/3 arcs, +1 for 3 additional arcs.		
	TB 3	4/1 arc, +1 mass per additional arc.		
	TB 4	8/1 arc, +2 mass per additional arc.		
Gatling Battery (P)	Gatling Battery	2/1 arc.	x4	
	Gatling Battery	3/3 arcs.		
	Gatling Battery	4/6 arcs.		
		Broadside (2 arc weapon) 2.5mass		
Twin Particle Array (P)	Twin Particle Array	2/1 arc.	x4	
	Twin Particle Array	3/3 arcs.		
	Twin Particle Array	4/6 arcs.		
		Broadside (2 arc weapon) 2.5mass		
Meson Projector (P)	Meson Projectors	2/1 arc.	x4	
	Meson Projectors	3/3 arcs.		
	Meson Projectors	4/6 arcs.		
Needle Beams	NB 1	2/2 arcs, +1 mass per additional arc, 3 arcs max	x3	
	NB 2	4/1 arc, +2 mass per additional arc, 3 arcs max		
	NB 3	8/1 arc, +4 mass per additional arc, 3 arcs max		
	NB 4	16/1 arc, +8 mass per additional arc, 3 arcs max		
Pulse Torpedos (SAP)	Pulse Torpedo	4/1 arc, +1 Mass per additional arc, 3 arcs max	X3	
	Pulse Torpedo SR	2/1 arc, +1 mass per 2 additional arcs, 3 arcs max	+1 per mass if using Over-loadable torpedo rules	
	Pulse Torpedo LR	8/1 arc, +2 mass per additional arc, 3 arcs max		
Turreted Submunition Pack (P)	Submunitions	1/3 arcs	3	
K-Guns (AP)	Normal	K1	2/6 arcs	x4
		K2	3/1 arc, +1 mass for an additional arc, 2 arcs max	
		K3	5/1 arc	
		K4	8/1 arc	
		K5	11/1 arc	
		K6	14/1 arc	
	Short Range (Half Mass)	SRK 1	1/6 arcs	
		SRK 2	2/2 arcs	
		SRK 3	3/1 arc	
		SRK 4	4/1 arc	
		SRK 5	6/1 arc	
		SRK 6	7/1 arc	
Long Range (Double Mass)	LRK 1	4/6 arcs		
	LRK 2	6/1 arc, +2 mass for an additional arc, 2 arcs max		
	LRK 3	10/1 arc		
	LRK 4	16/1 arc		
	LRK 5	22/1 arc		
	LRK 6	28/1 arc		
Arm with Flak Ammunition	Available for all types of K-Gun		+2 points per gun (all guns except K1 must be armed)	
Boarding Torpedoes	Boarding Torp Launcher	2/3 arcs	6	
	Boarding Torpedo	1 Each	3	

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Fusion Array	Fusion Array	3/1 arc, +1 mass per additional arc, 3 arcs max	x3
Gravitic Guns	Grav 1	1/6 arcs	x3
	Grav 2	2/3 arcs, +1 mass for 3 additional arcs	
	Grav 3	4/1 arc, +1 mass per additional arc	
Plasma Bolt launcher	Class 1 PBL	Mass 3, one arc + 1 for each additional arc (max of 3 arcs)	x3
	Class 2 PBL	Mass 6, one arc + 2 for each additional arc (max of 3 arcs)	x3
	Class 3 PBL	Mass 9, one arc + 3 for each additional arc (max of 3 arcs)	x3
	Class 4 PBL	Mass 12, one arc + 4 for each additional arc (max of 3 arcs)	x3
	Class 5 PBL	Mass 15, one arc + 5 for each additional arc (max of 3 arcs)	x3
	Class 6 PBL	Mass 18, one arc + 6 for each additional arc (max of 3 arcs)	x3

14.5 Spinal Mount Weapons.

Spinal Mount	Mass	Range	Points
Beam	8	24mu	x4
	16	32mu	
	32	48mu	
Plasma	8	24mu	x4
	16	32mu	
	32	48mu	
Point Singularity Projector	8	24mu	x5
	16	32mu	
	32	48mu	

14.6 Ordnance weapons

Weapon	Mass	Points
Multiple Kinetic Penetrators	1	x4
Anti-Matter Missile	2 ea	10ea
Heavy Missile- Standard	2	x3
Heavy Missile- extended range	3	
Heavy Missile- two stage	+2	
Salvo Missile Launcher-one shot	4	x3
Salvo Missile Launcher ER -one shot	5	
Salvo Missile Launcher	3	
Magazine- per missile salvo	2	
Magazine- per ER missile salvo	3	

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Rocket Pod	1	x3
Mine Layer	2	x3
Mines (min of 2)	1ea	2ea

Turrets: 3 points per mass.

6 arc turret 1 mass of turret holds 2 mass of weapons
5 arc turret 1 mass of turret holds 3 mass of weapons
4 arc turret 1 mass of turret holds 4 mass of weapons
3 arc turret 1 mass of turret holds 5 mass of weapons
2 arc turret 1 mass of turret holds 6 mass of weapons

14.7 Fighter Types

Standard	3 points each, 18 per wing.
Heavy Modification (+mod)	3 per fighter (+18 Per wing).
Fast (+mod)	24 per wing. (may be added to other fighter types at a cost of +1 per fighter (+6 per wing).
Long Range (+mod)	24 per wing. (may be added to other fighter types at a cost of +1 per fighter, +6 per wing).
Interceptor	3 per fighter, or 18 per wing.
Attack Fighter	4 points each, or 24 per wing.
Torpedo Fighter	6 points each, 36 per wing.
Graser Fighter	7 points each, 42 per wing.
Plasma Fighter	7 points each, 42 per wing.
MKP Fighter	6 points each, 36 per wing.
Missile Fighters	4 points each, 24 per wing.
Multi Role Fighters	5 each, 30 per wing.
Light Fighter	4 each, 18 for standard wing, 24 for attack.
FTL fighters (+mod)	Costs an additional +1 per fighter.
Assault Shuttles	1 point each, 6 per wing

14.8 Gunboat Types

FTL Gunboats (+mod)	+6 points for the squadron.
Beam Gunboat	9 points each
Plasma Gunboat	9 points each
Graser Gunboat	9 points each
Gatling Gunboat	15 points each
Needle Gunboat	9 points
Pulse Torpedo Gunboat	12 points each
Submunition Gunboat	12 points each
MKP Gunboat	15 points each
K-Gunboat	12 points each
Missile Gunboat	12 points each
Rocket Gunboat	12 points each

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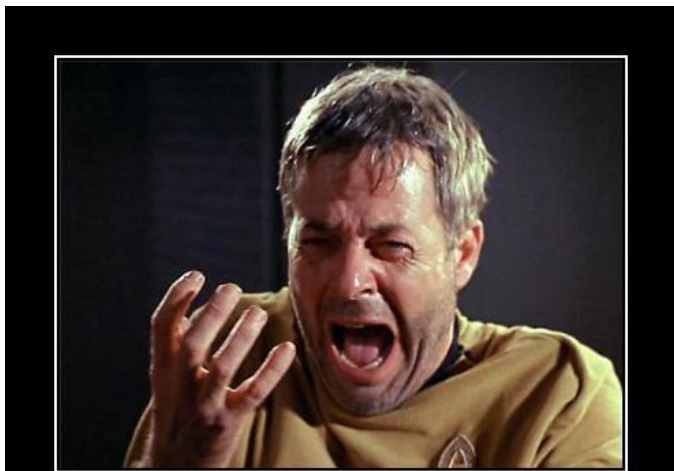
Point Defence Gunboat	9 points each
Area Defence System Gunboat (ADS)	12 points each
Electronic Warfare Gunboat (+mod)	+3 points each per level of ECM (3 levels max) for the entire squadron.
Scatterpack Gunboat	15 points each
Plasma Bomber Gunboat	15 points each
Heavy or Screened Gunboat (+mod)	+12 points for the squadron.



**Colonial Fleet in battle with the Federation.
Models By Ravenstar Studios and Timeslip Creations**

15 The Imperial Tech Base

The technology and various systems outlined in the rules are designed to give players the flexibility to design their ships to match whatever genre they wish to play in. Whether it be giant steel space carriers with big flak throwing turreted guns, to sleek high tech starships whose weapons can slice bits off a ship or destroy it out right. Players are naturally limited in what tech systems they can put on their ships by the genre, movie, TV show, etc., they are emulating and thus (probably) cannot “uber-build” a game winner. In other words the player has a preset framework in which to create his ship designs.



Whaddya' mean your whole fleet has cloaking devices and Wave Guns?

But what if a player has a collection of generic models that doesn't already go with a 'known universe'? By the rules he/she can build whatever they want, opening up the door to abusive play. For example - who wants to play against an opponent that uses spinal mounts, cloaking devices, fighters, gunboats, scatter packs and advanced drives all on the same ship? The best way to limit players is to generate a Tech Base for the player's empire using the following lists. Players may choose whatever systems they wish but are limited to a number of choices as determined by their player group. We recommend no more than ten but it's up to the players.

Some systems come for free and are marked with a '0' cost. Every empire has those systems and they do not count as one of their tech choice choices. Some systems also have prerequisites meaning you must purchase one system in order to be able to have another. For example, Pulse Batteries require the empire to have beam weapons as well since Pulse Weapons are an advanced version of standard beam weaponry.

15.1 Master Tech Base Reference

Primary ship systems

1. Standard 4, 5 and 6 row Hull (0 technology choices)
2. Advanced 3 row Hull (1 technology choice)
3. Hangar bay and launch tube/flight deck (0 technology choices)
4. Launch tube catapult (1 technology choice)
5. Standard drive system (0 technology choices)
6. Advanced gravity drive (3 technology choices)
7. FTL Drive (0 technology choices)
8. Advanced FTL Drives (1 technology choice)

Defensive systems

1. Armor (1 technology choice)
2. Layered or Shell Armor (1 technology choice, prerequisite is Armor)
3. Regenerative Armor (2 technology choices)
4. Stealth Hull (1 technology choice)
5. ADFC (0 technology choice)
6. Advanced ADFC (1 technology choice)
7. PDS (1 technology choice)
8. ADS (1 technology choice, PDS is prerequisite)
9. Scattergun (1 technology choice, prerequisite is Grape Shot)
10. Grapeshot (1 technology choice)
11. Screens (1 technology choice)
12. Advanced Screens (2 technology choices prerequisite is Screens)
13. Area Screens (3 technology choices, Advanced Screens is prerequisite)
14. Holofield (1 technology choice)
15. Stealth Fields (1 technology choice)
16. ECM (2 technology choices)
17. Area ECM (comes with ECM technology)
18. Cloaking Device (1 technology choice, Stealth Field is prerequisite)
19. Cloaking Field (1 technology choice, Stealth Field is prerequisite)
20. Tuffley Cloak Device (1 technology choice, Stealth Field is prerequisite)
21. Antimatter Suicide Charge (1 technology choice)

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Targeting systems

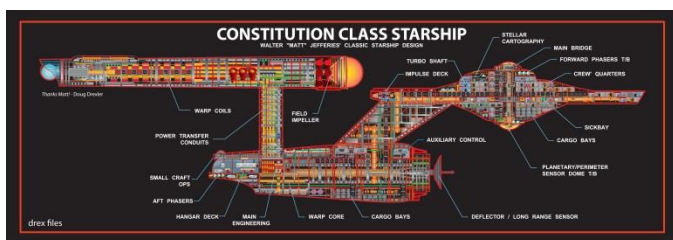
1. Fire Control (0 technology choices)
2. Advanced fire Control (1 technology choice)

Direct fire weapons

1. Beams, Class 1, 2 and 3 (1 technology choice)
2. Beams, Class 4, 5 and 6 (1 technology choice, prerequisite is Beams Class 1, 2 and 3)
3. EMP Projectors (1 technology choice)
4. Plasma Cannon (1 technology choice)
5. Standard Grasers (1 technology choice, Beams is prerequisite)
6. Heavy Grasers (1 technology choice, prerequisite is Standard Grasers)
7. Phasers (1 technology choice, prerequisites are Beams, and Grasers)
8. Transporter Beams (1 technology choice)
9. Gatling Battery (1 technology choice, Beams is prerequisite)
10. Twin Particle Array (1 technology choice, Beams is prerequisite)
11. Meson Projector (comes free with either Twin Particle Array or Gatling Batteries)
12. Needle Beams (1 technology choice)
13. Pulse Torpedoes - Standard and Short Range (1 technology choice)
14. Overloaded Pulse Torpedo (1 technology choice, prerequisite is Pulse Torpedo)
15. Long Range Pulse Torpedo (1 technology choice, prerequisite is Pulse Torpedo)
16. Variable Strength Pulse Torpedo (1 technology choice, prerequisite is Pulse Torpedo)
17. Fusion Array (1 technology choice)
18. Submunition Pack (1 technology choice)
19. K-Guns Standard and Short Range (1 technology choice)
20. Long Range K-Gun (1 technology choice, prerequisite is K-Gun)
21. Flak Ammo (1 technology choice)
22. Gravitic Guns (1 technology choice)
23. Boarding Torpedoes (1 technology choice)
24. Pulsers (2 technology choices, prerequisite is Beams)
25. Turrets (1 technology choice)

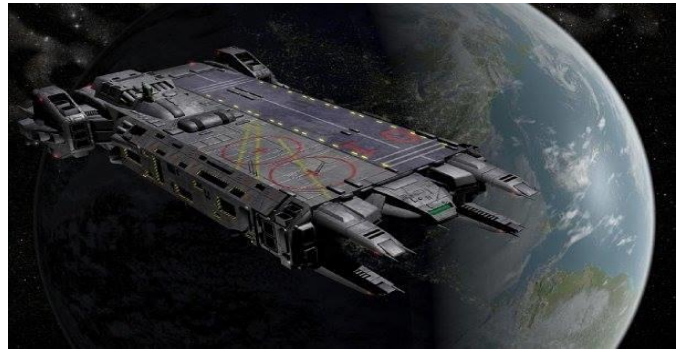
Spinal Mounts

1. Point Singularity Projector (2 technology choices, Gravitic Gun is prerequisite)
2. Beam (1 technology choice, Beams is prerequisite)
3. Plasma (1 technology choice, Plasma Cannon is prerequisite)



Ordnance weapons

1. Antimatter Missile (1 technology choice)
2. Salvo Missile Launcher (1 technology choice)
3. Salvo Missile Rack (comes with Salvo Missile Launcher)
4. Extended Range Salvo Missiles (1 technology choice)
5. Rocket pods (1 technology choice)
6. Heavy missiles (1 technology choice)
7. Mine Layer Rack (1 technology choice)
8. Standard Mines (0 technology choices)
9. Multiple Kinetic Penetrators (1 technology choice, prerequisite is K-Guns)
10. Plasma Bolt Launcher (1 technology choice)



Fighters

1. Standard Beam fighter (1 technology choice, prerequisite is Beams)
2. Standard Gun fighter (1 technology choice, prerequisite is K-Guns)
3. Heavy (+mod) (1 technology choice)
4. Fast (+mod) (1 technology choice)
5. Long Range (+ mod) (1 technology choice)
6. Interceptor (comes with standard fighter technology)
7. Attack Fighter (1 technology choice)
8. Torpedo Fighter (1 technology choice, prerequisite is Pulse Torpedoes)
9. EMP Fighter (1 technology choice, prerequisite is EMP Projectors)
10. Graser Fighter (1 technology choice, prerequisite is Standard Grasers)
11. Plasma Fighter (1 technology choice, prerequisite is Plasma Cannon)
12. MKP Fighter (1 technology choice, prerequisite is MKP Packs)
13. Needle Fighter (1 technology choice, prerequisite is Needle Beams)
14. Missile Fighters (1 technology choice, prerequisite is Salvo Missiles)
15. Rocket Fighter (1 technology choice, prerequisite is Rocket Pods)
16. Multi-Role Fighters (3 technology choices, prerequisite is Standard and Attack Fighters)
17. Robot Fighters (1 technology choice)

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18. Fighter Racks (come with Robot Fighter technology)
19. FTL Fighters (1 technology choice)
20. Assault Shuttles (1 technology choice)
21. Fighter Package Deal
This technology 3 choice package "fighter specialists" allows the user to pick 6 choices of fighter technology.

15.8 Gunboats

(Optional - Gunboats may not be purchased if the Empire is using fighters)

1. Gunboats (1 technology choice)
2. Gunboat Rack (comes with Gunboats)
3. FTL Gunboats (1 technology choice, prerequisite is Gunboats)
4. Beams (comes with Beam technology)
5. EMP (comes with EMP Projector technology)
6. Plasma (comes with Plasma Cannon technology)
7. Graser (comes with Graser technology)
8. Gatling/Pulser (comes with either Gatling battery or Pulser technology)
9. Needle (comes with Needle Beam technology)
10. Pulse Torpedo (comes with Pulse Torpedo technology)
11. Submunition (comes with Submunition Pack technology)
12. MKP (comes with MKP technology)
13. K-Gun (comes with K-Gun technology)
14. Gravitic Gun (come with Gravitic Gun technology)
15. Missile (comes with standard missile technology)
16. Rocket (comes with Rocket Pod technology)
17. Boarding Torpedo (comes with boarding torpedo technology)
18. Area Defense (comes with ADS technology)
19. ECM (comes with ECM or Area ECM technology)
20. Scatterpack (comes with Scatterpack technology)
21. Plasma Bomber (comes with Plasma Bolt Launcher technology)
22. Heavy or Screened Gunboat (+mod) (1 Technology choice)

Secondary ship systems

1. Enhanced Sensors (0 technology choice)
2. Superior Sensors (1 technology choice)
3. Minesweeper (1 technology choice)
4. Boat bay (0 technology choices)
5. Cargo holds (0 technology choices)
6. Troop and passenger berthing (0 technology choices)
7. Shipyard facilities (0 technology choices)
8. Marine Boarding Parties (0 technology choices)
9. Damage Control Parties (0 technology choices)
10. Ortilery (0 technology choices)
11. Weasel Emitters (0 technology choices)

15.2 Example Factions

Note: the examples presented here are not strictly the same as any of the published Fleet Books. They are merely presented here as examples.

New Anglian Confederation

TECH CHOICES

Tech type	#CHOICES
BEAM WEAPONS CLASS 1, 2 AND 3	1
BEAM WEAPONS CLASS 4, 5, AND 6	1
STANDARD GRASERS	1
PDS	1
STANDARD SCREENS	1
ADVANCED SCREENS	2
SALVO MISSILE LAUNCHER	1
PULSE TORPEDO	1
SUBMUNITION PACKS	1
STANDARD FIGHTER	1
TORPEDO FIGHTER	1
TOTAL	12

Eurasian Solar Union

TECH CHOICES

Tech type	#CHOICES
BEAM WEAPONS CLASS 1, 2 AND 3	1
BEAM WEAPONS CLASS 4 AND 5	1
PDS	1
STANDARD SCREENS	1
SPINAL MOUNT BEAMS	1
ATTACK FIGHTER	1
STANDARD FIGHTER	1
INTERCEPTOR FIGHTER	1
LONG RANGE FIGHTER	1
FAST FIGHTER	1
ASSAULT SHUTTLES	1
TOTAL	11

16 Special moves

16.1 Thrust 0 drives

Ships with thrust 0 drives, and any asteroids or similar object that have significant movement relative to ships, never write orders. The controlling player, or scenario designer, determines the initial position, course, and velocity before the game begins. Each turn, the ship or asteroid moves along this predetermined course before all other ships.

16.2 Rolling ships



Although Full Thrust makes no attempt to simulate 3-dimensional movement or combat, there is one simple rule addition that we are including here: the ability to roll a ship 180° on its central axis, thus effectively swapping the port and starboard sides (i.e. the ship is 'upside down' relative to the other ships on the table). This maneuver can be very useful when ships start to lose systems due to damage, as it can allow undamaged weaponry to bear on targets that would otherwise be on the wrong side of the ship.

To perform a roll, the player simply writes "Roll" in the movement orders for that turn; the roll expends 1 thrust factor which comes off the turning allowance. For example, a thrust-4 ship, normally capable of 2 points of turn, could only turn 1 point if it also rolled that move; but would still be able to use its other two thrust factors to accelerate or decelerate as normal. The roll then occurs at the start of the ship's movement, and a marker is placed by the model to indicate its inverted condition. Rolling has no effect on combat (except that the port batteries now bear to starboard and vice versa). An inverted ship may roll back 'upright' in any subsequent turn, or may remain inverted as long as the player wishes.

For simplicity of play, rolled ships still have their movement orders written in relation to the actual miniature rather than their theoretical inverted condition – thus an order written for a port turn will still turn the model to the left, even though to the inverted ship this would actually be a starboard turn. Keeping to this convention should avoid a lot of confusion and arguments.

16.3 Towing ships

In normal space ships can tow other ships.

First the towing ship must match courses. The two ships must be within 3 MU of each other and either both halted, or both moving at the same velocity and course facing.

At the start of a turn (before the Ship Movement Phase) where the two ships have matched courses, the towing ship can begin establishing a link.

- A ship equipped for towing as part of its normal duties requires one complete turn for each ship.
- Any other ship requires two complete turns and can only tow a single ship.

If either ship changes velocity or facing during this time without an exact match by the other ship, or if the target ship fires any weapon against the other and inflicts at least one hull box of damage, the link is broken and the procedure must be restarted from the beginning.

Once linked, the two ships move as if they were in a line-ahead squadron formation. Multiply the mass of the towing ship by its main drive rating; this is the available thrust.

Divide the available thrust by the combined mass of the linked ships and round down to the nearest whole number. This is the thrust rating of the linked ships. (If the thrust rating of the linked ships rounds down to zero, the tow can still succeed, but the time required will be many hours or days, outside the time frame of a Full Thrust battle.)

Example: A salvage ship with mass 80 and thrust 4 attempts to tow a dreadnought of mass 160 that has no operational main drive. It is currently drifting at velocity 3, course 9.

The salvage ship first matches velocity and course within 3 MU, then spends one turn establishing a link. The salvage ship has mass $80 \times \text{thrust } 4 = 320$ available thrust. Dividing this by the combined mass of $80 + 160 = 240$ gives $320 \div 240 = 1.5$, thrust rating 1 for the linked ships.



16.4 Moving table

Earlier we mentioned that ships that leave the edge of the table or playing area are leaving the battle. However, as space does not actually have edges, it really should be possible for the entire battle to ‘move’ off the edge of the playing area and still continue – this may happen if both sides are moving in the same general direction, e.g. in a pursuit scenario. If you find that all ships in the action are starting to get very close to one end or side of the table, it is a simple matter to move every ship and object in play a certain agreed distance back towards the opposite table edge; effectively you can think of it as extending the playing area under the ships. (All things are relative, as someone once said.)

16.5 Disengaging from battle

If you use the moving table in a game, it will become possible to continue pursuit of a fleeing enemy. Under the normal rules a retreating force simply has to leave the table in order to break off combat, but with the moving table the pursuit may go on until one side either catches or outruns the other.

Particularly when playing campaign games, which for obvious reasons are very seldom fought ‘to the death’, it is advantageous to be able to disengage from battle if things are going badly for you – saving your remaining ships for the next engagement can be much more important than going out in a heroic blaze of glory.

If one player decides to disengage, it is possible to actually play out the full pursuit stage as described above. If, however, this is felt to be too time consuming, there is an alternative abstract method that may be used.

The disengaging player’s ships must all move off the table via the same table edge; until the last ship has left the table, the battle will continue as normal. When all the ships are off the table edge, each player rolls a D6. If one player has any ship that has a higher thrust than all opposing ships, then add 2 to the die roll.

Example: if the disengaging player has some thrust-8 escorts while the opposing fleet has nothing with a thrust above 6, the former adds 2 to the roll.

If the final total of the player who is trying to disengage is equal to or higher than their opponent’s roll, they have successfully disengaged and are safe from pursuit. If, on the other hand, the opponent’s roll is higher, then the pursuing player may elect to continue pursuit; in which case the game continues with a new set-up as a stern chase. The fleeing player may then attempt the disengagement again by leaving the opposite edge of the new playing area.

16.6 Docking

Ships may attempt to dock with other ships or with starbases although this is unlikely during combat.

To accomplish a docking, the ship’s movement orders must be plotted so that it ends up within 3 MU of the target ship/starbase at the end of the turn. If the target is stationary, the ship must also come to a dead stop, otherwise it must exactly match both course and velocity with the target ship or starbase at the end of the turn. On the following turn, the ship may be considered docked. One full turn is also required to “cast off” and undock again, after which the ship may maneuver as normal.

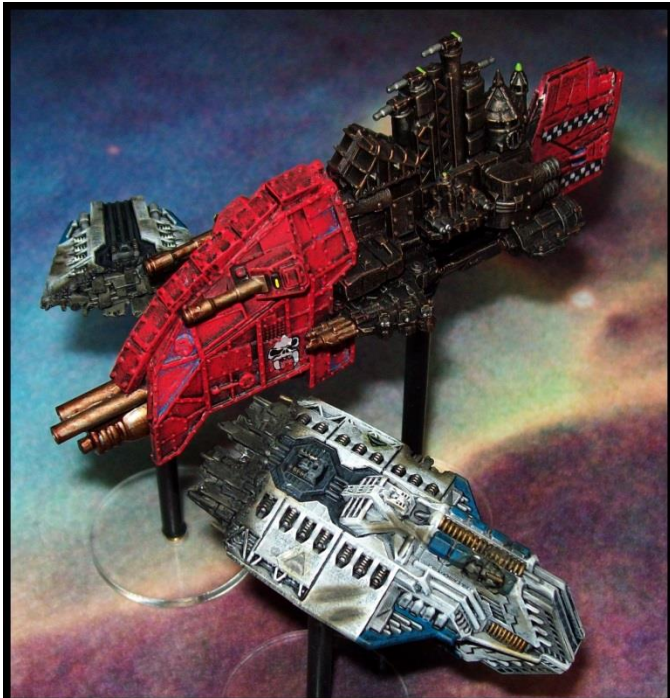
16.7 Ramming

Deliberate attempts to ram another ship are possible in some circumstances, but such suicide attacks should be rarely attempted – crews would not be very keen on officers who ordered such tactics as a matter

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of routine! Ramming is therefore an optional rule. (Very small ships that ram, such as Autonomous Kill Vehicles with AI pilots, are represented in Full Thrust by missiles or torpedo fighter groups.)

A player who wishes to attempt a ramming attack writes as part of movement orders that the ship is going to attempt to ram, and then rolls a D6 at the end of the Ship Movement Phase. Only on a roll of 6 may the ramming attempt proceed.



'Reaver' Heavy Battleship smashes through a Terran Battle Cruiser. Battle Cruiser By Spartan Games, Battleship kit bashed from Games Workshop bits

In order to attempt the ram, the ship must end the movement within 2 MU of the intended target ship (or models touching in the case of large ship models). Only if you succeed in anticipating the enemy move, and then succeed in rolling a 6 as explained above, may the actual ram be attempted.

Both players (attacker and target) roll a D6 each, and add the score to their respective ship's thrust ratings. If the attacker ends up with the highest total, the ram is successful.

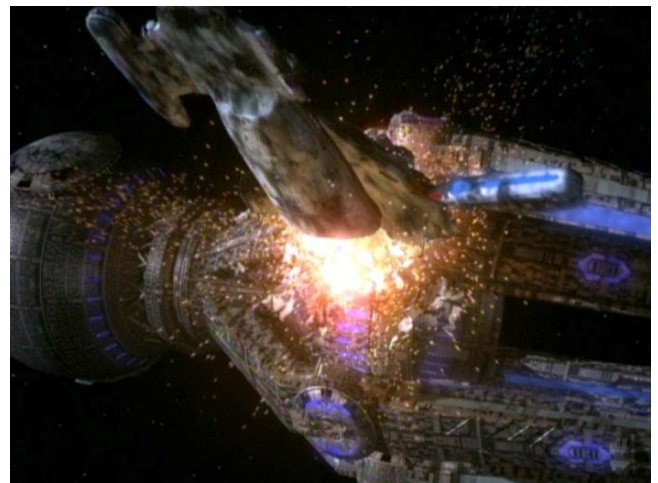
If the target's total is equal or higher, it has evaded the ramming attempt.

When a ram succeeds in making contact, each player rolls another D6 and multiplies the result by the current (remaining) hull boxes that the ship has. The final result of this is the number of damage points inflicted on the other ship as a result of ramming.

Example: A corvette with 2 of its original 3 damage points left actually succeeds in ramming an undamaged heavy cruiser with all 16 of its damage points. The corvette player rolls a 4, which inflicts 8 points of damage on the cruiser.

The cruiser owner rolls a 3, thus doing 48 points to the corvette. The result is one vaporized corvette, and a badly damaged cruiser.

It will be clear from this example that ramming can be very deadly when it succeeds, small ships are almost certain to be destroyed, and even the largest can be crippled. Players who insist on using this tactic in unrealistic circumstances should be penalized in the most effective way possible: don't let them play again.

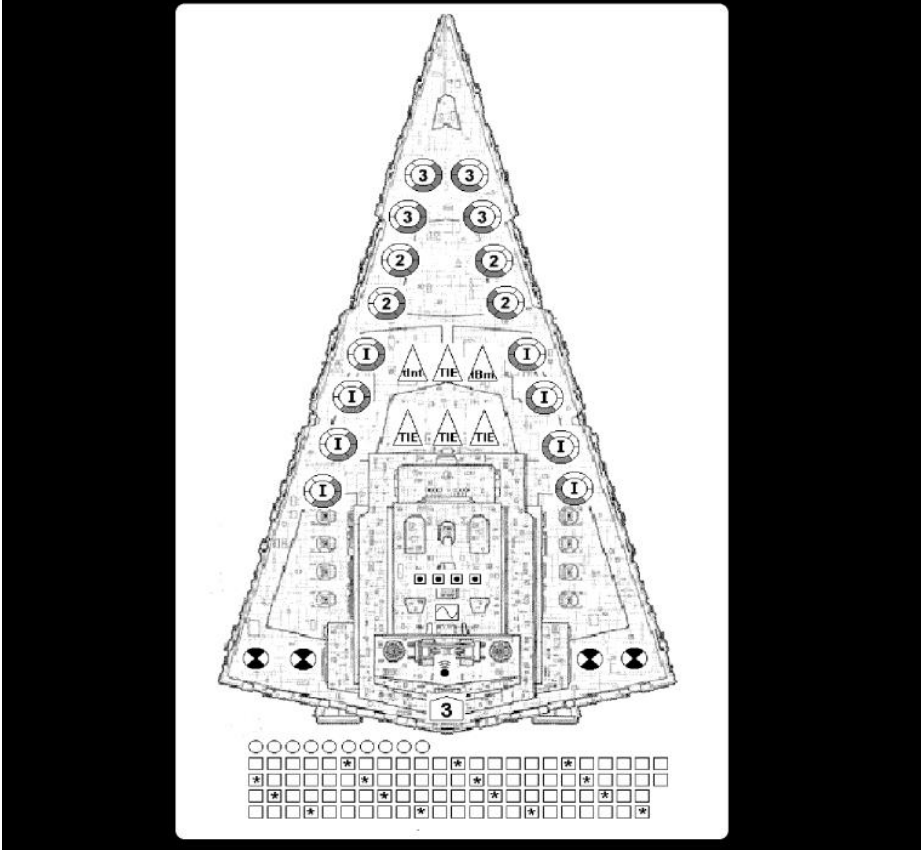


Ramming ability

Players may agree that certain game scenarios and/or certain races tactics may make ramming attacks more likely, and hence reduce this required die roll for them.

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Any ship that can automatically attempt to ram should have an extra cost of at least +1 per mass of the ship, which represents the difficulty of indoctrinating crews willing to sacrifice their own lives, the cost of a fully automated ship with remote controls or AI pilot, or the remote hive mind/queen intelligence controlling expendable beings.



17 Terrain effects

It may sound a bit odd to talk of “terrain” in a space battle, but if you think about it there are a number of possible ideas you can use to render certain parts of the table more difficult, dangerous, or just plain different.

The following suggestions are mostly pure space opera and anyone who has seen a few episodes of the typical science fiction television show will doubtless be able to think of lots more!

17.1 Planetoids and dense asteroid fields

Planetoid is used in this section for all large asteroids, small moons, comets, starbases, orbitals, and all other Really Big Things.

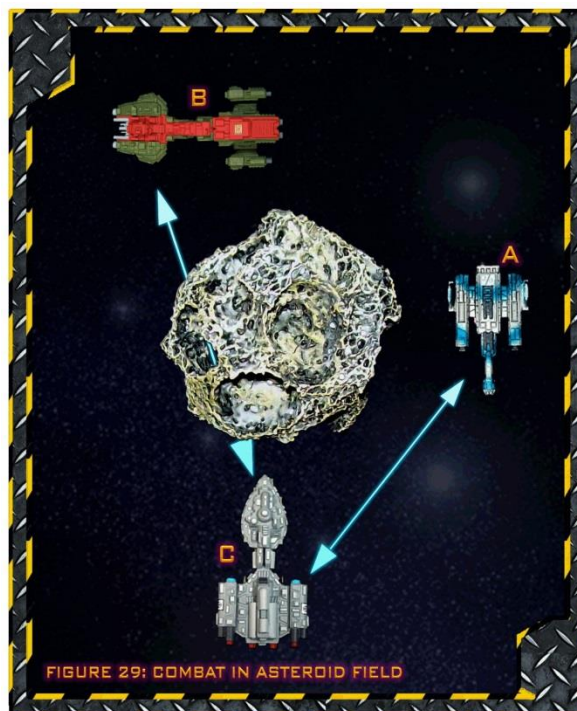
Asteroids can either be stationary, or be thrust 0 objects with a predetermined course and velocity. Ships cannot block line of sight or line of fire, but bodies such as asteroids do have a significant size in relation to the playing area and therefore are able to block lines of fire or sensor detection and pose a collision risk. If you are using round or spherical objects to represent the asteroids then it is simple: any line between two ships that crosses any part of the asteroid is blocked. (Between center points of models, remember.)



If, however, you are using irregularly shaped asteroid models, such as foam chunks, then it is necessary to mount them on bases, perhaps 1 to 6 MU across, depending on the asteroid size. A line between two ships is then blocked if it crosses any part of the asteroid’s base, which solves any disputes that could be caused by the irregular shape of the asteroid model itself.

If the line of sight between opposing ships is blocked by an asteroid, those ships may not fire at each other with any weapons, or place missiles along that line. Fighters may still fly around the asteroid to attack as normal.

Example: In Figure 29, ship C has a clear line of fire to ship A, but cannot engage ship B due to the intervening asteroid.



Sensor scans are also blocked by asteroids. At the start of the game, some ships may be hidden behind bodies in an asteroid field; they are represented by Bogey Markers in the usual way for unconfirmed contacts, but do not have to be revealed until an enemy ship comes within scan range and can get a clear line of sight onto the bogey. (Note that this blocking applies equally to active scan attempts as to passive.)

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Damage to asteroids

The normal rules assume that asteroids cannot be destroyed by weapons fire or by ships impacting with them. However, if the players wish, they may give each asteroid a large damage point value (perhaps 50 for a very small chunk, 100 for a larger one, etc.) and then allow players to fire at them.

When an asteroid is reduced to zero damage, it disintegrates into 1D6 smaller chunks, which all move at random courses and speeds out from the point of destruction. Try to avoid that lot. . .

17.2 Dust or Nebulae clouds

These have the following effects:

1. Travel through a cloud is restricted to a maximum safe velocity of 12; any ship attempting to exceed this in a cloud will suffer potential damage – roll 1 D6 and apply damage as for beam weapons fire. Standard Screens offer no protection, but armor and Advanced Screens do.

2. Clouds inhibit beam weapons and fire control lock on: when attempting to fire at a ship in a dust cloud, or if the firing ship is itself in a cloud, roll a D6 after nominating the target. On a roll of 1-3 the dust has prevented a successful target lock-on and the ship may not be fired at. On a 4-6 the shot may be fired as normal, but if using beams or Grasers treat the target as having one screen level higher than normal due to beam attenuation caused by the dust. (Screen levels above 2 remain at 2.)

3. Fighters always lock on, but treat the target as having one screen level higher as for beam weapons.

Note that this rule may, if desired, also be used to simulate the effects of ships operating in the fringes of planetary atmospheres, such as when skimming gas giants.

17.3 Solar flares

Flares may occur at random, perhaps diced for each turn, if the battle is happening fairly close to a very active star. They may be assumed to affect the entire table, or just a specific area as the player's desire. Any ship that is caught in a flare rolls a D6 for each

of its FireCon and sensor systems (if the advanced sensor rules are being used), adding 1 to the score per active screen level. On a score of 4+ the system is undamaged; otherwise it is knocked out as if by a threshold check.

17.4 Asteroid Fields, Meteor swarms and debris

These may cover areas of between 6 MU and 12 MU diameter (or other shapes/sizes at players discretion) and may be stationary on the table or moving in a similar way to the moving asteroid rules.

Any ship that enters or is hit by such an asteroid field, meteor swarm, or debris field has 1 D6 rolled for every full 6 MU of velocity, with the actual score rolled equaling the (penetrating) damage sustained.

Up to velocity 5 = no damage, 6-11 = 1 D6, 12-17 = 2 D6, etc.

This rule may also cover the effects of the debris in the rings of a planet such as Saturn, in which case a large arc of it could be depicted on the table to cause all sorts of problems!

17.5 Battle debris

When a ship is destroyed by enemy fire, i.e. reduced to zero damage points or less, it may simply become a drifting hulk, or it may actually explode into a cloud of debris.

To determine if this happens, note the amount of excess damage inflicted (over that required to reduce the ship to zero points) and roll a D6. If the score is less than or equal to the excess damage then the remains of the ship explode. For example, if a ship has 2 hull boxes left and suffers a further 5 points of damage, a die roll of $5 - 2 = 3$ or less will cause it to explode.

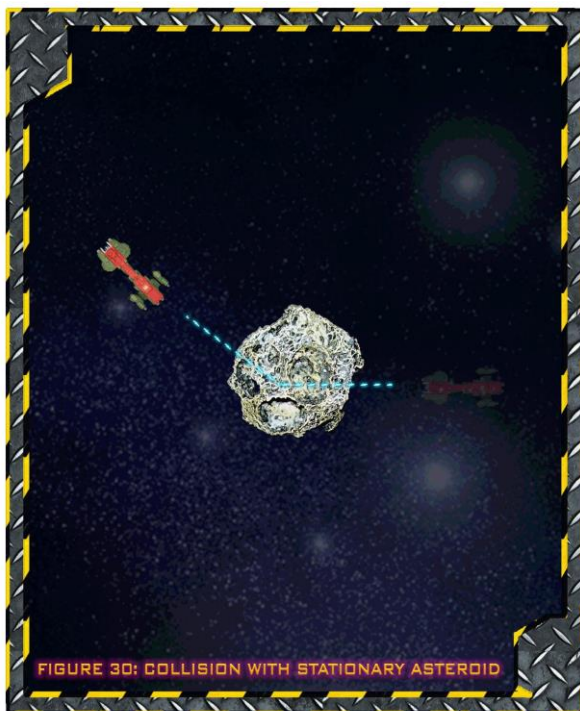
An exploding ship creates a cloud of debris 2 MU in diameter for an escort, 4 MU for a cruiser, or 6 MU for a capital ship. The debris cloud exists for only 1 turn after the explosion, during which it moves on the same course and velocity as the ship was travelling at the point of destruction.

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In this turn any ship encountering the cloud treats it exactly as for the meteor and debris rules given in the section above. After the one turn the debris is assumed to have spread out sufficiently to present little risk to other ships, and is removed from play.

Depicting spatial phenomena

The various effects suggested above may be represented on the table by means of pieces of card, cloth, or acetate cut to the relevant sizes for the affected areas. Meteors and debris clouds can be depicted by small cork-bark chips or even gravel spread over the required area. Explosion templates may be made if desired for destroyed ships, which if suitably graphic (lots of red and orange explosion effects!) can be very effective.



17.6 Collisions

Collisions can occur between ships and asteroids. If the asteroid is stationary – i.e. never changes position on the playing area – then a ship risks collision with the asteroid if its path during the Ship Movement Phase crosses any edge of the asteroid.

If the asteroid is itself moving, a collision risk can occur under either of these circumstances:

- The movement path of the asteroid brings it into contact with a ship at any point. (This is before the ship itself has moved, at the beginning of the Ship Movement Phase.)

- The final position of a ship after making its move is inside the asteroid.

Collisions do not occur if the movement paths of the asteroid and ship merely cross. Use the base or model edges of the asteroid and the center point of the ship model to determine collisions, not the edges of the ship model.



These collision rules are simple rather than physically accurate, but do ensure that as the movement of both asteroids and ships is completely predictable, you have only yourself to blame if you run into one!

To determine if the ship manages to avoid a fatal collision, subtract the ship's total available thrust rating from its current velocity. This number must be equaled or exceeded by the roll of 1D6 in order for the ship to have avoided the collision. Ships with Advanced Drives double their engine rating.

Example: If a cruiser with a thrust rating of 4 is

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travelling at velocity 9 and its movement intersects with an asteroid body, subtract the thrust (4) from the velocity (9) to give 5. Thus a 5 or 6 must be rolled for the cruiser to evade the asteroid – on a roll of 4 or less, exit one cruiser!

If the needed number for avoidance is 1 or less, then the ship is automatically able to avoid a collision; if the number is greater than 6, then a crash is inevitable. When any ship, regardless of its class, hits an asteroid, the ship is completely destroyed. Ramming a billion tons of rock at any speed is not recommended, even in a superdreadnought!

17.7 Planets

For Full Thrust purposes a planet includes not just planets but also major moons and even suns at the larger scales: any stellar body with a significant gravitational effect on spaceships.

In this section we present three different possible systems for representing planets at varying scales. Pick the one that best suits your scale or scenario.

Orbital table

At this scale the table represents an area at a given orbit radius above a planet (plus or minus some distance – higher velocities are ‘lower’), with the equatorial orbit path running between the centers of the short edges and a polar orbit across. The planet itself would be underneath the table.

A ship can leave the table at any time to make an orbit around the planet. When it does so, record the ship velocity, course, and distance from the nearest table corner at the point of exit. A number of turns later, the ship can enter again by being placed before orders on the opposite edge, at the same velocity and course, and within 6 MU of the same distance from the diagonally opposite corner edge.

Thrust 0 or 1 ships cannot enter until the 5th turn after exiting, thrust 2 to 4 until the 4th, and thrust 5 or greater the 3rd (This assumes that the ship is making a powered atmosphere skimming circumnavigation rather than a genuine orbit, plus a bit of dramatic license). Whether fighter groups can orbit is optional but not recommended: making the orbit would

consume too much fuel for such small craft.



17.8 Medium scale

At medium scale a planet should be represented on the table by a half sphere, although a plate or disk will suffice.

Decide whether the planet can be landed on or that contact with the planet will be a fatal collision.

The edge of the planet is the orbit track and should be marked with 12 clock face points. The orbit track has an entry velocity and an orbital speed in clock faces per turn.

A planet may have satellites or starbases in orbit. These move at the orbit speed of points per turn around the orbital track, and always face ‘away’ from the center of the planet.

A ship enters orbit with any movement that intersects the orbit track at the entry velocity and is placed at the nearest marker point. While in orbit, the ship does not

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have to have any course change orders written for it. The player simply notes that it is in orbit and moves the ship by a number of points equal to the orbit speed around the track. Any velocity change will cause the ship to leave orbit, either down or up.

If using cinematic movement, ships in orbit face forward in the closest course facing to the orbit path at that point. In vector movement, ships may change facing as usual.

Ships in orbit may fire at any ships outside the orbit track, or at ships at the point immediately in front or behind.

For simplicity we recommend only one ship or starbase may occupy each marker point, or only ships from the same side. If you do allow hostile ships within the same point, they may fire at each other as if at 1 MU range, through any arc the firing ship chooses. Missiles home in on a target chosen by random die roll.



Entering and leaving orbit

If the ship hits the orbital distance at less than the orbital velocity, it will enter an automatically

decaying orbit and start to enter the atmosphere (section 13.9). If it arrives with greater than the correct velocity it will ram straight into the atmosphere in an uncontrolled entry – you have been warned!

If the ship decelerates to less than the orbital velocity, its orbit will decay and it will start to enter the atmosphere. If it accelerates to above the orbital velocity it will leave orbit and move normally, in a straight line at the clock face heading that is the closest tangent to its orbital path.



Any ship that suffers a drive or bridge threshold failure while in orbit must make a second threshold check to stay in orbit. If this too fails, the ship orbit has decayed and it enters the atmosphere.

17.9 Large scale

These rules are for those who prefer their space battles on a grand scale with the table representing a significant chunk or all of an entire solar system.

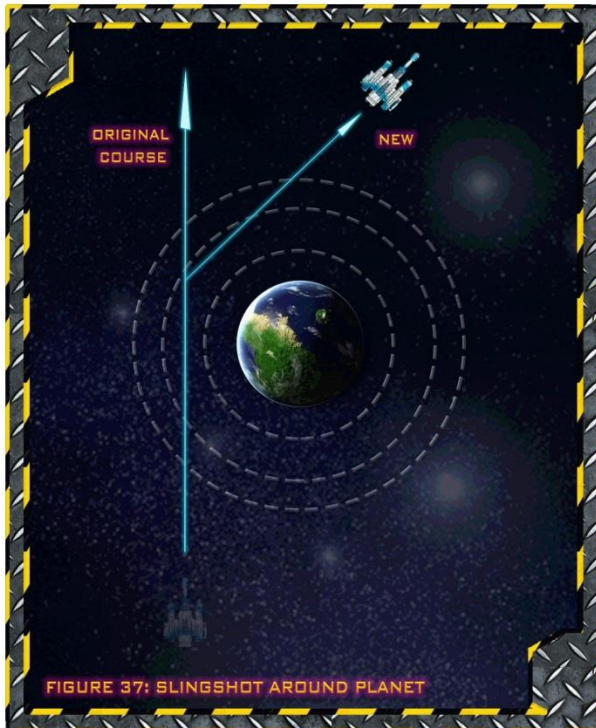
Represent planets by small disks up to several MU in diameter, much smaller than for medium scale. A planet is surrounded by three concentric gravity zones, each extending the radius by at least 1 MU. The outer zone is strength 1, the middle strength 2,

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and the innermost 4. For large planets increase the radius of the zones; treat a sun as a large planet with an extra inner zone of strength 8.

If the movement path of a ship intersects a gravity zone, pause the ship in the innermost zone contacted and adjust the speed and course as follows.

First, determine where the center of the planet is relative to the ship.



- If the center is in the fore arc of the ship, add the zone strength to the ship velocity.
- If the center is in the aft arc, subtract the zone strength from velocity.
- If the center is in a port or starboard arc, add half the zone strength to the velocity, and turn the ship towards the center by a number of points equal to the strength of the zone.

If the ship ends the Ship Movement Phase in a gravity zone, apply the changes in velocity and course to the start of the next turn movement instead.

A ship that has unused thrust points for changing

course may use them to change the gravity zone turn. In Figure 37, the ship changes course by 2. If it were a ship with thrust 4 drive and had not changed course, it could increase this up to 4 or decrease it down to none.

The velocity increase may not seem very high, but remember at this scale, the ship must already be moving at considerable speed.

The ship is considered to make a partial orbit within the zone while changing course, so cannot collide with the planet or enter another zone even if the straight line path would indicate otherwise. After leaving it can however intersect the gravity zone of another planet which will change the course and velocity again – clever players may be able to bounce their ships around like billiard balls.



17.10 The super simple and totally unrealistic way

A ship may enter planetary orbit (or other large celestial body) by the following rules: Ships desiring to make orbit must be travelling at a thrust no greater than 8 and no less than 6. Their course must also bring them within 3" of the objective but no closer than 2". That is the 3" gravity well mentioned earlier. If the ship is beyond the 3" it will go past the objective and not make orbit. If it is closer than 2" it will be caught in the gravity well and crash (i.e. it is destroyed). Remember all measurements are taken from the model's stem.

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On a final score of 3 to 5, the ship burns up in the upper atmosphere, but there is enough time for any interface craft (shuttles, drop ships, etc.), fighters, or life pods on board to launch.

On a final score of 6 or above, the ship burns up and all crew, passengers, and equipment on board are lost.

17.11 Atmospheric entry

A fully or partially streamlined ship may enter atmosphere deliberately in order to land on the world's surface. Alternatively, a ship of any configuration may be forced to enter atmosphere due to either a decaying orbit or approaching a planet at too high a velocity.

To make a deliberate safe atmospheric entry, a ship must first enter orbit as described above and then decelerate to less than orbital velocity. A fully streamlined (capable of aero braking or gliding) ship can land provided it has some main drive thrust. A partially streamlined ship can land if it has main drive thrust at least equal to the planet gravity in Earth Gs; if it has insufficient thrust it will make a crash landing with the effects being up to the individual scenario.

If any ship without streamlining enters atmosphere, or a streamlined ship makes an uncontrolled entry, roll a D6 and apply the following modifiers:

- If the ship is non-streamlined, add 4.
- If partially streamlined, no modifier.
- If fully streamlined, subtract 2.
- Add 1 for every 1 point of velocity in excess of entry orbital velocity.
- Add 1 if the ship's drive is damaged (half normal thrust), or add 3 if drive knocked-out.

On a final result of 2 or less, the ship manages to miraculously survive a ballistic entry, and crash-lands on the planetary surface. The chances of survival for crew/passengers and subsequent events are up to the individual scenario.

18 Battles, Scenarios and CPV

Space battles may be fought in a vacuum, but the commanders will still have some purpose or objective in mind.

Once you are familiar with the rules, we strongly recommend the use of terrain and planets to make the games more interesting, and scenarios with objectives other than a simple 'beat up the enemy'.

18.1 Deployment

A conventional if uninspiring way to begin the battle is with fleets at opposite short ends of the table in a 'meeting engagement'.

Players alternate in placing one ship at a time within 6 MU of their table edge (or two to four ships at a time for large battles) with any desired course and an initial velocity.

Space does provide much more freedom of movement than a planetary surface, so there is no reason not to use other deployments. One likely scenario is two fleets heading for the same objective on converging courses.

Players deploy their ships along the opposing long edges of the table up to the half way mark, within 6 MU of the edge and initial course limited to 11, 12, or 1.

For a battle between offensive and defensive fleets, the defending fleet deploys all its ships first anywhere within their own half of the table. The defender can also place a planet or similar terrain feature anywhere they desire.

The attacking ships can either enter under main drive at the opposite table edge, or (if permitted) some or all may make an FTL entry.

A variety of scenarios are available on <http://emeraldcoastskunkworks.wordpress.com/2014/09/08/72/>

18.2 Tournament fleets

Ship designs for competitive tournaments need to be controlled, for instance by restricting players to only designs given in the Full Thrust Fleet Books, with no modifications, changes in weapons, etc. (Players can of course use their own ship models even if they don't resemble the 'official' designs.) This should give a game where the tactics of play decide the victor, rather than who can stretch the design rules to the furthest limit!

An even more limiting but quite useful idea is to actually give each player a fixed, identical force – that way you are really finding out who is the better tactician (or just luckiest with the dice). This method can be effectively used for 'enter on the day' competitions where players do not have to bring their own fleets along, but use one provided by the organizers.

Fleets should be kept fairly small to allow games to be played to completion in a reasonable time. The ideal size is probably between 1000 and 1500 points in total, though fleets as small as 500 points can still be interesting. Forces of over 3000 points will probably be too large unless plenty of time is available.

To finish games faster, use the optional Striking the Colors rules (section 12) and/or disallow repairs to systems (section 10).

Fleet composition

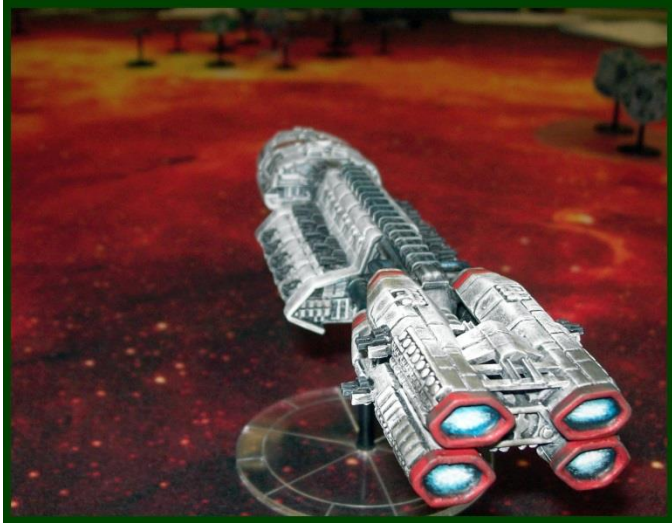
Battles can be made more interesting by restricting the proportions of different ship classes as well as the overall point total.

For 'patrol' battles, restrict fleets to having no capital ships at all and no more than 50% of the points spent on cruisers.

Allowing small carriers is optional but not recommended. For larger battles, you can restrict fleets to no more than 50% of points spent on capitals, including their fighters; or require that each capital class ship must have one or two corresponding cruisers and escorts. Or you could decide that large 'fleet actions' can be fought entirely by capital class

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ships with no requirement to have smaller ships present. Either can be argued based on historical precedent or different science fiction settings, so feel free to experiment.



18.3 Combat Points Value (CPV)

Experience has shown that the Full Thrust points system does not fully reflect the advantages of increasing ship size: One larger ship will usually defeat two ships each costing half as much, even though the combined points of the two sides are equal. The Combat Points Value, CPV, is a more complex method of calculating the point value for each ship that gives more equally matched battles when ships of different classes are mixed together.

CPV will tend to shift the ‘balance of power’ to small ships however and make big capital ships even rarer on the field. The classic ‘Corvette Swarm’ becomes even more dangerous when using CPV.

The simple CPV calculation changes only the basic hull cost calculation (section 11.2). Instead of being equal to mass, the points cost for the hull becomes

$$\text{hull} = \frac{\text{mass}^2}{100}$$

Round off to the nearest integer.

(If the ship has mass 7 or less the CPV calculation would give zero as the hull cost, but in Full Thrust

everything must cost at least 1 point.)

The effect of the simple CPV is that ships with mass below 100 become cheaper, over 100 more expensive.

The change to the point value can be calculated by subtracting the actual ship mass from the CPV hull value.

For example, the Suffren class light cruiser from Fleet Book 1 has mass 54 and a points cost of 181. Using the CPV calculation, the hull cost is

$$\frac{54^2}{100} = \frac{2916}{100} = 29$$

a reduction of 25 points for a new total points cost of 156. On the other hand, an Excalibur class dreadnought has a mass of 140 and points cost of 472. Using the CPV, the hull cost is

$$\frac{140^2}{100} = \frac{19600}{100} = 196$$

An increase of 56 for a new total points cost of 528.

The simple CPV given here is still unbalanced for some cases. A more elaborate method of CPV calculation is online at <http://fullthrust.star-ranger.com>

19 Timeline Continuation

The GZG Universe and Background

The ultimate source of interesting battles is a campaign. This can be anything from a series of linked battles with only the survivors from previous actions able to keep fighting, up to a full-fledged 'space opera' where each player represents a major power and must worry about politics and economics as well as simple combat. What all campaigns do need though is some sort of setting so the players know who is who and what resources are available. The GZG setting, or 'GZGverse', is the background and reference for Full Thrust and companion GZG products such as the Stargrunt and Dirtside ground combat rules.

It has been developed and expanded for well over two decades, so there is only space for a very brief introduction here. For more information, read the relevant sections in the Full Thrust 2nd edition rulebook and the two Fleet Books.

Please treat this background just like any of the rules: if you like it, by all means use it – if you don't, then write your own and ignore anyone who tries to say you're doing it wrong!

The GZGverse future history begins (or began) in the 1990s, but the period covered by the rules is roughly 2160 CE (AD) to, so far, 2194.

The major technological advances are efficient space travel and the development of a faster than light drive, widespread use of compact and powerful energy sources, and the early stages of artificial gravity. The GZGverse is neither trans-human nor approaching a singularity. Human biology has remained almost the same, while ethnic, religious, and national rivalries continue unabated or even intensified.

Earth remains the central planet of humanity. Surrounding it are the inner colonies, long settled worlds divided among the major powers. The outer worlds beyond are home to a staggering variety of colonies, factions, and settlements.

The two superpowers of the GZGverse are the New

Anglian Confederation (NAC), present day Britain, Canada, and United States; and the Eurasian Solar Union (ESU), present day China, India, and most of Russia. The other two major powers are the Federated States of Europe (FSE) and New Swabian League (NSL) which between them include almost all of present day Europe.

The fleets used by these four major powers are described in Fleet Book 1. For ships built toward the end of the Third Solar War and during the Kra'Vak conflict see the Fleet Books on the Emerald Skunkworks site and on Starship Combat News.

Twenty second century warfare can be so destructive that the major powers, reluctantly, have allowed the United Nations sufficient authority to maintain an uneasy peace on Earth and the inner colonies. Diplomatic and military struggles for power and influence have largely shifted to the outer worlds. The United Nations Space Command (UNSC) and some of these outer world fleets have not yet been published in book form, but can be found online.

Beginning in 2183 humanity met three different alien races in quick succession. The Sa'Vasku are ancient and enigmatic, relying on living biological technologies. The Phalons are similar enough to humans to be allies, enemies, or trade partners – but by human standards are exasperatingly changeable and can be all three on different days.

The third are the Kra'Vak, who are much more consistent in their approach to humanity: consistently hostile. 2185 is the official date for the start of the Xeno War between humanity and the Kra'Vak. The war has seen the United Nations become a major power in and of itself and they have introduced a new generation of advanced weapons and systems for human warships. The older ships designs remain in service, especially among second or third-rate powers.

The Sa'Vasku, Phalon, and Kra'Vak fleets are described in Fleet Book 2. The current GZGverse history stops at 2194, with Earth itself under threat from a massive Kra'Vak attack.

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The main timeline in Full Thrust 2nd Edition brought the "official" background history up to 2183, just before the first contact with the Kra'Vak. This continuation shows how things develop from there.....

2183: The Third Solar War had degenerated largely into a series of border wars by this time. Pan African Union representatives appeared before the United Nations to request their assistance in investigating attacks on PAU space. This was largely a political move intended to incline foreign powers to look favorably upon the Union when it retaliated against the Islamic Federation, which the Union considered to be the source of the attacks. UNSC sends Survey Cruisers McCaffrey and Niven into the outer rim of PAU space to investigate with their powerful long-range scanners. Contact with both ships was lost when they were off Lagos IV in a largely un-surveyed region of PAU-controlled space; the Niven is completely destroyed, and the McCaffrey disappears without trace. When contact with the two ships was lost, the PAU Universal Navy dispatched a Heavy Wing to investigate, led by the aging and now re-classed battlecruiser UNS Kinshasa. Kinshasa's last transmissions of an alien enemy finally confirmed the existence of the force raiding PAU space. A single Universal Navy destroyer was the only member of the wing to return, with news of the loss of both UN survey ships as well as the Kinshasa and the rest of the wing.

2184: Unexplained attacks and incidents increase in frequency, affecting not only PAU space but other nations as well; with the ongoing state of war between the NAC and ESU, much blame is placed by each power on the other. Both blocs, however, begin to realize that something far more important is happening. Late in 2184, NAC Fleet Intelligence recovers the first identifiable alien debris following an encounter near Angel II in which a Confederation squadron managed to destroy two ships from an attacking alien group. For the first time, Humanity has positive proof that the attackers are another sentient life-form. As the PAU develops more and more intelligence regarding the nature of the Kra'Vak threat, the Universal Navy begins a refitting of its

vessels on the Kra'Vak front. Screen generators are removed (most to be replaced by salvo missile racks and/or submunitions packs) and many naval vessels have their point defense systems replaced by class-1 dual-purpose batteries and new vessels are no longer constructed with armor plating. PAU shipyards are pressed to the limit refitting the fleet wholesale and the decision is made to purchase an additional six Novgorods from the ESU to assist in general search and exploration missions to locate Kra'Vak systems and patrol Union space.

2185: The first co-operative action between the ESU and NAC against the Kra'Vak occurs at the Battle of Sulaxar. Although tensions still run high (especially in diplomatic circles), the militaries of all the major powers - plus several smaller nations - are coming inexorably together in the face of a much greater threat. On 28.07.2185, the UN Assembly declares that a state of war now officially exists between all the nations of Humanity and the race known as the Kra'Vak; the First Inter-Sentient War (rapidly christened the Xeno War by the popular media) has truly begun; the PAU pursues aggressive shipbuilding of new vessels of an innovative design. The PAU signs an agreement with the UNSC, giving the UNSC a hundred year lease on refueling and resupply bases in its territory in exchange for technical data. As part of the agreement, an officer exchange program between the Universal Navy and the UNSC is signed, allowing UNSC observers aboard Universal Navy craft on the Kra'Vak frontier and vice versa. The PAU begins a major diplomatic effort towards ending the fighting of the Third Solar War and starts this initiative by sharing a portion of its intelligence on the Kra'Vak with the NAC, NSL, ESU and FSE in the hopes that Humanity can come together against the alien menace.

2186: Early in the year, the advances towards a joint ESU/NAC response to the Kra'Vak aggression falters when a Eurasian naval unit fails to assist a Confederation squadron under attack by alien forces off Caleb. Finally escaping with barely twenty-five percent of his force and men, Commodore Farris accuses the ESU of standing off from the action in order to gain control of the Caleb system. The diplomatic repercussions gradually settle, but

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illustrate the deep distrust that still exists between the major powers. The Universal Navy lays down the first Yambi class Superdreadnought. The Kra'Vak offensive gathers momentum, and very late in the year reports begins to come in of the first surface assaults by Kra'Vak forces. The Kra'Vak begin to strike at key richly laden Pan-African mining colonies on the rim in a bold gambit to rob the Union of the resources which fuel its industrial might while coveting those same resources for Kra'Vak military expansion.

2187: The first major success against Kra'Vak ground forces is reported on the NSL outworld of Rheinhold, where a combined force of NSL and NAC Marines supporting local militia units manage to beat off an attempted planetary landing by the alien invaders. Rheinhold then survives five months of protracted siege and repeated landing attempts before the Kra'Vak are driven out system by the arrival of a large joint task force of NAC, NSL, Dutch and Free Cal-Tex ships. Elsewhere, Humanity does not fare so well, and the aliens continue to make inroads toward the Core Systems. Virtually no information is released to the public concerning what is happening on worlds taken by the Kra'Vak, which causes widespread panic as rumors of massacre and genocide spread. Public opinion on Earth, Centaurus and Barnard swings in favor of pulling all forces back from the out worlds to defend the Core. Such a defensive concept does not find favor with the military, nor (naturally) with the colonial population.

2188: Contact is made with a second xenosentient species; the Sa'Vasku send a message to Humanity by returning a survivor of the crew of the UNS McCaffrey, and arranging a rendezvous that is attended by a joint NAC/ESU task force accompanied by a UN ambassador and xenospecialist team. After a very strange and inconclusive (to the humans) meeting between the UN delegation and the Sa'Vasku contact constructs, Humanity is still not sure if it has found new friends, or new enemies. Over the following years of the war, Sa'Vasku ships and fleets turn up apparently at random throughout human space, sometimes hostile, sometimes friendly and sometimes just observing; contact with them proves impossible unless they wish to initiate it, and

Humanity is still no nearer understanding their motives or agenda. The Yambi class Superdreadnought Shaka is laid down by the PAU.

2189: The Kra'Vak push towards the Core continues unabated, with Humanity scoring only minor successes in space and planet side against the onslaught. Late in the year, a rapid thrust by Kra'Vak forces deep into Human space is only narrowly defeated when they attack Centaurus, a battle which causes heavy losses to the allied human fleets and great damage to the orbital colonies of the Centaurus system. The Universal Navy cooperates with the UNSC and the navies of all the other major powers to repulse the Kra'Vak offensive. On the positive side, all human nations now fully realize the Kra'Vak threat and pledge themselves to cooperate against it.

2190: The Kra'Vak offensive into human space falters after the Battle of Centaurus. There is a brief pause during which the Kra'Vak opt to change their tactics and they begin to consolidate their hold on the captured human territories they have taken so far. The pattern of Kra'Vak attacks changes in nature as well, from raids and deep, slashing attacks to a concerted, organized march into human space. Instead of striking all over human space, the Kra'Vak begin an organized offensive that advances slowly into human territory systematically taking world after world and fortifying their holdings as they advance. The human forces give ground slowly as the Kra'Vak waves strike at system after system. The PAU's third and final Yambi class Superdreadnought Nthanda is laid down.

2191: First contact between Humanity and the Phalon race, when a Phalon ship is fired on and destroyed by an FSE force in the Rhone system. Other encounters with the Phalons follow, including several retaliatory attacks, until proper communication is finally established and the two races begin to understand something of the other. In the event, diplomatic relations with the Phalons appear almost as unpredictable as with the Sa'Vasku, with different factions within the Conglomerate siding with either Humanity or the Kra'Vak seemingly at a whim.

2192: First Battle of Mars, July 2192. The Kra'Vak

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manage to slip a veteran task force through Sol's battered outer ring of defenses and launch a strike against the orbital stations and colonies of Mars, focusing on the shipyards there. At stake are the under-construction ships of the UNSC's new Heavy Graser armed battle line. Ships and crews from all human nations, including the PAU, make the ultimate sacrifice to defend the shipyards and their contents and the Kra'Vak force is annihilated down to the last ship. Despite the victorious nature of the battle, civilian morale takes a heavy blow as people begin to give way to their fears of alien domination.

2193: It becomes obvious that a major Kra'Vak push into the Core, and probably to Sol itself, is very near. In desperation, the UNSC (coordinating the defense of the Core systems) orders all human forces to withdraw their ships from the colonies to interdict the Core worlds. While many units comply, others refuse to abandon their colonial home-systems which are still under attack from Kra'Vak forces. As the New Year approaches, the remnants of the UNSC's fleets begin to gather for a last-ditch defense of the Core. While the PAU is prepared to commit the bulk of its forces to the defense of Earth and the Core Worlds, behind the scenes, Universal Navy officials argue vehemently with their UNSC counterparts over the PAU's proposed Operation Damocles, the launch of an expeditionary fleet to take the battle to the Kra'Vak. The UNSC insists now is the time to insure the defense of the home worlds and that a counteroffensive can only take place after that. The PAU believes that the only way to lift the siege is to threaten the Kra'Vak's own home colonies. The UNSC rightly points out the risk in this plan in that no one yet knows where the Kra'Vak home systems even are. Tensions are increased when the PAU takes its plan to the other major powers directly and informs the UNSC that, if necessary, the Universal Navy will launch a counteroffensive alone. Opinion is widely divided over what is the correct course of action but in the end, the ESU, FSE, NSL, IJSF and NAC all decide to support the notion of an expeditionary fleet and contribute forces. Comprised of vessels from all major powers, the main military might of the expeditionary force consists of ships from the PAU, IJSF, FSE and NAC, with the UNSC's major contribution being the elite of its survey command,

under Commodore Kaitlin Chavez, which will be tasked with the difficult mission of searching for the Kra'Vak's home worlds while under fire. Despite the Universal Navy's contributing the largest naval contingent of the expeditionary force, UNSC Fleet Admiral Alonso Landry is chosen to lead the combined fleet which slips out of Sol system late in the year, jumping out to the rim and further still into the outer dark towards Kra'Vak space.

Operation Damocles

The combined expeditionary fleet is under the command of UNSC Fleet Admiral Alonso Landry aboard the Sol class Superdreadnought Hyperion. His second-in-command is PAU Admiral Gunju Yakuba aboard the Yambi class Superdreadnought Nthanda. The fleet's survey ships, including the Visionary class Explorer Pioneer, are led by UNSC Commodore Kaitlin Chavez. The Japanese have assigned the Scanner Pickets Fubuki and Yukikaze to back up the stretched thin UNSC survey ships assigned to the mission. Carrier operations are coordinated by the IJSF's Commodore Yosima Fujima, flying his flag from the Akagi class Supercarrier Hoshō, which has a full contingent of multi-mode fighters. Fujima's second in command is the NAC's Captain Andreas Bennett of the Inflexible class carrier RNS Invincible. Invincible's torpedo bomber squadrons are renowned as the NAC's best. The fleet's ground forces are organized around its two largest contingents: NSL Panzer Grenadiers led by Brigadier Rudolf Drescher and ESU Naval Infantry led by Colonel Zhanna Tereshkova.

2194: While other battles still rage in many of the colonial systems, the Kra'Vak main force arrives at the Core. Barnard and the already badly hurt Centaurus are attacked repeatedly by powerful Kra'Vak fleets.

May 2194: the first of the Kra'Vak attacks on the Earth's outer defenses begin. The Siege of Sol has started. Beijing, New York, Moscow and Geneva are nuked.

October 2194: Contact between UNSC command in the Sol system and Operation Damocles is temporarily cut.

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December 2194: With the Kra'Vak pressing in from all sides and contact lost with Operation Damocles, a small faction within the UNSC comes to the conclusion that Humanity's chances for survival are unacceptably slim under the current civilian governments and seeks to launch a coup. UNSC Colonel Victor Streed led an unsuccessful coup attempt against his superiors in an attempt to form a military government. Acting on information provided by UNSC intelligence that Streed was with his primary benefactor and ally, Rear Admiral Stanislaw Frankowski, aboard the battleship UNS Tethys, the UNSC surrounded Tethys with a loyal UNSC squadron and forced a premature confrontation (believing all their bad apples to be bottled up in one place) that led to the destruction of the Tethys (which was publicly blamed on a 'tragic accident'). However, Streed and several key co-conspirators were not aboard UNS Tethys at the time and managed to commandeer the UNSC heavy cruiser UNS El Dorado from dry dock. To escape from an encirclement of UNSC forces, Streed and El Dorado performed an emergency jump inside the gravity well and were believed to be destroyed, which for the UN was the end of the matter. The general public was never informed of the Streed/Frankowski coup attempt.

The El Dorado Incident: While the UNSC believed El Dorado destroyed, the ship eventually re-materialized into normal space between the PAU, Oceanic Union and the Scandinavian Federation where her jump exit was detected by all three surrounding powers. Investigating probes discovered the drifting wreckage of the Graser-equipped heavy cruiser floating in open space and all three governments sent out retrieval forces to recover the derelict and its Graser technology. A tragic three-way battle ensued and in the fighting El Dorado was destroyed with all three powers agreeing to share equal access to the debris. All historical records of the incident were sealed and the UNSC was never informed the incident ever occurred. While political tensions remained high, ironically, contact with Operation Damocles was restored shortly after El Dorado's disappearance.

January 2195: The use of artificially gestated or

'grown' humans by the ESU is discovered by an FSE task force. Creating artificial humans through cloning has been banned by treaty for centuries and the FSE delivers a formal protest which severely strains relations. To make things worse the news of the practice leaks out and quickly spreads though out human controlled space. All the major powers deliver formal protests with the NAC formally cutting off all ties with the ESU government until all of its artificial gestation facilities are destroyed.

February 2195: an emergency session of the UN Security council is held.



20 Final Thoughts

What's new and what's changed

One of the biggest changes in this version of the rules from Cross Dimensions and Full Thrust Second Edition is how weapons work individually. Not every weapon is Semi-Armor Piercing now.

Secondly, all fire in the Ship Fire Phase is simultaneous with threshold checks being conducted at the end of the turn. Hopefully you will find, as we have, it speeds the game up considerably.

What does 'Official' mean?

In my own opinion, it doesn't mean much of anything at all. After all this is your game. What you do with it is up to your local game group.

That said I am frequently asked where a player should go to get the 'official' rules and SSDs. My first reaction is to ask what does official mean. If the person asking thinks official means anything Jon Tuffley of GZG has written OR endorsed than what you are holding in your hands is 'official'. The same can certainly be said of the material on Star Ranger's site or the original Cross Dimensions rules. But does our imagination or our involvement with Mr. Tuffley somehow make the players imagination any less worthy? The answer is of course it certainly does not. Full Thrust is all about engaging a player's creativity and imagination. Why should you be restricted to what some game designer or miniature sculptor thought of? Here at Emerald Skunkworks, we have created many SSDs and additional rules for the game. Some, we have borrowed from other sources, some we wholly created on our own. It is our hope that you enjoy them all, but don't feel constrained by them in any way. If you or your group, don't like something we've done, change it with our blessing!

A few notes from Hugh Fisher

Full Thrust makes it possible for fleets from different systems, galaxies, or universes to do battle with each other. As every TV sci-fi viewer knows, space is cluttered with tachyon bursts, negative polarity fields, and quantum singularities that routinely push ships back and forth in time, into parallel universes, or even other dimensions. If ships, why not whole fleets or

solar systems? Full Thrust: Project Continuum is particularly well suited to bringing different settings together, as the wide range of weapons and systems can model almost anything. Unlike previous editions it should be much easier to translate specific genre systems directly into Full Thrust.

The first step in converting from another setting to Full Thrust is to determine the role of each ship, whether escort, cruiser, or capital. This will give an initial mass range for the design. Do not judge by size alone. For example, the Defiant from Deep Space Nine is a relatively small warship, but is stuffed full of advanced weapons and defenses. In terms of its capabilities, it is more like a very compact super-dreadnought and would have a much higher mass rating and points cost than other Federation ships of similar size.

If feints and rapid strikes are important in battle then the drive ratings should be higher than in settings in which the opponents charge straight into each other like herds of dinosaurs. If ships grind away at each other in drawn-out firefights, the designs should allocate more mass to defensive systems and hull and less to weapons. In other settings ships frequently explode with the first good shot, so should be designed with plenty of weapons and little or no protection.

Most science fiction ships use beams of some sort, but there may also be torpedo like weapons, or missiles. It often isn't possible to match every single system and weapon one for one, but you will find that Full Thrust: Project Continuum is flexible enough to recreate the distinctive fighting styles of different fleets. This is after all what it is designed for! If you do run into problems make up your own rules and please send them to Emerald Coast Skunkworks.



Suggestion for creating your own SSDs

Despite the almost endless supply of SSDs out there, sooner or later (probably sooner) you will want to create your own. Here are some ideas that might make that easier.

First, you could make them like we did in the late 1990s. Simply take a pencil and piece of graph paper and draw them out. Not very 'high tech' by today's standards (or even then) but it works.

Second, you can visit the great guys at <http://www.mechworld.de/>. They have an SSD builder that is terrific. While it does not fully support this edition of the rules it will allow you to build SSDs with the basic systems.


Lastly you can use either Microsoft Paint or Corell Draw to create your SSDs. This is how we have created our fleet books and the SSDs in this book. There is a file with all the SSD icons on our site available for your use.

<https://emeraldcoastskunkworks.wordpress.com/2014/09/12/ssd-icons-for-full-thrust/>

If you have never used these programs the 'learning curve' is actually pretty simple.

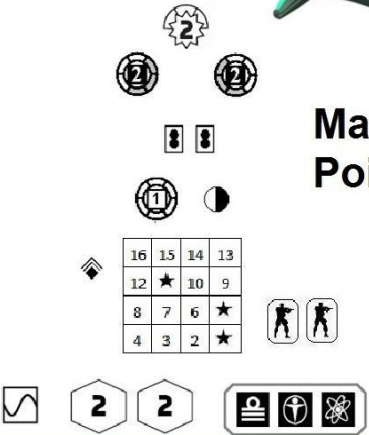
We plan on having a section on our site devoted to player created fleet books and would love to see your designs!

IRW Velash



Mass: 64
Points: 287

16	15	14	13
12	★	10	9
8	7	6	★
4	3	2	★



SSD designed by: Luis Nunez using Excel

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<http://shop.groundzerogames.co.uk/>



<http://corseceng.com/>



<http://ravenstarstudios.blogspot.com/>
<https://www.ravenstarstudio.com/>



Bobes Hobby House

<http://bobeshobbyhouse.com/>



The Game Space

<http://www.gamespacepensacola.com/>
<https://www.facebook.com/groups/gamespacebasecap/>

21 Various companies that make miniatures

This list is by no means exhaustive and includes just a few of the great companies out there

<http://shop.groundzerogames.co.uk/>

<http://www.eurekamin.com.au>

http://timeslipcreations.com/Catalog_Model_Kits.html

<https://sites.google.com/site/behrlwhubbuchiisculptor/home>

<http://federationmodels.com/>

<http://www.ninjamagic.com/cgi-bin/gt/tpl.h,content=13&>

<http://fantastic-plastic.com/>

http://jt-graphics.com/MK_BA.html

http://ravenstarstudios.blogspot.com/2006_04_01_archive.html

<http://ironwindmetals.com/store/index.php?cPath=273>

<http://www.studiobergstrom.com/>

<http://starfightershipyards.com/>

<http://www.brigademodels.co.uk/Spaceships/index.html>

<http://www.starshipmodeler.biz/shop/index.cfm>

<http://desktopwargames.com/>

<http://www.shapeways.com/shops/omnijackal>

<http://scrappingfacility.pl/>

<http://combatwombatminiatures.com/wombats-discount-space-ships.html>

Decal companies

<http://jupiterivdecals.com/2014/09/16/hello-world/>

<http://www.tenneshington.com/about-us.html>

22 Introductory Scenario player fleet

ID: _____ Name: _____

ID: _____ Name: _____

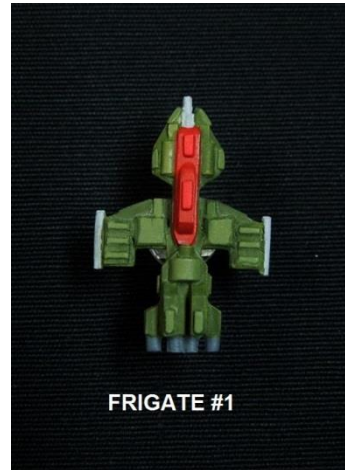
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ID: _____ Name: _____

ID: _____ Name: _____

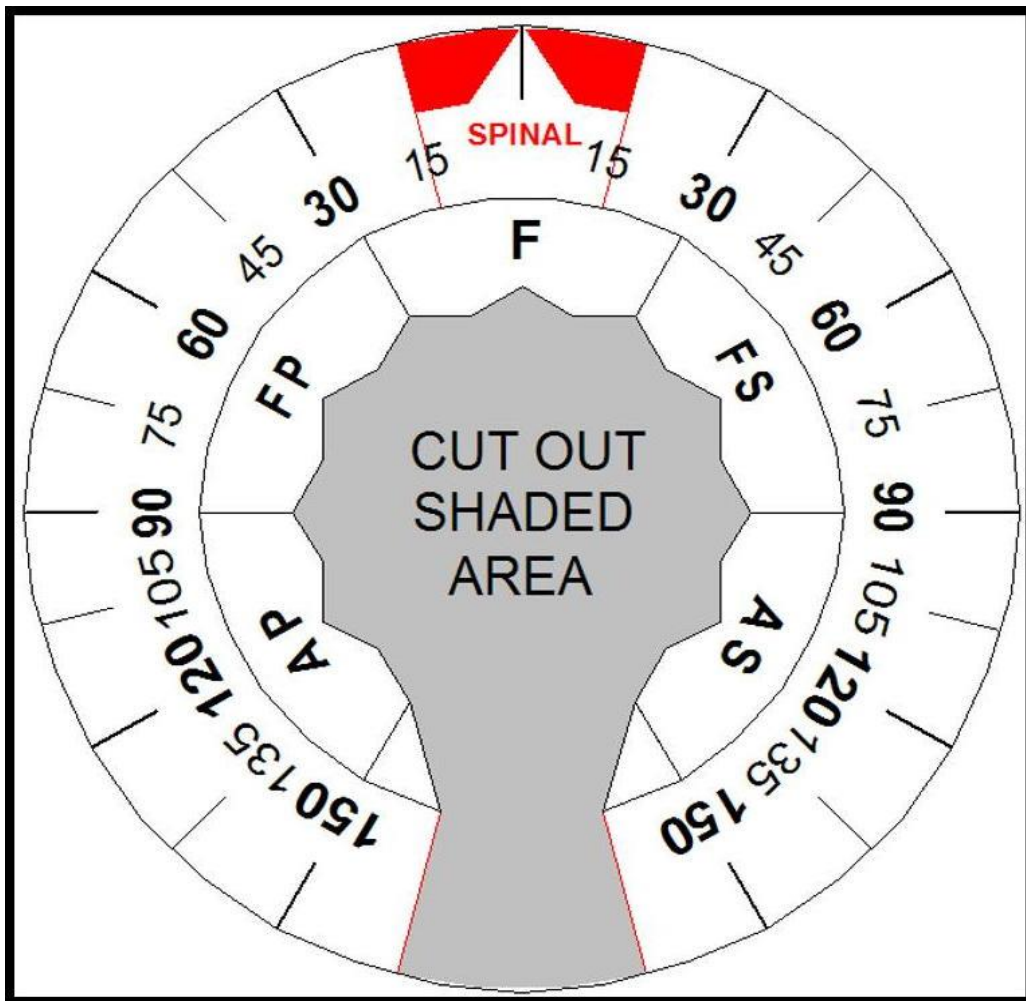
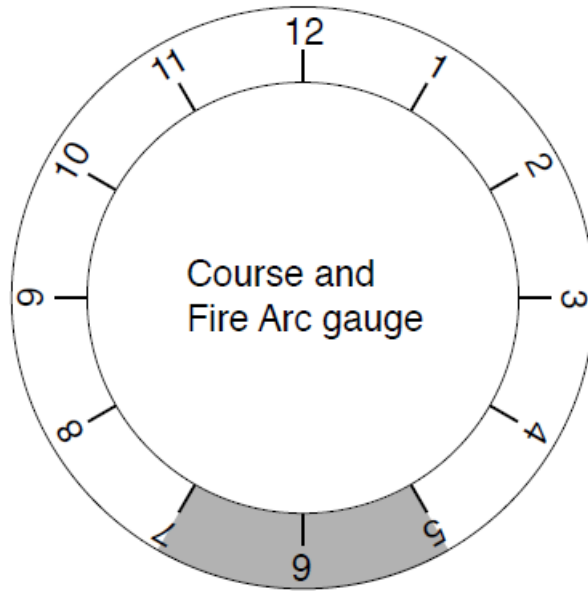
Ship ID	Start	Turn 1	V	Turn 2	V	Turn 3	V	Turn 4	V	Turn 5	V	Turn 6	V
CA 1													
CA 2													
FF 1													
FF2													
FF3													

Introductory Scenario counters for Eurasian Solar Union



Introductory Scenario counters New Anglian Confederation





QUICK REFERENCE SHEET

Turn Sequence

1. Write Orders
2. Roll for Initiative
3. Launch Missiles/Fighters/Gunboats.
Side that lost Initiative launches first, then alternates between players. Half distance for fighters.
4. Move fighters/gunboats launched on a previous turn. The player that lost initiative moves first.
5. Move ships according to movement plots.
Move fixed movement objects.
FTL entry or exit.
6. Secondary fighter moves.
7. Allocate fighter and missile attacks.
8. Fighter combats vs fighters or enemy missiles.
9. Point Defense fire.
10. Missiles and fighters vs ships. Conduct threshold checks.
11. Ships fire. Side with Initiative fires first, alternating sides. Gunboats also fire now.
12. Resolve Boarding Actions and resulting damage
13. Threshold checks
14. Damage Control assignments for DC parties not used to repel boarders.
15. Roll for reactor explosion. Apply damage if necessary and roll threshold checks again.

Beam Hit Probability Table

<u>Beam Dice</u>	<u>1 to 3</u>	<u>4</u>	<u>5</u>	<u>6</u>
BD	miss	1 hit	1 hit	2 hits
BD*	miss	1 hit	1 hit	2 hits
vs Screen 1	miss	miss	1 hit	2 hits
vs Screen 2	miss	miss	1 hit	1 hit

Note: Most beam weapons will re-roll results of 6. See individual weapon descriptions

Beam Hit Ranges

<u>Beam Class</u>	<u>Beam-1</u>	<u>Beam-2</u>	<u>Beam-3</u>	<u>Beam-4</u>
Normal Target	12"	24"	36"	48"
Vs Stealth-1	10"	20"	30"	40"
Vs Stealth-2	8"	16"	24"	32"

Heavy Graser Hit Ranges

<u>Beam Class</u>	<u>Graser1</u>	<u>Graser2</u>	<u>Graser3</u>
Normal Target	18"	36"	54"
Vs Stealth-1	15"	30"	45"
Vs Stealth-2	12"	24"	36"

Projectile Weapon Hit Probability

<u>Standard Weapon</u>	<u>Hit on 2+</u>	<u>Hit on 3+</u>	<u>Hit on 4+</u>	<u>Hit on 5+</u>	<u>Hit on 6+</u>
Normal Target	6	12	18	24	30
Vs Stealth 1	5	10	15	20	25
Vs Stealth 2	4	8	12	16	20

<u>Long Range Weapon</u>	<u>Hit on 2+</u>	<u>Hit on 3+</u>	<u>Hit on 4+</u>	<u>Hit on 5+</u>	<u>Hit on 6+</u>
Normal Target	9	18	27	36	45
Vs Stealth 1	7.5	15	22.5	30	37.5
Vs Stealth 2	6	12	18	24	30

<u>Short Rng Weapon</u>	<u>Hit on 2+</u>	<u>Hit on 3+</u>	<u>Hit on 4+</u>	<u>Hit on 5+</u>	<u>Hit on 6+</u>
Normal Target	4	8	12	16	20
Vs Stealth 1	3.33	6.66	10	13.33	16.6
Vs Stealth 2	2.66	5.3	8	10.6	13.3

Ships Reactor breaches

Reactor explodes on a 5+ if not repaired during step 14. Ships within 3mu take damage equal to mass/25 of the exploding ship

Critical hits to hangar bays 1D6

1-2 Secondary explosions occur. +1 to roll for each row of hull boxes destroyed this turn. +1D3 damage (x2 if hanger contained any fighters)

Re-Arming fighters 1D6

- 1 The group may not be re-launched in this game
- 2-5 May re-launch in the second turn after recovery
- 6 May re-launch on the turn immediately following that of recovery.

Scrambling fighters 1D6

- 1 The hasty launch attempt causes a mishap in the launch tube – one complete fighter bay (and its occupying fighters) is out of action for the rest of the game, unless a Damage Control Party can repair it
- 2-3 No groups may be launched this turn;
- 4 One group gets away but too late to intercept the attackers – the enemy group(s) may fire on the carrier BEFORE the scrambled group may attack them;
- 5 One group scrambles in time to intercept – it may engage an attacking group in a dogfight to prevent them firing on the carrier;
- 6 TWO groups manage to scramble in time to intercept the attackers.

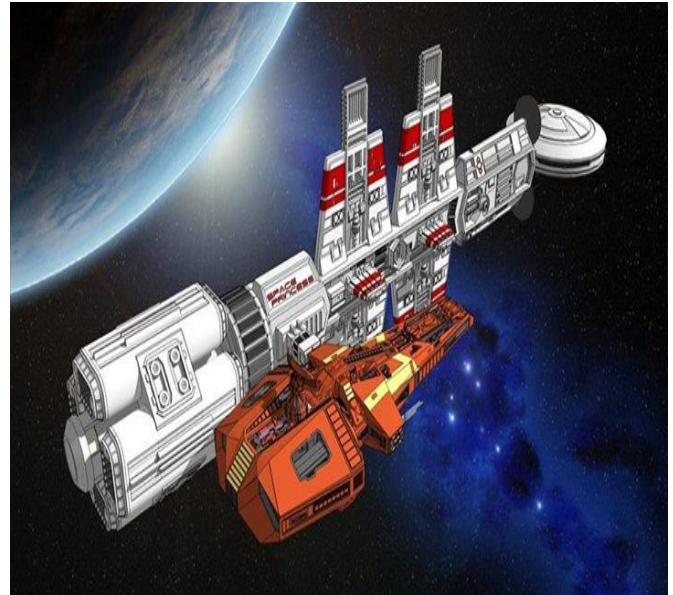
BOARDING COMBAT

Marines hit other marines on a 4+. Combat is simultaneous.

Friendly DC parties not making repair rolls may repel boarders on a roll of 6 on a 1D6. +1 to the roll for each DC party assigned, max of three.

Assault shuttles may land boarding parties on a 3+

Surviving Marines and Boarders inflict 1 point of damage on the boarded ship.



TRANSPORTER RAIDS 1D6

- 1 Nothing happens. The transporter technician is unable to lock onto the target system.
- 2-3 The Marines transport onto the ship but are unable to reach the target system and are killed.
- 4 The Marines transport onto the ship but are unable to reach the target system and return to the ship.
- 5 The Marines transport aboard and destroy the target system but are killed in the process.
- 6 The Marines transport aboard and destroy the target system and return safely to the ship. *Note:* Marines may not be sent to attack any Core or otherwise protected systems,



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