

THE STARSHIP COMBAT ALTERNATIVE (SCA)

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The Nerd-Night Gaming group: UWO Gaming Club: 1992-1999

Author David Weber for being the original backbone of Starfire, and being an excellent writer of such series as *Starfire* and *Honor Harrington*.

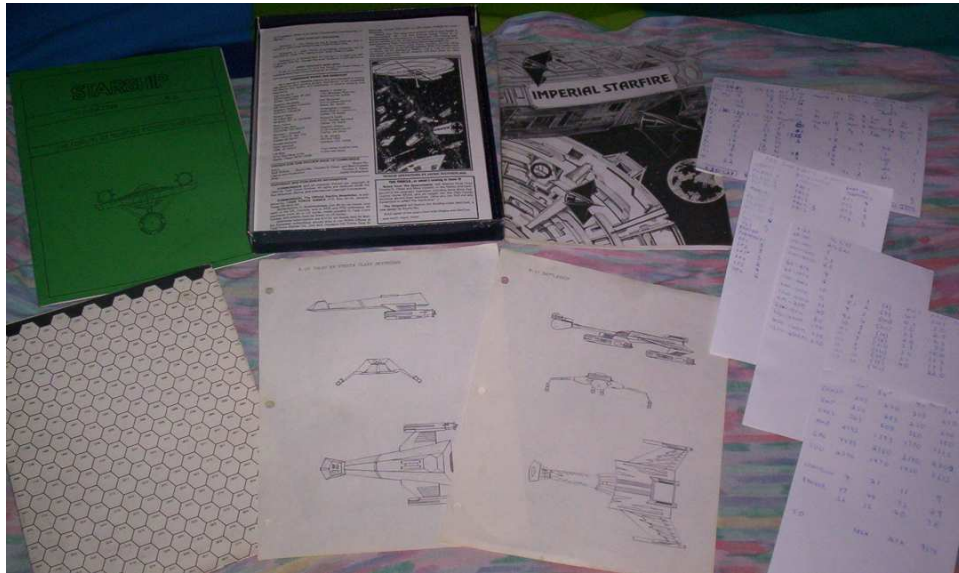
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Foreword

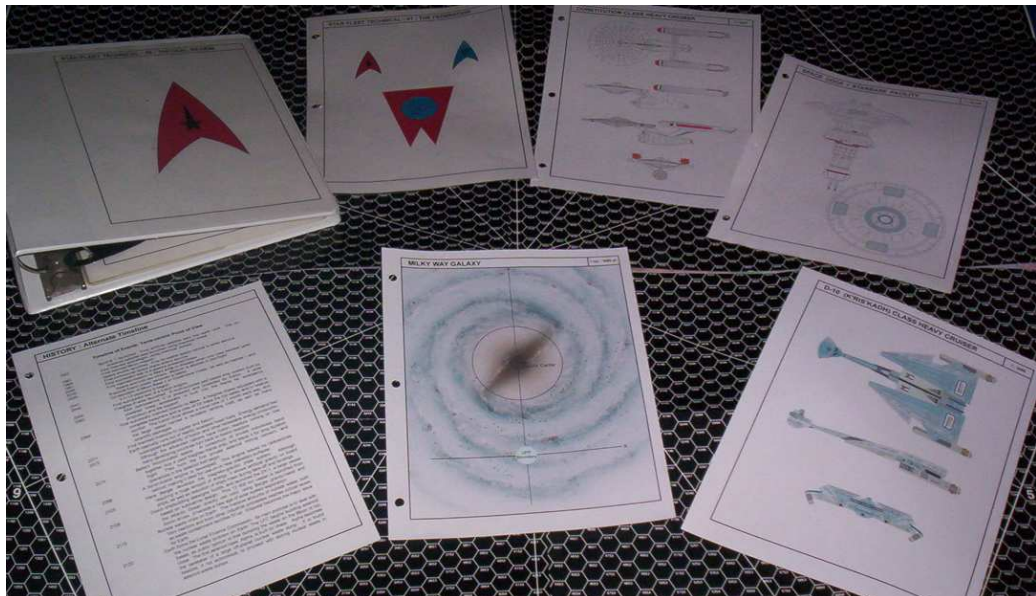
The first foray into “RPGing” for me was *AD&D*, which I discovered in 1979. Shortly after I discovered my first copy of *Star Fleet Battles* a year later. This grew into the cumbersome *Commander's Edition* in 1983. That year I also discovered two other games: *Star Trek: The Role Playing Game* and *Starfire*. I loved the simplicity of *Starfire*, which it kept even with the *New Empires* expansion. I did not like the starship combat rules from FASA, and when I changed over to the *GURPS* system, *GURPS: Space* was even worse – it didn't even really have a real ship combat system!

From this:



Thus I began my journey into developing my own system, based on the fast playing, yet detailed *Starfire* system. There were two common features of most ship combat games that *Starfire* didn't have that I wanted to keep: Power and Damage Allocation. Thus the linear damage style of *Starfire* is the option for the *SCA*. When the d10 edition of *Starfire* came out, the gameplay actually didn't change, just the dice and the charts. During the '90's I missed such things as *LUGTrek*. When I left university I concentrated on drawing ships, only returning to the rules in 2006. I wanted a detailed yet simple system, which would both allow ships from any era to interact, was consistent, and playable.

To This.



With the advent of each new series, the star trek continuity becomes worse and worse. Much of TOS "history" has been re-written, especially by *Enterprise*. And the particle-of-the-week of *Voyager* got a little thin as well. *DS9* was a pretty good war story. Even before I started this project there was the term YATI: Yet Another Trek Inconsistency. Makes for a pretty horrible timeline. For a good RPG (which the SCA is a companion), consistency is key. A believable explanation helps too.

Much of what is in *The Book* is not in here. (*The Book* is the white binder pictured above, and no, it's not called "Chicago Mobs of the Twenties") The Book contains the SCA, and more. Maps (and yes, I have a copy of the *Star Trek Star Charts* I just choose to ignore them), ships, equipment, timelines, and more. Eventually, I'll package and release most of it. I'm just currently out of round tuits.

Part 1: Some Weird Science

1.00 Introduction

This first section contains my own personal ramblings and reasonings for some “major alterations” to the “canon” Star Trek universe (as if there was such a thing anyway). As such there are no game rules here (just explanations) and this section does not affect the game play. If you want, you can skip to part 2 or 3 and begin playing. But if you have time you will probably want to read this over. . .

Since I discovered Star Trek in 1973 (syndication), I have since been trying to explain what has been seen on-screen using science (and I have since read *The Science of Star Trek*). Star Trek kindled in me a love for astronomy, which led me to a physics degree and an astronomy degree. So below is Stephen’s SWAG & BS explanation of the physics of star trek and the gaming of it:

1.01 Speed, Size, and Cartography

1.01.01 Warp Speed

Just how fast is warp speed anyway? In physics there is a “speed limit” to the universe; the speed of light (represented by the symbol c) Nothing physical (that we know of), can go faster, or even at, the speed of light. It’s pretty fast: ~300 000 km/s. Unfortunately it’s slow when you need to cross interstellar distances. Enter “warp speed.” There are two mathematical definitions of how fast warp speed is. TOS “used” the cube of warp speed ($\times c$), while the TNG Technical Manual used some funky function that went asymptotic between warp 9 and 10, but during *All Good Things* (TNG 726) Riker returned to the old way with “Warp 13.”

During most episodes, no sense can be made at all of how fast a ship is going. Warp speed really is “as fast as the script writer needs it to be.” We know that it is FTL (**F**ASTER **T**HAN **L**IGHT). And there seems to be some variability in it. To make things even more complicated, script writers have no concept that except in a single solar system STL (**S**lower **T**han **L**ight, *sublight*) speeds are useless (see 1.01.02). We live in the sublight universe.

Thus I will impose my own interpretation of just how fast warp speeds are: Warp speeds are the *square* of the warp times a baseline speed. The baseline speed varies slightly depending on the local flatness of space-time. The following chart shows the baseline values for the entire universe:

Terrain of Starship Travel	Baseline Speed (c)
Dark Energy Region Between Galactic Clusters	79
Flat Space-time Between Galaxies	67
Galactic Halo outside of Globular Clusters	59
Galactic Disk Between Spiral Arms	53
Galactic Disk In Spiral Arms	47
Nebulae or Star Clusters	43
Star Forming Regions (nebulae <i>and</i> star clusters)	37
Galactic Centre	31
Near a Large Point Mass (star, black hole, etc.)	0

That way gaming at earlier time periods is possible without some of the ridiculousness seen in *Enterprise*.

It should also be noted that large objects produce an area effect bending of space-time that prevents a warp field from forming close to the large object. Thus warp drives are unusable near point masses and this prevents the “slingshot around the sun” method of time travel (see 1.02.03).

The reasoning for this is simple. Impulse must be FTL (see below), and warp seems to be the practical speed band for space-faring races. But how does a physical object travel in this universe at FTL speeds? Simple. It doesn't. That's why it's called **WARP DRIVE**. Space-time is bent using artificial gravity generators (called warp nacelles). It is bent so much that the ship travels in a bubble of bent space-time. Inside the bubble the ship is travelling at STL speeds, but the bubble would move through space (like a wave group) at FTL relative to objects outside the bubble. This space-time bending would also make things appear different sizes to objects travelling at warp. Thus the size of a tactical hex would actually be variable to the outside world, but fixed in size as far as the ship was concerned.

OK, so back to the TNG warp thingy. There is a banded-ness to 'subspace', with the banded-ness based on base-9 mathematics. Thus warp bands are groups of 9. so warp 10 is actually the first speed of the second band of warp. This banded-ness was discovered in the failed transwarp experiments of the U.S.S. Excelsior. Thus the nomenclature was changed, from warp speed to *warp factor* speed. Warp factors use decimals to express the banded-ness of subspace. Thus warp 10 becomes warp factor 9.1, with warp 18 being warp factor 9.9. Warp 19? Warp factor 9.91. and so on. A neat explanation, and you don't have to keep track of two separately scaled speed scales. That and a buck ten will get you a cup of coffee. Since there are 3 speed regimes in (my) Star Trek Universe, they at least should be consistent with each other!

So how did I pick how fast warp speed is? It's based on my size of the Federation, good campaign timescales, and a mathematical relationship with all the numbers (except 0). By the way for game purposes, I use warp speed. Not warp factor speed. Like warp 13. The fastest warp? Warp 80. Don't hold your breath. The range is about 50 – 10000 *c* (for warp 1 to 14). Even with a “big-medium sized” Federation, you'll get there pretty soon.

1.01.02 Impulse Speed

Impulse engines must be able to propel a starship at FTL speeds. There is some on-screen evidence for this such as *The Child (TNG 201)* travelling interstellar distances on impulse while the warp reactor is used for other things. Otherwise there is absolutely no reason to mount impulse engines on a starship. Even limping to a nearby habitable star system at sublight speeds is going to take decades. Relativity will not affect ship time much unless speeds of 0.9*c* are reached. Thus impulse speeds must be FTL, but slower than warp 1.

Taking an idea from David Weber's *Honor Harrington* series, there are two FTL bands that ships can travel in, the “alpha” band (impulse) and the “beta” band (warp). We could also use this reasoning to create a third “gamma” band (transwarp), for even faster travel. Impulse engines would be simpler than warp drives and create a less stressful warp field. Direct fire weapons could travel in a fourth “delta” band (subspace), as would communication.

The first FTL band would then be the impulse speed regime. And in this case, impulse stands for graviton **IMPULSE** generators. It would bend space-time, but not fold it. Warp drive would then fold space-time, to generate faster speeds. Transwarp? Well, I'll leave that to your imagination.

Since we know that the warp band is above the impulse band the entire range of the impulse band is known. It has 9 levels (impulse 1 to impulse 8), with impulse 9 being warp 1, and not achievable without warp drive (full folding of space). Thus the maximum speed of any impulse engine is impulse 8.5. It is speculated that there are 81 segments in the warp speed band (9 x 9). Warp 81 would be transwarp 1.

Ok, so how fast are impulse speeds? Well, impulse 9 is warp 1, ~50 *c* in our region of the galaxy. If we use impulse squared (like warp), then impulse 1 is below light speed. Use $\text{impulse}^{1.5}$ to solve the problem. Impulse 1 is then about 1.9 *c*.

SPACE-TIME DIAGRAMMS:



Ship at Impulse speeds



Ship at Warp speeds

1.01.03. Sublight

This is the familiar universe that all us slowpokes live in. All things that we know of live in this regime (with the exception of black holes, and we still don't know what is inside them with any certainty). Something not seen on Star Trek, is time dilation affects (at least not annoying ones). Arriving home to find out that your children are now your grandparents would suck big time. Thus spacecrafts do not travel near the speed of light (as they don't need to if they are equipped with some form of FTL drive.)

So how fast do ships go at sublight? Not very. *c* is a speed of 360 hexes / turn. Ships typically have a maximum speed between 15 – 25 hexes / turn, roughly 5% of light speed. The time dilation factor is 0.1%. I've had clocks that off. (losing 1 ½ minutes in a day).

1.01.04 Size of a Tactical Hex

Just how big are those hexes anyways? Since I've defined a speed for *c* of 360, the size of a hex depends on just how long a turn is. Since I'm keeping *Starfire's* 30 second long tactical turn, the size of a sublight hex is . . . drum roll please . . . 25 000 km. Since a starship is locally travelling at sublight inside a FTL speed bubble, the size of a hex as far as a starship is concerned is . . . 25 000 km! To the outside world they appear to be much larger, but ship-relative, they are always the same size. That's why Spock quoted ridiculously low distances to enemy starships while travelling at warp speed. Ship-relative, they are that close!

Now we need to determine hex sizes at impulse and warp. How fast? Warp 1 is ~50 *c*. (in our region of the galaxy), and Impulse 1 is ~ 2 *c*. So a hex is how far a ship travels in 30 seconds.

At impulse, 1 hex is about 1 *l.m.* long, 18 000 000 km. At warp 1, ~ 25 *l.m.*. 450 000 000 km. 3 *A.U.* (to be precise 1 hex is 27 times smaller at I-1 than at W-1.) That's why, when a ship warps out, it is simply removed from the map board (2.01.04.1), Moving 1 hex at even impulse 1 speed moves the ship over 600 sublight hexes away. Going to warp from impulse speed isn't quite so dramatic. Going to warp 1, would only move the ship 27 hexes. Going to warp 5 is over 200 hexes though. You can at least take a parting shot.

1.01.05. Size of the Federation

Now that speeds are taken care of, lets deal with the second biggest YATI, the size of the Federation (and, consequently, all of the other star empires). One of the better sites in support of a "small" federation model is the Star Trek Cartography website at <http://www.stdimension.org/int/Cartography/cartography.htm>. A recent release is the Star Trek Star Charts (ISBN 0743437705), a related product. I never liked the small federation model. Way to spindly and easy to take over strategic areas. But the federation in the original *Technical Manual* was simply too big. Besides we have that warp speed problem.

So I'm going with a "big-medium sized" Federation. The spinward limit to my "medium sized" Federation will be that beacon of the night, Deneb 990 *pc* away. (Did I mention that like most professional astronomers I use parsecs instead of light years?) I also revert to an idea from the *Star Trek Maps* and appearing in FASA: "two Federations." The Federation Proper (FP), and the "Treaty Exploration Zone. (TEZ)" Only one empire impinges on the FP, and that is the Romulan Star Empire. Something about a war 100 years *before* TOS. As mentioned in Encounter at Farpoint (*TNG 101*), Deneb is at the end of explored

space, on the edge of the TEZ. As a matter of fact, I'll make a large chunk of the TEZ still unexplored, especially the part of it in the Sagittarius Arm.

The FP is a sphere 275 *pc* in radius, centred on the galactic disk directly beneath the star Sol. (And you thought our star was in the galactic plane didn't you? Sol lies 20 *pc* above the galactic plane.) Why 275 *pc*? The diameter, 550 *pc*, is the thickness of the spiral arm, and Sol is just about 275 *pc* in from the inner "edge" of the Orion Arm. There are a lot of stated thicknesses of the spiral arm from 300 – 900 *pc*, so I'm going with just under the average, as Sol is toward the edge of the Orion Arm.

The radius of the TEZ? 1000 *pc*. That way Deneb just fits in. the border with the Klingon Empire is in the TEZ, and so are the other races found between TOS and TNG. There is still lots of places to explore. Now to positions of things. Since the *Technical Manual* and the *Star Trek Maps* the Klingon Empire seemed to move from southwest of the Federation to east of it, with the Romulans directly north of them. Naaaaah. I'll leave them due south in the FASA position. That way all the territory to the west gets explored after TOS, and the TEZ in the Sagittarius Arm is still unexplored, for those who want to game in the post *Voyager* universe. If you want to be more historically accurate, have more than 1 TEZ radius. TOS/TMP: 750 *pc*. Have the Federation – Klingon border mysteriously end. . .

This system also works with Sol being in "Sector 001." Using GURPS 20 *pc* cubic sectors, The first sector would be centred on the origin of the coordinate system. If we use Sol's position and the centre of the galactic disk, then Sol lies in the centre of the sector directly above the origin sector. If sectors are given unit coordinates, the origin sector's coordinates are (0,0,0). The sector directly above it (one up in the Z-direction)? Sector (0,0,1). Problem solved.

This will negate some on-screen stuff from *Enterprise*. Qo'noS is 4 days away at warp 4.5? No way. Warp 4.5 is 1 *pc*/day. Travel time would be more like 1 year (or 2).

1.02 Treknology

1.02.01 Gravity Based Technology

The best way to explain most of Star Trek technology is to say that it is gravity based. I'll impose a supposition: Gravitons exist, and can be manipulated. This allows some incredible advances, including FTL drives. But much of treknology can be explained with gravitics, as all of our current technology can be explained with electricity.

Structural integrity fields (SIF) are one such technology. From "polarizing the hull plating", the SIF is the first line of defence for a starship. Consider a photon torpedo. The *TNG Technical Manual* specifies the warhead as 1.5 kg of frozen anti-deuterium. That much matter/energy conversion (including 1.5 kg of matter), yields an explosion of 64 megatons. A single hit should vaporize just about any ship. But it doesn't. Why? The SIF uses a gravity field to strengthen the physical structure of the ship. This translates in the game to "armour technology." I can use this also to explain the "small-ness" of an explosion caused by a photon torpedo. The energy must be compressed (by a gravity field) to be able to punch through shields and hulls. Soft targets such as 21st century cities are targeted with compression set to zero, for a much more devastating hit.

Shields also would be grav-tech. A more advanced version since they are totally in-material. Ships are really tough things, and unless you ram a ground target, even contact with the ground is survivable. As long as the star doesn't blow up shortly afterwards.

Artificial gravity, inertial dampeners to keep the crew from becoming anchovy past when the ship accelerates. You get the picture. By assuming that gravitons exist, and can be manipulated, almost every on-screen tech effect can be explained.

1.02.02 Transporters

Transporters have been one of the mainstays of Star Trek tech. Originally “invented” because the SFX were too expensive to have the Enterprise or shuttles landing on planets. And like any technology, you can now have “transporter accidents.” The problem is that physics gets in the way (again.) If you take an object apart, you have disassembled it you are not going to put it back together again. Converting it to energy? Listen pal, converting 3 kg of mass to energy creates a 64 megaton explosion. You want to turn a 100 kg human into energy 3 m in front of you? Lets not get started on “Heisenberg Compensators.”

So how to make transporters work, at least more believably. Well we reach back into our gravity technology bag of tricks and turn it into a small-scale wormhole generator. That’s what you need all those graviton devices for – to keep the crew from being squashed like a bug during transport. The persons stand on the transporter platform, and a wormhole opening is passed up and around them (stabilized and enlarged so the tidal forces don’t rip anyone apart.) That way you don’t have to step through the opening. Later improvements include such things as better stability so you don’t have to stand perfectly still on transport (to avoid being sucked into never-never land), and even the ability to double transport (“beam me directly to sickbay”) is possible. And you can still have transporter accidents.

1.02.03 Stars and Other Natural Gravity Wells

If you read the next section I have a beef with time travel. Since I also speculate that most of the believable trekology is gravity based, I have to deal with all those pesky natural sources of gravity, like everything that has mass. Planets. Stars. Especially stars. To avoid certain “problems” with warp speed, scale, and stars, I’m imposing a restriction. Since I propose a graviton based tech, the largest common natural source of these are stars. Their graviton flux interferes with the operation of some devices. Like warp drive. Warp drives won’t operate near large masses. The effect is based on the mass of the object and the distance. Thus a star creates an “warp interdiction field” around it. How large? 18 **A.U.** per solar mass. That’s why in *The Best of Both Worlds 2 (TNG 401)* the *Enterprise-D* isn’t at warp as it’s passing Saturn. Wouldn’t you expect a star then to interfere with impulse? It does, but at 0.9% of an **A.U.** per solar mass, you have to be **really** close to the star.

1.02.04 Time Travel

Simple. Doesn’t happen in my Star Trek universe (except under **really unusual** circumstances, like divine intervention). It’s definitely something that can screw up causality (witness the *Enterprise* series) and makes for really hard game play. Besides, it’s impossible. Even more impossible than FTL speeds. (Now don’t get me wrong, I like *Dr. Who*.) But why? Aside from the paradoxical argument (such as going back in time and killing your mother before you were born), there are other, observational theories to discount time travel (see *wikipedia*). The one missed by most is this: Time travel violates the second law of thermodynamics, the most tested and proven physical law. How and why? Well, first, the second law states that the amount of energy in the universe is constant. Since mass and energy are interchangeable ($E=mc^2$), the total mass & energy of the universe is constant. Time travel changes that. If you go back in time, you change the mass of the universe (of the past), increasing it by the amount of stuff you take with you. Thus you changed the energy content of the universe, and violated the second law of thermodynamics. Especially if you took a lot of reactor fuel with you. It can become a form of perpetual motion! So how do I explain the Guardian of Forever? I don’t. I’ll firmly park it in that divine intervention end of things and put in a hand waving argument about alternate universes.

1.03 Miscellany

Here is where I get to rant and rave about other YATI’s that bug me.

1.03.01 Why Trek Won’t Happen in the 23rd Century

One of the hardest things to do is to predict the future. The other is to get a consistent timeline out of Star Trek writers. Hate to break this here but we won’t be anywhere near to Star Trek by the time the

23rd century rolls around. Sorry. So I've personally pushed it off further into the future. That way I also get to shove in a pile of crossover stuff. Makes for great campaign material.

1.03.02 2D Versus a 3D Universe

Notice how everything is oriented in the same direction in Star trek? I wonder how that happens? Probably to reduce vertigo in the viewers of the show (or reduce SFX costs), it does have a good side effect on gaming, as it introduces a 2D effect on a 3D reality. Which makes perfect sense, in a way. We like to have a common orientation, and we live in a disk shaped galaxy. Thus it would be common to orient our ships to the *Galactic Plane*. That's where I've located my map origin after all. Every so often you do see ships "upside down", but usually they come at you from the front and sides. There is on-screen evidence that in solar systems ships travel in the ecliptic, where all the planets are (so all those pirates have something to hide behind.) Makes the hex map a little more realistic.

This also allows another possibility. Shield poles. A ships shields meet at the poles, allowing for a manoeuvre out of *Honor Harrington*. Rolling ship (2.06.04)

1.03.03 Enterprise, NX-01

Oh. . .where to start with this abortion . . . Now don't get me wrong – I actually liked the show from a character / action point of view. It's just that everything else in the show is one big YATI. I'm going to leave the whole "Akira-Prise" issue in the capable hands of Bernd Schneider at *Ex Astris Scientia*. I'm just going to make a few comments, and then leave you to the rules. Besides, in *your campaign*, you can do what you like.

The lack of shields does put the NX-01 pre-Romulan War, but the Warp-5 capability puts it one tech level prior to the Connie.

The vessel would not have transporters. Heck, a tractor beam would be an easier device to create!

Phasers and photon torpedoes? That's as bad as the 200 year old Klingon battlecruiser. I'm keeping the Four Years War, and the switch from lasers and particle accelerator cannon to phasers and photon torpedoes.

I think I'll stop here for now. . .

1.03.04 Quickies

Bumps on the Head: Ever notice that most humanoid races except us have bumps on the head? The Klingons did. Then they didn't. Then they did again. I'll stick with John M Fords view of the Klingons, thanks very much.

On to the rules!

Part 2: Ship Combat Rules

2.00 Introduction

The basics of ship combat are listed in the Tactical Turn Sequence of Play (2.03). The most important elements of ship combat are as follows: Speed Regime (2.01.04.1), Power Allocation (2.04), Initiative Determination (2.05), Tactical Movement (2.06), use of the unit control sheets (2.02), and how the weapons are fired (2.07).

2.01 The Tactical Combat Scale

The tactical map is the playing surface where ship combat is gamed out. The requirements are a few d10 dice, and a hex map, preferably the largest one(s) available. The *Imperial Starfire* system map (4 sheets) make an excellent map. Each hex represents approximately 3 AU in deep space (and much less in a solar system, or slower speeds – see 1.01.04, 2.01.04.1). The map should have a scattergram and numbered hexes. The use of miniatures and 30 mm hex maps are OK (if you have them), but expect the playing surface to be the size of a snooker table (2m x 4m)! There are no edges in space, so the map “floats.” Having extra map sheets to place on an end that a ship moves on to would be useful (or moving all the counters over becomes necessary).

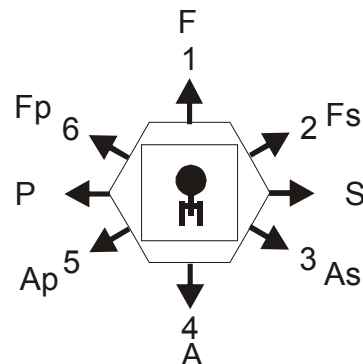
2.01.01 Playing Pieces

The playing pieces are either ½” cardboard “ship” counters or 30 mm hex counters from FASA / TFG / SDS. Each counter represents either an individual starship, a fighter squadron, seeking weapon, base, space station etc. Some non-unit counters may represent stars, planets, asteroids etc. The map and counters are the first component of the game system.

Each starship type is represented by the silhouette on the counter and may be colour-coded by empire/race.

Each unit has a facing with the direction designated by either a number, series of letters, or both. An example of this is on the scattergram (right) with the ship facing direction 1. The (ship-relative) designations are:

F (forward, fore)	A (aft)
Fs (fore starboard)	Ap (aft port)
S (starboard)	P (port)
As (aft starboard)	Fp (fore port)



2.01.02 Type Codes

Starships come in several types, by size and purpose:

Unit Type	Code	Unit Type	Code	Unit Type	Code
Escort	ES	Scout	SC	Shuttle	st
Corvette / Cutter	CT	Monitor	MT	Assault Shuttle	sa
Frigate	FF	Escort Carrier	CVE	Cutter / Ships Boat	ct
Destroyer	DD	Light Carrier	CVL	Pinnacle	pn
Heavy Destroyer	DH	Fleet Carrier	CV		
Light Cruiser	CL	Assault Carrier	CVA		
Cruiser	CR	Base	BS		
Heavy Cruiser	CA	Fighter Squadron	F		
Battle Cruiser	BC	Space Station	Ss		
Dreadnought	DN	Freighter	Fr		
Battleship	BB	Passenger Liner	Li		

2.01.03 Terminology

"Starships" are any large manned spacecraft capable of warp travel.

"Carriers" are starships designed to carry assault shuttles or fighters.

"Space stations" are large stationary space borne structures.

"Bases" are space stations built for military purposes.

"Fighters" are small shuttle sized warp capable ships optimized for combat. Some ships, such as the Minotaur class and the Jem'Hadar Fighter are called fighters, but are actually small starships.

"Small Craft" are small auxiliary spacecraft. Most are unarmed and have few hit points. Impulse powered small craft are properly called *"boats"*, while warp capable ones are *"pinnaces."* Most people just call them all *"shuttles."*

2.01.04 Combat Conditions and Regimes

The combat conditions and regimes determine the starting and victory conditions of a ship combat. Starting conditions can be determined by a fixed scenario, or can be "agreed upon" by the combatants. Victory conditions are usually determined when one side is destroyed, disabled, or forced to disengage. Sometimes the winner is the one who can disengage!

2.01.04.1 The Speed Regime of the Combat

The speed regime determines the combat. There are three speed regimes: **sublight**, **impulse**, and **warp**. The fastest regime that ships are willing or able to travel at determines the regime used. A ship may change its speed regime (if it is able to). This may end the combat. If the opponent also can change to the new speed regime a new combat starts with the "chase" starting condition.

The **sublight** regime is the slowest (it includes the speed zero!). Starships usually only travel at sublight speeds near planets, stations, and bases. Ships in orbit are in the sublight regime. A ship may disengage a sublight combat by *warping out*, accelerating to either the impulse or warp speed regimes. A ship doing so is simply removed from the map during the **movement phase** if the ship has allocated enough power to movement to travel at impulse or warp speed.

The **impulse** regime is the middle regime. It is the fastest regime that can be used with habitable planets (1.02.03). Ships in orbit may engage in combat in impulse if the combatants decide to **warp out** to the combat. A ship slowing (*going sublight*), and all sublight objects are stationary (speed = 0). The fastest speed possible in the impulse regime is impulse 8.5. A ship disengaging (*going to warp*) moves to the current map edge. At the **end** of the current turn, the ship is removed from the map.

The **warp** regime is the fastest regime. At warp a ship can only disengage by outrunning its opponents. A ship can travel at impulse speeds in the warp regime, with a partial speed (between 0 and 1). All sublight ships and objects are stationary. Stars cannot be used as terrain in the warp speed regime as their large gravity wells would cause all ships to drop to impulse! (see 1.01)

2.01.04.2 Standard Starting Conditions

Many combat scenarios have standard starting conditions:

An **ambush** occurs when one party wishes to sneak-attack another. The attacker places their unit(s) in the centre of the map on the facing of their choice. The defender places their unit(s) between 15 and 20 hexes of the map edge of their choice. There may also be terrain features that the attacker is using to hide behind.

A **chase** occurs when one party wishes to escape another. The escapee places their unit(s) in the centre of the map on the facing of their choice. The pursuer places their unit(s) within 5 hexes of the map edge directly aft of the escapee.

A **melee** occurs when all parties wish combat. Each combatant places their unit(s) within 5 hexes of a map edge of their choice.

A **warp out** occurs when combatants begin by leaving a planetary orbit. A planet is placed in the center of the map. Each player chooses a direction and a speed their unit(s) are capable of. Using initiative, each player places their unit(s) in the planet's hex and moves them in the direction and speed that they chose. Then the first turn begins.

2.02 Spacecraft Control Sheets

Spacecraft control sheets are the second component of the game system. There are control sheets for fighter squadrons, small craft, and large units (starships, stations and bases). Each unit counter is represented by a control sheet.

2.02.01 Large Unit Control Sheets

A large units control sheet lists the units systems in the following order: Shields, Armour, Superstructure, Weapons, Power, Control, and Auxiliary systems. For smaller numbers of systems damage is recorded by crossing off a system on the control sheet for each point of damage inflicted by a hit. For larger systems (10+) use a countdown list in which the remaining hit points are written. The control sheet then represents the actual capability of the unit for the next round of combat. Hits and power allocation should be marked in pencil or other erasable media.

2.02.01.1 Starship Control Sheet Example

CA1701 Enterprise	250 Hull Spaces (3 / 10 / 3x20)	POWER 108 _____
S-1 60 _____	S-4 60 _____	SIF & LS _____4_____
S-2 60 _____	S-5 60 _____	Shields _____
S-3 60 _____	S-6 60 _____	Movement _____
Arm Fore 0 _____	Ss 45 _____	Weapons _____
Aft 0 _____	Crew 43 _____	C-3 _____
		Auxiliary _____
LWD4 80 _____	Q 45 _____	FH3 (FF) _____
IMP2 24 _____	VVVVVVV	FH3 (PP) _____
BBBB	TrTrTrTr	FH3 (SS) _____
X ₄ X ₄ X ₄ X ₄ X ₄	TbTb	FH3 (OO) _____
C ₄ C ₄ C ₄ C ₄ C ₄	H 17 _____	FP2 (FF) _____
L ₄ 10 _____	MgMgMg	

Explanation:

CA1701 = Starship type and ID number of the individual ship. "Enterprise" = Name of the ship.

"250 Hull Spaces" = size of the ship. (3 / 10 / 3) = A notation indicating the size class of the ship (3), the power/warp ratio (10), and the number and shield type of generators (20 **T-L** 3).

S-1 60 = Shield on facing 1 (forward) has a maximum of 60 hit points. There are 6 shield facings.

Arm 0 = The Enterprise doesn't carry any dedicated armour.

Ss 45 = The Enterprise has 45 superstructure points.

Crew 43 = 43 crew units (1 crew unit = 10 humans)

LWD4 80 = A warp drive of **T-L** 4 that produces 80 GW of power. The L designation indicates that the ship is equipped with large size warp nacelles (see 2.06.02).

IMP2 24 = A second generation impulse engine that produces 24 GW of power

BBBB = 4 emergency batteries that produce 1 GW of power each.

X₄X₄X₄X₄X₄ = 6 **T-L** 4 scanners.

C₄C₄C₄C₄C₄ = the command and control ("**C-3**") spaces of the ship. The subscript denotes 4th tech level.

L₄ 10 = 10 **T-L** 4 laboratories. The Enterprise *is* an exploration ship after all.

Q 45 = 45 crew's quarters.

VVVVVVV = A 7 hull space shuttle hanger bay. *A ship with multiple bays are grouped together for combat purposes.*

TrTrTrTr = 4 transporters.

TbTb = 2 tractor beam generators.

H 17 = 17 spaces of cargo holds.

MgMgMg = 3 magazines. These hold the missile weapons, in this case photon torpedoes.

The weapons list is in the lower right box.

FH3 (FF) = A weapons bank. FH3 designates the type of weapon (F = Federation, H = pHaser, 3 = standard shipboard offensive phaser). (FF) indicates that there are 2 weapons that face forward. The

fourth bank can fire in any direction (O = Omnidirectional). The fifth bank of weapons are a pair of photon torpedoes which also fire forward.

On the right side if the control sheet is the power allocation form, above the weapons list.

POWER 108 = The total power of the ship, from the warp drive, impulse, and batteries.

SiF & LS __4__ = The basic power requirement of the ship. This amount is fixed and must be allocated.

Shields = _____ = The amount allocated to shields. This determines the shield strength. Each system type is then allocated down the list until all the power is accounted for.

2.02.02 Fighter Squadron Control Sheets

Fighter squadrons are represented by a single counter and control sheet. There are 6 fighters in a squadron (less if some are destroyed or are carried in numbers not divisible completely by 6). Each fighter lists its hit points and ordnance. A fighters hit points indicate its toughness as its systems are too small to track individually. Ordnance will be either built in to the fighter, or carried on pylons. Missile weapons indicate a single round of that weapon type. Fighters and other small craft do not deal with power allocation. They may also have separate stats when used during RPG adventures.

2.02.02.1 Fighter Squadron Control Sheet Example

Red Squadron CA1864		[FA-7]	(10)
#1 HHH FH1+ FP6 FP6	#2 HHH FH1+ FP6 FP6	#3 HHH FH1+ FP6 FP6	
#4 HHH FH1+ FDr3 FDr3	#5 HHH FH1+ X ₄ C ₄		

Explanation:

Red Squadron CA1864 = Squadron designation. NCC 1864 is an Avenger class starship which carries 2 5-fighter squadrons (thus no sixth fighter), one in each hanger bay.

[FA-7] = Fighter type or class.

(8) = The top speed of the fighters, in this case warp 10.

#1 = Fighter #1.

HHH = The FA-7 fighter has 3 hit points, making it a pretty tough fighter for its size. Hit points are grouped together on the left of each fighters box.

FH1+ = Internal armament. The first line of fighter armament designates internal armament, in this case an advanced defensive phaser.

FP6, FDr3, X₄, C₄ = External armament. The second line of fighter armament is external (and changeable). Fighters 1 – 3 carry two photon torpedoes each, while #4 carries a pair of drones. #5 carries a sensor pack and a communications pack, and is being escorted for long range reconnaissance.

2.02.03.1 Small Craft Control Sheet Example

CA44 pn 1	[FS-4]	(5)		
HHHHH	FH1	P-1	C-0	

Explanation:

CA44 pn 1 = Unit designation. This is the first pinnacle of CA44. Small craft may also be designated by individual ID or name.

[FS-4] = Unit type. This is a Federation S-4 heavy shuttlecraft

(5) = The top speed of this unit (warp 5)

HHHHH = The S-4 has 5 hit points.

FH1 = Armament. The S-4 has a defensive phaser.

P-1 indicates that this shuttle is carrying 1 crew unit (10 personnel)

C-0 indicates that the shuttle is not carrying cargo.

2.03 Tactical Turn Sequence of Play

1. **Power Allocation Phase.** Large units allocate power for the turn on their power allocation forms as per **2.04**.
2. **Initiative Determination Phase.** In some scenarios, initiative may be specified as belonging to one player. Otherwise players determine who has the initiative for each turn as per **2.05**.
3. **Movement Phase.** Players move their units according to their set speed and the provisions of **2.06**.
4. **Combat Phase.** Players fire the weapons of their units in accordance with the combat rules (**2.07**).
5. **Auxiliary Phase.** Players can launch small craft, use transporters, tractor beams, labs etc. (**2.08**)
6. **Record Keeping Phase.** Any required record keeping is done and the turn marker is advanced to indicate the start of another turn.

2.04 Power Allocation

All large units must allocate power to each of 6 sections of the ship (5 for stations and bases). The total power available is determined by adding the (remaining) power provided by the warp drive, impulse engines, and auxiliary power (usually batteries). The total of all power applied to ALL the sections cannot exceed the total power of the ship (but it may be less). Power is applied in units of GW.

2.04.01 SIF & LS

The first allocation is to the Structural Integrity Fields and Life Support.(SIF & LS). This power **MUST** be allocated. The amount is based on the size class of the unit (see **3.03.02**) in GW plus: 1 GW for any ship with 5 - 50 crew units; 2 GW for any ship with 50 – 500 crew units; plus 1 GW for each additional 1000 crew units.

2.04.02 Shields

The second allocation is to Shields. The amount of power allocated to shields is the maximum number of working shield *generators*. Each shield generator produces [its tech level] of shield points on each facing. If the amount of power is reduced the total shield points falls by the type multiple.

Example: The *Enterprise* has 20 **T-L** 3 shield generators. 18 GW of power is allocated to the shields. The ship now has shields at 54 points on all six sides (near maximum). The ship takes a 20 point hit on shield #2, reducing it to 34 points. On the next turn only 10 GW is allocated to shields. Shields 1,3,4,5 and are now at 30 points, but shield 2 is only at 10 points (30 – 20 damage). If only 5 GW were allocated to the shields the #2 shield would be at –5! (Shields cannot be negative. The shield would be at 0, and is down, but the –5 must be accounted for when more power is allocated to shields.)

2.04.03 Movement

The third allocation is to Movement.

If the ship is moving at warp, power must be available from the warp drive. The power applied determines the speed of the ship. To determine the speed, divide the power allocated by the ships power/warp ratio, rounding down to the nearest 0.5. If there is insufficient power to achieve warp 1 the ship drops out of warp to impulse or sublight. Example: the *Enterprise* allocated 55 GW to movement from her warp drive, and has a power/warp ratio of 10. Her speed is warp 5.5.

If the ship is moving at impulse, power must be available from the impulse engines. The power applied determines the speed of the ship. To determine the speed, divide thrice (3x) the power allocated by the ships power/warp ratio, rounding down as before. If there is insufficient power for 1 impulse factor, the ship drops to sublight speed. Example: the *Enterprise* allocated 20 GW to movement from her impulse engines. Her speed is impulse 6 ((20 * 3) /10).

If a ship is moving at sublight it can allocate power to movement from any source. Since movement at sublight is inertial-less with thrusters, speed *is* a function of power. To determine the speed, divide twice the power allocated by the power/warp ratio, *rounding to the nearest whole number*. Example: the *Enterprise* is travelling at sublight and allocates 34 GW to movement. Her speed is 7 ($((34 * 2)/10) = 6.8$ which rounds to 7).

2.04.03.1 Small Units

Small units do not have to allocate power for movement. They have a defined speed rating. Small units can set any speed they wish up to their maximum warp. A warp capable small unit has an impulse speed of 9, and a sublight move of twice the warp rating. If a small unit has a speed rating between 0 and 1, the rating is the units impulse speed (multiply by 10). Thus a speed rating of 0.65 is a maximum speed of impulse 6.5. Its sublight move is twice its impulse speed.

2.04.04 Weapons

The fourth allocation is to Weapons. The type and number of weapons to be fired determines the amount of power to allocate to weapons (see 3.04). If there is insufficient power to fire all the weapons, then choices on which weapons are to be fired must be made.

2.04.05 Control Systems

The fifth allocation is to Control systems. There are actually three systems included here: Scanners, **C-3** systems, and Labs. Each unit that you want to function for the duration of the turn must be allocated 1 GW. Scanners produce EW points, **C-3** systems produce command points, while labs produce science points. (Science points are only useful in certain scenarios.) If power is allocated for EW, a contest of scanners occurs (see 2.07.05.1). *This contest is determined at the end of the allocation phase.*

2.04.06 Auxiliary Systems

The sixth allocation is to Auxiliary systems. Each system that you want to use during the auxiliary phase must be allocated 1 GW.

2.05 Initiative

“Initiative” refers to the order in which players move their units and fire their weapons. The player who has the initiative at the start of the turn, as determined below, will move their units *last* and begin combat by firing one of their units *first*.

2.05.01 Determining Initiative

Seeking weapons have the initiative based on speed. The fastest moves last and attacks first. Then each player rolls 1d10 (re-roll any ties), and initiative goes to the person with the highest roll. Movement begins with the player with the lowest initiative roll and proceeds in ascending order to the highest roll. In combat, the player with the highest initiative fires the weapons of one of his units first, followed in descending order to the player with the lowest roll. In some circumstances, the initiative roll will be modified to reflect the tactical situation, as shown below.

2.05.02 Modifying Initiative

Initiative can be modified by either units carrying “excess” **C-3** systems, or by having a graded crew and/or command staff. Player characters are dealt with in Part 4.

2.05.02.1 Flagships

Any group (2+) of large units that act together must have a flagship. All units belonging to one player area group. In a pinch, any large unit can exercise tactical command, but units with large amounts of **C-3**

systems have an advantage. Some ships are built with an excess of **C-3** systems as purpose built flagships. For a flagship, each powered **C-3** system more than its size class will provide command points. A +1 to initiative modifier is generated by every 4 command points that a flagship provides. If a flagship is destroyed, the group suffers a -3 penalty to initiative on the next turn (as well as the lost command points), and a new flagship must be designated. The group suffers a -1 penalty to initiative the following turn while the new flagship takes control of the group. On the third turn after the previous flagship was destroyed, the new flagship functions normally. Should a player lose multiple flagships (before one can assume full control), each additional flagship lost causes a -1 cumulative penalty to the existing penalty.

Any single unit must (naturally) act as its own flagship. A flagship must be designated in writing, but not revealed to other players until the end of combat or until the flagship is destroyed.

2.05.02.2 Graded Crews and Command Staff

The flagship receives a cumulative bonus to its initiative based on the crew rating of the flagship. (Note: a poor or green crew would add a negative!) This is only in effect if graded crews are used. The fleet commander will also add a bonus (this cannot be negative) to the initiative based on their rating.

2.06 Movement

The movement allowance of a starship is expressed in movement points determined by the speed of the ship calculated in the allocation phase. For sublight movement the movement point allowance is the speed calculated above. For impulse and warp movement use the chart to determine the movement points:

Impulse factors only go up to 8.5 (in theory impulse 9 is warp 1). There is no real limit to warp speed except the engines and power allocation of a ship (see **3.03.03**). Just expand the chart (For whole number warps the chart is based on the difference of squares. $\text{Speed} = 2(\text{warp})-1$).

A movement point may be used to perform any one of the following actions:

1. Move from one hex to an adjoining hex in the direction in which the unit is facing.
2. Move to an adjoining hex and/or change facing (see **2.06.01**).
3. Perform a sideslip (**2.06.01.1**).
4. Remain in place, expending one movement point on the same facing (**2.06.02**).
5. Perform evasive manoeuvres (see **2.06.03**).

Movement Allowance Chart		
Impulse	Warp	Movement Points
1	1	1
1.5	1.5	2
2	2	3
2.5	2.5	4
3	3	5
3.5	3.5	6
4	4	7
4.5	4.5	8
5	5	9
5.5	5.5	10
6	6	11
6.5	6.5	12
7	7	13
7.5	7.5	14
8	8	15
8.5	8.5	16
	9	17
	9.5	18
	10	19
	10.5	20
	11	21
	11.5	22
	12	23

2.06.01 Facing

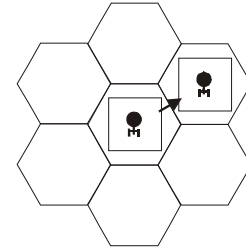
Each unit must have a specific facing at all times. That is, its counter must be pointed at a specific adjacent hex. A number from 1 to 6 (as shown on the scattergram) is used to denote the facing. Whenever a counter moves, it must be placed on the map with an unambiguous facing.

In order to change facing a unit must satisfy the requirements of its turn mode by expending a total number of movement points equal to its turn mode on a single facing before it can turn (change facing). The turn

mode of a starship is its size class (with a +1 penalty for civilian ships). The turn mode of fighters and small craft is 0. They can change their facing on every movement. A facing change can be only to a hex adjacent to the forward hex. For instance, a ship with a facing of 2, can only change its facing to direction 1 or 3.

2.06.01.1 Sideslips

A sideslip is a special kind of turn. It is considered a change of facing even though the facing of the unit remains the same, and turn mode requirements must be satisfied for sideslips as if they are facing changes. Instead of the ship moving forward into the hex (example) in direction 1, it moves either to the hex in direction 2 or 6, while still facing direction 1. An example of a sideslip in direction 2 is shown at right. Note that the ship remains facing direction 1.



2.06.02 Remaining in place

Starships equipped with large-nacelle warp drives are equipped with positron flywheels and can expend a movement point remaining in place instead of moving one hex forward. This movement would be in place of a turn, and like a sideslip, resets the turn mode of a ship. This feature is really useful to ships with initiative, as it may prevent a unit from overrunning a slower opponent.

2.06.03 Evasive Manoeuvres

Starships may choose to perform evasive manoeuvres, to reduce the chances that the ship will be hit by weapons fire. A ship must expend a total number of movement points equal to **twice** its turn mode on a single facing before it can perform evasive manoeuvres. Performing evasive manoeuvres costs one movement point. The ship remains in the same hex (the twisting and turning lengthens the distance travelled), but may change its facing. Evasive manoeuvres reset the turn mode of the ship. Fighters and small craft are considered to be constantly engaging in evasive manoeuvres, which is part of what makes them hard targets. Besides, if you are on a battlefield in a small unit you'd be stupid not to!

2.06.04 Rolling Ship (Optional Rule)

Starships operate in a 3D environment represented by a 2D map (see 01.03.02). One representation of 3D movement is rolling ship. A ship must expend a total number of movement points equal to **twice** its turn mode on a single facing before it can roll ship. Once a ship is rolled, turn its counter over to signify that the ship is rolled (a directional arrow on the back of the counter is useful). The ship remains in the same hex with the same facing during a roll. A rolled ship has benefits and penalties as detailed (in 2.07.02.4). Small units do not roll ship.

2.06.05 Impulse Movement at Warp Speeds

The impulse speed regime is 100 times closer in speed to the warp speed regime than it is to the sublight regime. Thus ships travelling at impulse speeds do move perceptibly in a warp speed combat. Their speed will be less than 1. A ship will move 1 hex at a time, but will not move every turn. The following chart is used:

Impulse Speed Chart for Warp Combats	
Impulse Speed	Warp movement
7.5 - 8.5	3/4
7.0	2/3
6.0 - 6.5	1/2
5.0 - 5.5	1/3
3.0 - 4.5	1/4
1.0 - 2.5	0

Once the "warp speed" is determined use the following chart to determine which turns a ship moving at impulse may move on the map. (repeat patterns as needed):

Turn	Warp 1/4	Warp 1/3	Warp 1/2	Warp 2/3	Warp 3/4
1	-	-	1	1	1
2	-	-	-	1	1
3	-	1	1	-	1
4	1	-	-	1	-
5	-	-	1	1	1
6	-	1	-	-	1
7	-	-	1	1	1

(and so on . . .)

Units can change facing at impulse speeds by satisfying their turn mode. (Impulse movement must be kept track of.) Ships can also roll or perform evasive manoeuvres at impulse speeds. Units at impulse do not sideslip as they perform all their in-turn movement in the same hex.

2.06.07 Planets and Asteroids (terrain)

Planets and asteroids are navigation hazards (when hit) and can be used to hide behind, orbit or land on. Contrary to popular belief all mobile ships are capable of landing on a planet. To orbit a planet or asteroid, the unit must be at sublight at the beginning of the turn, and must start the turn in the same hex as the planet or asteroid. The unit must allocate enough energy to move at sublight 3 for a planet and sublight 1 for an asteroid. The unit remains in the hex of the planet for the entire movement phase. To land on a planet, the unit must first be in orbit around the planet. The unit must allocate energy to move at sublight 3 for a planet and sublight 1 for an asteroid (again), and stay in the same hex. At the end of the movement phase, the ship has landed on the planet, on the side of the planet/asteroid of the player's choice. To take off from a planet requires 5 sublight movement points (4 if the planet has no atmosphere and 1 for an asteroid). The unit is placed in the hex of the planet or asteroid with the facing of the player's choice. If entering combat at the sublight speed regime only, excess movement may be allocated to move away from the planet, otherwise the ship is in orbit around the planet.

2.06.06 Nebulae (terrain)

Nebulae are extremely thin clouds of ionized gas (mostly hydrogen) which glow faintly. When travelling through them at warp or impulse, shields will not function and the movement cost per hex is doubled. Travelling through them at warp speeds will also cause damage to ships (4.02.04). That is why they are known as Ion Storms.

2.06.07 Ramming

It is difficult for one starship to ram another, as ships with reactionless drives are elusive targets. It is not – quite – impossible, however, and a ramming attack is devastating. . . especially to the rammer. Any ramming attempt between starships succeeds if both sides want it to. If the target declines, use the procedure in 2.06.07.1.

2.06.07.1 Ramming Procedure

On the movement pulse that a unit intent on ramming enters the hex of a target which chooses to dodge, each player rolls 1d10. The ramming player's die roll is modified as follows: +1 for each point his turn mode is lower than the targets; -1 for each point his movement allowance is lower than the targets; -1 for each point of evasive manoeuvres the target ship *could perform* this turn; +5 for a base and +7 for an asteroid base or station (as these targets have limited manoeuvrability).

A ramming attack succeeds when the ramming players modified die roll exceeds the defenders die roll by 3. A ramming attack on a ground target always succeeds (unless the rammer is destroyed first). Ramming the ground will destroy the ramming ship in the process. A "successful" ram ends movement for the ramming unit.

2.07 Combat

The combat phase of the tactical turn occurs after all movement is complete. During the combat phase each player may fire any (or all) available weapons aboard their starships, bases, stations, asteroid forts, fighters, etc. at targets of their choice. All the weapons of a given unit are fired at the same time, even though they may be fired at different targets. Remember that each *fighter squadron* is considered "one unit." A fleet of ships linked to a flagship through a datalink fires as one unit (but moves as separate ships).

2.07.01 Order of Fire

The fastest seeking weapon makes an attack on its target if it has reached its target, followed by the next fastest in descending order. Then the player with the highest initiative chooses one unit and fires its weapons, followed by all other players in order of initiative. When all players have fired one of their units, the first player fires his second unit's weapons (if they have a second unit). This process continues until all players have had an opportunity to fire all of their units.

2.07.02 Engaging Units

A unit's weapons may be fired in any sequence. Since damage is immediate, this may mean defensive systems may be knocked out before the weapons that they might affect arrive. Thus a player must declare the order of all the weapons fire of their unit before the results of fire are determined. Weapons of the same type can be fired together as a salvo (see 2.07.03.3).

The range of a shot is determined by counting the hexes between the units, counting the hex the target is in but not counting the hex of the firing unit (if both units are in the same hex the range is 0). Next cross index the weapon type and range on the Probability of Hit Table (PHT, see 2.10.01), to determine the "to hit" number. Roll 1d10; if the number is equal or less than the "to hit" number, a hit is scored. The probability of a hit may be modified by tactical considerations (such as evasive manoeuvring or EW), and all such considerations must be made before the die roll.

When a hit is scored, consult the Weapon Damage Table (WDT, see 2.10.02) and cross index weapon and range a second time to determine the weapon's damage value at that range.

Fighter squadrons fire in the same fashion as other units. Each fighter can engage a separate target without penalty. All missile weapons fired at a single target by the squadron are considered a single salvo.

2.07.02.1 Immobile Units & Evasive manoeuvres

Immobile units are easier to hit. To reflect this add +2 to the hit probability of any weapon fired at a unit incapable of movement. (This would include bases, forts, ground bases, stations, and starships with destroyed engines etc. But it would not include units that chose not to move but could have. These units are stationary, not immobile)

Each ship that performs evasive manoeuvres gains a -1 to the hit probability of any weapon fired at it. This effect is cumulative for each evasive manoeuvre done in a single turn. The effect lasts only the current turn.

2.07.02.2 Engaging Fighters, Small Craft and Seeking Weapons

A small craft or fighter squadron is targeted the same as a large unit, but due to its small size and evasive manoeuvres, a small craft / fighter gains a -4 to the hit probability at ranges between 0 - 10, a -5 at ranges 11 - 20, a -6 at ranges 21 - 30 and so on. Seeking weapons are at an additional -1 to hit. Fighters take hits on the first fighter in the squadron until it is destroyed, before damage passes on to the next fighter. Small craft move as individual units and are targeted as such, as are seeking weapons.

2.07.02.3 Ramming Units

Ships and fighters which make a successful ramming attempt in the movement phase are subject to opportunity fire, thus the effect of ramming (if any) is determined at the end of the combat phase. To prevent a successful ram from occurring, the ramming ship must be either destroyed, or have its operational engines destroyed or shut down. Fighters and small craft must be completely destroyed.

2.07.02.4 Rolled Ships

A rolled ship (denoted by an upside down counter) has its shield poles pointed in the port and starboard directions. A rolled ship can only attack targets in its fore and aft facings (1 & 4), in a 120° arc. Incoming fire on a rolled ship from fore and aft directions attack the fore and aft sides of the ship normally. Incoming

fire from the other four sides (Fs, As, Ap, Fp) strike all shields (equally) and all armour before penetrating. Fire that gets past shields and armour is dealt with normally.

2.07.03 Recording Damage Points

When a unit is damaged, the damage must be marked off the units control sheet. Damage is marked off immediately, and any system which is destroyed before it is employed may not be used. Different weapons score damage points differently, and these differences are noted in each weapon's descriptions (see 3.04) Each system is destroyed by single damage point. Normal weapons damage shields and armour first, then use the Damage Allocation Tables (DAT, see 2.07.03.2) to determine hit placement. If the system hit does not exist, then damage is re-rolled until all damage points are dealt with. Hits on small units simply destroy hit points until the fighter / small craft is destroyed (at 0 hit points.)

2.07.03.1 Shields and Armour

Shields and armour are systems solely intended to absorb damage, and they do it quite well. Thus shields and armour do not suffer from critical hits. There are some weapons, however, that can bypass some types of shields and armour. This ability will be found in the weapon's descriptions. Damage that gets past shields and armour are called *Internal Hits*, and are dealt with in 2.07.03.2. Normal shields have 6 facings and each facing has its individual shield points. Armour has 2 facings (fore and aft). Both facings have their individual armour points, and block fire from the entire arc.

2.07.03.2 Damage Allocation

The following damage allocation tables are used to allocate damage to large units. 2d10 are rolled and the damage location determined. The directions listed are for standard rear-nacelled starships. For front-engined ships (such as the Romulan *Bird of Prey*), use the ***opposite*** table for damage allocation. For stationary units like bases, use the "fore" table only.

Damage Allocation Table (fore)	
Roll	Damage Location
2	Warp Drive Critical [5]
3	C-3 –OR- Scanner Critical [2]
4	Labs
5	C-3 system
6	Transporters
7	Port / Starboard Weapon
8	Cargo Hold (1-military, 5-civillian)
9	Forward Weapon
10	Superstructure
11	Crew's Quarters
12	Warp Drive (5)
13	Scanners
14	Superstructure (2)
15	Impulse Engine
16	Auxiliary Power
17	Shuttle Bay –OR- Tractor Beam
18	Magazine
19	Weapon Critical [3]
20	Superstructure Critical [5]

Damage Allocation Table (aft)	
Roll	Damage Location
2	Weapon Critical [3]
3	Warp Drive Critical [5]
4	Auxiliary Power
5	Magazine
6	Scanners
7	Shuttle Bay
8	Aft Weapon
9	Superstructure (2)
10	Crew's Quarters
11	Warp Drive (5)
12	Cargo Hold (1-military, 5-civillian)
13	Impulse Engine (2)
14	Port / Starboard Weapon
15	Labs
16	C-3 system
17	Transporters
18	Tractor Beam
19	Impulse Engine Critical [3]
20	Superstructure Critical [5]

The number in parentheses indicates the number of hits in the salvo to allocate to that system. If there are less remaining hits to allocate, then only the remaining hits are allocated.

The number in square brackets after a listed critical hit are the amount of damage required to cause the critical hit. If there are less remaining hits to allocate, then only normal damage is allocated. Re-roll for any system that has been totally destroyed, or that doesn't exist on the target unit. (Damage rattles around the

target until it hits something. If there are no systems left on the target that a particular weapon is capable of affecting, then the remaining damage is lost)

2.07.03.3 Salvo Fire

All the weapons of the same type on a ship fired at a single target can constitute a salvo. A salvo is an all or nothing affair. Only one "to hit" roll is made for all the weapons in the salvo. All weapons will then successfully hit, or all will miss. The damage caused by a successful hit is the total for all the weapons at the proper range. The advantage of salvo fire is the increased likelihood of destroying an entire system type (such as engines on a ramming target), and increased ability to cause critical hits.

2.07.03.4 Destruction of Large Units

A large ship, BS, SS, PDC, or asteroid fort is destroyed when all of its systems are destroyed – OR – takes a superstructure critical hit when its superstructure has been previously reduced to zero. Since shields are not physical they are not counted as systems for this purpose. Since certain weapons can cause damage without knocking down the shields first, a ship could be left with only "S" codes; it's still destroyed at this stage.

2.07.04 Effects of a Successful Ram

If a successful ram is not stopped, the following damage is applied:

If the ramming unit entered the hex of its victim from astern (one of the three aft hexes), then the units' closing speed is lower and both units suffer damage points equal to twice the ramming ships size in hull spaces. If the rammer entered the victim's hex from one of the three front hexes (ahead), then each unit inflicts damage upon the other equal to four times its own size in hull spaces. Each fighter in an attacking squadron or individual small craft is considered to be 2 hull spaces in size (3 if it is carrying external ordnance). Stationary objects such as bases have no "rearward hexes." Treat all ramming attacks on stationary units as "ahead" rams.

2.07.05 Targeting Restrictions

The targeting ability of a spacecraft depends on three major considerations: scanners (you cannot shoot targets invisible to you), numbers of weapons (you cannot engage more targets than you have the ability to shoot at), and the sophistication of your fire control.

2.07.05.1 Electronic Warfare

You cannot shoot what you cannot see. The fields of fire (2.07.05.3) reflect this fact, but the range of the units on-board scanners reflect this fact. Starships need scanners to generate EW points. Each scanner system requires 1 GW of power and produces EW points equal to its tech level.

Each large unit has an inherent scanner range of 30 hexes (military ships) or 20 (civilian ships), with a bonus to the units detection range equal to three times (twice for civilian ships) the **T-L** of the scanners on the ship. Across that range they can identify targets as to type, size, engine power etc., and provide fire control data to their weapons. Ships and stations can do this with minimal power (this is called the passive scanner range). To see and engage targets at ranges greater than this requires powered scanner units.

EW points can be used for five things: To increase the ships passive scanner range, to jam an opponents scanners, to block an opponents attempt to jam your scanners, to block a datalink, and to prevent your datalink from being blocked.

To increase the ships passive scanner range, each EW point used increases scanner range by 3 (2) hexes.

Jamming / un-jamming scanners. EW points used for jamming cause a contest of scanners between the opposing units. To determine a winner both players roll 1d10, adding their EW points dedicated to jamming

scanners. The winner of the contest has unaffected scanners, but the loser has his scanner range reduced to 1/3.

Jamming / un-jamming datalinks. EW points used for jamming cause a contest of scanners between the opposing units. To determine a winner both players roll 1d10, adding their EW points dedicated to jamming datalinks. The winner of the contest has an unaffected datalink, but the loser has his datalink severed.

2.07.05.2 Fire Control

Your ship needs to be able to precisely target units that are great distances apart. For this you need **C-3** systems. For basic flight any ship generating 1 command point will be successfully able to pilot and navigate (and the power required for this is included in SIF & LS), but combat requires more precise control. For combat a unit must power **C-3** systems equal to its size class. Any powered **C-3** systems beyond the size class produce command points. Command points may be used to gain initiative (see 2.05.02.1), to increase targeting accuracy, or to form a datalink. Each 4 command points not used in initiative can be used to gain a +1 cumulative “to hit” bonus. This part of fire control is called “locking weapons.” To form a datalink with a 10 hex range requires 4 command points, plus 1 for each 5 additional hexes of range.

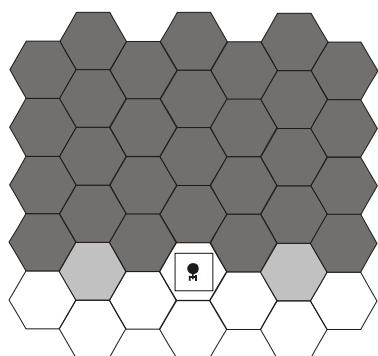
2.07.05.3 Weapon Types and Fields of Fire

Fields of fire are largely determined by the weapon type. There are 4 basic weapon types: Energy beam, energy pulse, direct fire missile, and seeking. The first three weapons have an immediate effect. A standard energy beam weapon has a 180° field of fire. Energy pulse and direct fire missile have a 120° field of fire, and can only be mounted fore and aft on starships.

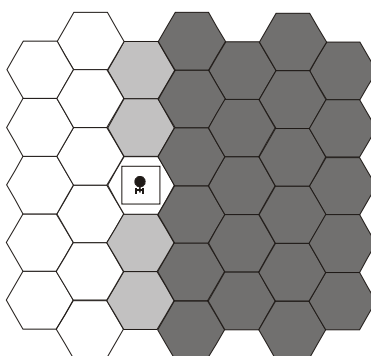
A seeking weapon has no real field of fire, as it tracks its target. Since it is fired in the combat phase, a seeking weapon will travel half its speed in the combat phase that it is fired. If it reaches its target in this distance, it attacks its target without giving the target a chance to fire at the seeking weapon. Some seeking weapons (such as the Romulan plasma torpedo) require the target to be in the front arc when the torpedo is fired. After the firing turn, a seeking weapon moves in the movement phase of a turn only.

For all fields of fire diagrams: Lightly shaded hexes can be fired into by 50% of a bank’s weapons (rounded up). All weapons in a bank can fire into the darkly shaded hexes.

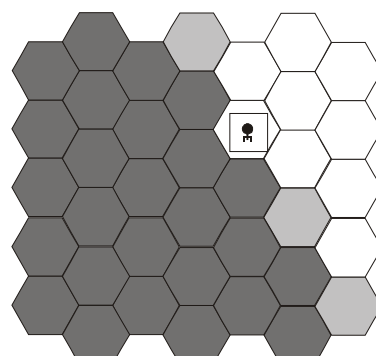
Examples of 180° fields of fire:



Fore (F)



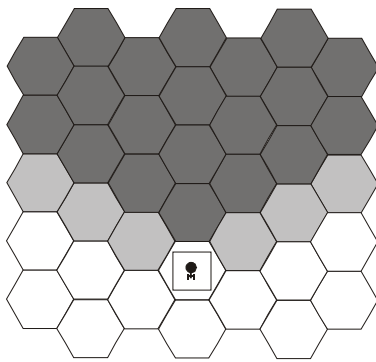
Starboard (S)



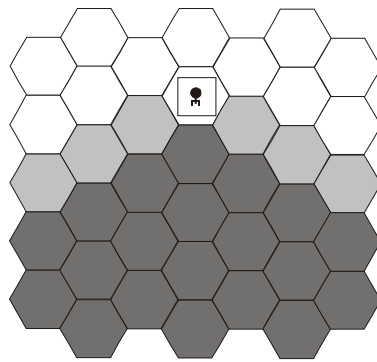
Aft Port (Ap)

Other 180° fields of fire are mirror images of these.

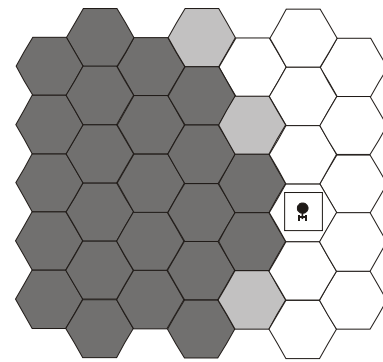
Examples of 120° fields of fire:



Fore (F)



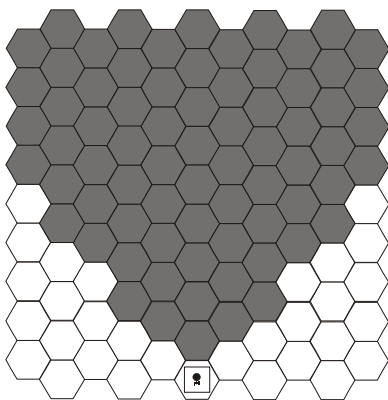
Aft (A)



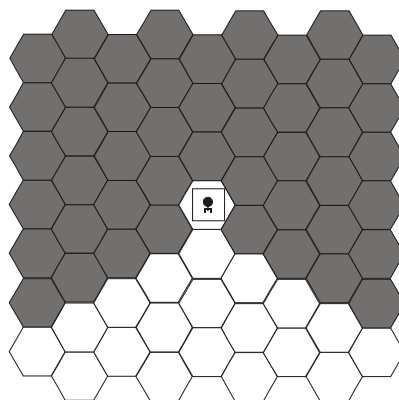
Port (P)

Only the fore and aft arcs are used with energy pulse and direct fire missile weapons. Other arcs are only used with energy beam weapons (as a restricted or primitive firing arc). On beam weapons, a 120° arc is denoted by a “-” sign after the arc direction.

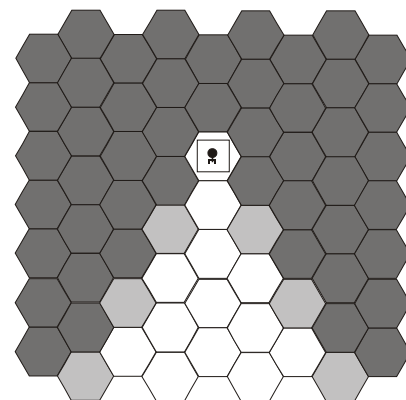
90°, 240° and 300° Fields of fire:



90°



240°



300°

Some beam weapons such as the Federation’s collimator phaser have larger firing arcs than 180°. Special 240° and 300° are called extended arcs. The 240° arc is designated with a “+” after the arc direction, while the 300° arc is designated by “++”. The arcs shown are both F. The 90° arc is a limited arc, designated by “- -.” It is also the arc used when firing energy pulse and direct fire missile weapons from a ground base in an atmosphere.

Most beam weapons can be mounted in a universal turret and have a 360° of fire. This field is called omni-directional and designated “O”. A starship can have a **maximum of two** such banks of weapons, mounted centrally on the ventral and dorsal surfaces.

Fighters and small craft have forward firing arcs only. Advanced fighters may have beam weapons with the “+” arc.

2.07.05.4 Blocked Fire

Each tactical hex represents an enormous volume of space which, for game purposes, no unit ever blocks another unit’s fire, but system bodies are another matter. It isn’t that they are necessarily big compared with the size of a tactical hex, but they are huge compared to the units, which means that mobile units which choose to do so may “hide” behind them.

Stars are huge – some are even larger than the largest hexes, and any star blocks fire. No unit may fire at another unit if any hex occupied by a star lies directly between them or if both firing and target units are within 1 tactical hex of the star but not in adjacent hexes.

System bodies smaller than stars block fire only if one player “hides” behind them. Planets and moons may be used to block fire when:

1. Both firing and target units are within 1 tactical hex of the planet / moon, and not in the same or adjacent hexes.
2. The target unit is in the same tactical hex as the planet / moon and the firing unit is not.
3. The target is within 1 tactical hex of the planet / moon and the planet / moon lies directly between it and the firing unit.
4. One unit is on the surface of the planet / moon and the other is a spacecraft in the same tactical hex which declares that it is hiding on the far side of the planet from the surface unit.

Asteroid(s) are too small to block fire from units but may be used to hide from an opponents sensors. To do this the target unit must be in the same hex as the asteroid(s).

Units hiding behind planets / moons cut the detection range of themselves to opponents to 1/3 of their opponents scanner range, while hiding behind asteroids cuts sensor range by 1/2.

A hiding vessel cannot fire on a unit that it is hiding from, or any other unit in the same hex of a unit that it is hiding from. (Moral: If they cannot see *you* then you cannot see *them*.)

2.07.06 “Shields Down”

unless a unit is tractor to a target, it is unable to determine the exact status of the target. Scanners can however tell if certain damage has occurred. When a unit no longer has active shields (in any direction), the player must immediately inform the opponent(s) that the unit has “shields down.” Shields may be switched off at any time, and may be switched on (if power is allocated to them) when the unit fires in the combat phase. (This tactic may be used to sucker in an opponent, but can backfire . . .)

2.07.07 Ground Bases

Ground bases are planet side installations designed to defend against attacks from space. When built on or into asteroids they are called asteroid forts. Ground bases have advantages and disadvantages when compared to starships.

One major advantage is that they can be built to almost any size, they are easy to repair and refit, and armour is – pardon the pun – “dirt cheap.”

Ground bases are placed on one facing of the planet / moon they are built on. All weapons on the ground base have the firing arc of the facing of the ground base. Ground bases built on planets / moons with an atmosphere have restricted firing arcs. Energy beam weapons have a maximum arc of 120°, while energy pulse and direct fire missile weapons have an arc of 90°. Since ground bases cannot run, and attacking spacecraft have a pretty good idea of where to find them, missiles can be fired at a known ground base (either by surveying the ground base earlier, or by scanning the base while it has fired weapons) from anywhere in range. Thus ground bases cannot “hide behind” the planet on which it is located. These disadvantages also apply to landed starships, which are considered to be pointing away from the surface (hex side) they have landed on. Only weapons which can fire into the forward arc (or part of it) can be fired from the ground. A starship landed on the ground is considered to be immobile, and the “fore” damage allocation chart is used.

Asteroid fortresses are a special case. Their size, like ships is determined in hull spaces. An asteroid fort can be built in place or towed to a destination (for towing purposes treat an asteroid as triple its hull spaces and one hollowed out into an asteroid fort is double hull spaces. Otherwise asteroid bases act like other bases and space stations in combat.

2.07.08 Critical Hits

Critical hits occur when a system is hit *just right* (or *just wrong* depending on your point of view). A critical hit cannot occur on shields or armour, and cannot occur on a hit which partially strikes shields or armour (treat as normal hits). Otherwise roll 1d10 and consult the critical hit table for the effect of the hit. Note: a superstructure critical hit occurring after the unit has its superstructure reduced to zero destroys the unit – it is not re-rolled as per (2.07.03.2)

Critical Hit Table	
Die Roll	
1 - 3	Double damage. Double the amount of the critical hit required.
4	Triple damage. Triple the amount of the critical hit required.
5 - 6	System failure. All remaining systems cease to function for the next turn, and takes the critical hit damage.
7 - 8	Bad system failure. All remaining systems cease to function for 1d10 turns unless repaired by damage control, and takes the critical hit damage.
9	Complete system failure. All remaining systems cease to function until repaired by damage control, and takes double damage.
10	Catastrophic system failure. All remaining systems damaged.

If a system that is in system failure receives another critical hit with system failure, simply add the time to the shutdown.

2.08 Auxiliary Systems

There are other things that starships can do during combat. Launching fighters and small craft, performing damage control, transport boarding parties, or study monsters as some examples.

2.08.01 Labs

Labs generate science points. Science points have many uses in the role playing game but have two in combat. Science points can be used to deep scan an enemy vessel. If the ship generates more science points than the twice the current shield rating of a target (on the facing side) detailed information about the target can be known. The target player must show you their ship control sheet. If the target is currently also being tractored by the scanning ship, the labs need only to produce more than half of the targets shields in science points.

Science points can also be used to try to determine information about monsters encountered. The details of this are scenario specific.

2.08.02 Hangar Bays

Hangar bays hold fighters or small craft. Each hangar bay can hold 10 points worth of small craft, fighters, or XO (external Ordinance) This does not require power. A powered hangar bay can launch **OR** retrieve one craft each turn. A small craft launched by a hangar bay is placed on the map in the same hex as the launching unit, with any facing. It begins movement on the following turn. To retrieve a small craft the small craft must have ended its movement in the same hex as the retrieving unit. A fighter takes 5 turns to refuel and rearm before it can be launched again. When hangar bays are hit, the small craft contained within them are destroyed. The target player may chose to take hits on empty bays first.

2.08.03 Tractor Beams

Tractor beams are used to grab other units and move them about. Each powered tractor beam unit can handle up to 1000 hull spaces of target unit. Tractor beams have a base range of 5 hexes, and like transporters, are omni-directional. For each hex above 5, roll 1d10 to be able to target the destination unit

properly. The roll must be under 8, with a penalty of –1 for each hex further away. Fire control (2.07.05.2) can be used to boost accuracy and increase range.

A tractor link creates a unique relationship between units. They may no longer maneuver independently, and the smaller unit is drawn closer to the larger, the tractor unit has established a precise lock on its victim (which gives it better scanner resolution), missile fire is affected, etc.

The owner of a “shields down” unit which has been tractored must show its control sheet to his opponent on demand, as long as 1 science point is being generated by the tractor unit.

A unit which has tractored another unit also calculates all energy weapon and missile hit probabilities as if the range were 3 hexes lower than it actually is. Missiles fire at the modified lower range or with the normal hit probability for the actual range, whichever is better. Only the tractor unit receives this bonus; the target of a tractor link does not.

The down-side of tractoring enemy units comes when the enemy is missile-armed. Any seeking weapon fired by a tractored unit automatically hits the tractor unit unless stopped by point defense. Direct fire missiles automatically hit as the tractor beam “sucks them in.”

Tractor beams can produce large chains of starships and / or bases locked together into what is effectively one large vessel. If all of them are on the same side they (presumably) agree on the course they want to steer. If they aren't, things get complicated.

Whenever a starship or base is tractored, it must declare whether it will shut down its engines, cooperate with the movement the tractor unit seeks to impose, or oppose that movement.

If two or more cooperating units are linked by tractors, the net speed of the tractored chain is calculated based on the total engine power of the tractored chain and total power/warp ratio of the chain as per 2.04.03.

If a tractored unit has shut down its engines (or has no functioning engines) it becomes deadweight, adding its power/warp ratio to the chain of tractored units.

If a tractored unit opposes the motion, its power/warp ratio is added to the chain but its engine power is subtracted from the tractor's engine power. If the net result is negative, the opposing units determine the chain's movement.

Bases have station keeping drives, and can apply 25% of their total impulse generation to oppose the movement of the base.

At the end of the movement phase, tractored ships move one hex closer to the tractor ship, unless both parties agree to maintain separation (such as a friendly tow).

2.08.04 Transporters

Transporters are used to “beam” personnel and cargoes directly from one unit to another (or to a planetary surface). Transporters have a base range of 3 hexes. For each hex above 3, roll under 7, with a penalty of –1 for each hex further away. A failure means that the transported objects are lost! Fire control (2.07.05.2) can be used to boost accuracy and increase range. Transporters cannot penetrate shields of tech level 3 or higher. A transporting ship must drop the shield that faces its target to transport to the target (and must wait until the next combat phase to raise them.) A transporter can transport 1 crew unit, or 50 units of cargo once in a turn, and require 1 GW of power per component..

2.08.05 Crew and Crew's Quarters

Crews quarters are powered on the SIF & LS line. They hold crew units according to their type. They may also hold passengers or troops. Crew quarters also refers to the ship's corridors, lifts, recreation areas, and life support equipment. Half of the crew is somewhere in the crew quarters spaces during combat, thus crew takes damage when quarters are hit (at half the rate, and using “empty” passenger crew quarters as the first hits).

A ship without dedicated troops can assign 10% of its crew units as boarding parties. They are kept on board (as defence) or transported to an enemy unit (see 2.08.08).

2.08.06 Cargo Holds and Magazines

Cargo holds require no power (usually), and . . . well . . . stores cargo. Some scenarios may require power be allocated to cargo holds to transport special cargoes. A cargo hold can hold 100 points of cargo. Magazines can hold 50 points of cargo and deliver it quickly to a weapons battery (a magazine can hold cargo in an emergency but typically holds the proper weapons for the ship). It requires no extra power.

2.08.07 Damage Control

In general, damage to ships cannot be properly fixed in the timescales of a combat. There are three things that can be done at the tactical scale: Shields can be replenished and reinforced, critical hits can be partially mitigated, and damaged systems can be bypassed. 33% of a ship's crew units can be assigned to damage control teams. Each damage control team (crew unit) generates 1 damage control point per turn.

Shield replenishment can occur after a unit takes no damage of any type for 3 turns. By allocating 1-5 damage control points to shields, one shield point (per damage control point) can be restored each turn thereafter. By allocating 10 damage control points per turn to shields, one shield **generator** can be restored **every other turn** (bringing shield point(s) to all the shields). Shield repair stops on the next hit to shields.

Critical hit mitigation can occur after a critical hit which causes system failure. By allocating 20 damage control points to restarting a failed system, roll 1d10. The remaining systems is restored on a 6 or less (3 or less for a complete system failure). Damage to the system cannot be repaired, however.

It is sometimes possible to bypass a damaged system and get partial functionality from it. By allocating 20 damage control points to a single system, roll 1d10. One component of that system is restored on a roll of 5 or less. Only one component of a system type (**exception:** warp drive may have up to the ship's size class in bypassed systems) can be bypassed. Note: a bypassed system is not repaired (or even jury-rigged). The system will only last out the current combat before it fails again. Any system type can only be bypassed once.

2.08.08 Boarding Parties

Boarding parties are marine style crew units. Boarding parties can be moved by shuttle or by transporter. Each boarding party can do one of the following:

Defend a **C-3** system. The boarding party must remain in the **C-3** system and perform no other action. It is dug in, gaining a +1 bonus if attacked.

Attack another (opposing) boarding party. Each boarding party rolls 1d10, adding +1 for each **T-L** (3.01.01), and grade (see 2.09). The highest roll wins, with the losing boarding party destroyed. If a tie occurs, neither boarding party is destroyed. Boarding party combat occurs before any other action can be taken by a boarding party.

Disrupt damage control teams. Each boarding party can prevent 3 opposing damage control teams from generating damage control points. (By basically chasing them around the ship.)

Capture cargo. Each boarding party can pillage 1d10 units of cargo per turn. Once a boarding party has collected 10 points of cargo, it must return to its own ship (to drop off the cargo) before it can pillage for cargo again.

Kill passengers (civilian ships only). A boarding party can kill one crew unit's worth of passengers in a turn (by rounding them up and shooting them.)

Destroy system components. Using the fore DAT, determine what system the boarding party is in. On a roll of 3 or less on 1d10, the boarding party damages that system (causing 1 damage point).

Capture: If the system is a **C-3** system, the boarding party could choose to capture it instead of damaging it. It first attacks any defending boarding party in the **C-3** system. The boarding party must remain in the **C-3** system and perform no other action to hold the **C-3** system (the boarding party may defend itself against attacks, gaining a +1 bonus for being dug in). If all the ship's **C-3** systems are held by boarding parties the ship is captured. The Control sheet should be marked with a "B" to indicate captured by a boarding party.

2.09 Crew Grade

Crews with greater experience, training, and *esprit de corps* become better fighters, reflected by assigning "earned grade" to veterans. Units may earn grade up to the level of "average" without facing combat, but grade *above* average can be earned only by accruing actual combat experience. For non-carrier Units to accrue experience, the unit must be a part of a force which participates in an engagement, whether or not it is fired upon or fires itself. Carriers earn grade both for engagements the carrier fought in and also for engagements in which only their fighter squadrons fought. If both a carrier and her fighter squadrons fight in the same engagement, it counts only as a single battle for experience and grade. Carrier pilots share the grade of their carrier.

In order to earn grade, a unit must face at least some challenge. For this purpose, therefore, an "engagement" is defined as a battle in which the opposing side's force is at least 50% of your own. This means that the weaker side might be able to count a battle for grade purposes while the stronger might not. (Which is only fair; 17 DNs that polish off a single ES haven't been very challenged, but should the crew of the ES manage to escape, they certainly have been!)

There are 5 grade levels: **Poor, Green, Average, Crack, and Elite.**

Note: The initiative roll modifiers listed below apply *only* when a graded unit is operating independent of any larger formation (and its task force) or when the graded unit *is* the flagship of a larger formation. When operating as part of a formation, a graded unit uses the initiative roll of the *formation*.

2.09.01 Poor Grade

"*Poor*" crews are crews which have suffered heavy casualties in a prior engagement or been disorganized by loss of command or control. Poor crews roll initiative at "-2"; subtract "2" from all hit probabilities after all other modifiers; make all rolls for emergency repairs, engine malfunction rolls, etc. at a penalty of 2; and add "2" to all readiness-state based combat readiness rolls. Poor pilots are "-1" for anti-shipping hit probabilities and "-2" for anti-lighter hit probabilities, and poor carrier crews require 2 extra turns to arm/rearm fighters. Poor crews become "green" after surviving one engagement or remaining continuously in commission for 6 months without combat.

2.09.02 Green Grade

"*Green*" crews have limited experience and are still "shaking down" together. Green crews make all initiative, repair, engine malfunction, etc., rolls at a penalty of 1; suffer a "-1" to all hit probabilities; add "+1" to all combat readiness rolls; and require 1 additional turn to arm/rearm fighters, and green tighter pilots are "-1" for all hit probabilities. Green crews become "average" by surviving one engagement or remaining continuously in commission for 18 months.

2.09.03 Average Grade

"*Average*" crews have seen some combat (if not a lot) or lots of peacetime experience. Apply all base numbers for hit probabilities, initiative rolls, repair rolls, etc., in these rules are those assigned to average crews. Average crews who survive 5 engagements become "crack."

2.09.04 Crack Grade

"*Crack*" crews are confident, experienced teams. They add "+1" to alt initiative and crew function rolls; fire at "+1" hit probabilities subtract "-1" from all combat readiness rolls; and arm/rearm fighters in only 4 turns, and crack pilots are "+1" for anti-shipping hit probabilities but engage opposing fighters normally. Crack crews who survive another 10 engagements become "elite."

2.09.05 Elite Grade

"*Elite*" crews are the cream of the crop, with extensive combat experience and well-oiled teamwork. They make all initiative and crew function rolls with a bonus of fire at "+2" to the hit probability; subtract "-2" from

all combat readiness rolls; and arm/rearm fighters in only 3 turns, a elite fighter pilots are at “÷2” to anti-shipping hit probabilities and “+1” to anti-fighter hit probabilities.

Even the best crews Cannot do the impossible, crew hit bonuses may not be used to fire weapons at ranges beyond the maximum effective range shown on PHT and WDT, nor does grade change the damage a weapon inflicts.

2.10 Combat Charts

The following tables are used with most weapons. Exceptions are noted in the individual weapon's description. Some weapons have modifications (plusses and minuses) to the basic table (hence the zeroes and negative numbers).

2.10.01 Weapon Range and Hit Probability Table

Range	1	2	3	4-5	6-7	8-10	11-12	13-15	16-18	19-21	21-24	24-27	28-30	31-35	36-40	41-45	46-50	51-60	61-75	75-100
Energy Beam (any)	10	9	9	8	8	7	7	6	6	5	5	4	4	3	3	2	2	1	1	0
Energy Pulse (any)	10	9	8	7	7	6	6	5	5	4	4	3	3	2	2	1	1	0	-	-
Basic Missile*	3	5	8	7	6	5	4	3	2	1	0	-1	-2	-	-	-	-	-	-	-
Standard missile*	4	6	8	8	8	7	7	6	5	4	3	2	1	0	-1	-	-	-	-	-
Enhanced Missile*	5	7	9	9	8	8	8	7	7	6	6	5	4	3	2	1	0	-	-	-
Advanced Missile*	6	9	10	9	9	8	8	8	7	7	7	6	6	5	5	4	3	2	1	-
Superior Missile*	7	9	10	10	10	10	9	9	8	8	7	7	7	6	6	5	5	4	3	2

* Direct fire missile type. Seeking weapons have a base 50% (5) hit probability at all ranges.

2.10.02 Weapon Range and Damage Table

Range	1	2	3	4-5	6-7	8-10	11-12	13-15	16-18	19-21	21-24	24-27	28-30	31-35	36-40	41-45	46-50	51-60	61-75	75-100
United Federation of Planets																				
FT1	4	4	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT2	8	8	8	8	8	8	8	8	-	-	-	-	-	-	-	-	-	-	-	-
FT3	6	6	6	6	6	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT4	10	10	10	10	10	10	10	10	10	-	-	-	-	-	-	-	-	-	-	-
FLA	2	2	2	1	1	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-
FLB	4	3	2	2	1	1	1	0	0	-	-	-	-	-	-	-	-	-	-	-
FLC	6	5	5	4	3	2	2	1	1	1	0	0	-	-	-	-	-	-	-	-
FLD	8	7	6	5	4	3	3	2	2	1	1	1	1	0	-	-	-	-	-	-
FA1	5	5	5	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FA2	6	6	6	5	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
FA3	8	8	7	7	6	5	4	3	-	-	-	-	-	-	-	-	-	-	-	-
FA4	10	9	9	8	7	6	6	5	4	3	-	-	-	-	-	-	-	-	-	-
FA5	15	14	14	13	12	11	10	9	8	7	6	5	4	-	-	-	-	-	-	-

Range	1	2	3	4-5	6-7	8-10	11-12	13-15	16-18	19-21	21-24	24-27	28-30	31-35	36-40	41-45	46-50	51-60	61-75	75-100
United Federation of Planets																				
FH1	4	4	3	3	3	2	2	1	1	1	1	1	0	-	-	-	-	-	-	-
FH2	6	6	6	5	5	4	4	3	3	2	2	1	1	1	0	-	-	-	-	-
FH3	8	8	7	7	6	6	5	5	4	4	3	3	2	2	1	1	0	-	-	-
FH4	12	11	11	10	9	9	8	8	7	7	6	6	5	4	3	2	1	0	-	-
FH5	20	19	18	17	16	15	14	13	12	11	10	9	8	7	5	3	2	1	0	-
FHM	20	19	18	17	16	15	14	13	12	11	10	8	6	4	2	-	-	-	-	-
FHG	3	3	3	3	3	2	2	2	1	1	1	-	-	-	-	-	-	-	-	-
FP1	15	15	15	15	15	15	15	15	15	15	15	-	-	-	-	-	-	-	-	-
FP2	25	25	25	25	25	25	25	25	25	25	25	25	25	-	-	-	-	-	-	-
FP3	8	8	8	8	8	8	8	8	-	-	-	-	-	-	-	-	-	-	-	-
FP4	12	12	12	12	12	12	12	12	12	12	12	-	-	-	-	-	-	-	-	-
FP5	24	24	24	24	24	24	24	24	24	24	24	24	24	-	-	-	-	-	-	-
FP6	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	-	-	-	-	-
Klingon Empire																				
KM1	3	2	2	1	1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KM2	5	4	4	3	2	1	0	0	-	-	-	-	-	-	-	-	-	-	-	-
KM3	7	6	6	5	4	3	2	1	0	-	-	-	-	-	-	-	-	-	-	-
KT1	6	6	6	6	6	6	6	-	-	-	-	-	-	-	-	-	-	-	-	-
KT2	9	9	9	9	9	9	9	9	-	-	-	-	-	-	-	-	-	-	-	-
KD1	5	4	4	3	3	2	2	2	2	1	1	1	1	-	-	-	-	-	-	-
KD2	7	6	6	5	5	4	4	3	3	2	2	1	1	1	1	-	-	-	-	-
KD3	10	9	9	8	8	7	7	6	6	5	5	4	4	3	3	2	2	1	-	-
KD1P	7	7	7	6	6	5	5	4	3	2	1	-	-	-	-	-	-	-	-	-
KD2P	10	10	10	9	9	8	7	6	5	4	3	2	1	-	-	-	-	-	-	-
KD3P	15	15	15	14	13	12	11	9	8	6	5	4	3	2	1	-	-	-	-	-
KP1	15	15	15	15	15	15	15	15	15	15	15	-	-	-	-	-	-	-	-	-
KP2	30	30	30	30	30	30	30	30	30	30	30	30	30	-	-	-	-	-	-	-
Romulan Star Empire																				
RT1	5	5	5	5	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RT2	9	9	9	9	9	9	9	-	-	-	-	-	-	-	-	-	-	-	-	-
RT3	16	16	16	16	16	16	16	16	-	-	-	-	-	-	-	-	-	-	-	-
RB1	3	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RB2	6	5	4	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RB3	9	7	6	5	4	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-
RI1	5	4	4	3	3	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-
RI2	8	7	6	5	4	3	3	2	2	1	1	1	-	-	-	-	-	-	-	-
RI3	10	9	8	7	6	5	4	3	3	2	2	1	1	1	1	-	-	-	-	-

Range	1	2	3	4-5	6-7	8-10	11-12	13-15	16-18	19-21	21-24	24-27	28-30	31-35	36-40	41-45	46-50	51-60	61-75	75-100
Orion Colonies																				
OD1	5	4	3	3	2	2	2	2	1	1	1	1	-	-	-	-	-	-	-	-
OD2	7	6	5	5	4	4	3	3	2	2	1	1	1	1	-	-	-	-	-	-
OD3	10	9	8	7	7	6	6	5	5	4	4	3	3	2	2	1	1	-	-	-
ODP	10	9	9	8	8	7	6	5	4	3	2	1	-	-	-	-	-	-	-	-
OP1	12	12	12	12	12	12	12	12	12	12	12	-	-	-	-	-	-	-	-	-
OP2	20	20	20	20	20	20	20	20	20	20	20	20	-	-	-	-	-	-	-	-
Gorn Alliance																				
GB1	3	3	2	2	1	1	0	0	-	-	-	-	-	-	-	-	-	-	-	-
GB2	6	5	5	4	3	2	1	1	0	0	-	-	-	-	-	-	-	-	-	-
GB3	9	8	8	7	6	5	4	3	2	1	1	0	0	-	-	-	-	-	-	-
GB4	12	11	11	10	9	8	7	6	5	4	3	2	1	1	0	0	-	-	-	-
Kzinti Hegemony																				
KzB1	4	3	3	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
KzB2	7	6	6	5	4	3	2	1	1	-	-	-	-	-	-	-	-	-	-	-
KzB3	10	9	9	8	7	6	5	4	3	2	1	1	-	-	-	-	-	-	-	-
Tholian Assembly																				
TD1	4	4	3	3	3	2	2	1	1	1	1	-	-	-	-	-	-	-	-	-
TD2	6	6	6	5	5	4	4	3	3	2	2	1	1	-	-	-	-	-	-	-
TD3	8	8	7	7	6	6	5	5	4	4	3	3	2	2	1	-	-	-	-	-

Note: Heavy federation weapons are included here (FLD, FA5, FH4, FH5) for completeness. They are designed for equipping starbases and heavy installations. The FH4 is mounted on dreadnoughts and battleships.

Part 3: Ship Construction Rules

3.00 Introduction

The basics of ship construction are as follows; The tech level is determined. A hull size is chosen. Then systems are added to the hull to build a ship. Virtually any type of system may be placed in any hull (exceptions will be noted in the equipment descriptions), though certain specialized systems may cost more, or not be available (especially to civilians, and someone from another government!)

3.01 Hulls

The standard building block of a ship is a Hull Space. Systems that are installed into a hull take up unitary amounts of hull spaces. Unlike the parent game, SCA does not have fixed hull sizes. Ships of one type tend to grow as technology advances (even excluding the anomaly of the *Galaxy* class), and different races have different design strategies. The following is a table of Federation heavy cruisers:

Class of Ship	Tech level	Size (hull spaces)
Verne	1	130
Horizon	2	175
Baton Rouge	3	240
Constitution	4	250
Enterprise	5	325
Excelsior	6	675
Akira	7	1250
Sovereign	8	1600

3.01.01 Technology Level (Tech Level, T-L) of a Ship or Large Unit

The tech level of systems on board a starship vary. For instance, the *Enterprise (NCC-1701)* has T-L 3 shields and armour (hull), T-L 4 warp drive, scanners, C-3 systems, and labs, and T-L 2 impulse engines.

The tech level of the warp drives determine the tech level of the ship. The warp drives are central to the ship anyway. They determine speed and power. Some systems do not have a specified tech level, and will use the tech level of the ship.

Since the tech level is sometimes galled the “generation”: To distinguish between the generation or production of “points”, and the *generation or tech level of a system* the term “**T-L**” will be used for the latter, with the **T-L** number used as a multiplier.

3.01.02 Terminology

“*System type*” refers to collection of the same system, such as T-L 4 warp drives, labs, or offensive phasers, etc.

“*system*” refers to each individual component of a system type that is installed in a ship. Systems are usually counted in “points.”

“*Large units*” refers to any unit 7 hull spaces or larger, and using discreet system types in its construction.

“*Tech level (T-L)*” and “*generation*” are sometimes used interchangeably, the meaning of the term “generation” being contextual.

3.01.03 Factors affected by hull size.

The first value of a ship is its Size Class. The size class of a ship (or station) is determined by the following table:

Hull Spaces	Size Class	Size Factor
7 - 24	1	1/2 (.4)
25 - 99	2	2/3 (.6)
100 – 399	3	1
400 – 1499	4	1.5
1500 – 5999	5	2.5
6000 – 24 999	6	4

Hull Spaces	Size Class	Size Factor
25 K – 99.99 K	7	6
100 K – 399.9 K	8	10
400 K – 1.499 M	9	15
1.5 M – 5.999 M	10	25
6.0 M – 24.99 M	11	40
25.0 M – 99.99 M	12	60

The size factor is also used to determine ship values, such as shields, armour, and superstructure. The minimum size of a starship is 7 hull spaces (realistically 11). The number of hull spaces also determines another crucial ship aspect: The **power/warp ratio**. To determine the power/warp ratio, divide the hull spaces by 25, rounding to the nearest 0.5. Example; the *Enterprise* has 250 hull spaces. Its power/warp ratio is 10.0. Civilian ships with large numbers of “H” or “Q” systems are calculated slightly different. If a ship has more than 50% of its hull spaces devoted to H or Q systems, only count half of the hull spaces of the Q and H systems to the total used to determine the power/warp ratio. This reflects that most cargo is not going to be solid neutronium, and that much of the space of Q systems is just that: space.

There are 2 or 3 systems that comprise the hull itself, shields, armour, and superstructure. These systems re affected by size factor. The size factor is the divider that must be used to determine how many points these systems will produce. Bases do not have engines (but have warp and impulse reactors). They have a power/warp ratio for tractoring purposes, and station keeping drives powered from their impulse reactors.

3.02 Procedure

Select hull size and tech level. Determine what you want your ship to do. Cruiser? Explorer? Bulk Freighter? Millenium Falcon knock-off?

Determine the speed of your ship, by adding engines. Don't forget impulse engines and auxiliary power systems.

Add weapons, quarters, control systems etc. until you run out of hull spaces. Missile weapons (both direct fire and seeking) require magazines. This is part of the simplicity of the system. Any available system may be installed, based upon tech level, legality and race.

Shuttles sold separately.

3.03 Common Ship Systems

The following are systems found on most starships of the major Star Trek races:

3.03.01 Shields

Type code: **Sx** , where x denotes the **T-L**.

Size: 1 hull space per generator

Power requirement: 1 GW per generator

A shield is an electro-gravitic envelope which surrounds a unit in a protective envelope. Each shield generator tech level has different properties as shown in the table. Each later tech level has all the special attributes of a former tech level:

Shield Generator	Special Attributes
T-L 1	None.
T-L 2	Blocks laser weapons.
T-L 3	Blocks transporters.
T-L 4	Blocks anti-proton beams.
T-L 5	Blocks warp-positron beams
T-L 6	No new attributes.
T-L 7	Blocks phased-polaron Weapons.

Each powered shield generator also produces its **T-L** in shield points. To find the shield points of a ship divide the total shield points generated by the ships size factor. Each facing has this many shield points.

3.03.02 Armour

Type Code: **Ax** , where x denotes the **T-L**. **ax** is used to denote dedicated armour.

Size: 1 hull space per system.

Requirement: **Ax**, 3% of hull spaces (2% - civilian), **ax**, none

Armour and superstructure comprise the physical structure of the ship. More than that, they provide a physical conduit for the SIF. Power for the SIF for military ships is (size class x size factor) GW. Civilian ships require half that. Each system produces its **T-L** in superstructure points. For a ships armour / superstructure rating divide the superstructure points by the ships size factor. For dedicated armour (**ax**), the armour points become the armour rating of the ship. The ship has this many armour points forward (facings 6, 1, 2) and aft (covering 3, 4, 5). Armour is normally damaged after shields but before any internal hits are taken. Superstructure is listed as Ss on the ship control sheet.

3.03.03 Warp Drive

Type code **AWx** , where x denotes the **T-L** (of both the drive and the ship.) and A denotes the nacelles (L = large nacelles, S= small nacelles).

Size: 2 hull spaces per system (small-nacelle), and base warp reactors.

3 hull spaces per system (large-nacelle)

Warp drive is the heart of a starship and comes in two basic forms: small-nacelle and large-nacelle. The small-nacelle warp drive does not come equipped with a positron flywheel. Ships so equipped (such as those of the Klingon Empire) cannot use up a movement point and remain in place. Advantage of small-nacelle warp engines: size.

Each warp drive *system* generates its **T-L** in GW, and each damage point reduces 1 GW of power production. A warp drive is capable of propelling a ship at warp (2 x **T-L**). Thus T-L 4 warp drives are capable of warp 8. To attempt to exceed this speed apply the following energy penalty:

Max Warp Exceeded by:	Additional Energy Cost (in warps):
0.5	1.0
1.0	2.5
1.5	4.5
2.0	7.0
2.5	10.0
3.0	13.5
3.5	17.5
4.0	22.0

Example: To build a T-L 4 ship (max warp 8) that can travel at warp 10, enough engine power must be produced to go warp 15 (8 + 7). Orion privateers are sometimes built this way, sacrificing internal space for extra speed. Actual current warp speed is determined by the power allocated (2.04.03)

3.03.04 Impulse Engines

Type code: **Ix** , where x denotes the **T-L**.

Size: 1 hull space per system (including base impulse reactors)

Impulse engines are the secondary power source for a starship. They can propel a starship at impulse speeds. Each system generates 1 GW per **T-L**. Tech levels of impulse engines advance slowly, as they are a mature technology. Expect the **T-L** of the impulse engines to be about half the **T-L** of the ship.

Actual current impulse speed is determined by the power allocated (2.04.03), when travelling at impulse speeds.

3.03.05 Batteries

Type code: **B**
Size: 1 hull space per generator

Nuclear batteries are one form of auxiliary power. They produce 1 GW of power per system. Ships usually carry enough to power SIF & LS in emergencies. Older ships tend to carry more, as nuclear batteries are extremely mature and reliable technology.

3.03.06 Crews Quarters

Type code: **Qa**, where a is the type designation.
Size: varies

Quarters are where the crew and passengers live. They each carry 1 crew unit (which is 10 humans). The size of a Quarters varies on their type. Cramped quarters Qc, take up 1/2 of a hull space, and must be installed in pairs. Since quarters also includes space for life support machinery, they are really claustrophobic, and cause a -1 morale penalty to crew grade. Small or Spartan quarters Qs, take up 2/3 of a hull space and must be mounted in threes. Warrior races or troops suffer no penalties in them, nor do crews of short range vessels. Standard quarters are denoted just by Q, and take up 1 hull space. Roomy quarters, Qr, occupy 2 hull spaces, while luxurious quarters Ql, take up 3, and appear in small quantities on luxurious passenger liners. Crew's quarters are powered as per **2.04.01**. Private individuals can in theory make quarters as large as they want, depending on their decadence.

3.03.07 Cargo holds

Type code: **H**
Size: 1 hull space per hold

Cargo holds are more than just empty space. They include equipment needed to store, and preserve any type of cargo. Each cargo hold stores 100 points of cargo, sometimes called "cargo units."

3.03.08 Magazines

Type code: **Mg**
Size: 1 hull space per magazine

A magazine is a specialized cargo hold designed to hold ammo. Magazines can hold 50 points of cargo as ammunition and deliver it quickly to a weapons battery. It is reinforced, and has an internal backup power supply. In emergencies, a magazine can hold any type of cargo that has a similar shape to the ammunition for the weapons for the ship, but doesn't require refrigeration.

3.03.09 Shuttle Bays

Type code: **V**
Size: 1 hull space per "bay."

A shuttle bay is space on-board ship for the storage, handling, launching, and retrieving of small craft and/or fighters. It includes atmospheric force fields and micro-tractor beam equipment. Each bay can hold 10 points worth fighters, small craft, or external ordnance. The space includes arming, fuelling, repair and launching facilities. Launching *or* retrieving small craft can be done once per turn, and require 1 GW of power. A single bay can only perform one such operation each turn.

3.03.10 Tractor Beams

Type code: **Tb, Tbe**
Size: 1 hull space per beam. Early tractor beams (Tbe) occupy 2 hull spaces, T-L 3.

Tractor beams are an electro-gravitic grapple which is used to lock onto other objects for the purpose of manipulation or towing. Early tractor beams are available at the beginning of T-L 3, but suffers a 2 hex range penalty. Each tractor beam system requires 1 GW while in operation.

3.03.11 Transporters

Type code: **Tr, Tre**
Size: 1 hull space per transporter. Early transporters (Tre) occupy 3 hull spaces, T-L 3.

Transporters are used to move material and personnel to and from the ship without the use of small craft. Early transporters are available at the beginning of T-L 3, and suffers a 1 hex range penalty. Each transporter system requires 1 GW while in operation, transporting either one crew unit with up to 10 cargo points, or 50 cargo points (and no crew) per turn.

3.03.12 Scanners

Type code: **Xx**, where x denotes the **T-L**.
Size: 1 hull space per scanner

Scanners are used for long range detection. They are the “eyes” of the ship. Each scanner system requires 1 GW while in operation, and produces **T-L** EW points each turn (see 2.07.05.1).

3.03.13 C-3 Systems (AKA “Bridge”)

Type code: **Cx**, where x denotes the **T-L**.
Size: 1 hull space per component
Power requirement: 1 GW per component

C-3 stands for command, control, and communication. They are the brains of the ship and have a common name: the bridge. Also “emergency bridge”, and “auxiliary control” Powerful computers assist the crew in determining what the ship does. Each powered **C-3** system generates command points equal to its tech level (see 2.07.05.2), and requires 1 GW.

3.03.14 Labs

Type code: **Lx**, where x denotes the **T-L**.
Size: 1 hull space per laboratory

Labs are the science component of the ship. Many ships will have only rudimentary labs, if any (which is usually a medical lab / sickbay of some sort.) Each powered lab requires 1 GW, and produces **T-L** science points each turn

3.03.15 Cockpit

Type code: **Cxn**, where n denotes the **T-L**.
Size: 1 hull space
Requirements: 1 GW, must be T-L 2 or higher.

Smaller vessels can get by with more compact control equipment. It combines both the functions of **C-3** systems with that of scanners. Each powered **Cx** system generates command points equal to one less than its tech level (see 2.07.05.2), and requires 1 GW. It also produces **T-L** – 1 EW points. Only 1 is allowed on a starship under 30 hull spaces, and none on larger ships.

3.03.16 Compact Boat Bay & Transporter System

Type code: **CTR**
Size: 1 hull space
Requirements: 1 GW, must be installed on a T-L 3 or higher ship.

Smaller vessels can also get by with more compact transporter equipment. It combines both the functions of a boat bay with that of transporters. Each powered **CTR** system can act as a transporter which can transport either 1/2 of a crew unit (+ no cargo) –or- 20 cargo points –OR- the **CTR** system can be used to launch –or- retrieve a small craft. The compact boat bay can hold 5 points of small craft. Only 1 is allowed on a starship under 40 hull spaces, and none on larger ships.

3.03.17 Cloaking Device

Type code: **CLn**, where n denotes the **T-L**.
Size: 1 hull space
Requirements: 6 GW, must have a number of systems installed equal to the ships size class. **T-L** 3+

Cloaking devices make a ship invisible to scanners. Passive scanners do not pick up a ship at all, but active scanners of a higher **T-L** pick them up at 1 hex on 8 or less on 1d10, with a –1 penalty for each hex further out, and a +1 bonus for each tech level higher the sensors are above the cloaking device.

A cloaked ship cannot fire as its own scanners are blinded. Cloaking devices are hit on scanner hits.

3.04 Race Specific Ship Systems

This version only includes weapon systems up to the TMP time period:

3.04.01 The United Federation of Planets

3.04.01.1 Lasers

Type: Energy Beam Weapon

Model	Size (hull spaces)	Power Requirement	Damage Bonus
FLA	1	2 GW	0
FLB	2	3 GW	0
FLC	3	4 GW	0
FLD	5	7 GW	0
FLA+	1	1 GW	+1
FLB+	2	2 GW	+1
FLC+	3	3 GW	+1
FLD+	5	6 GW	+2

Warp Accelerated Lasers are the first versatile energy beam used by the Federation. Lasers are not affected by T-L 1 shields, passing right through them. They cause damage to armour. Internal damage is allocated by the DAT. Improved during the Romulan War (to the “plus” models), lasers continued in service until their replacement by phasers. “D” models are designed for base use (but may be found on ships after they have been decommissioned or scrapped.)

3.04.01.2 Spatial Torpedoes

Type: Direct Fire Missile Weapon – Basic Missile

Model	Size (hull spaces)	Power Requirement	Damage	Ammo Size
FT1	4	5 GW	4	1
FT2	6	7 GW	6	2
FT3	3	5 GW	8	1
FT4	5	8 GW	10	2

Spatial torpedoes are the first direct fire missile weapon of the Federation. Models FT1 and FT2 were inherited directly from the Andorians, while models FT3 and FT4 were also developed during the Romulan War. Equipped with a fusion warhead, the damage is constant at all ranges. It causes normal damage, and internal damage is allocated by the DAT.

3.04.01.3 Particle Accelerator Cannon

Type: Energy Pulse Weapon

Model	Size (hull spaces)	Power Requirement
FAC1	2	2 GW
FAC2	3	3 GW
FAC3	4	4 GW
FAC4	5	5 GW
FAC5	8	8 GW

Under development on Earth at the formation of the Federation, this weapon system was not completed until the end of the Romulan War. A heavy-hitter, accelerator cannon replaced spatial torpedoes. It causes normal damage, and internal damage is allocated by the DAT.

3.04.01.4 Phasers

Type: Energy Beam Weapon

Model	Size (hull spaces)	Power Requirement	Damage Bonus
FH1	1	1 GW	0
FH2	2	2 GW	0
FH3	3	3 GW	0
FH4	5	5 GW	0
FH5	8	8 GW	0
FH1+	1	1 GW	+1
FH2+	2	2 GW	+1
FH3+	3	3 GW	+1
FH4+	5	5 GW	+2 to 10 hexes, +1
FH5+	8	8 GW	+2 to 15 hexes, +1
FHM	6	7 GW	0
FHG	3	3 GW	0*

Developed as a combination of the laser and the particle accelerator, the phaser went into service during the Four Years War. They are hard hitting and versatile weapons. Even shipboard phasers are capable of a stun setting, with pinpoint accuracy while in orbit about a planet. The “plus” improvement are the next generation (T-L 5 ships carry them), and have a +1 modifier on the PHT, as does the FHM. The FHG is the “gatling” phaser developed during the Galactic War. An anti-fighter weapon, it fires ****three times*** in rapid succession in one turn. It causes normal damage, and internal damage is allocated by the DAT.

3.04.01.5 Photon Torpedoes

Type: Direct Fire Missile Weapon – Standard Missile (FP1, FP2, FP3, FP4); Enhanced Missile (FP5, FP6)

Model	Size (hull spaces)	Power Requirement	Damage	Ammo Size
FP1	5	4 GW	15	2
FP2	8	6 GW	25	3
FP3	5	5 GW	8	2
FP4	2	3 GW	12	1
FP5	4	5 GW	24	2
FP6	6	6 GW	36	3

Developed during the Four Years War, this weapon carries an anti-matter warhead, and causes its damage at all ranges. The FP3 is the infamous “civilian torpedo” with a plasma warhead. FP4 – 6 are T-L 5 era weapons. It causes normal damage, and internal damage is allocated by the DAT.

3.04.02 The Klingon Empire

3.04.02.1 Masers

Type: Energy Beam Weapon

Model	Size (hull spaces)	Power Requirement	Damage Bonus
KM1	1	2 GW	0
KM2	2	3 GW	0
KM3	3	4 GW	0
KM1+	1	1 GW	+1
KM2+	2	2 GW	+1
KM3+	3	3 GW	+1

Warp Accelerated Masers are the early energy beam weapons of the Klingons. The Klingons have been warp-equipped space farers longer than the Federation, and are more pragmatic with weapons development. Like lasers, masers are not affected by T-L 1 shields, passing right through them. They cause damage to armour. Internal damage is allocated by the DAT. By the time of their first encounter with the federation, Disruptors had become their mainstay energy weapon.

3.04.02.2 Fusion Torpedoes

Type: Direct Fire Missile Weapon – Basic Missile

Model	Size (hull spaces)	Power Requirement	Damage
KT1	4	5 GW	6
KT2	6	8 GW	9

An early direct fire missile weapon of the Klingon Empire. Equipped with a fusion warhead, the damage is constant at all ranges. It causes normal damage, and internal damage is allocated by the DAT.

3.04.02.4 Beam Disruptors

Type: Energy Beam Weapon

Model	Size (hull spaces)	Power Requirement
KD1	1	2 GW
KD2	2	3 GW
KD3	3	5 GW

Disruptors are the standard energy weapon of the Klingons, and come in two types. They are simpler and more robust to build than phasers. It causes normal damage, and internal damage is allocated by the DAT.

3.04.02.4 Pulse Disruptors

Type: Energy Pulse Weapon

Model	Size (hull spaces)	Power Requirement
KD1P	2	3 GW
KD2P	4	5 GW
KD3P	6	7 GW

Pulse disruptors are the second type of disruptor energy weapon of the Klingons. Used as heavy weapons, pulse disruptors are very similar to particle accelerator cannon. As usual, it causes normal damage, and internal damage is allocated by the DAT.

3.04.02.5 Photon Torpedoes

Type: Direct Fire Missile Weapon – Standard Missile

Model	Size (hull spaces)	Power Requirement	Damage	Ammo Size
KP1	5	4 GW	15	2
KP2	8	8 GW	30	3

Either copied from captured units or bought through the Orion Syndicate, T-L 5 Klingon ships started to sport this effective armament. Like Federation photon torpedoes, they cause normal damage, and internal damage is allocated by the DAT.

3.04.03 The Romulan Star Empire

3.04.03.1 Plasma Blasters

Type: Energy Beam Weapon

Model	Size (hull spaces)	Power Requirement
RB1	2	2 GW
RB2	4	4 GW
RB3	6	6 GW

Plasma weapons were the standard beam weapon equipping Romulan ships during the Romulan War.. Used as heavy or light weapons, they were very effective for their time. They cause normal damage, and internal damage is allocated by the DAT.

3.04.03.2 Energy Torpedoes

Type: Direct Fire Missile Weapon – Basic Misile

Model	Size (hull spaces)	Power Requirement	Damage
RT1	5	4 GW	5
RT2	8	6 GW	9
RT3	12	10 GW	16

Used during the Romulan Years War, this weapon carries a plasma warhead, and causes its damage at all ranges. It causes normal damage, and internal damage is allocated by the DAT.

3.04.03.3 Ion Guns

Type: Energy Beam Weapon

Model	Size (hull spaces)	Power Requirement
RI1	2	2 GW
RI2	3	3 GW
RI3	4	4 GW

Ion guns replaced plasma blasters as the standard ship-board beam weapon. Again, they cause normal damage, and internal damage is allocated by the DAT.

3.04.03.4 Plasma Torpedoes

Type: Seeking Weapon

Model	Size (hull spaces)	Power Requirement	Damage
RPL1	8	8 GW	20
RPL2	12	12 GW	35
RPL3	15	15 GW	50

The plasma torpedo is the ultimate refinement of Romulan plasma technology. The weapon fires a bolt of plasma energy that travels at warp (*T-L* x 3). This bolt starts to lose strength at the end of its ***second full turn*** of movement. The bolt loses 5 points of damage per turn, until it reaches zero (at which point it is removed from the map). Plasma torpedoes are available at late T-L 3. At T-L 5, they gain a +1 to hit, with an additional +1 on each successive odd tech level. Plasma torpedoes can be attacked by energy beam weapons only. They take half damage from beam weapons, which further reduce the warhead strength. They cause normal damage, and internal damage is allocated by the DAT.

3.04.04 The Orion Colonies

Most of the current Orion weapons are copies of someone else's. All of them cause normal damage, and internal damage is allocated by the DAT.

3.04.04.1 Beam Disruptors

Type: Energy Beam Weapon

Model	Size (hull spaces)	Power Requirement
OD1	1	2 GW
OD2	2	3 GW
OD3	3	5 GW

3.04.04.2 Pulse Disruptors

Type: Energy Pulse Weapon

Model	Size (hull spaces)	Power Requirement
ODP	4	5 GW

3.04.04.3 Photon Torpedoes

Type: Direct Fire Missile Weapon – Standard missile

Model	Size (hull spaces)	Power Requirement	Damage	Ammo Sie
OP1	4	4 GW	12	2
OP2	6	6 GW	20	3

3.04.05 The Gorn Alliance

3.04.05.1 Plasma Blasters

Type: Energy Beam Weapon

Model	Size (hull spaces)	Power Requirement	Damage Bonus
GB1	2	2 GW	0
GB2	3	3 GW	0
GB3	5	5 GW	0
GB4	8	8 GW	0
GB1	2	2 GW	+1
GB2	3	3 GW	+1
GB3	5	5 GW	+1
GB4	8	8 GW	+2 to 10 hexes, +1

Blasters are the standard energy weapon of the Gorn, and come in two generations. They are simpler and more robust to build than most beam weapons, even simpler than Romulan models. The “plus” models appear early T-L 5. It causes normal damage, and internal damage is allocated by the DAT.

3.04.05.2 Plasma Torpedoes

Type: Seeking Weapon

Model	Size (hull spaces)	Power Requirement	Damage
GPL1	10	10 GW	25
GPL2	15	15 GW	40

A sophisticated weapon for the Gorn, possibly from Romulan technology. The weapon fires a bolt that travels at warp (**T-L** x 3). This bolt starts to lose strength at the end of its **second full turn** of movement. The bolt loses 5 points of damage per turn, until it reaches zero (at which point it is removed from the map). Plasma torpedoes are available to Gorn ships at T-L 4. At T-L 7, they gain a +1 to hit, with an additional +1 on each successive odd tech level. Plasma torpedoes can be attacked by energy beam weapons only. They take half damage from beam weapons, which further reduce the warhead strength. They cause normal damage, and internal damage is allocated by the DAT.

3.04.06 The Kzinti Hegemony

3.04.06.1 Electron Blasters

Type: Energy Pulse Weapon

Model	Size (hull spaces)	Power Requirement
KzB1	2	3 GW
KzB2	4	5 GW
KzB3	6	7 GW

The main Kzin ship-board energy weapon is a pulse weapon. Used as medium weapons, electron blasters fire a warp accelerated electron beam at the target. While it is blocked by standard shields and armour, It does not affect un-powered systems, skipping all **Q**, **H**, **Mg**, and **V** systems.

3.04.06.2 Drone Racks

Type: Seeking Weapon

Model	Size (hull spaces)	Power Requirement
DrA	3	1 GW
DrB	4	1 GW
DrC	5	2 GW

Drone racks (AKA “missile launchers”) are the standard Kzin missile weapon. Requiring little power, drone racks launch small craft sized vehicles. The type A and C racks fire a 2 point sized drone, while the type B fires a 4 pointer. The C rack is a rapid fire rack, firing two drones per turn. A gravitic catapult launches the missiles clear of the ship.

During the Galactic War, the federation (and others) used drones on their fighters, and adopted the type A rack for retrofit on some starships.

3.04.07 The Tholian Assembly

3.04.07.1 Beam Disruptor

Type: Energy Beam Weapon

Model	Size (hull spaces)	Power Requirement
TD1	1	1 GW
TD2	2	2 GW
TD3	3	3 GW

Disruptors are a standard energy weapon. Tholian designs have some similarity to phasers. It causes normal damage, and internal damage is allocated by the DAT.

3.04.07.2 Web Spinner

Type: Special
Size: 10 hull spaces
Power requirement: 10 GW

Web spinners are a unique weapon to the Tholians. When first encountered, it was slow and cumbersome, requiring a target to be immobile. Improvements to the device have allowed this weapon to act like an interstellar barbed wire fence dispenser. It is more effective as an area denial device than as a true weapon.

Each turn, the web spinner can generate a hex with web in it. The web must be anchored to another object: Asteroid, planet, or a large unit, or a previously anchored web hex. Webs can be cast into long bands. A web fades after 5 turns unless it is maintained by a web spinner. Each web spinner can maintain up to 6 web hexes.

Any vessel moving into a hex with an emplaced web has a chance of striking and becoming imbedded in it. Roll 1d10, and the vessel is stuck in the web on a roll of 3 or less. The vessel suffers a -1 penalty for every 2 warps above warp 2. The vessel gets a +2 bonus if it has satisfied its turn mode when it enters the hex of a web.

A vessel that strikes a web immediately comes to a stop, suffering 1 point per warp speed, multiplied by the ships size factor. To break out of a web, a ship must generate 7 movement points for 4 turns (to cross a web), or 2 turns (to back out of a web), suffering (4 or 2 times the ships size factor) in engine damage. Ships trapped in webs are considered immobile for combat purposes.

3.05 Data Sheets and Control Sheets

3.05.01 Data Sheets

A Ship Data sheet lists the systems and capabilities of a unit. It can even include a three view drawing of the vessel. Examples of a few can be found in the Appendix. It can include such entries as size and shape of the ship, cruising and maximum speeds. Cruising speed is based on a power level of between 75 and 80 % of maximum engine power.

It must include: hull spaces, shield, armour and superstructure ratings, power outputs, power/warp ratio, complement or crew units, and number of small craft.

It should include all systems installed, including weapons and their firing arcs.

3.05.02 Control sheets

A ship control sheet is derived from the ship data sheet. It is a table with 3 columns and 4 rows, as shown below:.

Ship name and identifier	Size class with derived size class, power/warp ratio, and shield <i>T-L</i> . (see 3.01.03)	Power output of power systems
Shield points 1 each for all 6 facings	Shield points 1 each for all 6 facings	Power allocation
Armour, fore and aft	Superstructure, and crew units	
Power and control systems	Auxiliary systems (including magazines)	Armaments

An example of a completed ship control sheet is found at **2.02.01.1**.

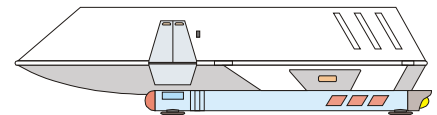
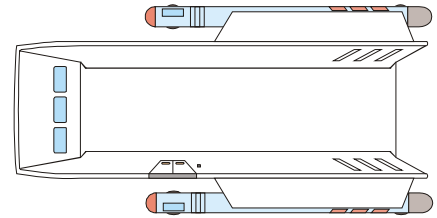
3.06 Other Units

3.06.01 Small Craft & Fighters

Most small craft are “off the shelf units” for each race

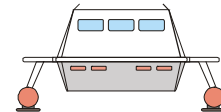
3.06.01.1 Federation S-3 Shuttlecraft

Type: pinnacle
Size: 4 points
Speed: warp 4
Hit points: 3
Armament: none
Capacity: 2/3 crew unit –or- 20 points cargo
Notes: Standard “7 person” TOS shuttlecraft



3.06.01.1 Federation S-4 Shuttlecraft

Type: pinnacle
Size: 8 points
Speed: warp 5
Hit points: 5
Armament: 1 FH1
Capacity: 2 crew units –or- 50 points cargo
Notes: TOS heavy shuttlecraft. Used to create small bases for ground away teams, this shuttle is armed, and has multiple internal configurations.



3.06.01.1 Federation S-7 Shuttlecraft

Type: pinnacle
Size: 5 points
Speed: warp 7
Hit points: 3
Armament: none
Capacity: 1 crew unit –or- 25 points cargo
Notes: Standard TMP shuttlecraft

3.06.01.1 Federation A-1 Fighter

Type: fighter
Size: 10 points
Speed: warp 5.5
Hit points: 3
Armament: FLA+
Capacity: 4 points XO
Notes: “Puffin’ class fighter



PUFFIN FIGHTER

3.06.01.1 Federation A-2 Fighter

Type: fighter
Size: 15 points
Speed: warp 7 (B-Model warp 8)
Hit points: 3
Armament: FLA+, B-model FH1
Capacity: 5 points XO
Notes: “Penguin” class fighter



PENGUIN FIGHTER

3.06.01.1 Federation A-7 Fighter

Type: fighter
Size: 8 points
Speed: warp 12
Hit points: 4
Armament: FH1+
Capacity: 2 points XO
Notes: "Corsair" class fighter

3.06.01.2 Klingon K-type Shuttlecraft

Type: pinnacle
Size: 6 points
Speed: warp 6
Hit points: 3
Armament: KD1
Capacity: 1 crew unit –or- 25 points cargo
Notes: Standard shuttlecraft

3.06.01.2 Klingon Z-class Fighter

Type: fighter
Size: 8 points
Speed: warp 9
Hit points: 3
Armament: KD1
Capacity: 4 points XO
Notes: fighter

3.06.01.3 Romulan Shuttlecraft

Type: pinnacle
Size: 4 points
Speed: warp 5
Hit points: 3
Armament: none
Capacity: 1 crew unit –or- 25 points cargo
Notes: Standard shuttlecraft

3.06.01.4 Orion Shuttlecraft

Type: pinnacle
Size: 4 points
Speed: warp 4
Hit points: 3
Armament: none
Capacity: 2/3 crew unit –or- 20 points cargo
Notes: Standard shuttlecraft...

3.06.01.5 Gorn Shuttlecraft

Type: boat
Size: 15 points
Speed: impulse 7
Hit points: 5
Armament: none
Capacity: 2 crew units –or- 50 points cargo
Notes: impulse craft

3.06.01.6 Kzinti Shuttlecraft

Type: boat
Size: 7 points
Speed: impulse 6
Hit points: 2
Armament: none
Capacity: 1 crew unit –or- 25 points cargo
Notes: impulse craft

3.06.01.6 Kzinti “Alpha” Fighter

Type: fighter
Size: 8 points
Speed: warp 9.5
Hit points: 2
Armament: KzB1
Capacity: 2 points XO
Notes:

3.06.02 Drones

AKA “missiles,” drones are used by a variety of races.

3.06.02.1 Federation Drones

The Federation used versions of the Kzin type 3 drones during the Galactic War.

3.06.06.1 Kzinti Drones

Drone Type	1	2	3	4	5	6
T-L	3	3	4	4	5	5
Size	2	4	2	4	2	4
Speed	Warp 7	Warp 7	Warp 11	Warp 12	Warp 13	Warp 13.5
Hit Points	2	3	2	4	3	4
Duration	4 turns	6 turns	5 turns	7 turns	6 turns	9 turns
Warhead	8	15	10	20	12	25
Hit Bonus	0	0	+1	+1	+2	+2

3.06.03 Mines and Independently Deployed Energy Weapons

Mines and Independently Deployed Energy Weapons (IDEWs), are devices that are emplaced to deny territory to an enemy. Explosive devices have been used for this purpose since their development. A mine is simply a bomb with a sensor that explodes when a unit passes near enough. An IDEW (sometimes called a “captor mine”) is a small satellite, that, instead of just exploding, fires a weapon at the unit.

A mine or IDEW can be up to 10 points in size, and carry 6 points in warhead or missiles. A typical 1-point T-L 4 anti-matter warhead would cause 20 points damage. T-L 3 Romulan ships used mines for suicide charges. 5 points large, with 4 point 48 damage thermonuclear warhead. A mine attacks a target in it's own hex on a 2 or less on 1d10 (roll individually for each mine), a 3+ means the ship passes too far away from the mine and the mine doesn't go off, it waits for the next opportunity. Roll a second 1d10 to determine effect: 1 – 6 – direct hit on the rolled facing, applying full damage. 7 – 9 – weapon detonates prematurely causing half damage to the facing (roll – 6). 10 – weapon detonates late, causing 1/4 damage to the aft (4) facing. Another warhead that can be fitted is a gravitic warhead, making mines usable in deep space (where you normally have to know *exactly* where a ship is going to pass by or it will

miss the mine). A gravitic mine has a 6 point warhead that can affect a whole hex (automatically attacking). It causes 30 points damage to warp engines (20 to impulse), skipping shields and armour, and brings the ship to a stop.

An IDEW fires its weapons at its target when they meet its targeting requirement. The weapons (drones) attack the target normally.

Part 4: Connections & Options

There are two important subsections to Part 4: Connections to a Star Trek: Role Playing game is the first, while optional rules to the combat system comprise the second. Like Part 1, this section is not needed to whip up a couple of ships and have at it. But it would be nice to integrate the combat into a RPG every so often.

4.01 Role Playing Connections

This section will connect directly to GURPS (the current system I use.) Feel free to modify it as needed.

4.01.01 Player Characters

Player characters who are bridge officers / security / engineers can be of some effect in battle. The following table can be used:

Character	Position	Skill	Effect
Captain	C-3, own ship -or- flagship	Tactics: Starship	+1 to initiative
Helmsman	C-3	Gunner: Ship weapons	+1 to hit
Navigator	C-3	Piloting: Starship	-1 turn mode
Engineer	C-3	Engineering: General	+1 to bypass system
	Engineering	Engineering: Drives	+ (size class) GW
	Any	Mechanic	+1 Damage Control
Science officer	C-3	Electronics Op: Sensors	+1 EW
	Labs	Physics, Chemistry, Research	+1 science points
Comm. Officer	C-3	Electronics Operations	-1 range datalink
Security	Any	Tactics	+1 Boarding Parties

4.02 Optional Rules For the Starship Combat Alternative

Like many games there comes a time when you may want to try a variation on a theme: Hence optional rules. . .

4.02.01 Linear Damage

Linear damage does not require the use of a DAT. To create a linear Ship Control Sheet, keep the shield lines and the power allocation part of the control sheet. Then place the remaining systems in the order that you want them to be hit.

Example:

CA1701 Enterprise	250 Hull Spaces (3 / 10 / 3)	POWER 108 _____
S-1 60 _____	S-4 60 _____	SIF & LS _____4_____
S-2 60 _____	S-5 60 _____	Shields _____
S-3 60 _____	S-6 60 _____	Movement _____
Arm Fore 0 _____		Weapons _____
Aft 0 _____		C-3 _____
Crew 43 _____		Auxiliary _____
SsSsSsW ₄ W ₄ W ₄ W ₄ W ₄ QQQ L ₄ L ₄ Fh3(p)I ₂ I ₂ X ₄ W ₄ W ₄ W ₄ W ₄ C ₄ Fh3(s)I ₂ I ₂ VHTrSsSsSsBHHX ₄ W ₄ W ₄ W ₄ W ₄ W ₄ SsSsSsI ₂ I ₂ QQQL ₄ L ₄ L ₄ W ₄ W ₄ W ₄ W ₄ Fp2(f)SsSsSsHVVfH3(o)TbI ₂ I ₂ QQQMg SsSsSsW ₄ W ₄ W ₄ W ₄ W ₄ HHHI ₂ I ₂ Fh3(f)QQQSsSsSsFh3(p)X ₄ QQQL ₄ L ₄ TrHHHSsSsSsW ₄ W ₄ W ₄ W ₄ W ₄ QQQX ₄ L ₄ C ₄ SsSsSsHHTTrbFh3(s)SsSsSsMgW ₄ W ₄ W ₄ W ₄ W ₄ I ₂ I ₂ BFp2(f)QQQSsSsSsH VVW ₄ W ₄ W ₄ W ₄ W ₄ I ₂ I ₂ QQQMgW ₄ W ₄ W ₄ W ₄ W ₄ QQQX ₄ L ₄ W ₄ W ₄ W ₄ W ₄ C ₄ Fh3(f)W ₄ W ₄ W ₄ W ₄ W ₄ TrQQQHsSsSsSsW ₄ W ₄ W ₄ W ₄ W ₄ I ₂ I ₂ QQQC ₄ W ₄ W ₄ W ₄ W ₄ W ₄ I ₂ I ₂ HHQQQSsSsSsW ₄ W ₄ W ₄ W ₄ W ₄ QQQL ₂ I ₂ I ₂ BVVSsSsSsW ₄ W ₄ W ₄ W ₄ W ₄ I ₂ I ₂ BQQQL ₄ SsSsSsHX ₄ QQI ₂ I ₂ C ₄ Q h3(o)SsSsSsW ₄ W ₄ W ₄ W ₄ W ₄		

4.02.02 Intermediate Sized Units

Fighters and small craft are typically smaller than 1 hull space (fitting into V), and starships are larger than 7 hull spaces. So what about a unit that is 1 – 6 hull spaces in size? A perfect example of such a ship is the Danube class runabout. SFB patrol craft (PF's) and interceptors also fall into this category.

An intermediate sized unit is built and operates similarly to a large unit. It has "hull spaces" (they are smaller), power allocation, shields, armour, and a turn mode (of 1). They have smaller power routings than starships, and therefore suffer range and to-hit penalties (fighters do not suffer this as they use power cells to power their energy weapons – having a limited number of shots instead.) They move and manoeuvre the same as large units, including positron flywheel movement.

Intermediate units have between 6 and 60 mini hull spaces. (Equivalent to 1 – 10 regular hull spaces.) Intermediate units also allocate power, in this case units of 100 MW (denoted CMW). Energy beam and pulse weapons fire with a –1 to damage. Intermediate units can be stored in hangars (V's) that are big enough (such as those on a *Galaxy* class ship). Use 1 mini hull space = 4 boat bay points.

Shields on intermediate units cover 2 arcs: Fore (sides 6,1,2), and aft (sides 2,3,4). Armour is unitary (omni-directional). Intermediate units' power/warp ratio is based on the smaller hull spaces and CMW. Divide the mini hull spaces by 15 to get the power/warp ratio (still rounding to the nearest 0.5.) Size factor does not apply to intermediate units. For SIF & LS, ships under 24 mini hull spaces require 1 CMW of power, ships over that require 2 CMW.

4.02.02.1 Systems of Intermediate Units

Some systems for large units can be used on intermediate units:

Any 1 hull space energy weapon can be installed on an intermediate unit. They take up 3 of the smaller hull spaces, having less shielding and "innovative" power routing. Power is at an advantage, requiring 50% (5 CMW per 1GW)

A full size lab can be installed. With space efficiencies, it takes up 4 mini hull spaces.

Full size transporters can be installed, as can shuttlecraft bays. These systems require the same space as they do on their larger counterparts. Each would take up 6 mini hull spaces.

The following is a table of "miniature systems" for use in intermediate units. These systems (except shields and armour) take 3 times the damage (in systems) than large unit systems. Systems are grouped on the control sheet by category, with square brackets separating hit points. Internal damage is allocated by the DAC (2.07.03.2) but with one exception: Each hit point is rolled separately. All numbers in brackets are considered to be "1" for intermediate units.

System Code	Size (mini hull spaces)	Power Requirement	System Description
Sx	1	1	Produces T-L shield points, both front and back. Has same special features as their large version.
Ax, ax	1	special	Each system produces T-L armour points or T-L / 2 superstructure points. Powered with SIF & LS.
Wx	2	-	Produces T-L CMW as warp power. Max speed is 2 x T-L warps.
Ix	1	-	Produces 2x T-L CMW as impulse power
Q	1	special	Quarters. Each holds 1/2 grew unit. Powered with SIF & LS.
H	1	-	Cargo hold. Holds 20 points of cargo.
Mg	1	-	Magazine. Holds 10 points of ammo. Looks a lot more like a magazine of bullets. Can't hold cargo.

System Code	Size (mini hull spaces)	Power Requirement	System Description
V	2	1	Miniature boat bay. Holds 3 points of craft.
Tb	1	1	This small tractor beam can grapple units up to 50 full hull spaces in size. T-L 3 or later.
Tr	2	1	Small transporter. Can transport 1/2 crew unit –or- 15 points of cargo. T-L 3 or later.
Lx	2	1	Micro-lab. Produces T-L / 2 science points.
Xn	1	1	Compact scanner. Produces T-L / 2 EW points.
Cx	1	1	Control centre. 1 required for combat, Extras produce T-L / 2 control points.

There are some specialized weapon systems for intermediate units. For example:

FPS-1: Mini-photon torpedo system. 6 mini hull spaces, 1 full hit point. Requires 8 CMW power. Fires a 1 point sized photon torpedo. Range 18 hexes. Damage 8.

Example ship: Xavier class PF:

PF101 Xavier	45 mini hull spaces (1 / 3.0 / 3x4)	POWER 43 _____
S-1 12 _____ S-2 12 _____ Arm 0 _____	Ss Ss Ss Crew 1	SIF & LS _____ Shields _____ Movement _____ Weapons _____ C-3 _____ Auxiliary _____
[Wd4 Wd4 Wd4] [Wd4 Wd4 Wd4] [Wd4 Wd4 Wd4] [Wd4 Wd4 Wd4] [I2 I2 I2] [I2] [Q Q] [X3 C3] [Tr H Mg]	FH1 (F) FH1 (P) FH1 (S) FPS-1 (F)	

4.02.03 Readiness States

SCA units may be at any of four readiness states: Alert, Normal, Stand-By readiness, and Mothballed. All of these readiness states will not normally have much impact in deep space, as an incoming enemy will usually be detected in time. Ambushes and actually executing an attack on a system means time must pass for any unit not in mothballs to go to General Quarters. General Quarters, or GQ, is fully combat ready with every weapon and defensive system powered.

4.02.03.1 Definition of Readiness States

Mothballed units are completely inoperative and may not be made operative in less than one week. As they have no operable structural integrity fields, they are highly susceptible to missile damage, and a raid on units mothballed in orbit can be devastating.

Units at *Standby* are operable but not expecting trouble. Their warp drives are down (cold shutdown) unless running at warp to a destination, in which case their impulse engines are down. Any scanners are operating but no weapons or defensive systems are active. Stand-By will be running 1 C-3 system and 1 scanner system. Stand-By units may, however, go to GQ in one interception turn after a potential attacker is detected. There is a 50% chance of a reduced crew aboard standby ships (roll 5 or under on 1d10). If there is, divide the normal crew units by 3, rounding up.

Units at *Normal* readiness are better prepared for trouble. Their engines C-3, and scanners are fully manned and operate normally, as do their shields (if any). No other defensive or offensive systems are

operable. Like units at Stand-By readiness, they can go to GQ in one interception turn after the detection of a potential attacker.

Units at *Alert readiness* are *expecting* trouble. Their engine rooms, C-3, scanners, and shields are manned and fully operational. In addition, any point defense weapons and security teams (boarding parties) are active, though operating at less than full efficiency. (They are only partly manned. To reflect this, defensive weapon hit probabilities are at -2 for the first turn and -1 for the second) Their offensive weapons are also partly manned and can be brought on line very quickly (2 turns), though the units are still short of GQ. Alert is the highest readiness state which can be maintained indefinitely.

Units at *General Quarters* know positively that they are about to enter combat. Players may indicate in their units' strategic movement orders specific times or conditions under which they will go to GQ, but they may not remain continuously at GQ for longer than 36 hours. If no potential enemies are detected during that period, they must revert to a lower readiness state to avoid debilitating crew fatigue. Once they revert from GO to a lower readiness state, units must remain at the lower readiness state for at least 36 hours to recuperate unless a potential enemy is detected in the interim.

Note that crew grade (2.09) affects how quickly a surprised unit can go to GQ.

4.02.03.2 Effects of Readiness States

Even an attacking starship entering a new system (or one where accurate current data) cannot be at GQ, since they do not know where all the threats and targets are. They must make a sensor sweep of the system first. Thus, unless the ship was recently in the system, the highest (and only sensible) readiness state will be Alert.

The defenders' problems are worse. Even if they expect an attack to come, they cannot star at GQ forever. Mine Fields (3.06.03) are active and attack normally if the defending units are at Alert. If the defenders are *not* at Alert, mine fields are not active and must be activated as any other system. Independently deployed energy weapons (3.06.03) must always be activated before they can engage. Bases, starships, and fighters must all be brought to GQ before they may engage the suddenly appearing enemy. If the defenders have been warned of attack by a picket, they begin moving to GQ the instant the picket vessel or its warning comes through. Once they reach GQ, all starship, BS, and SS on-board systems are fully manned and ready and carriers may launch a CSP (Combat Space Patrol) of some or all of their fighters and maintain it by launching replacements as those currently on CSP are recovered at the end of their endurance.

Note, however, that no unit may remain at GQ for more than 36 hours at a stretch if no attack comes in during that time. At best, they will revert to Alert readiness in the fourth day following the picket's return.

Whether or not the defenders have warning, they must react before they can open fire. This takes time (maybe not a lot, but *STARFIRE* tactical turns are only 30 seconds long) as determined by rolling 1D10 when the first hostile starship comes into scanner range and using the die roll as described below. If a picket brings warning, the die is rolled on the turn after the *picket* senses the intruders (unless the picket is jammed). Units at Alert may activate their first offensive weapon after the number of tactical turns equal to the 1d10 roll. To simplify matters, the owning player selects one weapon *type* which becomes active simultaneously on *all* of his units within the system. Forming datalinks count as weapons for this purpose. Minefields attack normally on the first turn the warning (somebody hits that panic button), but IDEW also count as one offensive weapon system for this rule.

4.02.04 Nebulae

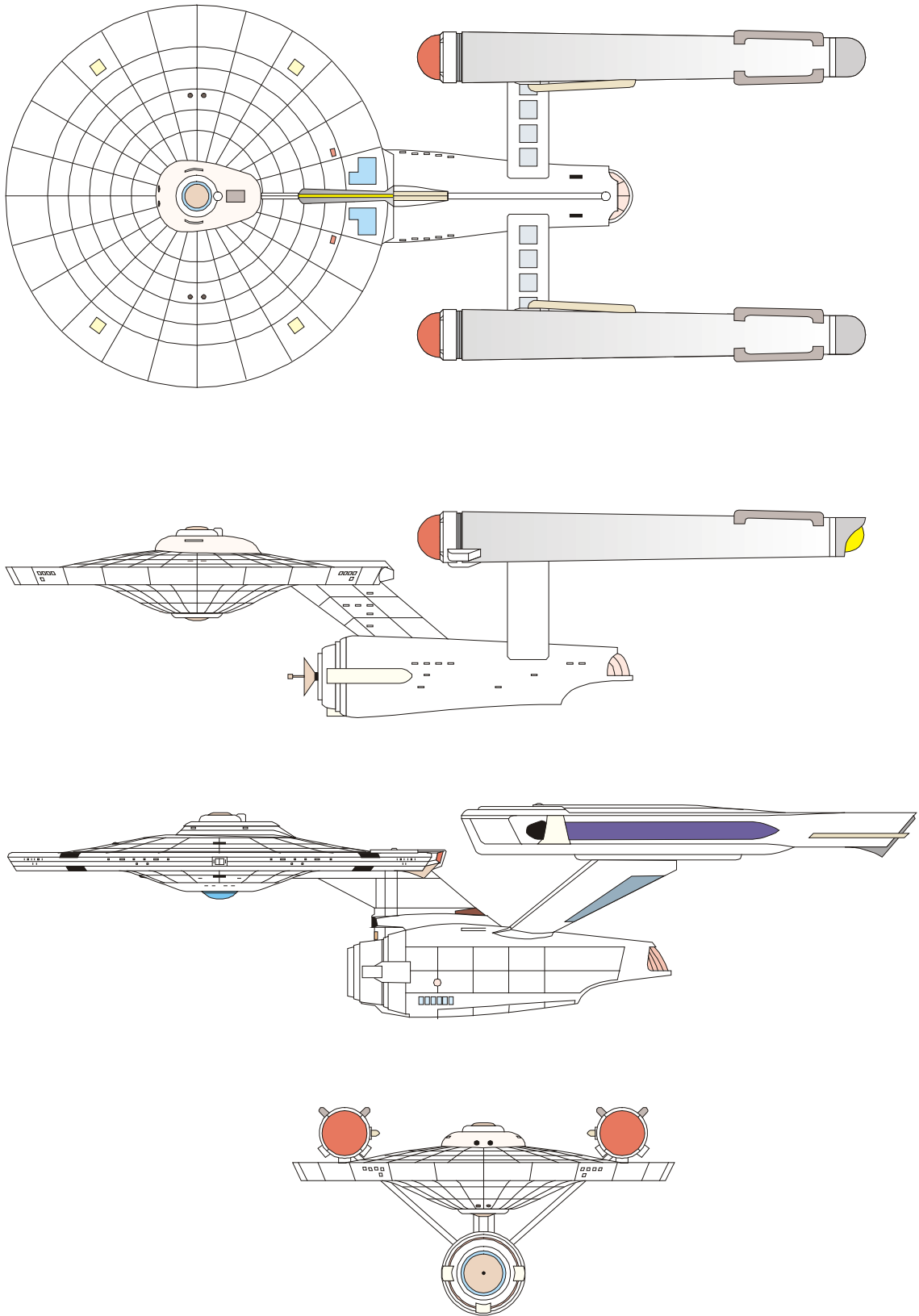
Nebulae are clouds of ionized gas (which glow), or clouds of dust (which block light). Some even produce dangerous radiation. But the main hazard comes from slamming into this cloud of dust or gas at FTL speeds. Since shields do not function moving through nebulae at warp causes damage to ships, at the rate of 2 points damage per warp per turn. Traveling at high impulse (I-7 or higher), causes 1 point of damage per turn. Slow down in nebulae!

4.02.05 Cutting Edge Technology

Cutting edge technology (prototypes) occur when systems are first developed. This is optional with the exceptions of Tre, and Tbe. Prototype tech levels are denoted with a "+", or "-" for early new tech level or advanced current tech level. For instance a T-L 3- shield produces 2.5 shield points. A T-L 2+ shield also produces 2.5 shield points, but does not have the ability to block transporters. The "-" also can be used to denote a cheap "knock off" of a system.

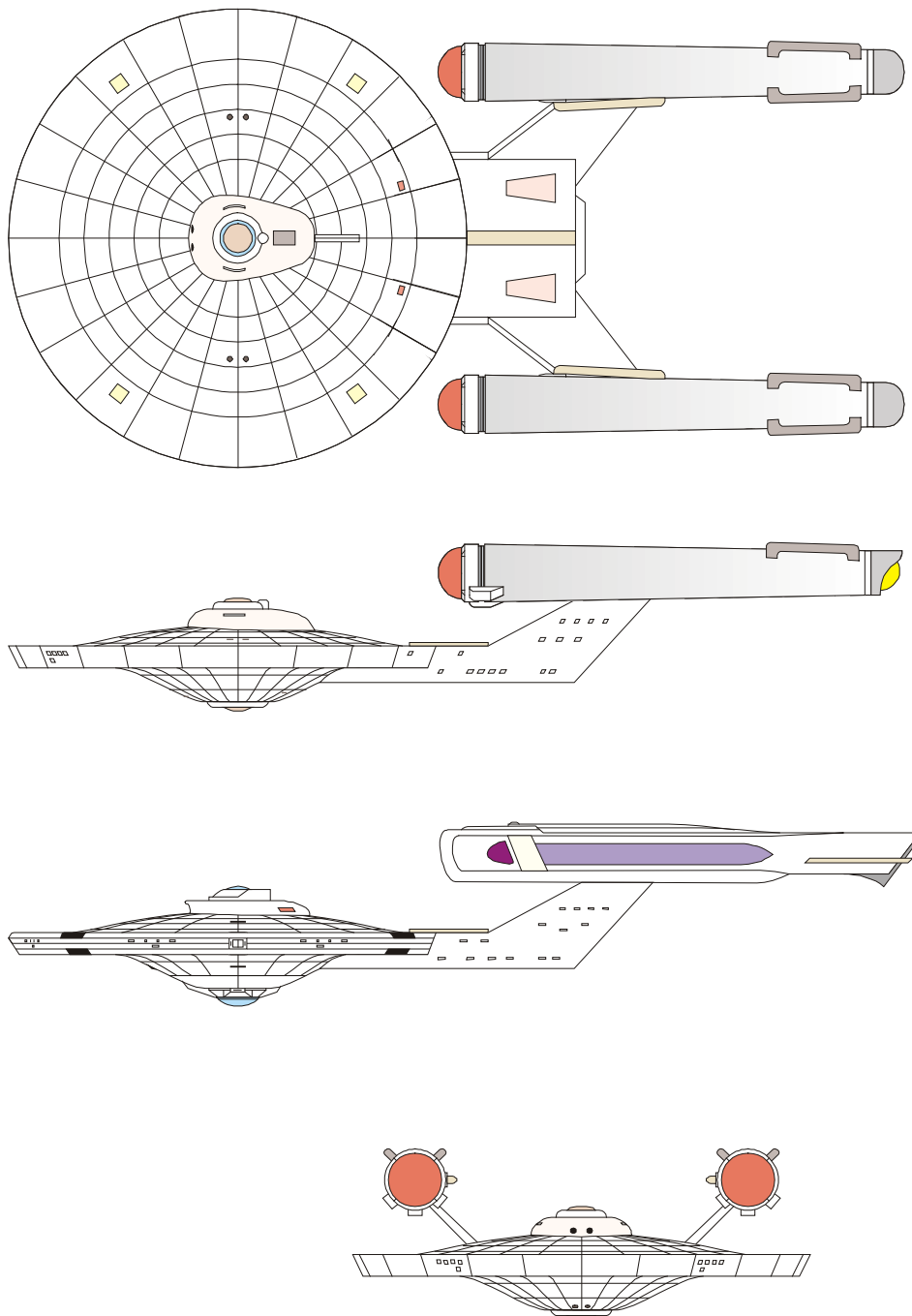
APPENDIX

The following are examples of ship data sheets:



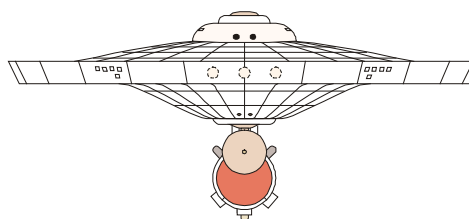
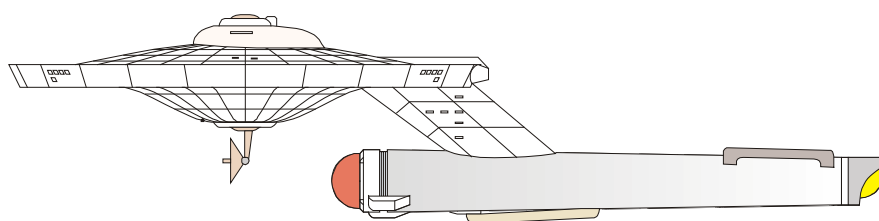
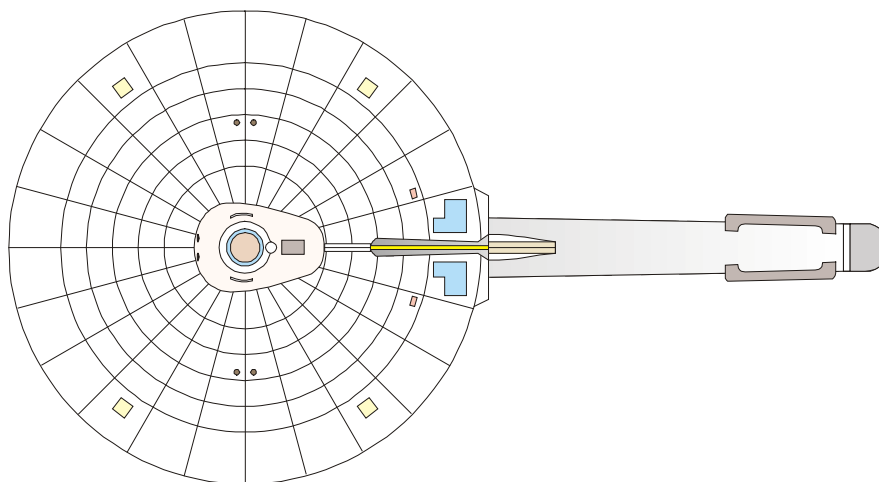
The U.S.S. Constitution heralded in the new Class 1 fleet. The ship was the first to be designed to take advantage of the new DiLithium focused warp drives and other breakthroughs in starship design and technology. Built as Heavy Cruisers, this class set a new standard in starship classification and soon relegated previous ship types to the reserve. The addition of phasers and photon torpedoes during the Four-Years War completed the changeover to the new 'Class 1' fleet design.

	Initial Configuration	Phaser Refit	Constitution II
Size			
Dimensions	288 x 127 x 69	288 x 127 x 70	300 x 138 x 72
Hull spaces	240	250	300
Structure			
Shields	Rated 54	Rated 60	Rated 96
Superstructure	45	45	80
Power & Speed			
Warp drive	72 GW	80 GW	120 GW
Impulse	24 GW	24 GW	36 GW
Auxiliary	5 GW	4 GW	4 GW
Cruising speed	W 6.0	W 6.0	W 8.0
Emergency speed	W 7.5	W 8.0	W 10.0
P-W ratio	9.5 / 1	10 / 1	12 / 1
Complement	350	430	420
Shuttles	7	7	8
Armament	FLC+ 2 F 2 P 2 S 2 A FA4 4 F	FH3 2 F 2 P 2 S 2 O FP2 2 F	FH3+ 4 F 4 P 4 S 2 O FP2 2 F
SYSTEMS	S ₃ 18 A ₃ 15 LW ₄ 18 I ₂ 12 B 5 Q 38 X ₄ 6 C ₄ 5 L ₄ 10 V 7 Tr 4 Tb 2 H 20	S ₃ 20 A ₃ 15 LW ₄ 20 I ₂ 12 B 4 Q 45 X ₄ 6 C ₄ 5 L ₄ 10 V 7 Tr 4 Tb 2 H 17 Mg 3	S ₄ 22 A ₄ 15 LW ₅ 24 I ₃ 12 B 4 Q 45 X ₅ 8 C ₅ 5 L ₅ 12 V 8 Tr 4 Tb 2 H 26 Mg 4



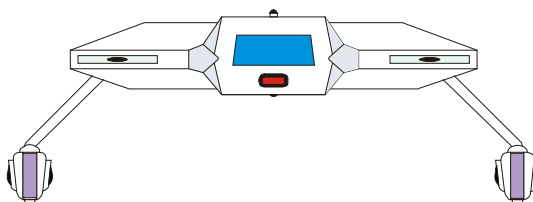
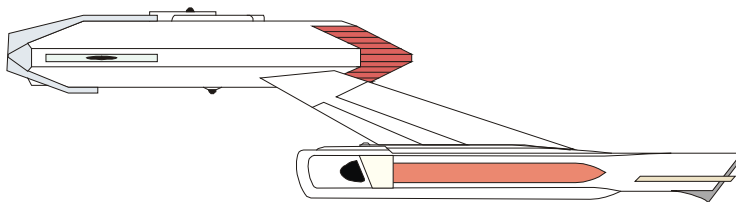
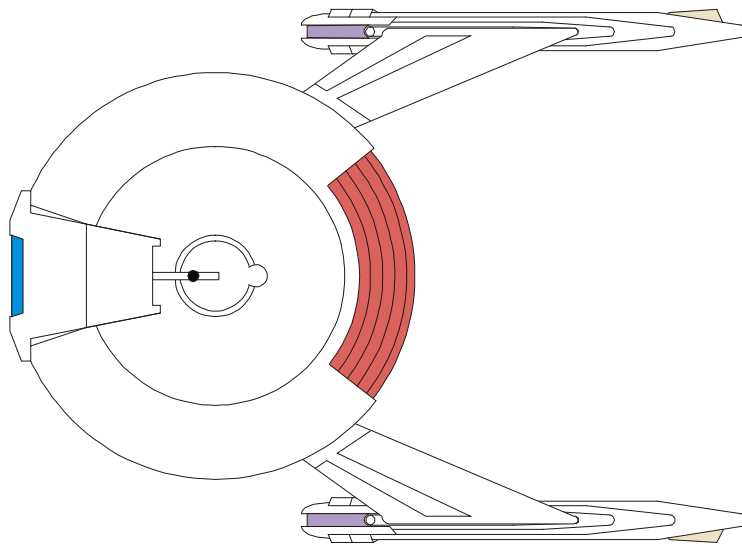
This Class 1 vessel is designed to replace an aging Light Cruiser population. It is the first class to use a modified Class 1 hull, and the first class to be designed with phaser and photon torpedo armaments. The class, comprising 1364 vessels, endured through two refits, and remains the original *Class 1* Light Cruiser. Up-rated with new technology, the Loknar is now considered to be a bit small for the current light cruiser role.

	Initial Configuration		New Technology Refit	
Size				
Dimensions	257 x 127 x 46		263 x 127 x 52	
Hull spaces	175		175	
Structure				
Shields	Rated 45		Rated 60	
Superstructure	42		56	
Power & Speed				
Warp drive	56 GW		70 GW	
Impulse	20 GW		24 GW	
Auxiliary	4 GW		4 GW	
Cruising speed	W 6.5		W 7.5	
Emergency speed	W 8.0		W 10	
P-W ratio	7.0 / 1		7.0 / 1	
Complement	250		250	
Shuttles	4		4	
Armament	FH2 2 F		FH2+ 4 F	
	2 P		4 P	
	2 S		4 S	
	2 A		2 A	
	FP2 2 F		FP5 2 F	
SYSTEMS				
	S ₃	15	S ₄	15
	A ₃	14	A ₄	14
	LW ₄	14	LW ₅	14
	I ₂	10	I ₃	8
	B	4	B	4
	Q	27	Q	27
	X ₄	3	X ₅	3
	C ₄	4	C ₅	4
	L ₄	3	L ₅	3
	V	4	V	4
	Tr	3	Tr	3
	Tb	1	Tb	1
	H	11	H	12
	Mg	2	Mg	3



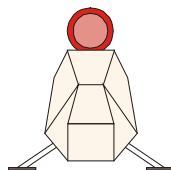
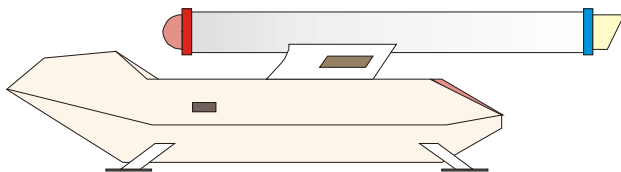
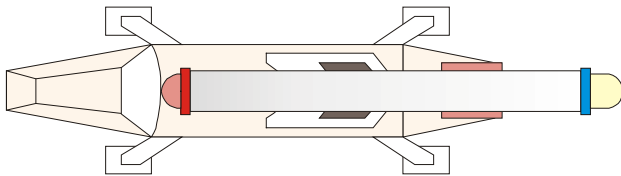
Designed to take advantage of the new breakthroughs in starship design, this ship class was created using the modular components of the new Constitution class. The Saladin and Hermes made excellent companions to the Constitution Class, and formed the basis for the new Class 1 fleet. Up-rated during the Four Years War with phaser and photon armament they served through the Galactic War. Like the Constitution class, these ships were refitted with new technology.

	Initial Configuration		Phaser Refit		Hermes class Scout	
Size						
Dimensions	228 x 127 x 58		228 x 127 x 58		228 x 127 x 58	
Hull spaces	140		142		140	
Structure						
Shields	Rated 30		Rated 36		Rated 36	
Superstructure	30		30		30	
Power & Speed						
Warp drive	40 GW		44 GW		44 GW	
Impulse	20 GW		20 GW		20 GW	
Auxiliary	3 GW		2 GW		2 GW	
Cruising speed	W 6.0		W 6.0		W 6.0	
Emergency speed	W 7.5		W 8.0		W 8.0	
P-W ratio	5.5 / 1		5.5 / 1		5.5 / 1	
Complement	180		180		170	
Shuttles	2		2		2	
Armament	FLC+	2 F	FH3	2 F	FH3	2 F
		2 P		2 P		
		2 S		2 S		
	FA3	3 F	FP1	2 F		
SYSTEMS	S ₃	10	S ₃	12	S ₃	12
	A ₃	10	A ₃	10	A ₃	10
	LW ₄	10	LW ₄	11	LW ₄	11
	I ₂	10	I ₂	10	I ₂	10
	B	3	B	2	B	2
	Q	20	Q	19	Q	19
	X ₄	5	X ₄	5	X ₄	5
					Xs ₄	16
	C ₄	3	C ₄	3	C ₄	4
	L ₄	4	L ₄	3	L ₄	8
	V	2	V	2	V	2
	Tr	2	Tr	2	Tr	2
	Tb	1	Tb	1	Tb	1
	H	12	H	10	H	10
			Mg	2		



The smallest vessel used by Starfleet for solo scouting missions in unexplored territory, the Ranger carries a large shuttle-bay and a hefty armament for a ship it's size. More economical than a class 1 starship, these starships are becoming popular as armed yachts.

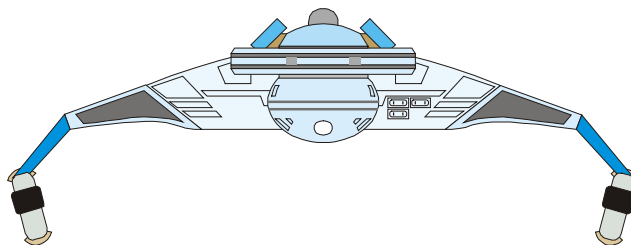
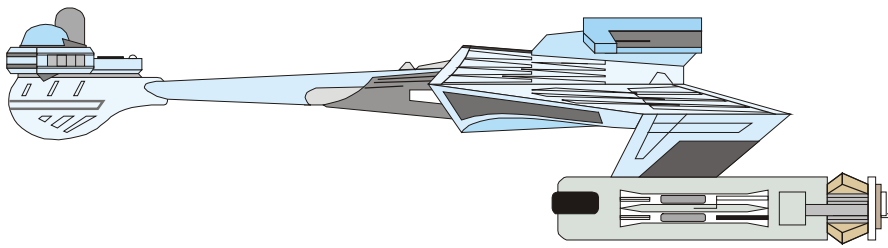
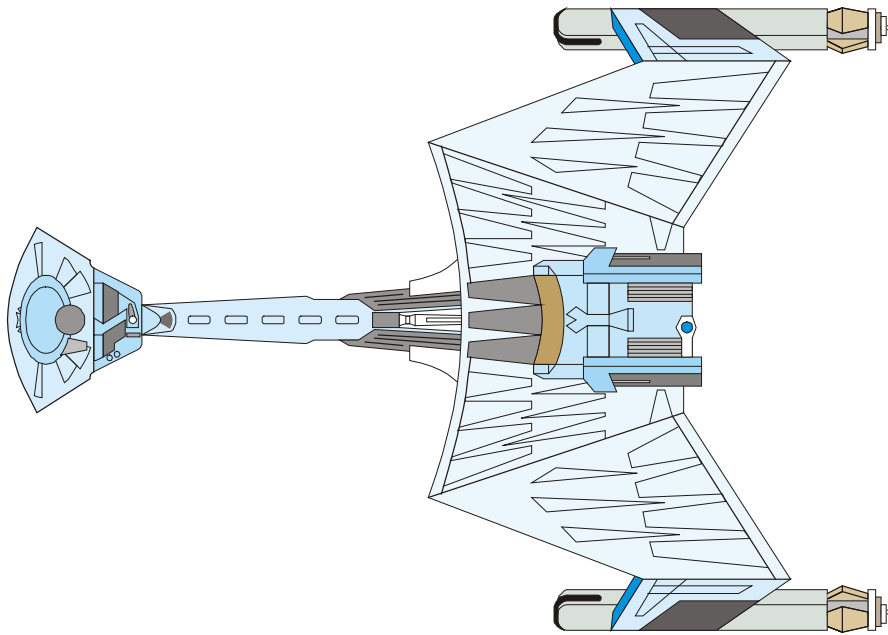
	Scout		Yacht	
Size				
Dimensions	99 x 72 x 26		99 x 72 x 26	
Hull spaces	55		53	
Structure				
Shields	Rated 36		Rated 27	
Superstructure	24		24	
Power & Speed				
Warp drive	20 GW		18 GW	
Impulse	9 GW		6 GW	
Cruising speed	W 8.0		W 6.5	
Emergency speed	W 10.0		W 9.0	
P-W ratio	2.0 / 1		2.0 / 1	
Complement	35		20 + 40 passengers	
Shuttles	3		3	
Armament	FH2+ 1 Pf 1 Sf 1 O FP4 1 F		FH2 1 Pf 1 Sf 1 O	
SYSTEMS	S ₄ 6 A ₄ 4 LW ₅ 4 I ₃ 2 B 1 Q 4 X ₅ 2 C ₅ 1 L ₅ 3 V 3 Tr 1 Tb 1 H 6 Mg 1		S ₃ 6 A ₄ 4 LW ₅₋ 4 I ₃ 2 B 1 Q 6 X ₅ 1 C ₅ 1 L ₅ 1 V 3 Tr 1 Tb H 9	



One of the smallest starships (as opposed to a shuttlecraft) built with standard shipboard components of its day. Designed by Cyrano Jones for his own use, the vessel has become a standard one person starship and small scout. It is possible to find versions with either deflector shields, a 2 person transporter or even armaments!

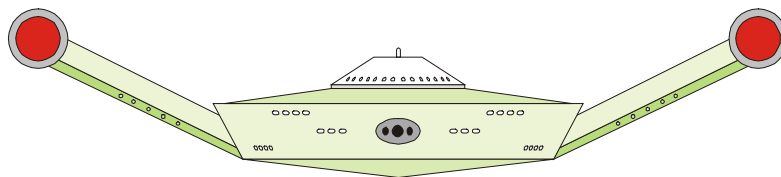
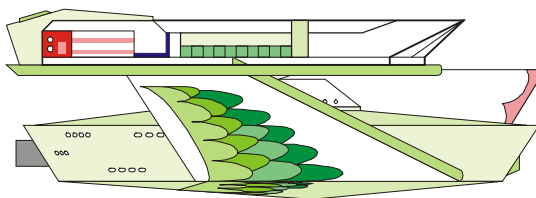
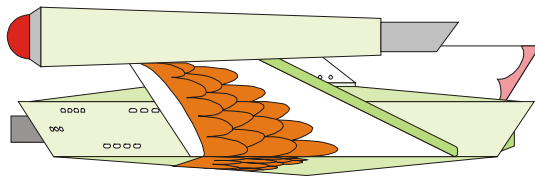
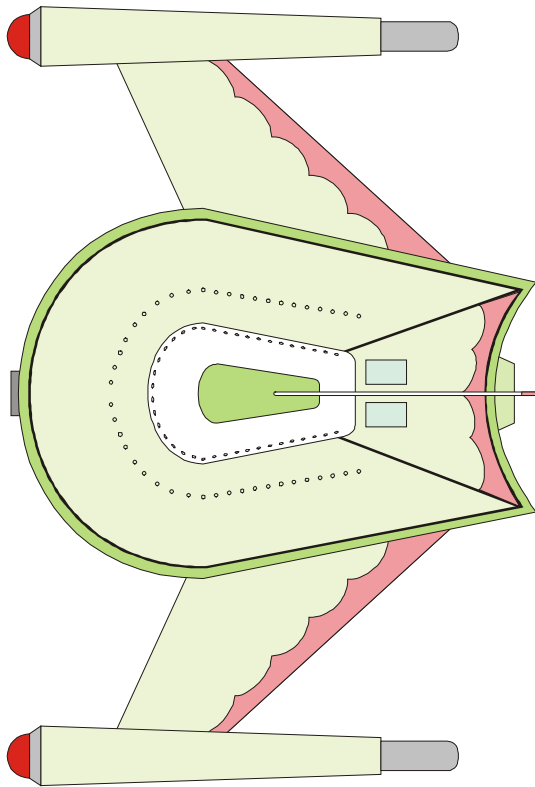
Some versions have changed the landing gear to make for a narrower (7 m) ship.

	Scout		Trader	
Size				
Dimensions	41 x 11 x 12		41 x 11 x 12	
Hull spaces	12		12	
Structure				
Shields	Rated 6		Navigational only	
Superstructure	6		6	
Power & Speed				
Warp drive	4 GW		4 GW	
Impulse	2 GW		2 GW	
Auxiliary	1 GW		-	
Cruising speed	W 6.0		W 6.0	
Emergency speed	W 7.5		W 7.5	
P-W ratio	0.5 / 1		0.5 / 1	
Complement	3		1 - 5	
Shuttles	-		-	
Armament	FH1	1 F+		
SYSTEMS	S ₃	1	S ₃	-
	A ₃	1	A ₃	1
	LW ₄	1	LW ₄	1
	I ₂	1	I ₂	1
	B	1		
	Q	1	Q	1
	CX ₃	1	CX ₃	1
	V _{TR}	1	V _{TR}	1
	H	1	H	4



The D-7 series of battle cruisers are a continuation of the Drell line of large ships. Faster and more powerful than the D-6, and also using advanced distrupctor weaponry, this class represented a traditional Klingon design strategy of incremental progress. Introduced during the Four Years War, the early encounters with the D-7 were inconclusive. The class itself was upgraded over the years, including the addition of photon torpedo weaponry during the Galactic War.

	D-7A (Klölode)		D-7B		D-7D (Keptor)	
Size						
Dimensions	240 x 169 x 64		240 x 169 x 64		244 x 169 x 64	
Hull spaces	190		200		200	
Structure						
Shields	Rated 38		Rated 40		Rated 36	
Superstructure	45		45		45	
Power & Speed						
Warp drive	56 GW		64 GW		64 GW	
Impulse	20 GW		20 GW		20 GW	
Auxiliary	5 GW		5 GW		4 GW	
Cruising speed	W 6.0		W 6.0		W 6.5	
Emergency speed	W 7.5		W 8.0		W 8.0	
P-W ratio	7.5 / 1		8.0 / 1		8.0 / 1	
Complement	320 + 210 troops		320 + 210 troops		320 + 210 roops	
Shuttles	5		5		5	
Armament	KD2 3 F		KD3 2 F		KD2 2 F	
	2 S		2 S		KD3 2 S	
	2 P		2 P		2 P	
	KD2P 4 F		KD2P 4 F		KD2P 4 F	
					KP1 1 F	
SYSTEMS						
	S ₃₋	15	S ₃₋	16	S ₃	12
	A ₃	15	A ₃	15	A ₃	15
	SW ₄	14	SW ₄	16	SW ₄	16
	I ₂	10	I ₂	10	I ₂	10
	B	5	B	5	B	4
	Qs	14	Qs	14	Qs	14
	Q	33	Q	33	Q	33
	X ₄	4	X ₄	4	X ₄	4
	C ₄	4	C ₄	4	C ₄	4
	L ₄	3	L ₄	3	L ₄	3
	V	5	V	5	V	5
	Tr	5	Tr	5	Tr	5
	Tb	1	Tb	1	Tb	1
	H	19	H	19	H	19
					Mg	2



After more than a century without contact with the Federation, the Romulans re-emerged with a daring cross-border raid by a single *Vas'hatham* class cruiser. Although the Romulan ship was destroyed by a *Constitution* class heavy cruiser, it showed itself to be a formidable combat vessel when under the command of an experienced captain. This ship, better known as the "Romulan Bird of Prey", was withdrawn from front-line service after the Romulans allied themselves with the Klingons and began to receive D7 cruisers. A modernized and refitted version appeared after the Galactic War.

	Initial Configuration		Refit	
Size				
Dimensions	144 x 210 x 46		144 x 206 x 52	
Hull spaces	135		140	
Structure				
Shields	Rated 25		Rated 40	
Superstructure	36		36	
Power & Speed				
Warp drive	35 GW		50 GW	
Impulse	10 GW		15 GW	
Auxiliary	4 GW		4 GW	
Cruising speed	W 6.5		W 7.5	
Emergency speed	W 6.5		W 9.0	
P-W ratio	5.5 / 1		5.5 / 1	
Complement	230		230	
Shuttles	2		2	
Armament	RI2 1 Fp 1 Fs 1 As 1 Ap RPL3 1 F		RI2 2 Fp 2 Fs 1 As 1 Ap RPL3 1 F	
SYSTEMS	S ₃₋ 10 A ₃ 12 LW ₃₊ 10 I ₁ 10 B 4 Qs 24 X ₃₋ 3 C ₃₋ 3 L ₃₋ 1 V 2 Tr 2 Tb 1 Cl ₃ 3 H 11		S ₄ 10 A ₃ 12 LW ₅ 10 I ₂₋ 0 B 4 Qs 24 X ₄ 3 C ₄ 3 L ₄ 1 V 2 Tr 2 Tb 1 Cl ₄ 3 H 11	

