

Star Fleet battles construction and Design System.

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Basic parameters (0)

Starships have a number of core features regardless of their race or design, and these are mainly dependent on the size of the hull. This table categorises them.

Ship Class	Life support	Energy for Shields	Heavy Hardpts	+Phaser Hardpts	Size Class	Move Cost	Excess Damage	Min Crew
Int	0	0	2	+1	5	0.167	2	2
PF	0	0.5+0.5	2	+3	5	0.2	2	2
Pol	0.5	0.5+0.5	2	+5	4	0.25	2	3
FF	0.5	0.5+0.5	2	+6	4	0.33	3	4
DD	0.5	0.5+0.5	4	+7	4	0.5	3	4
DW	0.5	0.5+0.5	3	+8	4	0.5	3	4
CW	1	1+1	4	+8	3	0.67	4	4
CL	1	1+1	4	+8	3	0.75	4	4
CA	1	1+1	4	+10	3	1	4	4
BCH	1	1+1	4	+12	3	1	6	4
DN	1.5	1+3	6	+16	2	1.5	8	5
BB	2	2+5	10	+20	2	1.5	10	6
LTT	1	1+1	2	+7	3	0.67	5	4
TG	1	1+1	2	+10	3	1	6	4
Sml pd	(1 weight)	-	2(3)	+2	4	n/a	+1	2 (except cargo pods)
Lrg pd	(2 weight)	-	4(6)	+2	4	n/a	+2	3 (except cargo pods)

Heavy hardpoints are primarily for heavy weapons. They can be converted on a 1:1 basis into phaser hardpoints. Most heavy weapons use a single heavy hardpoint, but this varies.

Phaser hardpoints are used primarily for phasers, although some seeking and heavy weapons may use them. Phaser hardpoints may NEVER be converted to heavy hardpoints.

A ships' design may not exceed the hardpoint limitations. (Exception – when I have the time to introduce shock rules).

Tugs may sacrifice all heavy hardpoints to allow them to carry small pods with 3 hardpoints, or large pods with 6. Small pods are built as if they were size 12 (+0.25mass/ mass tech, min 3 hull unless all cargo), Large pods as if they were size 22 (+0.5 mass/mass tech, min 6 hull unless all cargo). Pods always have aft hull when attached, or centre hull when unattached. Hull boxes on pods do not acquire hull points, but there must be at least as many hull boxes as heavy weapons and phasers (phas-3s counts as ½).

Pod weights and move cost of tugs:- Tug get 1 worse turn mode per pod weight. (large = 2 weights). Tugs can carry a maximum of 2 pods (within their weight allowance), and have two alternative arrangements. (1) Two small pods are carried side by side – no large pods can be carried, and two pods must be carried (2) Two pods can be carried in a central position - tandem, the first may be large. When towing 2 pods in tandem, the back (small) pod cannot use any of its heavy hardpoints. One pod can also be towed in a central position as well.

	Pods weights	1	2	3	4
LTT	0.67	1	1.33	n/a	n/a
TG	1	1	1.5	2	n/a

Excess damage has no mass or economic cost. It is intrinsic to the ship. Extra boxes cost 1/2/3/5/8/11/19 EPV increasing as you successively add boxes.

Technology System(1)

This first section outlines all the technology for building starships. At this point during a first reading, it is not necessary to understand how to do the designs, but this section will give an important impression on how technology influences design, and thus needs to be described first. Apart from technology, the basic resource is EPs – economic points. The EPV will be close to the BPV of the designed ship, however the system requires a separate calculation for BPV. In a campaign system or scenario, the players should have the same EPV, spending up to an agreed limit. For strict SFB balanced battles, use BPV. However, please note that using BPV will partially abrogate any advantages players may have acquired from good designs.

Techblock system (1.1)

This construction system loosely uses the techblock system as outlined in “campaign designers handbook”. However, as players will be designing their own ships rather than using standard SFB ships, many of the tech-blocks are missed out. or are simply unnecessary. Also, there are more restrictions on what can be researched and what is assumed to make the design system more workable.

All techblocks comes with an assigned technology cost, and a certain amount should be given to players to purchase techblocks around which they can design their ships. Obviously, the more technology that you give a player, the better the ships they will be able to design.

This system does not encompass Andromedan, Jindarian, Omegan, or X-technology. (I could work on them later, esp it would be nice to get PA panels balanced).

Assumed Technologies

- 1) Reinforcement, shield repairs, and specific shield dropping.
- 2) All static defences except fighter and PF modules/bases, which are assumed when a player has spent 100 technology on fighters, or has PFs.
- 3) Electronic warfare, Scout sensors.
- 4) All manoeuvring technologies (emdec nimble, mid-turn speed changes, etc.) except positron flywheel, which is not in this system.
- 5) Admin and GAS shuttles with all their options. SWACS are not covered in this system (yet).
- 6) All marine techblocks
- 7) Battle, troop, pseudo, cargo Pods, Freighters, Q-ships, Refits (see later)
- 8) Phaser holding, down-firing, capacitors, and phaser classes 2/3/4.

Of course, players may consult the campaign manual, and assign technology costs for these assumed technologies. However, integrating these into a full ship design system will considerably increase the complexity.

Starship |Hull type Techblocks (1.2)

All players are assumed to start off with the technology for the 5 basic starship class sizes available, from which they can design 3 hulls. These are in order of movement costs Pol (1/4), FF (1/3), DD (1/2), CL (3/4), and CA (1). Every new hull above three of these costs 20 Technology points to develop. For instance, if playing a campaign where technology increases over time, a player may decide that his CA is so hopelessly out of date that it is not worth upgrading, and wants to design a new CA. That will cost 20 technology points. Buying a techblock for a ship size class does NOT allow to automatically build a ship that size, you must spend the 20 technology points to design *any* new hull.

Further Hull Technologies (1.21)

	Tech	prerequisites	
DNs	20	none	
CWs	30	Hull Tech 2	
DW	20	CW	
BCHs	20	DW,DN	(the player must have been at war for 5 years)
BBs	50	DN	

Please note that all these ships, with the exception of the BCH, will pay surcharges for their warp engines unless the player buys warp technology. A BB cannot be built at all until a player has Warp-technology level 1.

General Ship technologies.(1.3)

These are unique to this design system, and are an essential feature of it. They come in a number of areas as shown in the table 1.31. All of them come in levels. You must buy the first level before the second, and so on.

Technology costs (1.31)

Item	Level									
	1	2	3	4	5	6	7	8	9	10
Mass	10	15	15	20	20	25	25	30	30	35
Hull	10	10	10	15	15	20	20	25	25	30
Shield	10	10	10	10	15	15	15	20	20	25
APR	20	25	30	35						
Battery	15	20	25	30						
Impulse	15	20	30	40						
Phaser Arcs	15	25	35	50						
Warp/AWR	30	50	80	120	170					

Item	Level				
	11	12	13	14	15
Mass	35	40	45	50	55
Hull	30	35	35	40	45

Mass Technology (1.32)

Every ship size class has a default maximum mass. However, this can be increased if a player purchases Mass technology. Therefore, use the formula below to calculate the maximum allowable Mass, rounding to the nearest quarter point.

Ship Class	Movement cost	Base Mass	Additional mass per Mass tech
INT	0.167	10	0.25
PF	0.2	20	0.25
POL	0.25	27	0.25
FF	0.33	35	0.5
DD,DW	0.5	47	0.5
CW	0.67	62	0.75
CL	0.75	69	0.75
CA,BCH	1	85	1
DN	1.5	122	1.5
BB	2	165	2

- BCHs and DWs get a bonus of 8 and 4 mass respectively.

e.g. A player has 5 mass technology and wishes to build a DW. The basic mass of a DD/DW is 47 is increased by 4 because this is a DW, and also increased by 2.5 (5*0.5) for the players technology level. The DW has a maximum mass of 53.5.

Hull Technology and system workings (1.33)

Hull is the most complex system on a ship. A strong hull is used to improve the ship in a number of ways. Each ship size class MUST have a certain amount of hull mass in its design as depicted in the table below (next page). This is required for supplies, hull infrastructure, etc.

However, there is a secondary, more important concept at play, called hull integrity. A ship's hull integrity starts as equal to the player's hull tech. It cannot be increased, but may be decreased even to negative levels by increasing the proportion of centre hull and centre warp on the ship (see respective sections).

The required hull mass is then calculated, by subtracting a number as defined by the following formula, rounding to the nearest whole number (0.5 rounds to 1, -1.5 rounds to -1):-

$$\text{Required Hull mass} = B - (H * M)$$

H= Hull integrity rating

M= Movement cost of ship.

B= base hull mass given in the table below

n.b. a negative hull integrity *increases* the required hull mass.

It is MANDATORY that the design has the required hull mass. Hull mass in excess of this is credited to the player as hull points. Hull points can be spent on increasing the breakdown rating and turn modes of the ship, as well as increasing the maximum crew limit. However, if in the process of designing the ship's warp engines, a player has accepted a worsening of the turn mode or breakdown rating (see 1.351), hull points cannot be used at all for ANY improvements.

Normally, hull mass is equal to the number of hull boxes on the SSD. However, a player may sacrifice 2 SSD boxes (hull mass stays the same) to gain a hull point. The number of SSD boxes must remain at least half the base hull mass.

Size Class	Base Hull Mass	Breakdown rating				Turn Mode						
		3-6	4-6	5-6	6	E	D	C	B	A	AA	nimble
Int	3				Start						Start	+1
PF	4			Start	+1					Start	+1	+1
Pol	6	-	Start	+1	+1				Start	+1	+1	+1
FF	8		Start	+2	+1				Start	+2	+1	+2
DW	10	-	Start	+3	+2			Start	+2	+2	n/a	n/a
DD	10	Start	+2	+3	+2			Start	+2	+2	n/a	n/a
CW	12	-	Start	+3	+3		Start	+2	+2	+4	n/a	n/a
CL	14	Start	+2	+3	+3		Start	+2	+3	n/a	n/a	n/a
CA	16	-	Start	+4	+4		Start	+2	+4	n/a	n/a	n/a
BC	16	Start	+2	+4	+4	Start	+2	+3	+5	n/a	n/a	n/a
DN	24	Start	+3	+8	+7	Start	+3	+6	+10	n/a	n/a	n/a
BB	36	+4	+9	+14	n/a	+4	+6	+14	n/a	n/a	n/a	n/a

LTT/TG As CW/CA.

* “start” Units start at this turn mode/breakdown rating by default. If there is no “start” on that row of the table(BB) the unit starts off with 2-6 breakdown rating and/or F turn mode.

* “+#” Spending this number of hull points upgrades the ships abilities to the next level.

Nimble:- A ship must have a breakdown rating of 6 before it can be made nimble. No ships bigger than an FF can be nimble.

n/a – not allowed

A hull point may also be used to increase the number of excess damage boxes on the ship by 1. (max 50% extra).

NB A ship’s maximum crew is equivalent to its double its hull mass. Each hull point not spent on breakdown rating or turn mode can be used to increase the maximum crew by 3 units. Each crew unit can be allocated to be 2 marines or deck crews for 0.5 EPV per marine or deck crew (basic crew units are free). A ship may not have more transporters than its crew units divided by 8 (round all fractions up in this case).

E.g. The Klingons have 4 Hull Tech and a Klingon D6 spends 19 mass on Hull.

The hull requirement for CA's is 16 mass, so the Klingon D6 starts with 3 hull points, + 4 for its hull technology. 8 of the 19 potential SSD boxes are sacrificed for another 4 hull points to bring the total to 11 hull points. The hull points are spent on upgrading the breakdown rating to 5-6 (4), increasing the turn mode to B (2+4), and an extra 4 crew units.

The Klingon D6 has 11 hull SSD boxes, breakdown 5-6, turn mode B, and 23 Crew. It cannot have more than 5 transporters.

Hull distribution (1.331)

If given the option with no restrictions, players will choose to have all centre hull. There are several ratios of hull that are considered standard. As one approaches a more central distribution of hull, the difficulty of designing the ship increases, and hull integrity is lost. (i.e, the hull protects systems better rather than lend structural support for violent manoeuvres).

Ratio of Forward:centre:aft hull	Hull integrity adjustment
5:0:2 or 2:0:5 or worse	+1
3:0:2 or 2:0:3 or worse	0
1:0:1 or worse	-1
1:0.5:1 or worse	-2
1:1:1 or worse	-3
All centre hull	-4

note that the *default* hull ditribution is a situation where one of forward/aft hull is much greater than the other – not good from a DAC point of view. If a ship uses boom technology all ships with booms must have a 5:0:2 ration

of aft hull:forward hull (or worse). If a ship uses saucer technology, a 5:0:2 ratio of forward:aft hull is required (or worse). These ratios cannot be improved by reductions in hull integrity as above, although boom/saucer ships get the +1 integrity bonus for the ratio they are forced into.

BOOMS - tech cost 50, 0.5 mass requirement (costs nothing). Ships cannot have more than ¼ of the total mass in the boom, and must have at least one inactive boom impulse to separate (or warp engines for DNs/BBs). DN booms may have up to 15 warp, BB booms up to 30 warp. A ship must have a movement cost of at least 0.5 in order to have a detachable boom

SAUCERS – tech cost 80, requires 1 mass (costs nothing). Ships cannot have more than ½ of the total mass in the saucer. DN saucers may have up to 15 warp, BB saucers up to 30 warp. A ship must have a movement cost of at least 1 in order to have a detachable saucer.

Shield technology and system workings. (1.34)

The table below gives the basic shield strength for all units (each shield is that strength). Depending on your shield tech, additional shield boxes are granted on each shield as shown in the cross-indexed number. Note that interceptors only have 2 shields, they have a base strength of 7 (front) and 5.

Unit	Basic		Shield Technology								
	Shields	1	2	3	4	5	6	7	8	9	10
Int	7/5	0	0	0	1	1	1	2	2	2	3
PF*	7	0	1	1	2	2	3	3	4	4	5
Pol*	8	0	1	1	2	2	2	3	3	4	4
FF*	10	1	1	2	2	3	3	4	4	5	5
DD/DW*	12/14	1	2	3	3	4	5	6	7	7	8
CW*	16	1	2	3	4	5	6	7	8	9	10
CL**	15	1	2	3	4	6	7	8	9	10	11
CA/BCH**	18/20	0	2	3	5	6	8	10	11	12	14
DN**	23	0	0	2	4	6	9	11	13	15	18
BB**	32	0	0	0	3	6	9	12	15	18	21

e.g. A player has 4 shield tech. His CA has shields of 18+5=23boxes.

There are several shielding alternatives

- All round shielding identical
- Focus on front shielding – For each *, add 2 to shield #1, 0 to shield #2/6, and subtract 1 from shields 3/4/5
- Front shields stronger and rear shields weaker. For each *, add 4 to shield #1, 1 to shield #2/6, and subtract 2 from shields #3/5, 4 from shield #4.

Players must choose the same shield option for all their ships. Switching options costs 20 tech points. Alternatively, this may be randomised.

APR/AWR/impulse/battery technology and system workings. (1.35)

Power systems in general are quite easy to fit onto a ship up to a certain level. After that, space, mass, and heat dissipation requirements make them progressively more difficult to install safely. This manifests in an increasing EPV cost as more systems are put onto the ship. The table below gives an EPV cost dependent on the size of the ship. (PS Wyn and LDR ships bend these rules- short range ships can have less stringent safety requirements).

Size Class	# = number of boxes at each cost level					
	Cost modification					
	0	+1	+2	+3	+4	+5
Int	1	0	0	0	0	1
PF	1	0	0	1	0	0
Pol/FF	1	0	1	1	0	1
DD/DW 2	1	1	0	1	1	1
CW/CL 2	1	1	1	1	1	1
CA	2	1	2	1	2	1
DN	3	3	3	3	3	3
BB	4	4	4	4	4	4

Example – A BB buying any of APR/AWR/battery/impulse buys its first 4 boxes of these systems at the lowest cost modification of “0”. The next 4 boxes (batteries 5-8) come at a cost modification of +1, subsequent boxes being more expensive still. The BB can have a maximum of 24 boxes in any one of the systems

To find out the cost of the system at each cost level, refer to the table below, where the number given is the EPV for the system at that cost level.

Cost Level	1-3	4	5	6	7	8	9	10	11	12	13
EPV cost/box	0.5	1	1.5	2	2.5	3	3.5	4	5	6	7

Base cost level for systems.

Battery = 5, APR=7, AWR=8, Impulse=9. (if a cost level becomes >13, the system cannot be installed)

Reduce the cost level of an item by the technology level of the race in that power system. to give the modified cost level. This is then increased as given above as the number of power boxes are increased on the ship.

Example:- The player wants 15 battery on his BB, having battery tech level 3.

Base cost level = 5, Modified cost level = 5-3 = 2

1st 4 batteries cost $4 \times 0.5 = 2$ EPV (cost level 2)

Batteries 5-8 cost $4 \times 0.5 = 2$ EPV (cost level 3)

Batteries 9-12 cost $4 \times 1 = 4$ EPV (cost level 4)

Batteries 13-15 cost $3 \times 1.5 = 4.5$ EPV (cost level 5)

Total cost of battery suite = 12.5EPV.

If a player decides to have a ship with no APR or AWR, the base cost level for impulse is reduced to 7. (i.e impulse is reduced to just over half price). A ship may have AWR or APR, but not both. AWR must be developed as a technology addition for 50 technology points. Note that AWR tech is the same as warp tech, as AWR is simply a warp engine that is not set up for movement.

Warp technology and system workings. (1.35)

This system is again quite complex, but addresses the reason why some galactic ships had less than the optimum 30 hexes of movement from warp, and why fast ships were ultimately unsuccessful.

In this chart, the number is the maximal number of warp boxes that the ship class can have at the given warp technology level of the player. If there is an “X” written in, the ship class simply cannot be built unless the player has a higher warp technology level (exception: see below)

Ship Class	Warp Technology					
	0	1	2	3	4	5
Int	X	X	X	4	4	4+4*
PFs	X	X	X	X	6	6+6*
Pol	8	8	8	9	10	12
FF	9	10	10	12	14	15
DD/DW	12	14	15	16	18	20
CW	X	18	20	22	24	27
CL	15	18	21	24	27	30
CA/BCH	20	24	27	30	33	36
DN	X	X	42	45	48	54
BB	X	X	X	60	64	72

* warp booster packs

Many times, a race decided they needed faster ships, and were prepared to pay a considerable premium on their warp engines to have the extra speed. To reflect this a player can build ships as if he had 1 higher warp tech, but then the ENTIRE warp engine comes with a 20% EPV surcharge. Going further still, the player can build as if he has 2 higher warp tech, but the engine carries a 50% surcharge. Each Warp box has a base EPV of 3

e.g. A player wants to build a BB, but only has 1 warp-tech. He can “pretend” he has 3 warp tech, as he wants the BB at any price. The 60 warp boxes have a base price of 180EPV, but the 50% surcharge takes that up to a whopping 270EPV.

Warp distribution. (1.351)

It has long been known that centre warp gives a considerable advantage because it is hit late on the DAC. However, in this system, it comes at a price because it is harder to mount all the power generation onto one location (safety problems and bigger engine), and it is harder to turn a ship with the warp at the centre.

There are 4 types of Warp distribution. The ratios must be adhered to *exactly*. If you cannot make the ratio, you must change the amount of warp engine in your design. No single warp engine can be more than 24 boxes. All penalties here are cumulative. i.e. if you want 100% centre warp (ratio 4), then you must pay the penalties mentioned in ratios 2 and 3 as well.

Ratios

- 1) 50:50 left:right warp. This is the standard ship ratio, and carries no penalties.
- 2) 33:33:33 left,centre, and right warp. The player must reduce hull integrity by 2 for this ship (round fractions normally and see 1.33) or his warp engine maximum is limited as if his warp technology was 1 lower.
- 3) 25:50:25 left,centre, and right warp. The player must reduce hull integrity by 1 for this ship or the ship's turn mode is worsened by category.
- 4) All centre warp. The player must reduce hull integrity by 2 for this ship or the ship's breakdown rating is lowered by one category.

Phaser Arc technology and system workings. (1.36)

Many design systems have simply had the player pay a surcharge for phasers with better arcs. The problem with this approach is that a player has no incentive to put any phasers onto rear-facing arcs except a few phas-3's, -FH or FX arcs will become dominant. In reality, putting phasers on rear arcs would be easier, as heavy weapons will nearly always take up the prime forward-facing weapon hardpoints on the ship.

In this system, each phaser comes with a certain number of arc points depending on its type and the player's arc technology, as depicted in the first table below. These arc points are then totalled, and can be spent on phaser arcs in the second table below. For 0.5 mass, a ship is granted with an extra 3 arc points.

table 1, # = arc points per phaser installed.

Phaser type	Arc Technology.				
	0	1	2	3	4
Phas-1,2	4	5	6	7	8
Phas-3	1.33	1.66	2	2.33	2.67

table 2 # = Cost in arc points for each phaser and its arc.

Arc	Phaser type	
	Phas1/2	Phas3
360	11	3.67
FX,FX+directly rearward*	10	3.33
RS+LF,LS+RF,FH+L,FH+R	9	3
RX,RS+LR,LS+RR,FH,FA+R,FA+L	8	2.67
LS,RS,RF+R+LR,LF+L+RR	7	2.33
RH,RA+R,RA+L,FA,R+L	6	2
R+RF,L+LF	5	1.67
RA,R+RR,L+LR	4	1.33
LF,RF	3	1
L,R	2	0.66
LR,RR	1	0.33

* - only allowed on booms; phaser-3s may not have this arc.

Heavy Weapons Techblocks (1.4)

These tables encompasses a number of Techblock tables from the SFB campaign manual, and considerably changes the technology required for many elements. This is because players are no longer working within a race framework with preset ships, and as a result much more careful balancing is required.

For each heavy weapon, there are normally 2 values. The second is the cost for developing the overload function of the weapon.

A player may only research two heavy weapon classes at the given cost in tech and EPV. For this purpose (only), the phas-G counts as a heavy weapon while fusion beams do not count as a heavy weapon. The third heavy weapon costs a 50 Tech surcharge and its systems costs 1.5 times as much, while a fourth heavy weapon cost a 100 tech surcharge, coming at double the cost. This is to reflect the logistical problems of inventing and supporting a diverse weaponry. Once the tech surcharge is paid, subsequent tech costs for the weapon are normal.

Weapon	EPV	Tech	Mass	Hardpoints required		Prerequisite
				Heavy wpn	+Phaser	
Fusion Beam	1	25(15)	1	1	OR +2	None
Fusion Holds	+0.5	20	+0	+0	+0	Fusion
Fusion Suicide OL	+0.5	15	+0	+0	+0	Fusion overload
Hellbore*	6	55(20)	2.5	1	+0	Fusion (optional)
ESG (3 power max)	5	45	3	0	+1	None
Full ESG (5pwr)	+1	25	3	0	+1	ESG
ESG capacitor	+2	25	+0.5	+0	+0	ESG
PPD**	10	70(35)	4	1.5 (round UP)	+1	Plas-S (optional)
Mauler cannon	14	65	8	2	+2	None
Disruptor range-10	2	incl#.	2	Varies	Varies	None
range 15	3	incl#.	2	Varies	Varies	None
range 22	4	60(30)	2	Varies	Varies	(DSR10-22- one tech)
range 30	5	25	2	Varies	Varies	DSR-22
range 40	6	15	2	Varies	Varies	DSR-30
Derfacs	2	40	+0	+0	+0	DSR-30
UIM	3ea	60	+0	+0	+0	DSR-22
180 arc DSR	+1	30	2.25	Varies	Varies	DSR-22
210 arc DSR	+2	30	2.5	Varies	Varies	180 arc DSR
240 arc DSR	+3	30	2.75	Varies	Varies	210 arc DSR
Photon	3	65(30)	2	1	+0	None

*If fusions are made a prerequisite, reduce the tech cost of hellbores to 55.

** If plas-S are made a prerequisite for PPDs, reduce their tech cost to 50. PPDs are normally deployed in balanced pairs, hence the strange hardpoint requirement.

Incl# – included in tech cost given below in the table.

Disruptors are very unusual in that they require a different number of hardpoints depending on their range and the size of the ship they are installed in. This is to reflect that only the larger ships have 40-range DSR in SFB. The numbers in this table give the number of heavy weapons hardpoints required, while “+X” gives a number of additional phaser hardpoints required.

DSR Range	Ship size class	Pol,FF,DD,	DW,CWCI,CA	BCH,DN,BB
	Int.PF			
10	1	1	1	1
15	1+1	1	1	1
22	1+2	1+1	1	1
30	2+2	1+2	1+1	1
40	n/a	n/a	1+2	1+1

DRONES

Weapon	EPV	Tech	Mass	Hardpoints required Heavy wpn	+Phaser	Prerequisite
Rack A	1	incl.	1	0	+1	
Rack F (2 boxes SSD)	1	incl.	2	0	+1	
Type-1Drn	n/a	incl.	1sp	n/a	n/a	
Drone cont= half sensor	1	20	+0	0	0	None
Drone cont= sensor	2	10	+0	0	0	DC=half sensor
Drone cont= dbl sensor	4	30	+0	0	0	DC=sensor
Rack B	2	15	1	0	+1	A rack
Rack C	2	15	1	0	+1	A rack
Rack D (3 boxes SSD)	4	10	2	1	OR +2	B rack
Rack E	3	10	1	0	+1	ADD6
Rack G	2.5	20	1	0	+1	B/C racks
Rack H (3 boxes SSD)	4	10	4	1	OR +2	D rack
Type-4*	n/a	5	2sp	n/a	n/a	Type 1
Type-3	n/a	10	1sp	n/a	n/a	Type 1
Type-3 XX	n/a	10	1sp	n/a	n/a	Type 3
Type-2*	n/a	20	1sp	n/a	n/a	Type 1
Type-6	n/a	10	0.5sp	n/a	n/a	Type 1
Speed 20	n/a	30	+0	n/a	n/a	Type2, Warp tech 2
Speed 32	n/a	30	+0	n/a	n/a	Spd20, Warp tech 4
ATG guide	n/a	10	n/a	n/a	n/a	Type 1
Multi-war drn	n/a	15	n/a	n/a	n/a	Type 4
ECM drn	n/a	40	n/a	n/a	n/a	Type 1
Armoured drn	n/a	10	n/a	n/a	n/a	Type 1
Slug Drn	n/a	10	n/a	n/a	n/a	Armoured drones
External armr	n/a	5	n/a	n/a	n/a	Armoured drones
Probe drone	n/a	10	n/a	n/a	n/a	Type 1
Kzinti sp. drone %	n/a	100	n/a	n/a	n/a	All rack types
ADD6	1	15	1	0	+1	Type A rack
ADD12	3	50	1	0	+1	ADD 6
ADD30	6	15	2	0	+1	ADD 6 (bases only)

*Type 5 drones are automatically acquired when the player has both Type 2 and Type 4 drones.

NB Stingray, stonefish, starfish, swordfish, and spearfish drones are not in this system. You can allocate tech costs and prerequisites for them if you want.

n/a – use standard SFB drone costs in a BPV battle. Else, I'll have to work out economic costs for this lot (ug).

NB - seeking weapons are generally less demanding on hardpoints, so often use phaser hardpoints.

PHASERS

Phaser 3	1.5	Assu	0.5	0	+0.5	none
Phaser 2	2	Assu	1	0	+1	none
Phaser 1 25%		20				none
Phaser 1 50%		20				Phas-1 25%
Phaser 1 75%		30				Phas-1 50%
Phaser 1 100%	4	30	1	0	+1	Phas-1 75%
Phaser G	5	110	1	0	+1	Phas-1 50%
Phaser 4	5	Assu	3	1	+1	none (Bases only)

Phaser-1 X% - no more than X% of the phaser 1s and phaser 2s on the ship may be phas-1.

Assu – assumed tech.

PLASMA

Weapon	EPV	Tech	Mass	Hardpoints required			Prerequisite
				Heavy	wpn	+Phaser	
Plas-G	3	35	2	1		+1	none
Plas-F	2	20	1	1		+1	Plas-G
Plas-R*	6	20	6	2		+2	Plas-F
Plas-S	4	10	3	1		+2	Plas-R
Plas-D	n/a	incl	1sp	n/a		n/a	inclu
Plas-D rack	3	50	1	1		+1	Plas-F
Swivel G	+1	10	+0	n/a		n/a	Plas-G
Swivel F	+1	10	+0	n/a		n/a	Plas-F
Swivel R	+3	20	+1	n/a		n/a	Plas-R
Swivel S	+2	15	+0.5	n/a		n/a	Plas-S
Pseudo F	1	5	0.25	n/a		n/a	Plas-F
Pseudo R	4	5	0.25	n/a		n/a	Plas-R
Pseudo S	3	5	0.25	n/a		n/a	Plas-S
Pseudo G	2	5	0.25	n/a		n/a	Plas-G
Shotgun	+0	15	n/a	n/a		n/a	Plas-S
Envelop	+0	15	n/a	n/a		n/a	Plas-G
Sabot Plasma	+0	30	n/a	n/a		n/a	Warp 5, APR 2, Plas-S
ECM plasma	+0	50	n/a	n/a		n/a	All pseudos
Rear Fs (a la ISC)	2	30	1.5	0		+1	Plas-F

NB Psuedos take up mass in the ship. Each tube may only have one pseudo plasma attached

* -Plas-Rs may not be installed on ships with a movement cost of less than 1. Only 1 per ship, except for BBs (2).

No ship except BBs can have more than three heavy plasmas (R,S,G). BBs can have up to 5.

AEGIS

Limited Aegis	+2/wpn	50	-	-	-	50% Phas-1
Full Aegis	+3/wpn	50	-	-	-	Limited Aegis

Only ADDs and Phasers can be attached to an Aegis system.

MINES (simplified)

Weapon	EPV	Tech	Mass	Hardpoints required			Prerequisite
				Heavy	wpn	+Phaser	
Mine Rack	1	0	1	0		+1	none
Minesweeping sensor	6	0	-	-		-	none
Small Mine	1	0	1/2sp	-		-	none
Large Mine	2	0	1sp	-		-	none
T-bomb	4	0	1sp	-		-	none
Fuses	1ea.	30					none
Small captor	2+wep	20	2sp				none
Large captor	5+wep	25	5sp				Small captor

Command-control mines cost triple

Shuttle Techblocks (1.5)

Weapon	EPV	Tech	Shuttle Mass	Prerequisite
120deg Phas-3	1	Assu	1	Assumed.
2nd Phaser (3)#	-5	n/a		none
3 rd Phaser (3)#	-	20	n/a	2 nd phaser -3
360 deg Phas-3#	1	10	2	none (max 1 phaser of this arc)
120 deg phas-2	3	40	4	Extra Phas-3, 50% phas-1
240 deg phas-2	5	20	5	120 deg phas-2 (hvy fighters only)
120deg Phas-G	4	40	3	Extra Phas-3, Phas-G
240 deg phas-G	6	20	5	120 deg Phas-G (hvy fighters only)
Disruptor	2	20	4	DISRUPTOR
Chaff	0.5	20	1ea.	none
Fusion (1 charge)	1	10	2	FUSION
Fusion (2 charge)	2	15	3	1-charge fusion.
Hellbore	4	40	6	HELLBORE
Photon	2	30	5	PHOTON
Plas-F @	2	20	4ea	PLAS-F
Plas-D	1	30	2ea	Plas-f (fighter)
Drone rail (Type I)	0.5	10/rail	1ea	Type I drone
Drone Rail (type III)	1	15/rail	1ea	Type III drone (max 4 rails)
Dogfight rail (type VI)	0.5	5/rail	0.5ea	type VI drone
Launch rate 2 drones VI+any	1	10	0	2 drone rails
Launch rate Any 2 drones 2	15	0		Launch rate 2 drones VI+ any
Launch rate 4 typeIII drones	4	40	1	Launch rate any 2 drones
shuttle ADD-6	2	20	4	ADD-6
Booster packs.	2	20	1	Warp-tech 5
EW Pod	5	30	5	
Fighter Dogfight tech	0	50/level	0	none (starts at tech-0, max tech-2)
Fighter launch tubes	1	30	0.25	none

Each fighter can have a maximum of one “heavy” phaser hard point (Phas2, Phas-G or phas-3) and a light hardpoint for a phas-3. The costs given are for placement of the light phaser hardpoint (cost for “2nd phaser”), which can be upgraded to a 360 degrees for a Phas-3. Heavy fighters can have a secondary light phaser hardpoint (cost for “3rd phaser”). However, if three phasers are put on a heavy fighter, the arcs of the two phas-3 (2 light phasers) MUST be LS/RS or both RX.

NB 1) Two 1-space drone rails can be coupled to launch a type-4 drone. Normal fighters may not have normally more than 4 drone rails total (but see below). Heavy fighters may not have more than 6.

NB 2) All shuttle-borne heavy weapons require the player to have researched the standard ship-borne heavy weapon.

NB 3) Normal fighters have one heavy weapon hardpoint, that must be FA in arc (drone rails are independent and in addition to this). The heavy weapon hardpoint can mount four (extra) drone rails, or 2 fusion beams, or 2 Pl-D, or one of a DSR, hellbore, photon, plas-F, or ADD-6, or 2EW pods. Heavy fighters have two heavy weapon hardpoints and can also mount 2 extra EW pods.

All races start off with an administrative shuttle. Each increase in size (hits on SSD) and speed requires a technology expenditure as given in the charts below. Fighters above size 14 are considered large (max size 24), and require an additional expenditure of technology for speed increases above 6. All size and speed technology require the size and speed at the next lower level.

Ships may not have more shuttle bays than (6-size class). Each shuttle bay more than 1 costs nothing but requires 0.25 Mass. (NB each shuttle bay is a group of shuttle boxes – more shuttle bays means you can launch shuttles faster). A faster launch rate requires launch tubes.

SIZE	Tech cost	BaseHull cost EPV	SIZE	Tech cost	Base Hull cost EPV
6	Ass.	1	16	10	3.5
7	5	1	17	10	3.5
8	5	1.5	18	15	4
9	5	1.5	19	15	4.5
10	5	2	20	15	5
11	5	2	21	15	5.5
12	10	2.5	22	20	6
13	10	2.5	23	25	6.5
14	15	3	24	30	7
15	10	3			

Speed	Tech Cost	Hvy fighter Add. tech	Engine Space	Engine cost EPV	Dogfight level 0	Dogfight level 1	Dogfight level 2
6	Ass	Ass	1	1	0	1	2
7	5	5	2	1	0	1	2
8	5	5	2	1	1	1	2
9	5	5	2	2	1	2	2
10	5	5	2	2	1	2	3
11	5	5	3	2	2	2	3
12	10	5	3	3	2	3	3
13	10	5	3	3	2	3	4
14	10	10	3	4	3	3	4
15*	15	10	3	4	3	3	4
16	25	15	4	6	3	3	4
17	25	15	4	6	3	4	4
18	25	15	4	7	3	4	4
19	30	15	4	8	3	4	5
20	30	20	5	9	4	4	5
21	30	20	5	10	4	4	5
22	35	25	5	12	4	5	5
23	40	30	5	14	4	5	5
24	50	35	5	16	4	5	5

* it is normal to use booster packs (doubles speed) to go faster than 15.

Dogfight Level#. These numbers give the fighter's dogfight rating according to the player's dogfight tech level. The Dogfight rating is reduced by 2 for each heavy weapon installed EXCEPT fusions and plas-D. The Dogfight rating is automatically zero if it is a large fighter. The base hull cost includes the cost of a cockpit.

Optional rule.

Total up all the technology points that have been spent on fighters. Fighters that use all of this technology have a 50% cost surcharge. For every 1% of the the total technology spent on fighters they need less than 100%, reduce the cost surcharge by 1%. This is to reflect that most races could only afford to field their best fighters on their heavy carriers.

Example:- A player wants to design a DSR fighter (20 tech) with 2 drone rails (30 tech), 2 dogfight rails (20 tech) and a phas-3 360 (10 tech) He wants it to go speed 12 (35 tech). He has size-14 (55 tech) and ADD-6 (20 tech) already purchased

Space/cost requirements _ DSR (4/2). Drone rails (2/1) Dogfight rails (1/1), P3-360 (2/1), P3-FA (1/1) Speed 12 (3/3). The player makes the fighter size 14 (cost 3). The fighter's notional cost is 12EPV, but it uses 89% of his available fighter tech (150/170), so costs $12 * 1.39EPV = 16.7 EPV$ rounds to 17EPV. Its DFR is 1.

Carrier boxes (1.51)

These systems are put in the carrier to support fighters. The only systems that translate to actual boxes on the SSD are the “shuttle housing” box, which is the same cost and size as a standard shuttle box. All the other systems cost EPV and space, but do not contribute to the SSD. They are, however, vital for fighter support. Support boxes for various heavy weapons and phasers can only be installed if the player has the relevant fighter weapon technology. Similarly, the player needs booster pack technology to install the booster pack store. Weapons are charged (and held for no cost) normally in the support boxes and are then transferred to fighters using deck crews.

System	EPV	Mass
Shuttle Housing	1.5	0.5
20 drone sp. storage	0.5	0.25*
Ready racks	0.5	0.25**
6 booster packs store	0 (+ pack costs)	0.25 (this is on top of the packs that would be installed on the fighters)
DISR charger	1	0.25
2 FUS charger	1	0.25
Hellbore Charger	2	0.25
Photon Charger	1.5	0.25
Plas-F Stasis/Charger	1.5	0.25
Phas G/phas-2 suppot	0.5	0.25
Repair bay	0 (+ repair)	0.25 contains 10 repair points, costing 1EPV. ***

* - Drone storage areas must be allocated for every 6 drone fighters (at least). Extra storage can be obtained via cargo boxes (1 box = 50 drone spaces). Drones are moved from cargo to storage areas automatically (a job for the general crew).

** - Ready racks are used for loading drones. There must be one for every pair of drone fighters (more are allowed). One ready rack can load one drone onto one fighter each turn, using one deck crew.

*** - Repair bays are required for every 2 fighters (more can be added), and are required for fighter repair. Extra repair points can be put in cargo (25/cargo box). One Deck crew can repair one point of damage using one repair bay.

One deck crew can load one heavy weapon charge onto a fighter from a weapon charging bay per turn. Carriers must have at least half as many charging systems as they have fighter heavy weapons installed on their current fighter complement.

Phaser support are charging/retuning systems for larger fighter phasers. (NB While these might seem “unnecessary” systems, they are put in to balance out phaser-fighters, which otherwise become too powerful).

Plas-D fighters use the same ready rack/storage system as drones.

PF techblocks (1.52)

System	Tech	Prerequisite
Int Size Class	inc.	
PFT designation	inc.	. Ship must b CA or smaller
Mech Tractor	100	Impulse tech 2, Warp Tech 4, Hull tech 4,
Shuttle tractor (hvy shuttles)	15	Mech tractor.
Warp booster packs	50	Warp Tech 5, Int size class.
PF size class	80	Hull Tech 6, Int size class.
PF shield refits.	40	Shield tech 6 – give +3 boxes to all shields.
Heavy PFTs	80	ALL other PF technologies except shuttle tractor.
SSCS	80	Heavy PFTs

Every two mech tractors or shuttle tractors require a phaser hardpoint unless the player has the Heavy PFT tech. The Heavy PFT tech also allows the player to make a BCH class or larger into a PFT; The SSCS tech allows two PFT floatillas can be mounted by a DN or BB class ship.

The PFT designation adds 10EPV to the ship Only designated PFTs can have repair, up to 12 boxes. Any PFs mounted on non-designated ships are considered “casual”.

Sensors, Scanner, Lab and Damcon. (1.6)

There are a number of problems associated with these systems in that the sensor/scanner/damcon tracks of a race does not really correlate to anything else – not command system or labs. Ships with 1 lab can suffer some disadvantages (Klingon D5). In this system, each ship class starts off with a base sensor/scanner track as given in the tables below. If it has at least two lab, increase the sensor/scanner level 1. Otherwise, each extra sensor/scanner level cost an incremental number of EPVs, namely 2/3/5/8/11/19. No ship can have its sensor scanner level increased by more than 6 from its starting level. BBs always have maximum scanners/sensors. Int/PFs increments in sensor/scanner tech cost double, and an increase of 4 levels is the maximum.

Sensor level	Sensor track	=	Sensor level	Sensor track	=	Sensor level	Sensor track	=
1	60	PF,Int.	11	66420		21	66653210	DN
2	630		12	66530		22	66654310	
3	640	Pol	13	665310	CL,CA	23	666543210	
4	6410		14	665420		24	666653210	BB
5	6420	FF	15	66630		25	666654210	
6	6520	DW	16	666410		26	666654310	
7	6530	TG,DD	17	666420		27	6666543210	
8	65310	CW	18	6664210				
9	66310		19	6665310	BCH			
10	66410		20	6665320				

Scanner Level	Scanner Track		Scanner level	Scanner track		Scanner level	Scanner track	
1	09	Frigh.	11	01359		21	00123459	
2	069		12	00369		22	00012459	
3	049	Pol	13	00359		23	00012359	BB
4	0379		14	00159	CL,CA	24	000123459	
5	0369	FF,	15	00149		25	0001234569	
6	0359	DW	16	001359				
7	0259	TG	17	001249				
8	0149	DD	18	0012469	BCH			
9	0139		19	000369				
10	01369	CW	20	0012369	DN			

Damage control is much more uniform across the races, and has fewer levels

Damcon Level	Damcon Track	
1	20	PF,Int
2	220	Pol
3	2220	FF
4*	420	
5	4220	DD
6	42220	CW,CL
7	44220	CA
8	442220	BCH
9	444220	
10	6442220	
11	64442220	
12	66442220	DN
13	664442220	
14	666442220	
15	8666442220	BB
16	8866442220	

Any increase in Damcon rating cost 3EPV, plus 1EPV if the first number increases, plus 1EPV per total digit increase. Damcon rating 4 is only available for Wyn/LDR-type short range auxiliaries. It is otherwise skipped. No more than 3 increases in DAMCON are allowed.

COST REDUCTIONS on sensor/scanner/damcon tracks.

- 1) Each Bridge box above 1 reduces the cost of a sensor improvement by 1EPV
- 2) Each AuxCon box above 1 reduces the cost of a scanner improvement by 1EPV. A ship with no Auxcon loses one scanner level (down to a minimum of 1).
- 3) Each Emer box above 1 reduces the cost of a DamCon improvement by 1EPV A ship with no Emer loses one Damcon level.
- 4) Each Lab box above 2 reduces the cost of any one tracks' improvement by 1 EPV

Each control/lab box can only be used to reduce the cost of an improvement ONCE. Each lab box can only be used to reduce the cost of one track. (i.e. you cannot use the same lab box to reduce all 3 of scanner/sensor/Damcon).

NB there appears to be little technology progression on Sensor/scanner/Damcon tracks in SFB, unless you go back as far as the early years or as far forward as X-ships, which are not covered by this system. Hence, excellence in these areas can be bought by cash. At a later date, these could be integrated into the techblock system.

Crew (1.7)

The base crew is equal to double the amount of mass spent on hull.

This can be increased by 4 for each hull point used

Transporters are limited to crew/5 (round all fractions up)

Each crew unit can be converted into 2 boarding parties (1EPV) or 2 deck crews (1EPV). Conversions are not allowed if this brings the crew to less than double the minimum.

General technology, command ratings and ship requirements. (1.8)

A ship must have a shuttle bay, transporter, phaser, impulse, bridge,

Police ships or larger must have a second control box.

Frigate ships or larger must have a lab and a probe (unless they are maulers)

Destroyers or larger must have tractor beam and a third control box.

The command rating of a ship is equal to (3-size class + control boxes.) Any flag bridge boxes bring this to a minimum command rating of 9. Two flag bridge give a command rating of 10. The maximum command rating without flag is 8. Command ratings of ships smaller than MC1 using flag boxes is reduced by 1.

All the following systems are assumed technology

System	Cost	Mass		System	Cost	Mass
Warp	3	1	(can have modifiers in cost)	Probe-10	1	1
Impulse, APR,	Varies	1		Shuttle	1.5	0.5
Battery	Varies	0.5	(see relevant section)	Tug Designation	6	0
Control boxes	2	1	(Bridge,Aux Con, Emer)	Sensor	8	2.5
Lab	1.5	0.5		Security	1	1
Hull	0.5	1		Flag	10	2
Cargo	0.5	0.5				
Armour	1	1				
Transporter	1	0.5				
Tractor	1.5	0.5				
Probe 5	0.5	1				

Size/cost modifiers (1.9)

These are adjustments to the overall cost of the ship depending on its size and number of ships in its class built. Prototypes are inordinately expensive, as they often involve modifications to the ship construction yard.

Ship #	Size					
	FF,Pol,DW,CW	CA,CL	DD	BCH	DN	BB
1 st	+60%	+80%	+50%	+150%	+100%	+200%
2 nd -5 th	+10%	+20%	+10%	+30%	+40%	+50%
6 th -10 th	0	+10%	0	+5%	+20%	+25%
11 th -15 th	-10%	0	0	0	+10%	+15%
16 th +	-25%	-5%	-5%	-5%	0	+10%

Maintenance (1.10)

While this is not essential for a design system, some integration is required as otherwise some systems get marginalised. Basically, lab, shuttl, tran, trac, and cargo have commercial value and ships with these systems can “earn” money in the form of reductions in maintenance costs during peacetime only.

Base Maintenance per 6 month period = 10% of the ship’s value (before size/cost modifications given above). Reduce this by 0.3 per lab, 0.6 per trac beam, 0.4 per transporter beam, 0.3 per cargo box, and 0.3 per shuttle. Ships with sufficient quantities of these systems can earn money. (in a complex system, there would be a limit to how many ships could be on peacetime duties, except, of course, cargo ships).

Refits and Varients (1.11)

To come

Racial traits (1.12)

-unfinished - will be handled in a similar manner to “master of orion II” computer game.

Physical

Physically strong	Half price marines
Physically weak	double cost marines

Trade

Active trader	Cargo is free
Warlike nation	warships have 10% discounts
Offensive nation	Warships have 20% discounts

Officers

Good leadership	+50% legendary officers, bonus to crew experience
Poor leaders	-25% legendary officers
Good academy	bonus to crew experience at start
Subordinate race	Need security.

Fighters

Fighter race	Fighter techs and costs have 20% discount
Non-fighter race	No Fighters
PF race	PFs have 20% discount.

Different atmosphere	(easier to co-exist)
----------------------	----------------------

Manufacturing
 Awful manufacturing +20% all costs (not crew)
 Poor manufacturing +10 all costs
 Good manufacturing -10% all costs
 Excellent manufacturing -20% all costs

Alertness
 Paranoid race +1 to WS roll.
 Alert race 50% chance of +1 to WS roll
 easy-going race 50% chsnce of -1 to WS roll

Manoeuvre
 Manoeuvrable 1 better turn mode
 Non-Manoeuvrable 1 worse turn mode

Materials
 Excellent materials +4 hull integrity
 Good materials +2 Hull integrity
 Poor materials -2 Hull integrity
 Bad materials -4 hull integrity

Exploration
 Good/Bad explorers +/-1 to scouting rolls (not yet defined)
 Ecological/Ruthless exploiters -/+1 to exploitation rolls (timescale of game is not long enough for ecological effects)

EXAMPLE (nb quirks below not used).

Y120 KLINGON D6 (ps not exactly the same, but very close)

Technology:- Mass-6 (105), Hull-2 (20), Shield-3 (30), Warp-2 (80), Booms (50), DSR-22(ovl,90), Drone A/F, Drone=1/2sensor, Type I/IV drones (20), Arc2 (40) Total tech = 435.

Base mass = 85+6 (mass tech). Hull integrity = 3 = (2 tech +1from 2:0:5 hull ratio) Required Hull=13

POWER.	boxes	mass	cost		Weapons	boxes	mass	cost
30 warp	30	30	108	=30*3*1.2 (surcharge)	Arc improve	0	1	0
5 impulse	5	5	21	=3.5+3.5+4+5+5	Drn-F	1	2	1
2 APR	2	2	5	=2.5+2.5	4DSR-22	4	8	16
3 BTTY	3	1.5	5	=1.5+1.5+2	7phas-2	7	7	14
TOTAL	40	38.5	139		TOTAL	12	18	31

SYSTEMS	boxes	mass	cost
4 Lab	4	2	6
2 bridge	2	2	4
2 aux	2	2	4
1 emer	1	1	2
2 scty	2	2	2
5 tran	5	2.5	5
3trac	3	1.5	4.5
2 Shtl	2	1	3
Boom	0	0.5	0
Exdam	4	0	0
Probe-10	1	1	1
TOTAL	21	14.5	31.5
HULL	11	19	9.5

PHASER ARCS	boxes	mass	cost
Arc2 = 6 arc pts/phaser = 42			
1 space = +6 Arc pts.			
3FX+rear hexline		30pts	
2R+RR		8pts	
2L+LR		8pts	
		46pts (2 unused)	
Damcon 442220 (+1 level)			5 EPV
Sen 665310 (no improvement)			0 EPV
Scan 001359 (+2 levels)			5 EPV
TOTAL			7EPV

deductions -2 for labs, -1Aux con

Hull pts =10 (=6 (19boxes-13req.) + 4 (8 boxes sacrificed))
 Turn mode B (6 hull pts), Breakdown 5-6 (4 hull pts)
 Crew = 38 (19*2), Marines = 14 for **7EPV**

BASE EPV TOTAL = 225 EPV * 1.8 for prototype CA = **414.6 EPV TOTAL COST**
 maintenance = 22.5 - 1.2 (labs) -2 (tran) - 1.8 (trac) - 0.6 (shtl) = **16.9 EPV/6 months.**

QUIRKS

Every design has a problem. Without fail - well, almost without fail. Once a design class is decided on, roll on this "quirks" table, which will randomly hamstring you in some way because your subordinates fouled up or had other agendas. Oh well. Roll two dice sequentially. All effects are for this design only.

- 11 Lose one heavy hardpoint.
- 12 Lose two phaser hardpoints
- 13 Lose a heavy hardpoint and a phaser hardpoint
- 14 Lose a phaser hardpoint
- 15 Lose 1 shield tech
- 16 Lose 2 shield tech
- 21 Lose 1 warp tech
- 22 Lose 2 mass tech
- 23 Lose 4 mass tech
- 24 Lose 2 structural integrity
- 25 Lose 4 structural integrity
- 26 Lose all battery tech
- 31 Lose all APR tech
- 32 Lose all impulse tech
- 33 Lose 1 arc tech
- 34 Lose 2 arc techs
- 35 Lose a turn mode (after all improvements)
- 36 Lose a breakdown rating pip (after all improvements)
- 41 Lose 1 level of Damcon
- 42 Lose 2 levels of sensor
- 43 Lose 2 levels of scanner.
- 44 Ship must have at least MC*8 (round up) in shuttles
- 45 Ship must have at least MC*10 (round up) in lab
- 46 Ship must have at least MC*6 (round up) in tractor
- 51 Ship must have at least MC*8 (round up) in transporter
- 52 Ship does not gain hull points due to excess hull over the required amount
- 53 Ship must spend 2 mass on 2 extra excess damage boxes (foul-up leading to too many support beams)
- 54 CAST-IRON CONTRACT. Ship can only mount the heavy weapon you have spent the least tech on (no other heavy weapons allowed).
- 55 SWINDLE - contractors' swindle means that this class costs 5% more than it should do.
- 56 OVER BUDGET - first ship costs 50% more than the normal prototype cost.
- 61 DELAY - Ship production delayed by 1 year due to difficulties
- 62 DELAY - Ship production delayed by 2 years due to difficulties
- 63 ARRGGH Roll twice more
- 64 YOU TWITS!!! Roll three more times
- 65 DISASTER - prototype ship blows up in the yard due to a fault! Design is irrecoverable and new technology must be spent to replace it. Lose MC*200 in EPV
- 66 What? You mean everything works???? Cor!!! If this result is one of several, it negates all the others. This ship rocks....