Klingon Swarm Tactics,
Why they are the best for the Empire.

by
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KWA-400 Thesis

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Is it cultural? Is it Economic? Is it Strategic? Why does the Klingon Empire, a powerfully warlike race, use at its primary combat vessel, ships that are ship for ship weaker then any of the primary combat vessels of their neighbors and/or potential enemies? From the D7 of the 2270's to the Bird of Prey of 2370's, the Klingons have consistently used underpowered, low endurance vessels, whose weapons suites are impressive for their size, but their overall combat effectiveness is generally 1/2 to 1/5 that of the standard Federation Line Cruiser.

From the D-7 to the Bird of Prey to even the modern Vor'cha attack cruisers, Klingon ships are class by class under-gunned, have lower endurance, and fewer multi mission capabilities then their counterparts in the Federation, the Romulan Empire, or even the Breen and Cardassian fleets. Do the Klingons choose these smaller ships for cultural reasons? To prove they have honor and are ready to go to Sto-Vo-Kor? Does the Klingon economy mandate smaller and leaner ships as a necessity? Or is the decision based on a strategic vision of a larger fleet with smaller shops allowing more flexibility on the fleet level? In this paper we will look at each of these reasons for the smaller Klingon Ship and then the Klingon Swarm tactics. For each in its own way is a valid reason for the pattern of Klingon ship design and each is a puzzle part of the whole picture. In considering each of the 'causes': cultural, economic and strategic, we will look at the answer based historically on the D-7 / K'tinga Classes, the recent usages of Birds of Prey classes, and the future uses of the Vor'cha, and other smaller Klingon ship designs.

The historical D-7 Class was only slightly under-gunned relative the Federation's Constitution Class, but its Engine Power and long range endurance was only a fraction of their counterparts. However while patrolling in packs of three, the D7 gave the Klingon commanders more opportunity for combat, and thus Honor. Also with smaller ships working teams, meant there was the position of pack leader that could be reached for. These two factors led to more aggressive ship commanders, with a slightly weaker ship, this was a trait that was to be encouraged and rewarded. The cultural legacy of this led to a large officer corps of commanders and junior officers prepared for the Post D-7 / K'tinga era of ships.

Later the Klingon Defense Force developed the Bird of Prey classes, both smaller then the D-7, they were more powerfully gunned for their size, and were used in packs of three to five ships with much more success. In addition the cloaking device technology gained from the Romulans was more easily utilized in these smaller ships. More ships with smaller crews led to more opportunities for command, for combat honors, and for advancement. Klingon commanders who do not succeed are replaced; those who will not fight are replaced – violently. The legacy this provided the KDF, was of a officer cadre of thousands of combat capable officers and commanders, willing to use their smaller ships more aggressively then their counterparts in the Federation and Romulan Empire.

Where does the KDF go from here when taking cultural necessity into account? Along with the larger Vor'cha cruisers and the Negh'Var Battle cruisers, the Klingons must continue to develop either improved Bird of Prey vessels, or an entirely new craft, that takes into account lessons learned during the Dominion War. One such development is the Bat'leth Class Patrol Combatant (1), developed in cooperation with the Federation and as an extension of the Federation's Defiant Class Escort program. Intentionally designed for Patrol duty, these small combatants are meant to operate in units of 3-5 vessels and with highly refined tactics that will fully utilize their heavy weaponry and nimble handling. For the Empire this will provide continued development of new officers who may achieve independent command experience while serving with honor to the Empire.

We have explored while culturally the Klingon Empire would want smaller vessels then their neighbors, but is there also an economic reason? From the time of the D-7 to the current Bird of Preys to the future Bat'leth class ships, is there a resource-motivated reason to have three small ships instead of one large one? Of course there is, and we will look at the comparative "costs" in each era.

The D7 was in relative to the cost of the Federation Constitution class, much less resource demanding. To use an arbitrary standard, the Constitution class would fetch 13 Billion (with a B) Ferengi Bars of Gold Pressed Latinum. This is using today's rate of exchange. The D7 though required only 5.2 Billion Bars. In addition with the smaller, more focused, smaller mission crew, annual upkeep and supply of the crew was only 23 million Bars versus the 100 million Bars for the Constitution. Finally the maintenance of the D7 was also cheaper then the Constitution, but not by much, 25 million Bars versus 35 million per year.

In addition due to the large numbers of same hull design craft, the D7 and later K'tinga class programs, experienced added savings in design, yard building, and training of yard personnel. The program proved much less expensive in the long run for the Empire, then the multitude of ship classes for the Federation, especially when variants were taken into account. Every time the Empire needed a variant ship class of the cruiser, they modified an existing D7 Hull, while the Federation built a whole new ship design / class type.

Following the great success of the D7 and K'Tinga classes, the KDF followed up with the K'vort and the smaller B'rel classes. Outwardly the two classes were exactly alike; accepting the K'vort was larger in scale with equally larger scaled weaponry. These two "Bird of Prey" classes with their variable geometry wing structures were excellent craft that were equally at home in deep space and within a planetary atmosphere. Hugely cheaper then the Federation, Excelsior, Ambassador, and Galaxy classes, they were also much less capable. However in combat, they excelled especially when flown in packs of three or more. Dahar masters developed excellent tactics for these craft that made use of their size and agility, while saving the Empire Trillions in Construction costs, and Billions more in maintenance and crew costs. In addition having the K'vort

class with the same warp and maneuvering dynamics as the smaller B'rel made it easier to transfer successful captains from the B'rel to the K'vort classes.

The B'rel was also used as a test and variant platform for KDF research and intelligence operations. The B'rel craft used by General Chang when he used a Cloaked and Firing capable craft to attempt to disrupt the Khitomer Peace Conference was a prime example.

The future of Klingon small vessels can be seen in the proposed Bat'leth class, and even here the Economic reasoning for the Empire holds true. Each Bat'leth, like the Defiant class that inspired it, has more fire power then a K'vort, and nearly the firepower of the Federation Intrepid class. With research and development costs shared with the Federation this class will vessel by vessel be the most cost effective ever developed by the Empire, and because of the large run of vessels proposed, the over all cost of tooling for the construction would again be even greater. Finally the Bat'leth class is intended to have MANY different variants, from covert operations, to being a missile boat, to mine laying or system defense, to escort duties for unarmed starships. Every variant so far imagined has been planned for with the modular make up of the Bat'leth major sections.

Finally, we can present a strategic necessity for the use of smaller vessels and swarm tactics. IT WORKS! That itself is a reason for the Empire to pursue any specific tactical and or strategic course of action. But explaining why it works is even more fundamental to our thesis. Taking the D-7 into account, the Empire could not match the Federation's R&D budgets or their multipurpose platforms like the Constitution Class, or Enterprise Class Heavy Cruisers. But what the empire could do was build three D-7s for the resource cost of one Enterprise, and then have each ship specialize as a Science Boat, a Beam Weapon Boat, or a Missile Boat. In addition even the famed Captain James T. Kirk was unable to match the firepower and flexibility of three D-7's. Even the hated Romulans were able to use the three to one advantage to nearly capture Kirk and the Enterprise, by being able to box in the Federation's most famous ship, and being able to take away escape in any of the three dimensions, the Romulans were able to use swarm tactics to remove the Federation's vessel-to-vessel technical superiority.

This success continued on into the Bird of Prey program, and even more so when the swarm tactics are considered. One on one neither the B'rel nor the K'vort can stand up to any of the Federation, Romulan or Cardassian light cruisers, much less the powerful Heavy Cruiser / Large Exploration Cruisers. But three of these Bird of Preys which still require less resources in total (Building, Manpower, Replenishment and Support) and yet will and have torn apart their opponents in a matter of seconds. The multi-mission flexibility provided also allows each of these ships to fulfill a separate primary and/or secondary mission. The same strengths of multiple numbers and swarming tactics that applied for the D-7's apply even more so for the Bird's of Prey, In addition, because the ratio has grown from the 3-1 of the earlier era to 5-1 or even 7-1, the maneuverability, and the more weaponry, balances against or exceeds the Federation or Romulan advances in multi-nodal phaser banks.

In the foreseeable future this success is expected to repeat with the Bat'leth Patrol Combatant Ship program. The research and development stage is completed and the construction/prototype stage is beginning. A whole new technological and design concept from the Bird of Prey series, the Bat'leth will retain the numerical superiority due to its smaller size, smaller then even the B'rels. Resource cost will be about eighty percent that of a B'rel and twenty percent that of the Federation Intrepid class. And with five Bat'leth Class ships, any flotilla commander will be more than a match for anything up to a Negh'Var or even Sovereign class ship. This tactical flexibility also leads to operational and strategic flexibility as well. If a flotilla commander can break off two ships to act as escorts, one as a long ranged and cloaked patrol, and the last two has a cloaked hunter detail, he an patrol AND control a much larger area of space than one or two ships before. Finally swarm tactics are even more exacting with multiple small, agile, and powerful weapons platforms, as witnessed by the Jem'Hadar's Scarab ships during the Dominion War.

In conclusion, it has become apparent that the Klingon Defense Force uses the smaller craft and their Swarm tactics, for a myriad of reason. Cultural: because they are warriors, ready to seek Honor in battle and Honor in leadership. Economic: because of their smaller industrial base, especially post-Praxis, they must use their resources with more care and stewardship. And finally Strategic: for the best reason to use a particular tactic or strategy like the swarm tactic is that it works. The Empire, has withstood encroachment from the Federation, hostility with the Romulans, attacks from the Borg, Cardassians and the Dominion, and has come out the victor time and time again.

In the end, the Klingons use these tactics, because they are Klingons, the hunt, the pack, and the thrill of the kill. It is inherent in every Klingon warrior, the Blood of Warriors, it calls to them, and they answer it, One Warrior, One Ship, One Empire.

wo' toy'taHvlS Hegh 'e' tul Hoch tlhIngon
To die while serving the Empire, is the hope of every Klingon.

Appendix 1 The Bat'leth Class

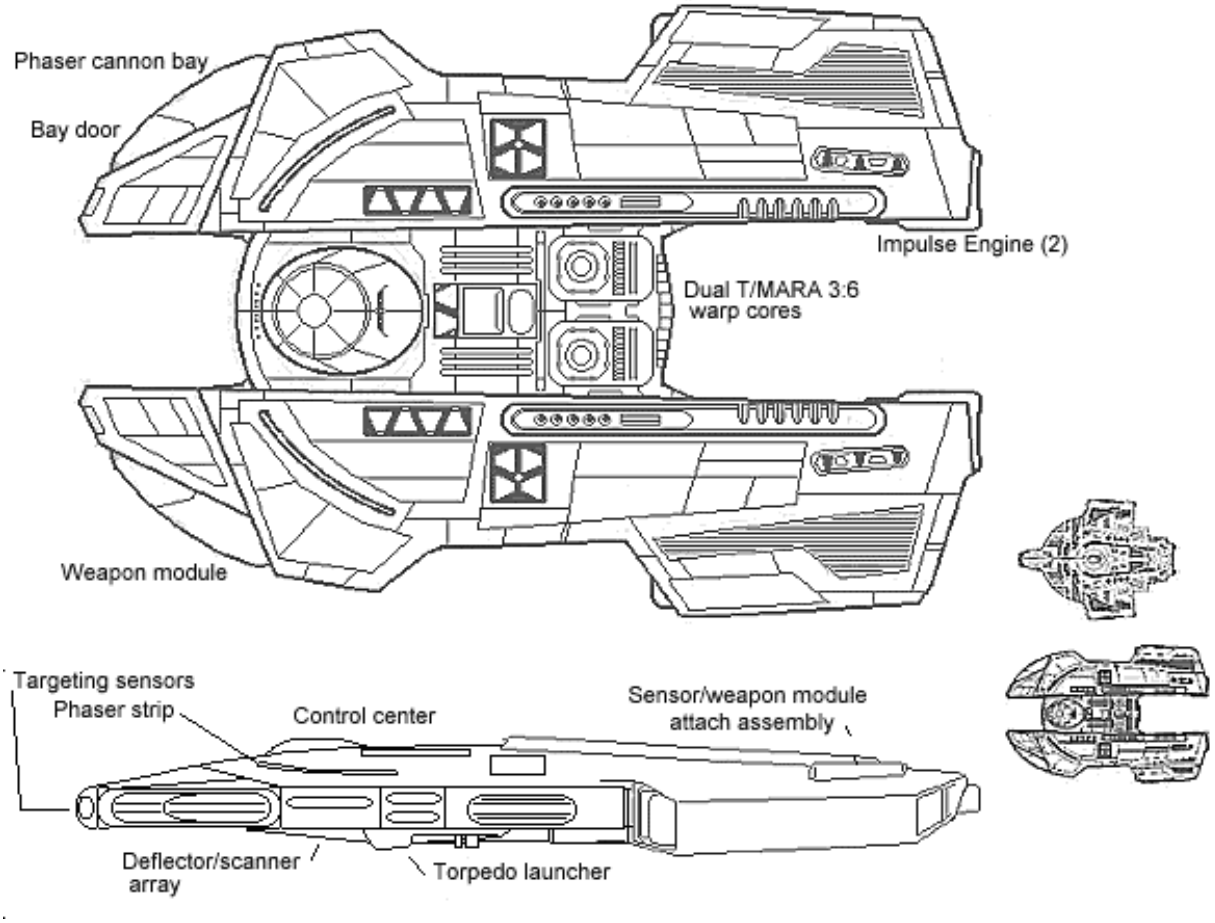
The Bat'leth class Patrol Combatant is also known by its Federation Designator as the Rapier Class Small Destroyer.

Below list the Statistics of the Bat'leth/Rapier Class.

DECK DESCRIPTIONS for the Mark IV – Bat'leth/Rapier Class

Deck 1	Command Bridge, transporter room 1, deuterium tanks, plasma vents, Captain's ready room, pulse phaser cannon, engineering deck 1, sensor palette.
Deck 2	Impulse engines, engineering deck 2, dual computer core, med/science lab, sickbay, warp coils P/S, mess hall, targeting sensors, transporter room 2, crew quarters
Deck 3	Torpedo magazine, shuttlebay 1 & 2, antimatter storage, cargo bay pad, bay door mech, cargo bays 1-4, shuttlebay 3, cargo transporter, main airlock P/S, torpedo launchers (4), phaser charging coils.
Deck 4	Warp coils P/S, torpedo magazine, cargo bay pad, bay door mech, torpedo launchers (4), landing legs, LWR sensors, navigational deflector.
Sub Deck (5)	Tractor beam, warheads, landing legs, LWR sensors, navigational deflector

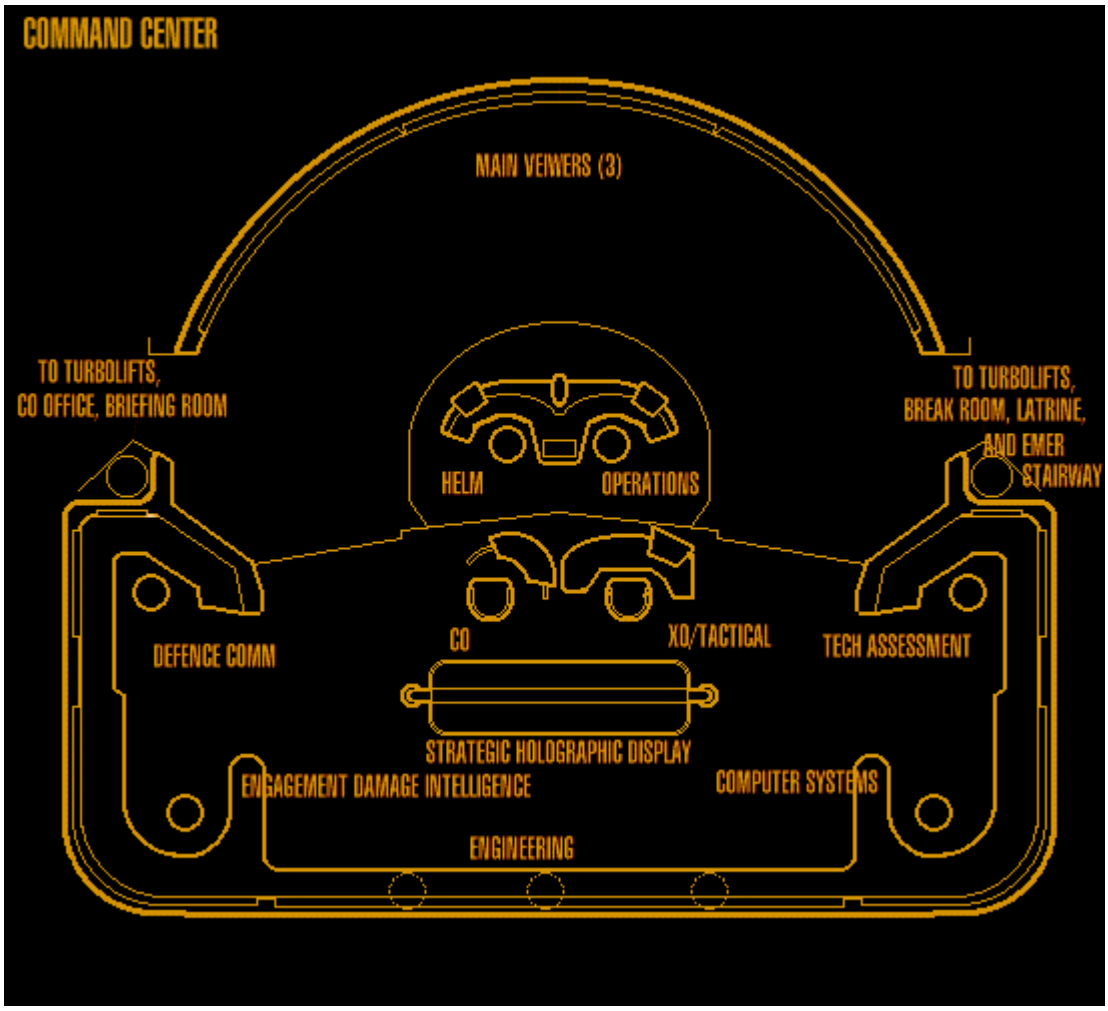
BAT'LETH / RAPIER CLASS



Introduction

The *Bat'leth/Rapier* class is a multipurpose weapons platform with removable weapon bays/modules. Depending on mission profile, the Rapier can be configured to carry torpedo launchers, or new missiles such as the AQSM or EQT. A sensor, weapon, or special equipment pod mounts to the rear. A majority of the technology covered in this database is incorporated into the assualt ship as well, including a standard cloak.
Specifications

Length:	220 meters
Beam:	148.5 meters
Height:	29.8 meters without upper pod
Officer Compliment:	15
Crew Compliment:	65
Marine Detachment:	20 (Reinforced Squad)
Warp Propulsion:	dual T/MARA 3:6
Cruise Warp:	6^{WF}
Maximum Warp:	9.985^{WF}
Emergency Warp:	9.992^{WF} for 12 hours
Impulse Propulsion:	two Gravitic Fusion $10^8 I_{sp}$ Plasma Thrusters
Criuse Impulse:	.15c
Maximum Impulse:	.25c
Emergency Impulse:	.70c, .90c with sysmetric subspace field for mass, and time dilation reduction.



As with all ships, the nexus of ships' functions are commanded from the main bridge. The command center was designed with the mindset of being under attack. No hand railing is present as those structure cause damage to impacting personnel and do little in breaking falls. The bridge shell is a single cast structure of reinforced polyduranide and coated with tritanium. All enviromental and optical data networks are along the floor, leaving the ceiling bare and free from possible equipment rending lose under attack to fall upon the crew. Lighting is supplied by elements embedded into the RPD shell. To protect crew during IDS lags, low power force fields provide a 'soft' buffer around the crew stations preventing crew from being tossed around. This magnogravitic buffer field has no effect on the nervous system and doesn't cause electic shock when in contact.

Three holographic displays make up the main viewer. The multidirectional holoemitters are layered over the internal side of the shell and capable of projecting data into the volume of the bridge giving three dimensional tactical representation.

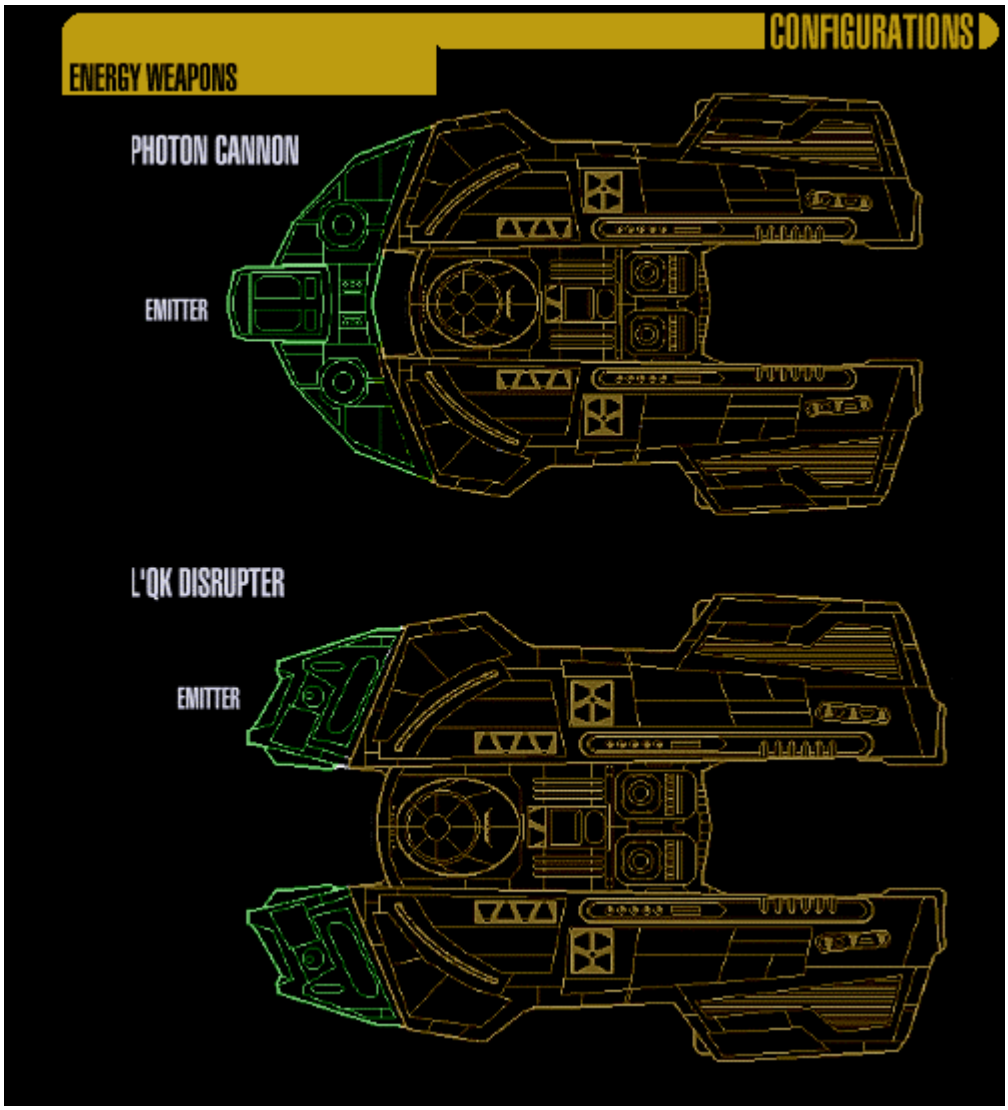
Helm and Operations work from a single step-down pit. Operations is placed next to helm due to the neccessity of Flight Control sharing mission operations parameters. In the same function, the Commanding Officer sits beside the Tactical Officer, who is usually the Excutive Officer, to share tactical and strategic information and planning.

Their posts are on a single step-up platform that extends to the rest of the aft area. Behind the commanding officers is the Strategic Holographic Projection, that depicts fleet movements and positions of known starships in theatre, as well as any planetary, or stellar bodies and demarcation zones.
The starboard stations are Defense Communications and Engagement Damage Intelligence. Def Comm is capable of managing heavy fleet communication traffic during massive engagements. EDI accumulates battle damage assessment of either all ships in the vicinty or specified targeted ships. Information on weaknesses and target integrity is routed to Tactical.
Technologies Assessment and Computer Systems comprise of the port stations. Tech Ass involves extensive passive and active scanning of threat vessels to determine their level of technology. This information is important as a factor in delegating the Rapier's power allocations for shields and quantic energy beams. Computer Systems monitors the main processors and back-up systems and is responsible for routing computing power around damaged parts of the computer and ODN systems.
The Aft section is devoted to Engineering and Enviromental and can control all aspects of engineering control. Rollout stools are available when workloads increase.

Configurations Codes:

1 -main vehicle
A -phaser cannon
C -photon cannon
D -distruptor
E -phaser pod (dorsal)
G -AQS missile
H -enhanced quantum torpedo
L- long range sensor sweep pod (dorsal)
M -microphotorp pod (dorsal)
N -quantum deconstruction torpedo/missile
P -PIMESS pod (dorsal)
R -SARPEV
Q -quantum torpedo launcher
T -photon torpedo launcher
V -subspace variance detector(cloak searcher) pod (dorsal)

Sample configurations
1AATQ: Standard. Two foreward phaser cannon modules. Two ventral one each photon torpedo, quantum torpedo launchers.
1ACHQV: Cloak Suppresion. One phaser cannon, one photon cannon, one EQT launcher, one QT launcher, one SVD pod.
1AAGGL: High Fleet Offence. Two phaser cannon, two ASQMs, one LRS pod.
1AANNP: Target Anniliation Offence. Two phaser cannons, two QDMs (Nemesis Devices), one PIMESS pod.



Rapier/Batleth class created and designed and schematics by Paul S. Cargile of Starfleet Military Reserves. http://members.tripod.com/~SMR4124/

Meshes created by Tachy of Scifi-Art. http://www.scifi-art.com/

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