TEMPEST

SPECIFICATIONS

STARFLEET NAVAL CONSTRUCTION CONTRACT DATA

CONSTRUCTION CONTRACT NO.	NX-2200
VESSEL CLASSIFICATION	TEMPEST (PROTOTYPE)
VESSEL DESIGNATION	FRIGATE - PERIMETER CONTROL

STRUCTURAL DIMENSIONS

VESSEL	
LENGTH	240m
BEAM	141.7m
DRAFT	62.85m
DISPLACEMENT	7.24mt
DECKS	11
ARMAMENT MODULE ASSEMBLY (AMA)	
LENGTH	186.23m
BEAM	53.98m
DRAFT	17.80m
DECKS	5

CREW COMPLIMENT

OFFICERS	52
ENLISTED	320
CIVILIAN	25
PILOT/SUPPORT	84

SYSTEMS

WARP PROPULSION	
POWER GENERATION	M/ARC (DEUTERIUM FUEL DIRECT INJECTION)
CRUISE SPEED	wf6.0
MAXIMUM SPEED	wf9.6 (16 HOURS)
EMERGENCY SPEED	wf9.8 (12 HOURS)
IMPULSE PROPULSION	
POWER GENERATION	DEUTERIUM/TRITIUM FUSION REACTION
MAXIMUM SPEED	10,000kph
TACTICAL	
SHIELDING	SPREAD-FOCUS ELECTROMAGNETIC GRID
PHASERS	14 - TYPE VIII TURRET DISCHARGE
	4 - HIGH-ENERGY DIRECT CHANNEL CANNONS
TORPEDOS	8 TUBES
ARMAMENT	184 MARK V PHOTON TORPEDOS
COUNTERMEASURES	2 TUBES
ARMAMENT	16 HF PULSE DETONATION TORPEDO
SENSORS	TBD
ELECTRONICS	
STORAGE	ISOLINEAR CHIP
INTERFACE	LCARS
NAVIGATION	WARP CELESTIAL GUIDANCE (DORSAL/VENTRAL)
	FOCUSED FIELD DEFLECTOR (PRIMARY)

DEVELOPMENT

In the 2280's, Starfleet directed their attention towards starship designs that would push the boundaries of warp capability, as well as advanced armaments to combat the ever-growing threats to the Federation. The aging Miranda Class vessels were fast becoming old vessels, incapable of handling missions that demanded tougher hulls and stronger phased energy outputs to battle the enemy. The ASDB pushed forward to develop newer designs, while the Miranda Class vessels were being reassigned to diplomatic and survey missions. While there was still a great deal of life left in the aging Miranda Class, most Starfleet captains agreed that it was time to abandon the mono-hull design and go back to the dual hull, as was seen with the Ambassador Class and subsequent Galaxy Class vessels.

In 2366, growing tensions between non-member Federation races, forced Starfleet to re-evaluate its Fleet inventory. Shipyards across the Alpha Quadrant were outputting newer vessels at a much slower pace than anticipated, which in turn, caused Starfleet to worry about whether it would be truly prepared for a possible all-out assault on its fragile Federation defense. Reliable intelligence reports were still pouring in about a possible Borg invasion fleet, moving in to destroy the Federation. Meetings with senior Fleet staff concluded that with the low inventory of active vessels, it was time to re-evaluate the potential of previously inactive vessels to be returned to service. Coupled with this decision, Starfleet engineers began the long task of retrofitting new technology into these vessels, but the results were not as favorable as hoped. With regards to the Miranda Class, the spaceframe design was discussed again, but this time, with regards to Fleet support. Its dual aft shuttlebays would come in handy for storing extra shuttles, equipment, crew and even act as emergency triage posts, if war broke out. It was decided that more attention would be placed on the Miranda, to incorporate newer upgraded technologies, equipment and systems which could ultimately place the Miranda back into the forefront of wartime tactical inclusion. It was agreed that one vessel would be singled out for prototype enhancement and upgrade, and in case the upgrades and enhancements failed or didn't perform as projected, then no real detriment would fall upon the fleet. The vessel chose was the U.S.S. Tempest, which had a rather long and illustrious life as a Frigate with the 6th Fleet. She'd seen some battle, to which she was victorious. She's seen many an Admiral and Federation VIP grace her corridors as well as having three accomplished captains at the helm.

The first phase of the upgrade was the removal of the "rollbar" superstructure, atop the dorsal surface of the vessel. This was always considered a weak point to Starfleet captains, if they were engaged in battle with the enemy. The torpedo/sensor emplacement, which was part of the structure, was redesigned to be larger and its hardpoint connection would be resigned to a single vertical mount, placed aft of the main bridge. This design would allow for quicker mobilization of crew and ordinance, with the inclusion of high-speed elevators and turbolift, from deck three, up to the main deck of the newly named Armament Module Assembly (AMA). Atop the main deck of the AMA, are fixed, high frequency antennas, signal disruption arrays, as well as other sensor equipment, vital to protecting not only the vessel, but participating in "sensor nets" with other vessels in a given fleet. With the removal of the rollbar structure, a decision was made to keep the high-energy discharge (HED) phaser cannons in place, as these would still be useful in battle. Previous incarnations of these cannons were effective, but an issue of extreme power drain to the M/ARC, proved that they could only be used as a short-term contingency. The upgrades being performed on the aging M/ARC to a more efficient and powerful M/ARC also proved that the HED phaser cannons could be utilized with longer bursts, adding to the already formidable armaments of the Miranda. As an added bonus, some overly eager ASDB team members proposed that the HED phaser cannons could be tuned and adjusted to fire quicker bursts of phased energy, similar to the newly developed U.S.S. Defiant's Type XII cannon. While that project was shrouded in secrecy, it was no secret that more powerful armaments were needed and the inclusion of this technology would prove useful if successful, and easily dismissed if a failure.

The second phase of the upgrade, included the replacement of the older phaser turret systems to more efficient ones that held larger energy capacitors. Some internal compartment renovation was necessary but in no way, inconvenienced the crew compliment and logistical planning. The computer systems was also upgrade from the old Duotronic Processing System to the newer Isolinear chip storage and retrieval as well as the new LCARS interface. All other systems aboard ship were either repaired, upgraded or eliminated, due to the new role the Miranda would be engaged in.

Overall speed and handling of the vessel was rather impressive for the Miranda, when it first emerged, but warp technologies have evolved by leaps and bounds over the years, so it was necessary for the Miranda to become more competitive. Several meetings with Warp Technology experts, as well as Starfleet Engineers occurred, and proved once again that the Miranda was more than capable of handling the newer technology with little to no structural issues. Enhanced structural and inertial dampening field generators were installed to help cope with the extra stresses being placed on the spaceframe. As the warp core had been upgraded, so were to two warp engine nacelles, with primary upgrades reserved to small enhancements, plasma injectors and other minor maintenance routines. The overall condition of the engines had been inspected prior to the refit and were certified space worthy by the Corp of Engineers. Warp speed testing, conducted after fitting, showed that increased power output from the M/ARC generated a 125% increase in efficiency, while speed sustainability over longer periods increased 30% for an engine model once considered outdated. The data acquired from these test were officially filed with the Advanced Theoretical Propulsion Labs at Starfleet Command, to be used in the future for further development.

Another notable function on board the Tempest, as well as all the other Miranda Class vessels, was the lack of proper deflector control. With the original design, the emitters and arrays stayed well-hidden and that became an issue rather often when navigating areas of space with stronger and more energetic disturbances. Plasma storms had to be navigated around to avoid the immense power drain incurred on the defensive shield grid, which was incapable of fully protecting the vessel in such situations. A refit of this vital system was necessary and entailed the complete removal of the grid and subsequent mechanics, only to be replaced with larger, focused arrays to the ventral aft section of the vessel. These arrays were capable of outputting much higher energy signatures, thus reducing any structural damage or power loss to the defensive shield grid. After installation, testing and inspection, the added energy output needed to power these arrays was negligible, but provided significant protection overall.

The final phase of fitting entailed extensive compartment planning and reassignment. Crew compliment was increased for all departments, so crew accommodations needed to be renovated and in some respects, redesigned to handle the increase. A more efficient, space-saving design was approved for enlisted crew with two occupants, which included built-in bunk accommodations in the compartment walls, compact washroom and downsized replicator generators for food preparation. This design was accepted as a viable alternative to an increased mess compartment. Junior grade officers would still benefit from a single occupant compartment, with the same design layout as enlisted, with the notable exception of one bed. Senior officers benefit from a larger compartment with a variated design, including a sitting area, dining accommodation for multiple people, slightly larger washroom and a larger bed, not built-in to the compartment walls. Other accommodations are standard to the other berthing compartments. VIP quarters would be in shorter supply, but available. Sizing of the berthing compartment is similar to senior officer quarters, and includes most of the standard options of the senior officer quarters, with the exception that the sitting area and dining area would be larger. Conference rooms would be increased in amount, but slightly smaller than before. Offices, labs and other scientific research compartments would be sized to suit needs. One major change for compartmental usage was to the Ward Room. Medical facilities are always in short supply when out on deep space missions, so a fully staffed Ward Room is critical. With war being imminent, designers agreed that an extensive Ward Room would be necessary, complete with Triage, E.R. and surgical facilities. Over 10% of the full complement, is comprised of medically trained staff to cover not only the Main Ward Room, but three other smaller medical facilities on board. While some considered that this compliment size was "overkill", it was successfully argued that the highly customizable shuttlebays could be used for emergency Triage, to which the extra staff would be a priority and assist the CMO, CORN, and other nursing and medical advisory staff. It is also planned to have a small staff of civilians on board, in various positions, to assist Starfleet officer's and crew with non-classified workloads and most would be assigned to the various labs and offices on board.

Since, at the time of construction, war would be imminent, many other details about the fitting of the Tempest are still deemed highly classified and the release of such information will not be made known until a directive from the Chief of Staff, Starfleet Command, gives approval. Further documentation into specific details of the vessel are contained within their own set of plans, approved by their respective agencies.