

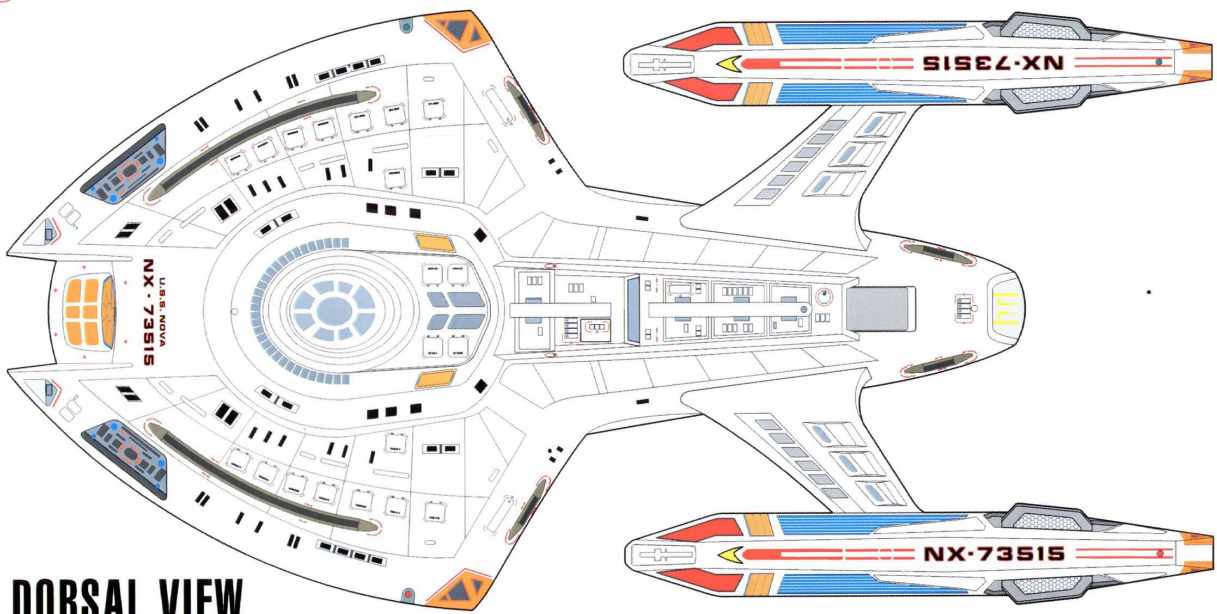


# NOVA

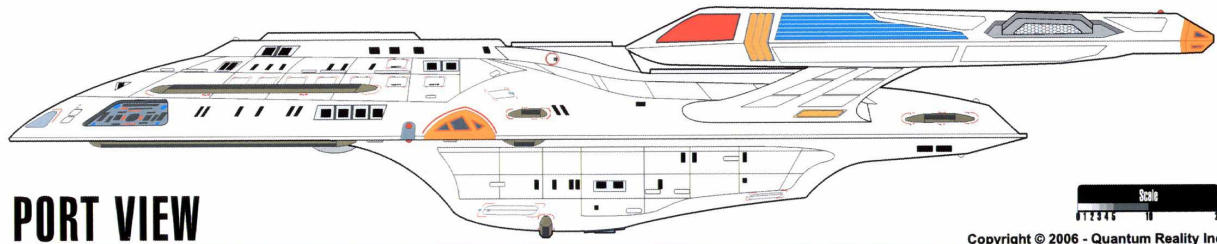
PROTOTYPE NX-73515  
EXTERNAL VIEWS SHEET 1/7  
SPECIFICATIONS

## SPECIFICATIONS

|                          |                                                                                                                                                             |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Particulars              | Nova                                                                                                                                                        |
| Vessel Class             | NX-73515                                                                                                                                                    |
| Identification           | Light Research Cruiser                                                                                                                                      |
| Type                     |                                                                                                                                                             |
| Spaceframe               |                                                                                                                                                             |
| Overall Length           | 180 meters                                                                                                                                                  |
| Overall Beam             | 43 meters                                                                                                                                                   |
| Overall Draft            | 35 meters                                                                                                                                                   |
| Decks                    | 8                                                                                                                                                           |
| Displacement             | 2.1 X 10 <sup>6</sup> tons                                                                                                                                  |
| Crew & Auxiliary Systems |                                                                                                                                                             |
| Complement               | 15 Officers<br>65 Enlisted                                                                                                                                  |
| Transporters             | 2 B-personnel<br>1 Cargo                                                                                                                                    |
| Information Systems      |                                                                                                                                                             |
| Computer Core            | 2 (1 Primary / 1 Secondary)<br>Isolinear Optical Chip Transistor FTL Nanoprocessors                                                                         |
| Warp Systems             |                                                                                                                                                             |
| Power                    | Matter / Antimatter Reactor<br>(5.2 X 10 <sup>6</sup> terawatt)                                                                                             |
| Cruising Speed           | wf 8.0                                                                                                                                                      |
| Flank Speed              | wf 7.0                                                                                                                                                      |
| Burst Speed              | wf 8.0 (Sustainable for 1 hour)                                                                                                                             |
| Impulse Systems          |                                                                                                                                                             |
| Power                    | 4 - primary - deuterium fusion reactor<br>(8.1 X 10 <sup>10</sup> megawatt)<br>2 - Secondary - deuterium fusion reactor<br>(2.2 X 10 <sup>6</sup> megawatt) |
| Vector Nozzle            | 1 (downward)                                                                                                                                                |
| Cruising Speed           | 0.25 c                                                                                                                                                      |
| Flank Speed              | 0.80 c                                                                                                                                                      |



DORSAL VIEW



PORT VIEW



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# NOVA

PROTOTYPE NX-73515

EXTERNAL VIEWS SHEET 2/7

SPECIFICATIONS  
DESIGN HISTORY

## SPECIFICATIONS

### Tactical Systems

|              |                                                                                                                                                        |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Phaser       | 11 - Type X strip                                                                                                                                      |
| Torpedo Tube | 2 Fore - Type 31 (Secret Ops)                                                                                                                          |
| Magazine     | 30 Mark VI Photon Torpedoes                                                                                                                            |
| Grid         | 10 Class I-B Probes                                                                                                                                    |
| Deflector    | 8 Deflector Shield Generator (rated 5.75 X 10 <sup>6</sup> mw - standby / 1.35 X 10 <sup>6</sup> mw - alert / 2.87 X 10 <sup>6</sup> mw - 0.0017 Sec.) |
| Tractor beam | 4 Structural Integrity Field Generator (rated 1.15 X 10 <sup>6</sup> mw)                                                                               |
|              | 1 - Primary - forward (2.81 X 10 <sup>6</sup> megawatt - 210 millicoulombs)                                                                            |
|              | 1 - Secondary - forward (1.18 X 10 <sup>6</sup> megawatt - 115 millicoulombs)                                                                          |
|              | 1 Fore / 1 Aft (10 megawatt - 280 millicoulombs)                                                                                                       |

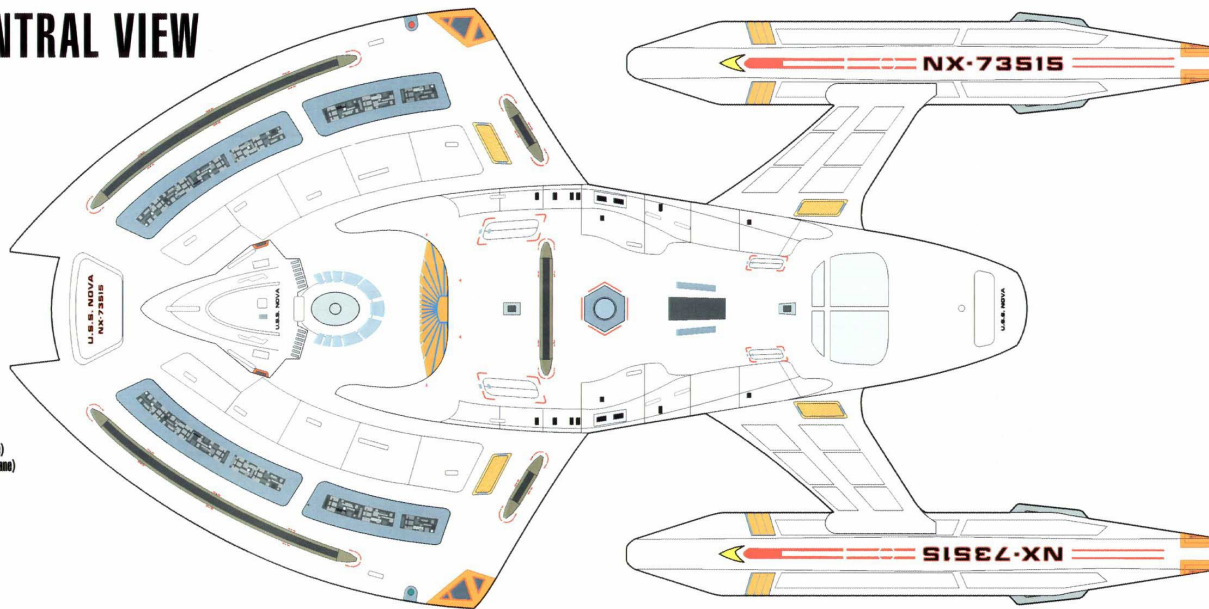
## DESIGN HISTORY

Project Nova was first proposed by Starfleet Command to the Federation Council in 2261 as an explorative vessel to replace the aging Oberth-class. Rather than design a vessel 'from scratch', the Advanced Starship Design Bureau pulled a design - yet never built - spacetime frame from out of the proposed archives at the Starfleet Tactical Development Division. The design had actually been intended as a pocket destroyer - one of two designs submitted for the Deffaut-class.

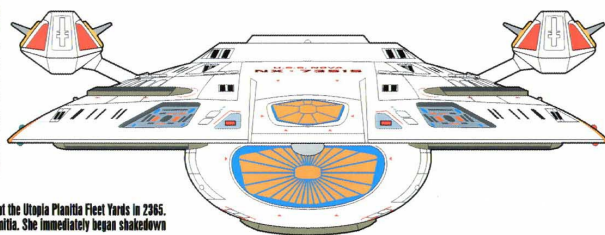
The Nova-class spacetime frame was redesigned into a research ship. Her tactical sensor arrays were replaced with science sensor pallets, and her aft torpedo tubes removed completely - leaving room for a plug-in cargo bay atop the shuttlebay. The vessel was designed with a civilian research contingent in mind. Labs, quarters, mess/recreation lounge, conference and office facilities for said personnel have been located on deck four to simplify security concerns. The overall design is a scaled-down throwback to the Constitution-class configuration without the interconnecting hull between the primary and secondary hulls - considered a weak point in the Heavy Cruiser design.

The first spacetime frame components of the class' lead ship were gamma-welded at the Utopia Planitia Fleet Yards in 2365. On 09 November 2368, U.S.S. Nova (NX-73515) was launched from Utopia Planitia. She immediately began shakedown trials in the home sectors, being formally commissioned on 30 July 2369.

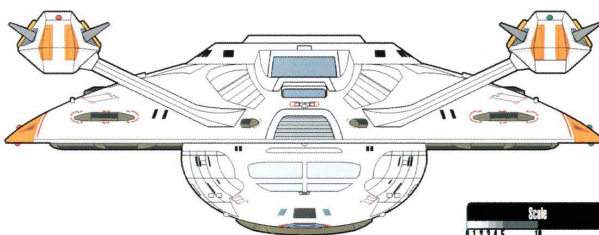
## VENTRAL VIEW



## FORWARD VIEW



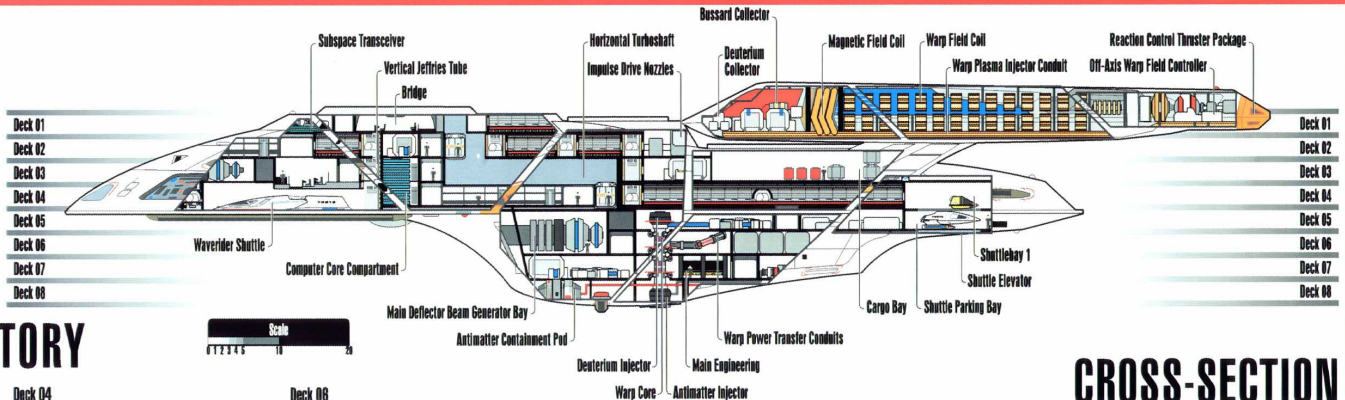
## AFT VIEW



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# NOVA

PROTOTYPE NX-73515  
CROSS-SECTION SHEET 3/7  
DECK DIRECTORY  
INTERNAL SYSTEMS



## DECK DIRECTORY

|                                        |                                                   |                                                |                                                  |                                                  |                                      |
|----------------------------------------|---------------------------------------------------|------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------|
| Deck 01                                | 1 Main Bridge                                     | Deck 04                                        | 0 Junior Officer's Quarters                      | Deck 06                                          | 2 Enlisted Quarters (4, 3-ber Bunks) |
| 1 Conference Room                      | 0 Enlisted Quarters (4, 3-ber Bunks)              | 2 Life Support                                 | 2 Dorsal-Forward Tactical Scanner / Sensor Suite | 2 Primary Deflector Generator Bay - Main Section |                                      |
| 1 Captain's Quarters                   | 2 Torpedo Launch Bay                              | 1 Main Engineering Bay - Upper Level           | 2 Torpedo Launch Bay                             | 2 Deflector Screen / Force-Field Generator Bay   |                                      |
| 1 First Officer's Quarters             | 2 Dorsal-Midships Phaser System                   | 1 Main Engineering Bay - Upper Level           | 2 Ventral-Midships Phaser System                 | 1 Water Storage / Waste Recycling Compartment    |                                      |
| 1 Subspace / Radio Transceiver Room    | 2 Dorsal-Aft Phaser System                        | 1 Shuttlebay                                   | 2 Dorsal-Aft Phaser System                       |                                                  |                                      |
| 2 Transporter Transceiver Room         | 1 Waverider Shuttle Parking Bay                   | 1 Computer Core Bay - Main Level               | 2 Waverider Shuttle Parking Bay                  |                                                  |                                      |
| 1 Officer's Quarters                   | 1 Shuttlebay                                      | 2 RCS Thruster & Fueling System - Main Section | 1 Shuttlebay                                     |                                                  |                                      |
| 4 Escape Pod Access                    | 2 Structural Integrity Field Generator & Antigrav | 1 Landing Thruster Bay                         | 2 Escape Pod Access                              |                                                  |                                      |
|                                        | 2 Cryogenic Gas Tankage Compartment               | 1 Main Engineering Bay - Main Level            |                                                  |                                                  |                                      |
| Deck 02                                | 1 Officer's Quarters                              | 1 Antimatter Processing Bay                    |                                                  |                                                  |                                      |
| 1 Officers' Mess (Relage 1)            | 2 Deflector Screen / Force-Field Generator Bay    | 2 Access to Forward Landing Strut Ladder       |                                                  |                                                  |                                      |
| 1 Enlisted Lounge & Mess (Relage 2)    |                                                   | 2 Aft Landing Struts / Pod Bay                 |                                                  |                                                  |                                      |
| 1 First Officer's Office               |                                                   | 1 Astronetics Lab                              |                                                  |                                                  |                                      |
| 1 Chief Engineer's Office              |                                                   |                                                |                                                  |                                                  |                                      |
| 2 8-Personnel Transporter Room         |                                                   |                                                |                                                  |                                                  |                                      |
| 1 Life Support Compartment             |                                                   |                                                |                                                  |                                                  |                                      |
| 1 Fusion Generator & Impulse Bay       |                                                   |                                                |                                                  |                                                  |                                      |
| 2 Escape Pod Access                    |                                                   |                                                |                                                  |                                                  |                                      |
| Deck 03                                | 2 Officer's Quarters                              | Deck 08                                        | 2 Forward Landing Struts / Pod Bay               |                                                  |                                      |
| 2 Enlisted Quarters (4, 3-ber Bunks)   | 1 Antimatter Containment Bay                      | 1 Plasma Relay Control / Ventral-Midships      | 1 Antimatter Containment Bay                     |                                                  |                                      |
| 1 Sickbay Complex                      | 1 Phaser System                                   | 1 Antimatter Injector Engineering Bay          | 1 Sickbay Complex                                |                                                  |                                      |
| 1 Transporter Refuel Bay               | 1 Antimatter Loading Port                         | 1 Tractor Beam Emittor                         | 1 Transporter Refuel Bay                         |                                                  |                                      |
| 1 Secondary Deflector Bay              |                                                   |                                                | 1 Secondary Deflector Bay                        |                                                  |                                      |
| 1 Cryogenic Gas Tankage Bay            |                                                   |                                                | 1 Cryogenic Gas Tankage Bay                      |                                                  |                                      |
| 2 Dorsal-Forward Phaser System         |                                                   |                                                | 2 Dorsal-Forward Phaser System                   |                                                  |                                      |
| 1 Computer Core Bay - Upper Section    |                                                   |                                                | 1 Computer Core Bay - Upper Section              |                                                  |                                      |
| 1 Security Complex                     |                                                   |                                                | 1 Security Complex                               |                                                  |                                      |
| 1 Sickbay                              |                                                   |                                                | 1 Sickbay                                        |                                                  |                                      |
| 2 Science / Engineering Workshop / Lab |                                                   |                                                | 2 Science / Engineering Workshop / Lab           |                                                  |                                      |
| 14 Escape Pod Access                   |                                                   |                                                | 14 Escape Pod Access                             |                                                  |                                      |
| 1 Deuterium Injector Engineering Bay   |                                                   |                                                | 1 Deuterium Injector Engineering Bay             |                                                  |                                      |
| 1 Main Cargo Bay                       |                                                   |                                                | 1 Main Cargo Bay                                 |                                                  |                                      |

## CROSS-SECTION

## INTERNAL SYSTEMS

### Section 1.0 Spacecraft Structure

The spaceframe of the Nova-class starship is trititanium/duralumin macrofilament truss frames, 0.65 m<sup>2</sup> in cross section. These are placed at the tops of Decks 1, 3, 5, and 7 for all three axes of the ship. Smaller trusses are spaced between quarters, at hull junctions, and at the turbofill shafts, measuring 0.25 m<sup>2</sup> in cross section. This physical framework is reinforced by the Structural Integrity Field (SIF), using a network of Class 2 ceramic-polymer wave guides to distribute energy to Class 1 ceramic-polymer elements. The exterior hull substrate is poly bonded to 4 cm by 0.5 cm bands with 2 cm studs every meter that are gamma welded to the main frame.

### Section 1.1 Spacecraft Hull Structure

The first hull layer is 5 cm thick and is composed of a poly microfoam with interwoven trititanium filaments (nominally 1.5 meters in width by 2.5 meters in length). The second layer is four sheets of 0.4 cm thick trititanium, each going 90 degrees to the layer above it, for torsion strength, a fifth sheet of Alumin foil is 0.4 cm thick also and used for radiation protection. The third layer is a honeycombed duralumin alloy with a micro-ceramic polymer bonded to each side used for thermal insulation and SIF conductivity. The fourth and outer layer is composed of a 2.0 cm ablative ceramic fabric with interwoven trititanium filaments. This is attached to a polycyberams sheet by a chemical bonding process. This layer 3.0 meters wide by 3.0 meters in length and is attached with standard duralumin fasteners to the first three layers after they are bonded together. This layer is replaced as needed, with no more than 8 years between oldest and newest sheets.

### Section 1.2 Structural Integrity Field

The physical integrity of the spaceframe is augmented by the SIF, created by four field generators on Deck 5, each consisting of a pair of 2 megawatt graviton polarity sources. These feed a pair of 150 millicochrane subspace field distortion amplifiers. Any two units are capable of supporting the entire SIF grid at 100% for 40 hours before gaussing causes a critical shut down. The SIF system creates a subspace distortion field that is guided along all trusses and hull plates, reinforcing these by a factor of 150,000% of their usual tensile strength.

In addition to the waveguides within the internal spaceframe, there are a series of emitters on the hull.

**Section 1.3 Inertial Damping Field & Synthetic Gravity Generators**  
The Inertial Damping Field (IDF) operates in parallel with the ship's artificial gravity generators, maintaining a series of variable-symmetry force fields that absorb external inertial forces. The force fields are maintained according to SFRA-standard 352.12, averaging 75 millicochrane with field differential of 5.26 nanocochrane/meter. Flux generation for IDF and gravity are provided by generators within the crawl space under each deck, in a hexagonal grid with nodes spaced 30 meters apart.

**Section 1.4 Security & Containment Force Field Generators**  
There are secondary force-field generators mounted within the vessel, filling a variety of roles. Main Engineering has a series responsible for maintaining containment for the Warp Core - with standby units for emergency containment in the event of coolant leakage and other hazards endemic to Antimatter and Fusion reactions. Others scattered throughout the ship are non-dedicated, and using waveguides and sophisticated forming software can be routed to perform various tasks - including corridor security barriers, brig security barriers, and bulkhead life-support barriers (in the event of localized hull breaches), these units have a set of four 1 megawatt polarity sources feeding a pair of 75 millicochrane field generators.

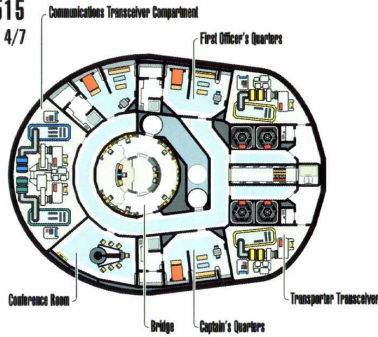
### Section 2.0 Computer Systems

The Main Computer Cores (MCC) are located on Decks 3 through 4 in the Primary hull. The MCCs consist of 276 dedicated modules of 144 isolinear optical storage chips, which, under LCARS control provide dynamic access at a rate of 4,800 kilobytes/sec. The total storage capacity for each module is 64,000 to 128,000 kilobytes, depending on software configuration and data compression rates. The MCC is joined to the Optical Data Network (ODN) by triple redundant Micron Junction Links (MJL) on each module. The final layer to the computer systems is a dedicated short range Radio Frequency (RF) system that all cores use to communicate with the control panels, access points, and PADs.

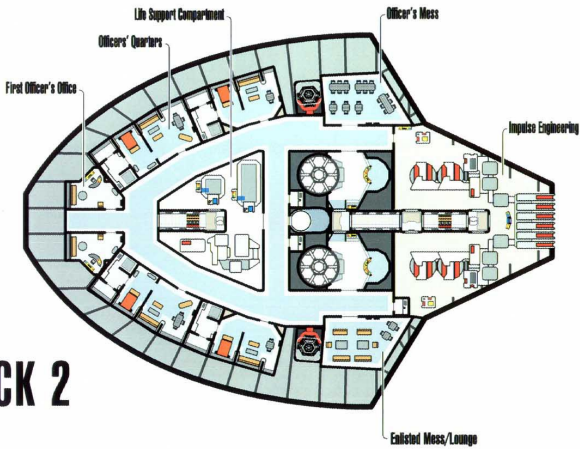
# NOVA

PROTOTYPE NX-73515  
INTERNAL VIEWS SHEET 4/7  
SYMBOL CHART

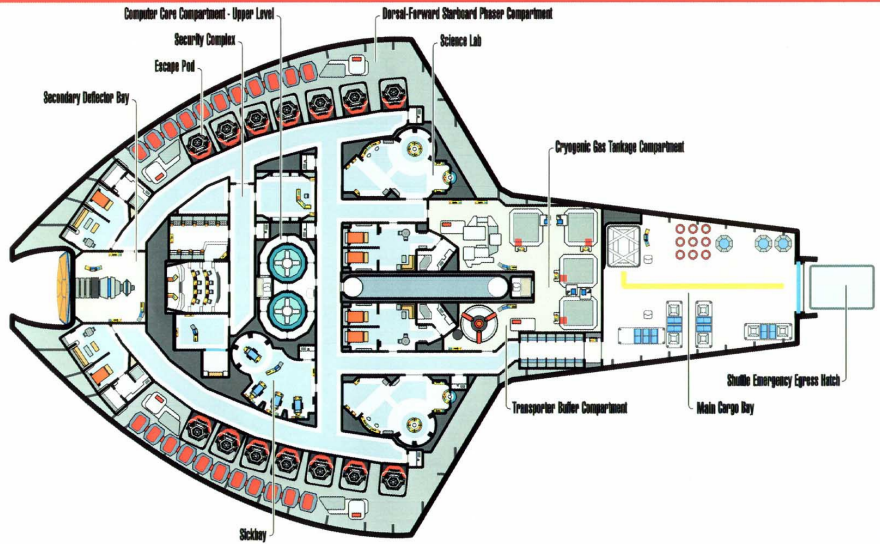
## DECK 1



## DECK 2

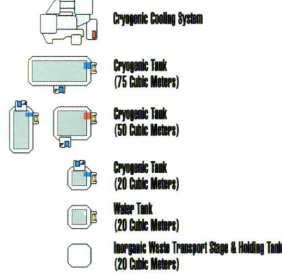


## DECK 3

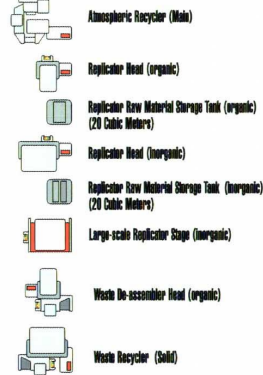


## SYMBOL CHART

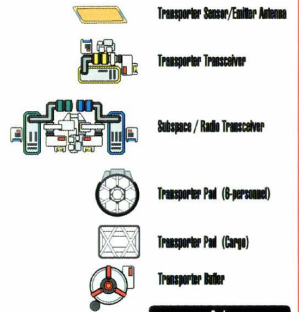
### LIFE SUPPORT & FLUID/GAS TANKAGE



### ENVIRONMENTAL ENGINEERING - REPLICATION



### AUXILIARY ENGINEERING - TRANSPORT & COMMUNICATIONS SYSTEMS



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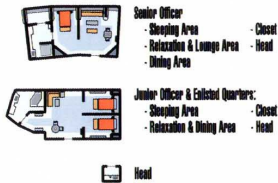
# NOVA

PROTOTYPE NX-73515  
INTERNAL VIEWS SHEET 5/7  
SYMBOL CHART

## DECK 4

## SYMBOL CHART

### AUXILIARY ENGINEERING - COMPARTMENTS



Science / Engineering Workshop / Lab:  
- Research Area  
- Operators' Stations  
- Independent Computer Core



B-Perimeter Transporter Room:  
- Stage  
- Operators' Station



Sickbay Complex:  
- Containment Area  
- 1 Surgical Bed  
- Head  
- 3 Diagnostic Beds  
- Replicator



Security Complex:



- Armory



- Locker Room

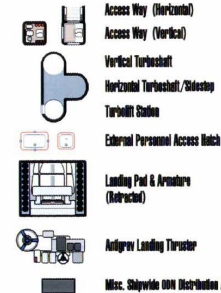


- Briefing Room



- Dry & Monitoring Room

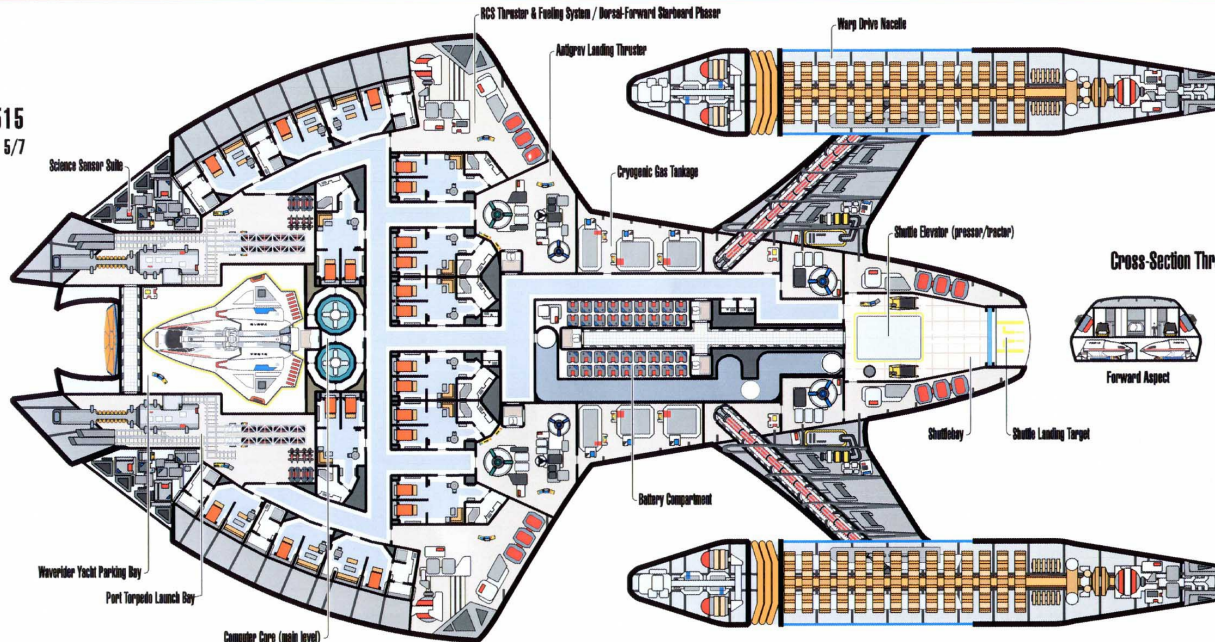
### AUXILIARY ENGINEERING - MISCELLANEOUS SYSTEMS



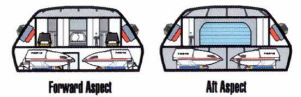
### AUXILIARY ENGINEERING - CONSOLES & STATIONS



### AUXILIARY ENGINEERING - EXTERNAL FEATURES & MARKINGS



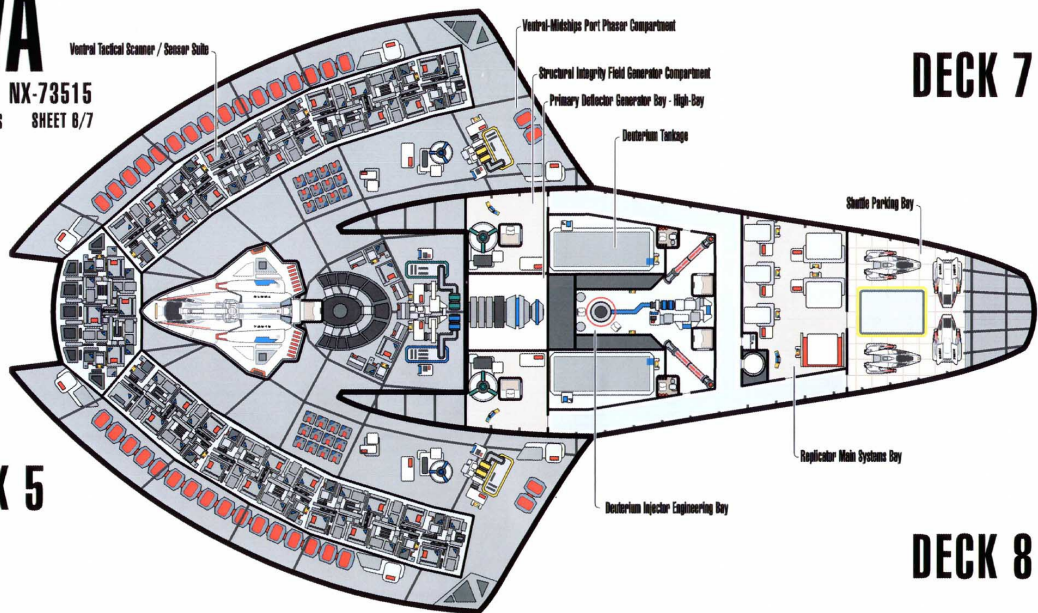
### Cross Section Through Shuttlebay



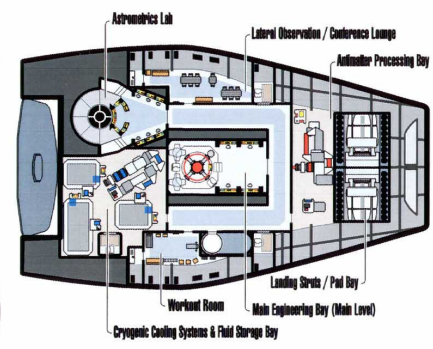
# NOVA

PROTOTYPE NX-73515  
INTERNAL VIEWS SHEET 8/7

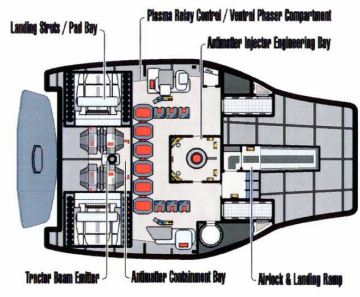
## DECK 5



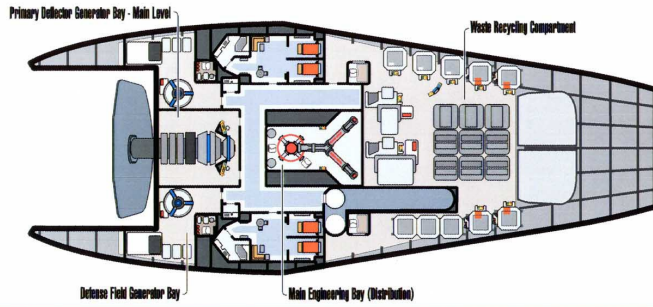
## DECK 7



## DECK 8



## DECK 6

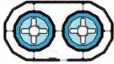


# NOVA

PROTOTYPE NX-73515  
SYMBOL CHART SHEET 7/7

## SYMBOL CHART

### AUXILIARY ENGINEERING - INFORMATION SYSTEMS



Computer Core



Navigation Sensor Pallets



Long Range Tactical/Science Sensor Array



Ventral Navigational Sensor Array



Forward Main Navigational Sensor Array



Ventral Short Range Science Sensor Array

ESCAPE SYSTEMS



Escape Pod



Escape Pod Niche & Cover

### AUXILIARY ENGINEERING - DEFENSE SYSTEMS



Phaser Emitter



Phaser Firing Chambers

Photon Torpedo Launch Bay:

- Launcher
- Feed/Transfer Conveyor & Tunnel to Aft Launcher
- Magazines (2 stacks of 4 x 4 = 32)
- Loading Conveyors (Open forward hull)
- Torpedoes & Probe Launcher:
  - Quantum Torpedo
  - Photon Torpedo
  - Various Probes
- Torpedo/Probe Mobile Storage Racks

### AUXILIARY ENGINEERING - GRANTONIC SYSTEMS



Tractor Beam Emitter



Secondary Deflector Dish



Main Deflector Dish



Primary Deflector Generator



Secondary Deflector Generator



Force Field / Deflector Screen Generator



Engineering Insulating Force Field Generator



Structural Integrity Field Generator

### MAIN ENGINEERING - ELECTRO-PLASMA SYSTEMS



EPS Relay



EPS Distribution Node



EPS Phaser Distribution Node



Cold Fusion Battery Bank

### MAIN ENGINEERING - REACTION CONTROL THRUSTER SYSTEMS

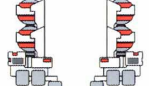


Vectored Exhaust Nozzle Plasma Fusion Generator (2.2 X 10<sup>9</sup> Mw)



Deuterium Processors

### MAIN ENGINEERING - IMPULSE DRIVE SYSTEMS



Fusion Generators (0.1 X 10<sup>10</sup> Mw)



Deuterium Processors

### MAIN ENGINEERING - WARP DRIVE SYSTEMS



Warp Plasma Conduit

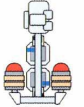


Warp Field Cell



Off-Axis Field Generator

### MAIN ENGINEERING - BUSSARD COLLECTION SYSTEMS



Magnetic Field Generator / Collector



Continuous Cycle Fracturator & Hydrogen Tanks



Ionizing Beam Emitters



Magnetic Field Coils

### MAIN ENGINEERING - WARP CORE SYSTEMS



Deuterium Injector



Warp Core Cross sections



Warp Core Reaction Chamber



Antimatter Injector



Warp Plasma Conduit



Antimatter Containment Pod



Antimatter Processor



Deuterium Processor

### EMBARKED CRAFT



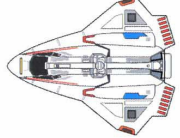
Work Bus



Type S Shuttlecraft



Type S Shuttlecraft



Wave Rider Shuttlecraft

