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NOVA

PROTOTYPE NX-73515

EXTERNAL VIEWS SHEET 1/7
SPECIFICATIONS

SPECIFICATIONS

Particulars
Vessel Class: Nova
Identification: NX-73515
Type: Light Research Cruiser

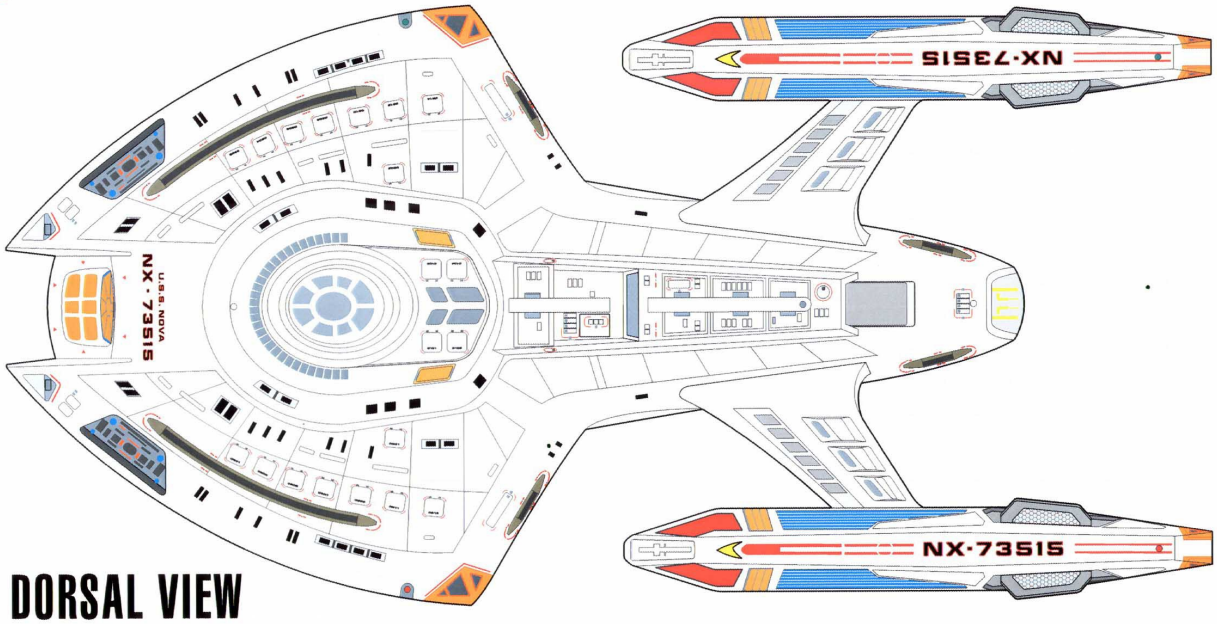
Spaceframe
Overall Length: 180 meters
Overall Beam: 43 meters
Overall Draft: 35 meters
Decks: 8
Displacement: 2.1 X 10^5 tons

Crew & Auxiliary Systems
Complement: 15 Officers, 85 Enlisted
Transporters: 2 6-personnel, 1 Cargo

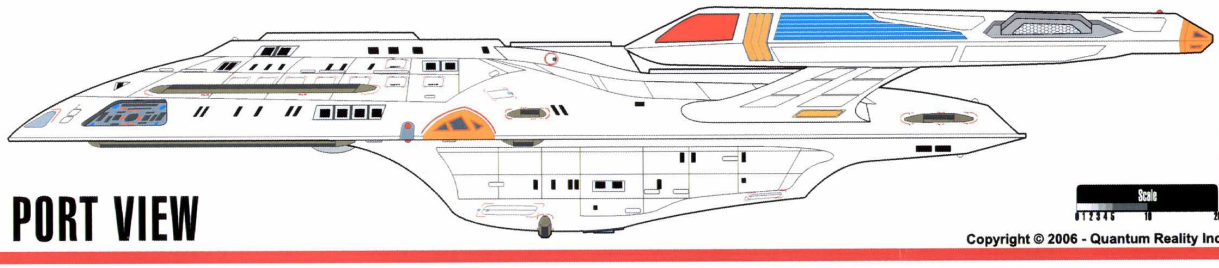
Information Systems
Computer Core: 2 (1 Primary / 1 Secondary) Isolinear Optical Chip Transtator FTL Nanoprocessors

Warp Systems
Power: Matter / Antimatter Reactor (5.2 X 10^4 teravolt)
Cruising Speed: wf 6.0
Flank Speed: wf 7.0
Burst Speed: wf 8.0 (Sustainable for 1 hour)

Impulse Systems
Power: 4 - primary - deuterium fusion reactor (8.1 X 10^{10} megawatt)
2 - Secondary - deuterium fusion reactor (2.2 X 10^8 megawatt)
Vector Nozzle: 1 (dorsal-aft)
Cruising Speed: 0.25 c
Flank Speed: 0.90 c



DORSAL VIEW



PORT VIEW

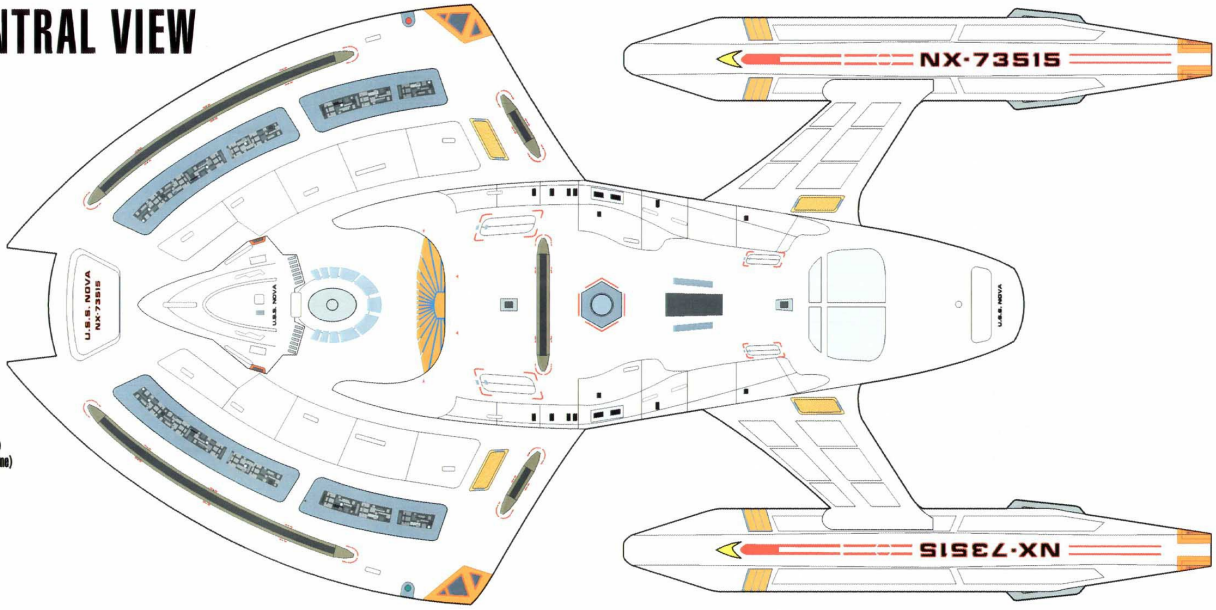
Scale
0 1 2 3 4 5 10 20

NOVA

PROTOTYPE NX-73515

EXTERNAL VIEWS SHEET 2/7
SPECIFICATIONS
DESIGN HISTORY

VENTRAL VIEW



SPECIFICATIONS

Tactical Systems

Phaser	11 - Type X strip
Torpedo Tube	2 Fore -Type 3I (burst fire)
Magazine	30 Mark VI Photon Torpedoes 10 Class 1-B Probes
Grid	6 Deflector Shield Generator (rated 5.75 X 10^2 mw - standby / 1.35 X 10^2 mw - alert / 2.87 X 10^5 mw - 0.0017 Sec.) 4 Structural Integrity Field Generator (rated 1.15 X 10^3 mw)
Deflector	1 - Primary- forward (2.01 X 10^2 megawatt - 210 millicochrane) 1 - Secondary - forward (1.10 X 10^2 megawatt - 115 millicochrane)
Tractor beam	1 Fore / 1Aft (10 megawatt - 290 millicochrane)

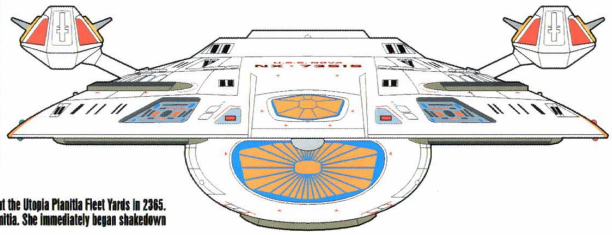
DESIGN HISTORY

Project Nova was first proposed by Starfleet Command to the Federation Council in 2261 as an exploration vessel to replace the aging Oberth-class. Rather than design a vessel 'from scratch', the Advanced Starship Design Bureau pulled a designed - yet never built - spaceframe 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 Defiant-class.

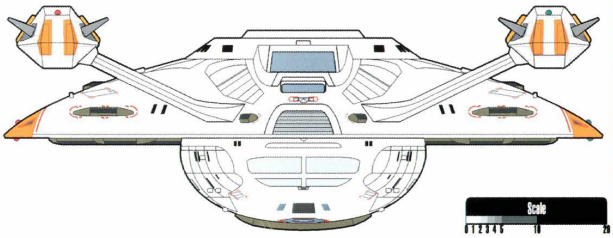
The Nova-class spaceframe was redesigned into a research ship. Her tactical sensor arrays were replaced with science sensor pallets, and her aft torpedo tubes removed completely - leaving room for a piggy-back cargo bay atop the shuttlebay. The vessel was designed with a civilian research contingent 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 spaceframe 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.

FORWARD VIEW



AFT VIEW

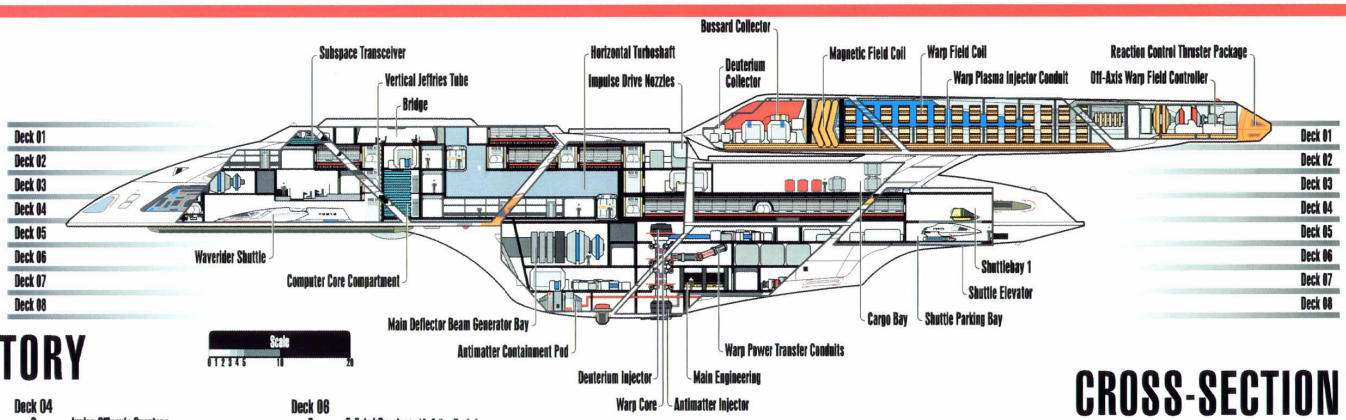


Scale
0 1 2 3 4 5 10 25

NOVA

PROTOTYPE NX-73515

CROSS-SECTION SHEET 3/7
DECK DIRECTORY
INTERNAL SYSTEMS



DECK DIRECTORY

Scale
0 1 2 3 4 5 10 20

Deck 01

1	Main Bridge
1	Conference Room
1	Captain's Quarters
1	First Officer's Quarters
1	Subspace / Radio Transceiver Room
2	Transporter Transceiver Room
1	Officer's Quarters
4	Escape Pod Access

Deck 02

4	Officer's Quarters
1	Officers' Mess (Refuge 1)
1	Enlisted Lounge & Mess (Refuge 2)
1	First Officer's Office
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
2	Enlisted Quarters (4, 3-tier Bunks)
1	Sickbay Complex
1	Transporter Buffer Bay
1	Secondary Deflector Bay
1	Cryogenic Gas Tankage Bay
2	Dorsal-Forward Phaser System
1	Computer Core Bay - Upper Section
1	Security Complex
1	Sickbay
2	Science / Engineering Workshop / Lab
14	Escape Pod Access
1	Deuterium Injector Engineering Bay
1	Main Cargo bay

Deck 04

6	Junior Officer's Quarters
8	Enlisted Quarters (4, 3-tier Bunks)
2	Dorsal-Forward Tactical Scanner / Sensor Suite
2	Torpedo Launch Bay
2	Dorsal-Midships Phaser System
2	Ventral-Midships Phaser System
2	Dorsal-Aft Phaser System
1	Waverider Shuttle Parking Bay
1	Shuttlebay
1	Computer Core Bay - Main Level
2	RCS Thruster & Fueling System - Main Section
2	Structural Integrity Field Generator & Antigrav Landing Thruster Bay
2	Cryogenic Gas Tankage Compartment
1	Battery Compartment
2	Deflector Screen / Force-field Generator Bay

Port / Starboard Nacelle & Pylon

1	Bussard Ionizing Beam Emitter Bay
1	Bussard Magnetic Field Generator Collector Bay
1	Continuous Cycle Fractionator & Deuterium Chiller Bay
1	Warp Coil & Plasma Injector Bay
1	Off-Axis Field Coil Bay
1	RCS Thruster & Fueling System

Deck 05

2	Ventral-Forward Tactical Scanner / Sensor Suite
1	Primary Deflector Generator Bay - Upper Section
1	Deuterium Injector Engineering Bay
1	Replicator Main Systems Bay
1	Shuttle Parking Bay
2	Battery Room
1	Shipfitting & Maintenance Lab
2	Structural Integrity Field Generator Bay

Deck 06

2	Enlisted Quarters (4, 3-tier Bunks)
2	Life Support
1	Primary Deflector Generator Bay - Main Section
1	Main Engineering Bay - Upper Level
2	Deflector Screen / Force-field Generator Bay
1	Main Engineering Bay - Upper Level
1	Water Storage / Waste Recycling Compartment

Deck 07

1	Cryogenic Cooling Systems & Fluid Storage Bay
1	Civilian Science Complement Lounge & Mess
1	Workout Room
1	Main Engineering Bay - Main Level
1	Antimatter Processing Bay
2	Access to Forward Landing Strut Ladder
2	Aft Landing Struts / Pad Bay
1	Astrometrics Lab

Deck 08

2	Forward Landing Struts / Pad Bay
1	Antimatter Containment Bay
1	Plasma Relay Control / Ventral-Midships Phaser System
1	Antimatter Injector Engineering Bay
1	Tractor Beam Emitter
1	Antimatter Loading Port
1	Warp Core Jettison Hatch

CROSS-SECTION

INTERNAL SYSTEMS

Section 1.0 Spacecraft Structure

The spaceframe of the Nova-class starship is tritanium/duranium macrofilament truss frames, 0.65 m^2 in cross section. These are placed at the tops of Decks 1, 3, 5, and 7 for all three axis of the ship. Smaller trusses are spaced between quarters, at hall junctions, and at the turbolift shafts, measuring 0.25 m2 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 tritanium filaments (nominally 1.5 meters in width by 2.5 meters in length). The second layer is four sheets of 0.4 cm thick tritanium, each going 90 degrees to the layer above it, for torsion strength, a fifth sheet of Aledium foil is 0.4 cm thick also and used for radiation protection. The third layer is a honeycombed duranium 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 tritanium filaments. This is attached to a polycobbrams sheet by a chemical bonding process. This layer 3.0 meters wide by 3.0 meters in length and is attached with standard duranium 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 48 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 millicochranes with field differential of 5.26 nanocochranes/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.

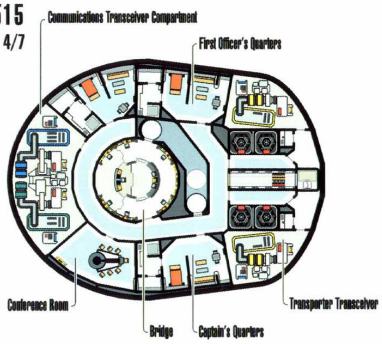
Section 2.0 Computer Systems

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 kiloquads/sec. The total storage capacity for each module is 64,000 to 128,000 kiloquads, 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 PADDs.

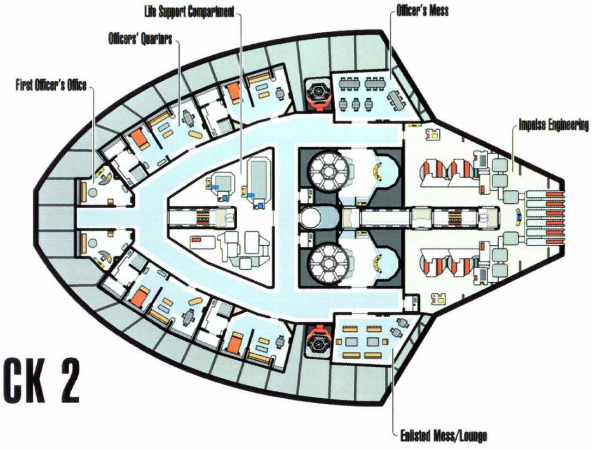
NOVA

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

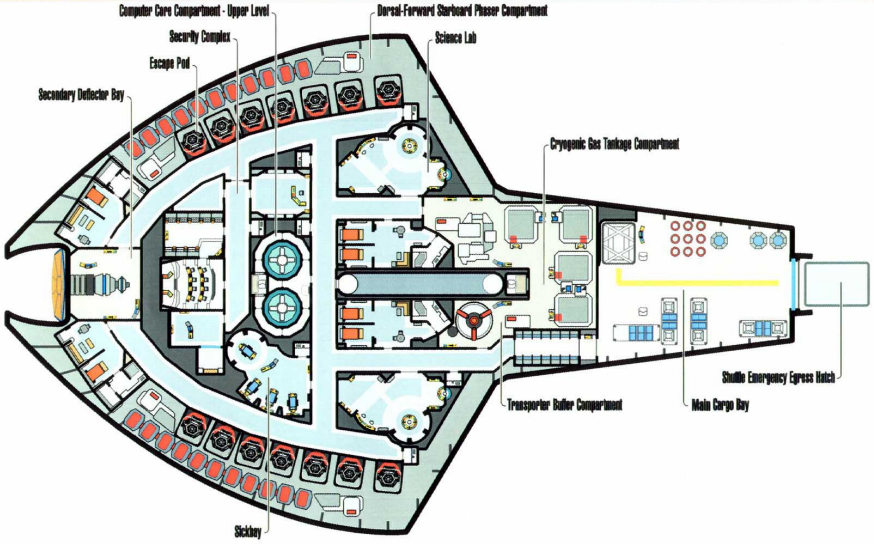
DECK 1



DECK 2

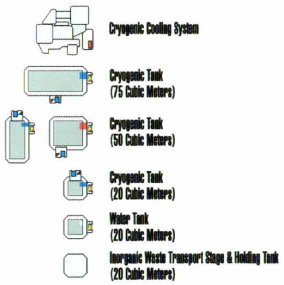


DECK 3

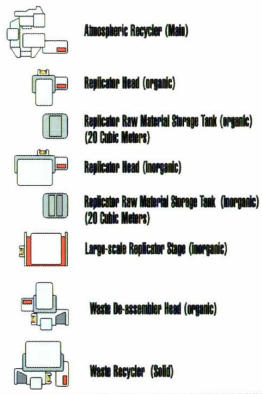


SYMBOL CHART

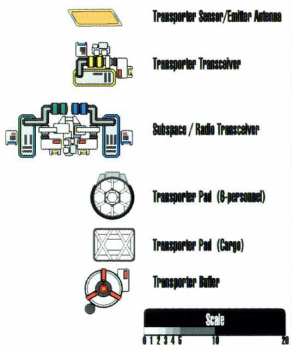
LIFE SUPPORT & FLUID/GAS TANKAGE



ENVIRONMENTAL ENGINEERING - REPLICATION



AUXILLARY ENGINEERING - TRANSPORT & COMMUNICATIONS SYSTEMS

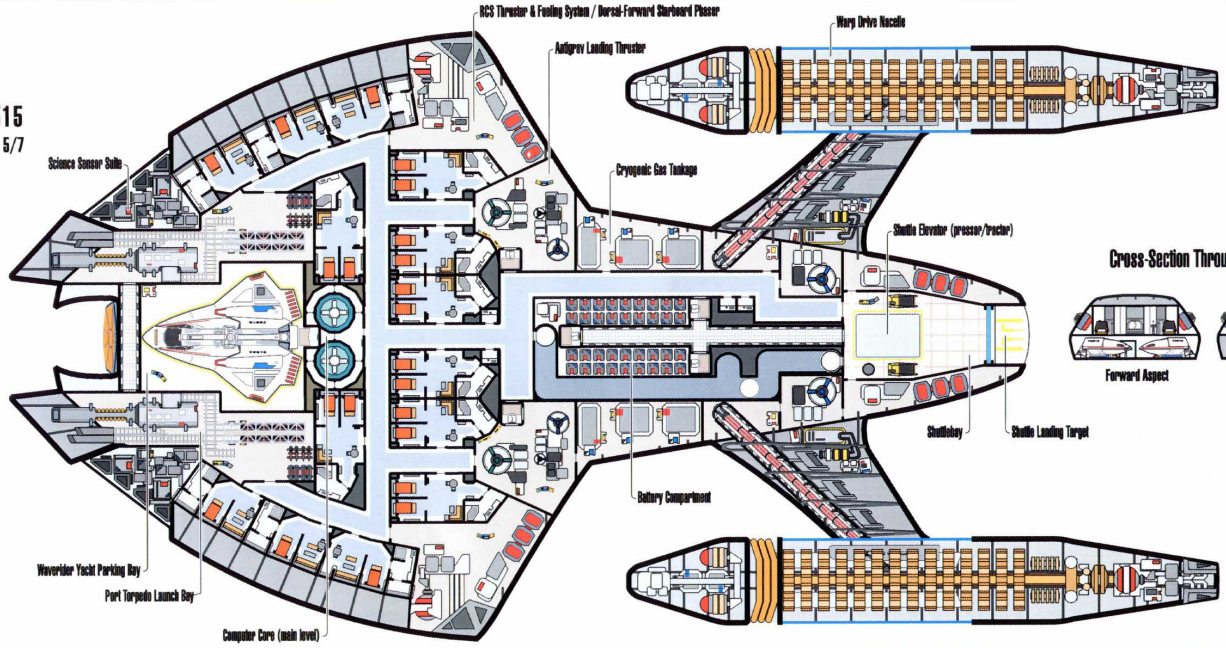


NOVA

PROTOTYPE NX-73515

INTERNAL VIEWS SHEET 5/7

SYMBOL CHART



DECK 4

Cross-Section Through Shuttlebay

Scale
0 1 2 3 4 5 10 20

SYMBOL CHART

AUXILLARY ENGINEERING - COMPARTMENTS

Senior Officer
- Sleeping Area
- Relaxation & Lounge Area
- Dining Area
- Closet
- Head

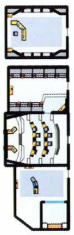
Junior Officer & Enlisted Quarters:
- Sleeping Area
- Relaxation & Dining Area
- Closet
- Head

Head

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

6-Personnel Transporter Room
- Stage
- Operators' Station

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



Security Complex:
- Armory
- Locker Room
- Briefing Room
- Brig & Monitoring Room

AUXILLARY ENGINEERING - MISCELLANEOUS SYSTEMS

Access Way (Horizontal)
Access Way (Vertical)

Vertical Turboshaft
Horizontal Turboshaft/Sideslip
Turbolift Station

External Personnel Access Hatch

Landing Pad & Armature (Retracted)

Antigrav Landing Thruster

Misc. Shipwide ODN Distribution Areas

AUXILLARY ENGINEERING - CONSOLES & STATIONS

Bridge Consoles

Free-standing Consoles
Wall-mounted Consoles

Desk

Replicator Station

AUXILLARY ENGINEERING - EXTERNAL FEATURES & MARKINGS

Radiation Hazard

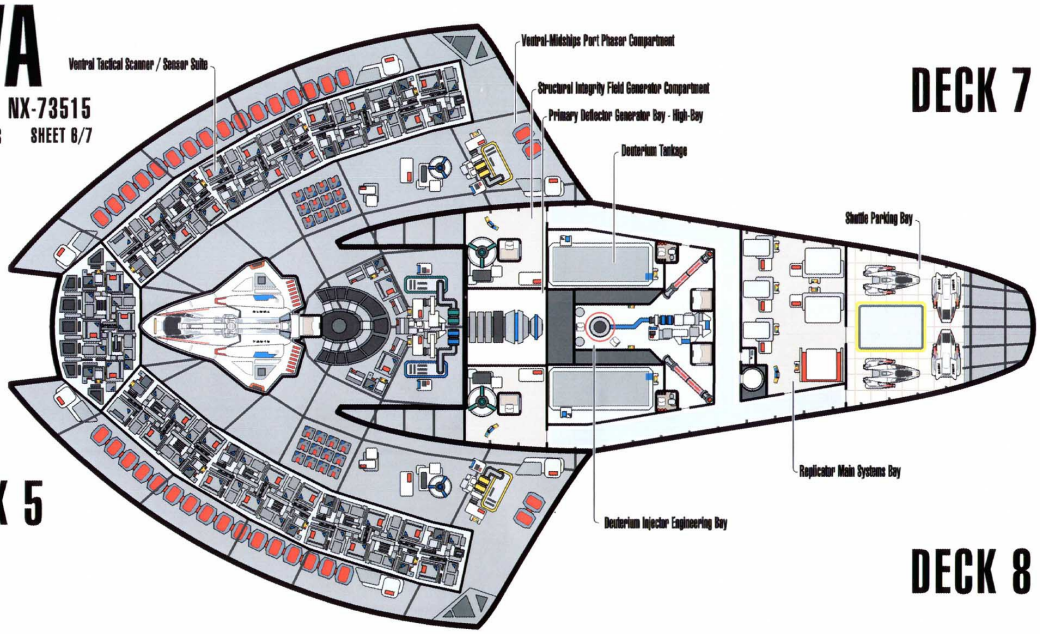
Equipment Access Panel

Navigation Beacon

NOVA

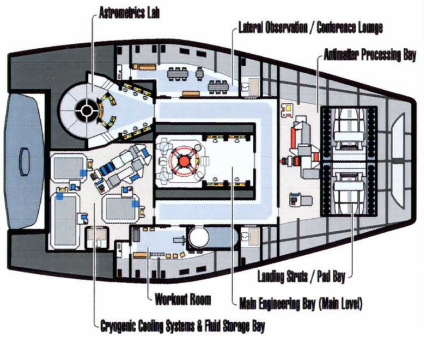
PROTOTYPE NX-73515

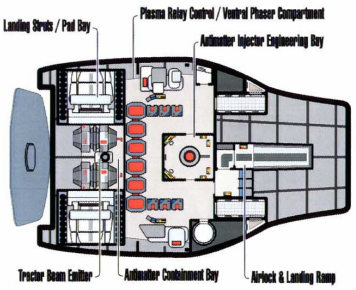
INTERNAL VIEWS SHEET 8/7



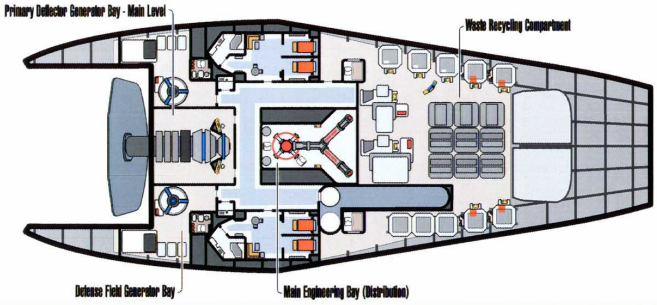
DECK 5

DECK 7





DECK 8



DECK 6

Scale

0 1 2 3 4 5 10 20

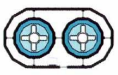
NOVA

PROTOTYPE NX-73515

SYMBOL CHART SHEET 7/7

SYMBOL CHART

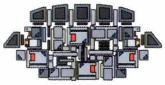
AUXILLARY ENGINEERING - INFORMATION SYSTEMS


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

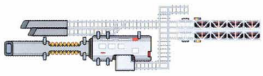

Escape Pod


Escape Pod Niche & Cover

AUXILLARY 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 (from forward hull)
- Torpedoes & Probe Loadout:
  - Quantum Torpedo
  - Photon Torpedo
  - Various Probes
- Torpedo/Probe Mobile Storage Racks


Force-field / Deflector Screen Generator

Conventional Explosive Destruct Charge

AUXILLARY ENGINEERING - GRAVITONIC 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

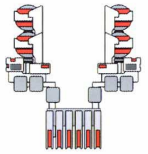
MAIN ENGINEERING - REACTION CONTROL THRUSTER SYSTEMS


Vectored Exhaust Nozzle Plenum

Fusion Generator (2.2×10^9 Mw)

Deuterium Processors

MAIN ENGINEERING - IMPULSE DRIVE SYSTEMS


Fusion Generators
(0.1×10^{10} Mw)

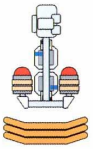
Deuterium Processors

MAIN ENGINEERING - WARP DRIVE SYSTEMS


Warp Plasma Conduit
Warp Field Coil


Off-Axis Field Generator

MAIN ENGINEERING - BUSSARD COLLECTION SYSTEMS


Magnetic Field Generator / Collector

Continuous Cycle Fractionator & 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

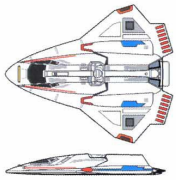
Deuterium Processor

EMBARKED CRAFT


Work Bee


Type 8 Shuttlecraft


Type 9 Shuttlecraft


Waverider Shuttlecraft

Scale

0 1 2 3 4 5 10 20