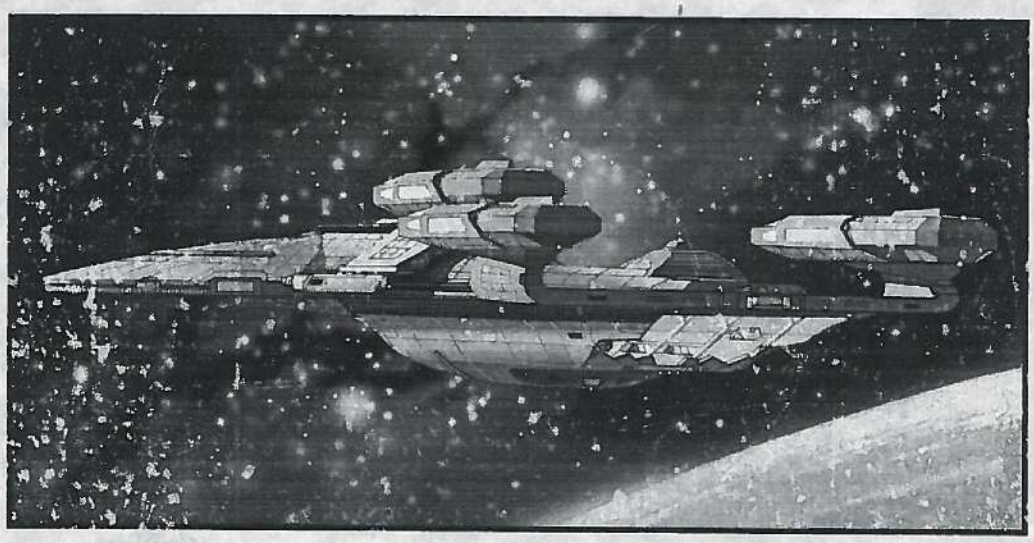
CETUS PROJECT



TECHNICAL GUIDE

Written and Illustrated by
James T. Wappel

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PREFACE

Historical chronology of the Great Union of New Terra: 2136-2388

2136 Humans make contact with an ancient race called Ballesterii.

2140 Earth forms a loose cooperative alliance with the Ballesterii and other neighboring races.

2144 First contact with a species known as the Jolarans at Donora II leads to a massacre, and a series of small battles ensues.

2145 Open warfare with the Jolaran Empire begins.

2147 Earth forces achieve initial success at Caleb and Draconis Beta, but the tide quickly turns and the Jolarans deal them several setbacks.

2151 The Earth/Jolaran war degenerates into a stalemate. At this time, Earth makes contact with planets that will eventually form the Chetzoq Alliance. These worlds are attempting to break free of Jolaran control, and form their own state.

2153 The Jolarans, worried about the prospect of the humans forming an alliance with the breakaway Chetzoq, develop a Stellar Convection Destabilization weapon.

2153 A small scout ship penetrates undetected deep into Earth space, and launches the SCD weapon. This alters convection patterns within the sun's interior, causing a massive change in the regeneration of the solar magnetic field. Hyper-increased magnetic activity leads to the formation of sunspots covering as much as 15% of the heliosphere. The immense increase in this activity devastates the biosphere of Earth, and makes the rest of the solar system virtually uninhabitable. 89 million people die in the first four months after the attack.

2154 A global evacuation is begun to Procyon four. Due to the lack of ships, the process is slow, and millions more die. This evacuation becomes known as the Second Exodus. There are those who choose to stay, despite the conditions.

2155 EarthFleet launches an all out, risky offensive to avenge the destruction of the homeworld. At this time, worlds held captive under Jolaran domination begin open revolts.

2156 Nearing defeat, the Jolarans choose to call for a truce, so that they can quell the internal strife.

2159 Former protectorates of the Jolaran Empire unite with the free Chetzoq worlds to form the Chetzoq Alliance, the largest confederation of worlds in known space.

2165 Humans decide to form a common government with the nearby worlds and colonies which have been rebuilt in the aftermath of the war. 37 charter states sign the Procyon Accords.

2167 Unrest within the Jolaran Empire slowly dies out as the reconstructed Jolaran Imperial Navy reestablishes firm control.

2172 The Great Union of New Terra is formed, with 56 member states. Each individual state is represented in both the Union Assembly (upper house) and the Council of Representatives (lower house). The upper house of Parliament begins with 168 members (three for each world), while the lower chamber is a proportional system, based on population. The Interstellar High Court (IHC) interprets the Rules of Confederation, while the President is elected by voting among all member states.

2173 A long period of relative calm settles in over the entire region. Both the Chetzoq Alliance and the Great Union of New Terra enjoy an unprecedented era of expansion for nearly twelve years.

2195 An attempt at a mutual defense pact between the Great Union and the Chetzoq Alliance fails, leading to animosity between the two governments.

2197 The Jolarans, convinced that the Great Union will take no action to assist the Alliance, begin limited campaigns to recover the territories lost to the insurrections of 2155-2159.

2203 On the 50th anniversary of the Second Exodus, survivors who had remained on Earth make a bid to form an independent state. The move is dismissed by President Berghen and the Legislature. The IHC also rules against the movement declaring that all people living on Earth are Terran citizens under the Rules of Confederation. This causes a deep rift, and the True Earth movement begins.

2209 A Great Union colony transport bound for the Argelius system strays too far into space disputed by the Chetzoq and the Great Union. This ship is attacked and boarded by a Chetzoq patrol vessel. The United Space Service (USS) VICTORIA answers the distress call, and destroys the patrol ship in a short battle.

2210 In protest, the Chetzoq Alliance closes its borders with the Great Union, and begins to fortify its frontier.

2212 The Jolarans launch a surprise assault on the territories of Menkal, Eudora, and Sigma Tauri.

2214 Jolaran forces push the last remaining Chetzoq units out of this northern region.

2218 The Jolaran Empire tries to sew further conflict between the Chetzoq and the New Terrans by claiming the Great Union secretly intends to annex the Kamyka and Kivu territories.

2224 Unwise colonization policies enacted by the newly elected, expansionist Council of Representatives give credence to the statements made by the Jolaran Empire.

2226 Relations between the Great Union and the Chetzoq are further strained by continued western expansion.

2227 A Chetzoq patrol stops a convoy in the Eta Carinae system. All cargo is seized, and the colonists are briefly detained.

2228 Outraged Legislators of the Northern and Western regions within the Great Union demand that the President take action to protect their constituents.

Table of Contents

2230 President Ramirez is defeated in an election seen as a referendum on dealing with the conflict with the Chetzoq. The new President signs into law the Colony Protection Act.

2233 Moska, a Chetzoq world on the border with the Great Union, claims that any incursion into their territory (some of which is under dispute with the Zosma colony) will be met with force.

2235 Angry Zosman colonists challenge the Moska to attack a convoy which is travelling through the disputed area. The Moskans carry out their threat, which causes the other Great Union border worlds to rally behind the Zosman colonists. The Legislature of the Great Union approves mobilization of Terra Force, over the objections of the legislators from the regions bordering the Jolaran empire. They fear that a war with the Alliance will leave them vulnerable to attack by the Imperial Jolaran Navy.

2236 President Brice uses his war powers to send troops and ships to aid the northern colony worlds. Ten Assemblymen and 24 Representatives resign from office in protest, fracturing the government. Later in 2236, another conflict with the Chetzoq at Baten Katos leads to formal declaration of war by the Great Union.

2237 During a year of tense inaction, both sides build up their forces.

2238 Minister Jemtaq, head of the Chetzoq Alliance, is assassinated. Jemtaq had been ridiculed for his losses to the Jolarans and weakness towards the Great Union. The Alliance government is subverted by militant senators of the border worlds.

2239 Chetzoq forces attack the Zosma, Zavigani and Elessan systems. Both sides are now at war, each without the full support of its population.

2239-
2242 Limited offensives are launched by the Alliance and the Great Union, without significant tactical gains.

2244 As the war continues, dissent grows rapidly in many areas of the Great Union. President Brice, who had been reelected on a pro-war platform, becomes increasingly unpopular.

2246 With no end to the war in sight, soldiers from the Carema, Gomeisa, and Zato systems refuse to leave their bases when they are ordered to the front lines. Brice attempts to force them to leave, which results in rioting on several other worlds. With the very fabric of the Great Union coming apart, and civil war imminent, the President resigns.

2247 Vice President Perkins stops all TerraForce military activity, and takes over as President. He risks defeat in hopes of ending the war.

2248 Attempts at peace talks are rejected by the militant senators of the Alliance. They vow to continue the war.

2249 TerraForce scout vessels encounter a huge task force poised to invade the Zosma system. The attack is not launched when it is revealed who had assasinated Minister Jemtaq. The Moskans had been secretly operating with the Jolarans, hoping to start a war with the Great Union.

2250 The Chetzoq officially end the conflict, and agree to demilitarize the area after Perkins repeals the Colony Protection Act.

2252 A cooperation pact is signed by Perkins and the new Minister of the Alliance.

2253 Once again, calm settles over the frontier territories. On the 100th anniversary of the Jolaran attack on Earth, limited autonomy is granted to the Old Earth government, and the True Earth movement is no longer listed as a rebel organization. With the threat of civil war past, peace is maintained for many years.

2254 With the end of internal strife and the Chetzoq border war, the Great Union begins renewed exploration in earnest.

2262 The exploration vessel FREEDOM disappears in a region referred to as the "Valley of the Giants". This area of space, seen only through interferometry, contains a rare cluster of massive stars.

2269 The planet Volans joins the Great Union.

2271 The Gabelle colony achieves full representational status in the Great Union. The Beadu and Phomani worlds fall to the Jolarans after ten years of siege.

2272 Tezen joins the Great Union as it celebrates its Centennial.

2280 First contact is made with Izangi exiles.

2283 The Great Union learns that the Izangi are fleeing their homeworld, which had been overrun by a powerful race known as the Seri.

2285 Another starship, the UCATAAN, enters the Valley of the Giants, loses contact two weeks later, and is never heard from again.

2290 The Great Union continues to expand along its southwestern frontier, Establishing colonies on Shedar and opening relations with the Hamal.

2293 The Jolaran outposts of G'nnaro and Leea report incursions by ships of unknown configuration.

2294 The USS VENITIA is sent to examine the Valley of the Giants after the colony vessel HOLBROOKE is lost without any trace.

2296 More Izangi refugees begin to appear at Great Union colonies, such as Shedar.

2297 An official investigation into the plight of the Izangi is authorized by President O' Connell.

2298 A distress call relayed from the USS VENITIA is the last signal received by TerraForce Command.

2301 Q' Vat and Norvu join the Chetzoq Alliance.

2303 Izangi refugees describe starships matching the profile of the vessels that attacked the VENITIA.

2305 Cheron pirates begin raiding shipping lanes in the Volans and Corellius sectors.

2307 Jaros becomes the 60th member of the Great Union of New Terra.

2310 TerraForce assigns heavier patrols to protect shipping from the Cherons, and accuses the Jolaran Empire of giving the raiders safe haven in their territory.

2314 Jolaran operatives depose the government of Tarod, a neutral world which had begun to establish a trading relationship with the Great Union.

2315 A similar overthrow is attempted at Delta Cassi. It does not succeed, and the Jolarans launch a full-scale military assault.

2316 The Cassi resist the attack, but are on the verge of defeat. They appeal to the Great Union for assistance.

2317 A group of TerraForce warships, led by the USS COMPASS ROSE, is sent to blockade the sectors around Delta Cassi.

2318 The Imperial Navy attacks the blockade, destroying five of the TerraForce warships, including the USS COMPASS ROSE.

2318 Recalling Jolaran aggression of the past (and the long, bitter war that ensued), the Great Union embarks on operation called "Steadfast", a secret attack deep into Jolaran space. Later in 2258, Steadfast is launched, achieving stunning success.

2319 The Jolaran Empire retreats from both the Delta Cassi and Tarod systems.

2322 Riding a wave of confidence after its victory over its old enemy, the Great Union moves forward with a new colony program in the Delos system.

2338 The Beltane Fleet Yards base is established.

2353 The 150th anniversary of the Second Exodus is marked by a solemn ceremony.

2366 Shedar colony becomes a sanctuary for Izangi refugees.

2369 D'Vos joins the Chetzoq Alliance, giving the Chetzoq a foothold in a region of space called the "Void". The Void is the last large area that has not been explored.

2372 The Great Union celebrates its bicentennial. There are now 107 member states.

2373 A fleet of unknown vessels is sighted by TerraForce scout ship BONHOMME.

2374 The Shedar, Tezen, and Gabelle systems are attacked in a simultaneous invasion. The attacking vessels are nearly impervious to CEPar and torpedo weapons fire. TerraForce manages to recover in a rapid counterattack, but several enemy vessels are now inside Great Union space. These heavy ships attack vulnerable supply convoys.

2376 Referring to themselves as the Seri Republic, they demand that the Great Union abandon its colonies along a wide area of territory.

2377 The Seri Guard attacks the Albireo system. The escort ships are defeated, and the troop transports are unable to complete the ground attack.

2378 From its large military base of Nekkar, the Seri launch the largest assault of the entire conflict. TerraForce believes the target is the massive Beltane Fleet Yards, and distributes four of its six available task forces to its defense. Instead, the attack is directed against the Bilana V industrial center. Both remaining task forces are sent to the system to meet the invasion. In the battle that ensues, the Great Union forces are routed, and the troop transports enter orbit around the planet. Before the Seri Guard troops can land, two ANTARES frigates, the COLD HARBOR and the WATERLOO destroy them. Bilana V is saved, but the two vessels are later destroyed.

2379 As a result of the shocking defeat at Bllana V (where TerraForce lost 13 of 17 ships), all civilian industrial production is changed to military equipment. The Alexandria Naval Academy is forced to put midshipman into battle to compensate for the loss of personnel.

2380 The Izangi rebellion forces the Seri out of their system. The new Provincial government signs a cooperation treaty with the Great Union.

2380 Using the Izangi homeworld as a base, TerraForce is able to reach several sectors of vital Seri territory. This advantage turns the tide of the war against the Seri, and the conflict is ended abruptly, without a formal treaty or armistice.

2381 Approval for the CETUS PROJECT is granted by the Department of Defense.

2382 The Seri, whose homeworld is located in the Valley of the Giants, label the Great Union as an expansionist, imperialist state. They sight the numerous incursions by previous Great Union colony missions into the "Valley".

2384 The main spaceframe of the CETUS class CVX is laid at the Procyon IV vehicle assembly facility.

2386 New solar regeneration technology is tested and proves to be successful. With this technology, it is now possible to restore the biosphere of Earth to its original state. The announcement stuns many in the Great Union. The delicate balance between New Terrans and the descendants of the survivors is once again upset. True Earthers do not want the technology to be used, because they feel it will lead a to huge influx of New Terran immigrants. These new immigrants had not suffered the hardships that the original survivors endured.

2388 Production on the AURORA class Corvette is in full swing. The POLARIS and the SOUTHERN CROSS are completed at the Beltane VII facility.

2388 Preparations for the official launch of the USS COMPASS ROSE, the first CETUS class CVX are underway at the Procyon IV Assembly Facility.

Department of Defense

CETUS PROJECT

ACCESS ONLY TO AUTHORIZED TERRAFORCE PERSONNEL:
CLEARANCE LEVEL 5

1.0 SPECIFICATIONS

1.1 CETUS CLASS HULL DIMENSIONS

STANDARD OPERATION MODE

LENGTH	2573 meters
HEIGHT	321 meters
BEAM	762 meters
DECKS	84
MASS (unloaded)	8,518,437 m.tonnes
MASS (fully loaded)	9,943,552 m.tonnes
CARGO CAPACITY (hauling)	420,000 m.tonnes
CARGO CAPACITY (storage)	1,100,000 m.tonnes
OFFICERS (level 1-5)	303
CREW (enlisted)	3185
+ 100 permanent crew on two AURORA class CVTs	
TOTAL CREW	3588
BATTLECRAFT:	
LIBERTY CLASS	21
TOUTATIS CLASS	60 (four squadrons)
TRITON CLASS	35
SHUTTLECRAFT	72
AURORA CLASS CVT	2

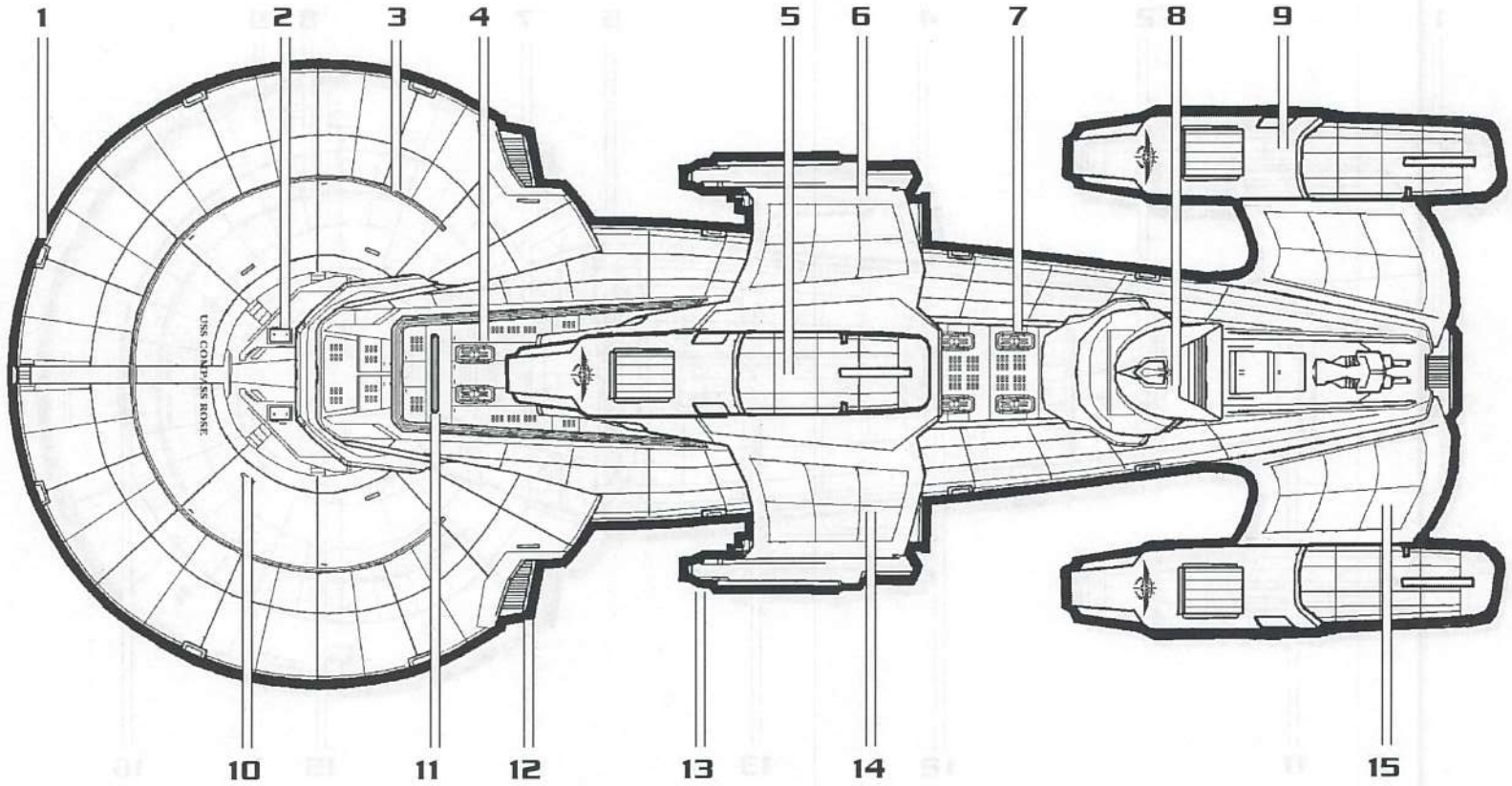
SEPARATION MODE: PRIMARY HULL

LENGTH	1250 meters
HEIGHT	293 meters
BEAM	762 meters
DECKS	47
TOTAL CREW	1391

SEPARATION MODE: SECONDARY HULL

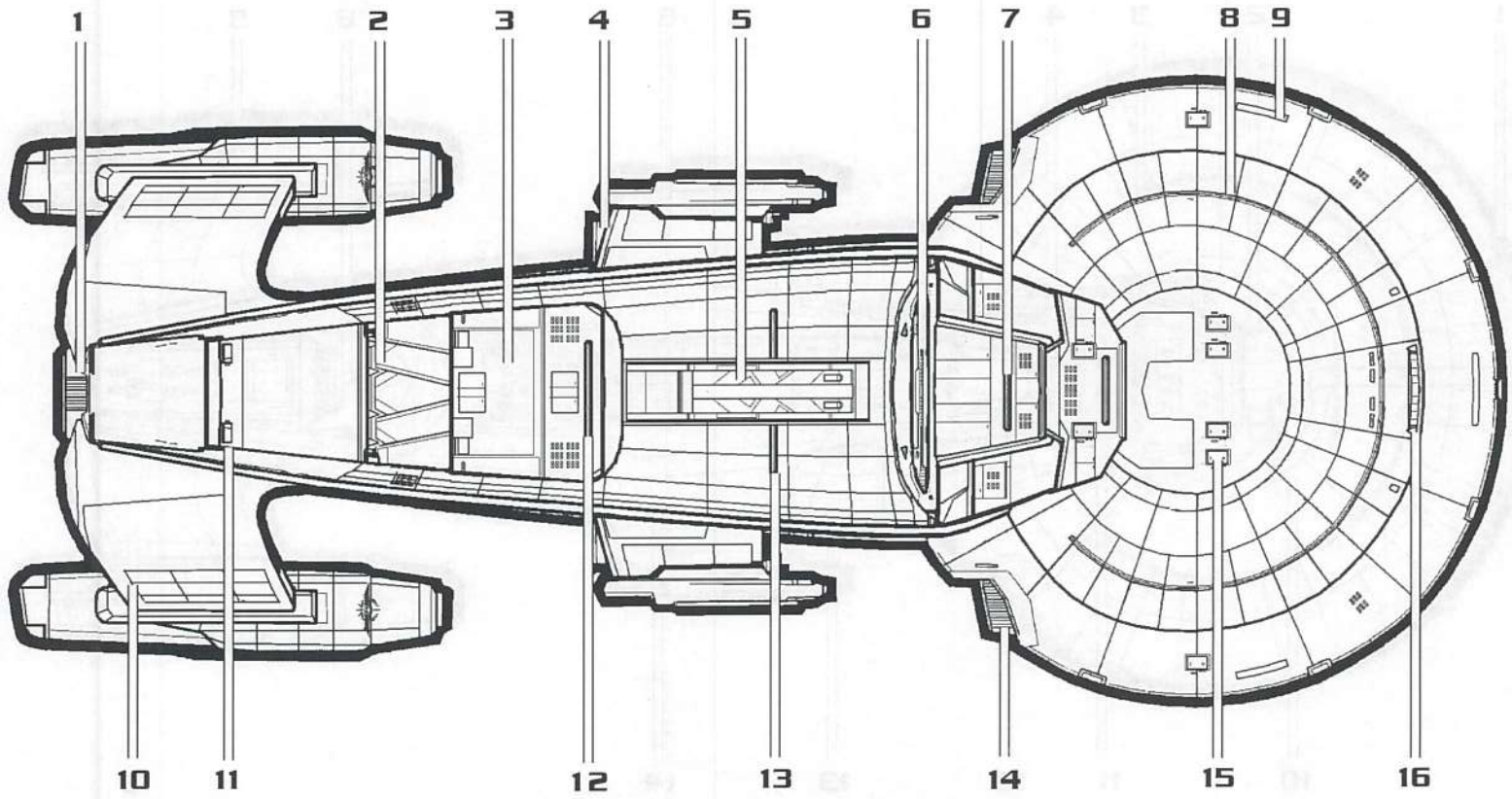
LENGTH	2014 meters
HEIGHT	293 meters
BEAM	690 meters
DECKS	68
TOTAL CREW	2097

1.2 DORSAL EXTERIOR: STANDARD MODE



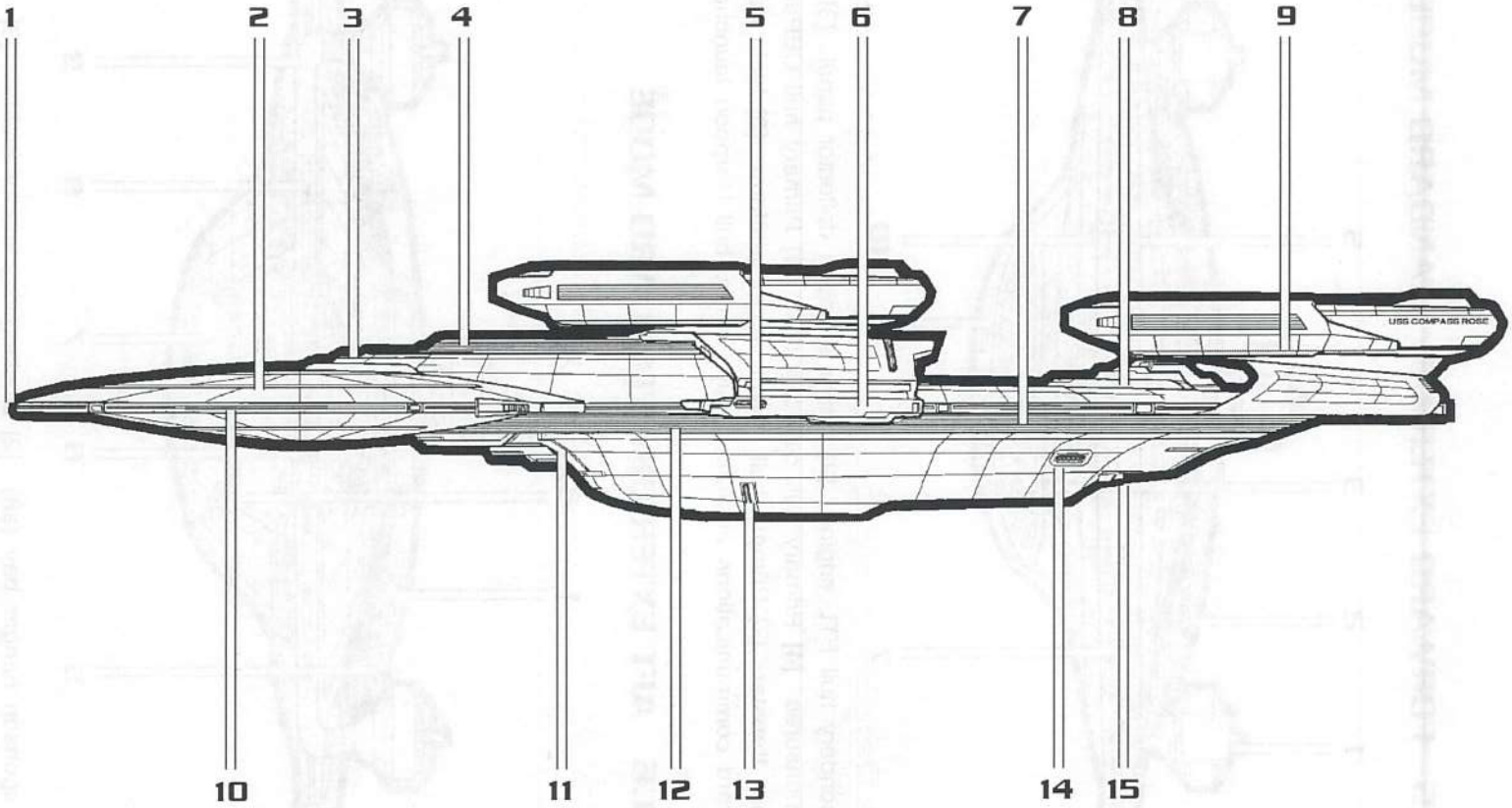
[1] Primary hull thruster [2] Primary dorsal Hellfire torpedo launcher [3] primary dorsal CEPar ring (360 arc) [4] Primary dorsal landing pad [5] Primary hull FTL engine [6] Primary hull upper sponson [7] Secondary dorsal landing pad [8] Main exterior hangar bay (aft dorsal) [9] Secondary hull FTL engine [10] Primary dorsal Harpoon torpedo launchers [11] Primary dorsal CEPar array (Z-axis) [12] Primary hull sublight engine [13] Primary hull upper sponson Hellfire torpedo launcher [14] Upper sponson shield grid [15] Aft sponson shield grid

1.3 VENTRAL EXTERIOR: STANDARD MODE



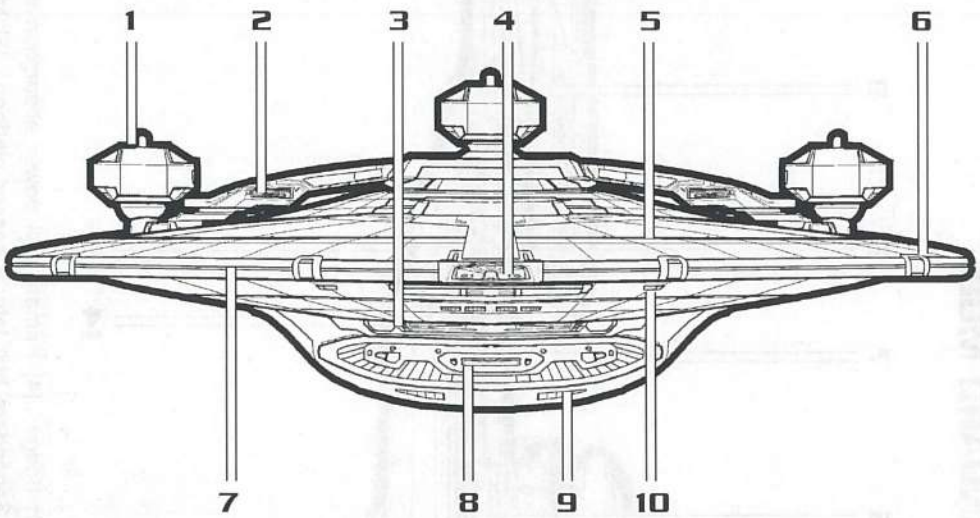
[1]Secondary hull sublight engine [2] Main hangar bay access doors [3] Emergency small craft egress hatch [4] Primary hull sublight engine [5] Deployable spacedock array casing [6] Main deflector dish [7] Secondary ventral CEPar array (Z-axis) [8] Primary ventral CEPar ring (360 arc) [9] Primary ventral countermeasures [10] Aft sponson ventral shield grid [11] Docking bay tractor emitter [12] Secondary ventral CEPar array (Z-axis) [13] Secondary ventral CEPar array (Z-axis) [14] Primary hull sublight engine [15] Primary ventral Hellfire torpedo launchers [16] The Galley

1.4 LATERAL EXTERIOR: STANDARD MODE



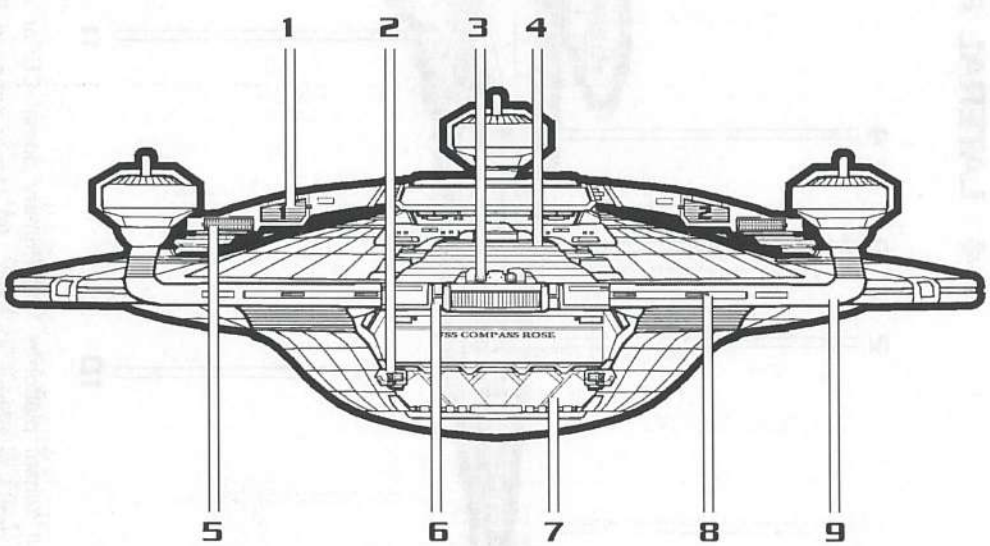
[1] Primary hull sensor platforms [2] Primary dorsal CEPar array (360 arc) [3] Main bridge [4] Primary hull power absorption array [5] Upper sponson Phalanx drone launchers (Y-axis) [6] Upper sponson FTL field distributor [7] Secondary hull lateral sensor platform [8] Main exterior hangar bay [9] FTL engine shield grid [10] Primary hull lateral sensor platform [11] Secondary hull forward Hellfire torpedo launchers [12] Secondary hull power absorption array [13] Secondary ventral CEPar array (Z-axis) [14] Secondary hull Phalanx drone launchers (Y-axis) [15] Main docking bay tractor emitters

1.5 FORWARD EXTERIOR: STANDARD MODE



[1] Secondary hull FTL engine [2] Upper sponson deflector panel [3] Forward countermeasures [4] Primary hull deflector dish [5] Primary hull CEPar ring [6] Primary hull thruster [7] Primary hull lateral sensor platform [8] Main deflector dish [9] Forward communications antenna [10] Primary hull Harpoon launcher (Y-axis)

1.6 AFT EXTERIOR: STANDARD MODE



[1] Upper sponson hangar bay (aft) [2] Docking bay tractor emitter [3] Secondary hull Hellfire torpedo launcher (aft) [4] Main exterior hangar bay (aft dorsal) [5] Upper sponson sublight engine [6] Secondary hull sublight engine [7] Main hangar bay access door [8] Secondary hull lateral sensors (aft) [9] Aft FTL sponson

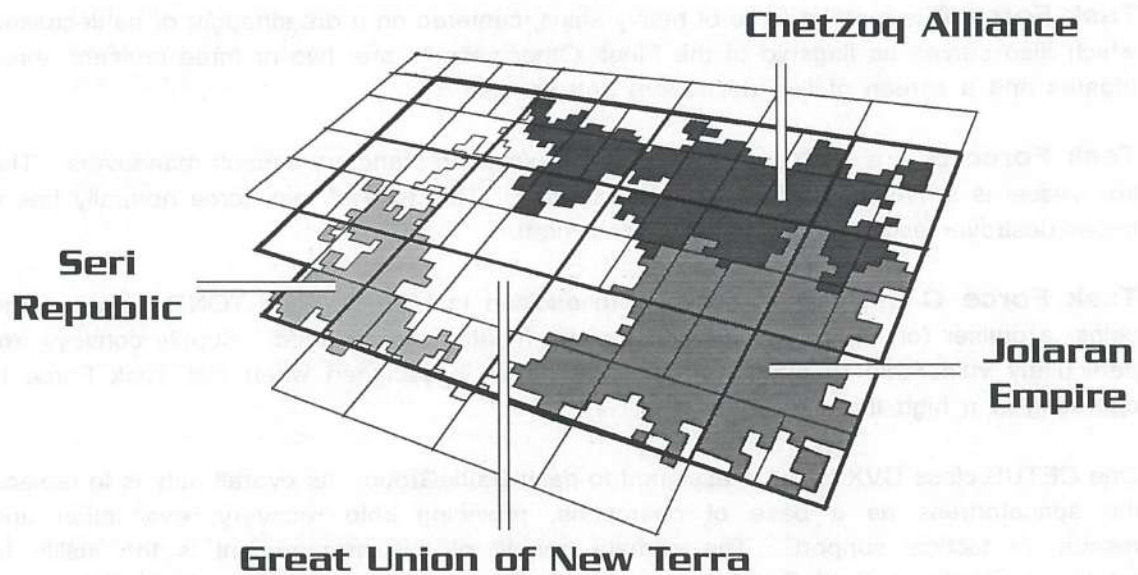
2.0 MISSION PROFILES

2.1 BASE OF OPERATIONS

Political tensions, which have been mounting for the last decade, are forcing the Great Union of New Terra to once again consider a substantial military buildup. The new Cooperation pact between the Seri Republic and Jolaran Empire threatens the Great Union on its southern and eastern frontiers. Both sections are dangerously exposed and difficult to defend.

The Great Union itself, composed of nearly 120 worlds, is spread across a vast area of space. Population and industrial centers are far less concentrated than any of the other major powers. This has required the construction of numerous spaceports and stationary fortresses. The demand of labor and material resources needed to maintain them is no longer acceptable. Experience in the recent conflict with the Seri Guard showed the static defence network concept to be inadequate. Even the most heavily armed spacefortress was a stationary target, which was either overwhelmed by superior numbers or simply bypassed. Resupply and support to front line forces was severely disrupted, threatening disaster.

In order to lower the cost of the planned military expansion, the Department of Defense sought an alternative to the costly, vulnerable stations. A mobile facility was chosen as the best option. Named after the mythical sea monster of old Earth skylore, the CETUS class CVX would function as the central core of a new, dynamic defense strategy.

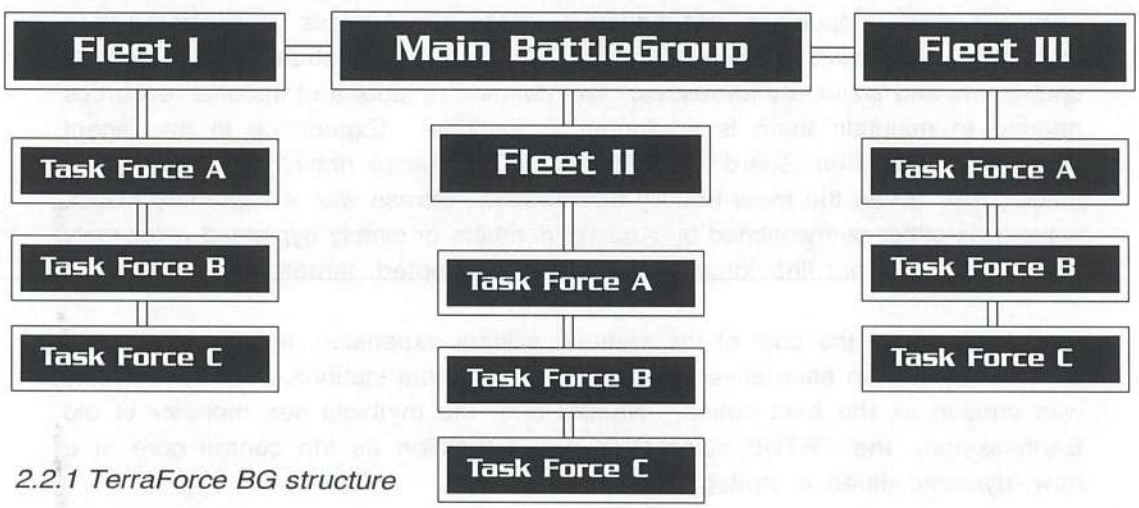


2.1.1 Current territorial status of the major powers

2.2 COMMAND AND CONTROL

Defending the long frontier of the Great Union is a daunting task, challenging even the most efficient command systems and force deployments.

With the advent of the CETUS CVX, TerraForce has begun to divide its force structure into five primary Battlegroups: Northern, Southern, Eastern, Western, and Interior. These five main groups are further divided into three Fleets: left axis, center, and right axis (individual Fleets are normally designated with an old-style numeral, which is added as a suffix on all ship ID numbers). Each Fleet is made up of three Task Forces, each with a specific mission profile and function. See figure 2.2.1



2.2.1 TerraForce BG structure

Task Force A is a strike force of heavy ships, centered on a dreadnaught or battlecruiser, which also serves as flagship of the Fleet. Other vessels are: two or three cruisers, three frigates and a screen of five destroyers and scouts.

Task Force B is a strategic force used for executing planetary assault maneuvers. The key vessel is a TARAWA class military transport. This type of task force normally has a larger destroyer escort and additional scout craft.

Task Force C is a support convoy. In addition to LIBERTY and TONGA class cargo ships, a cruiser (or heavy cruiser) and several frigates are included. Supply convoys are particularly vulnerable to attack, so a scout patrol is assigned when this Task Force is operating in a high threat scenario.

One CETUS class CVX is to be assigned to each BattleGroup. Its overall duty is to replace the spacefortress as a base of operations, providing ship recovery, evacuation and rescue, or tactical support. The primary benefit of this arrangement is the ability to rotate or transfer a BattleGroup to another theatre. Thus, a stronger BattleGroup can be moved to a sector facing a large-scale assault, while the CVX anchors the old position.

2.3 SHIP RECOVERY

In peacetime, military ship construction within the Great Union of New Terra has historically been reduced, placing added value on each vessel. Existing craft must perform an expanded range of duties (some beyond the original design specifications) increasing the stress on spaceframe and vital components.

System breakdowns can occur if proper maintenance is not provided. As a result, individual ships spend more time in spacedock for routine repairs, further weakening the Fleet operational potential. Should a large vessel become disabled in a distant outlying sector, recovery is very difficult, placing the lives of the crew at greater risk. A nonfunctional ship must be towed to the nearest facility for repair and refit, a process which could take several weeks.

The CETUS class CVX will have the ability to reach a disabled ship immediately, and conduct the necessary repairs quickly. If the damage is too extensive to be repaired on site, or a hostile force is nearby, all TerraForce vessels up to the rank of cruiser can be placed in the main hangar bay for transport to a shipyard.

In a wartime scenario, large numbers of ships will be damaged, often in or near enemy territory. The CETUS class CVX can recover these craft, which would otherwise have been destroyed or captured. This corresponding reduction in equipment and personnel losses will greatly enhance the fighting ability of TerraForce.

Also, conducting maintenance and repairs at the point of an attack will free the interior naval yards to concentrate on building additional warships and developing new technologies.

2.4 EVACUATION AND RESCUE

Outlying colonies and highly developed global habitations are equally susceptible to the forces and power of natural phenomena. Natural planetwide disasters are not common occurrences, but the devastation they cause is to be avoided at all costs. In the case of Rasalas IV, there was prior warning, but the means to evacuate the inhabitants did not exist, and millions perished as a result. The Government of the Great Union of New Terra has a responsibility to its citizens to protect them from avoidable catastrophes.

The CETUS class CVX is an ideal vessel for conducting large-scale rapid evacuations. Utilizing the TRITON troop transports and AURORA corvettes, approximately 73,000 people can be extracted from a hazardous area in less than 36 hours.

Extensive medical facilities (see chapter 15) can provide initial medical care for thousands of casualties. Previously, slow and unarmed hospital ships of the BARKIN class were sent on these types of rescue missions.

2.5 TACTICAL GOALS

The geographical situation of the Great Union, with its member states and territories separated by broad expanses of space, presents a significant challenge for its military. TerraForce is the primary instrument for the projection of military power and political influence into distant regions. It is also the means by which the Great Union ensures the security of its maritime communications and trade in the event of hostilities with another power.

These twin missions of power projection and territorial control are equally important. In order to project power against a distant sector, TerraForce must be able to exercise control over the space which its vessels must transit to reach their objective and over the area in which a planetary assault mission will be attempted. The task of exercising territorial control over broad areas of the vacuum of space is made much easier if forward deployed power projection forces compel the enemy to adopt a defensive posture.

With its powerful armament, the CETUS class CV greatly enhances the strength of a BattleGroup. It can be used to spearhead an offensive operation, overwhelming an undersized or overcommitted enemy force. Should a breakthrough occur in any given area of front line forces, the CETUS vessel can effect a delaying action, giving adjacent forces time to redeploy and counterattack.

Operating in separation mode, The CVX can supplement two of the fleets in its BattleGroups directly, thereby increasing the ability to project power in a specific theatre. This division minimizes the target presented to a hostile force, while also making the enemy compensate by reconfiguring their force structure.

3.0 COMMAND STRUCTURE

3.1 STANDARD AND SEPARATION MODES

The command structure of the CETUS class CVX is unlike any other in the Fleet, due to the fact that it is actually four ships in one. To provide a practical example, the hierarchy of the USS COMPASS ROSE will be used.

Under standard operation mode, the Captain has command of the COMPASS ROSE itself, while the Executive Officer (X0) helms the Corvette POLARIS, and the Second Officer (2o) takes charge of the Corvette SOUTHERN CROSS.

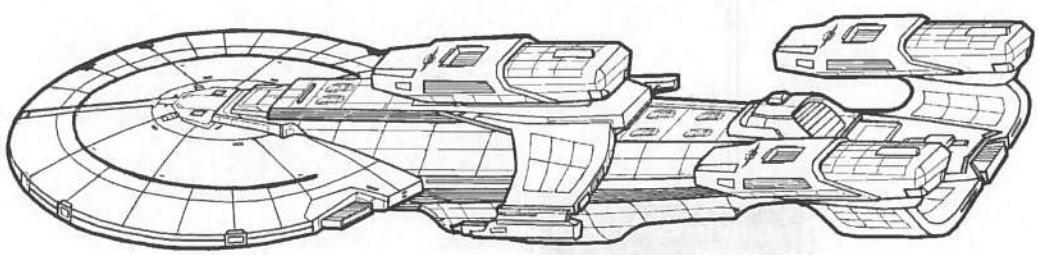
During separation mode, the Captain commands the COMPASS ROSE saucer module, and the Tactical Officer takes over the secondary hull /battle section.

Leadership of all flight operations is the responsibility of the Wing Commander. During the launching and recovery process, all Squadron Leaders are under the control of the Air Boss, whose post is in Traffic Control above the hangar bay. The Air Boss directs all incoming and outgoing craft safely and quickly. Once the fighters have left the ship, they report directly to the Wing Commander, who will direct the mission either from Flight control on the bridge, or in person.

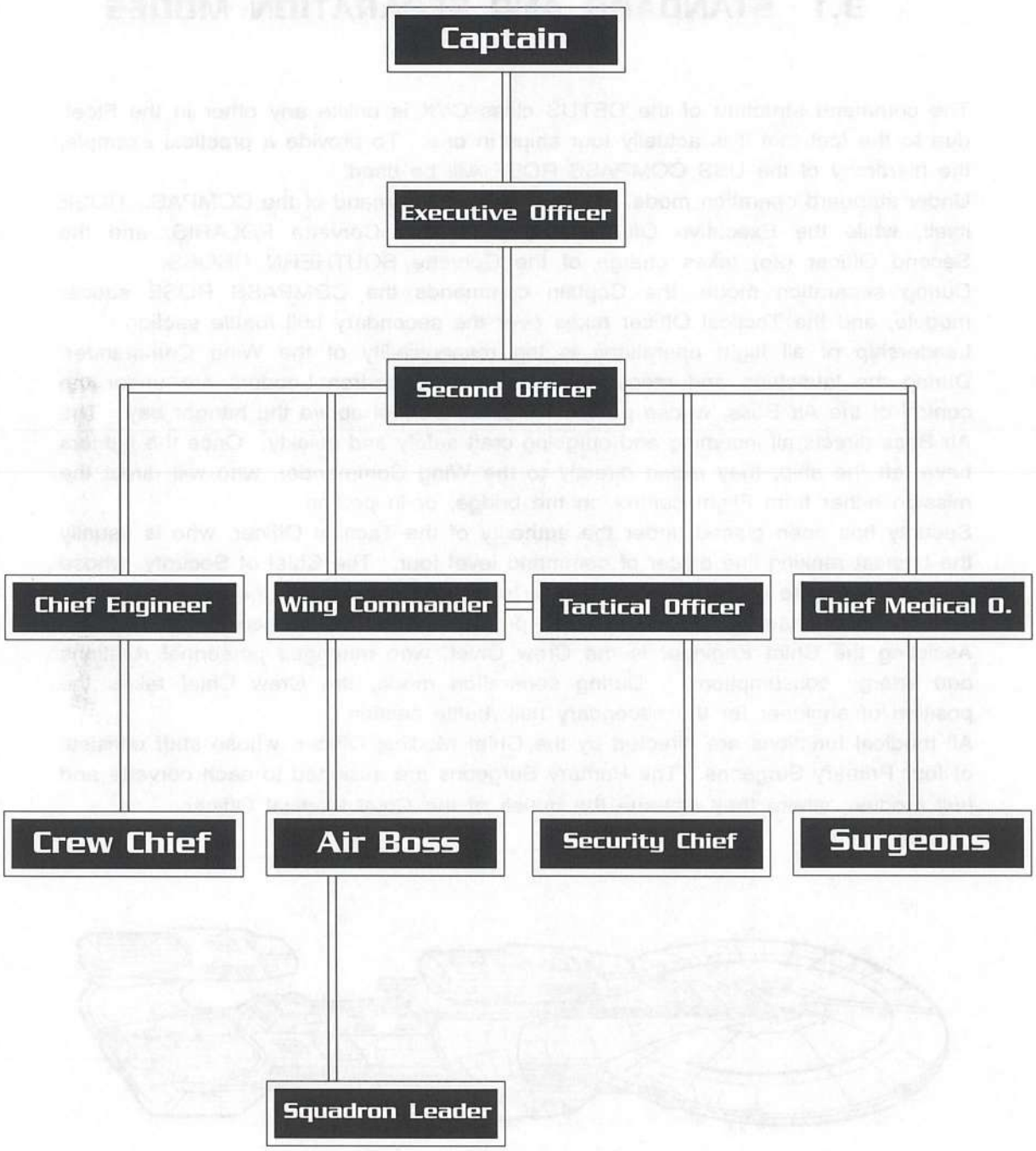
Security has been placed under the authority of the Tactical Officer, who is usually the highest ranking line officer of command level four. The Chief of Security, whose responsibility is to assess threat potential to the crew, reports to the Tactical Officer.

The Chief Engineer is in charge of all propulsion and power generation systems. Assisting the Chief Engineer is the Crew Chief, who manages personnel rotations and energy consumption. During separation mode, the Crew Chief takes the position of engineer for the secondary hull /battle section.

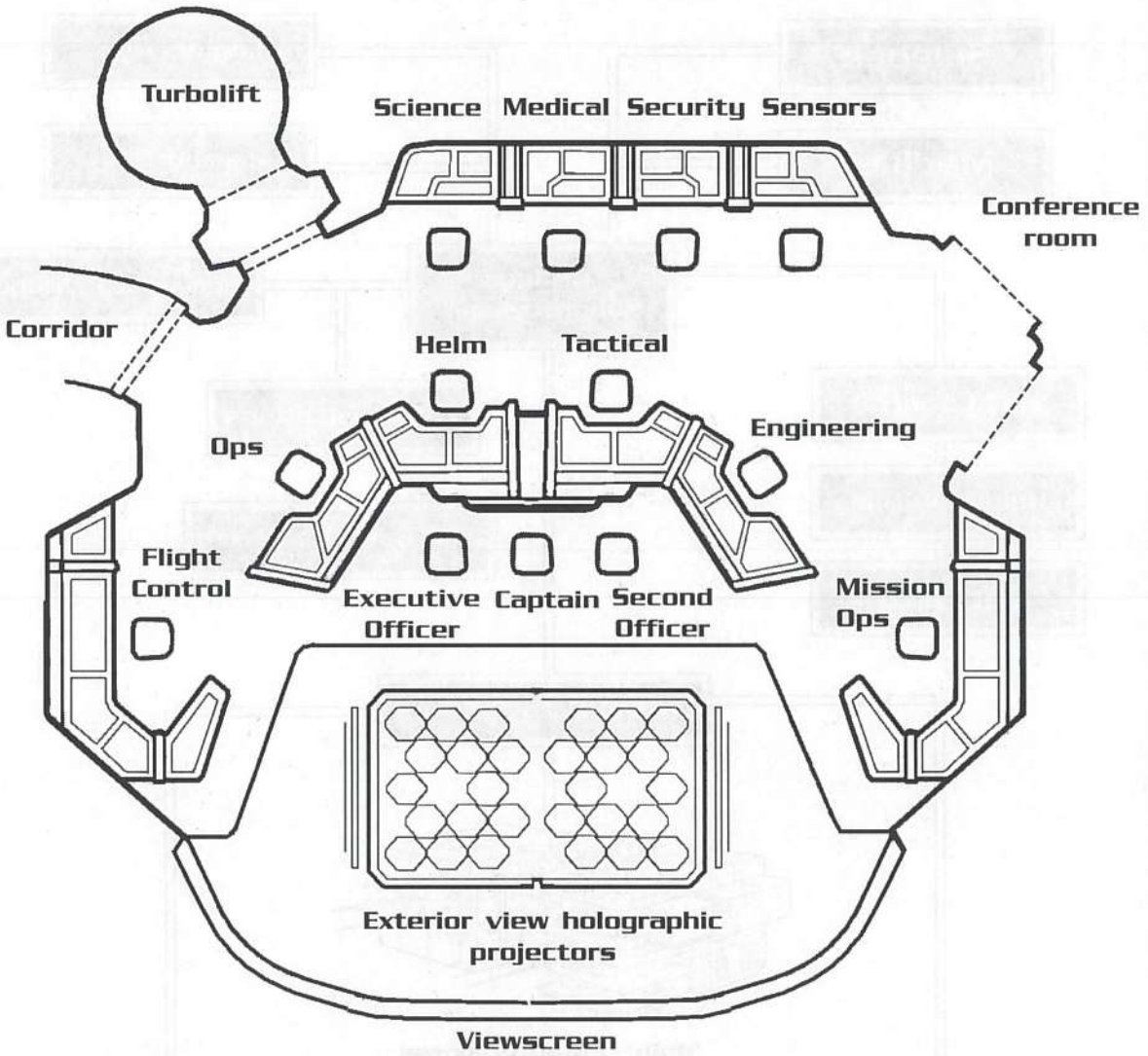
All medical functions are directed by the Chief Medical Officer, whose staff consists of four Primary Surgeons. The Primary Surgeons are assigned to each corvette and hull module, where they assume the duties of the Chief Medical Officer.



3.1.1 Command tree of the USS COMPASS ROSE



3.2 BRIDGE LAYOUT



3.2.1 Main Bridge floor plan: USS COMPASS ROSE

Even when the CETUS CVX is in separation or deployment modes vessel operations are extremely complex. Both the Primary and Secondary hulls are designed to maintain complete capacity. For those reasons, the bridge layout of the Primary and Secondary hulls are nearly identical.

3.3 BRIDGE STATION COMPUTER UPLINKS

Science

Medical

Engineering

Mission Ops

Bridge Subprocessor

Secondary Bridge

Flight Control

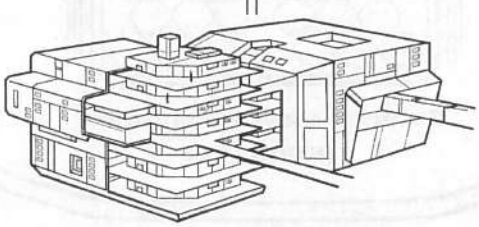
Helm and Ops

Tactical

Communications

E-M Band Receivers

Optical Data Network



Main Computer Cores

Primary Hull Lateral Arrays

Secondary Hull Lateral Arrays

Long Range Sensors

Navigational Sensors

Tactical Sensors

Upper Sponson Array

Lower Sponson Array

Mission Ops Sensors

4.0 FLIGHT MODES

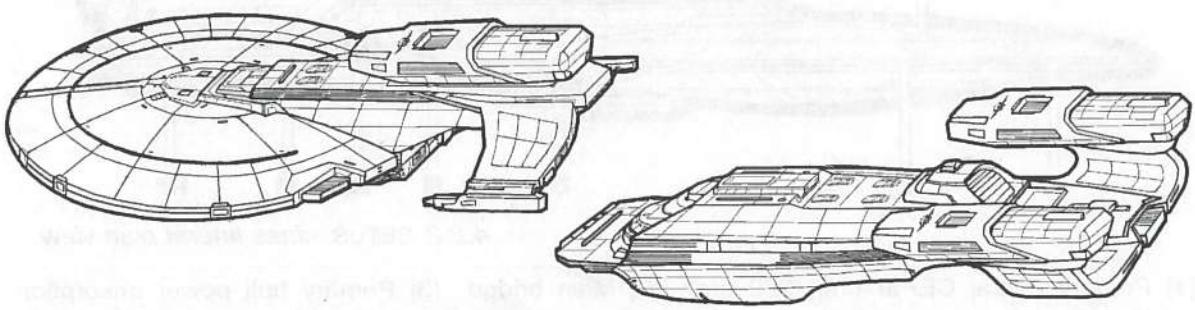
4.1 SEPARATION PROCEDURE

The CETUS class CVX consists of two spacecraft systems integrated to form a single functional vessel. They are also designed to operate independently of each other, carrying out essentially the same mission objectives.

Fourty-eight docking latches provide the necessary physical connections between the major load bearing areas of both vehicles. Twelve active latches and Twelve passive apertures are located on the separation planes of the primary and secondary hulls. Each active latch segment consists of a 15 meter diameter hydraulic piston, while the passive aperture has three duronium-plated grab plates. These areas are also equipped with transfer conduits that accept and transfer energy from each vehicle.

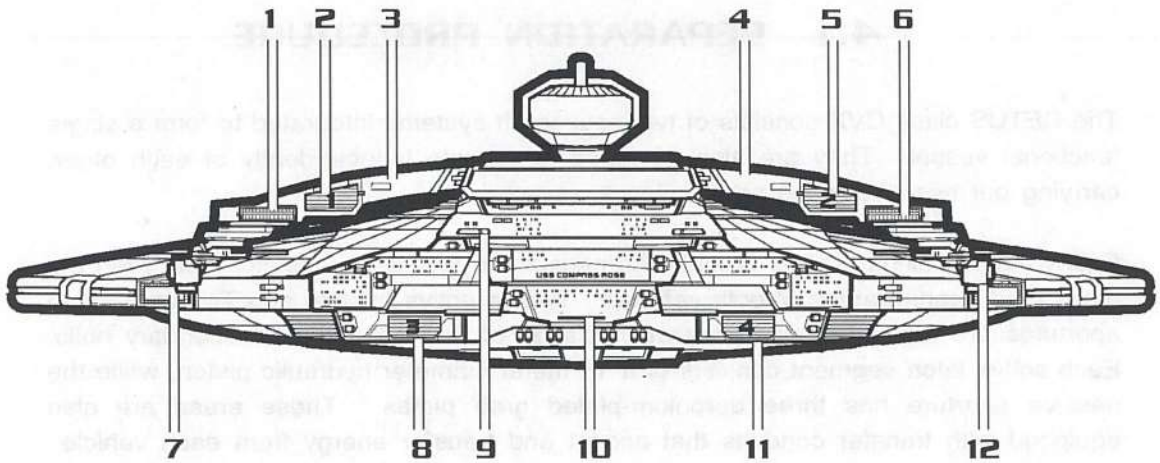
The CETUS class also accommodates a set of passenger and cargo pass through lifts, including emergency access tubes. These shafts are equipped with automatic path termination seals, which also act as airlock modules. A brief review of the separation sequence is as follows:

[1] Crew, passenger, and battlecraft transfers are confirmed by the Main Bridge and Flight Control.
[2] On a signal from the Secondary hull Bridge, computer event timers terminate all interconnects by commanding all umbillical blocks to shut down and retract to safe housings, and turbolift seals drop into deploy positions.
[3] After all system disconnects are confirmed, latch wedge locks are retracted and hydraulic pistons move to unlock position.
[4] Secondary maintains its heading on Y-axis, while the Primary hull moves along Z-axis into a clear position, achieving escape velocity.



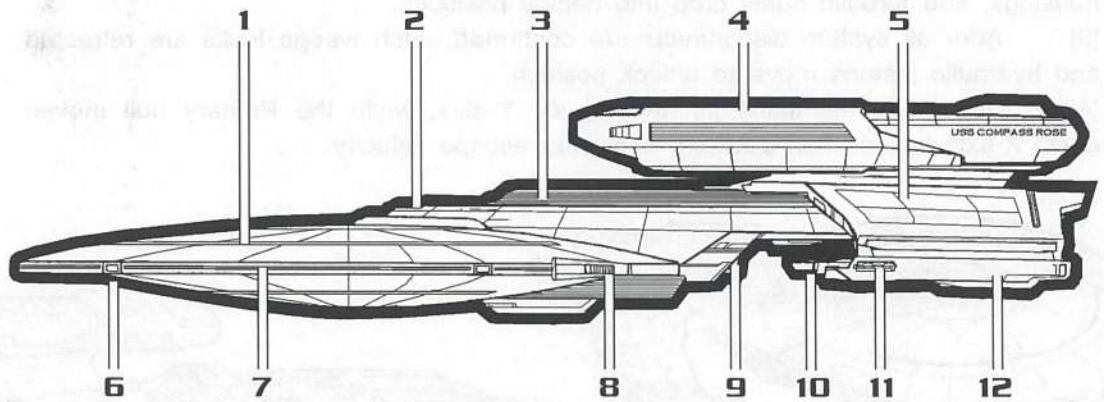
4.1.1 CETUS *class dorsal view: separation in progress*

4.2 SEPARATION MODE: PRIMARY HULL



4.2.1 CETUS *class aft plan view*

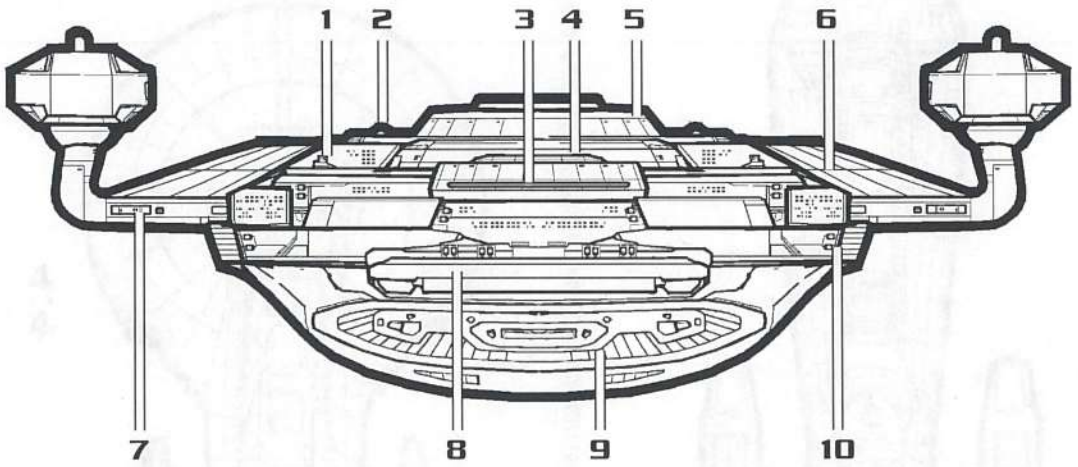
[1] Upper sponson sublight engine (port) [2] Upper sponson exterior hangar bay (port) [3] Aft Harpoon torpedo launcher (Y-axis) [4] Primary hull upper sponson FTL articulation frame [5] Upper sponson exterior hangar bay (starboard) [6] Upper sponson sublight engine (starboard) [7] Main hull sublight drive (port) [8] Main hull hangar bay (port) [9] Docking latches [10] Ventral aft CEPar array (Y-axis) [11] Main hangar bay (starboard) [12] FTL field distributor.



4.2.2 CETUS *class lateral plan view*

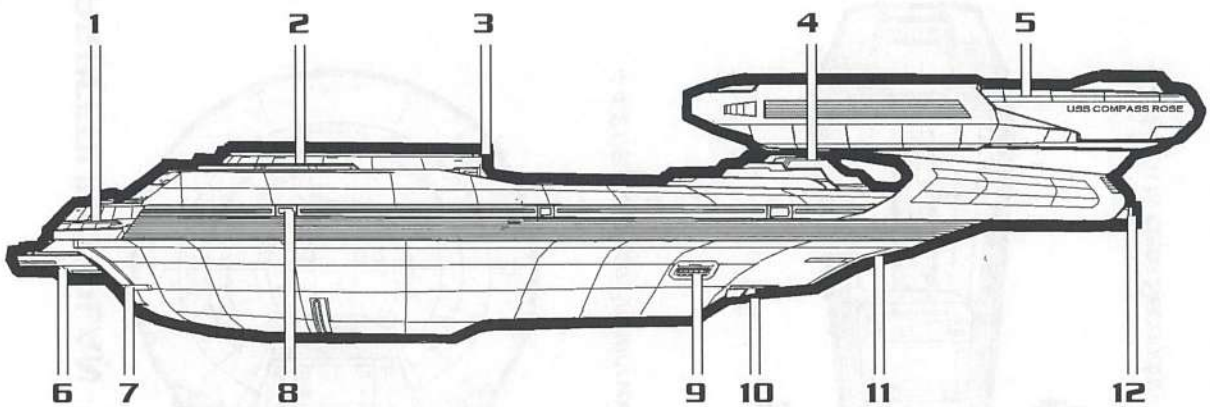
[1] Primary dorsal CEPar ring (360 arc) [2] Main bridge [3] Primary hull power absorption array [4] FTL engine [5] Upper sponson dorsal shield grid [6] Primary hull thruster [7] Primary hull lateral sensor platform [8] Primary hull sublight drive [9] Ventral aft CEPar array (Y-axis) [10] Upper sponson Hellfire torpedo launcher [11] Phalanx drone launchers [12] FTL field distributor.

4.3 SEPARATION MODE: SECONDARY HULL



4.3.1 CETUS *class fwd. plan view*

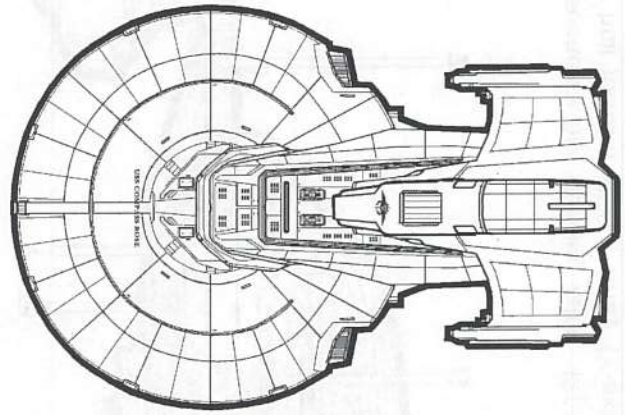
[1] Secondary hull docking latch [2] Secondary hull dorsal CEPar array (Z-axis) [3] Secondary hull forward CEPar array (Y-axis) [4] Bridge [5] secondary hull emergency egress doors [6] Dorsal shield grid [7] Aft sponson Harpoon launchers [8] Docking latches (primary interconnects) [9] Main deflector dish [10] Lateral docking latches



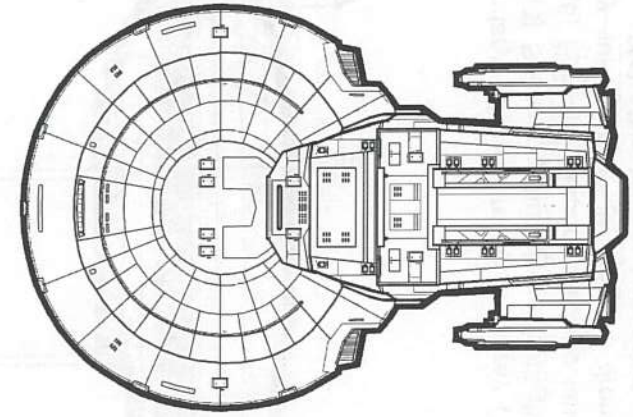
4.3.2 CETUS *class lateral plan view*

[1] Secondary hull forward CEPar array (Y-axis) [2] Secondary hull Dorsal CEPar array (Z-axis) [3] Secondary hull dorsal sublight engine [4] Main external hangar bay [5] FTL engine [6] Forward Harpoon torpedo launchers [7] Forward Hellfire torpedo launchers [8] secondary hull thruster [9] Phalanx drone launchers [10] Main docking bay tractor emitter [11] Main hangar bay doors [12] Secondary hull aft sublight engine

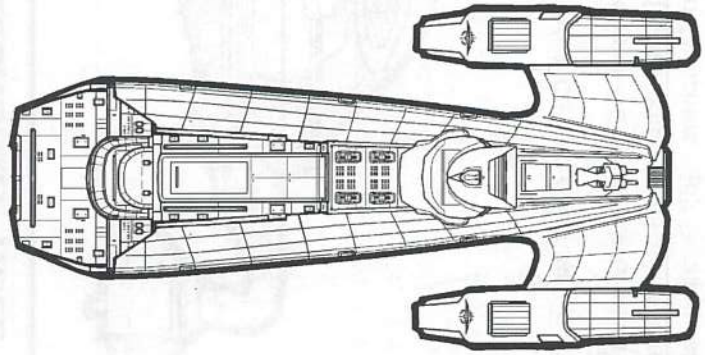
4.4 SEPARATION PROCEDURE: PLAN VIEWS



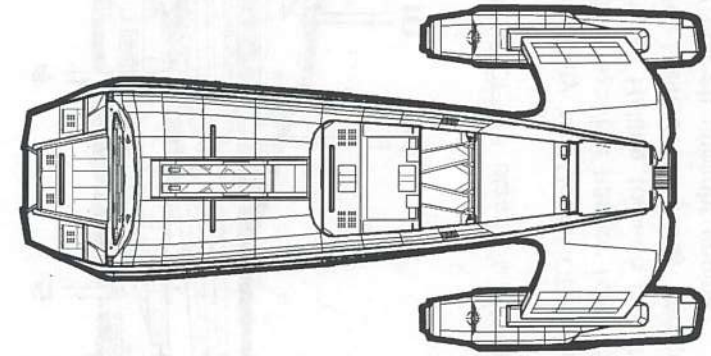
4.4.1 CETUS *class Primary dorsal plan view*



4.4.2 CETUS *class Primary ventral plan view*



4.4.3 CETUS *class Secondary dorsal plan view*



4.4.4 CETUS *class Secondary ventral plan view*

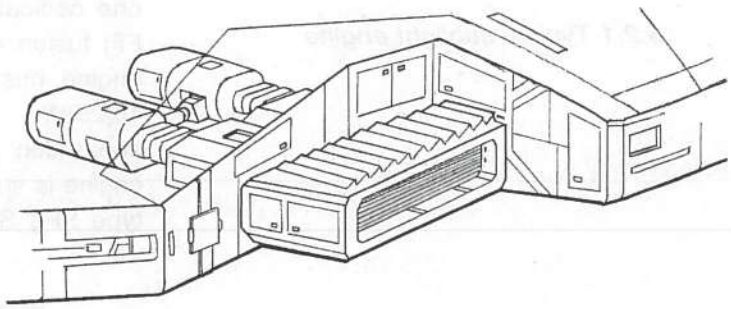
5.0 PROPULSION SYSTEMS

5.1 SUBLIGHT DRIVE: PRIMARY HULL

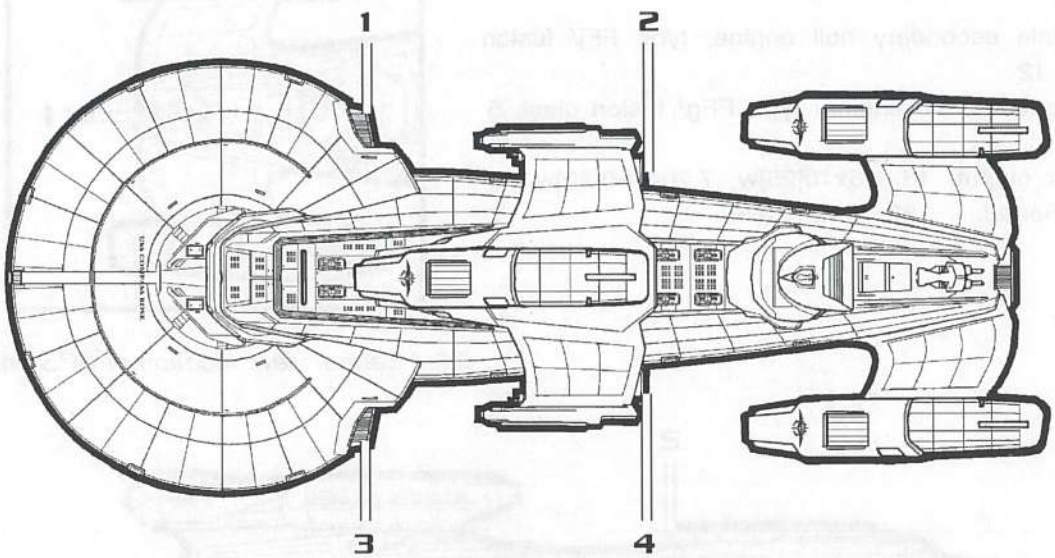
The primary non-FTL propulsion of the CETUS class and certain auxiliary power generation operations are handled by the sublight propulsion system (SPS). All travel within stellar systems must be conducted at sublight speed, due to the hazards of collision with planetary debris.

Fuel supplies for the SPS system are contained within the primary hydrogen tank, with additional fuel cells located on decks 14, 17, and 31. Redundant cross-feeds within the Primary and secondary hulls perform all fuel handling operations during flight and spacedock rendezvous maneuvers.

There are six sublight engines on the CETUS class CVX: four on the Primary hull, and two larger capacity engines on the secondary hull. Figure 5.1.2 shows the locations of the SPS units.



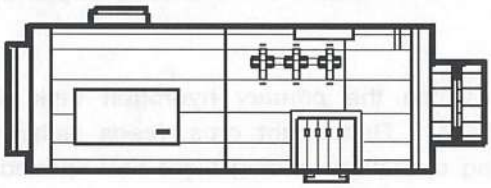
5.1.1 Saucer SPS sublight engine



5.1.2 Dorsal view: location of SPS units

[1] Starboard saucer engine: type FFg/ fusion class 5
[2] Starboard upper sponson engine: type FFc/ fusion class 3
[3] Port saucer engine: type FFg/ fusion class 5
[4] Port upper sponson engine: type FFc/ fusion class 3

5.2 SUBLIGHT DRIVE: SECONDARY HULL

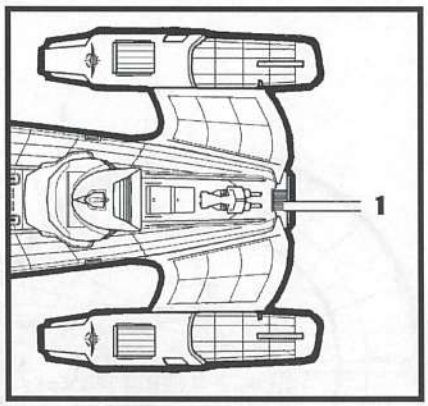


5.2.1 Typical sublight engine

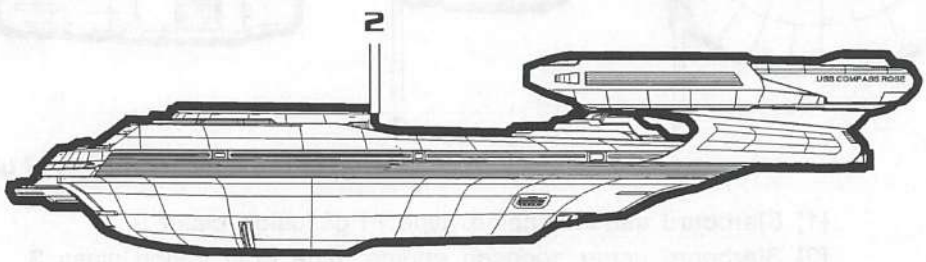
The secondary hull of the CETUS class CVX is the largest spaceframe ever designed that is powered by a sublight drive system. Power requirements turned out to be far above the capabilities of even the highest output fusion reaction systems. TerraForce engineers decided against mounting several FFg type 5 reactors on the hull, preferring to create one dedicated SPS unit. As a result, the FFj fusion class 12 was developed. This engine has a power output of 15.675 X 10[25]W. When the vessel operates in separation mode, the main aft sublight engine is supplemented by the upper dorsal type FFg SPS unit.

[1] Main secondary hull engine: type FFj/ fusion class 12
[2] Upper dorsal engine: type FFg/ fusion class 5

Power output: 15.675x10[25]w, 7.764x10[20]w
Max speed: 138 million KPH



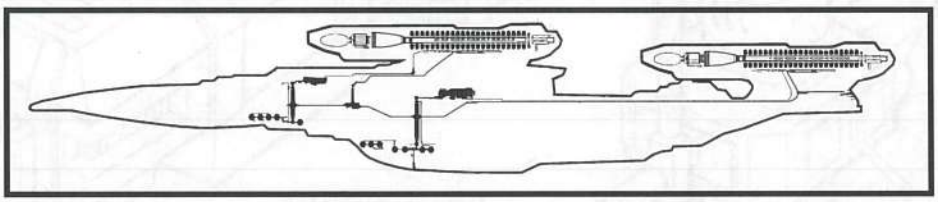
5.2.2 Lateral view: location of SPS units



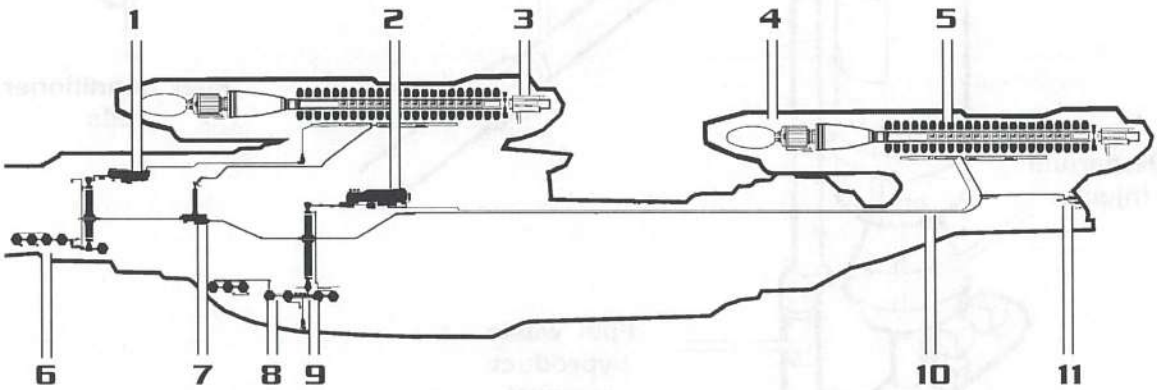
5.2.3 Lateral view: location of SPS units

5.3 MODULAR IN-LINE FTL DRIVE

The modular in-line FTL drive of the CETUS class CVX is a stunning breakthrough for faster-than-light propulsion. The twin reactor core system offers many advantages: sustained high FTL capacity, additional power source for weapons and shields, as well as a built in emergency backup. The CETUS class is also the only vessel with a saucer section capable of FTL speeds. This essentially creates a second starship which can function entirely independent of the engineering section.
Structural limitations and cost considerations forced the designers to alter the original four engine configuration to three. To compensate for the less than optimum one engine saucer drive, a sponson was placed on the upper dorsal where the engine would be mounted. This sponson would distribute the FTL distortion field to a more efficient profile, imitating the presence of a two engine system.



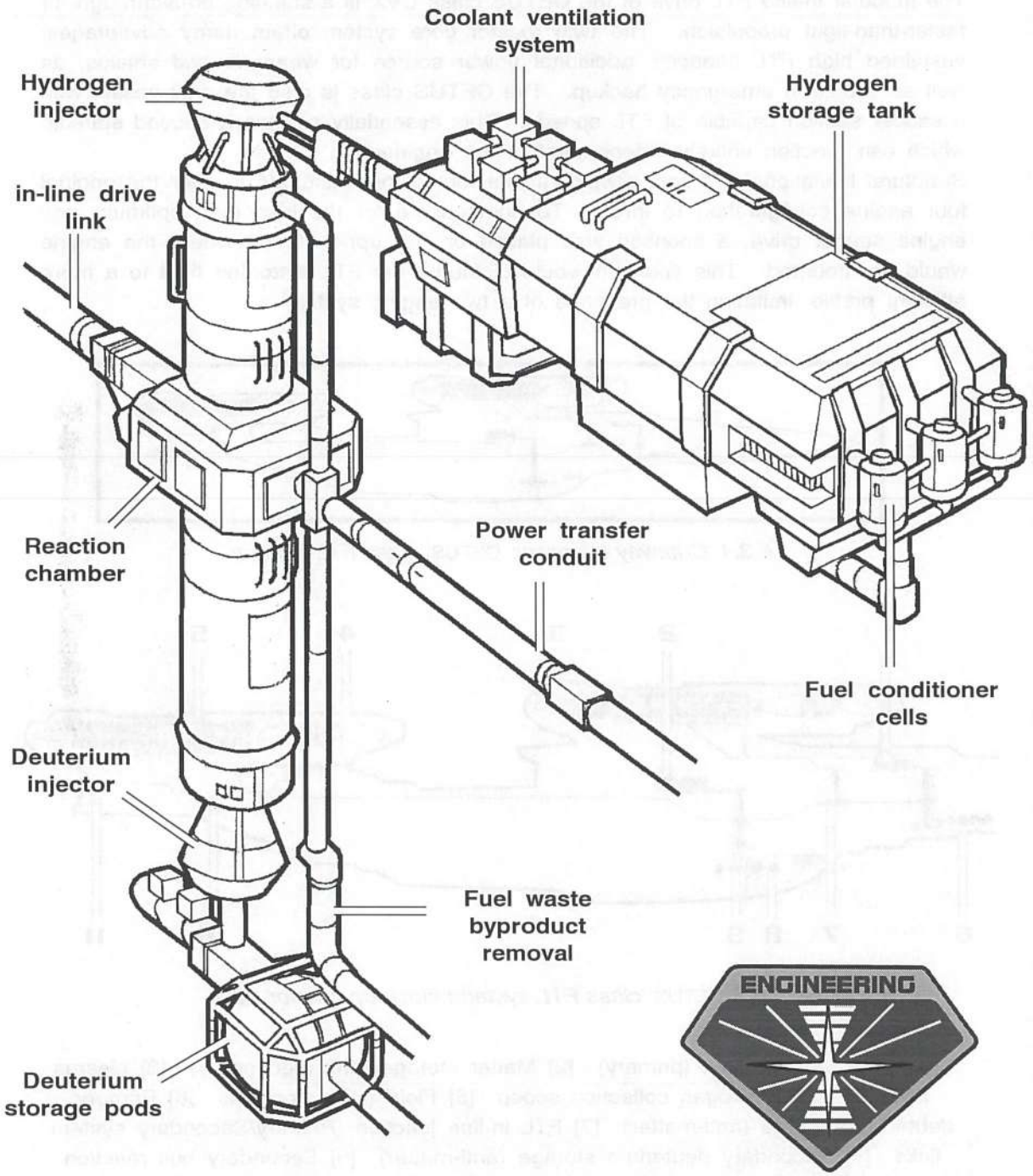
5.3.1 Cutaway overview: CETUS *class FTL system*



5.3.2 CETUS *class FTL system: close up interior view*

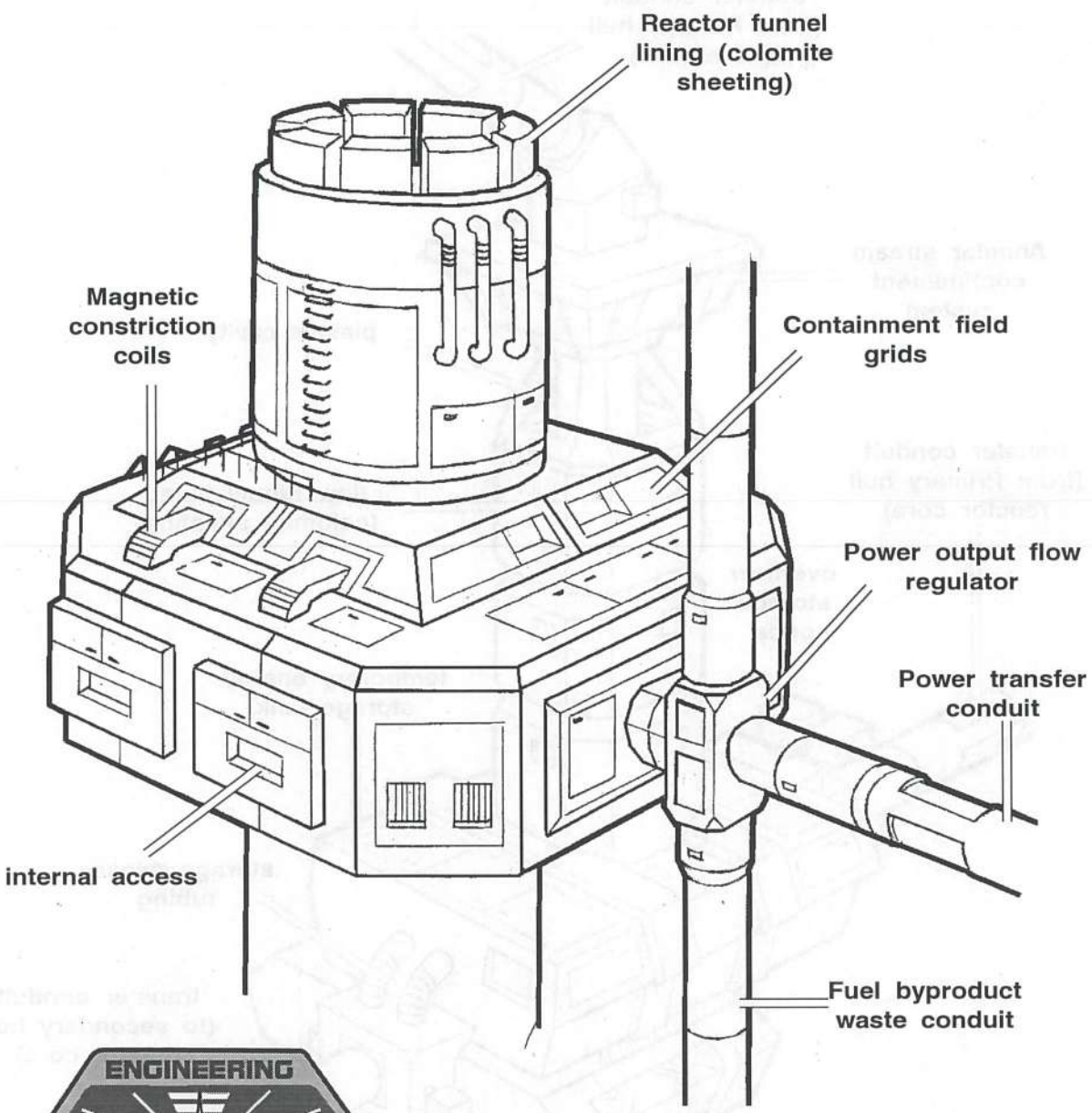
[1] Matter storage tank (primary) [2] Matter storage tank (secondary) [3] plasma injectors [4] Hydrogen collection scoop [5] Field generator coils [6] Primary deuterium storage (anti-matter) [7] FTL in-line junction (Primary/Secondary system links [8] Secondary deuterium storage (anti-matter) [9] Secondary hull reaction chamber [10] Power transfer conduit [11] Emergency flush vents

5.4 MAIN CORE AND STORAGE TANKS



5.4.1 Main reactor core and storage tanks: FTL system

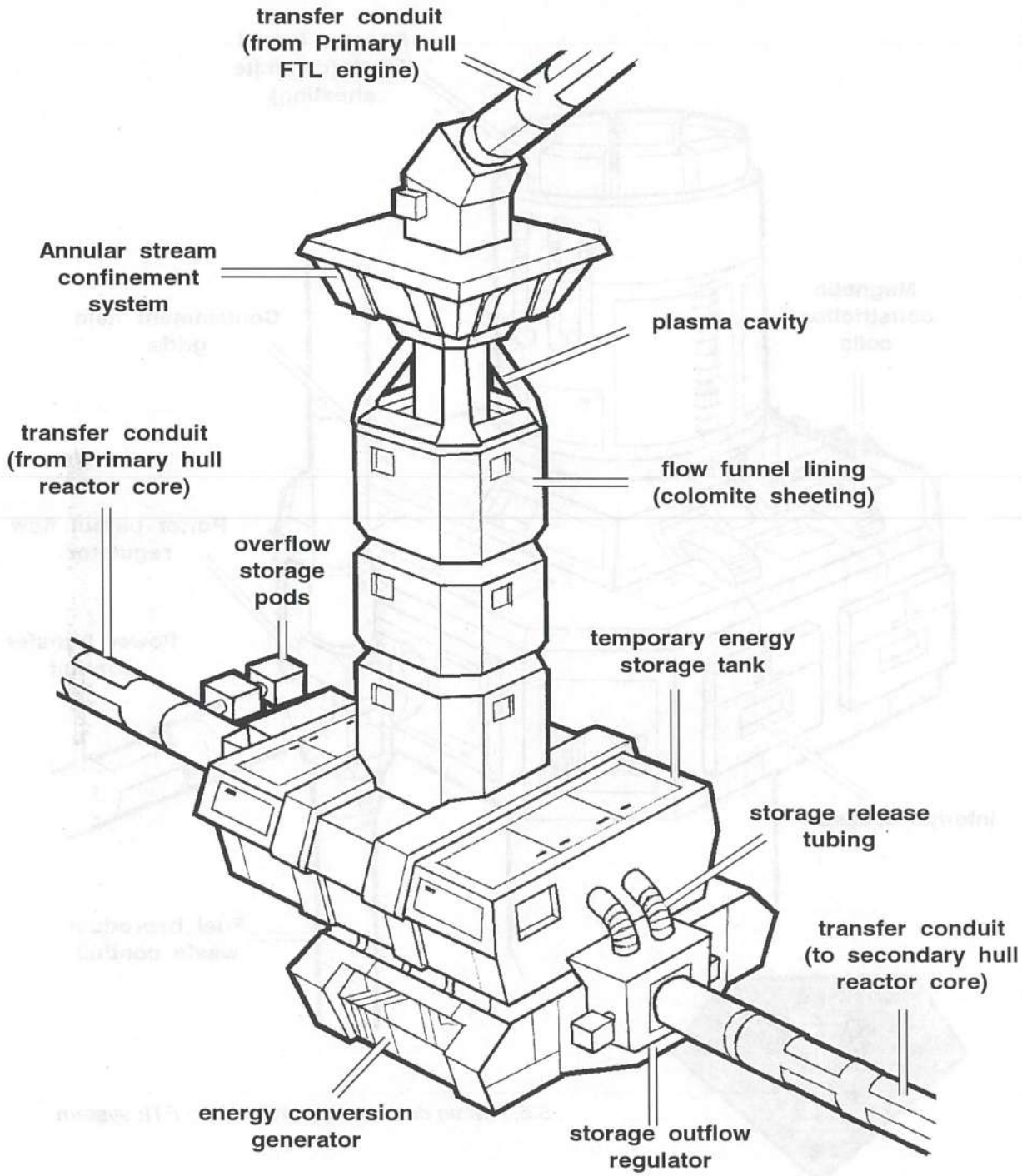
5.5 MAIN CORE REACTION CHAMBER



5.5.1 Main core reaction chamber: FTL system

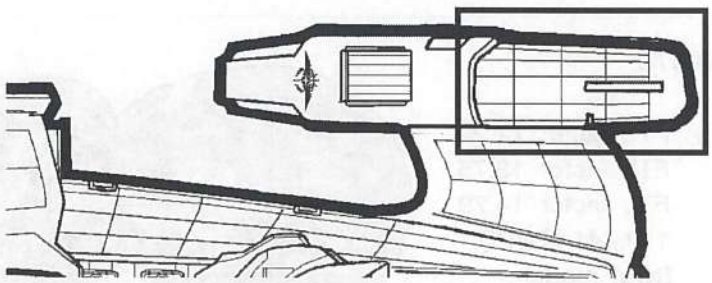
ENGINEERING

5.6 IN-LINE FTL DRIVE LINKAGE

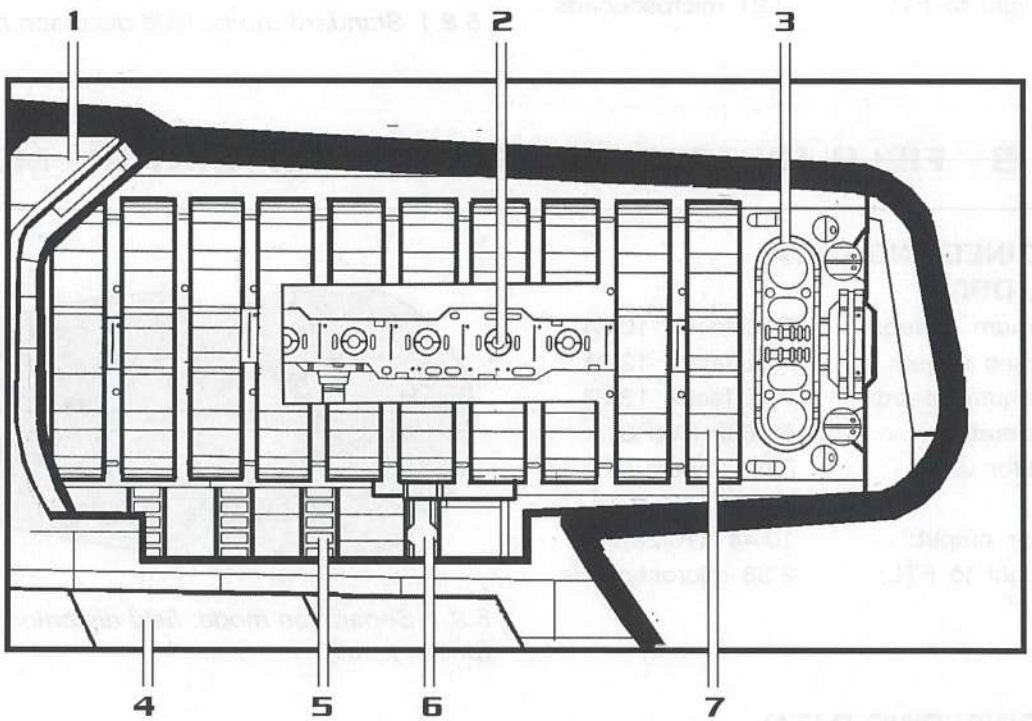


5.4.1 Main reactor core and storage tanks: FTL system

5.7 FTL ENGINES



5.7.1 FTL engine overview (secondary hull)



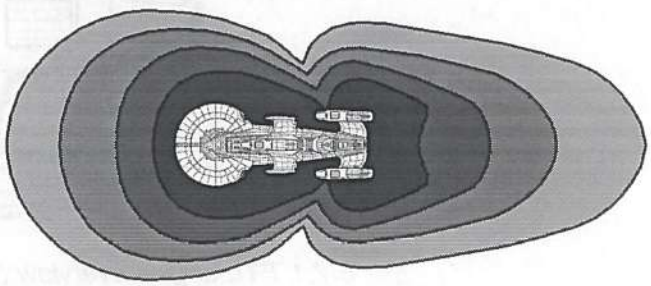
5.7.2 Close up cutaway view: internal structure of FTL engine

[1] FTL engine exterior cowling and shield grid [2] Off-axis field controller [3] FTL primary plasma injector [4] FTL engine support sponson [5] Interior spaceframe struts [6] Power transfer conduit (from main reactor core) [7] FTL field coil (colomite inner layer)

5.8 FIELD DISTORTION PROFILE: STANDARD MODE

ENGINEERING DATA:
FTL DRIVE

Optimum speed:	FTL factor 12.22
Cruising speed:	FTL factor 13.75
Maximum speed:	FTL factor 14.79
Acceleration:	119.441 KWPS
Reactor units:	[two] model UWC/ series Ax
Power output:	21.11 x10[28]W
Sublight to FTL:	2.21 microseconds

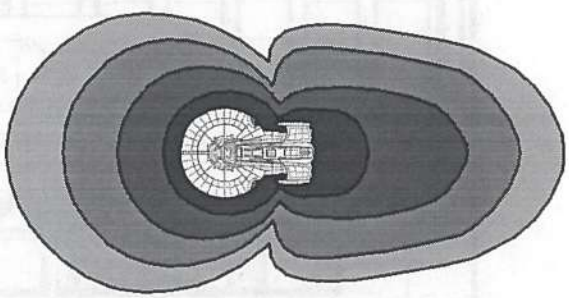


5.8.1 Standard mode: field distortion profile

5.9 FIELD DISTORTION PROFILE: SEPARATION MODE

ENGINEERING DATA:
FTL DRIVE

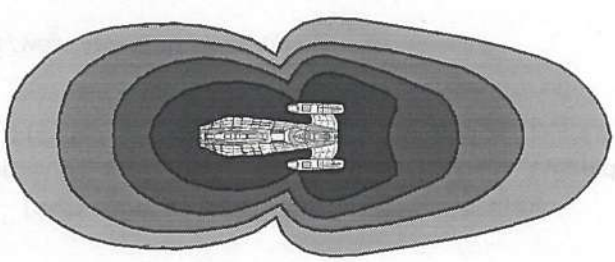
Optimum speed:	FTL factor 10.34
Cruising speed:	FTL factor 12.01
Maximum speed:	FTL factor 13.73
Acceleration:	63.662 KWPS
Reactor units:	[one] model UWC/ series Ax
Power output:	10.44 x10[28]W
Sublight to FTL:	2.38 microseconds



5.9.1 Separation mode: field distortion profile (primary hull)

ENGINEERING DATA:
FTL DRIVE

Optimum speed:	FTL factor 10.78
Cruising speed:	FTL factor 12.67
Maximum speed:	FTL factor 13.79
Acceleration:	72.032 KWPS
Reactor units:	[one] model UWC/ series Ax
Power output:	11.881 x10[28]W
Sublight to FTL:	2.392 microseconds

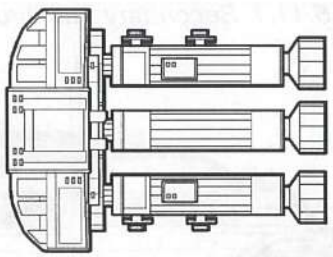


5.9.2 Separation mode: field distortion profile (secondary hull)

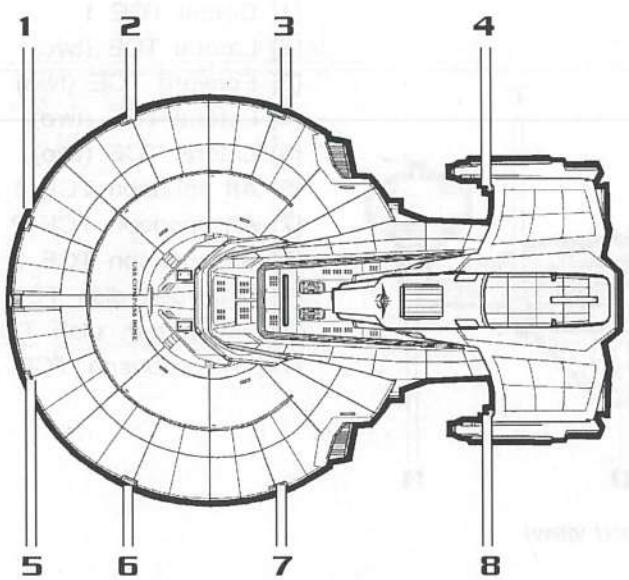
5.10 THRUSTERS: PRIMARY HULL

In its normal docked configuration, the CETUS class CVX achieves low-velocity attitude control through the use of 26 thruster control engines (TCE). The TCE system is designed primarily for sublight operations involving station-keeping, three-axis stabilization, and docking with smaller vessels. Precise attitude control is essential, particularly during a difficult operation, such as starship entry into the main hangar bay.

Each TCE consists of a gas-fusion reaction chamber, a high energy field trap, and upper and lower vectored-thrust exhaust nozzles.

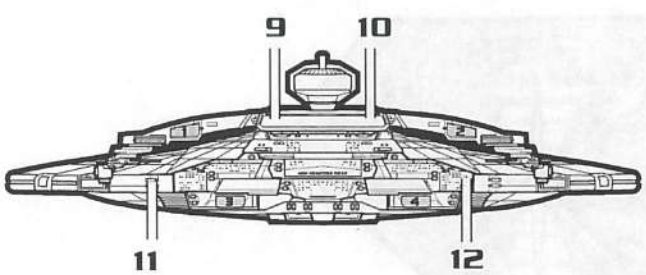


5.10.1 Typical thruster pack



[1] Lateral saucer TCE 1
[2] Lateral saucer TCE 2
[3] Lateral saucer TCE 3
[4] Forward sponson TCE 1
[5] Lateral saucer TCE 4
[6] Lateral saucer TCE 5
[7] Lateral saucer TCE 6
[8] Forward sponson TCE 2

5.10.2 Primary hull thrusters (dorsal view)

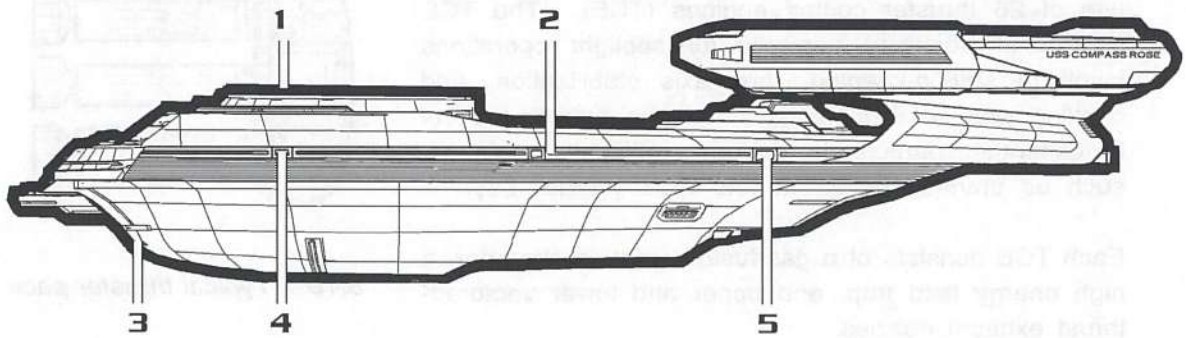


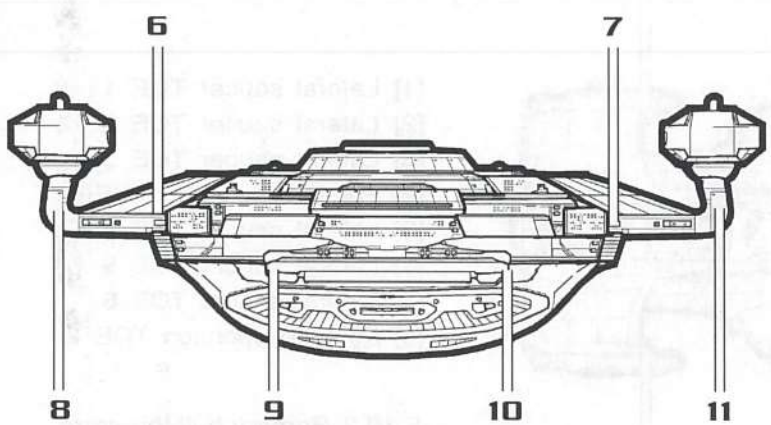
[9] Aft sponson TCE 1
[10] Aft sponson TCE 2
[11] Aft saucer TCE 1
[12] Aft saucer TCE 2

5.10.3 Primary hull thrusters (aft view)

5.11 THRUSTERS: SECONDARY HULL

5.11.1 Secondary hull thrusters (lateral view)





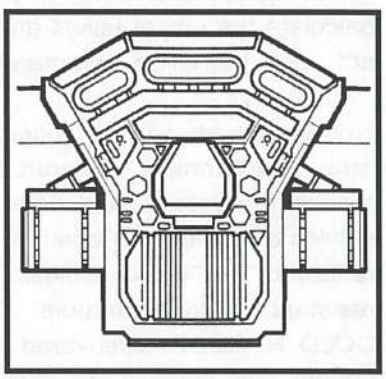
[1] Dorsal TCE 1
[2] Lateral TCE (two)
[3] Forward TCE (two)
[4] Lateral TCE (two)
[5] Lateral TCE (two)
[6] Aft sponson TCE 1
[7] Aft sponson TCE 2
[8] Aft sponson TCE 3
[9] Main def. dish TCE 1
[10] Main def. dish TCE 2
[11] Aft sponson TCE 2

5.11.2 Secondary hull thrusters (forward view)

6.0 WEAPON SYSTEMS: OFFENSIVE

6.1 CEPAR ARRAYS: PRIMARY HULL

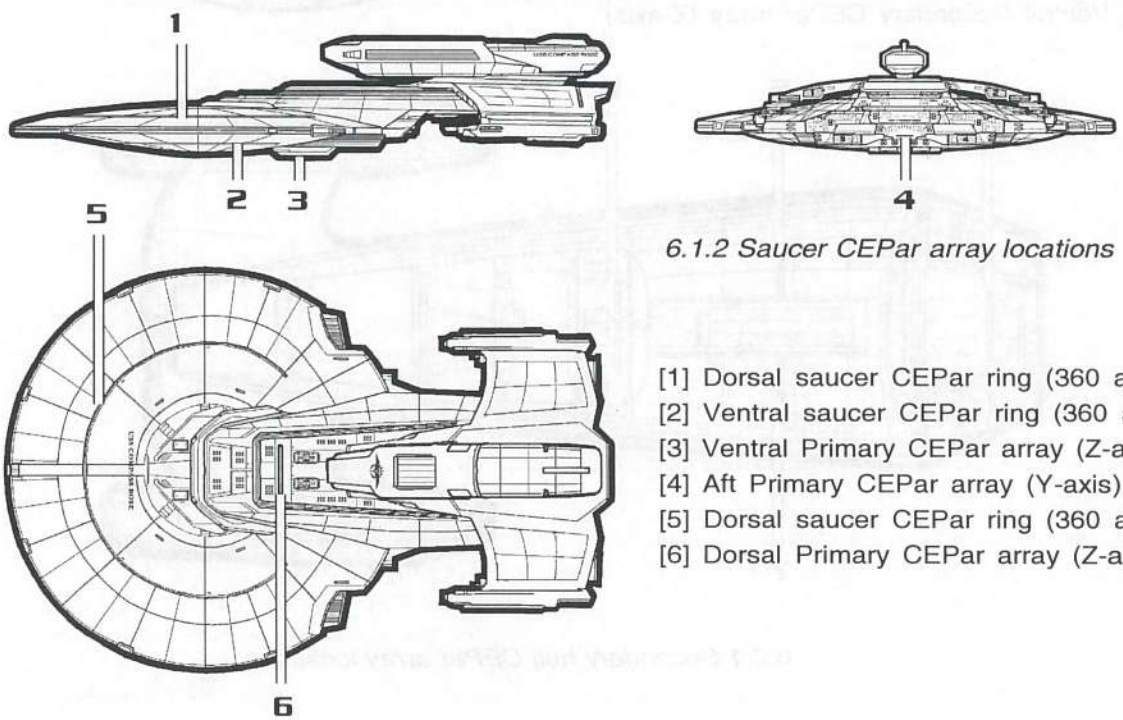
The primary short-range offensive system used by TerraForce for sublight use for the last 115 years is the CEPar beam weapon. The Charged Energy PARticle system refers to the basic principle of magnetically exciting heavy particles, accelerating them, and focusing the stream in a narrowly confined beam that has a highly destructive effect on the molecular structure of typical matter.



6.1.1 Typical CEPar array emitter

As installed on the CETUS class, the ship's arrays are rated as type Fh 17, the largest emitters available for shipboard use. The CETUS class supports 26 arrays, arranged in 13 banks of two.

A typical CEPar array consists of 200 emitter segments in a dense linear arrangement for optimal control of firing order, radial effects, and target impact. Groups of emitters are supplied by redundant sets of energy feeds from the main power plant. They are also interconnected by fire control, thermal management, and sensor arrays. The visible hull surface configuration of the CEPar array is a long, shallow raised strip, with the majority of the hardware built into the vehicle spaceframe.



6.1.2 Saucer CEPar array locations

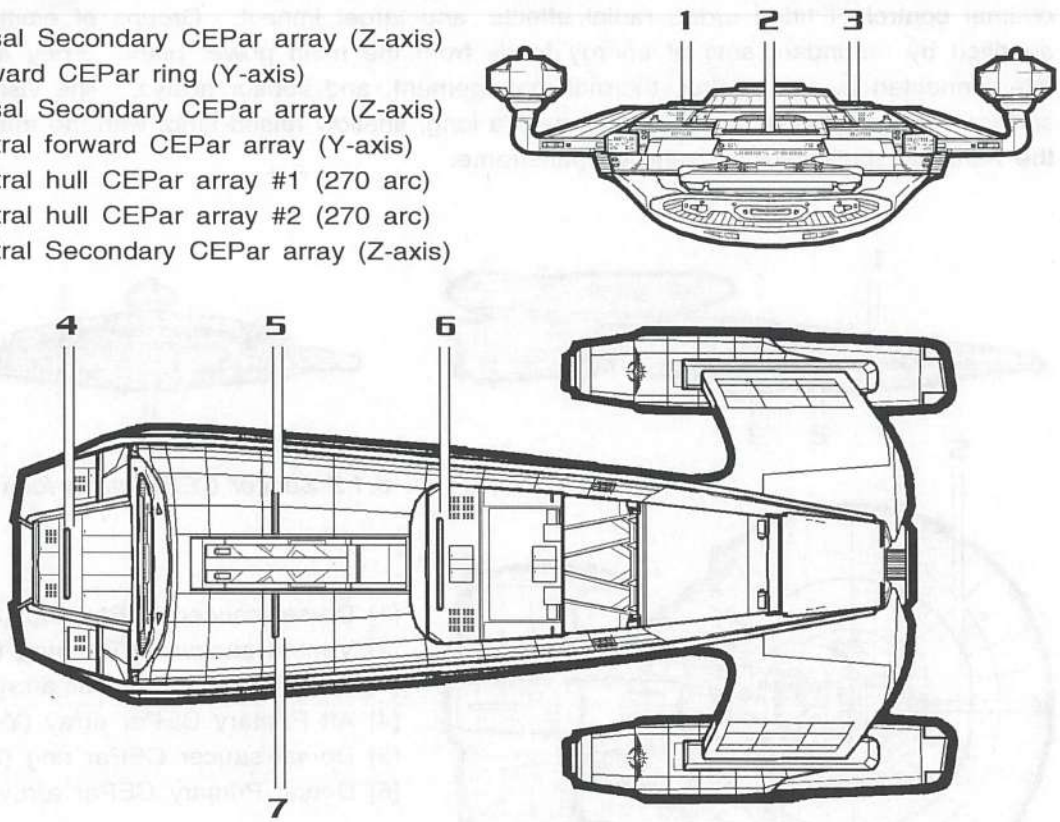
[1] Dorsal saucer CEPar ring (360 arc)
[2] Ventral saucer CEPar ring (360 arc)
[3] Ventral Primary CEPar array (Z-axis)
[4] Aft Primary CEPar array (Y-axis)
[5] Dorsal saucer CEPar ring (360 arc)
[6] Dorsal Primary CEPar array (Z-axis)

6.2 CEPAR ARRAYS: SECONDARY HULL

The performance of the CEPar array is determined by an extensive set of practical and theoretical scenarios stored within both main computer cores. Artificial intelligence routines calculate the power levels and discharge attitude of the CEPar arrays automatically as they act upon the direct commands of tactical officers.

Hostile vessels will be encountered with a wide variety of shields that reduce the CEPar array effectiveness. Jolaran shields spread the beam cross section, redirecting the energy around the shields and back into space. Higher power levels will usually overcome the shields and allow the beam to reach its target, but the recent conflict with the Seri Rebublic rendered that tactic useless. The Serisan Guard ships possessed sophisticated, highly resistant shield generators. After the loss of several warships, the captain of the USS COLD HARBOR discovered that extremely rapid-fire volleys at different parts of a shield bubble can weaken it. The CEPar arrays on the CETUS class CVX are located to achieve maximum beam contact with the target area. The maximum effective range is 34,500 km.

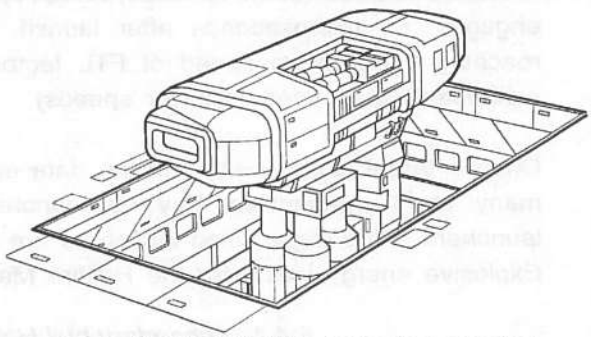
[1] Dorsal Secondary CEPar array (Z-axis)
[2] Forward CEPar ring (Y-axis)
[3] Dorsal Secondary CEPar array (Z-axis)
[4] Ventral forward CEPar array (Y-axis)
[5] Ventral hull CEPar array #1 (270 arc)
[6] Ventral hull CEPar array #2 (270 arc)
[7] Ventral Secondary CEPar array (Z-axis)



6.2.1 Secondary hull CEPar array locations

6.3 HELLFIRE TORPEDO LAUNCHERS: PRIMARY HULL

The Hellfire Matter/Antimatter torpedo is the most powerful weapon in the arsenal of TerraForce. It is carried on all major ships of the line, from the VALIANT class dreadnaught [Mark VII] to the STARWOLF class destroyer [Mark IV]. Long-range, high yield detonations can be delivered at effective ranges of up to 270,000 KM.

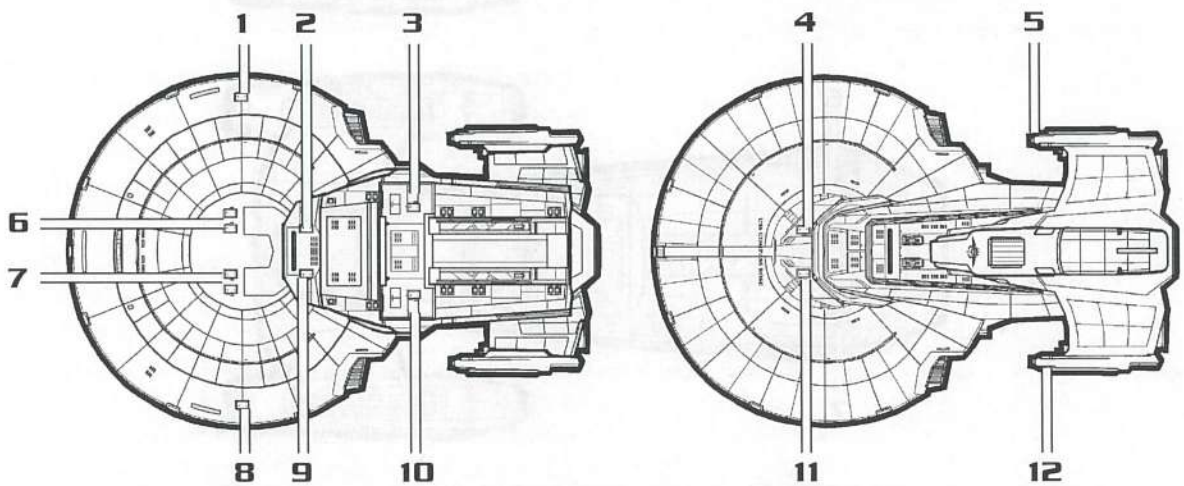


6.3.1 Typical Hellfire torpedo launcher

Due to the nature of the CETUS class mission, it was necessary to equip the vessel with the ability to keep threat forces at a greater distance than is ordinarily required. Therefore, the CETUS CVX has an unusually high number of launchers. To further enhance the targeting arc, special swivel-mounted launchers are positioned on optimal hull surfaces, in order to present a clear field of fire. The Hellfire mechanisms are housed in special bays, avoiding the exposure normally encountered with the standard fixed-configuration Mark VII launchers.

The standard Hellfire torpedo is used in FTL combat, requiring the use of on-board sensor targeting apparatus, along with control links to the Tactical station on the main bridge.

6.3.2 Primary hull Hellfire torpedo launcher locations



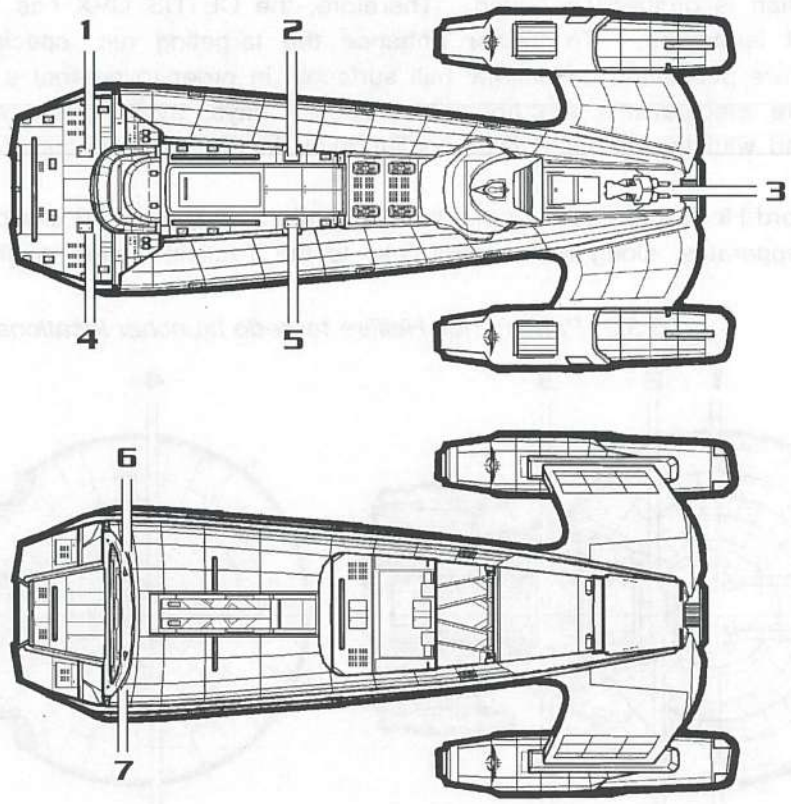
[1] Ventral starboard launcher (X-axis)
[2] Ventral forward launcher (Y-axis)
[3] Ventral aft launcher
[4] Dorsal central axis launcher #1 (360)
[5] Dorsal fixed sponson launcher (Y-axis)
[6] Ventral central axis launcher #1 (360)
[7] Ventral central axis launcher #2 (360)
[8] Ventral port launcher (X-axis)
[9] Ventral forward launcher (Y-axis)
[10] Dorsal aft launcher
[11] Dorsal central axis launcher #2 (360)
[12] Dorsal fixed sponson launcher (Y-axis)

6.4 HELLFIRE TORPEDO LAUNCHERS: SECONDARY HULL

A Hellfire torpedo (Mark VII class) is equipped with a micro matter/antimatter system, which engages .66 microseconds after launch. This propels the torpedo at FTL velocities, reaching a maximum speed of FTL factor 13.892 for 9.33 seconds (or until the cell is exhausted when used at lower speeds).

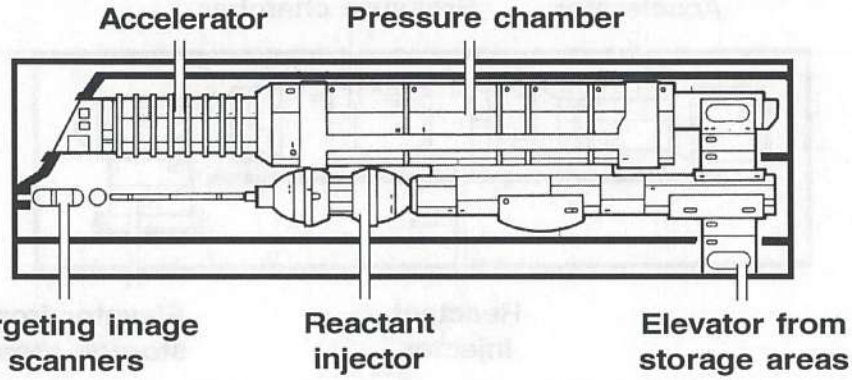
Once a target is acquired, and the data entered into the guidance system, a volley of as many as 10 projectiles may be launched every 2.1 seconds from the arc-mounted launchers. The larger fixed launchers are capable of a spread of 14 every 2.03 seconds. Explosive energy yields for the Hellfire Mark VII are currently 596 megatons

6.4.1 Secondary hull Hellfire torpedo launcher locations



[1] Dorsal forward launcher (Y-axis)
[2] Dorsal centerline launcher (X-axis)
[3] Main fixed dorsal aft launcher (Y-axis)
[4] Dorsal forward launcher (Y-axis)
[5] Dorsal centerline launcher (X-axis)
[6] Ventral forward Y-axis fixed launcher (starboard)
[7] Ventral forward Y-axis fixed launcher (port)

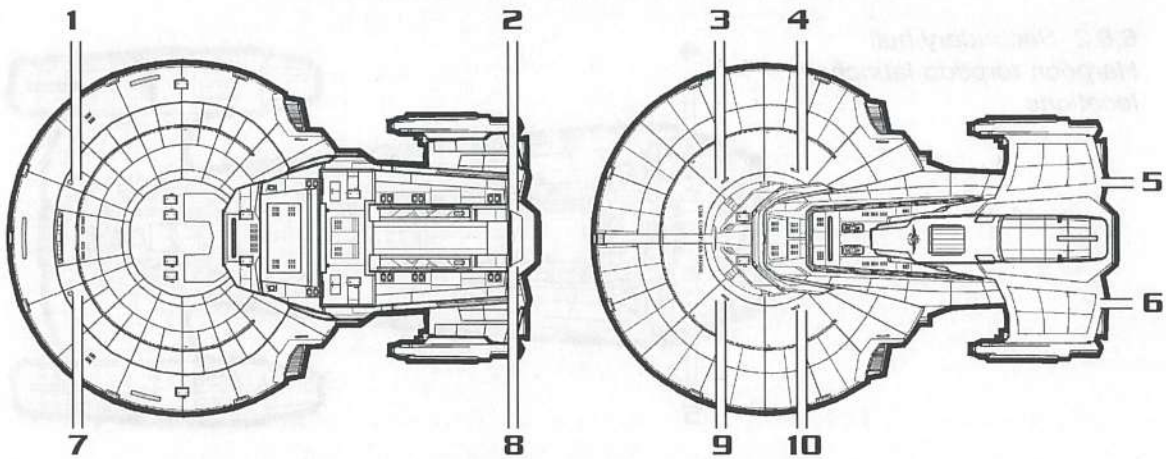
6.5 HARPOON TORPEDO LAUNCHERS: PRIMARY HULL



6.5.1 Primary hull Harpoon torpedo launch bay

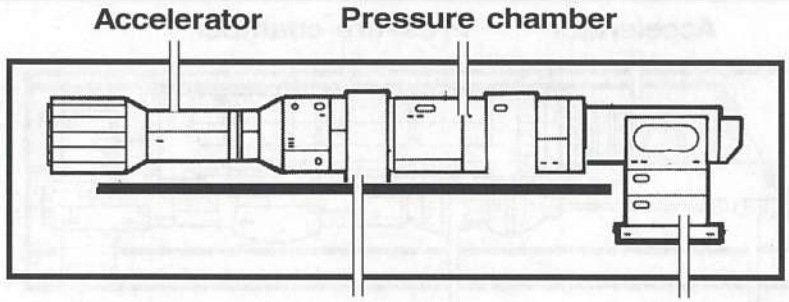
The Harpoon torpedo is a medium-yield, mid range FTL weapon that is used primarily against smaller ships of the line and enemy battlecraft. Nearly all TerraForce vessels are equipped with Harpoon launchers, which are manufactured only in fixed units. A Type IX torpedo possesses the highest yield at 210.3 megatons, while the type XXII can be mounted on TOUTATIS class interceptors and TRITON class troop transports. Referred to as a level-2 offensive/defensive system L2S/D, the Harpoon torpedo functions in a variety of roles. It gives TerraForce ships the tactical advantage to avoid close in attacks by large numbers of very maneuverable craft, which can utilize echo deflection nets to survive barrages by the heavier yield Hellfire system.

6.5.2 Primary hull Harpoon torpedo launcher locations

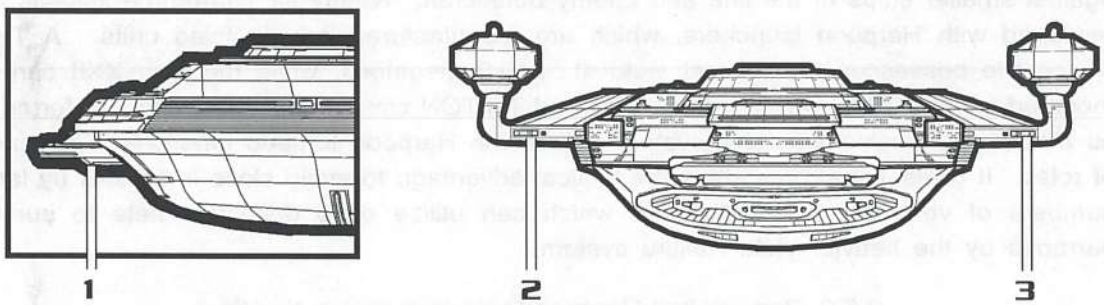


[1] Ventral starboard launcher (Y-axis)
[2] Ventral aft launcher (Y-axis)
[3] Dorsal forward starboard launcher
[4] Dorsal aft starboard launcher
[5] Dorsal aft sponson launcher #1(Y-axis)
[6] Dorsal aft sponson launcher #2 (Y-axis)
[7] Ventral port launcher (Y-axis)
[8] Ventral forward launcher (Y-axis)
[9] Dorsal forward port launcher
[10] Dorsal aft port launcher

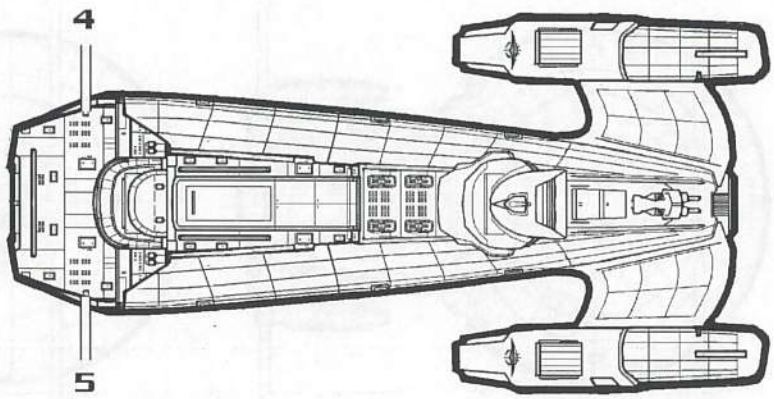
6.6 HARPOON TORPEDO LAUNCHERS: SECONDARY HULL



6.6.1 Secondary hull Harpoon torpedo launch bay



6.6.2 Secondary hull Harpoon torpedo launcher locations



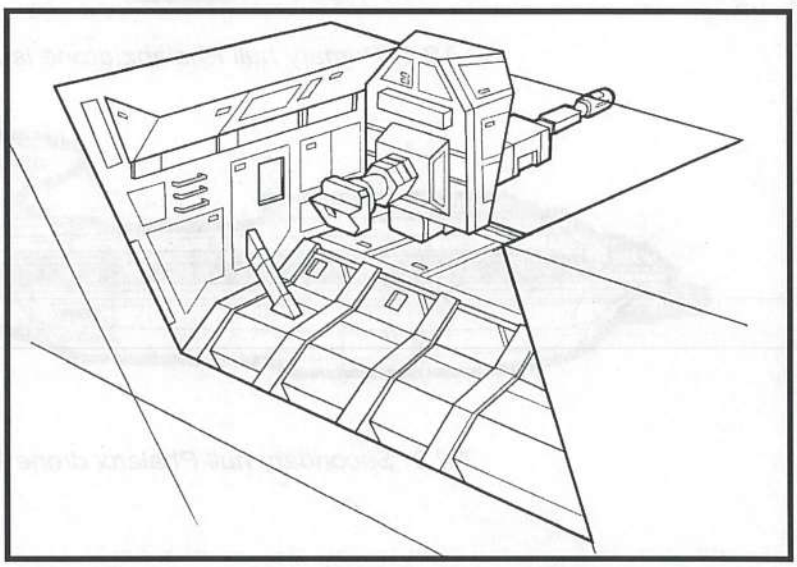
[1] Forward deflector dish launcher (Y-axis)
[2] Starboard aft sponson launcher (Y-axis)
[3] Port aft sponson launcher (Y-axis)
[4] Dorsal forward starboard launcher (X-axis)
[5] Dorsal forward port launcher (X-axis)

7.0 WEAPON SYSTEMS: DEFENSIVE

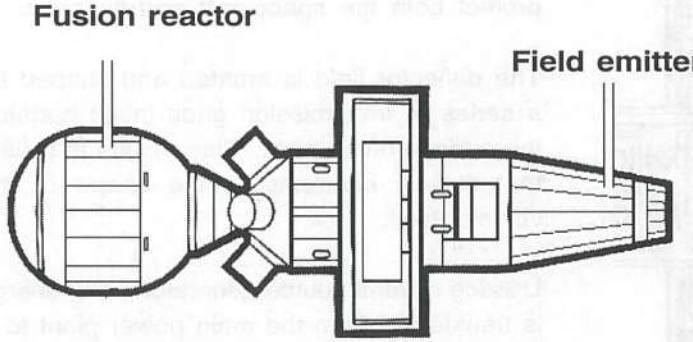
7.1 COUNTERMEASURES: PHALANX DRONE LAUNCHERS

All TerraForce warships are equipped with anti-fire countermeasures. Passive devices (PCMs) are used as decoys, which disperse a sensor echo field, causing enemy sensors to lock on to the decoy. If this is successful, an Active countermeasure (ACM) can be utilized to eliminate the enemy projectile.

The Phalanx series is designed to intercept enemy torpedoes before they can detonate against either shield or hull surfaces. Locking on to the emission signature of its target, the drone calculates attitude, distance, and velocity factors in order to complete a successful intercept.



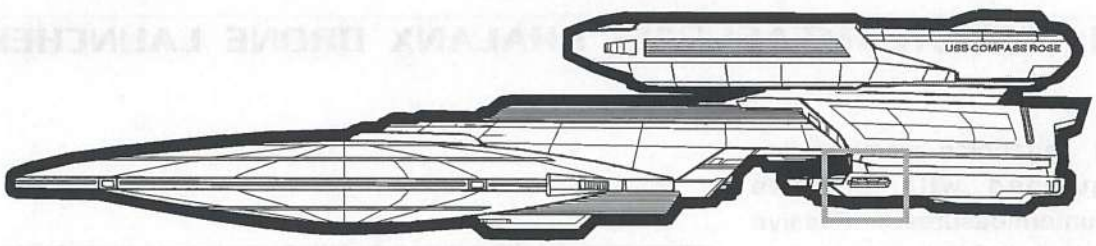
7.1.1 Secondary hull Phalanx drone launcher bay



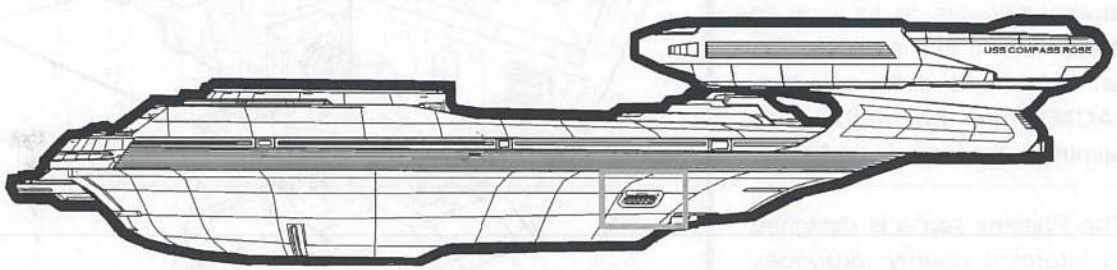
7.1.2 Type 01 Phalanx drone countermeasure

A vessel the size of the CETUS class (with a shield profile of over 3000 meters) presents an enormous target aspect to potential Threat forces. ACM devices such as the Phalanx close in defense system can reduce strain on other key defensive system discussed in chapter 7.2 -5, the Shield Deflector Grid (SDG).

7.2 COUNTERMEASURES: PHALANX DRONE LAUNCHERS



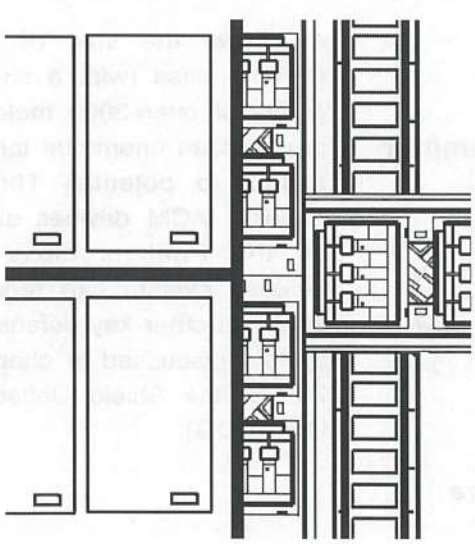
7.2.1 Primary hull Phalanx drone launch bay



7.2.2 Secondary hull Phalanx drone launch bay

7.3 SHIELD GENERATORS: SDG SYSTEMS

7.3.1 Typical hull shield generation array



The tactical deflector system is the primary defensive system of all TerraForce vessels. It is a series of powerful deflector fields that protect both the spacecraft and its crew.

The deflector field is emitted and shaped by a series of transmission grids inlaid beneath the surface hull plates. This results in a field that closely conforms to the shape of the vehicle itself.

Utilizing several source generators, flux energy is transferred from the main power plant to a hierarchy of polarity amplifiers, which magnify and strengthen the field at the point of impact.

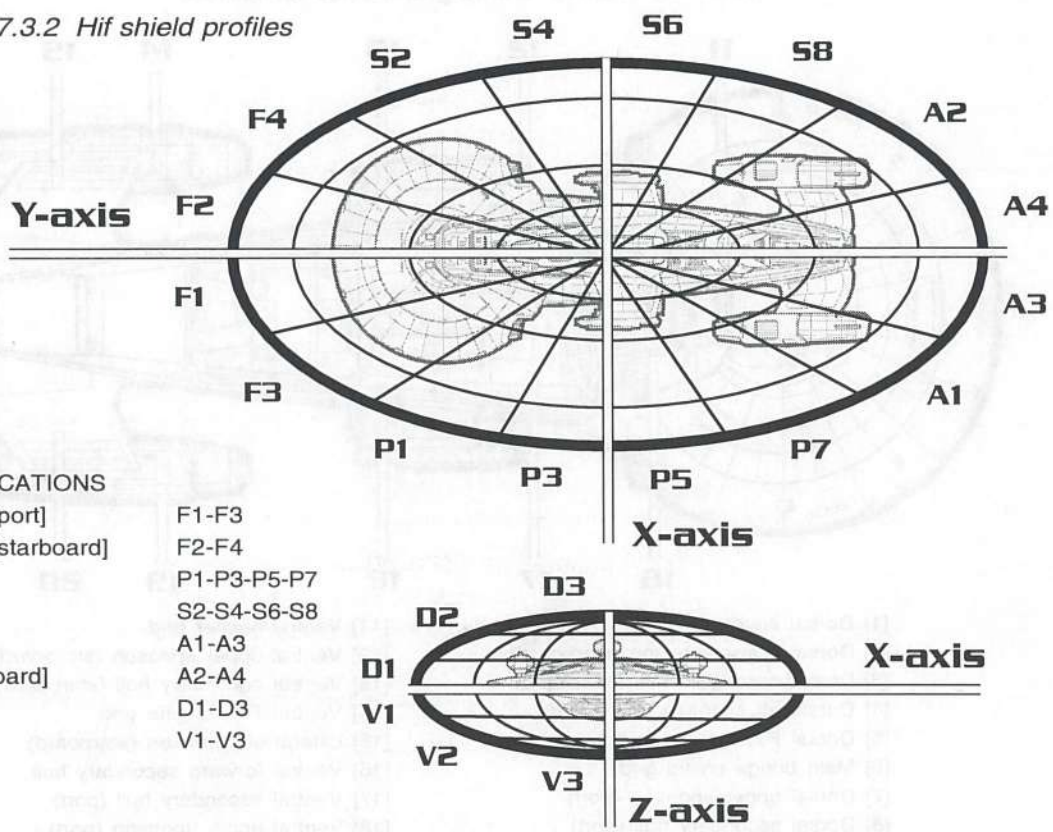
SHIELD PROFILES: CETUS CLASS CVX

The SDG system of the CETUS class was developed and manufactured by the Larson Technologies Consortium, a major contractor for the Department of Defense for over twenty years. LTC has prided itself on safeguarding the lives of TerraForce crew personnel.

Early computer modeling demonstrated that a vessel the size of the CETUS class would be extremely difficult to protect against sustained high-yield impacts. An adequate SDG system would require the use of several thousand High Frequency shield generators (HiF) to be installed throughout the spaceframe. The Larson JX25 was chosen as the best option. With a shield rating of 974, the L/JX25 has a refresh cycle of .399 microseconds. Power consumption under normal operation is 3.553 KWPS per unit, but will increase when polarity amplifiers engage to magnify shield strength.

Under Standard operational mode, the SDG produces a field that is 3142 meters by 721 meters by 1066 meters. Size and shape of the SDG can be modified to increase effectiveness. Figure 7.3.2 illustrates the major divisions of the SDG profile.

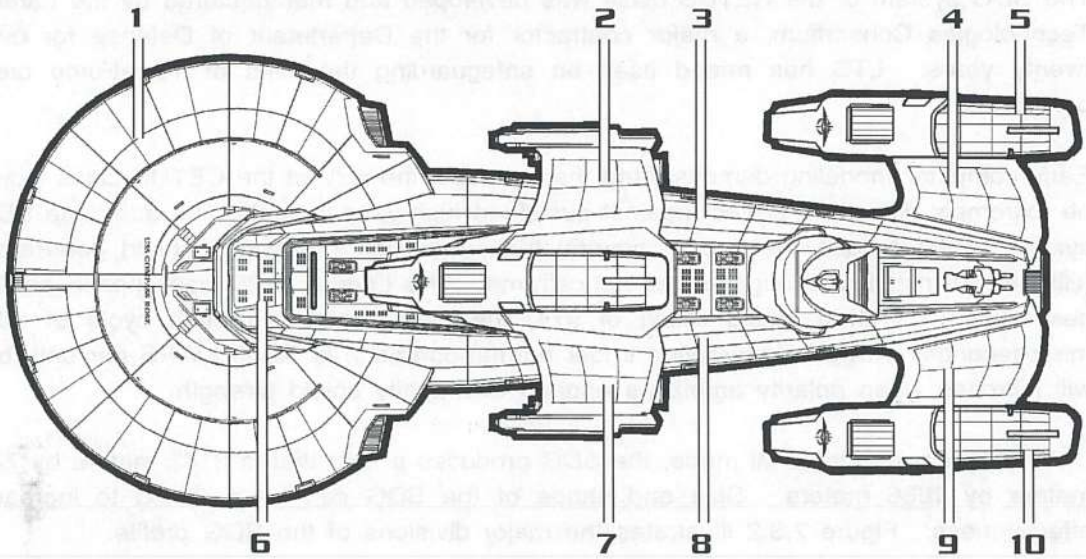
7.3.2 Hif shield profiles



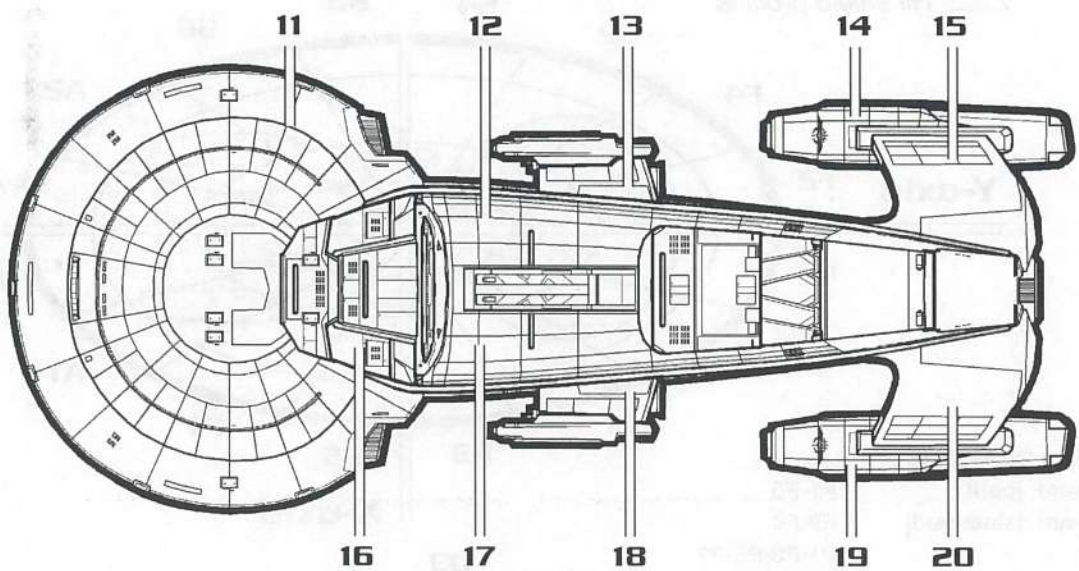
GRID LOCATIONS	
Forward [port]	F1-F3
Forward [starboard]	F2-F4
Port	P1-P3-P5-P7
Starboard	S2-S4-S6-S8
Aft [port]	A1-A3
Aft [starboard]	A2-A4
Dorsal	D1-D3
Ventral	V1-V3

7.4 SDG SYSTEMS: CETUS CLASS CVX

7.4.1 Dorsal HiF shield grid locations: Dorsal



7.4.2 Dorsal HiF shield grid locations: Ventral



[1] Dorsal saucer grid
[2] Dorsal upper sponson (starboard)
[3] Dorsal secondary hull (starboard)
[4] Dorsal aft sponson (starboard)
[5] Dorsal FTL engine grid
[6] Main bridge shield grid
[7] Dorsal upper sponson (port)
[8] Dorsal secondary hull (port)
[9] Dorsal aft sponson (port)
[10] Dorsal FTL engine grid

[11] Ventral saucer grid
[12] Ventral upper sponson (starboard)
[13] Ventral secondary hull (starboard)
[14] Ventral FTL engine grid
[15] Lateral aft sponson (starboard)
[16] Ventral forward secondary hull
[17] Ventral secondary hull (port)
[18] Ventral upper sponson (port)
[19] Ventral FTL engine grid
[20] Lateral aft sponson (port)

8.0 POWER ABSORPTION ARRAY

8.1 POWER ABSORPTION ARRAY: DEVELOPMENT

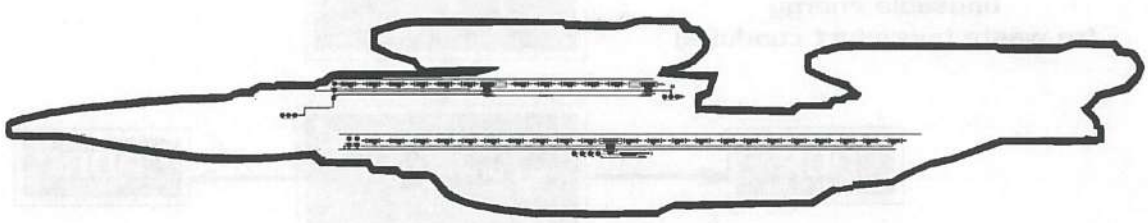
The large hull surface area of the CETUS CVX presented many difficult challenges to the Procyon IV defense technicians. After numerous simulations and prototype testing, it became apparent that conventional shield technology would be inadequate to protect the entire vessel should it encounter a continuous, heavy assault by threat forces.

Generating a shield profile of 2.7 billion square meters required so much power that other vital weapon systems had to be disengaged, leaving the ship without offensive capabilities for brief periods. Even with added power from the Primary hull FTL core, shield integrity could not be maintained for more than 14.25 minutes against a typical adversary forces of the major powers..

This dilemma jeopardized the entire CETUS PROJECT. Increasing the power plant was not a viable option, due to the additional volume of ship capacity that would be consumed. Other options, including reactive armor, trianite sheeting and colomite plating were considered to be temporary and expensive solutions.

With the feasibility of the CETUS PROJECT in doubt, chief designer Captain Tolcott suggested a new, relatively untried technology called Power Absorption. The premise of the device is simple. Instead of deflecting incoming energy, the system absorbs it, stores it, and then converts it into a usable power source. If a potential overload of the array is detected, the excess energy can be dissipated through the FTL emergency flush vents.

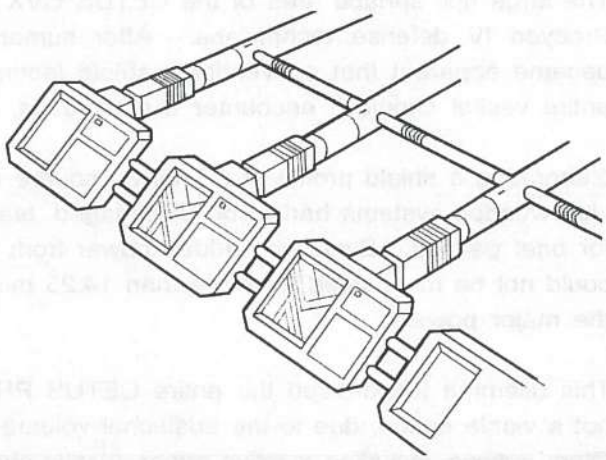
This breakthrough by the design team was stunning. Ironically, the large spaceframe of the CETUS class was an ideal platform for such a system. Previous experiments with smaller vessels had failed, due in part to a lack of surface area on which to place an adequate number of absorption cells. Computer simulations and live-fire exercises were successful, and the CETUS PROJECT was saved.



8.1.1 Power absorption array system: CETUS *class* CVX

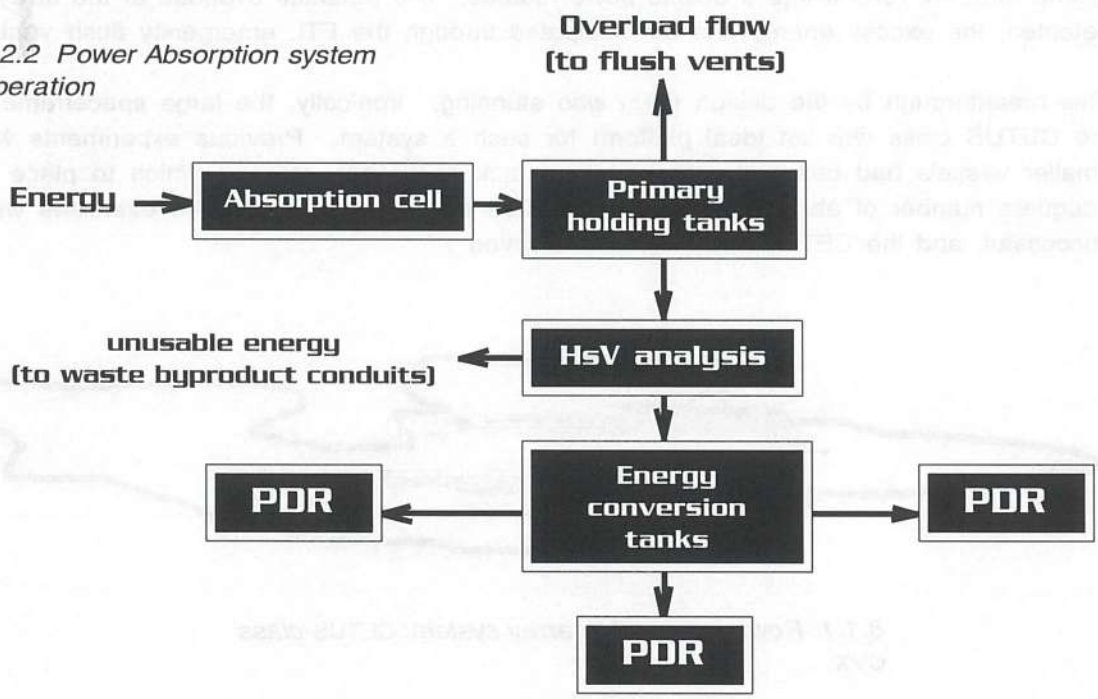
8.2 POWER ABSORPTION ARRAY: OPERATION

After incoming energy is directed to the collection cells (see fig 8.2.1), it is shunted to the primary holding tanks (fig 8.3.1). Analysis by high speed vector scanners (HsV) determines how the energy must be manipulated in order to be converted into a viable source of power. Once analyzed, the raw power input (RPI) is channelled into energy conversion tanks (ECT), which process the RPI, adapting its frequency to the harmonic signature compatible with other ship systems. The next phase is the distribution of the newly converted energy. Power distribution rods (PDR) connect EC Tanks with major power conduits throughout the Primary and Secondary hulls.



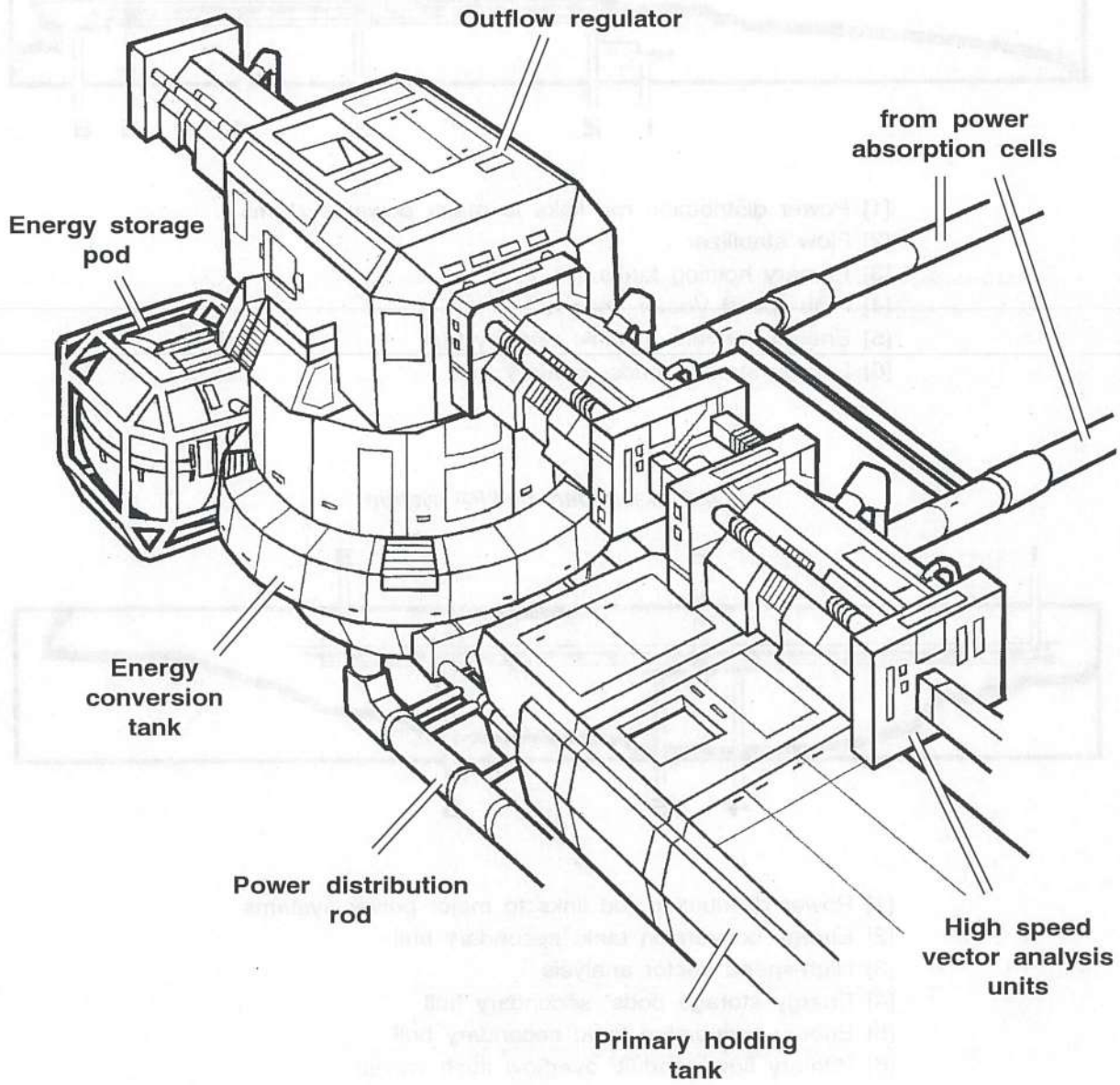
8.2.1 Typical energy collection cells

8.2.2 Power Absorption system operation



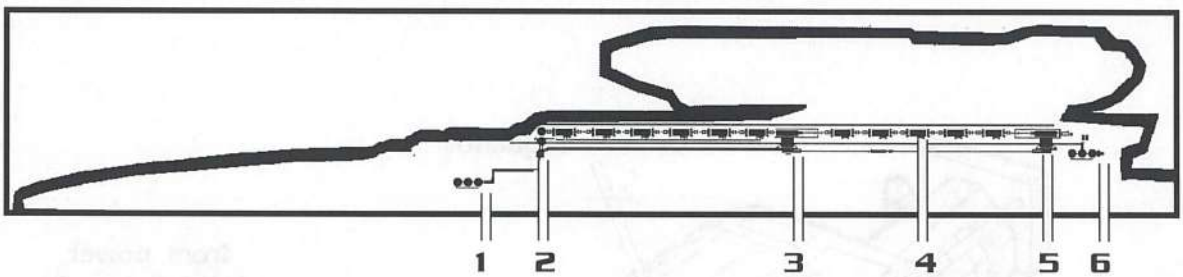
8.3 MAIN STORAGE AND CONVERSION TANKS

8.3.1 Main storage and conversion tanks: Secondary hull system



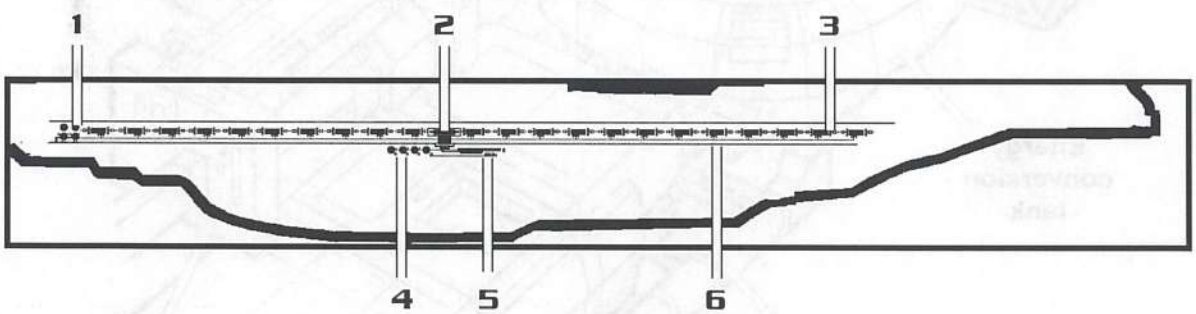
8.4 POWER ABSORPTION ARRAY: PRIMARY AND SECONDARY HULLS

8.4.1 Primary hull PA system



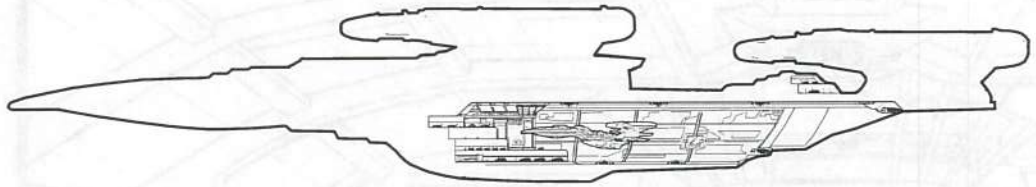
[1] Power distribution rod links to major power systems
[2] Flow stabilizer
[3] Primary holding tanks
[4] High-speed Vector analysis
[5] Energy conversion tank: primary hull
[6] Energy storage pods: primary hull

8.4.2 Secondary hull PA system



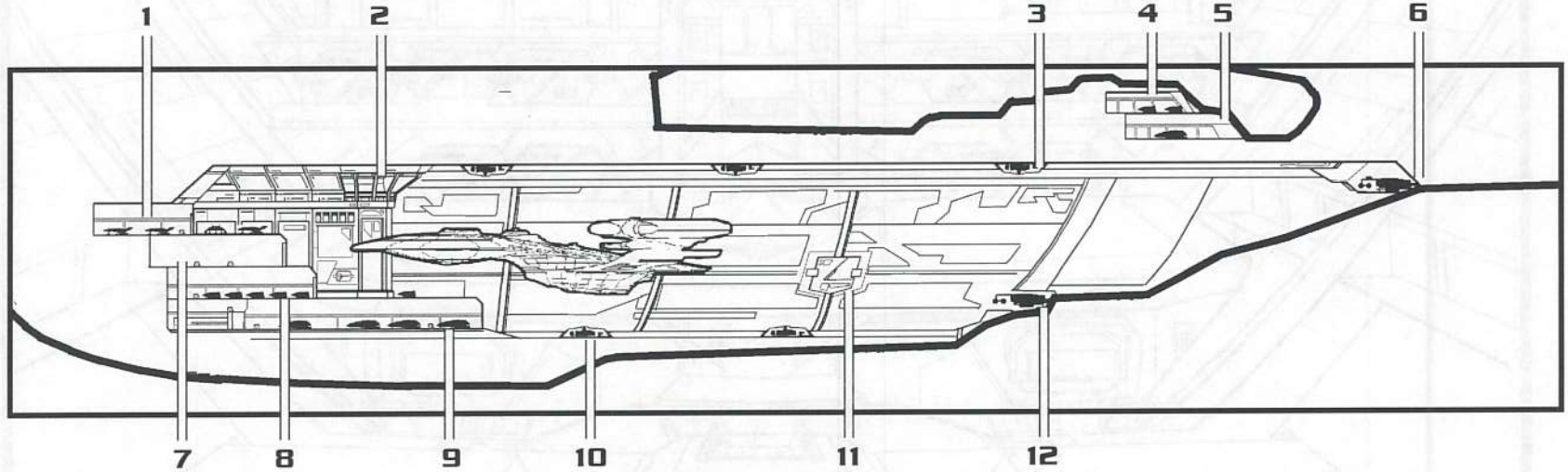
[1] Power distribution rod links to major power systems
[2] Energy conversion tank: secondary hull
[3] High-speed vector analysis
[4] Energy storage pods: secondary hull
[5] Energy conversion tank: secondary hull
[6] Primary flow conduit/ overflow flush valves

9.0 STARSHIP SERVICING CAPABILITIES



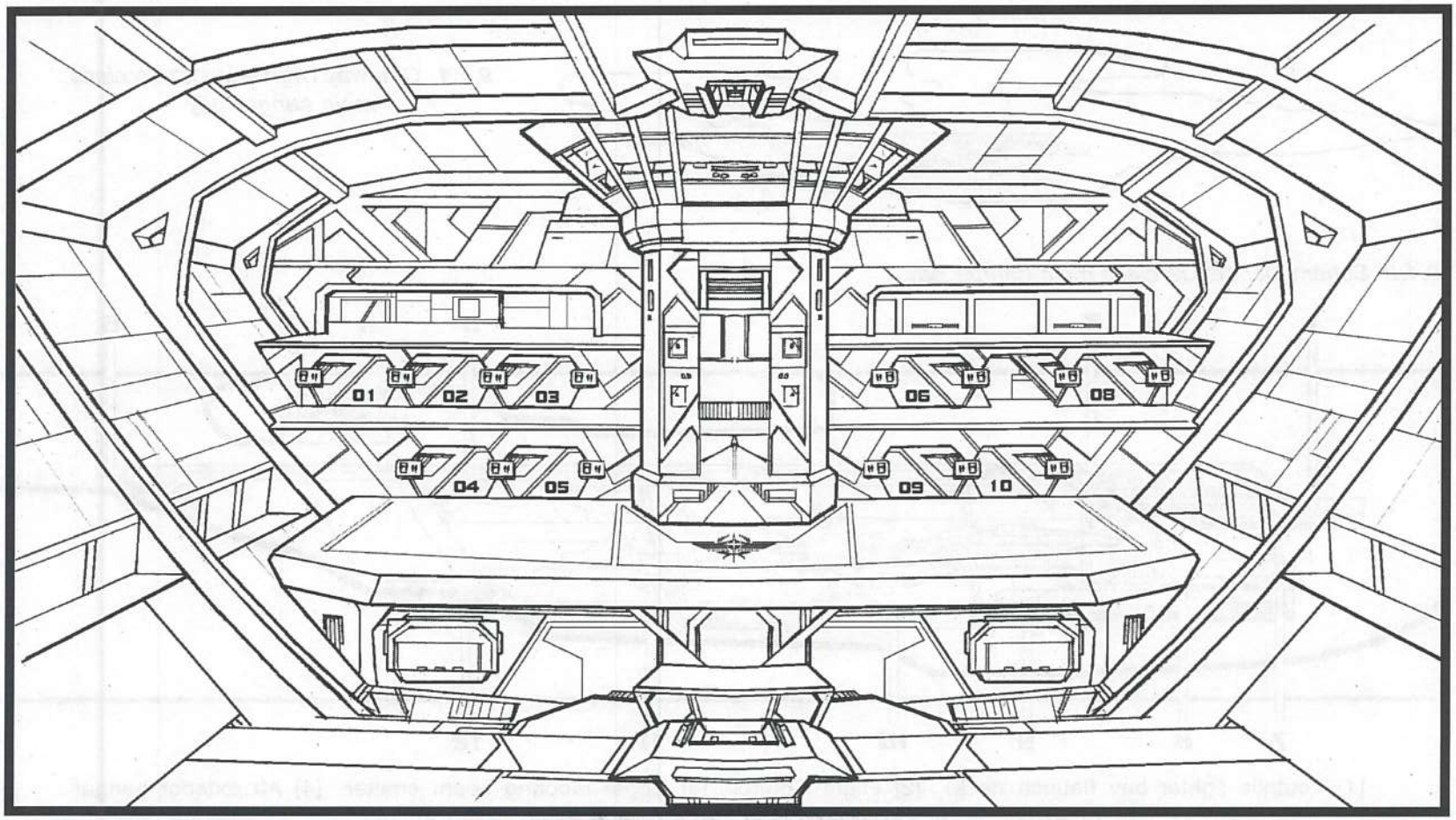
9.1.1 Cutaway overview: CETUS *class main hangar bay*

9.1.2 Schematic: CETUS *class main hangar bay*



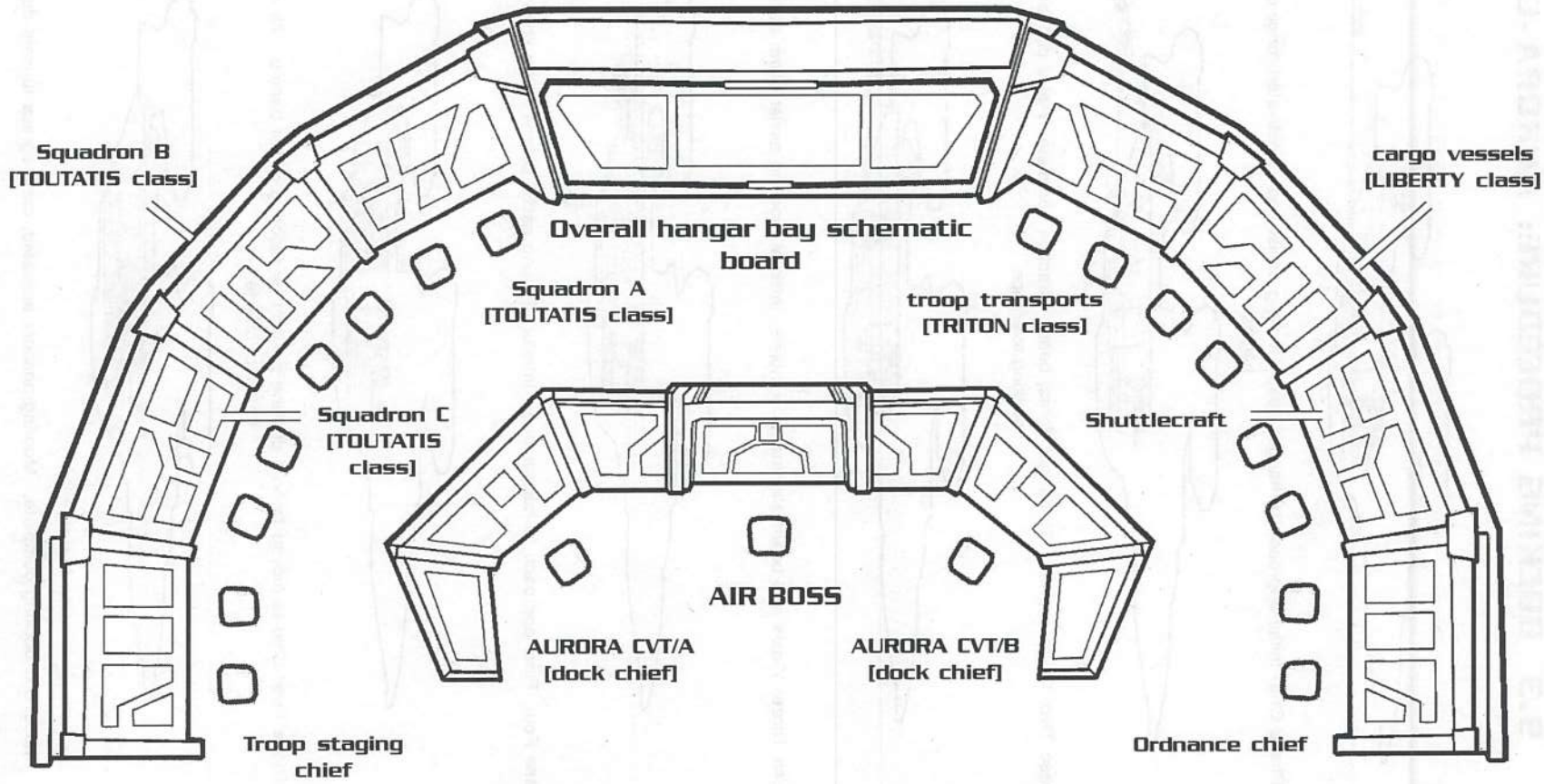
[1] Toutatis fighter bay (launch deck) [2] Flight Control [3] Upper mooring beam emitter [4] Aft exterior hangar bay (deck 1) [5] Aft exterior hangar bay (deck 2) [6] Upper docking beam emitter [7] Shuttlebays [8] Shuttlebays/ Triton class troop transports [9] Liberty class cargo bays [10] Lower mooring beam emitter [11] Maintenance bay access hatch [12] lower docking beam emitter

9.1 MAIN HANGAR BAY



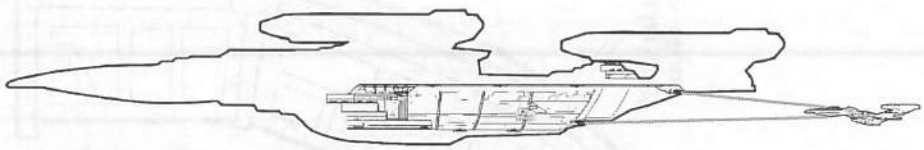
9.1.3 Internal structural view: CETUS *class main hangar bay*

9.2 FLIGHT CONTROL

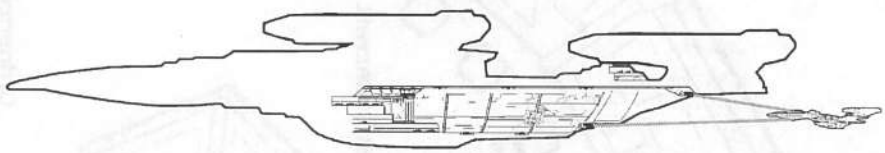


9.2.1 Flight Control: CETUS *class Main hangar bay*

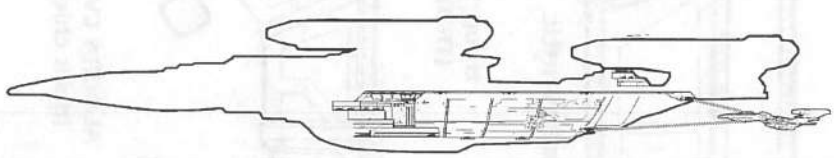
9.3 DOCKING PROCEDURE: AURORA CLASS



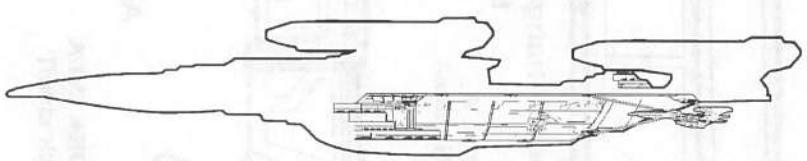
Phase One: Initial approach to hangar bay. Docking assist beams activated, engine retraction begins



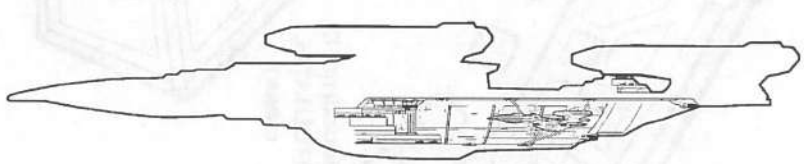
Phase Two: Close approach to hangar doors, beam retraction complete. Y-axis contraction 45% of docking tolerance.



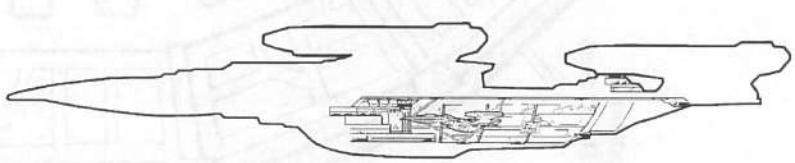
Phase Three: Y-axis and beam alignments complete. Internal mooring assist beam activation begun.



Phase Four: Final approach to hangar bay. Interior mooring assist beams guide ship into position.

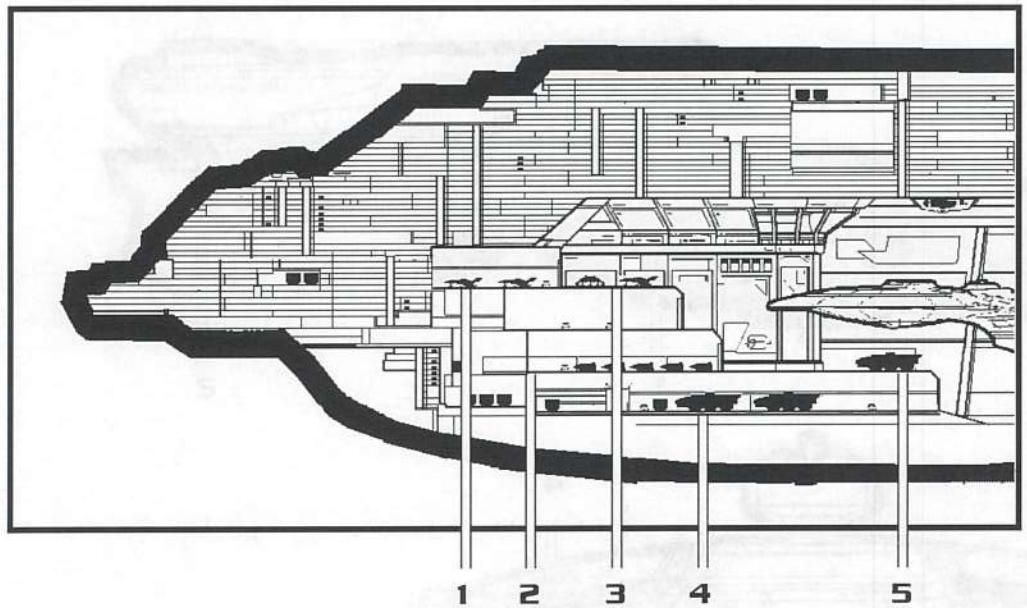


Phase Five: Ship is moved to final docking position by mooring assist beams. All shipboard thrusters off-line.



Phase Six: docking complete. Mooring anchors activated, crew egress tunnels deployed.

9.4 INTERNAL HANGARS: BATTLECRAFT



The CETUS class Secondary hull contains a number of specialized hangar bays, which support the Air Wings, shuttle transports, TRITON armored troop carriers, and LIBERTY class cargo vessels.

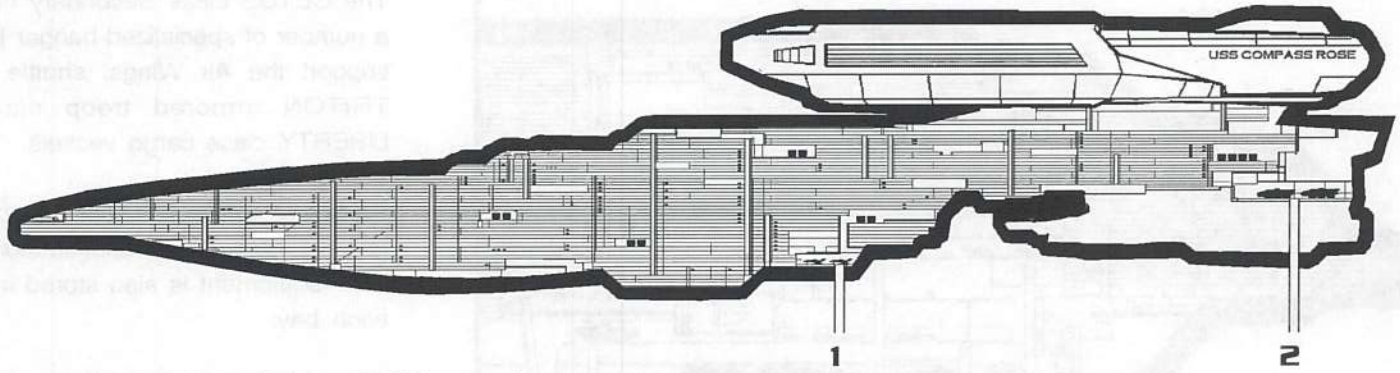
Each area is supplied with fueling and repair facilities, as well as ordnance storage. Flight crew equipment is also stored in lockers in each bay.

Staging areas for large troop deployments or crew evacuation/rescue operations are located on the upper levels of the LIBERTY cargo bays and the shuttlebays.

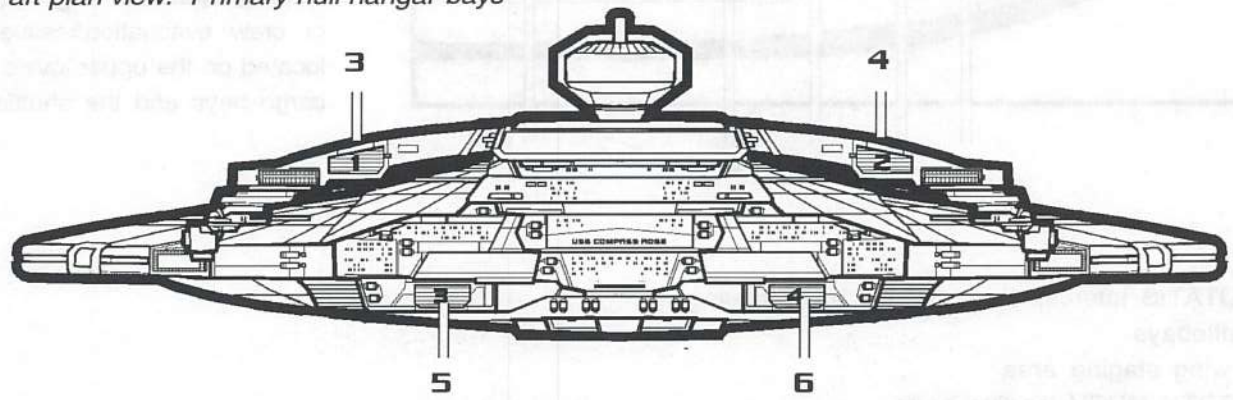
[1] TOUTATIS interceptor (ordnance bay-refueling)
[2] Shuttlebays
[3] Air wing staging area
[4] LIBERTY MPCV loading bays
[5] TRITON class ATC staging area

9.5 EXTERIOR DOCKING BAYS: PRIMARY HULL

9.5.1 Internal structural view: Primary hull hangar bays



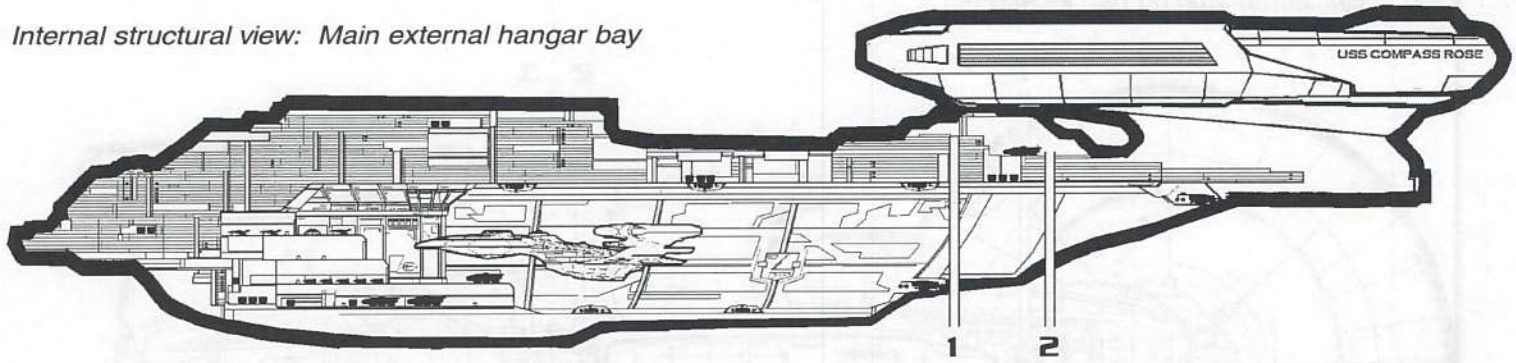
9.5.2 External aft plan view: Primary hull hangar bays



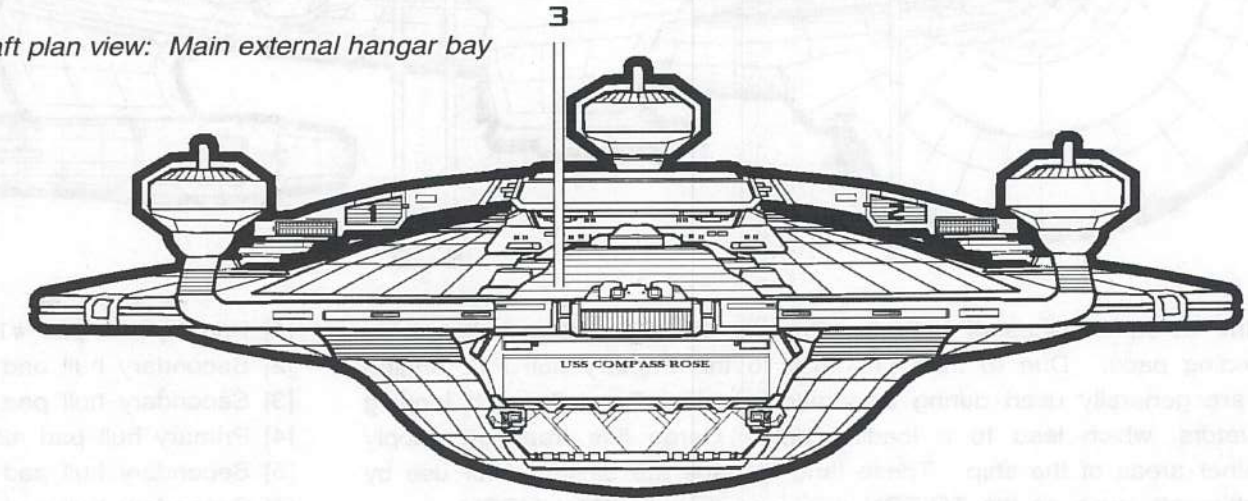
[1] Saucer module exterior hangar bay (Fighters/shuttlecraft) [2] Upper sponson exterior hangar bay (TRITON/LIBERTY class heavy battlecraft) [3] Port upper sponson hangar bay [4] Starboard upper sponson hangar bay [5] Port saucer module hangar bay [6] Starboard saucer module hangar bay

9.6 EXTERIOR DOCKING BAYS: SECONDARY HULL

9.6.1 Internal structural view: Main external hangar bay



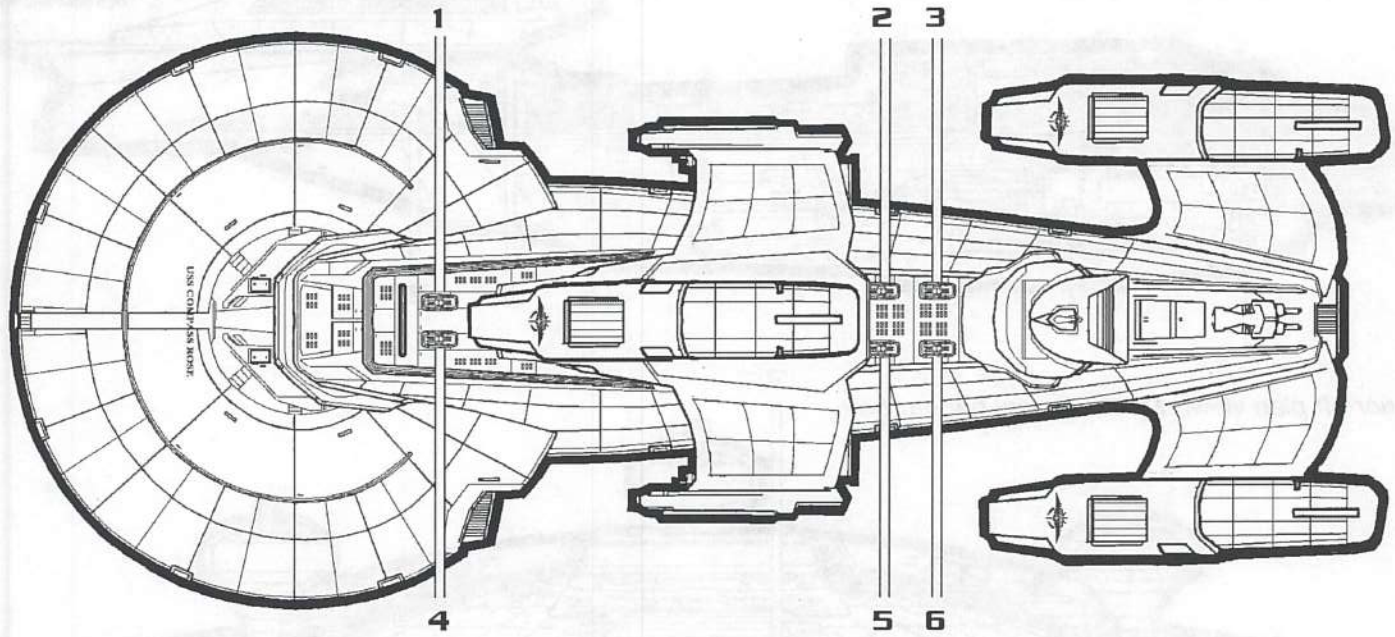
9.6.2 Exterior aft plan view: Main external hangar bay



[1] Deck one (shuttlecraft) [2] Deck two (TRITON/LIBERTY heavy battlecraft) [3] Secondary hull aft exterior hangar bay

9.7 DORSAL LANDING PADS

9.7.1 Dorsal Battlecraft landing pad locations

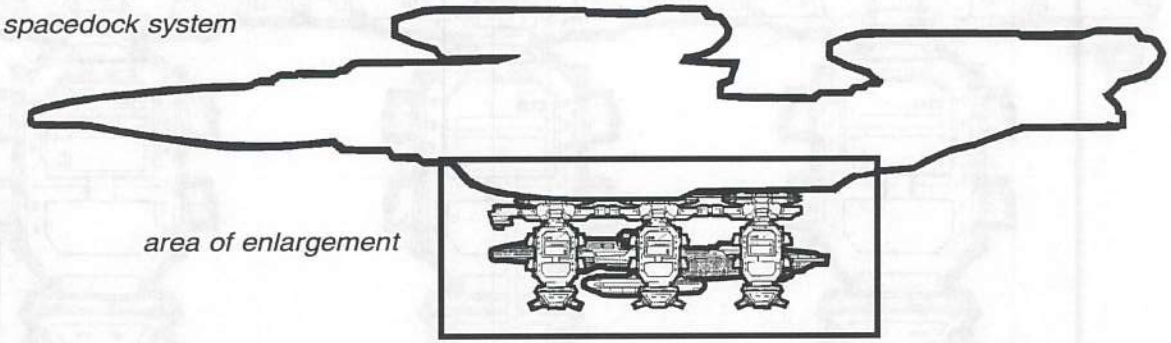


Located on the dorsal surfaces of both the Primary and Secondary hull are six Battlecraft landing pads. Due to their proximity to the Primary hull FTL engine mount, they are generally used during Separation mode. Beneath each landing pad are elevators, which lead to a loading bay. Cargo lifts transport supply modules to other areas of the ship. These landing pads are designed for use by the heavy battlecraft, such as the TRITON ATC and the LIBERTY MPCV.

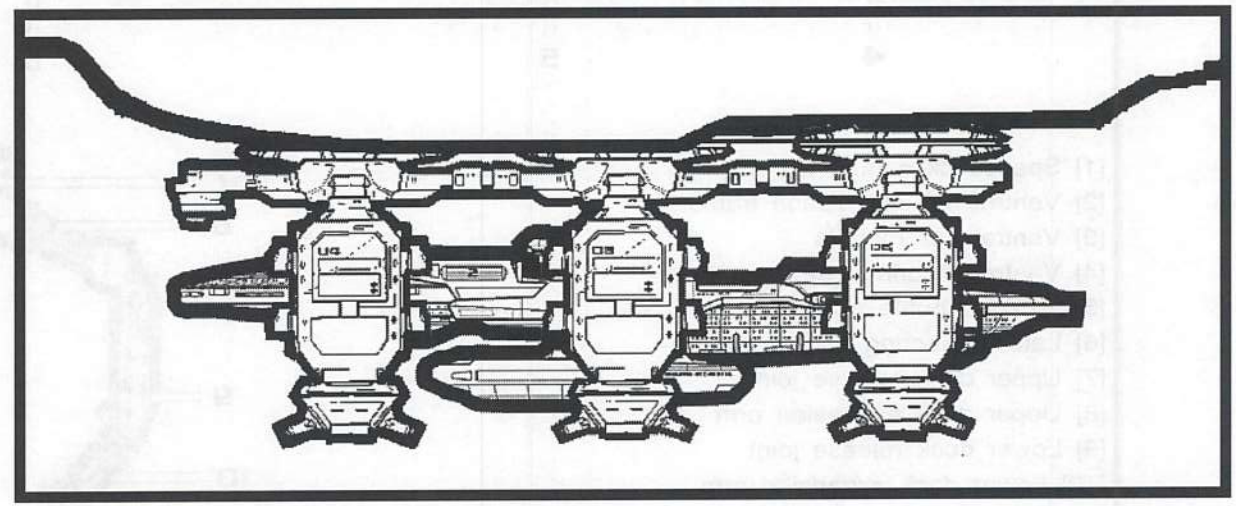
[1] Primary hull pad #1 (starboard)
[2] Secondary hull pad #1 (starboard)
[3] Secondary hull pad #2 (starboard)
[4] Primary hull pad #2 (port)
[5] Secondary hull pad #3 (port)
[6] Secondary hull pad #4 (port)

9.8 DEPLOYABLE SPACEDOCK ARRAY

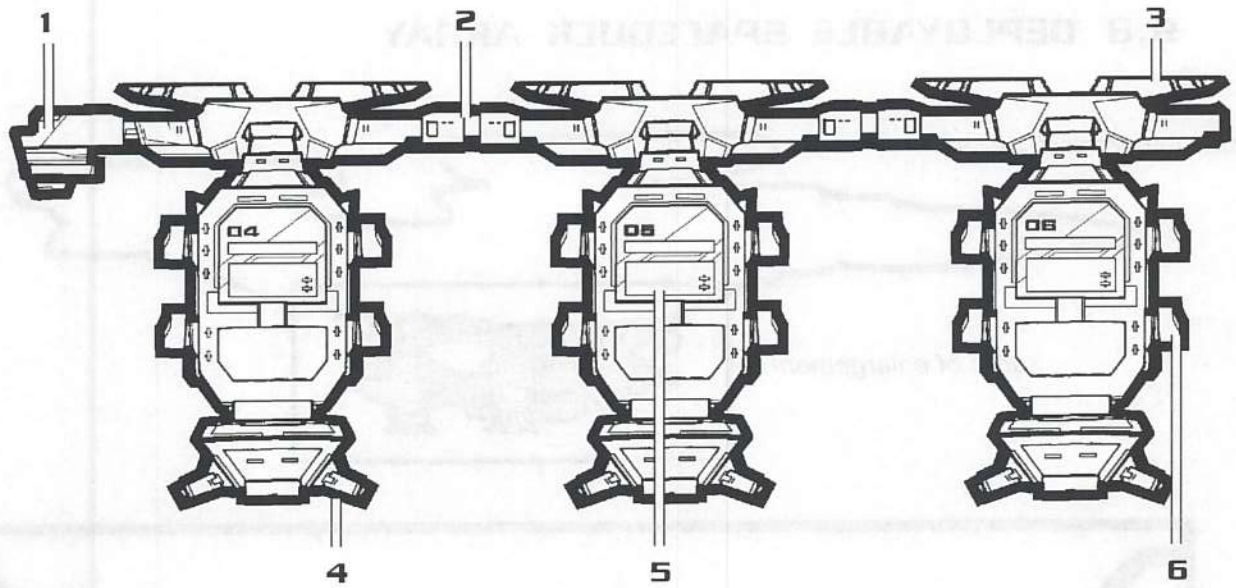
9.8.1 Cutaway overview: CETUS *class spacedock system*



In order to accommodate vessels larger then the class of Destroyer, the CETUS CVX is equipped with a Deployable Spacedock Array (DSA). The entire facility is housed on decks 68-85 in the Secondary hull. When the ship is in flight mode, the DSA contracts at specified release joints and moves into its storage bay. Heavy ships of the line, such as Dreadnaughts, Battlecruisers, Heavy Cruisers, Cruisers, and Frigates can be served by the DSA. Expansion arms and articulation frames allow the DSA to conform tightly to a docked vessel's contour, placing minimal strain on the lateral and ventral mooring beam emitters.

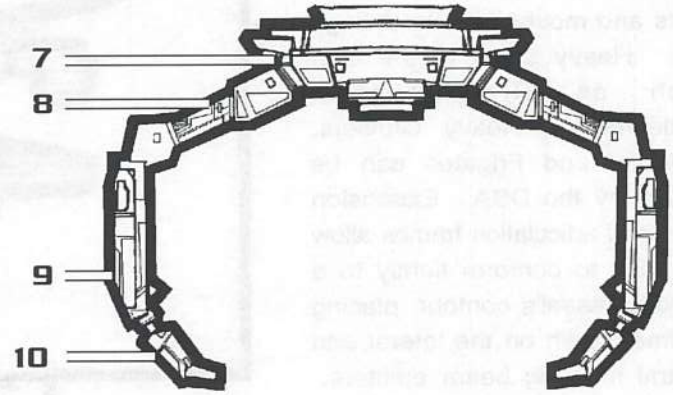


9.8.2 VANGUARD *class Battlecruiser docked with DSA*

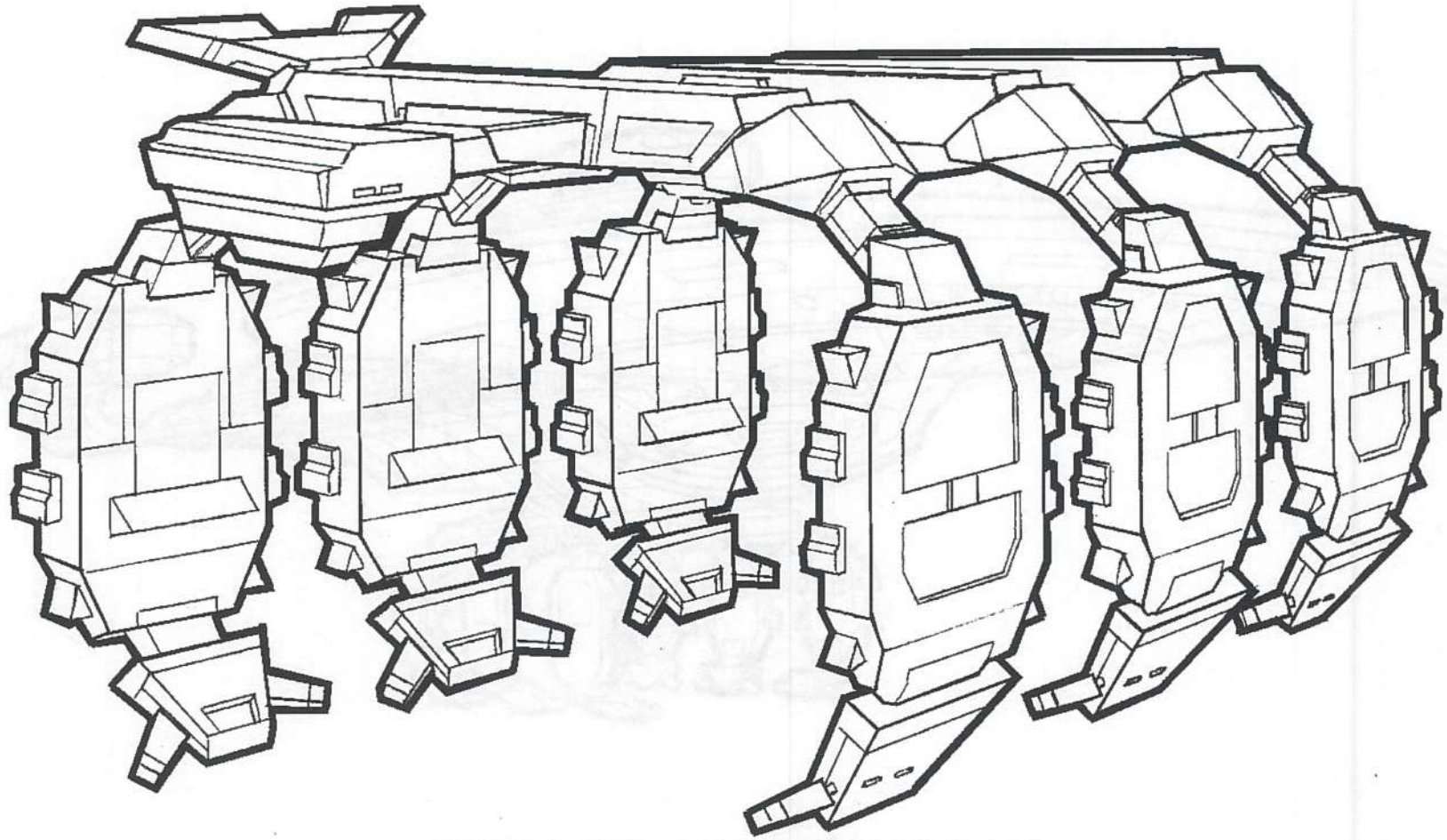


9.8.3 Deployable Spacedock array: lateral plan view

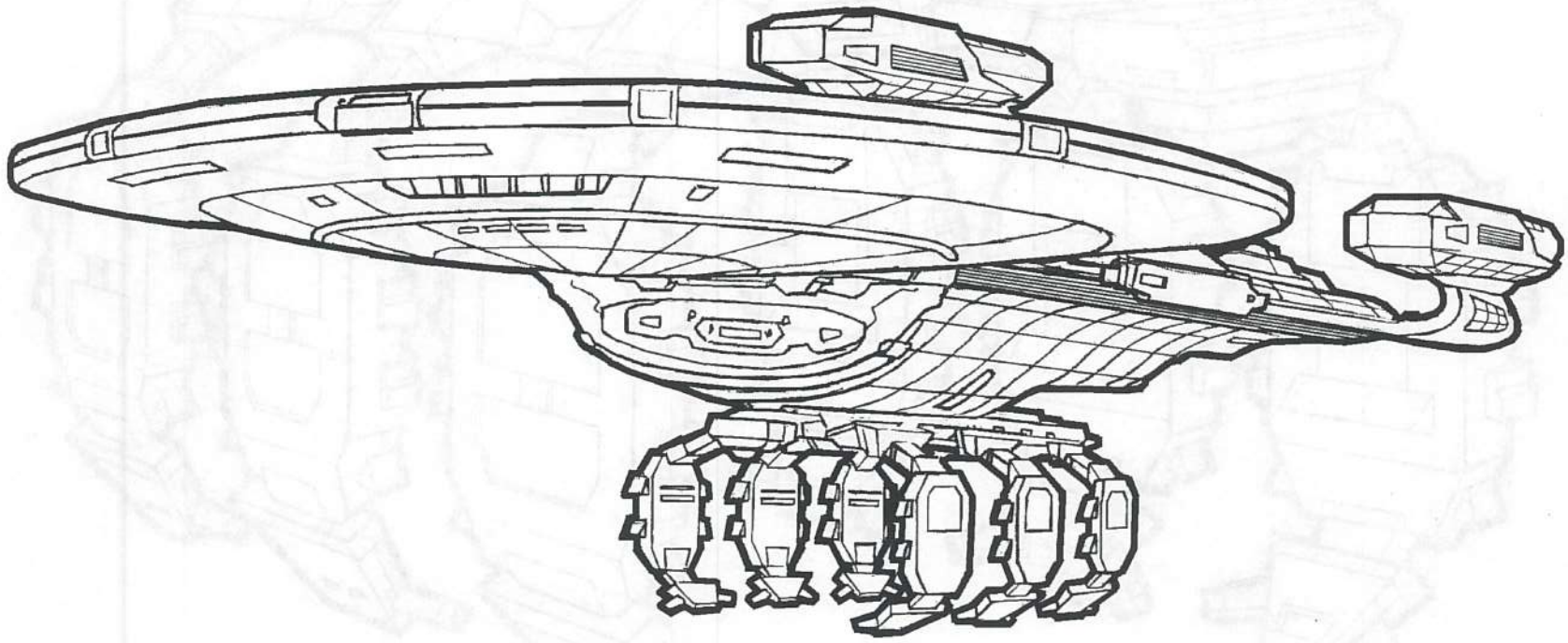
[1] Spacedock control center
[2] Ventral hull articulation frame
[3] Ventral hull mounts
[4] Ventral mooring beam emitters
[5] Worker shuttle access hatch
[6] Lateral mooring beam emitters
[7] Upper dock release joint
[8] Upper dock expansion arm
[9] Lower dock release joint
[10] Lower dock expansion arm



9.8.4 Deployable Spacedock array: forward plan view



9.8.5 Dorsal view: CETUS *class spacedock system*

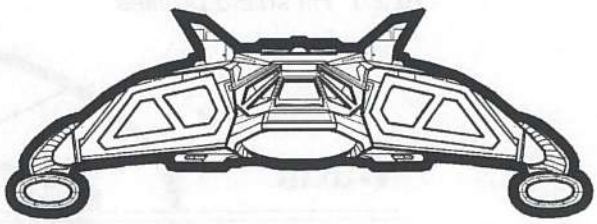


9.8.4 Deployable Spacedock array: forward plan view

10.0 BATTLECRAFT

10.1 TOUTATIS INTERCEPTOR: MISSION PROFILE

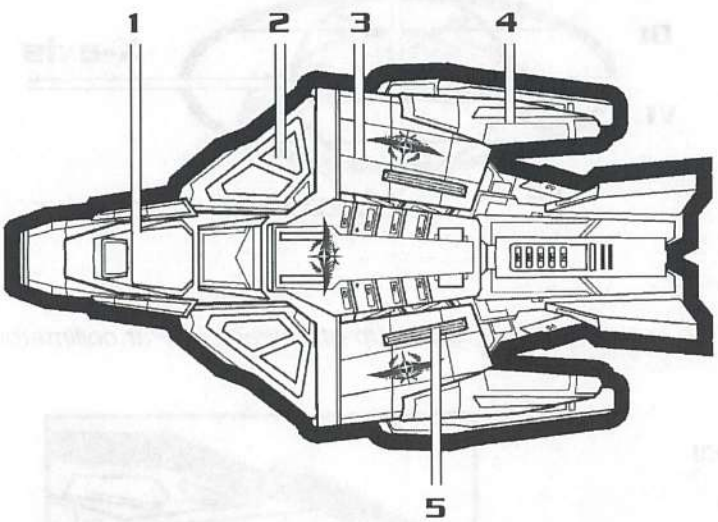
Built to operate in deep space or atmospheric conditions, the TOUTATIS fighter is the deadliest pursuit vessel in TerraForce history. Its rate of climb far exceeds all other adversary craft, and it is equipped with a devastating weapons array that is second only to the Jolaran NERIAS fighter.



10.1.1 Forward plan view: TOUTATIS *class*

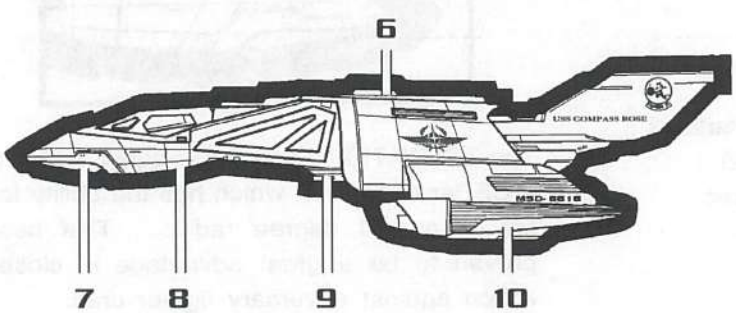
While previous interceptors could perform well in deep space, they proved to be vulnerable when operating in an atmosphere against ground targets. To alleviate this problem, TerraForce plated its surface with colomite plating, an new alloy that was initially developed for the SENTINEL class. The armor protects the fighter when the shields are not functioning, as often occurs in planetary surface combat.

10.1.2 Dorsal plan view: TOUTATIS *class*



VITAL STATISTICS

Designer	Jared Tolcott
Length	42 meters
Beam	23.7 meters
Height	11.2 meters
Mass	32,000 m/tons
Crew	three
Shield strength	94

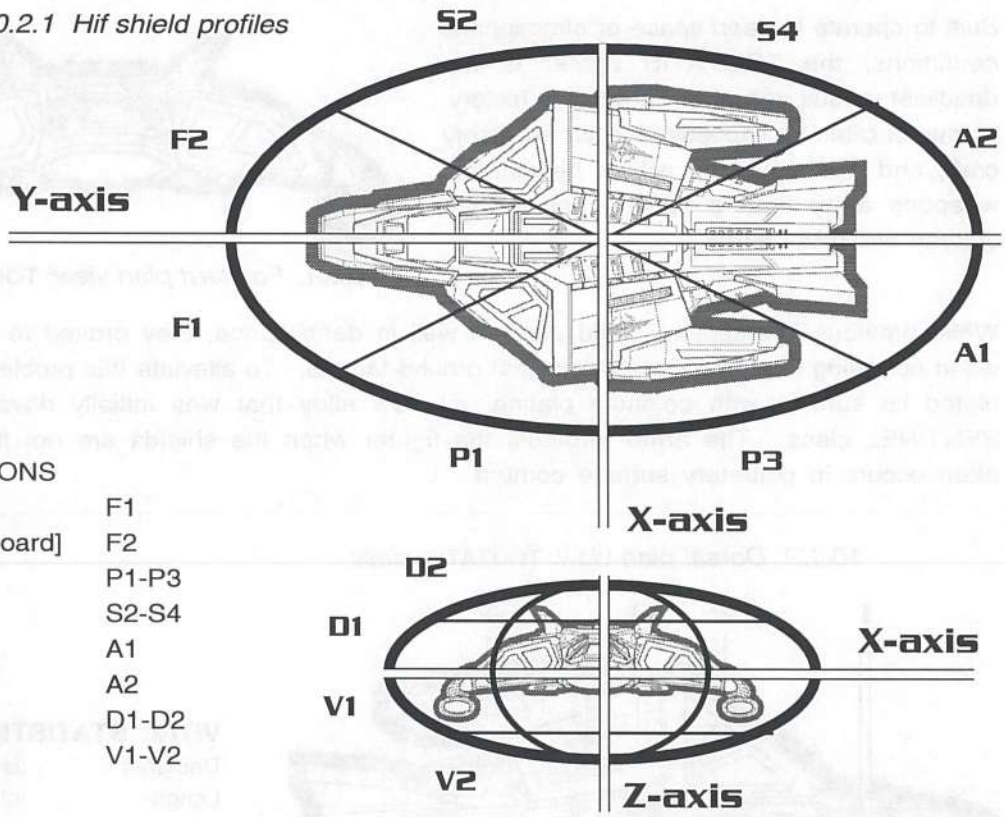


10.1.3 Lateral plan view: TOUTATIS *class*

[1] Cockpit
[2] Sublight engine
[3] Main dorsal shield grid
[4] FTL engine articulation mount
[5] Dorsal CEPar array (Z/Y-axis)
[6] Primary sensors
[7] Forward CEPar array (360 arc)
[8] Ventral shield grid
[9] Forward Harpoon launchers
[10] FTL engine

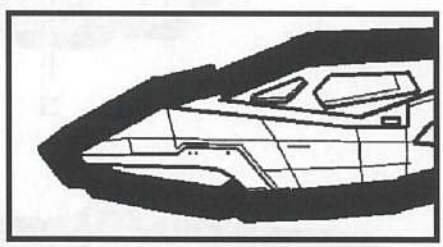
10.2 TOUTATIS CLASS: WEAPON SYSTEMS

10.2.1 Hif shield profiles



GRID LOCATIONS	
Forward [port]	F1
Forward [starboard]	F2
Port	P1-P3
Starboard	S2-S4
Aft [port]	A1
Aft [starboard]	A2
Dorsal	D1-D2
Ventral	V1-V2

10.2.2 Close up of forward CEPar collimator



The TOUTATIS interceptor is equipped with a CEPar collimator, which has the ability to fire in a 360 degree radius. This has proven to be a great advantage in close action against adversary fighter craft.

TORPEDO

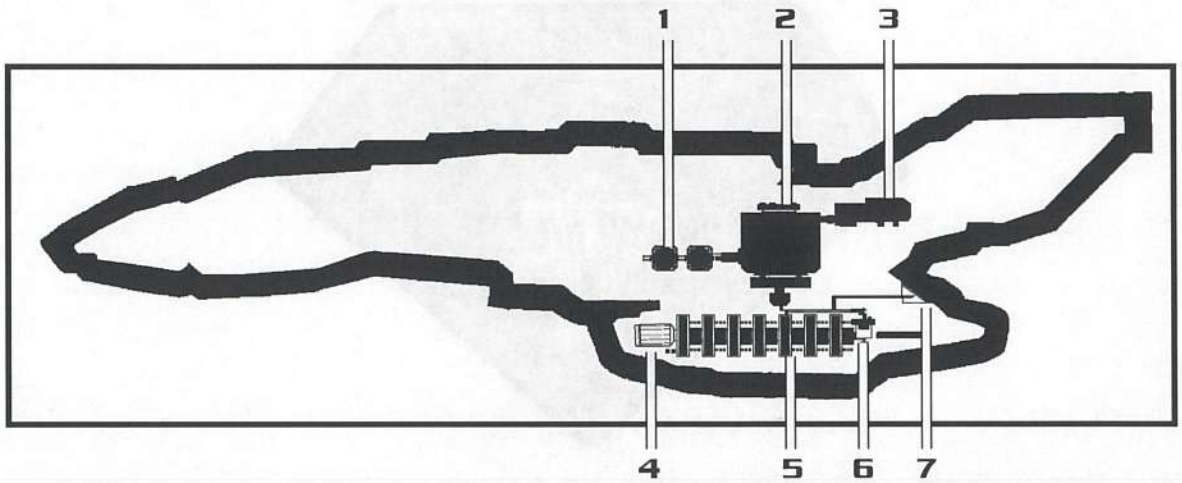
Weapon Type:	HARPOON Type XXII
Launchers:	2 [one each]
Output:	89.23 megatons
Range:	68,000 KM

BEAM WEAPON

Weapon Type:	Charged Energy Particle
Banks:	4 [2 in banks of 2]
Rate of Fire:	120 mw per 2.6 sec.
Firing Arcs:	180 [2]/ 360 [1]
Range:	14,200 KM

10.3 TOUTATIS CLASS: PROPULSION SYSTEMS

10.3.1 Cutaway overview: reactor core and field core propulsion system



FTL Systems

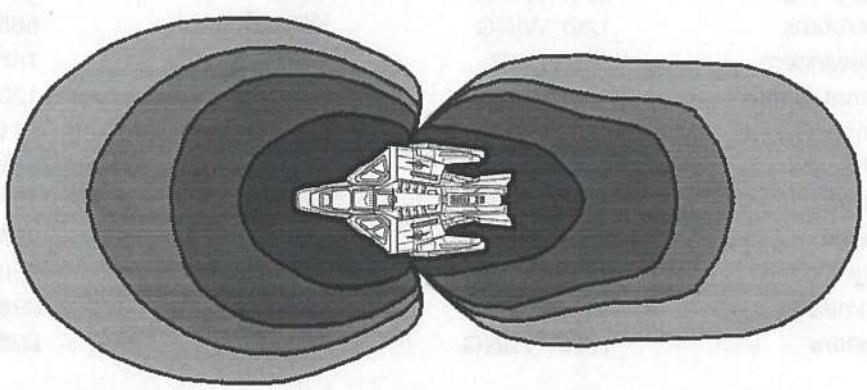
Optimum speed:	FTL factor 11.98
Cruising speed:	FTL factor 12.14
Maximum speed:	FTL factor 13.75
Acceleration:	8.221 KWPS
Reactor units:	[ONE] model FCa 11
Power output:	2.199 x 10[14]W

Sublight Systems

Sublight to FTL:	1.993 microseconds
Sublight units:	[TWO] FiS 44
Power output:	3.874 x 10[9] W
Maximum speed:	144.55 million KPH

[1] Deuterium storage pods (anti-matter)
[2] Reaction chamber
[3] Hydrogen storage (matter)
[4] Hydrogen collection scoop
[5] Driver coils
[6] Plasma injectors
[7] Emergency flush vents

10.3.2 TOUTATIS *class field distortion profile*



10.4 TOUTATIS CLASS: FIGHTER WINGS

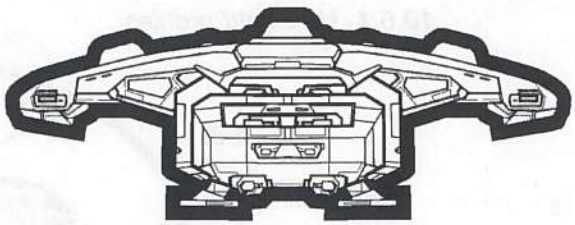
10.4.1 Shoulder emblem worn by all pilots and ground personnel

10.4.3 Vest emblems of three squadrons stationed on USS COMPASS ROSE *(left: TOMCATTERS, center: MASTERS, right: DARK KNIGHTS)*

NAME	ID NUMBER	NAME	ID NUMBER
Tomcatters	31st WING	Six Shooters	64th WING
Crazy Eights	20th WING	Blue Devils	5th WING
Afterburns	12th WING	Wildcards	58th WING
Sidewinders	3rd WING	Cheeseheads	146th WING
Comet Strike	40th WING	Kickers	120th WING
Space Cadets	48th WING	Jolly Rogers	111th WING
Enforcers	50th WING	Angry Angels	34th WING
Hellfire	52nd WING	Gophers	107th WING
Dawgs	60th WING	Vols	45th WING
Dirty Dozen	22nd WING	Black Forest	26th WING
Bulkheads	8th WING	Dark Knights	89th WING
Masters	176th WING	Wolverines	99th WING

10.5 TRITON ARMORED TROOP CARRIER: MISSION PROFILE

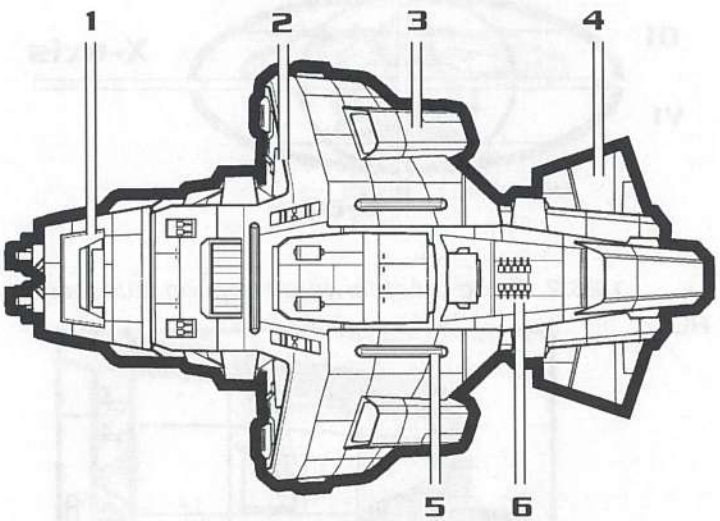
Like the TOUTATIS class, the TRITON ATC is built to operate in deep space or atmospheric conditions. It is an all-purpose transport vessel used by TerraForce to conduct planetary assault or defensive operations. The TRITON class is heavily protected by a combination of reactive armor and colomite plating.

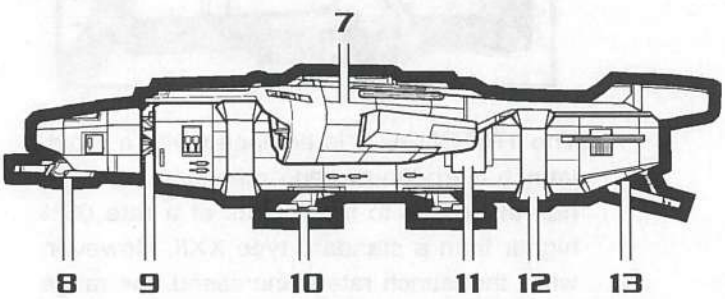


10.5.1 Forward plan view: TRITON *class*

While operating in flight mode, the Surface Landing Vehicle (SLV) is joined to the Command Module (CM) by a series of grapples. Once one the surface, the grapples release, allowing the CM to conduct other missions. The TRITON class is quite slow by TerraForce standards, but its powerful armament and heavy armor protect the vessel from most planetary defense long and short range weapons.

10.5.2 Dorsal plan view: TRITON *class*





10.5.3 Lateral plan view: TRITON *class*

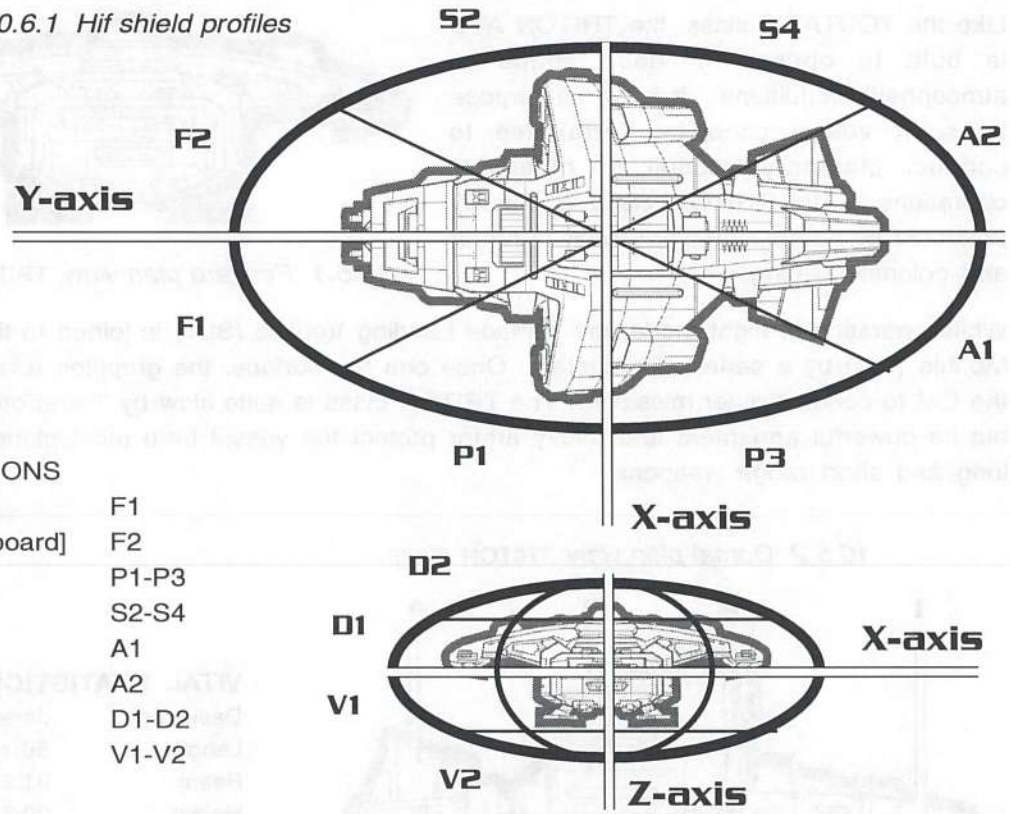
VITAL STATISTICS

Designer	Jared Tolcott
Length	56 meters
Beam	31.9 meters
Height	20.2 meters
Mass	43,000 m/tons
Crew	three
Troop capacity:	20
Shield strength	94

[1] Cockpit
[2] Sublight engine
[3] FTL engine
[4] Aft field stabilizer
[5] Dorsal CEPar array (Z/Y-axis)
[6] Primary sensors
[7] Dorsal shield grid
[8] Forward HARPOON launchers
[9] Separation plane CM/SLV
[10] Landing platform
[11] SLV emergency hatch
[12] SLV/ Command Module grapple
[13] Main exit door

10.6 TRITON CLASS: WEAPON SYSTEMS

10.6.1 Hif shield profiles



GRID LOCATIONS	
Forward [port]	F1
Forward [starboard]	F2
Port	P1-P3
Starboard	S2-S4
Aft [port]	A1
Aft [starboard]	A2
Dorsal	D1-D2
Ventral	V1-V2

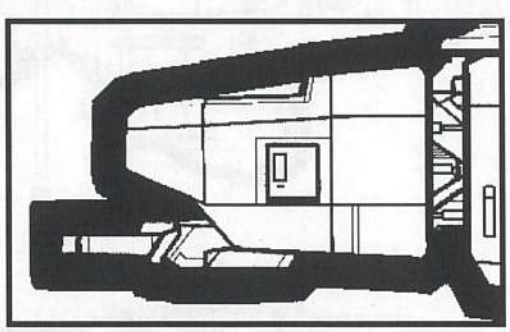
TORPEDO

Weapon Type:	HARPOON Type XXII RL
Launchers:	2 [one each]
Output:	89.23 megatons
Range:	63,000 KM

BEAM WEAPON

Weapon Type:	Charged Energy Particle
Banks:	4 [2 in banks of 2]
Rate of Fire:	120 mw per 2.6 sec.
Firing Arcs:	180 [4]/
Range:	14,200 KM

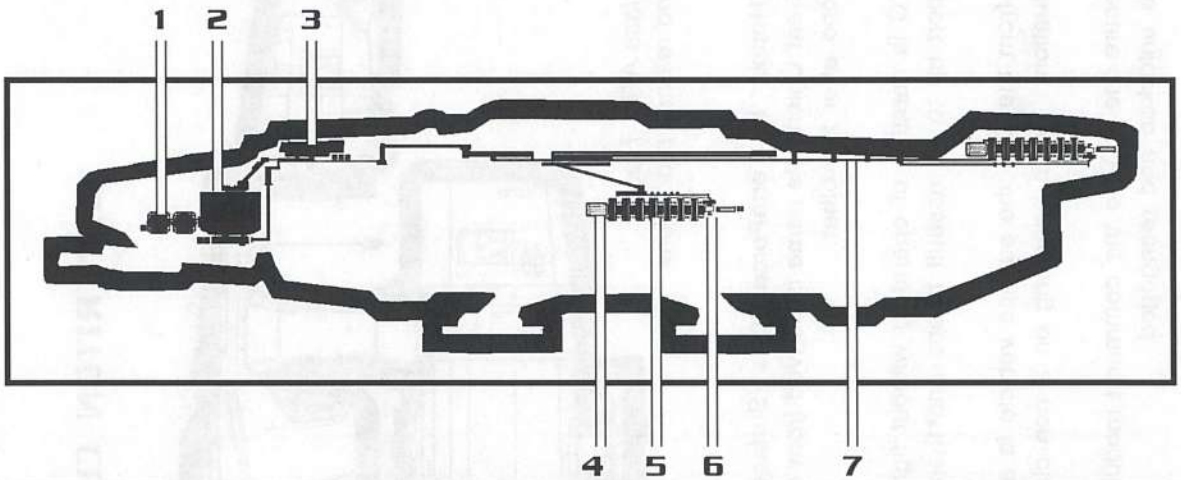
10.6.2 Close up of forward Harpoon launchers



The TRITON ATC is equipped with a rapid-launch Harpoon torpedo mechanism, which has the ability to fire rounds at a rate 65% higher than a standard type XXII. However, while the launch rate is increased, the range is curtailed by about 5,000 KM.

10.7 TRITON CLASS: PROPULSION SYSTEMS

10.7.1 Cutaway overview: reactor core and field core propulsion system



FTL Systems

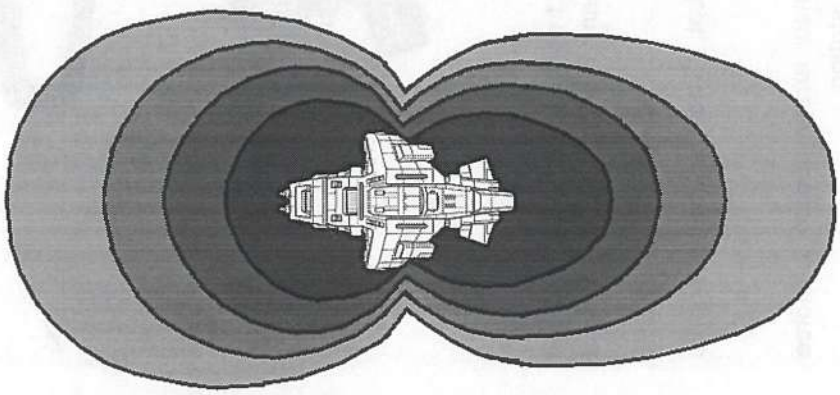
Optimum speed:	FTL factor 10.12
Cruising speed:	FTL factor 10.33
Maximum speed:	FTL factor 11.994
Acceleration:	6.25 KWPS
Reactor units:	[ONE] model FCt 12
Power output:	2.21 x 10[13]W

Sublight Systems

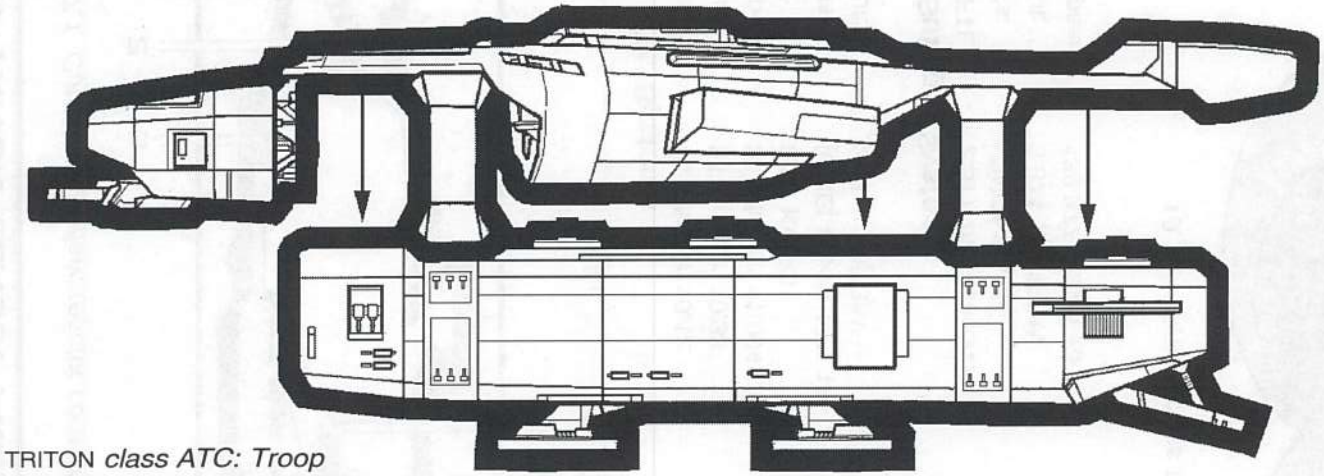
Sublight to FTL:	2.311 microseconds
Sublight units:	[TWO] FiS 44
Power output:	3.874 x 10[9] W
Maximum speed:	139.977 million KPH

[1] Deuterium storage pods (anti-matter)
[2] Reaction chamber
[3] Hydrogen storage (matter)
[4] Hydrogen collection scoop
[5] Driver coils
[6] Plasma injectors
[7] Emergency flush vents

10.7.2 TRITON *class field distortion profile*



10.8 TRITON CLASS: SURFACE OPERATIONS



10.8.1 TRITON *class ATC: Troop carrier landing and release procedure*

Nicknamed the 'Hopper' by TerraForce SOps (Surface Operation forces), the TRITON class amored troop carrier is widely used throughout the Great Union. Its name is derived from multiple retrieval operations, when a single command module picks up several different SLV's, one after the other.

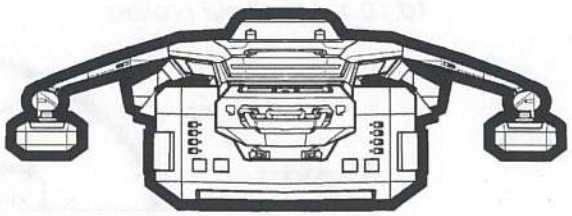
The TRITON ATC is capable of operating without fighter escort, a great advantage in planetary combat. The Command Module is used to transport up to 20 assault troops and their equipment rapidly.

Once separated from the CM, the surface vehicle is a base of operations for the troops. External sensor arrays update the force on its tactical situation. When operating on a non class M planet, the SLV serves as a life support station.

Four grapples secure the SLV to the command module upon recovery. During flight mode, all computer uplinks and inter-vehicle access doors are unlocked and reengaged.

10.9 LIBERTY CLASS MULTIPLE PAYLOAD CARGO VESSEL: MISSION PROFILE

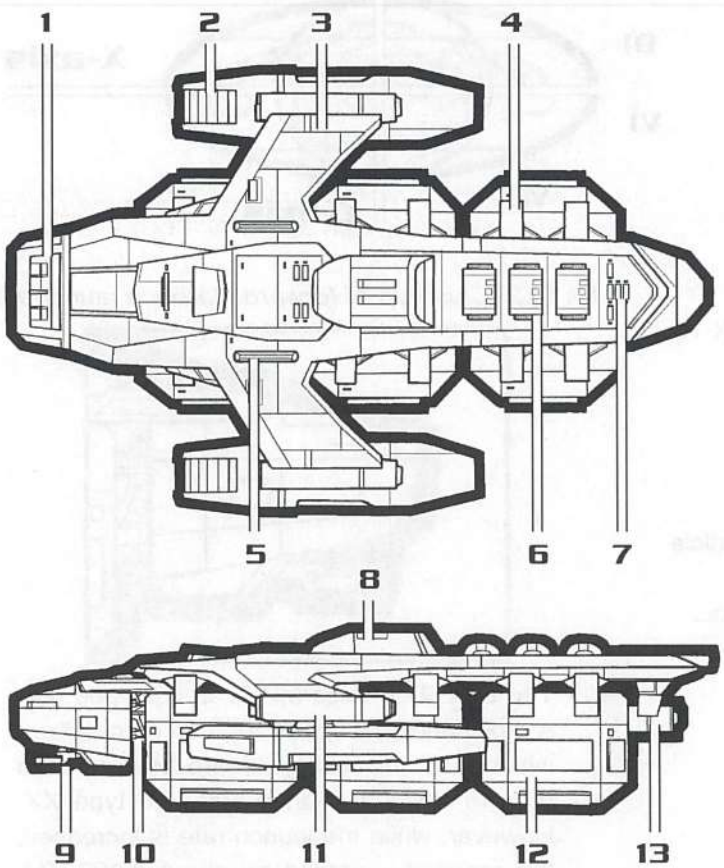
An ideal medium range cargo vessel, the LIBERTY class MPCV is well suited for duty on the CETUS class CVX. It is used as a supply ship for all TerraForce ships of the line. To better facilitate ship-to-ship resupply, vessels ranked from dreadnaughts to destroyers are equipped with landing pads .



10.9.1 Forward plan view: LIBERTY *class*

The LIBERTY class can also perform limited atmospheric operations, providing ground troops with critical supplies at the point of attack. In peacetime, the LIBERTY ships are the lifeline to distant outposts and colonies. Normal cargo capacity is 20,000 MT, but can be increased to almost 33,400 MT.

10.9.2 Dorsal plan view: LIBERTY *class*



10.9.3 Lateral plan view: LIBERTY *class*

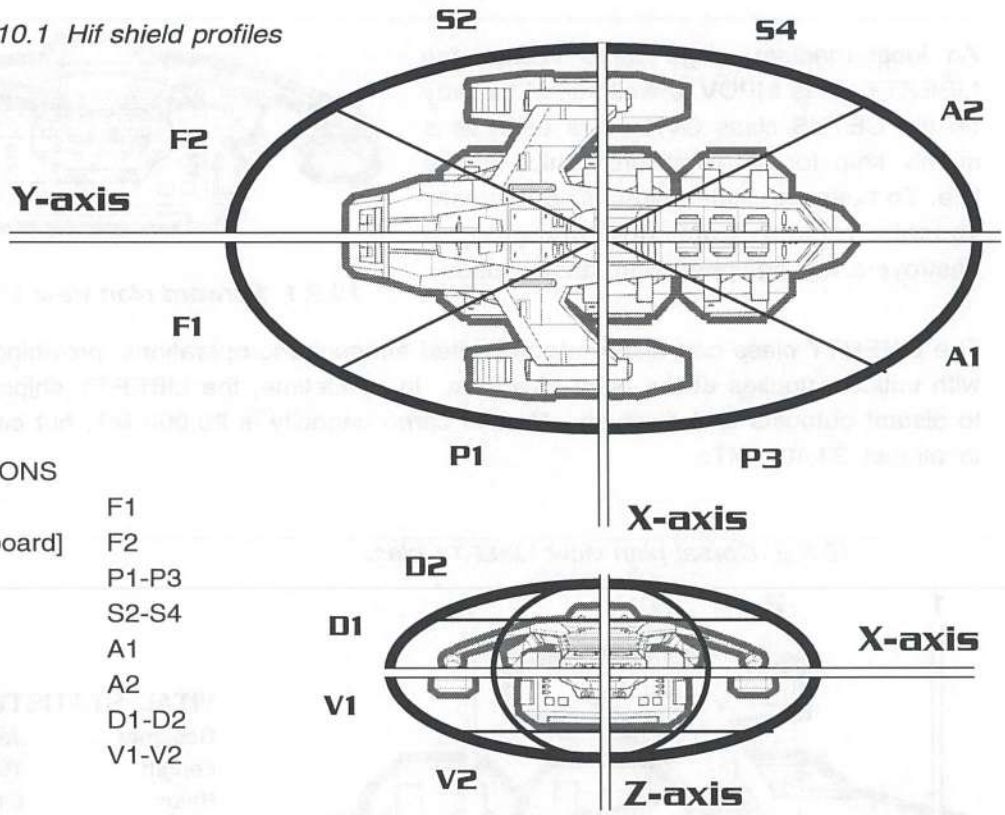
VITAL STATISTICS

Designer	Jared Tolcott
Length	109.35 meters
Beam	64.78 meters
Height	31.9 meters
Mass	69,000 m/tons
Crew	12
Cargo capacity:	20,000 MT
Maximum:	33,400 MT
Shield strength	83

[1] Cockpit
[2] FTL engine
[3] FTL support sponson
[4] Cargo module/ spine grapple
[5] Dorsal CEPar array (Z/Y-axis)
[6] Fuel containment cells
[7] Primary sensors
[8] Main sublight engine
[9] Forward Harpoon launchers
[10] Separation plane
[11] FTL articulation frame
[12] Cargo module
[13] Additional cargo module mount

10.10 LIBERTY CLASS: WEAPON SYSTEMS

10.10.1 Hif shield profiles



GRID LOCATIONS	
Forward [port]	F1
Forward [starboard]	F2
Port	P1-P3
Starboard	S2-S4
Aft [port]	A1
Aft [starboard]	A2
Dorsal	D1-D2
Ventral	V1-V2

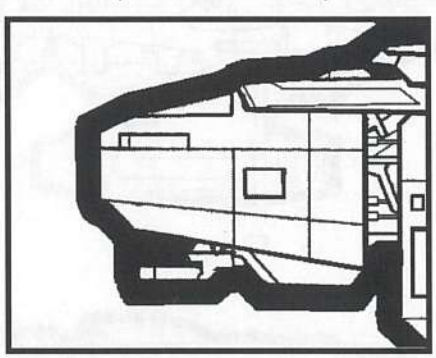
TORPEDO

Weapon Type:	HARPOON Type XX RL
Launchers:	2 [one each]
Output:	102.03 megatons
Range:	79,000 KM

BEAM WEAPON

Weapon Type:	Charged Energy Particle
Banks:	4 [2 in banks of 2]
Rate of Fire:	220 mw per 2.42 sec.
Firing Arcs:	180 [4]
Range:	17,900 KM

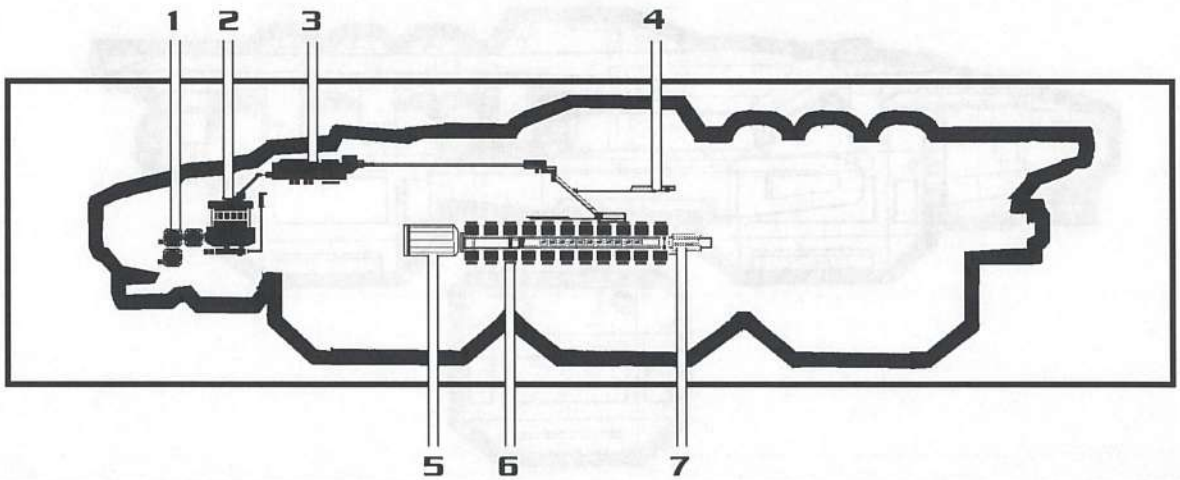
10.10.2 Close up of forward Harpoon launchers



The LIBERTY class MPCV is equipped with a rapid-launch Harpoon torpedo mechanism, which has the ability to fire rounds at a rate 45% higher than a standard type XX. However, while the launch rate is increased, the range is curtailed by about 8,000 KM.

10.11 LIBERTY CLASS: PROPULSION SYSTEMS

10.11.1 Cutaway overview: reactor core and field core propulsion system



FTL Systems

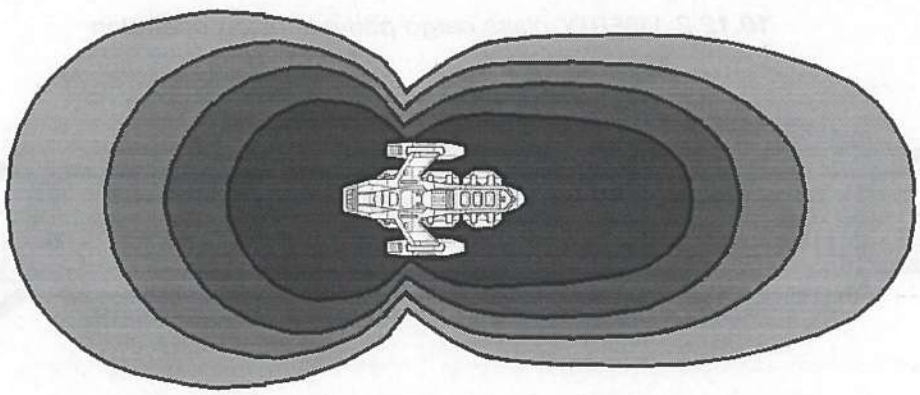
Optimum speed:	FTL factor 9.87
Cruising speed:	FTL factor 10.511
Maximum speed:	FTL factor 11.633
Acceleration:	5.89 KWPS
Reactor units:	[ONE] model FCj 4
Power output:	4.94 x 10[16]W

Sublight Systems

Sublight to FTL:	2.591 microseconds
Sublight units:	[TWO] FiG 29
Power output:	6.128 x 10[12] W
Maximum speed:	128.25 million KPH

[1] Deuterium storage pods (anti-matter)
[2] Reaction chamber
[3] Hydrogen storage (matter)
[4] Emergency flush vents
[5] Hydrogen collection scoop
[6] Driver coils
[7] Plasma injectors

10.11.2 LIBERTY *class field distortion profile*



10.12 LIBERTY CLASS: CARGO OPERATIONS

10.12.1 LIBERTY *class cargo pod release operation*

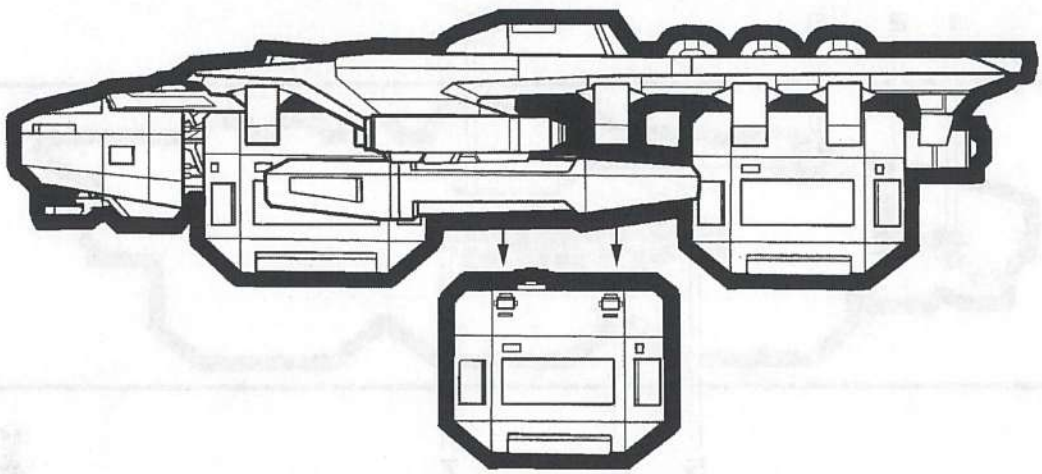


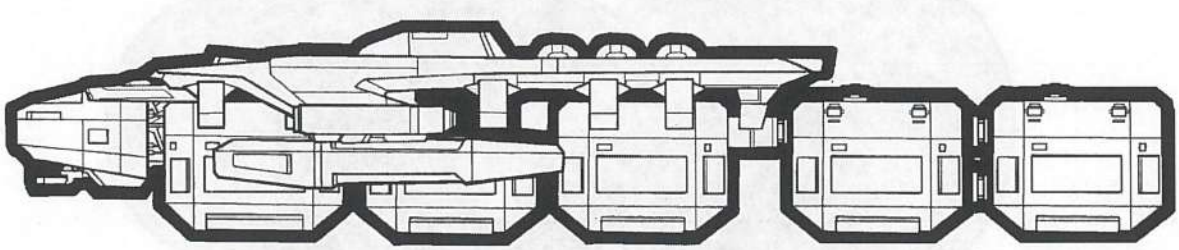
Figure 10.12.1 shows a cargo pod at its release point from the spine of the main craft. Once the pod is free, it is placed on special conveyors that run throughout all large TerraForce vessels. The conveyors transport the pod to designated holds by means of cargo lifts, which generate special anti-grav fields to neutralize the 6,670 MT mass.

When the supplies in a cargo pod have been exhausted, it is transported to a loading bay, where the empty container is retrieved by another MPCV that is delivering new provisions.

A standard three payload configuration is ideal for sublight and FTL propulsion. However, the LIBERTY class also has the capability to engage two additional payload units. FTL propulsion efficiency is reduced by 9%, while sublight systems suffer an 11% degradation, due to the alteration of the ship's axial balance.

During large -scale evacuation maneuvers, modified payload units can be equipped with limited life support apparatus for up to 30 passengers.

10.12.2 LIBERTY *class cargo pod extension operation*



11.0 AURORA CLASS CORVETTE

11.1 AURORA CORVETTE: MISSION PROFILE

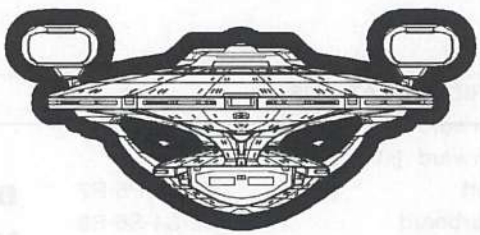
The AURORA class corvette is the first TerraForce vessel designed to exist in a symbiotic relationship with another. Its spaceframe was determined by the constraints of the CETUS class hangar bay. The primary hull was streamlined to an "elliptoid" form, to allow a second corvette access to the hangar. Both FTL engines are mounted on articulation frames, or tracks that bring the engines forward and closer together. This movement reduces the beam of the vessel by 23%. When the vessel undocks, the engines move back to their normal flight mode positions.

The AURORA class is used as a perimeter scout when operating with the CETUS class. In a threat scenario, a second corvette is deployed as a defensive screen.

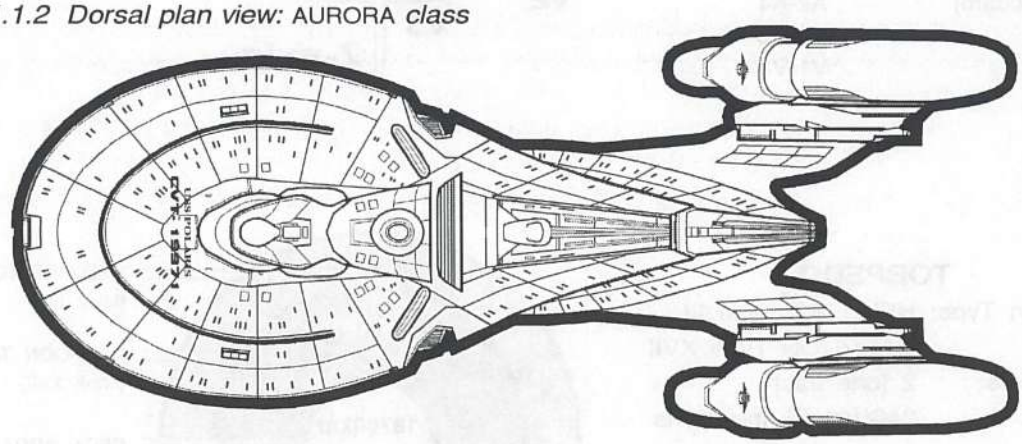
VITAL STATISTICS

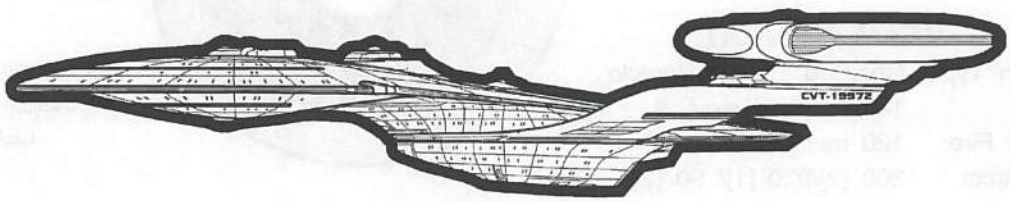
Capital ship-	Class/CVT
Designer	Hasni Reshan
Length	278.3 meters
Beam	109 meters
Height	51.35 meters
Mass	128,000 m/tons
Crew [officers]	19 (level 1-5]
Crew [enlisted]	81
Shield strength	275

11.1.1 Forward plan view: AURORA *class*



11.1.2 Dorsal plan view: AURORA *class*

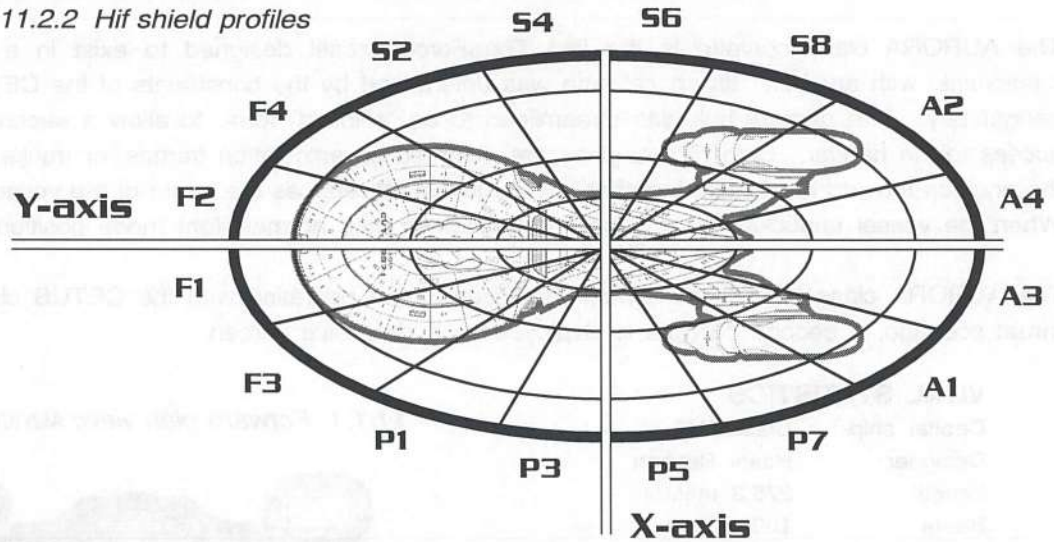




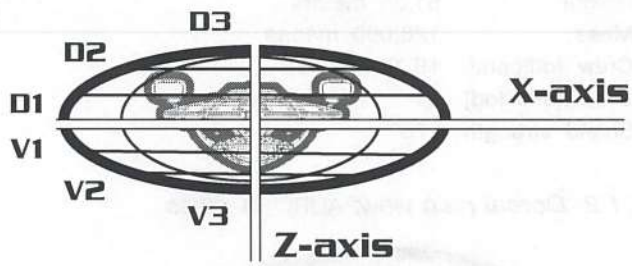
11.1.3 Lateral plan view: AURORA *class*

11.2 AURORA CORVETTE: WEAPON SYSTEMS

11.2.2 Hif shield profiles



GRID LOCATIONS	
Forward [port]	F1-F3
Forward [starboard]	F2-F4
Port	P1-P3-P5-P7
Starboard	S2-S4-S6-S8
Aft [port]	A1-A3
Aft [starboard]	A2-A4
Dorsal	D1-D3
Ventral	V1-V3

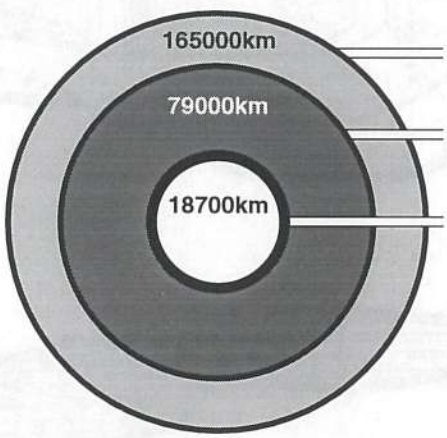


TORPEDO

Weapon Type:	HELLFIRE Type III HARPOON Type XVII
Launchers:	2 [one each]
Output:	246/101.45 megatons

BEAM WEAPON

Weapon Type:	Charged Energy Particle
Banks:	10 [5 in banks of 2]
Rate of Fire:	120 mw per 2.2 sec.
Firing Arcs:	360 [2]/270 [1]/ 90 [2]



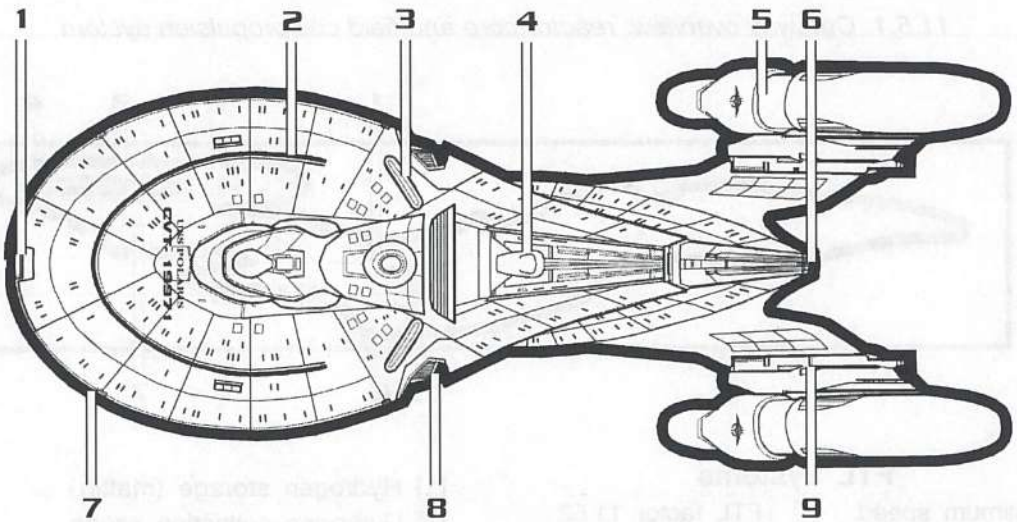
HELLFIRE TORPEDO [Mark III]

HARPOON TORPEDO [Mark XVII]

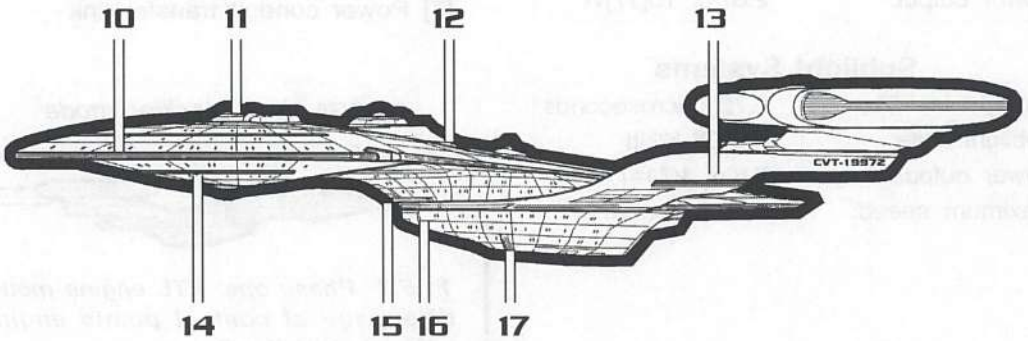
CEPar ARRAY [Type Fh9]

EFFECTIVE WEAPON RANGES- AURORA CLASS

11.3 AURORA CORVETTE: SPECIFICATIONS



[1] Forward countermeasures [2] Primary hull dorsal CEPar ring (360 arc) [3] Primary dorsal CEPar fat array (Y/Z-axis) [4] Dorsal hard contact points [5] FTL engine [6] Aft HARPOON torpedo launcher [7] Lateral thruster [8] main sublight engines [9] FTL engine track mount



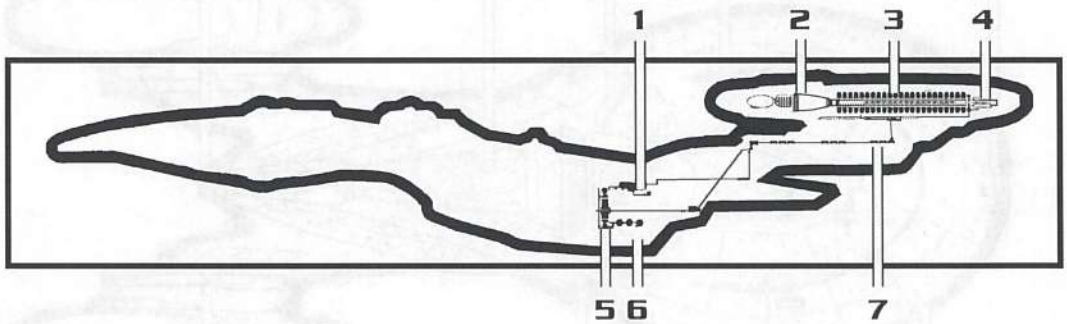
[10] Lateral sensors [11] Main bridge [12] Main hangar bay [13] FTL engine articulation frame [14] Primary hull ventral CEPar ring (360 arc) [15] Forward HELLFIRE torpedo launcher [16] Forward HARPOON torpedo launchers [17] Secondary hull CEPar array (Z-axis)

11.4 AURORA CORVETTE: SHIP REGISTRY

USS Polaris	FRG-19971	USS Auriga	FRG-21749	USS Cepheus	FRG-25983
USS Southern Cross	FRG-19872	USS Ara	FRG-22004	USS Carina	FRG-26271
USS Castor	FRG-20034	USS Aquarius	FRG-22936	USS Caleum	FRG-27719
USS Pollux	FRG-20153	USS Virgo	FRG-23317	USS Aries	FRG-27994
USS Algol	FRG-20576	USS Vela	FRG-23885	USS Lepus	FRG-28043
USS Perseus	FRG-21374	USS Taurus	FRG-24107	USS Xena	FRG-29910

11.5 AURORA CORVETTE: PROPULSION SYSTEMS

11.5.1 Cutaway overview: reactor core and field coil propulsion system



FTL Systems

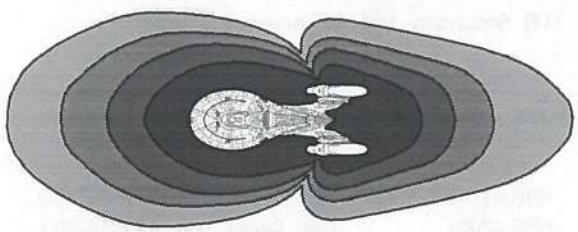
Optimum speed:	FTL factor 11.52
Cruising speed:	FTL factor 12.73
Maximum speed:	FTL factor 14.83
Acceleration:	7.335 KWPS
Reactor units:	[ONE] model 34 Jd/A
Power output:	2.67 x 10[17]W

Sublight Systems

Sublight to FTL:	1.72 microseconds
Sublight units:	[TWO] K2-II
Power output:	7.8 x 10[14] W
Maximum speed:	139 million KPH

[1] Hydrogen storage (matter)
[2] Hydrogen collection scoop
[3] Driver coils
[4] Plasma injectors
[5] Reactor core
[6] Deuterium storage pods (anti-matter)
[7] Power conduit transfer link

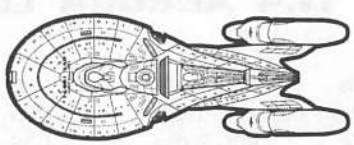
11.5.5 AURORA *class FTL distortion profile*



AURORA *class: docking mode*

11.5.2 Phase one: FTL engine mounts disengage at contact points engines contract along Y-axis.

11.5.3 Phase two: movement continues along Y-axis articulation frame



11.5.4 Phase three: Docking latches engage at Y-axis, 5% shift along X-axis until final position is achieved.

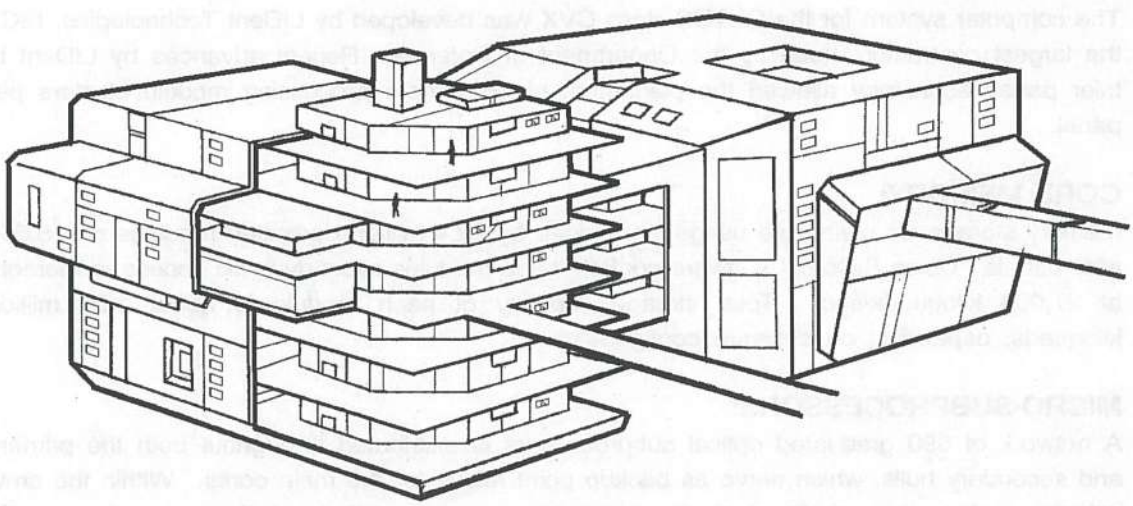
12.0 COMPUTER SYSTEMS

12.1 MAIN COMPUTER CORE

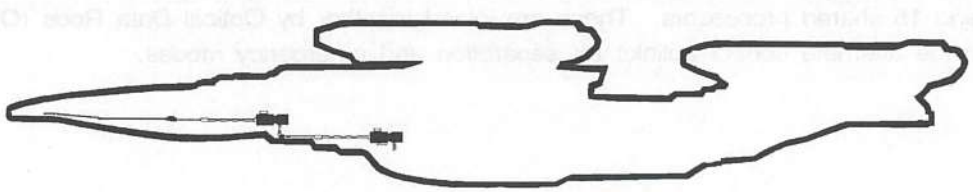
The main computer system is a set of two redundant main processing cores. Either of these cores is able to handle the primary operational computer load of the entire vessel. Each core incorporates a series of field generators, which assist in the hyperconduction of information within the core units.

Core elements are based on micro-subprocessors arranged into clusters of 110,000 segments. These clusters are grouped into processing modules of 575 clusters controlled by a bank of 64 trilar coated panels. Two hundred panels are permanently located on each of four levels of each main core, while the other three levels can be reconfigured as the situation requires. Access hallways and tubes are located in the center of each panel array for maintenance and repair.

12.1.1 Main computer core

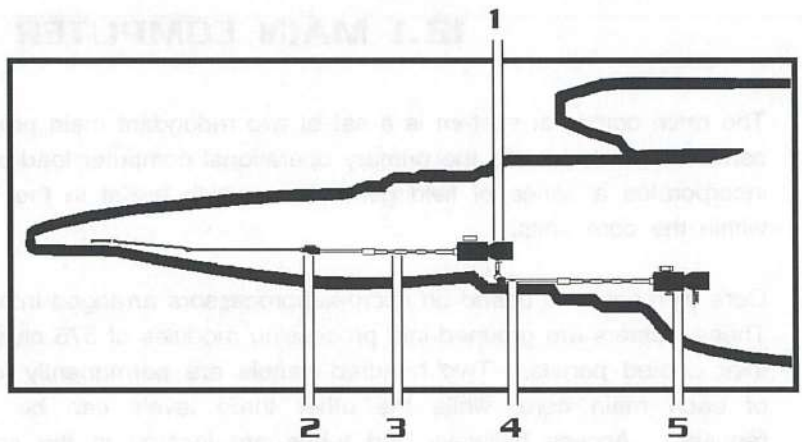


12.1.2 Cutaway overview: CETUS *class computer core locations*



12.2 COMPUTER SYSTEMS: PRIMARY AND SECONDARY HULL

[1] Primary hull main core
[2] Backup point relay
[3] Optical data rods
[4] Umbillical linkage
[5] Secondary hull main core



12.2.1 Main computer cores and ODR links

MANUFACTURER:

The computer system for the CETUS class CVX was developed by LIDent Technologies, ISC., the largest contractor used by the Department of Defense. Recent advances by LIDent in trilar panel technology allowed the placement of 16% more processing module clusters per panel.

CORE MEMORY:

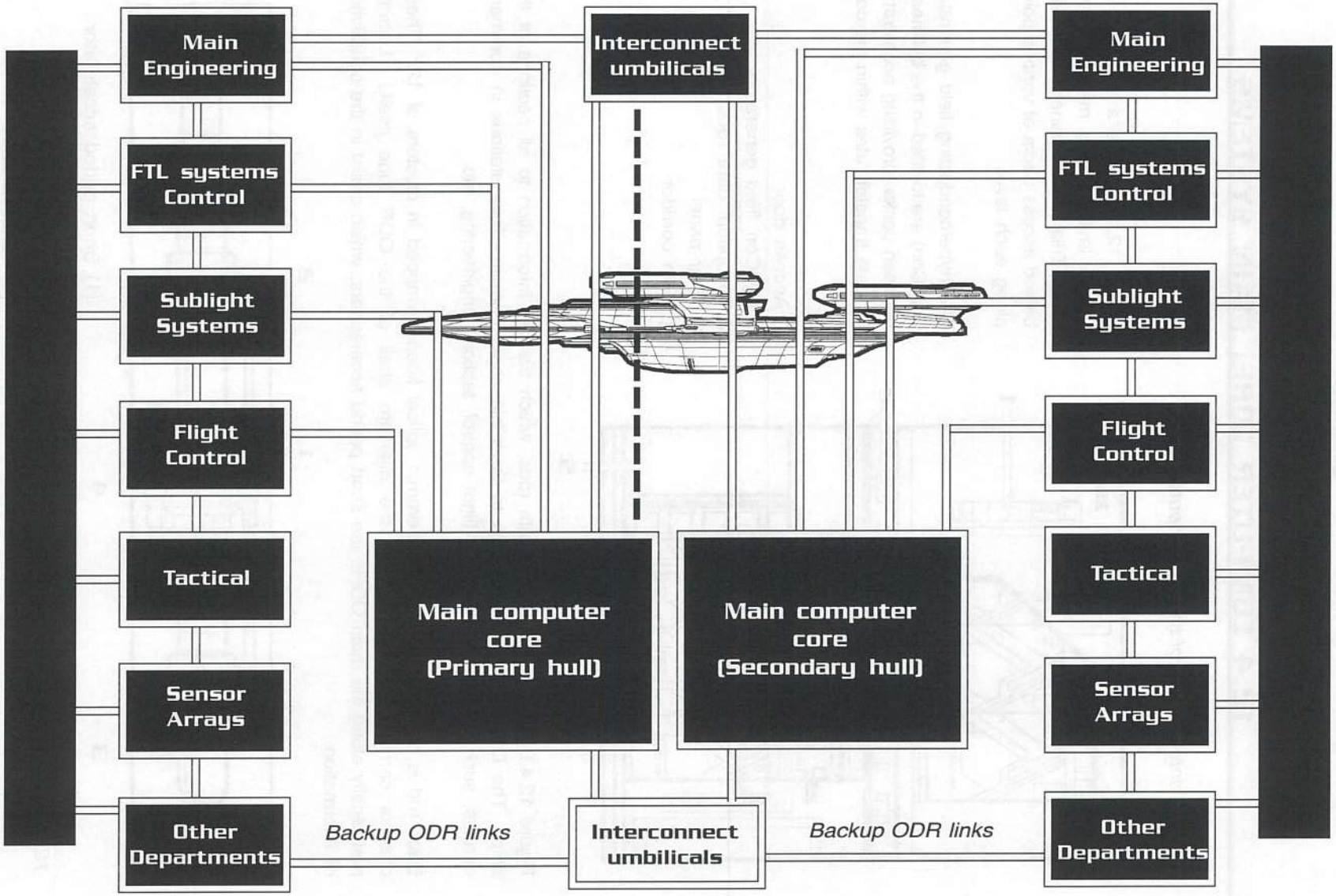
Memory storage for main core usage is provided by 22.4 million dedicated modules on 15,659 trilar panels. Using BiCoMM software control, these modules allow dynamic access to memory at 27,000 kiloquads/sec. Total storage capacity of each module is about 1.99 million kiloquads, depending on software configuration.

MICRO-SUBPROCESSORS:

A network of 590 graduated optical subprocessors is distributed throughout both the primary and secondary hulls, which serve as backup point relays for the main cores. Within the crew volume of the ship, most of these micro-subprocessors are located near main corridor junctions.

The bridges of the Primary and Secondary hulls each have 15 direct and 28 shared processors, which permit operations in the event of main core failure. Flight Control also has 7 direct and 15 shared processors. These are joined together by Optical Data Rods (ODR), which provide alternate control uplinks for separation and emergency modes.

12.3 COMPUTER CORE: OPERATION



12.4 COMPUTER CORE: MAIN SYSTEMS

12.4.1 Interior view of typical computer core

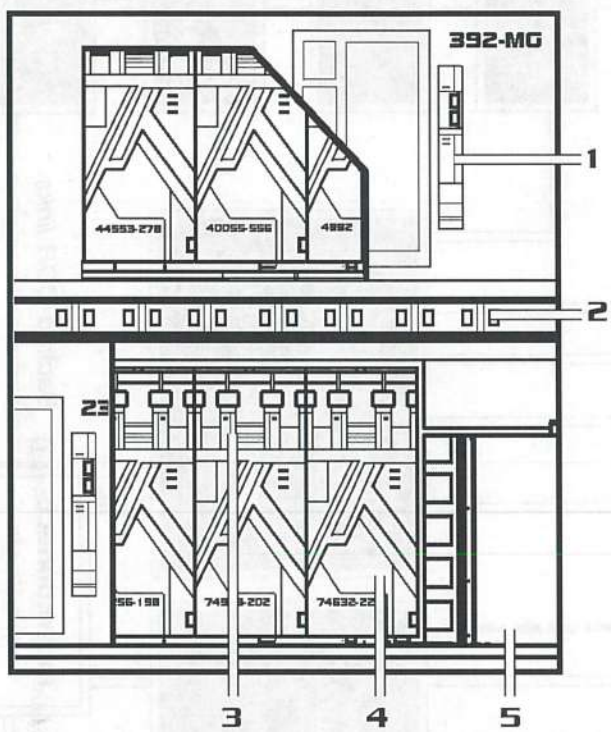


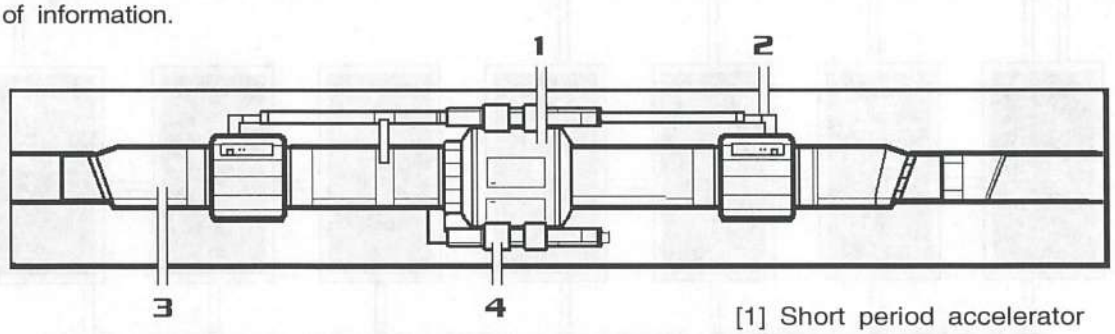
Figure 12.4.1 shows a cross-section of two levels of the main computer core. Trilar coated panels are located behind access doors at various points along each level.

The hyperconducting field generators (HypCon) are located in the bulkheads between decks, providing acceleration for data transfer rates within the core.

[1] Access door
[2] HypCon field generators
[3] To optical data rods
[4] Trilar panel
[5] Main corridor

Figure 12.4.2 shows one of 673 data rods, which transfer information to all sections of the ship. The ODRs are the direct link to the main cores from interface stations in command centers, such as the main bridges, flight control, tactical, engineering, etc.

Each rod is composed of 48 poly-ceramic optical fibers, wrapped in clusters of 12. These clusters carry information through the ditanium shell of the ODR tube itself. Located periodically along the main ODRs are short period accelerators, which assist in the conduction of information.



12.4.2 Typical Optical Data Rod

[1] Short period accelerator
[2] Bypass conduit
[3] Ditanium shell
[4] Junction node

13.0 GUIDANCE SYSTEMS

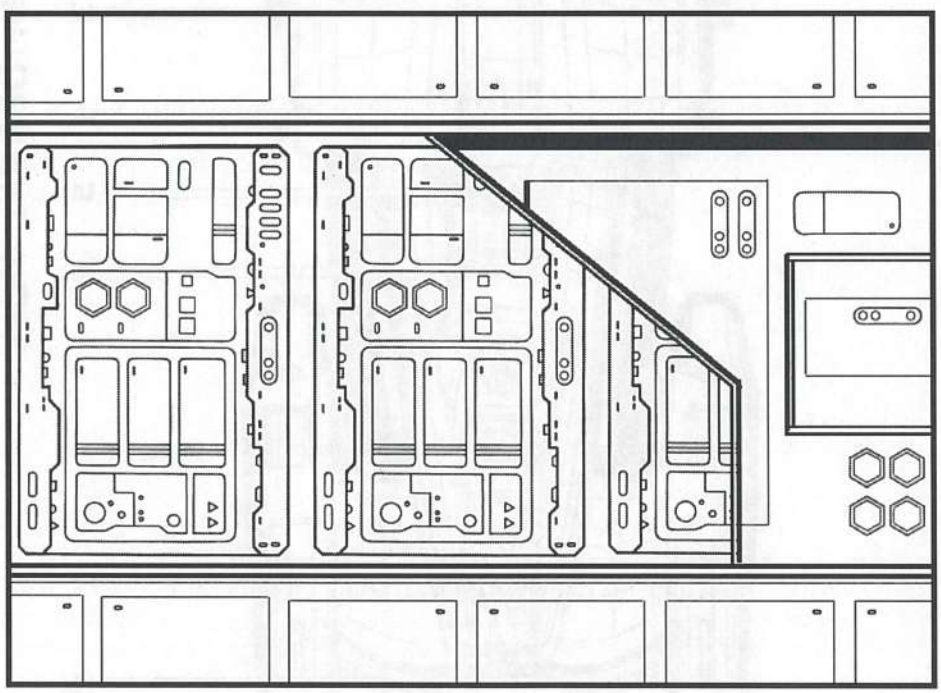
13.1 SENSORS

The CETUS class CVX features a sophisticated and flexible series of sensor packages. This is necessary if it is to adequately perform as the base of operations for BattleGroups as planned. HCtell ISC is the main contractor for the external detection instruments.

There are three main sensor systems on board the USS COMPASS ROSE. The first is the long-range sensor array located in the main deflector dishes on both the Primary and secondary hulls. This package of high-power devices is designed to perform active sweeps far out in front of the ship's path.

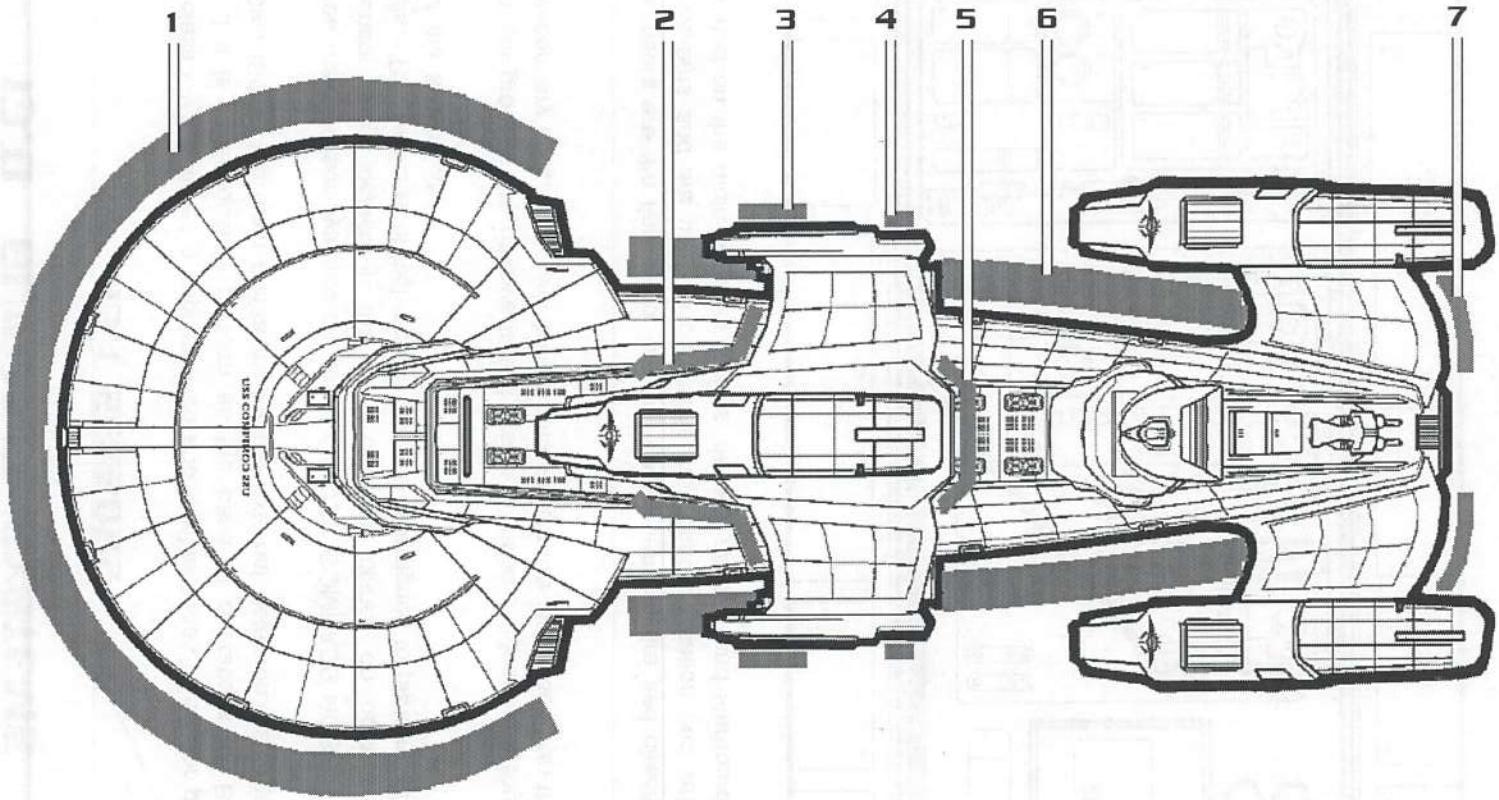
The second major group is the passive lateral arrays. These are located along the rim of the Primary and secondary hulls. To cover blind spots, arrays are also placed on the dorsal upper sponson.

Navigational sensors are the final major group. These sensors are tied directly to the ship's flight control systems and are used to determine the vessel's location and velocity. Various pallets are located on the main deflector dishes, as well as port and starboard lateral arrays.



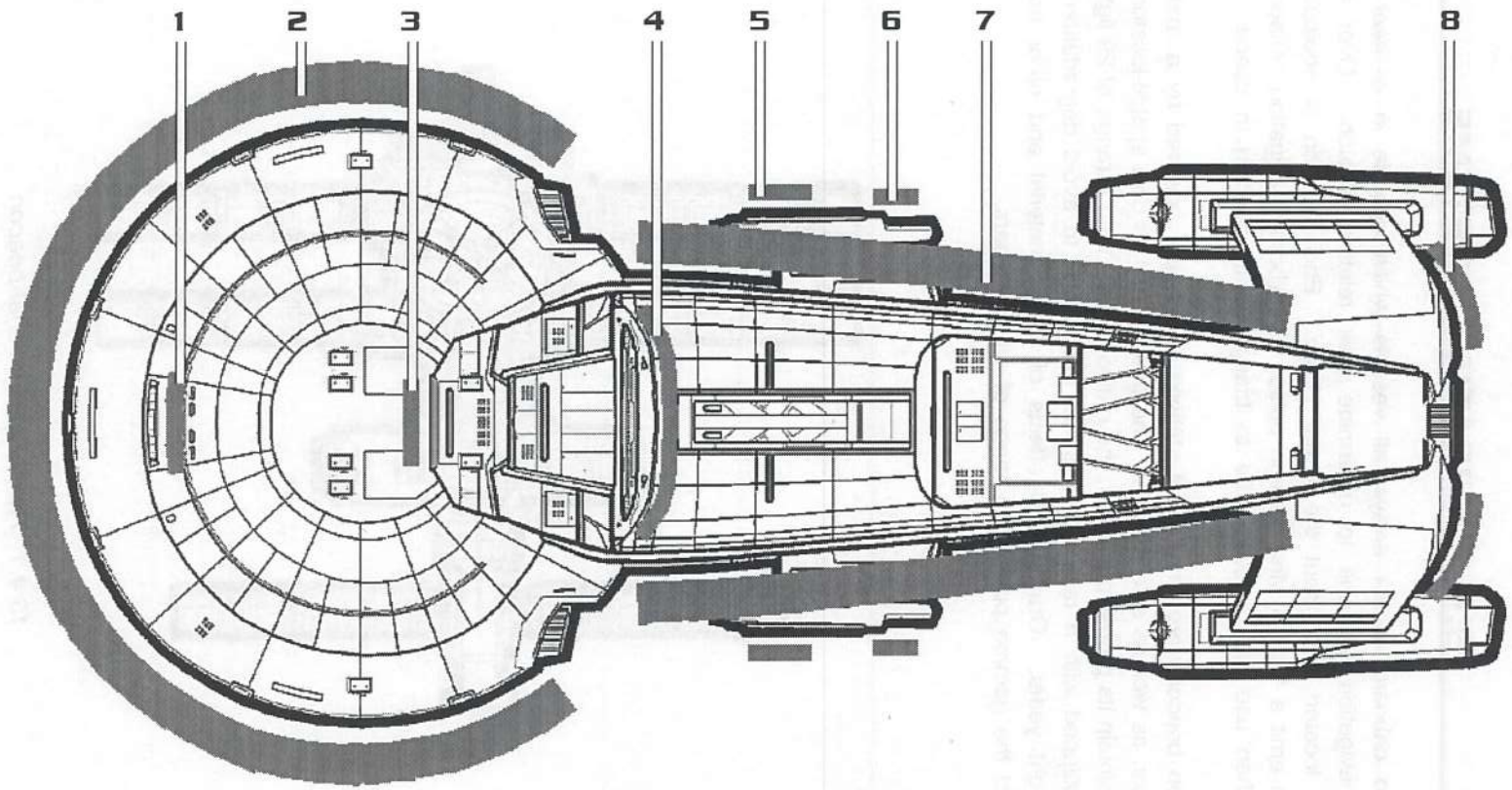
13.1.1 Cutaway interior: CETUS *class lateral sensor array (passive)*

13.2 SENSOR ARRAYS: DORSAL HULL



[1] Primary hull lateral sensors (saucer) [2] Upper sponson forward array [3] Upper sponson lateral platform #1 [4] Upper sponson lateral platform #2 [5] Upper sponson aft array [6] Secondary hull lateral sensors [7] Aft sponson lateral sensors

13.3 SENSOR ARRAYS: VENTRAL HULL

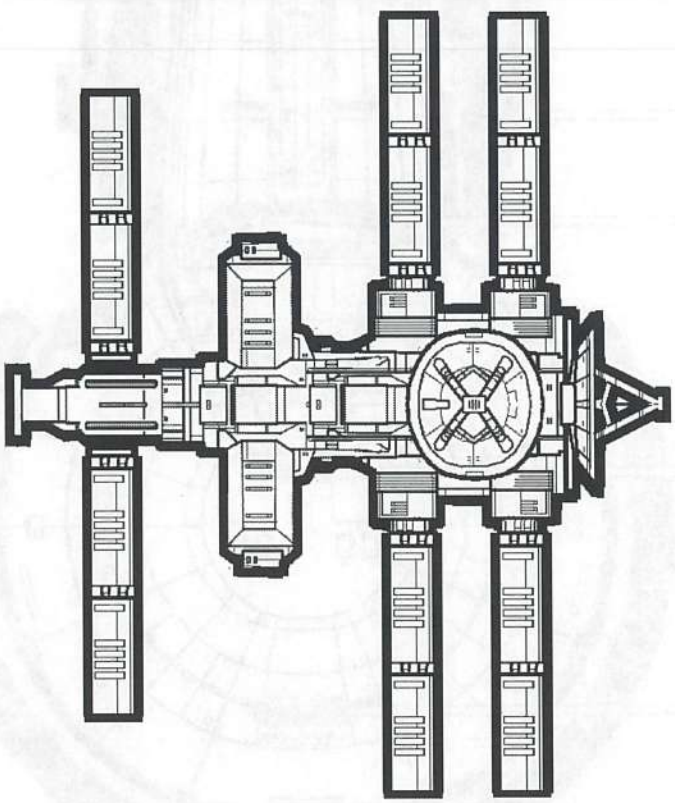


[1] Primary hull long-range sensor platform [2] Primary hull lateral sensors (saucer) [3] Ventral primary hull array [4] secondary hull long-range sensor platform [5] Upper sponson lateral platform #1 [6] Upper sponson lateral platform #2 [7] Secondary hull lateral sensors [8] Aft sponson lateral sensors

13.4 NAVIGATION SYSTEMS

In addition to onboard sensor arrays, all vessels which operate in or near Great Union space use navigation beacons to determine their relative position. Over 400 of these beacons are located throughout the Great Union. Each beacon is equipped with three dishes, which emit a 12.575 Mhz gamma pulse. Ship borne navigation sensors receive this signal, and then use the resulting data to triangulate its position in space.

The navigation beacons are unmanned stations, which are powered by a main fusion type RdS 12 reactor, as well as solar panels. The beacon has its own spatial-locator gyro system, in order to maintain its proper position in the network grid. With a range of 29 light years, each beacon is equipped with a rapid-sync stream accelerator to avoid degradation in the signal beyond 16 light years. Gravitational effects of stellar material and other natural sources adversly affect the gamma pulse at a range of 18 light years.



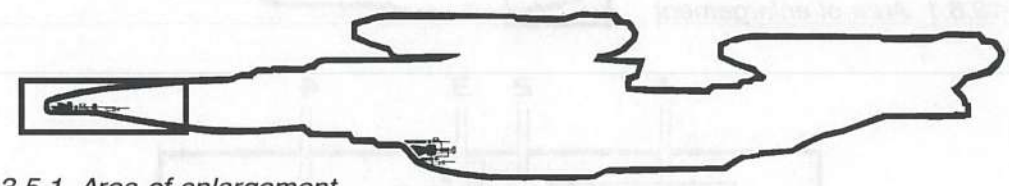
13.4.1 Typical navigational beacon

13.5 NAVIGATION AND LONG-RANGE SENSOR ARRAYS: PRIMARY HULL

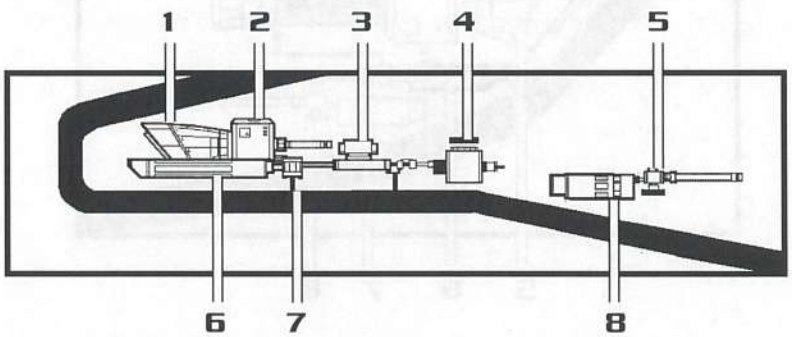
Figure 13.5.2 shows the distribution of long range active scanning devices on board the Primary hull section of the CETUS class CVX, including the saucer main deflector dish.

The saucer dish sweeps 5,000 KM ahead of the vessel's leading edge to push away stellar debris at FTL speeds. A type FiA 1 fusion reactor is the main power source for the dish, but additional power can be provided by the FTL reactors.

Both the narrow and wide angle EM scanners are critical to remote sensing of enemy vessels at long range, and for navigation outside the range of Great Union navigation beacons. Use of these long range active scanning devices, however, will reveal the ship's position more easily to a hostile force. When operating in high threat areas, it is advised that the passive, lateral scanners be used instead.



13.5.1 Area of enlargement

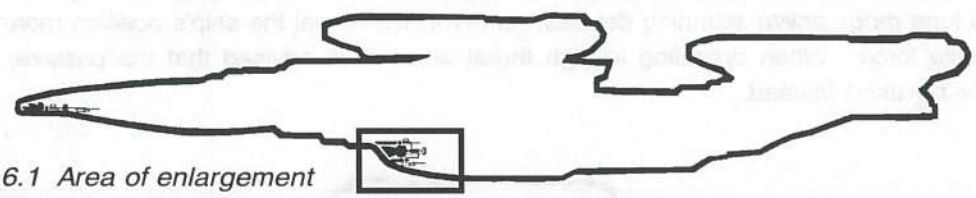


13.5.2 Primary hull long-range scanner layout

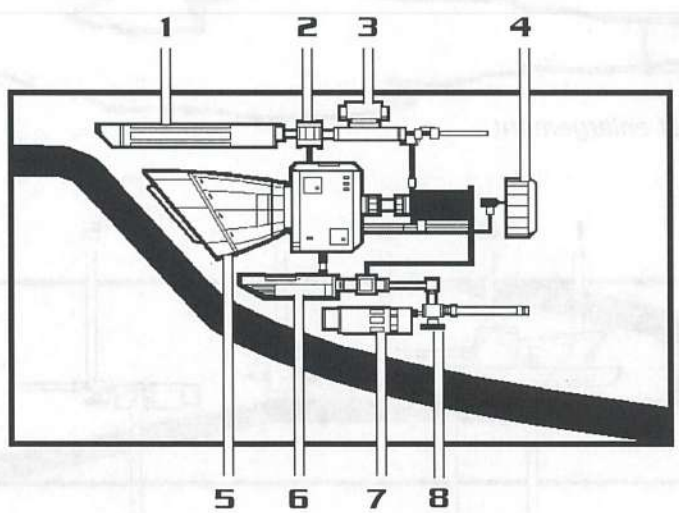
[1] Main deflector dish
[2] Fusion power generator (deflector dish)
[3] Forward gamma pulse receiver
[4] Power link for wide-angle EM scanner
[5] Data collection node (narrow-angle EMS)
[6] Wide angle active EM-scanner
[7] Data collection node (wide-angle EMS)
[8] Narrow angle active EM-scanner

13.6 NAVIGATION AND LONG-RANGE SENSOR ARRAYS: SECONDARY HULL

The long range active scanning device layout is composed of the same elements as the Primary hull, with the exception of a powerful, 24 meter wide-field spectrascope. A type Fib5 is the main power source for the deflector dish, which has a 13% greater power capacity than the primary hull reactor. Additional power links to the main FTL core can channel a significantly higher rate of energy flow.



13.6.1 Area of enlargement

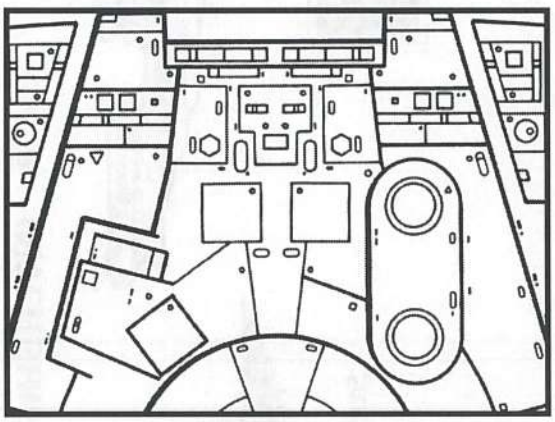


13.6.2 Secondary hull long-range scanner layout

[1] Wide angle active EM-scanner
[2] Data collection node (wide-angle EMS)
[3] Forward gamma pulse receiver
[4] Power link for main deflector dish
[5] Main deflector dish
[6] 24-meter wide field spectrascope
[7] Narrow angle active EM-scanner
[8] Data collection node (narrow-angle EMS)

14.0 COMMUNICATIONS

14.1 EXTERNAL ARRAYS

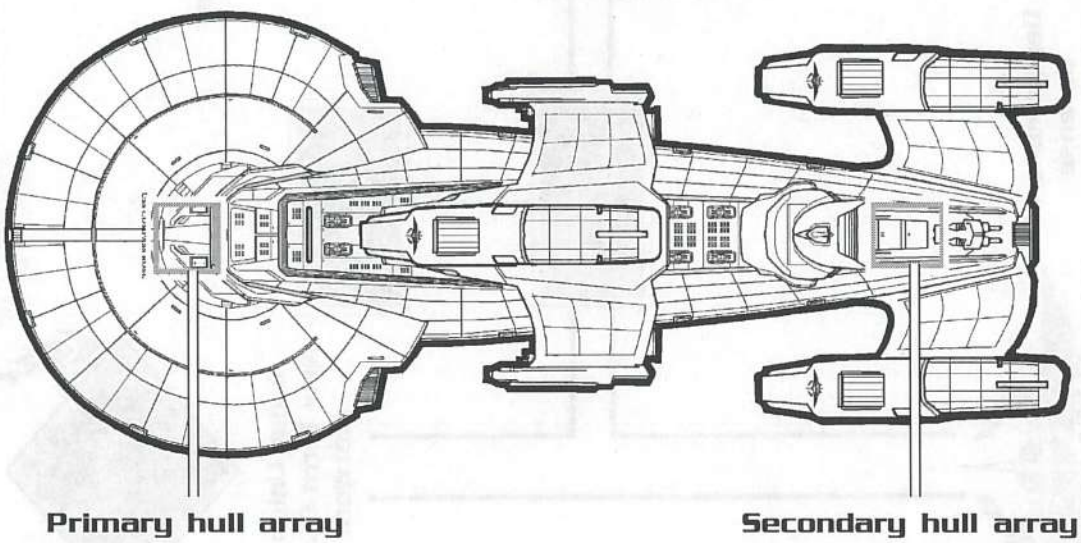


14.1.1 External communication array

External communication with other land-based and deep space forces is provided by two large external antennae, which are located on the dorsal of both Primary and Secondary hulls.

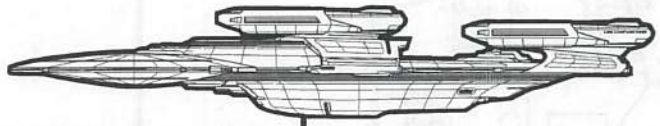
Each array consists of 35 intra-space transceivers (IST) placed in redundant assemblies of 10. These are partially embedded in the hull alloy material, which allows the skin of the vessel itself to serve as a wide-band antenna. A series of input-output signal conditioners is placed laterally every 2.5 meters, resulting in a virtual RF interferometer. This system provides far greater band-width and range capabilities than conventional dish antennae.

Even if part of the array were to be disabled, the other imbedded intraspace transceivers would continue to function, providing vital links to other TerraForce vessels.



14.1.2 Locations of dorsal external communication arrays

14.2 INTERSHIP COMMUNICATION UPLINKS



USS Compass Rose

Temporary intraspace relay

Stationary base

Local Planetary network

Great Union of New Terra Civilian Network

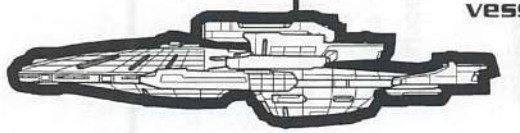
Intraspace Relay

Intraspace Relay

Intraspace Relay

Intraspace relay

other TerraForce vessels



Department of Defense (TerraForce Command)

15.0 MEDICAL FACILITIES

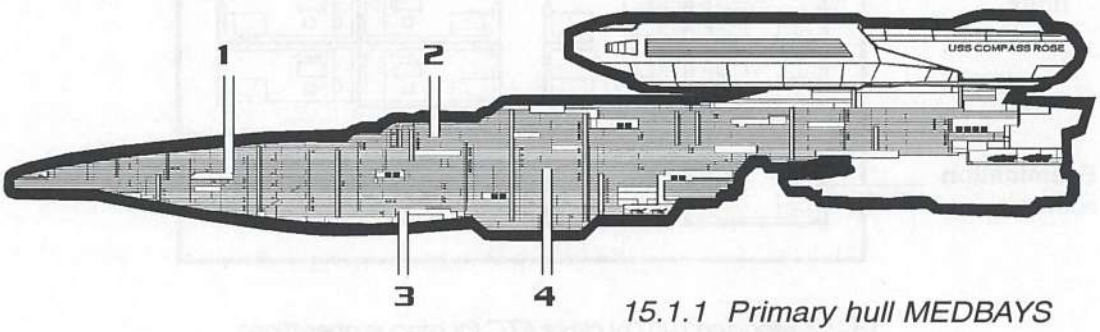
15.1 MEDBAYS: PRIMARY AND SECONDARY HULLS

The medical facilities of the CETUS class CVX are an integral part of fulfilling its mission as a rescue vessel. Extensive Emergency Trauma Centers (ETC) and Intensive Care Units (ICU) are situated throughout both the primary and secondary hulls.

In addition, each major section of the ship maintains two five-member Remote Med Teams (RMT), who are stationed on specially modified rescue craft (see chapter 15.2).

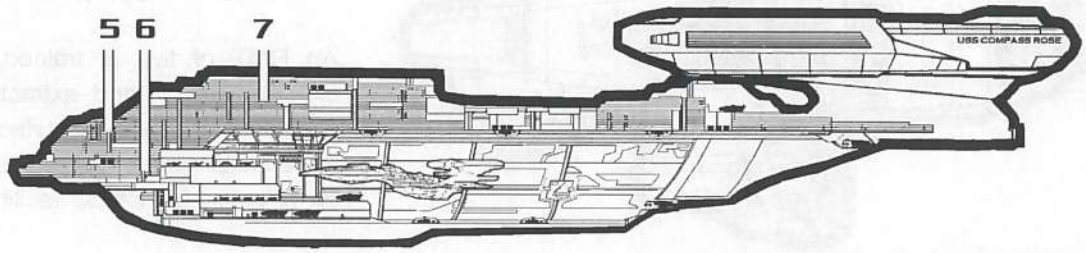
A typical MEDBAY consists of eight Surgery rooms, four medical supply storage rooms, six intensive care units, six recovery rooms, and four examination rooms (see fig 15.2.1).

Primary hull MEDBAYS are located on decks 12, 23, 35, and 41. In the Secondary hull, MEDBAYS are positioned on decks 27, 43, and 54.



15.1.1 Primary hull MEDBAYS

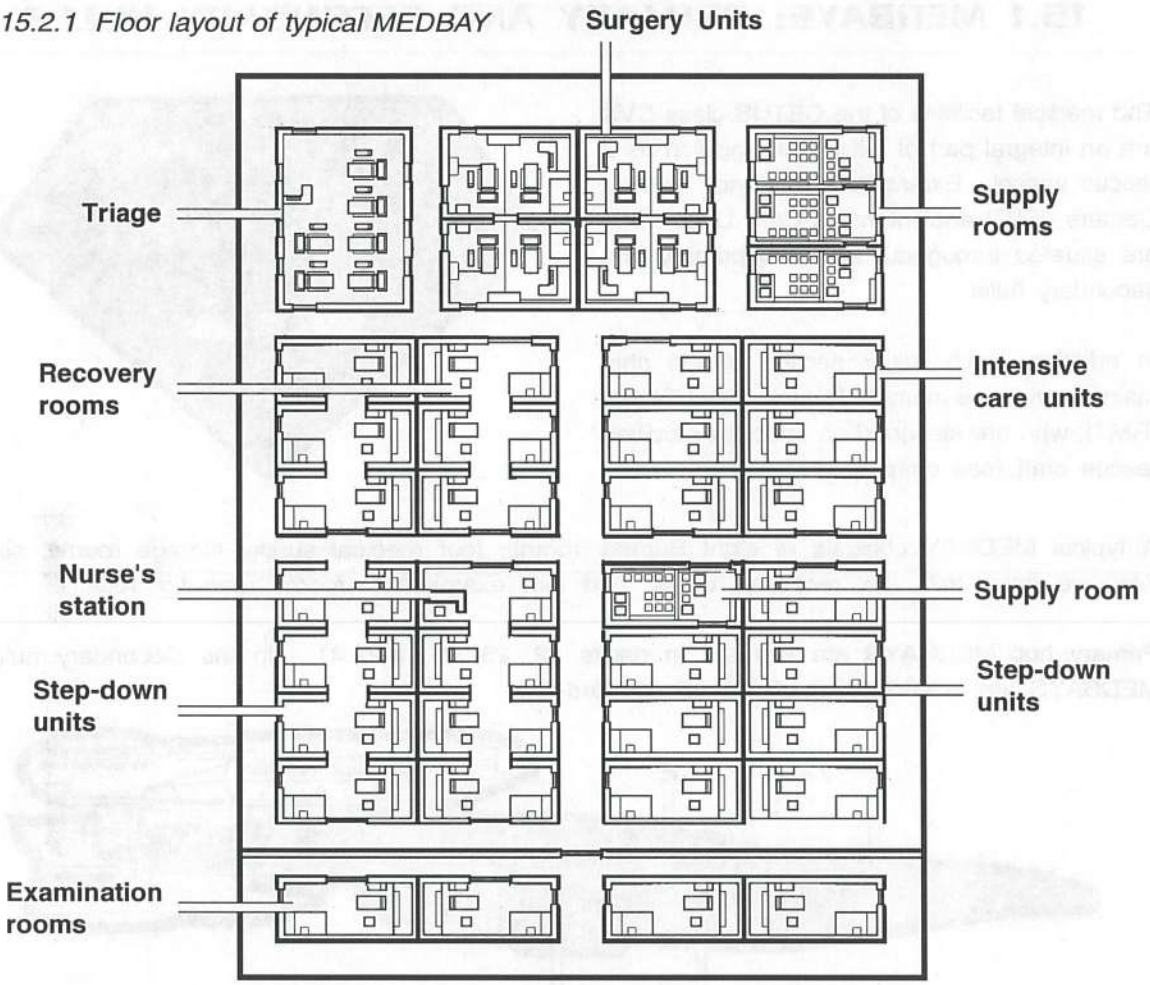
[1] MEDBAYS 3 & 4
[2] MEDBAYS 1 & 2
[3] MEDBAY 7 (triage)
[4] MEDBAYS 5 & 6 (emergency priority)
[5] MEDBAYS 8 & 9
[6] MEDBAY 12 (triage)
[7] MEDBAYS 10 & 11 (emergency priority)



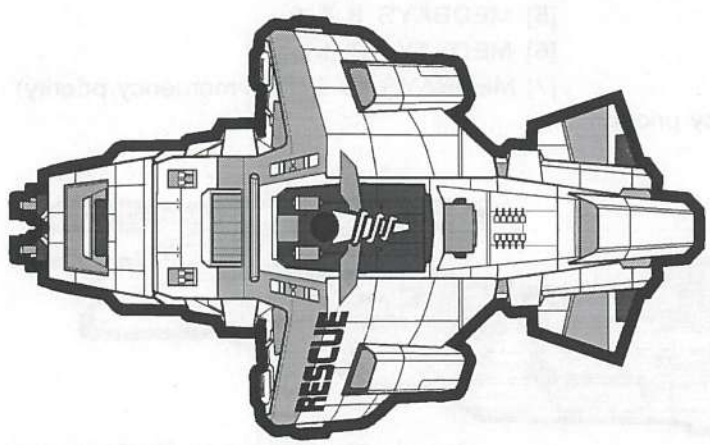
15.1.2 Secondary hull MEDBAYS

15.2 MEDBAY LAYOUT

15.2.1 Floor layout of typical MEDBAY



15.2.2 Modified TRITON *class ATC for rescue operations*



Both the Primary and Secondary hulls carry a modified TRITON ATC. Each is equipped with life-saving emergency devices.

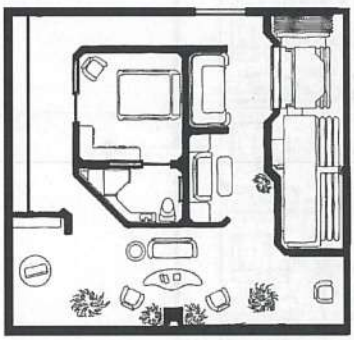
An RMT of five is trained to execute search and extraction operations on planetary surfaces, while initial triage takes place en route to a medical facility.

16.0 CREW/ ENVIRONMENTAL SYSTEMS

16.1 LIVING QUARTERS

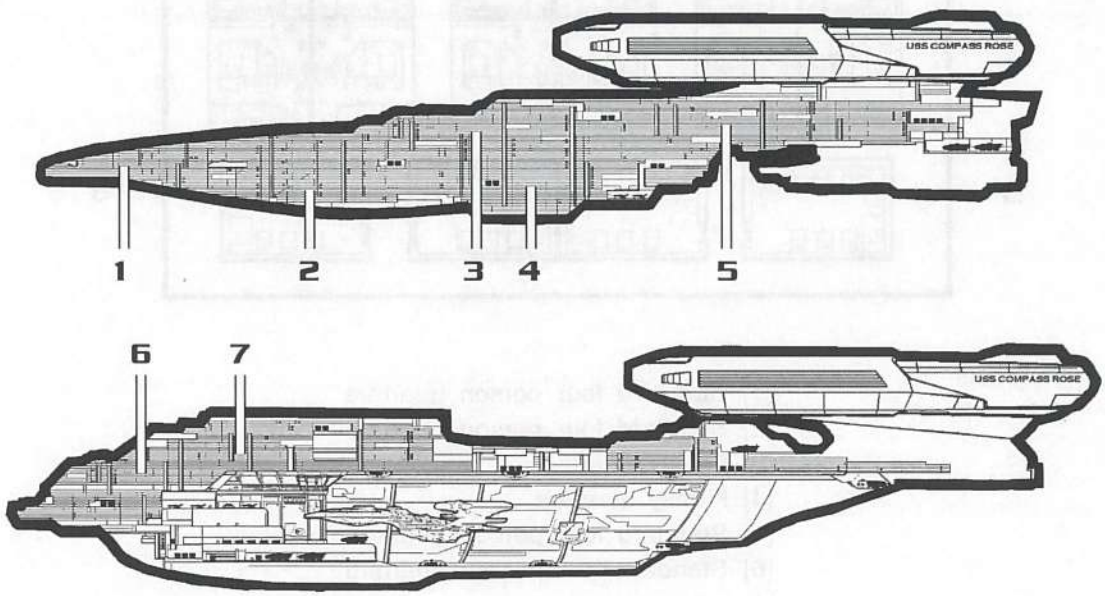
The first ship of its kind, the CETUS class CVX must accommodate the largest crew compliment of any in TerraForce history. While the average tour of duty is about 1.5 years, some high crew members will have assignments that are several years in duration. As a result, the peacetime policy of the DOD (as it has been for 16 years) will allow a crew member to bring aboard immediate family only.

Special family quarters are located on both the Primary and Secondary hulls. These quarters are intermixed with standard four bed crew quarters, so that individual crew members will not be isolated. This also fosters a sense of community, which has increased efficiency greatly.



[1] Saucer section Non-Terran quarters
[2] Crew section A (decks 8-29)
[3] Command staff quarters
[4] Specialist crew quarters (Medical staff, Air wing A, Hydroponics, Science)
[5] General crew quarters (Cargo crews)
[6] Crew quarters (Flight support staff, Dock workers)
[7] Passenger quarters (colonists, troops, guests)

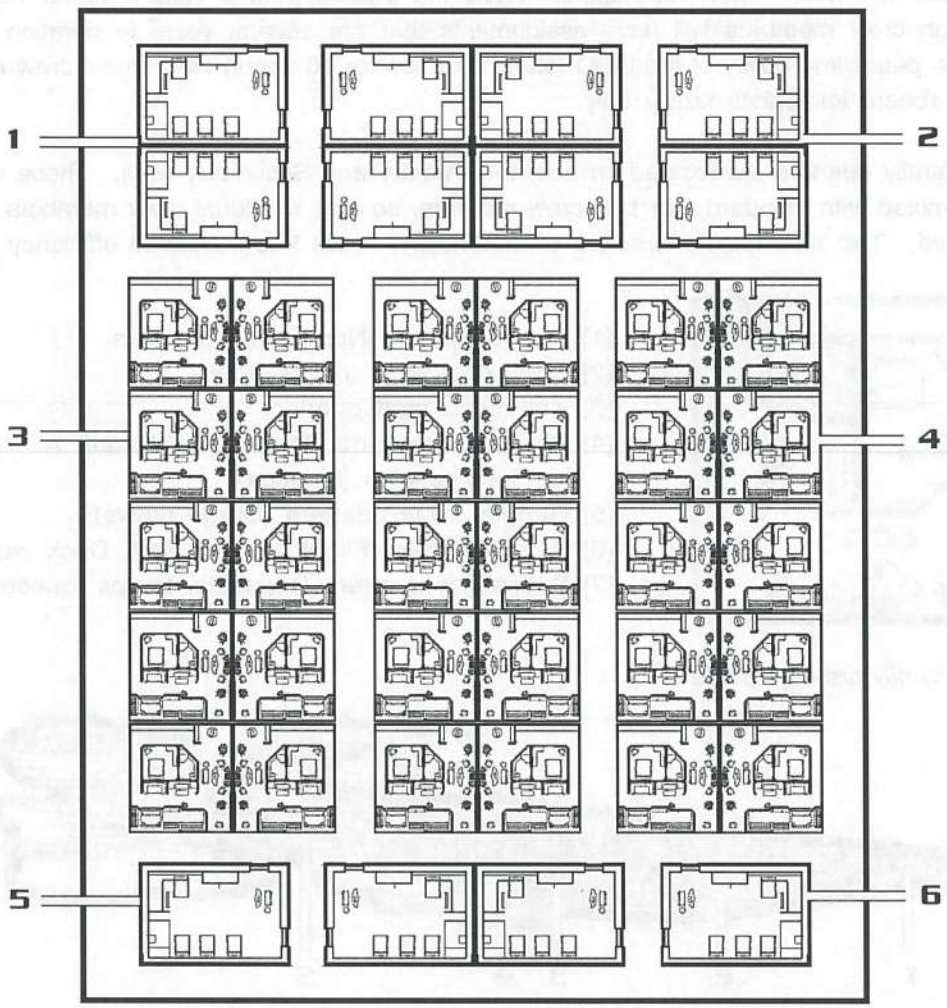
16.1.1 Family crew quarters



16.1.2 Cutaway interiors: CETUS *class crew quarters*

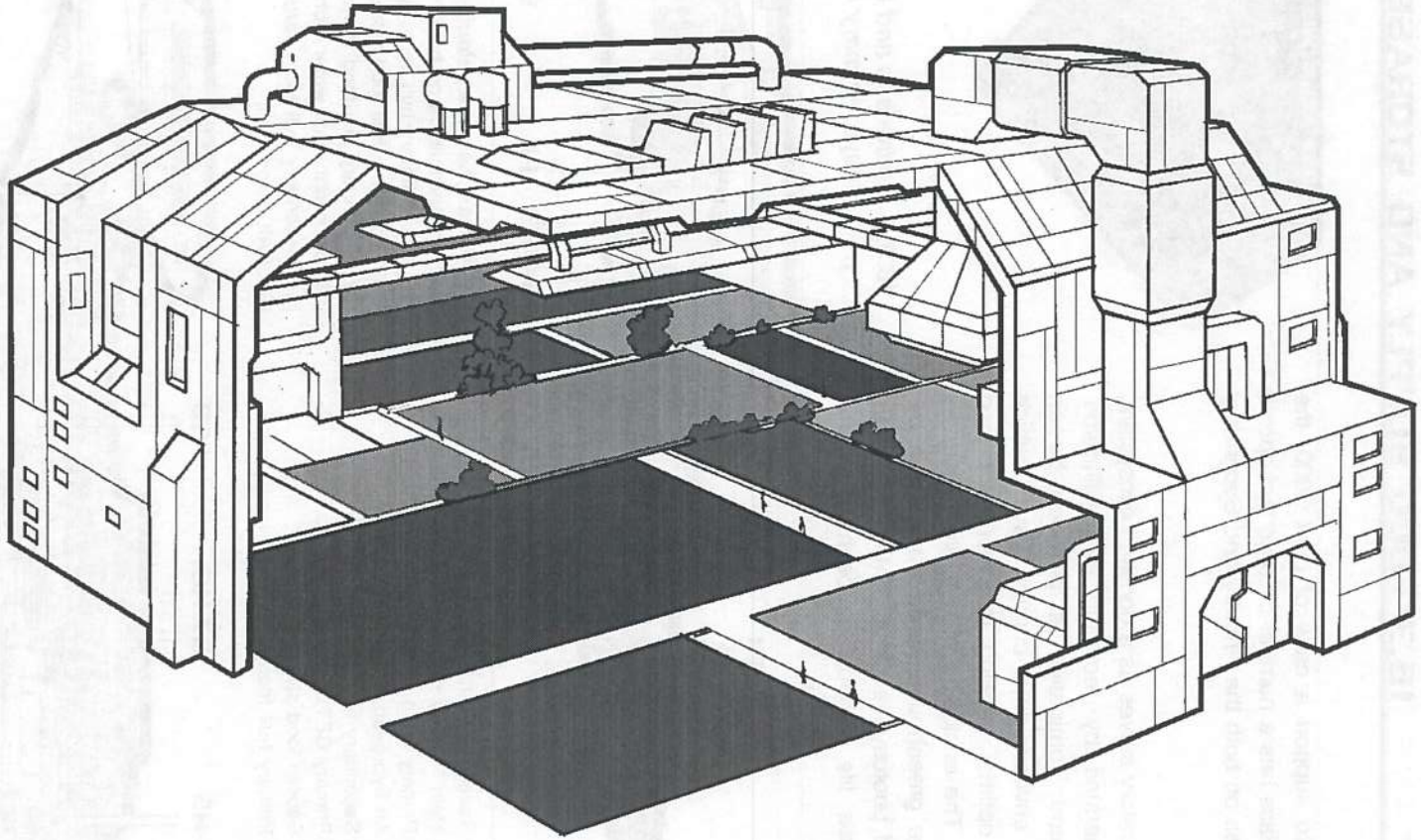
16.1 LIVING QUARTERS

16.1.3 Cutaway interior: CETUS *class crew quarter layout*



[1] Standard four person quarters
[2] Standard four person quarters
[3] Family quarters
[4] Family quarters
[5] Standard four person quarters
[6] Standard four person quarters

16.2 HYDROPONICS LABS



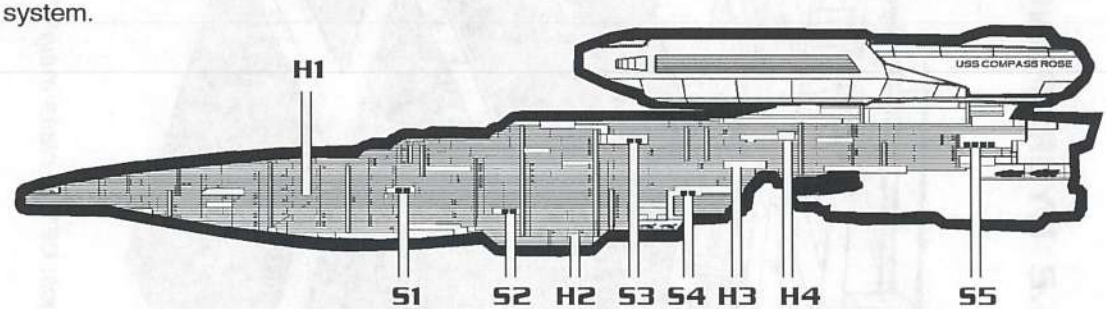
16.2.1 Hydroponics: CETUS *class main chamber (secondary hull)*

16.3 FOOD SUPPLY AND STORAGE

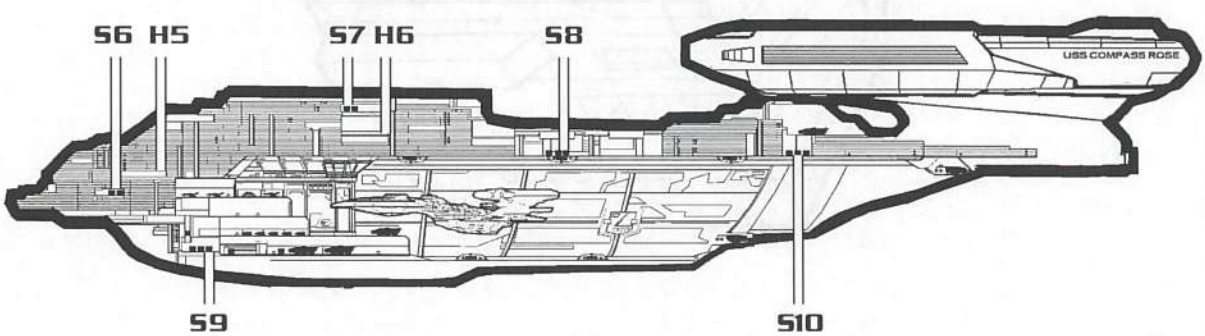
In order to support a crew of over 3000, the CETUS class has a number of large hydroponic laboratories on both the Primary and Secondary hulls.

Each laboratory serves as a confined ecosystem, which operates by recycling and refiltration. Climate and illumination is provided by an elaborate environmental control system, which provides optimal growing conditions for food sources. The enclosure of a hydro-lab serves as a large greenhouse, while the oxygen by-product of photosynthesis is vented throughout the vessels life support atmospheric control system.

16.3.1 Hydro-labs and food storage bays: Primary hull



[H1] Saucer hydro-lab 1 (Terran)
[H2] Main Primary hull hydro-lab 2
[H3] Primary hull hydro-lab 3 (non-Terran)
[H4] Aft hydro-lab 4 (auxiliary)
[H5] Secondary hull hydro-lab 5
[H6] Primary CETUS class hydro-lab
[S1] Saucer food storage A
[S2] Primary hull food storage B
[S3] Primary hull water storage A
[S4] Primary hull Cargo hold A
[S5] Main Primary hull cargo storage
[S6] Secondary hull food storage A
[S7] Secondary hull food storage B
[S8] Secondary hull water storage A
[S9] Secondary hull Main cargo bay
[S10] Aft cargo bays



16.3.2 Hydro-labs and food storage bays: Secondary hull

16.4 ENTERTAINMENT

The rigorous and hazardous nature of deep interstellar space travel often has a negative effect on crew performance. Early TerraForce vessels, such as the USS FREEDOM, had little crew amenities and a four year tour of duty. As propulsion technology improved, and travel times were reduced, such assignments were correspondingly shortened.

Despite the improvement demonstrated by 1.5 to two year deployments and rotations, TerraForce still suffered from crew performance drop-offs in mid assignment. Additional shore leave time proved helpful, but the long monotony of space travel in a relatively confined space remained a drag on the emotional status of crew members.

Intermittent warfare with the Jolaran Empire and the more recent conflict with the Seri Republic have made life aboard a TerraForce vessel difficult. Small-scale recreation centers had always been included in ship designs, but these were not adequate. Much larger gymnasiums and social centers were finally approved 35 years ago, over the objections of some DOD engineers.

Sixteen years ago, TerraForce Command gave permission for long-term crew members to bring immediate family on assignments during peacetime. This was a very controversial decision, due to the specialized crew members that would now be required (pediatricans, teachers, etc.) A few years after the policy was implemented, crew performance was at all time high, and crew rotations and redeployments could be reduced. This had the effect of building more efficient, close-knit teams which worked together very well.

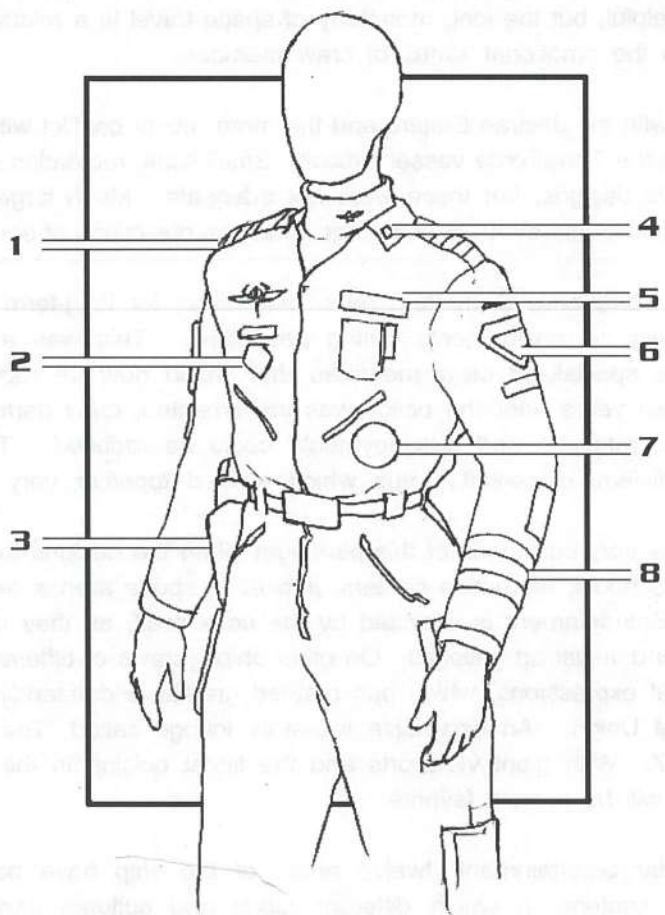
The design team was very conscious of this paradigm when the designs for the CETUS class CVX were begun. Schools, recreation centers, and even sports arenas are incorporated into the ship's interior. Entertainment is provided by the crew itself, as they utilize three concert halls, two theatres, and visual art galleries. On other ships, crews of different races have been able to share cultural expressions, which has created greater understanding and cooperation throughout the Great Union. An expansive two-story lounge called "The Galley" is located on decks 26 and 27. With giant viewports and the finest quisine in the Great Union, it is anticipated that this will be a crew favorite.

In addition to popular entertainment, twelve areas of the ship have been designated as religious expression centers, in which different races and cultures can practice religious customs and ceremonies. A limited number clergy is allowed on board, but high ranking leaders are only granted limited stays, in concordance with the special needs of a specific culture. Note: this area of cultural expression has caused periodic difficulties, primarily when a new race enters the Great Union. Finding balance with the exposure of so many new cultures can cause xenophobic backlashes if the problem is not addressed openly and promptly.

16.5 DUTY UNIFORMS

The duty uniform of CETUS class crew members is similar to those worn by all TerraForce personnel. A dark blue jumpsuit is worn over a color-coded mid collar tunic: Red signifies Tactical, grey for Command, white for Medical, Blue for Civilian operations, Green for Science, and brown for Engineering. Rank insignia are worn on the collar flap, as well as shoulder and arm band indicators. Name, Department emblems, Squadron logos, and BattleGroup numerals are placed on breast pockets and shoulders of the jumpsuit.

16.5.1 Typical uniform: USS COMPASS ROSE



[1] Shoulder rank stripes
[2] BattleGroup numeral
[3] Sidearm (military personnel and command)
[4] Collar rank insignia
[5] Nameplate
[6] Department emblem
[7] Squadron/ Task force insignia
[8] Arm rank stripes

17.0 SHIP'S HISTORY

17.1 CETUS CLASS DESIGN LINEAGE

Prior to his tour as captain of the Battlecruiser USS ARIZONA, Jared Tolcott earned a reputation as a designer with the team that created the VANGUARD class. He was instrumental in the creation of the main spaceframe, which is still one of the most versatile of all TerraForce ships of the line.

His assignment on the ARIZONA lasted for over three years, until the Battle of BILANA V in 2378, which was the worst defeat suffered by the Great Union in over two centuries. The Arizona was one of the few ships to survive, and only by heroic action managed to prevent the total annihilation of the entire Fleet. Over half the crew compliment had been killed, however, and the damage to the ARIZONA was so extensive it later had to be scrapped.

Captain Tolcott himself suffered severe wounds, and was temporarily relived of duty. During his recovery, he began to design a vessel which would prevent such a catastrophe from occurring again.

The stationary defenses in the surrounding sectors of BILANA system had merely been bypassed by the Seri invasion force, leaving the Fleet terribly exposed. He resolve to create a vessel that would replace this static defense system.

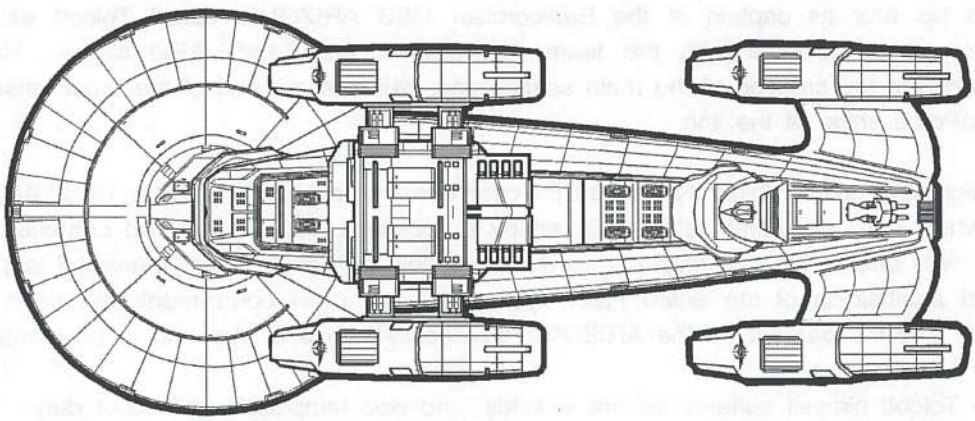
By June of 2379, he had formed his initial concept of the CETUS class. He envisioned a vessel that could be used as a mobile base, with powerful offensive capabilities. His first design was ready for presentation to the DOD in August of 2380 (see chapter 17.2). It featured an expensive, four engine configuration, which was rejected. The second design (submitted in December of the same year) was far less costly, but the capabilities if the ship were sharply reduced. It was approved by many in the civilian government, but TerraForce strategists felt that it would not adequately fulfill its mission.

Finally, with the help of his friend Lt. Commander Lesath (Chief Engineer of the ARIZONA) Tolcott developed the three engine design, and the modular in-line FTL drive system. By March of 2381, approval had been granted for the CETUS PROJECT, the most ambitious construction attempted in TerraForce history.

The Procyon IV assembly facility was the site chosen to build the main spaceframe, which was laid October 15th, 2384. Other vital components were contracted to naval shipyards around the Great Union to enhance security. In April of 2387, the main spaceframe was complete, as well as the FTL engines. Two AURORA class Corvettes were built at the Beltane VII dockyard by 2388, as were most of the Battlecraft. All of the secondary craft were delivered to the Procyon IV facility in May of 2389, where initial shakedowns were completed.

The official launch ceremony of the USS COMPASS ROSE is scheduled for January 1st, 2389.

17.2 CETUS CLASS: ALTERNATE CONCEPTS



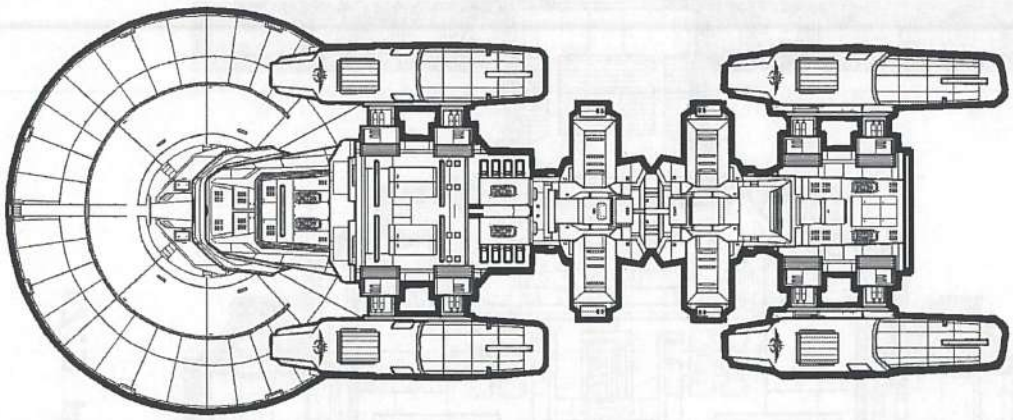
17.2.1 Original concept design: CETUS *class* CVX *(September 2380)*

This vessel was the first CETUS class concept created by Captain Jared Tolcott over seven years ago. In this design, a four engine configuration is used, with two FTL engines placed on both the Primary and Secondary hulls. The Primary hull FTL engines are mounted on special articulation frames in order to establish a more efficient distortion field during separation mode.

Moving along the X-axis of the expansion arms, the FTL engines are positioned laterally of the saucer section for flight mode. Once the final position is attained, the engines are secured for FTL travel.

The upper sponson of this design is used as a weapons platform, with four Z-axis CEPar arrays located on the dorsal sections. Also, two batteries of four HELLFIRE torpedo launchers are mounted on the aft portion of the dorsal. These batteries have a clear field of fire in all directions, and can launch devastating broadsides.

Presented to the Department of Defense on September 25th, 2380, it was debated heavily between Department Chiefs of Staff, many of whom argued that the potential cost of this project would seriously curtail the ability of TerraForce to build other standard vessels. Civilian authorities in the Great Union Council of Representatives immediately labeled the concept as extravagant, and threatened to cut off funding if a less costly design was not submitted.



17.2.2 Second concept design: CETUS *class* CVX *(December 2380)*

Frustrated by his first attempt, Captain Tolcott created a new design that would not be refused on the basis of cost. The second concept, sent to the DOD in December of 2380, was only 42% of the total cost of the original design.

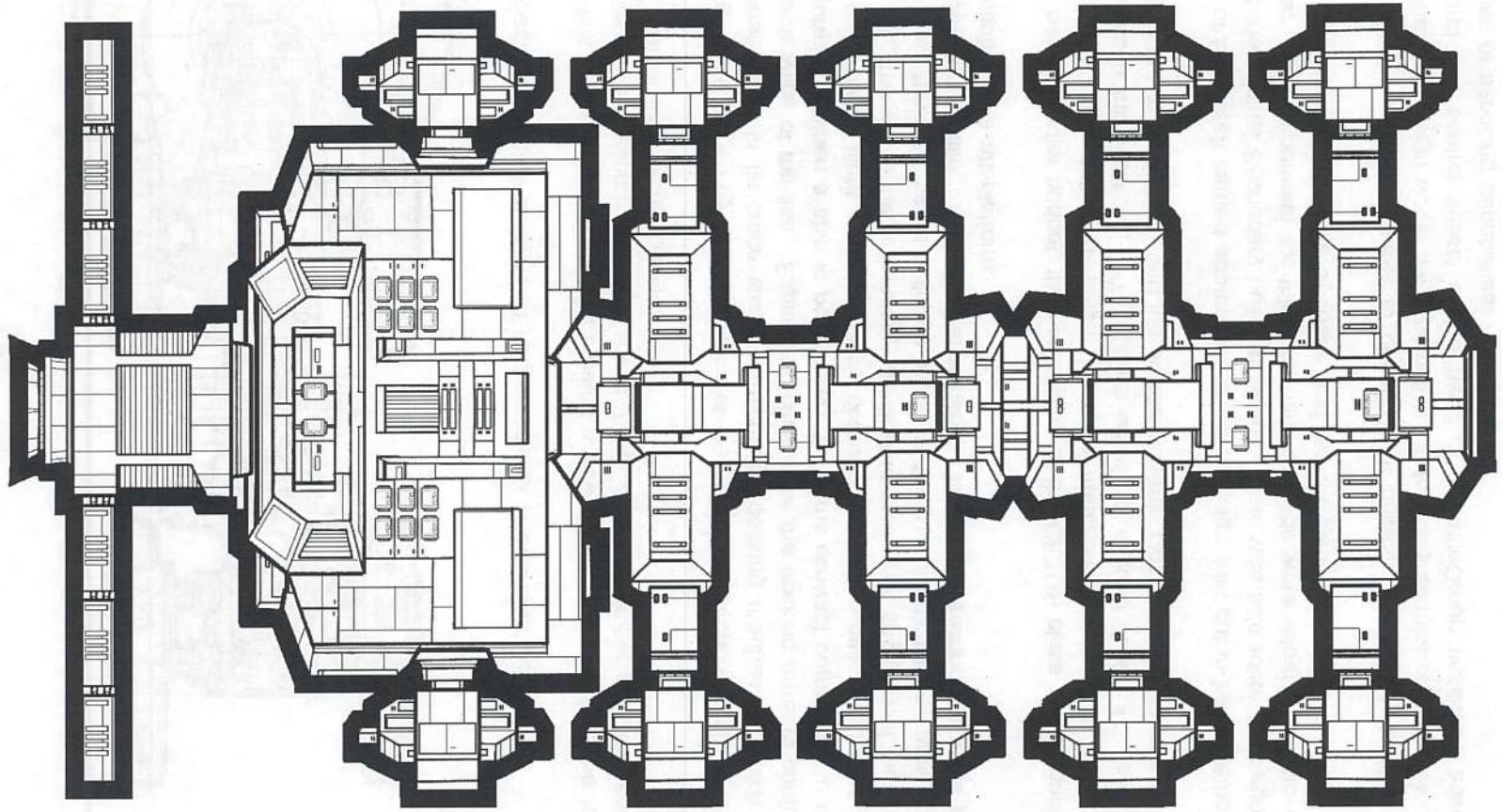
The largest savings were gained by the elimination of the enclosed Secondary hull, which also removed the hangar bay. In its place was an articulated docking mechanism which could house all TerraForce ships of the line. Expansion joints allow the docking arms to conform to any vessel configuration. When a ship is not docked, the arms contract completely to reduce drag on the FTL drive during flight mode. To help compensate for the awkward nature of the secondary hull profile, the aft sponson is nearly identical to the upper sponson of the Primary hull. The FTL engines have the same ability to move on the X-axis articulation frame, forming a more efficient distortion profile. The aft exterior hangar bay of the secondary hull is placed on the dorsal section of the aft platform.

While this design had a smaller budget, the capabilities of the CETUS class were significantly reduced. Without the large, enclosed hangar bay, the transportation of small to mid size vessels would be much more difficult. FTL speeds could not exceed Factor 4.2, due to the danger presented by the exposed craft and the additional strain placed on the mooring beams.

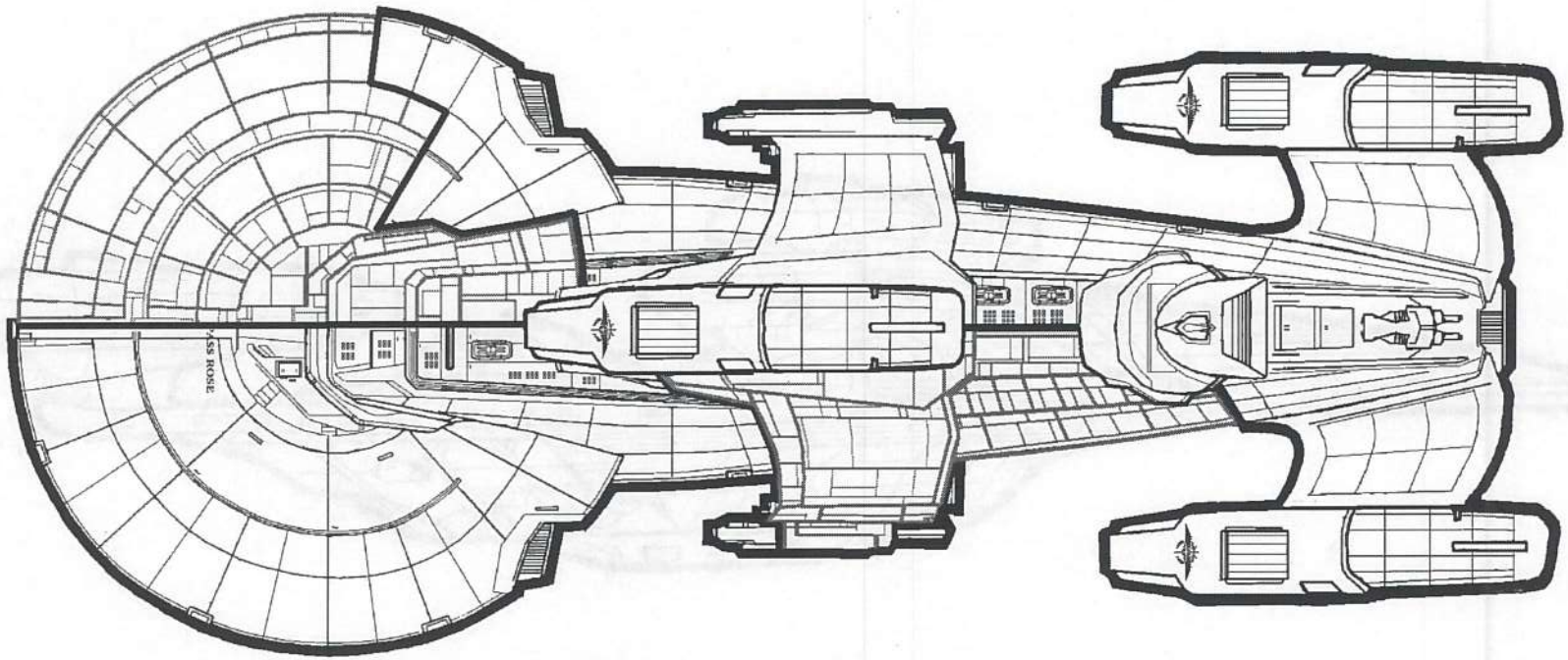
Also, the number of Battlecraft carried aboard this second design was cut in half. Without the internal volume of the original Secondary hull spaceframe, there was little room for cargo bays and staging areas. To compensate for this loss, landing pads were situated on the dorsal sections of both the Primary hull upper sponson and the aft platform.

This design was clearly more acceptable to Great Union politicians, but high ranking DOD commanders felt that this design would not accomplish the five original mission parameters. Its use as a command and control vessel at the head of a BattleGroup would be adversely effected by the loss of servicing capabilities.

17.3 PROCYON 4 VEHICLE ASSEMBLY FACILITY

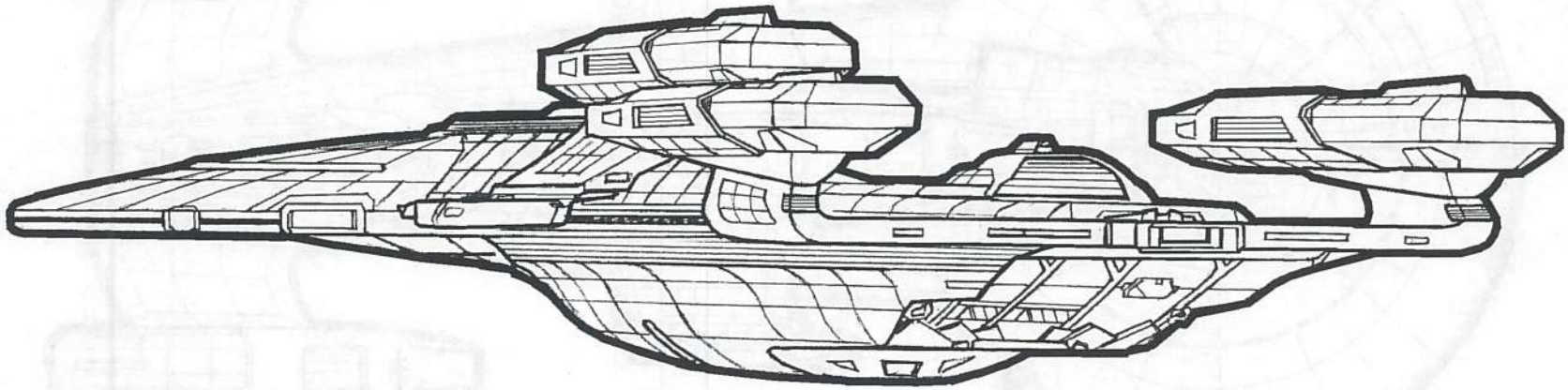


17.4 STRUCTURAL FRAME ASSEMBLY



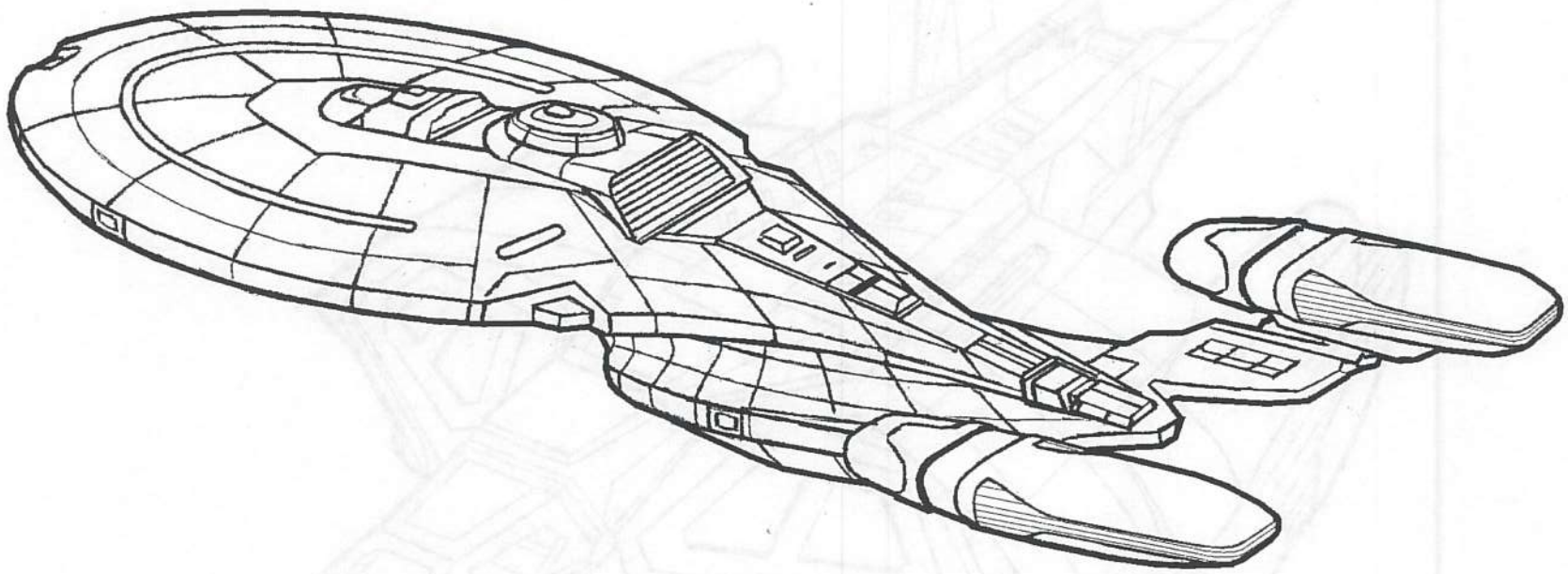
17.4.1 Structural frame assembly: CETUS *class* CVX *(cutaway overview)*

17.5 CETUS CLASS: OPERATIONAL VIEWS



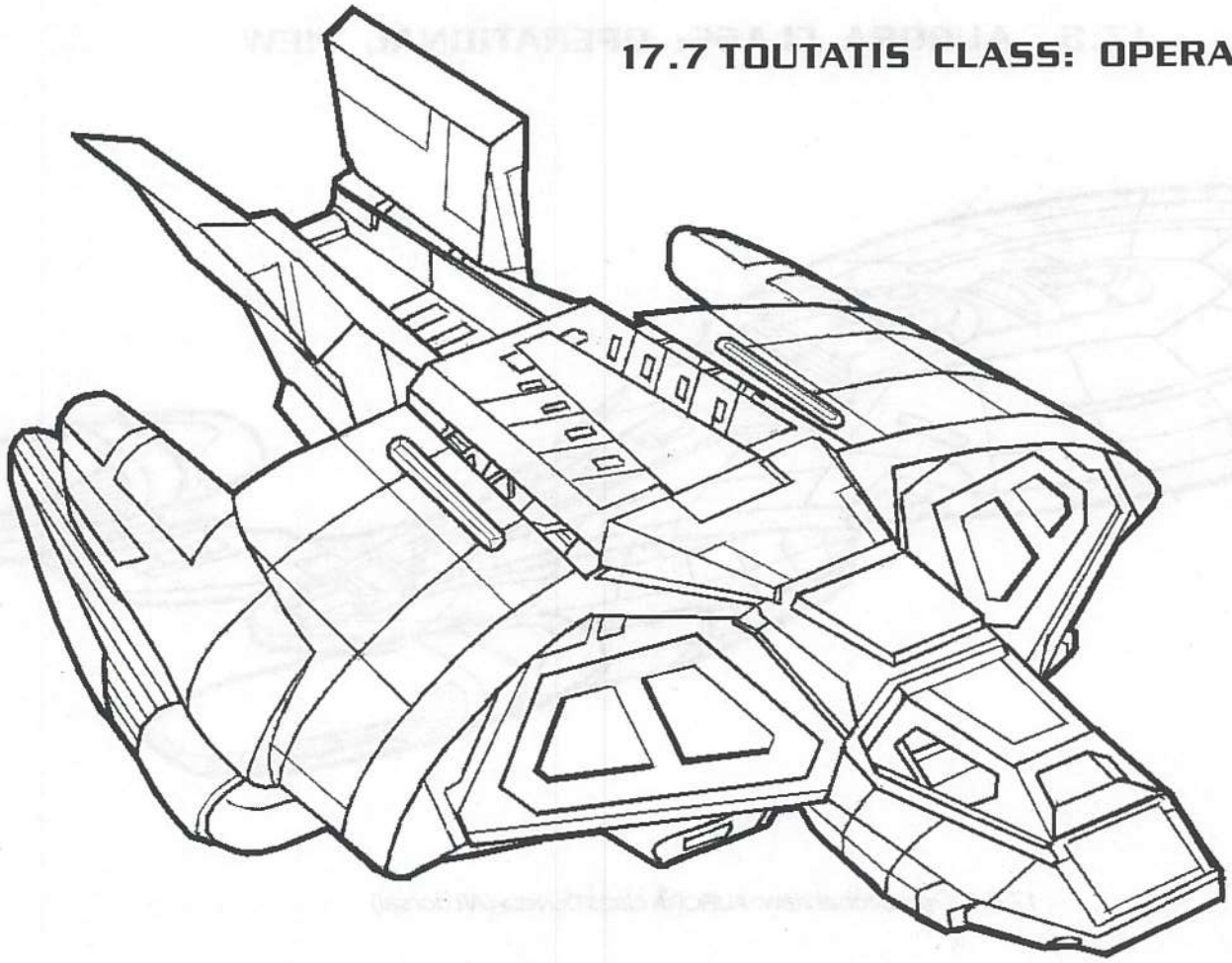
17.5.1 Aft ventral operational view: CETUS *class* CVX *(Main hangar bay)*

17.6 AURORA CLASS: OPERATIONAL VIEW



17.6.1 Operational view: AURORA *class* Corvette *(Aft dorsal)*

17.7 TOUTATIS CLASS: OPERATIONAL VIEW



17.7.1 Operational view: TOUTATIS *class* Interceptor *(Forward dorsal)*

18.0 CONCLUSION

18.1 TACTICAL POLICIES

When the USS COMPASS ROSE, CVX 6616 is launched in January, it will not be sent to a border protection assignment. The Department of Defense and TerraForce have agreed that it would not be wise to have the adversary powers become aware of the existence of the CETUS class before the other four vessels have been built.
Best projections for the construction timetables on the COMPASS ROSE sister ships are at least 2 years, possibly less. If hostilities appear to be imminent, the COMPASS ROSE will be recalled, and the other CETUS class ships will be constructed using the December 2380 design.

The first mission of the COMPASS ROSE will be, ironically, one of exploration. The ship will enter one of the last great unexplored territories, known as the "Void." It is believed that the CETUS class has the ability to fully explore this area much more rapidly than standard exploration vessels. Time is crucial, for this area of space must be investigated before the COMPASS ROSE assumes its place at the head of BattleGroup D (southern frontier).

Both the civilian government and the DOD want to avoid a repeat of the disastrous conflicts of the past, particularly the most recent war with the Seri Republic. Many officials believe that a more thorough knowledge of the existence of a powerful, advanced culture to the South and West of the Great Union would have altered colonization policy. The mission of Captain Tolcott and his crew will be to meet as many new races as they can, and attempt to form alliances where possible. If a hostile race is encountered, the CETUS class is to avoid engagement unless attacked. Should a hostile force take aggressive action, however, the ship is not to withdraw unless it is severely outnumbered (it is believed that the Jolaran Empire attacked the Great Union 245 years ago after Earth forces disengaged to a more tenable position, which was seen as a sign of weakness).

It is also believed that a mission of this type will serve to rejuvenate the spirit of exploration within the Great Union itself. Constant war with the other powers, as well as the renewed conflict with the 'True Earth' resistance, has eroded hopes for a better future, as well as the pioneer attitude that made the Great Union the most prosperous state in this region of the galaxy.

Seeking new allies and weeding out potential enemies is the task that lays before the crew of the USS COMPASS ROSE. This historic, unprecedented mission has already generated much excitement, and the crew is eagerly awaiting to enter the boundless unknown of the Void.

18.2 DEDICATION PLAQUE: USS COMPASS ROSE

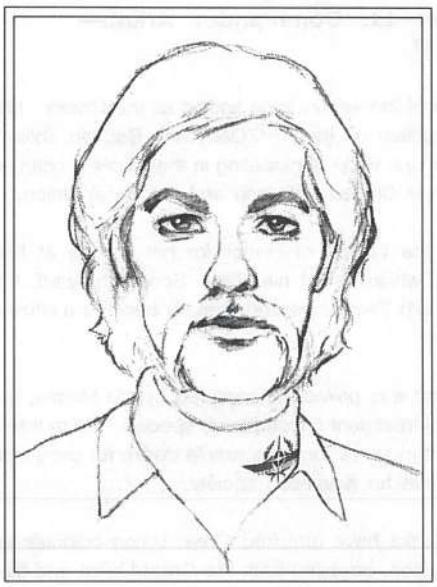
TERRA FORCE

U.S.S. COMPASS ROSE

CETUS CLASS - TERRAFORCE REGISTRY CVX-6616
PROCYON FOUR ASSEMBLY FACILITY, NEW TERRA
THIRD SHIP TO BEAR THE NAME - LAUNCHED 1.1.2389
GREAT UNION OF NEW TERRA

TERRAFORCE COMMAND	DESIGN TEAM	YARD ENGINEERS	ADVANCED TECHNOLOGIES
Adm. Jackie Paciello	Capt. Jared Tolcott	Capt. Brian Fagan	Lt Cmdr. Lesath
Adm. David C. Meuller	Capt. Hasni Reshan	Capt. Obhuto Kaerenyi	Dr. Gienah, T.F. Med.
Adm. Roy Firestone	Capt. Nanci S. Griffith	Capt. Henry Parelli	LIDent Technologies, ISC.
Adm. Chesley Bonestell	Capt. Yakmura Tashi	Capt. Wakan	Larson Tech. Consortium
Adm. Lucian G. Rudaux	Capt. Coleen Delaney	Cmdr. Blodeuwedd	Martin Lockheed, ISC.
Adm. Kim Poor	Capt. James T Wappel	Cmdr. Charles Walsh	Anaxxar Public General, ISC.
	Capt. Eric Cohen	Cmdr. David L. Jones	

18.3 OFFICER PROFILES: USS COMPASS ROSE



Captain Jared Tolcott—Terran: age 37

17 years ago, Tolcott graduated Alexandria Naval Academy with honors in cultural history and starship design. His first ship was the Rabin, where he served as navigator. During his 6-year tour on the Potomac, he rose from navigator to weapons officer, and then first officer. In 2376, he became the Captain of the USS ARIZONA, a VANGUARD class Battlecruiser.

Under his command, the Arizona gained distinction as only the 2nd TerraForce vessel to enter the Void. The ARIZONA was so badly damaged at the Battle of Bilana V, it had to be scrapped. Born and raised on New Chicago, he has a large immediate family. Three of his siblings are in TerraForce, and his niece is a 1st year midshipman at ANA.

His interest in history includes the American Civil War and the Ballesterii Enlightenment.

First Officer: Cmndr Cathryn MacClellan—Terran, Ardanian, Jarosian: age 29

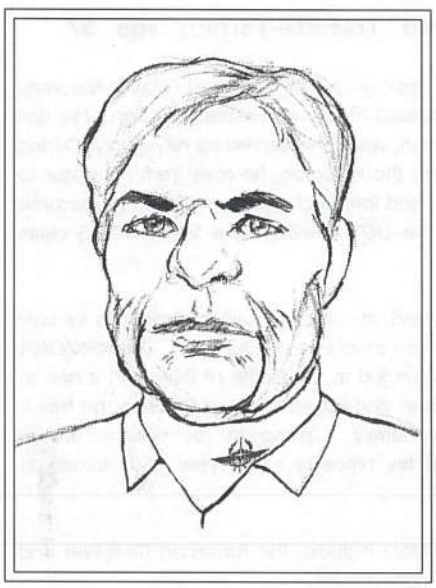
Cmndr. MacClellan was born on Jaros, but raised on New Terra. Her paternal grandfather was Jarosian, and her mother is part Ardanian. Ten years ago, she graduated first in her Academy class, and then served as science officer aboard the KEARSARGE and the M'BENGA. While on the BLUCHER, she earned the rank of commander and became First Officer.

For her valor in saving colonists from Cheron raiders at New Delphi, she was awarded the Star Cross. She suffered severe injuries in the attack, and her left arm was destroyed. With the help of an artificial extremity device (AED) prosthetic, she can function as well, if not better, than normal.

Despite her Jarosian heritage, she has a sharp sense of humor and is known for her fiendish practical jokes. She is also an expert at Speedball, one of the most popular sports in the Great Union. In addition to athletics, she is a fine sculptor, and her works will be displayed in the ship's art gallery, along with others done by the crew.

Her family still raises thoroughbreds on New Terra.

18.3 OFFICER PROFILES: USS COMPASS ROSE



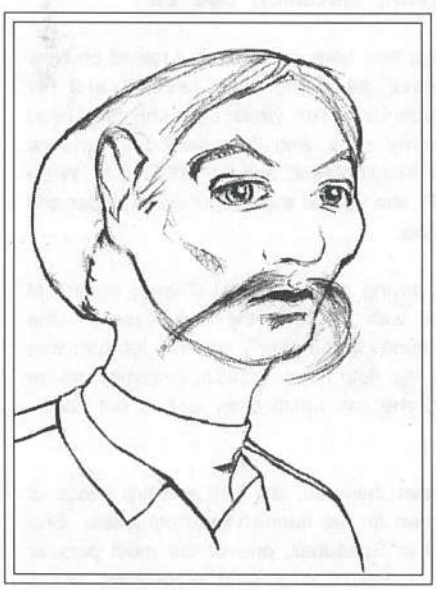
Tactical Officer Lt. Commander Arkab—Moskan: age 31

Arkab is a member of the warrior race known as the Moska. He served as tactical officer on the ARIZONA with Captain Tolcott and Commander Lesath while participating in the officer exchange program between the Chetzoq Alliance and the Great Union.

He was awarded the Legion of Honor for his actions at the Battle of Bilana V, which saved his ship. Soon afterward, he decided to remain with TerraForce and formally become a citizen of the Great Union.

Born on a world that was previously captured by the Moska, he questioned the cruel treatment of conquered species. He realizes that his people must move beyond the simple desire for conquest if they are to become an advanced society.

In the past, the Moska have attacked Great Union colonies in the Baten Kaitos region, angering both the Great Union and the Chetzoq Alliance.



Chief Engineer Lt. Commander Lesath—Ballesterii: age 107

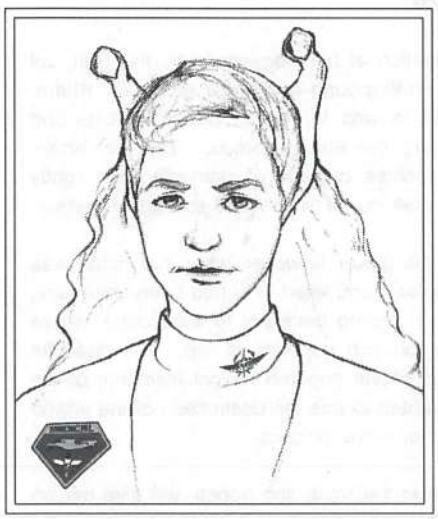
As a specialist in FTL field mechanics, he was instrumental in the design of the CETUS class modular in line propulsion system. He has served in TerraForce for 83 years.

On the HORNET, he served as the assistant engineer, and then engineer of the VALTARIS, and the TALMARA. After these assignments, he spent 36 years at TerraForce research, where he met his wife, Suud. They had a daughter who was named Sirrah after Lesath's grandmother. When sirrah was 15 years old, Suud died of a rare virus. At this time, Lesath requested to be returned to active starship duty.

He was posted to the USS ARIZONA, serving as Chief Engineer under Jared Tolcott. They quickly became close friends, and Sirrah considers Tolcott to be her 'big brother'. Lesath instructed tolcott in many Ballesterii customs and traditions.

It was his eloquent statements on behalf of Arkab's admittance into TerraForce convinced to Joint Chiefs to also allow him citizenship. He has earned the nickname Senxen, or 'Grandpa', among the crew, although it is never said to his face.

18.3 OFFICER PROFILES: USS COMPASS ROSE

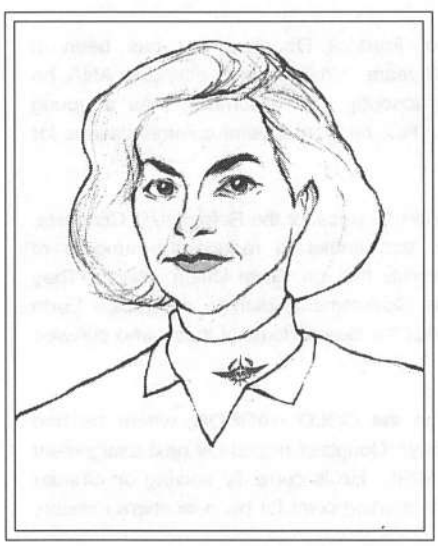


Chief Medical Officer: Doctor Gienah—Alessian: age 40

Gienah is known for her brilliant work in exobiology, and is heralded as the Great Union's finest authority on the medicinal practices of alien species. Several years ago, she eradicated a deadly microbe on Seginus 2 that would slowly dissolve the host's tissue in three years. Early in her career, she served on an emergency rescue vessel in the Argelius Region, administering aid to disaster victims.

Her husband, Ancha, is an Interceptor pilot on the COMPASS ROSE. Their two young children, Alchiba and Alberien are delightful and bright. They are also mischievous and quite a handful. Many of her family ancestors were also healers, and TerraForce presented her with the opportunity to bring that ability to many others throughout the Galaxy.

Having treated the victims of numerous planetary conflicts, she abhors violence and is suspicious of the nature of the COMPASS ROSE's mission in the Void. Ancha's position as a fighter pilot has always been a sore point between them.



Ambassador Illiena Dren—Ardanian: age 49

Her passion is to communicate with other species. She was a professor of psychology at TerraForce Medical, which has resulted in her achievements in diplomacy and first contact situations.

During her 26 years in TerraForce, she has participated in many treaty signings and diplomatic missions. Dren played a key role in the Armistice of Alberio, which ended the war between the Great Union and the Seri Republic.

She is the only member of the crew to see extensive duty on the other side of the Void, and has become familiar with some of the new species that were encountered.

Ambassador Dren is from a relatively obscure family in a remote wilderness region of Ardania called Porma. She was isolated from the more well-to-do urban culture for most of her upbringing, until she attended the Gexzhana University in Ardania's capital city. Her feelings toward the old royal families are not very warm.

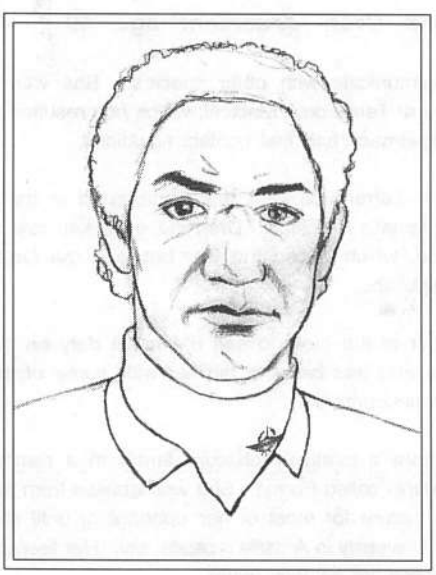
18.3 OFFICER PROFILES: USS COMPASS ROSE

Wing Commander Lt. Cmdr. Jel Asara—Izangi: age 26

During the occupation of her homeworld by the Seri, Jel was part of the underground resistance group Ze' Kharn. Her primary mission was to harass Seri transports and freighters supplying the enemy forces. The Ze' Kharn assembled small ships capable of damaging the lightly shielded civilian craft out of stolen and smuggled parts.

She abandoned the group, however, when her father was branded a collaborator and killed. He had been attempting to persuade a Seri mining team not to wipe out a village that was located on rich deposits of ore. His peaceful approach of negotiations angered radical elements of the resistance that wanted to use the destruction of the village as a rallying cry for more violence.

The long mission to the Void, she hopes, will give her an opportunity to get away from her troubled home. She does not put much stock in the rumors that the Great Union secretly supplied resistance groups on Izangis.



Second Officer, Cmdr. Clarence Douglass—Human: age 33

A descendant of Fredrick Douglass, he has been in TerraForce for 13 years. While he was attending ANA, he specialized in philosophy and diplomacy. As a young ensign on the CAIRO, he won several commendations for bravery.

He has been a powerful voice for the Reformation Congress, a political group that seeks to reduce the amount of unelected bureaucrats the run Great Union affairs. They also object to the Governments plan to repopulate Earth over the objection of the descendants of those who survived the Exodus.

After six years on the COLD HARBOR, where he had risen to Commander, Douglass hoped his next assignment would be in the Void. He is currently serving on Shedar Orbital Station, the starting point for his new ship's mission.

Born on Alpha Centauri, he is an avid hockey and football player (he believes Speedball is too tame).

18.3 OFFICER PROFILES: USS COMPASS ROSE

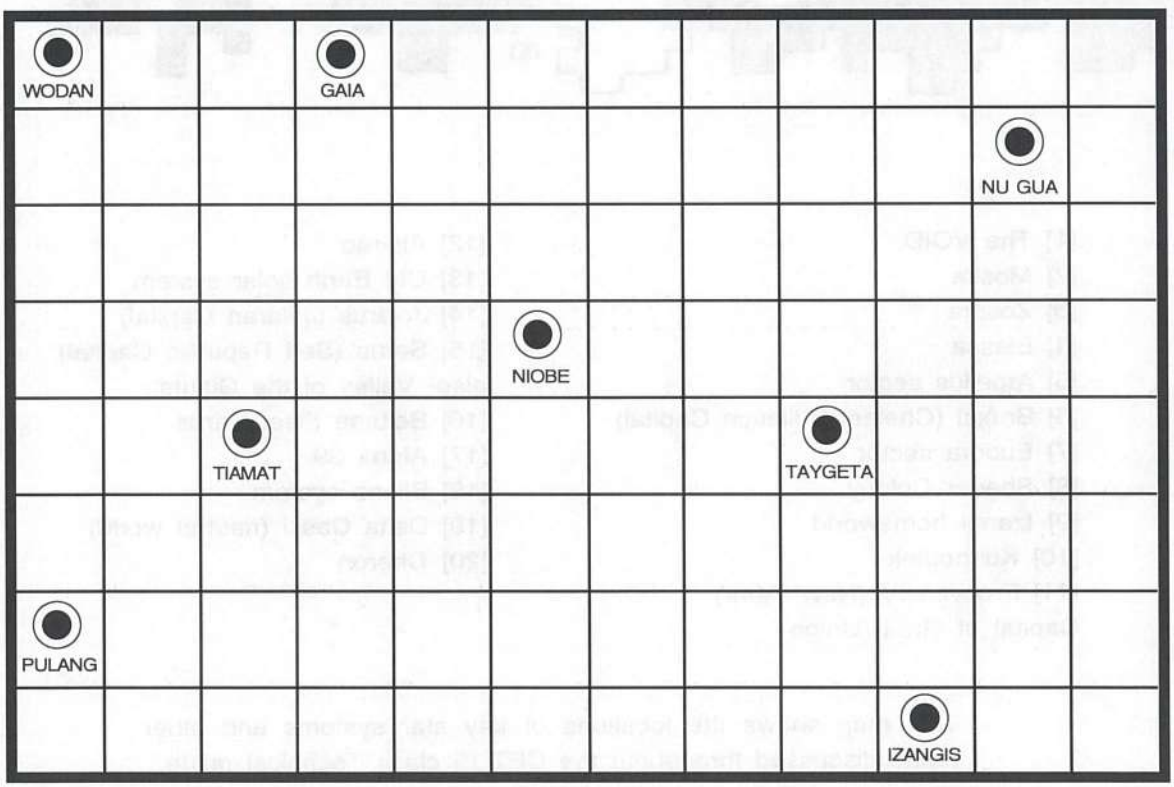
Helm Officer Lt. J.G. Nekhbet Khonsu—True Earther: age 28

The only member of the crew roster who was born on Earth, Lieutenant Khonsu has served in TerraForce for ten years. She was a young midshipman at the Alexandria Naval Academy at the time of the Battle of Bilana V. As a result of that disaster, TerraForce had no choice but to press the raw recruits of the ANA into service. Lt. Khonsu's class finished their education on the battlefield.

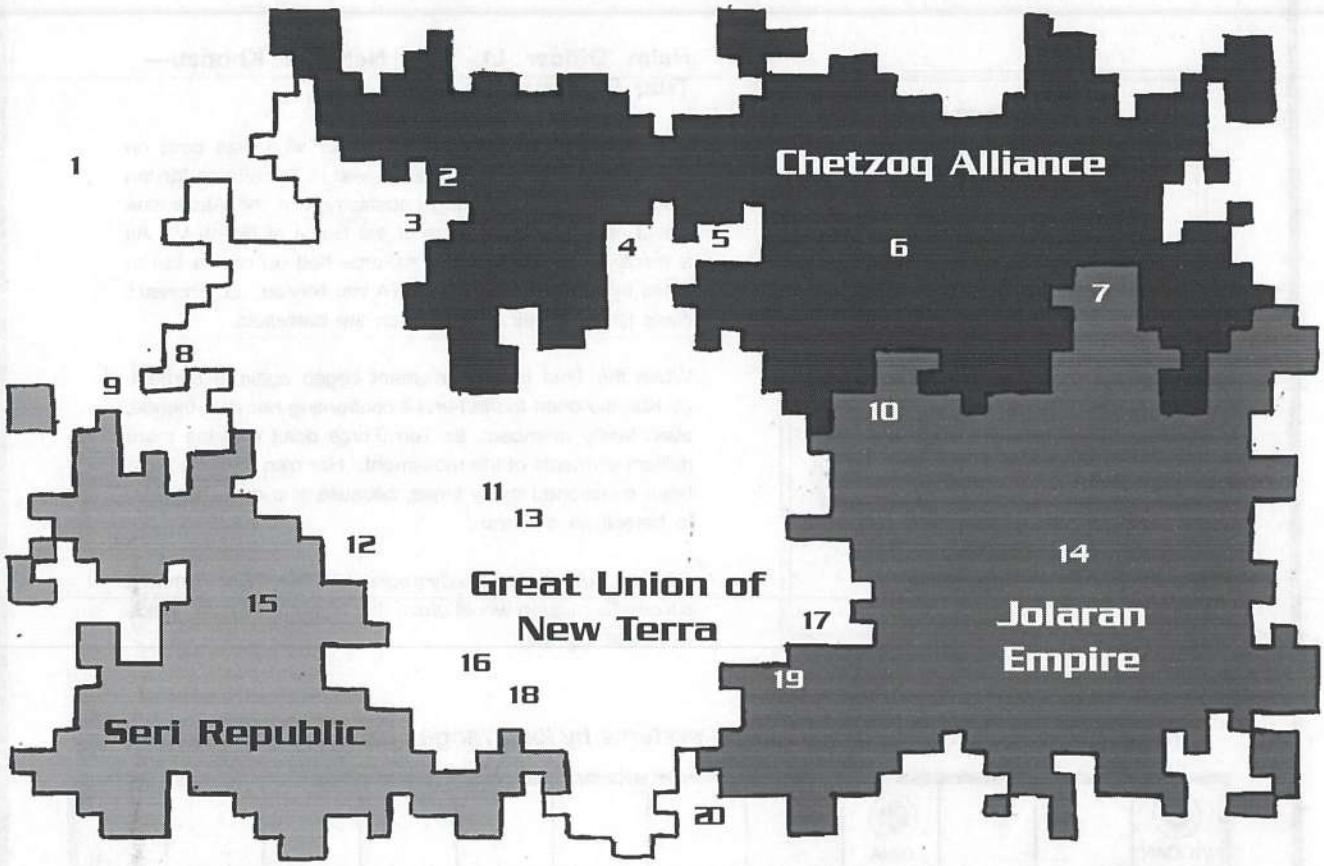
When the True Earth movement began again in earnest, Lt. Khonsu often found herself confronting her own friends, even family members, as TerraForce dealt with the more militant elements of the movement. Her own loyalties have been questioned many times, because she does not refer to herself as a Terran.

Captain Tolcott specifically requested her, hoping that a successful mission would prove that Humans of both worlds can exist together.

18.3.1 The VOID: previously charted systems by long range scans and expeditions



18.4 QUADRANT MAP



[1] The VOID
[2] Moska
[3] Zosma
[4] Elessa
[5] Argelius sector
[6] Braxal (Chetzoq Alliance Capital)
[7] Eudora sector
[8] Shedar Colony
[9] Izangi homeworld
[10] Kouhoutek
[11] Procyon IV (New Terra)
Capital of Great Union
[12] Albireo
[13] Old Earth solar system
[14] Jolarus (Jolaran Capital)
[15] Serus (Seri Republic Capital)
also- Valley of the Giants
[16] Beltane Fleet Yards
[17] Alpha 39
[18] Bilana system
[19] Delta Cassi (neutral world)
[20] Cheron

This map shows the locations of key star systems and other areas discussed throughout the CETUS class Technical guide.

Based on the Cetus Class Technical Guide

24TH CENTURY SHIPS OF THE LINE SERIES II

The 24th Century Ships of the Line—Series II, will feature twelve major ship classes from each of the major powers. It will be a four volume set, which will include data on weapons, engineering, tactics, mission profiles, and fleet organization. Each volume layout will be similar to the Cetus Class Technical Guide.

***Volume One*: The Great Union of New Terra**
- **The Ships of TerraForce**

***Volume Two*: The Jolaran Empire**
- **The Ships of the Imperial Jolaran Navy**

***Volume Three*: The Chetzoq Alliance**
- **The Ships of the Alliance Defense Council**

***Volume Four*: The Seri Republic**
- **The Ships of the Seri Guard**

For More Information on These Future Publications, Send a Self-Addressed, Stamped Envelope (SASE) To:

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Join the Crew of the USS Compass Rose

The officer profiles in Chapter 18 of the Technical Guide are the basis for each main character in a series of original science fiction stories titled "Journeys of the Compass Rose." These stories will chronicle the mission of the USS Compass Rose as it enters "The Void." Created from the historical chronology of the Technical Guide Preface, each story will refer to events covered in that section, and further tales will expand on that history. The Compass Rose will encounter many new races, as well as old enemies in the darkness of The Void.

Issue One: "Rim of Fire," opens with the launch ceremony at the Procyon Four Assembly Facility. The crew and ship officially join together at Shedar Orbital Station, where the oddessey to The Void begins. A few weeks into the mission, the Compass Rose encounters the Tayget Confederation, a small, prosperous union of worlds with which Ambassador Dren wishes to establish a diplomatic relationship. This potential ally, however, is facing a natural disaster which is tearing the entire civilization apart. Captain Tolcott and the crew of the Compass Rose soon find themselves embroiled in a desperate struggle of survival.

For more information on this future publication, send a S.A.S.E. to:
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