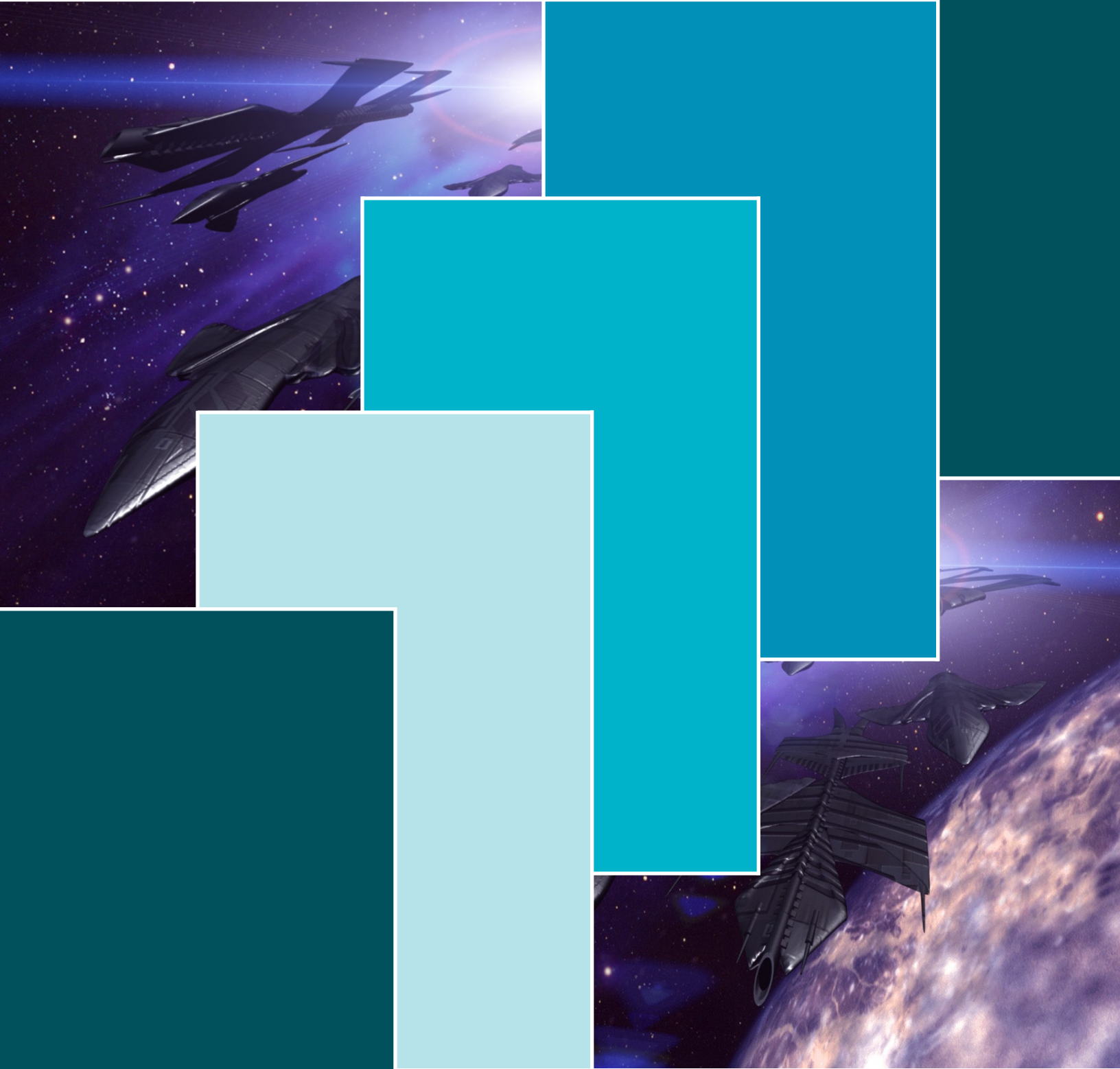# Sky Marshall 4

TALE OF THE RED DRAGON

There was no hint of danger as the titanic warship passed through the warp point, no hint of imminent death until the first huge asteroid collided with the ship as it completed its' transit into the system. Once, twice, three times the monstrous vessel was struck by immense boulders from the recently formed asteroid belt. As the deadly rocks hit, the warship staggered, hull plates crumpling as thousands of its' personnel were instantly sucked to their deaths as the mighty ship was gutted. Only the huge size of the vessel saved it from total destruction, although its' companion ships weren't so lucky. One by one as they passed through the warp point the cruisers, light carriers, and destroyers of Task Force 37 were utterly demolished when they unexpectedly materialized into the asteroid field. In moments the immense warship, fatally crippled, stumbled alone out of the field and into darkness.......

The man slowly came back to consciousness, with the bitter taste in his mouth that could only come from blood and he awoke into pitch darkness, the kind of darkness that is so black you couldn't see your own hand in front of your face. He turned his head to the right and blinked hard, but the blackness wouldn't go away. Obviously the gravity was out as well because the huge man felt that gnawing feeling in the stomach that only came from zero-g. He swallowed several times, trying to get the bitter taste of blood out of his mouth. The iron-copper sensation wasn't too pleasant and it was obviously a warning sign from his body that something had happened. The man grasped about for something to hold onto, realizing that the air surrounding him was very cool and their was a slight smell of meat and gravy in his nostrils.

He concentrated more, his mind seeking out the computer links that connected to the rest of the ship and his shipmates, but there was nothing but local computer noise from the interface band encircling his forehead. A quick nanonic diagnostic showed nothing was physically wrong with his body, he was just slightly achy but there were no external computer links at all and it disoriented him. He slowly began to move, pushing away from a bulkhead in the darkness, not knowing where he was floating too but knowing he had to move. All datalinks to the central computer onboard the small ship were completely down, and apparently the main link to the AI was disrupted too.

Definitely not a good sign.

As his head cleared more, hearing came back to him and his eyesight adjusted to the blackness of the inside of the ship. Voices sounded out in the darkness, voices that were not far away and he tried to angle himself at the sounds, just before he unwittingly hit a bulkhead and slowly bounced off of it. His ooof of surprise alerted someone in the adjacent compartment because there was suddenly silence and then,

"Brian, is that you?" A woman's voice....

"Yeah, it's me. What the hell's going on?" Brian growled out, trying to find a wall or something to grab onto.

His interface band didn't recognize who he was talking too, and Brian muttered in frustration. Interface bands had finally enabled humans to make substantial breakthroughs in genetic engineering and nanotechnology, and had now made them something more than human. Newer generation interface bands are massively parallel, each one easily equaling the computing capability of all of Earth's 20th century computers but his was giving him no external data at all.

"Sir, we have a massive power failure, and I can't contact anyone outside the Cestus," the woman's voice came back, a slightly worried sound in her voice. Brian then remembered her name,

"Thanks Erika. Try to get power back online. I will be with you in a minute," he said. He was the senior petty officer on board the small parasite warship they were working on. They had been laboring on the Cestus, a battlerider located inside the hangar bay of the Tiamat, when something had hit and knocked him out and obviously it wasn't just him that had been effected by whatever had happened.

Without warning low emergency lights came on and Brian glanced around. He was in the mess hall of the ship and it was really damn messy at the moment, he thought grumpily. Large trays, pieces of uneaten food, and liquid floated about him, some of which was helplessly clinging to his work dungarees. Brian reached out a huge hand and grabbed a nearby table, swinging himself around wildly in the zero-g. He had nearly forgotten his own strength and shot rapidly across the room towards the door where Erika's voice was coming from. He hit the door hard, grasping a handle along the frame and after a second he hauled himself through, cruising down a gray, non-descript hallway, headed towards the engineering section of the vessel. The Cestus itself was much larger than any fighter, nearly five times larger than a standard gunboat, so it took him a moment to clear the hallway and desperately grab at a bolted-down chair. The room was large, gray, and dominated by the massive engine core.

This section of the ship was also heavily shielded and three people occupied several seats, two of whom were obviously trying to get the ship's computers and power systems online. Without much success, Brian noted ruefully. One of the other engineers, Andel Koontz, was a muscle-bound heavy worlder who Brian barely knew. The other crewman, Robb Nazzal, was an ethnic Arab who was their only computer specialist.

"Ok, what happened?" Brain asked while trying to seat himself into the chair he had commandeered. He looked over at a petite black woman with a short, wild afro hairstyle, dressed in work coveralls. She was strapped into the hard metal-backed chair, looking at him with worry in her eyes.

"Sir, I don't know what happened. We only have the battery going right now. I'm trying to get the power core online and it looks like all the computer links are down, and that's just not possible."

Nodding his head slightly, Brian Labuda knew she was right. Megaknox was a vastly powerfully AI, and to knock him off-line took either a deliberate decision from the Captain to scramble its brains....or massive damage to the ship. The Tiamat was a 900,000 ton juggernaut-sized vessel and only the powerful mind of an AI could keep the Red Dragon-class warships' systems stable. In addition to the 9,000 odd crew there were over 2,000 nanotech androids onboard that were an extension of the AIs mind, but they could also run autonomously or under human command as well.

The huge red headed man once again tried to link with the central computer/communications web, known as CentralNet but their was nothing, not even static, in the bandwidth. Thousands of

minds should be communicating via CentralNet, and constant updates of information should be coming from 'Knox, but their was nothing and Brian began to be a little afraid at that thought.

"Okay Robb, talk to me," Brian said aloud, exasperation in his voice.

The huge Arab bodybuilder was only a few feet away from him, but he started when Brian suddenly spoke in the quietness of the room. The swarthy man's big black bushy eyebrows scrunched downward, and he said,

"Well, the computers show that we only have emergency power. Gravity is coming back on.......now." And his timing couldn't have been better because just then Brian and everyone else in the room felt the sudden and familiar tug of gravity, and as one the group of soldiers sighed in relief. Adjusting themselves into more comfortable positions, Brian patiently awaited further details from his team.

With full power back up and the engine core thrumming behind them, Brian began inquiries via the local computer net onboard the Cestus. Engine status was above standard, systems all over the ship began to awake and send information out and suddenly Brians' interface band began to receive data, relieving the man with their code green status checks. He searched with his mind for a moment, and his interface band located the rest of his team. Three were in the weapons bay and three were on the bridge. He data-sent to them:

You guys all right?

Immediately he d-received back from them, each sounding somewhat relieved and a little scared,

Mora: Yeah, okay here, sir.

Minto: Fine, what the hell happened?

Kabu: Shaken, but okay.

He thought for a moment and then d-sent:

Sit tight, we'll find out what's happening and I'll get back to you.

Brian contacted the others as well and ordered them to stay put until he contacted them. He then again looked at his subordinates in the engine room. He sighed and thought for a moment.

"Robb, bring up external cam. I wanna see what's going on in the flight deck." As he watched, Robb interfaced fully with the Cestus' computer and his eyes glassed over. Brian then began receiving images from the ship-mounted cameras inside his head, his interface band snatching the data from the localnet.

The flight deck was huge and it had to be because it was the primary center for holding the Tiamat's small craft, including the ships' twenty-four huge battleriders. Over one hundred forty drone fighters were held in nearby fighter bays and 180 drones, fifteen warpods, and sixteen automatic attack bits were also being stored on board the Tiamat. As he concentrated in his mind, Brian could see that the bay was nearly empty except for the hulking batleriders, some of which looked seriously damaged. Nothing was visible except for emergency floodlights from the Cestus. Nothing. That was a very bad sign. It was then that Brian noticed the electromagnetic barrier guarding the flight bay doors was down and he instantly understood why their wasn't anyone visible to the cameras. When the field had failed, everything portable had been viciously sucked out the doors and into space. But why hadn't the ships' engineers closed the manual doors? Where was the crew? Why was their no comm?

Brian began to seriously worry now. Main power was out on the Tiamat and its' computers were down and their was no sign of the ships' crew or their android counterparts. He could tell through his interface band that the pressure outside the Cestus was zero so they would be leaving via vaccsuits, but that was no problem. There were over thirty of them onboard the battlerider.

Brian, Robb d-sent, I have some computer interface with the rest of the ship. I think you should take a look at these readings.

Brian received the information from Robb and he was shaken by what he saw. The Tiamats' internal autonomous computers were telling him that their was no life aboard their immense warship. The computers ran wealth and welfare scans on each individual in the ship via their interface band and sent that data to the AI Megaknox and anyone who requested it. Robb had done just that and of the 9,101 crew on the juggernaut when they'd left Meetpoint Station, only eleven still onboard according to the computers....all onboard the Cestus. The computers also showed massive damage to the ship with two-thirds of it completely invisible, as if somehow destroyed. That's not possible, Brian thought as he pondered the data he had gotten from Robb. They were on a milk run, delivering 250,000 prisoners to the Purgatory System before heading to Depot. The Tiamat, although being a brand new warship, would be mothballed there because of her immense maintenance needs. With the apparent removal of the Hre'Daak threat and the dissolution of the Pan-Sentient Union in the wake of the destruction of Terra and New Valkha, the costs of keeping the Tiamat and all six of her monstrous sister ships running couldn't be sustained. Last thing he knew they were passing through a local warp point and were just one system away from the prison planet Purgatory when all hell broke lose.

And I blacked out, Brian thought angrily. He leaned back into his high backed chair, knowing that all eyes in the room were on him. He glanced over at Robb, who was looking thoughtful, as if pondering their fate in some abstract way and although Erika's skin was very black, he could still see fear upon her face. She smiled grimly at him when he looked at her. Only Andel, the heavy worlder who was stacked with corded muscles and tension, showed anger on his face.....powerful anger.

Brian thought for a moment longer while rubbing his temples with his huge fingers and then said,

"Alright, lets' get the androids in here to seal the breaches and I want everyone in EVA suits in twenty minutes. We need to get contact with the rest of the ship and our shipmates. I'm counting on you guys," Brian said in his gruff tone. He signed off and motioned for the people."Alright, lets' get the androids in here to seal the breaches and I want everyone in EVA suits in twenty minutes. We need to get contact with the rest of the ship and our shipmates. I'm counting on you guys," Brian said in his gruff tone. He signed off and motioned for the people in the room to get moving.

God, just two more months and we were all going to be Demobilized. Shit!

(TO BE CONTINUED)

Ablative Antilaser Foam Armor(Af): This system was first developed by the Imperial Zarkolyan Navy after they developed their first laser missile warhead (it was kept secret for many years afterwards). It must be reapplied monthly (time to reapply is number of Af spaces times the amount of time it would take to rearm all XO; as if it had max XO, military hull). It provides NO protection versus anything except lasers and each space provides 4 spaces of protection against laser fire. No more than 5% of the ships' hull can be comprised of Af, minimum 1 space. All Af must be the first armor spaces on a ships' design line. Af can be reapplied between battles, but it takes TIME. TL7, 1hs, 15MCr per hs, 5,000MCr R&D. (Roger Hanna's idea!) New Tech S

Armored XO Racks(XOa): Armored XO racks were developed in response to the laser torpedo, which devastates XO racks. An armored XO rack is not destroyed until one HS of armor, or a single internal system (not by HS), is destroyed. Additionally, the defender may choose to eliminate destroyed XO racks in any order, including unloaded ones first. Same quantity as standard XO racks. TL8, costs 7MCr each, 3,500 development cost. (Stephen Cooke's idea!)

Engine Interlinking(Il): This system allows a ship to swap between different engine types without dropping the drive field by harmonizing the engines to allow one set to start as the other starts. The using ship must remain stationary for the tac turn it takes to swap the engines over. Cost is 50MCr, 1 hs, Tl6. (Ian's tech)

Long Term Mineclearer(LTMc): A military systems that can be developed after mines are invented, the LTMc uses a mix of tractor beams, special scanners, and short range lasers to sweep a hex of mines at a rate of ten patterns per month. Any ship mounting LTMc has to pay 15% maintenance per month. TL3, cost is 100MCr. Size is 15 hull spaces, dev cost is 10,000. (Thanks Ian for this great idea).

SBM Boom(SMBB): Designed for bases only, the SBM Boom was created during the Armageddon War and used extensively by Terran units in that conflict, but to little avail. The SBM Boom is a variation on an XO rack for a SS, BS, or AF. Each SMBB is a tower that can hold up to 5 SBM, connected to the boom by an umbilical that supplies power and targeting info. Due to their size, 2 SMBB are destroyed per hit inside shields. Each SBM is treated as a loitering SBM for firing purposes. The power umbilical allows for indefinite attachment. Each SMBB costs 15MCr each, requires 5 hull spaces of surface area like an XO rack, and is TL10. Development cost is 2,000. (Todd Kes' idea!)

Sensors, Improved Long Range(Xr2): First developed by the Shassizss Imperium, the Xr2 enabled the snake-like Shassizss to fight off the numerous Porenthi Hordes who used small craft and swarm fleets to attack their mighty Imperium. Xr2 allows a bonus for missiles weaponry(+1) to hit SBMs and fighters. The Xr2 is TL6, 2 hull spaces in size, 80MCr each, and 8,000 to develop.

Sensors, Capital Long Range(Xr3): Built for the Poorgl Empire, the Capital Long Range Sensors allowed a more distant view of the battlefield for these racial cowards, enabling them to run away from superior enemy forces long before they could be decisively brought to action. Xr3 allows a 50% increase in range over standard Xr and a +2 o hit vs SBMs and fighter craft. The Xr3 is TL8 and 3 hull spaces in size, costs 100MCr and is 10,000 to develop.

Spherical Chaff System(Chf): Built by the Ssst*phok in their eternal war with the Susuru race, the Chf system is for bases only (-1 to be hit and -3 to be rammed). The Chf system only works for bases because they don't move and their DF doesn't disperse the chaff within the field). Only one unit effective per base. Cost per unit is 50MCr, dev cost is 5,000. TL10.

Smallcraft Jamming(?sc): Since the introduction of small craft (fighters, pinnances, gunboats, etc) these flighty vehicles have always had a stupendous speed advantage over standard warships, but they have their drawbacks as well. One of these is their inability to easily overcome a regular vessels ECM. While fighters typically have very little space dedicated to ECM, warships are usually lavishly equipped with such hardware. As a result, warships developed the ?sc system. This jamming array is not powerful enough to affect starships, but any small craft attacking any ship mounting this system from five hexes or less suffers a -1 to hit from jamming, in addition to any modifiers from standard ECm and EM (although not with Ghostmaker ECM). This system does unfortunately allows HARM missiles to home in on the vessels mounting ?sc. It may not be negated by ECM. TL11, 2 hull spaces, 40MCr. (Andrew Crystal's tech)

Survey Instruments, Capital Second Generation(Xc2): The Xc2 system was first developed during the Long Night, when the Rishatha Imperium fell apart due to constant alien attacks. Xc2 allows a 50% increase in range over the standard Xc. The Xc2 is TL6, 4 hull spaces in size, 350MCr each, and costs 12,000 to develop.

TOLATS AND THE PSU

Humanity's introduction to the Tolats occurred in 2438 and came at a surreptitious time for the people of the Reformation Group, a cluster of pacifistic and highly religious humans worlds located in the Terran Federation's Fringe area. The initial meeting between Tolats and Humans in the Deuteronomy System remained highly secretive for two reasons: the crab-like Tolats (although being fantastically technically advanced) were a somewhat isolationist race and the Reformers (who were definitely pro-Fringe) feared what the ever domineering Corporate Worlds of the Terran Federation would do with advanced Tolat technology.

It was just six months before the outbreak of the Terran Civil War that the Tolats made contact with the Reformation Group. Their favorable response to Reformation overtures and the Tolats' fear of the vastly larger Terran-Orion Alliance cemented the relationship between the two microstates. Although the Tolats attempted to conceal their small empire from the burgeoning Terran Federation, they were forced to intervene on the Reformations' behalf when a large Terran combat force was sent to subdue their human allies at the beginning of the Terran Civil War. Apparently the personal relationship that Admiral Craig Labuda had established with the Tolat ambassador made this

DUETERONOMY SYSTEM

intervention possible, but the collapse of a galactic superpower like the Terran Federation also highly alarmed the conservative Tolats.

Although the Federation fleet was crushed by the assault of three Tolat juggernaut-sized vessels, the Reformation Group scrambled to build additional new ships and weaponry they had acquired from their technically advanced allies, who formally signed agreements with the Reformation Group when it achieved its' independence in 2444. Technology transfers between the two states continued and joint research teams were widely established between the two powers prior to the outbreak of the Second Arachnid War. Apparently several small Arachnid colony worlds escaped destruction during the Fourth Interstellar War and had grown to threatening sizes in the intervening eighty year lull.
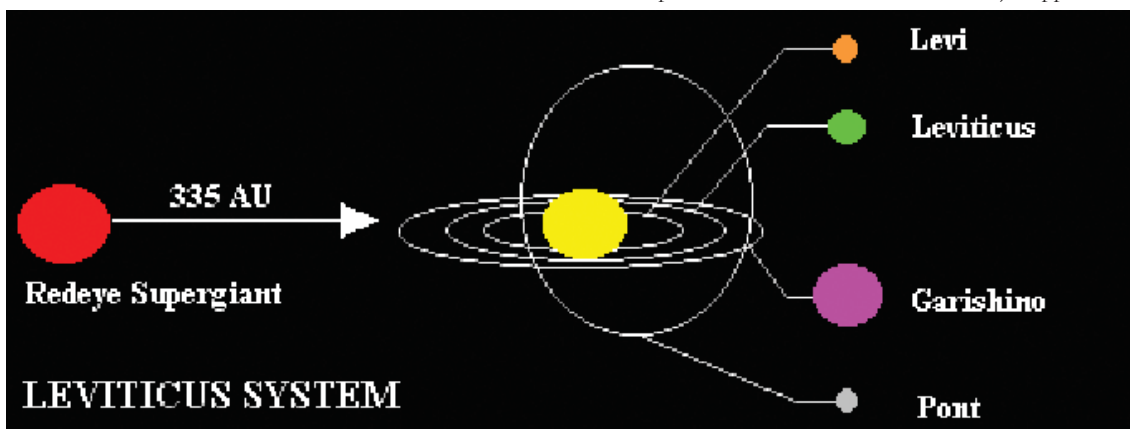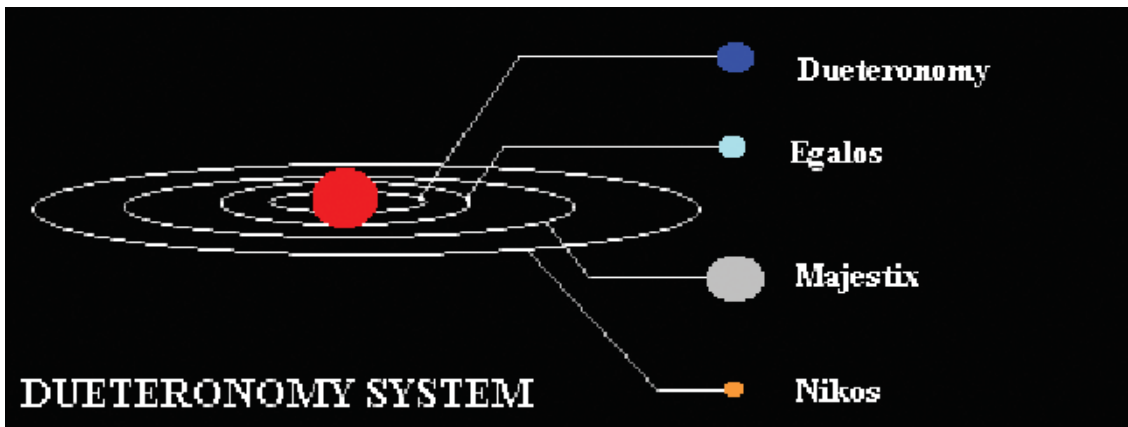
Admiral Labuda and his newly formed Reformation Fleet were sorely put to

the test during these battles but again Tolat juggernauts eventually entered the fray in 2451, forming the core of several new anti-Arachnid battlegroups, with large numbers of light Reformation warships rounding out their forces. Battles between the joint Tolat-Reformation fleets and the Arachnids bitterly raged for nearly two years until in desperation the Reformation Group called on the newly forming Pan-Sentient Union for help. This move, however, was not made lightly because it would ultimately expose the Group's relationship with the alien Tolats. Debate raged within the Reformation Council for weeks until Marine Commandant Devon Labuda, cousin to famed Admiral Craig Labuda, forced the political leaders to see the overwhelming dangers of the Arachnid threat.

Fleets of the Pan-Sentient Union (under Admiral Ellen Devore and Zoe MacFarland) did respond almost immediately to the new Arachnid threat and were highly puzzled at the Reformation Groups' astounding leap in firepower. Tolat juggernauts were kept well hidden from the PSU forces while smaller vessels joined the fray. Astonished PSU officials, both military and political, tried to make contact with the Tolats involved in the fighting but were rebuffed, and the Reformers weren't talking. In the end, after 2 years of hard fighting and the defeat of the deadly Arachnid hordes, both the Tolats and the human-controlled Reformation Group again became isolationist. The two smaller powers ultimately cut off contact with the PSU, who had threatened and cajoled the human Reformers with economic sanctions and military "responses", but finally the PSU did neither and begrudgingly accepted the status quo.

The sudden outbreak of the Armageddon War shocked the Reformation Group and their Tolat allies out of their isolation and only a hastily thrown together task force (which fought Hre'Daak vessels at the important Reformation world Leviticus) stopped

LEVITICUS SYSTEM

the entire area from being overrun with Hre'Daak warships. With Terra a radioactive ball and the Pan-Sentient Union in tatters, the Reformers and the Tolat allies went on to forge a much larger political alliance out of the ashes of the Armageddon War, ultimately encompassing over 100 worlds into the sphere of influence. The Reformation Group continues to bring stability and strength to the areas of the former Terran Federation, under the benevolent eye of their Tolat allies......

unless the race instantly declares war upon the Vang....hehehe).

ESTEEL SYSTEM

- Esteel
- Gigantes
- Miramar Base
- Fury

THE VANG

No one truly knows where the deadly alien Vang race originated from, but everyone does know how absolutely terrifying this race can be. To be accurate, the Vang are the most horrific and deadly race to ever exist, more lethal than the J'Rill, Rigellians, or even an Hre'Daak Arbitrator. What is known about them is once contacted they rapidly take over all races (kind of a super-diplomacy) unless the newly contacted race immediately declares war on them. The most fearsome battles with the Vang took place when they attempted a takeover of the ancient (and vast) Califax Pontificate. The resulting battles between the converted Califax Empire and their hated enemies, the Laowon Federation were epic, with both sides slugging it out with nuclear weapons, annihilating entire worlds and destroying large swaths of inhabited space. The only way to stop the spread of the parasitic Vang was total immolation of Vang-infested worlds. Worlds that were even suspected of infestation by the Vang were burned from orbit by Laowon warships, without the benefit of investigation. Many alien worlds, including the high-tech Penzatti homeworld, were destroyed by the genocidal Laowon race. The only aliens to avoid this fate was the truly bizarre Binarian Collective, which stumbled upon the horrors of this war during their expansion. The Collective's inability to be infected by the deadly Vang and their overwhelming technological superiority enabled them to fend off both Vang and Laowon attacks, but at high costs. The near-instant ability of the Vang in partnering with any alien race that came into contact with them and the resulting military offensive that followed, made the Vang the most prolific and destructive race ever known. Their final demise, at the hands of the vengeful Laowon race with the help of the Binars, occurred after nearly forty years of continual bombardments of Califax-occupied planets. A biological horror, the Vang have a RM of 110, RC 110, with the ability to build ships twice as fast as most other races and twice the population growth of other races. However, their research and development is half that of other races but they have a special ability to infect/convert any conquered and controlled population at 25% a turn. Additionally, the have a 7% population conversion rate on contested planets. (Remember: They instantly Partner with any NPR race they come in contact with

BERSERKER HULL CHART

These titanic warships were first used during the devastating Susuru-Ssst*phok War. That conflict used phenomenal Susuru and Ssst*phok technologies which laid waste to huge swaths of the Orion's Arm, a war that eventually obliterated both races. The use of warp point "stretchers" and "crushers" also realigned much of the areas' warp points, causing long-tern instability in the area known to the Terrans as the Jambles (or to the Vestrii the Maze).

Class Name	Code	TL	HS	Hull	TM	I	Ic	J	Jc	FT
Herald	HE	18	501-600	28	8	18/1	12/1	12/2	18/2	14
Emissary	EY	19	601-700	32	8	18/1	14/1	12/2	21/2	16
Berzerker	BZ1	20	701-800	36	8	21/1	16/.5	16/2	24/2	18
Berzerker Knight	BZ2	21	801-900	40	8	21/1	18/.5	18/2	27/1	20
Berzerker Warlord	BZ3	22	901-1000	44	9	23/1	20/.5	20/2	30/1	22
Berzerker King	BZ4	23	1001-1100	48	9	26/.5	22/.5	24/1	34/.5	24
Emperor	EM	24	1101-1200	52	9	29/.5	24/.5	28/.5	38/.5	26
Overlord	OL1	25	1201-1300	56	10	31/.5	26/.5	32/.5	42/.5	28
Overlord Nemesis	OL2	26	1301-1400	60	10	33/.5	28/.5	36/.5	46/.5	30
Starslayer	OL3	27	1401-1500	64	10	35/.5	30/.5	40/.5	50/.5	32

*ships with a speed of .5 indicated move every other tactical turn in combat, and have a strategic speed of 1. (Note: I have no idea where this chart came from. All I have is a hard-copy. I am not endorsing! I just thought they were interesting. The Editor).

BUREAUCRACY

This little idea is for those of you who hate the ton of money that 3rd Edition allows, and the resulting huge fleets that your players field. Bureaucracy is a rule I made that empires have social needs that aren't being addressed! Bureaucracy are things like Social Services, Welfare, etc. This rule cuts down on a lot of that money and is an optional rule. Death by budget......or of a thousand cuts. Thanks Ian!

Income (in MCrs)	Bureaucracy
0-10,000	0%
10,001-20,000	1%
20,001-40,000	2%
40,001-80,000	5%
80,001-160,000	10%
160,001-250,000	25%
250,001-500,000	50%
500,001+	75%

*Note: The percentage listed is deducted from an empire's monthly income before anything is spent. (My idea, Ian Clarke's chart).

ORGANIC SHIPS

This technology was created by Troy Cash. Great job Troy! I wanted to share it with the rest of you guys! Damon

LIVING SHIPS

Originally breed in the distant past, living ships are actual full-fledged creatures. They typically spend their time near the Pelulio they were born at. These creatures were obviously created in the past but have now escaped, been released by or outlived their creators. Note that bio-ships do not grow nor are they born as terrestrial creatures do. They are bred in specialized bio-manufacturing facilities and emerge full sized and complete. The process is organic nano-construction, the bio-ship is either being gestated or has been born.

GENERIC CATEGORIES

Herd Ships: These ships were seemingly breed to be freighters. Most of their volume is empty space that can be accessed through special sphincters that act like hatches. Typically this breed is dumb and not as robust as some of the other breeds. They are usually smaller than 1500 kTonne (30 spaces). Typically fairly slow, 2 STMP, and have a low capability for fasting (2 turns).

Loners: These ships were seemingly breed to be freighters. Most of their volume is empty space that can be accessed through special sphincters that act like hatches. Typically this breed is dumb and not as robust as some of the other breeds. They are typically larger from 3000 kTonne to 6000 kTonne (60-120 spaces) and faster than herd ships, 4 STMP, and have a medium capability for fasting (4-5 turns). There are also loners than seem to be designed to carry terrestrial beings (high Q capacity).

Hunters: Small fast ships which often go rogue and become wild and cannibalistic. Approximately 1000 kTonne (20 spcs) or less but with Military class drives these ships often prey on other living ships instead of starkrill and budgys (see Pelulio notes). Not as tough as Guardian class or Mother class ships they tend to hunt in packs. They are typically fast (max I), with short-range weapons.

Guardians: Larger class ships from 3000 kTonne to 6000+ kTonne (60-120+ spaces) with Military drive systems and Military weapons. There are numerous sub-breeds with different weapons mixes. They are omnivorous and definitely designed for missions away from the Pelulio, their fasting rate is nine and they can fatten up well. 75%+ also contain regeneration systems.

Mothers: Larger fast ships (carriers), these ships have been seen up to 20000 kTonne (400 spec) and never seen smaller than 4000 kTonne (80 spec). These ships have the capability to hold Internal parasite craft of many breeds. And a number have been seen to actually have the capability to birth the parasite craft. They are omnivorous and definitely designed for missions away from the Pelulio, their fasting rate is twelve and they can fatten up well. 90%+ contain regeneration systems.

Pelulio (Living Worlds): These are advanced breeders of the various ship types and have shown some capability to create new types based on circumstances. They are only found on VR inner moons of Gas Giants (A barely habitable type T world). They possess the equivalent capability of a 1000 PU population that can only be used to breed living ships via ground construction. They generate the equivalent income of 500 PU per turn for this purpose. The Pelulio ground construction is actually specialty SYb that are not orbiting, instead they appear as vast wombs scattered across the planet. Each Pelulio has 6 - 14 of these (SYxb) wombs. The ships built must have AC like normal ground construction but do not cost extra or have modified construction times.

Pelulio income is nearly unusable by races that have not developed biotech or have high HT levels. Pelulio output is converted to non-

bio resources or vice-versa at a ratio of 10 to 1. Empires with a tech level over 10 reduce this ratio by one each HT above 10 until it reaches the normal one to one ratio.

Each observed world is unique but all have an equivalent tech level of at least 8 with most in the range of 14-16. However, NO observed biotech can be used for non-biological development unless the observing empire is equivalent in tech level to the observed tech and has completed the biotech project for themselves.

Living worlds can be seeded by other worlds. Requirements are a large moon of semi-terrestrial world in orbit of a gas giant or brown dwarf. This world must be rich or very rich in nature. Though not suitable for terrestrial habitation these worlds have atmospheres and liquid water. Standard terrestrial races consider these worlds harsh, with a maximum population of 1500, 500 for ST, 250 for water-world races.

A Pelulio egg is a 40-hull space item that must be carried as a single item in a specially constructed ship via holds or transit racks. Once landed on a suitable world it will hatch into a 2 PTU equivalent colony organism that rapidly expands across the planet. For tracking purposes use per turn growth at double rate until a PU equivalent of 1000 is reached, an adolescent world.

The adolescent world will then devote its energies to establishing a near space ecology suitable for it's offspring. It's possible a terrestrial race could convince it to divert some of its energies to early production of offspring but that would be rare. This process takes from 21-30 turns. Observers will see what seems to be continual launches of missile-like organisms called starkrill and small craft (including ast, fighters and gunboats) called budgys into local space.

These life forms are self-replicating full fledged creatures but do not have a good enough breeding rate to sustain themselves if the Pelulio is killed. They will die out within 20-200 turns. They live in the gas giant orbital shell, on moons and asteroids around the gas giant and in the upper and mid reaches of the gas giant itself. They search for and dig out carbon, water-ice radioactive and other rare minerals, concentrating these for the higher level of the food chain; the more complex bio-ships.

The other inhabitants of the gas giants moons can actually harvest these life forms. For game purposes the moons of the Gas Giant all gain a bump of one level of richness and 6-10 asteroid colonies can also be placed around the gas giant based on the harvesting of the starkrill and budgys. Very Rich become Ultra Rich +175% colony sites.

The Pelulio will sense the additional harvesting of them and produce them at an accelerated rate. After the initial stocking period the Pelulio will still produce both on a regular basis to maintain the levels. This is the reason it only has 500 PU equivalent for building Living Ships. It typically only needs 200-300 of it's excess capacity to keep the local system established. The other 200 will be stored as "fat" for use if it feels as desperate need to produce extra ecological forms of starships or a baby Pelulio. Typically a Pelulio will have some 20,000+ in "fat" stored.

After establishing the local ecology the Pelulio starts producing the larger starship class hulls. The breeding is seemingly random unless some alien race convinces it to breed specific types. Most Pelulios seem to have only three or four variations of each Living Ship category. Bio-races of appropriate tech level can give a Pelulio instructions on how to breed new types.

Contact with a Pelulio is achieved via standard rules with a -

15% modifier to the initial attempts, the Pelulio are more than moderately strange to terrestrial races. Contact with the Living Ships is impossible until contact has been made with the Pelulio itself. They then take on the Pelulio's attitude towards the race.

Living ships WILL NEVER allow unknown alien starships to approach the Pelulio under their own power or with weapons. All Living Warships will attack, all Living Herd ships and Loners will attempt to ram. Even nearby Rogue ships will attack, they depend on the Pelulio's eco-system as much as any other.

TECH

All tech can be researched and developed but is developed as biological tech and is thus not capable of replication unless empire is a biotech race or has developed biotech. Development of tech items must be designated as biotech or regular tech. Future development cost of the other is halved.

SPECIAL TECH

All biotech must be contained in a bio-hull, unless otherwise noted all biotech has exactly the same cost (per item and development) and has exactly the same size as regular tech.

BIOTECH

A Race can start with Biotech or regular tech. Biotech functions identical to the other unless noted. To develop the other tech type is a 15,000-mcr project done as if it was a new tech level. Tech level starts as ½ the level of the races current tech. Each additional tech level up to the races base level is an additional tech level project that is twice as fast as normal and ½ the cost.

BIO-HULLS

Production cost is double (maintenance is normal), build rate is 2/3rd the normal rate. This is true for Pelulio and race built (SYxb) maintenance.

Living ships all contain processing systems allowing them to forage for food under certain circumstances. The amount not found via foraging represents less common minerals or minerals too hard to process by the living hull.

The maintained cost is reduced by 40% if within system containing an asteroid belt, a nebula or if orbiting a gas giant. The craft must expend 1 STMP for foraging. Each additional STMP generates an additional reduction of 5% maintenance. Thus the maximum is a 55% reduction in maintenance.

The maintained cost is reduced by 80% if within a system containing a Pelulio. The craft must expend 1 STMP for foraging in the eco-area of the Pelulio. Each additional STMP generates an additional reduction of 5%. Thus the maximum is a 95% reduction in maintenance. In the wild the remaining 5% (special enzymes and concentrated materials) must be made up by feeding directly at the Pelulio or by cannibalizing other living ships.

Most wild living ships will load up with 10-20 turns of the missing enzymes. A cannibalized ship has a value equal to 10% of its cost in these special materials. In addition it has another 40% of cost in regular maintenance materials.

FASTING

Bio-ships can fast (be without maintenance) for a longer period than traditional star craft. A ship that has fasted needs double maintenance until caught up. Ships past their fasting level start dying at TWICE the rate of normal ship failure.

FATTENING

Living Ships can overfeed on purpose to store maintenance for

future use. This maintenance does not use up internal storage. Living ships using Fat for maintenance count as if they are still in maintenance for any purposes. Fat is stored up to 50 csp per Hull Space of the ship at the rate of 10 csp per hull space per turn.

HIBERNATION

A living hull can drop into hibernation in which case it's maintenance needs drop to 2% which must be supplied via fat or delivered by others to the ships mouth.

Ships will always come out of hibernation if their fat is exhausted and then must receive normal de-mothballing costs within two turns or they will be considered automatically out of maintenance, fasting does not apply, the ships resources are stretched too thin already. If they are awakened before exhausting their fat then they still need to pay the de-mothballing within two turns and fat can only be used for 50% of it.

REPAIR

Only the Pelulio, or bio (SYxb), (MSxb) or regeneration system (MSr) can repair a Living ship. Living ships were designed and breed to be tough and to heal much easier and faster than terrestrial creatures. Regeneration has to be triggered by outside forces without a regeneration system but it can be done.

Tech level, costs and other characteristics of hulls are the same.

REFITTING

It is not easy to refit Bio-hulls with newer technology, except for expendable munitions received from external sources. Newer generations of the same technology can be refitted at double cost.

A Pelulio can attempt to completely refit a bio-ship; the process is twice the cost of refitting non-bio-ships. The ship must be nano-disassembled and reassembled to allow the control interfaces to be grown.

SENSORS AND COMMUNICATION

Bio-ships have +33% to the range and sensitivity of Xr or communications device in them including the standard ship items. Bio-ship X or Xr produce +50% points when surveying.

NEW TYPES

If an allied bio-tech capable race wishes it can give a Pelulio the plans for new ship types the Pelulio did not previously have. This can be done by allowing the 'dissection" of an existing bio-ship or by providing appropriate pre-built nanite constructors. The cost for the nanite constructors is equal to 40% of the cost of the standard craft.

In either case it takes the Pelulio 3 turns to program it's total nanite complement to build new craft.

SMALL CRAFT

Living fighter, gunboats and other small craft have external ordinance mounts, as do standard small craft. However, the internal hardware of one of these cannot be modified after birth.

Living small craft of this type do not need a typical pilot and the fighters and gunboats typically have no capability to contain one.

Fighters and gunboats receive a +2 bonus given that space, and thus 3d maneuvering, is their normal habitat. Other small craft including ast do not receive this and need pilots from standard terrestrial species for any complex task as they are typically as dumb as dirt.

   Small craft can be housed in traditional Boat Bays, Hanger Bays or use traditional XOg but must still receive bio-maintenance.

BIO-TECH SYSTEMS

Unless specified all Bio-tech systems have the same cost and space as traditional systems. All systems listed below can only be used on bio-tech ships.

Pelulio(PCU): The ultimate biotech project the result is the capability to create Pelulio seeds. Tech Level - 14, 40 hull spc, cost 20,000 + 2000 per HT level over 8, development cost 100,000 + 10,000 per high tech level over 8.

Shipyard - Bio(SYxb): SYxb can only breed bio-ships or heal bio-ships. Any construction project halted in mid production is LOST, as the incomplete ship will die.

Shipyard - Medium - Bio(SYMxb): SYxb can only breed bio-ships or heal bio-ships. Any construction project halted in mid production is LOST, as the incomplete ship will die.

Machine Shop Module - Bio(MSxb): Can only repair damage to bio-ships.

Regeneration System - Unique Bio-ship System(MSr): Can be used to heal the bio-ship it is on exactly as would a Machine Shop as long as the Bio-ship is in maintenance. Acts at half rate if the bio-ship must move during turn. Cost 50, space 5.

Brain System - Unique Bio-ship System(Qb): Cost 10, 1 space, develop cost: none, comes with first

Bio-Hull development. Each bio-hull needs one. Additional brains beyond the first give the following benefits

Each system above one acts as replacement for 1.5 Q requirements of the hull size. Ships with less Qb than hull requirements MUST have supporting Q or Qs to replace them, as would a normal ship. This is often the case in bio-ships allied with or built by terrestrial species.

Qb in excess of the basic and hull requirements (or in excess of 80% of those if combined with traditional Q or Qs) raise the level of the ship, bio-ships start at average, +2 Qb raise's the ships level to Crack, +6 Qb raise it to Elite.

For an additional +2 Qb the bio-ship can function as an average Admiral, +4 Qb allows it to function as a crack Admiral and +6 Qb allows it to function as an elite Admiral.

A newly born bio-ship needs 1 additional month of shakedown time per level of "crew" or Admiral it receives.

Bio-ships which engage in combat or drilled can increase or lose levels as normal.

Cargo Hold Living - Unique Bio-ship System (Hb): Cost 5, space 1, develop cost: none, comes with first

Bio-Hull development

The Living Ship cargo hold used for maintenance of a Bio-hull. It can hold only 200 csp due to food processing organs that are part of it. A ship without this cannot Forage.

Tractors(T): All living ships will have at least one tractor to help it collect food.

Wombs: All wombs can only produce specific items that are designated when the womb is created. Small craft, fighter and gunboat wombs can feed and care for other generations or types of craft not specified. Wombs must be in maintenance to work. If the ship is fasting all costs are subtracted from the fat supply.

Womb - Ordinance - Unique Bio-ship System(Mgw): Can be used to build 30 csp of missiles per turn. The womb can only produce 1 type of missile per turn. It takes a STMP of non-use to reorient the nano-processors to the bio-pattern of a new type. It has the internal storage capacity of a standard magazine. Bio-missiles

can be used by non-bio ships but must be supplied with bio-maintenance. Cost 50, 2 spaces.

Womb - Small Craft - Unique Bio-ship System(Bbw): Can be used to grow new small craft for a bio-ship.

One boat bay point of small craft can be grown per turn. This system can contain 4 boat bay points of

small craft. Cost 150, 3 spaces.

Womb - Fighter - Unique Bio-ship System(Vwf): Can be used to grow new symbiote fighters for a bio-ship. It also acts like a V if it is not being used to grow a new fighter. It takes 1 turn to grow a new fighter. Cost 100, 2 spaces.

Womb - Gunboat - Unique Bio-ship System(Vwg): Can be used to grow new symbiote gunboats for a bio-ship. It takes 2 turns to grow a new gunboat. A gunboat can be carried in this system and it will function as a gunboat bay if not being used to grow a new gunboat. Cost 150   , 3 spaces.

(Editors Note: Thank you Troy for the best bio-organic technology I have ever seen!)

PLANETARY DEFENSE CANNON

Planetary Defense Cannons are a new, unique tech system. All cannons are mounted in non-mobile rotating housings which can be built into a PDC or can be constructed as a stand-alone system. These massive objects are easily seen from space (within 3 tH of the planet) and each must be controlled by a nearby (CIC); one per cannon. Although there is no official maximum number of cannons that can be built on a planet or moon, the energy requirements for these gigantic weapons is so immense that for every 200PU once cannon can be operated.

Weapon	HS	Code	Cost	TL	Dev Cost
Antimatter Beam, Ground Based	25	Cbg	300	12	30,000
Antimatter Beam, Heavy	25	Cbh	600	17	60,000
Hellborne Cannon	15	He	200	10	25,000
Meson Gun	15	Me	550	15	50,000
Particle Beam Cannon	15	Pa	350	14	30,000
Particle Beam, Heavy	25	Pa2	450	16	50,000
Quark Cannon	15	Qu	650	18	40,000

Weapon	0	1	2	3	4	5	6	7	8	9
Cbg	75	50	25	5	0					
Cbh	150	100	50	25	0					
He	75	25	0							
Me	8	6	4	2	0					
Pa	45	35	25	15	5	0				
Pa2	75	55	35	25	15	5	0			
Qu	6	6	5	5	4	4	3	2	1	1

(1)Fires a heavily reinforced atmospherically dynamic magnetic bottle into low orbit.

(2)Fires rapidly decaying mesons into low orbit, passes through shields and armor.

(3)Fires highly energetic quarks into orbit, passes through shields and armor. Fires every round.

Editor's Note: These weapons are used in addition to standard PDCs and weaponry and their stand-alone nature allows them to be produced rapidly and used immediately.

The debate over the role of large, space-going fighter-equipped carriers should be familiar even to the most casual observer of defense matters. Its advocates claim they are the priceless tool of power projection, offering matchless flexibility which cannot be achieved by any other means. Its critics argue that they are a pricey anachronism, a relic of outdated Interstellar War thinking which offer little, if any, substantive advantage over lower-cost alternatives. These issues have time and time again been raised in the Terran Federation, particularly in times of shrinking defense outlays.
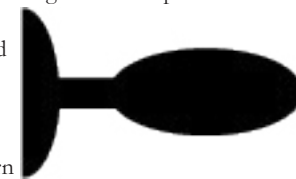
What is not as clear to the casual observer is to what extent that very same debate is taking place within the Orion, Gorm, Ophiuchi, and Crucian navies. While the Khanate of Orion has always had a substantial battleline of cruisers, battleships, and heavy dreadnoughts to force open defended warp points during combat, the Khanate Navy (KON) has always had some organic fighter bays built into many of its capital ships, and the KON continues to be a carrier-dominated navy due to the fact that Orions tremendously enjoy one-on-one combat (overcoming a foe in single combat is the highest form of praise in the honor-bound Khanate society). The Gorm, although tightly allied to the Orions, have never favored carriers in any way, primarily because their large bodies do not fit well in cramped fighter cockpits, although they have taken to the heavily modified Gunboats with a passion. The Ophiuchi, for their part, have allowed the carrier to have complete supremacy within their navy (the OADC) since they are a bird-like race and one of the galaxies' best fighter pilots as a result of their avian heritage. Luckily, the OADC is strongly allied with the Terran Federation and both powers have built their navies to compliment one another: the TFN builds very large warships like monitors and superdreadnoughts and have some carriers while the OADC no longer has warships larger than battlecruisers in its inventory (as of 2401). The battlecruisers and destroyers are escorts for the large carrier fleets that the Ophiuchi have built up over time, not for warp point assaults unlike the large TFN units. The Star Union of Crucius, one of the most important powers during the dreadful Fourth Interstellar War, had no fighters or carriers during its' initial operations against the Bugs. When carriers were finally built, the Star Union Navy (USN) also had to endure some high-level sniping within their government over the use of carriers: most military officers wanted the carriers within the battleline (screening it and projecting long-range fighter strikes against its enemies), however the politicians wanted them to be used for planetary defense but the military won out in the end. Unfortunately, the Star Union Navy was initially forced to accept a series of design compromises consistently falling short of its naval goals in constructing their first carriers (the Fuuryss-class CVA). The Fuuryss carrier program got off to a late start; this slow beginning, like so many important things in history, may be attributed to a unique mixture of political and technological circumstances within the Star Union hierarchy. When Admiral Sommers (TFN) forces met up with the Star Union in early 2364, she introduced the Star Union to the Terran Federations' most advanced technologies, including the long-range strikefighter. The Union Star Navy had never seen small craft like fighters before and began crash developing several carrier designs over the next few months, while the Imperial Zarkolyan Navy (the Star Union's military allies) stayed with traditional fleet units like cruisers, battleships, and destroyers. The Crucian race took to fighters like a second skin, out flying any known race with the tiny craft. The role of carriers and their escorting fighter craft won overwhelming approval during ISW4 and their effect against antimatter-laden Arachnid gunboats intent on ramming PSU capital ships was indisputable.

The outbreak of the Armageddon War, however, would change the very nature of fighter combat and the role of the carrier as well. When fighting initially occurred in the Beijing Chain, the Terran Federation had over 8,000 fighters on hand for combat, and only 302 survived the initial 30 minutes of combat with the Hre'Daak forces. These catastrophic losses amongst its best fighter pilots forced the Pan-Sentient Union (the unified Terran and Orion states) to look to robotic fighters as a prompt replacement until new fighter pilots could be trained up or transferred from other locations deep within PSU space. In the end, fighters and carriers did play a significant role in the fighting but their efforts failed ultimately and the Hre'Daak located the human homeworld and obliterated it from space. With the fall of the Pan-Sentient Union, additional carrier classes have been built to replace the heavy losses and several smaller Terran states have fielded unique classes as well: the Microcarrier (the Reformation Group) and the Premier Carrier (New Human League). This paper is a record of the history of carriers, primarily within the Terran Federation leading up to the Armageddon War

Pegasas-class CVL

With Admiral Erik Addelman's ouster and the military buildup that came with Admiral Rickover Wellington's assumption of power, the first Terran carriers were laid down at Galloway's World (Orbital Shipyard No. 334). The lead vessel was launched in 2245 and named Norn; she entered commission two months later. Norn was followed by Oroborous, which was commissioned in early 2246; there were fourteen further vessels built during the war and nine after it ended. The Pegasa

Names: *Pegasus* and 24 additional units

Displacement: 60,000 tons

Overall length: 600 feet

Speed: 67 mikes

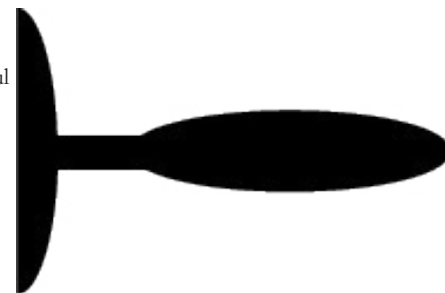Crew compliment: 1,200

First Built: 2245 AD

The Pegasus-class were very light carriers and they were crash built as an emergency measure to counter the Rigellian advances into the Federation. Their space wing was comprised entirely of early generation strikefighters and they were designed primarily as anti-shipping vessels. Their defenses and sensor suite were optimized against the overwhelming Rigellian threat. Shipboard armament was not included for self defense but anti-fighter point defense were added at the last moment. The Pegasus' served well during the war and additional units were purchased even after the fighting wound down.

Ypres

With the successful deployment of CVLs within the Terran Navy for the first time and their bold use by Admiral Minerva Waldeck (the Mother of Terran Carrier Ops), additional Terran "carriers" were laid down at Alpha Centauri in late 2245 as a fighter-replacement vessel whose initial role later turned

Names: *Ypres* and 14 additional units

Displacement: 180,000 tons

Overall length: 1,300 feet

Speed: 10 mikes

Crew compliment: 1,850

First Built: 2245 AD

into a platform for massive planetary bombardment by the wars' end. The lead vessel was launched in 2245 and named Ypres; she entered commission two months later. Ypres was followed by Aisne, which was commissioned in early 2246; there were thirteen further vessels built.

The Ypres-class were not true carriers; they were an naval design built on dreadnought hulls to bring additional fighter craft to the front lines, albeit at very slow speeds. The Ypres herself was an impressive vessel and a masterpiece of Terran engineering; nearly three times the size of her predecessors. The ships' weapons, ECM, and sensor suite were optimized against the overwhelming Rigellian threat. Shipboard armament was not included for self defense but anti-fighter point defense were added at the last moment. The Ypres served well during the war but they were immediately scrapped at the end of the conflict due to their hideous maintenance costs.

Note: the Independence-class CVs(12 total) were also built during this war.

Wolfhound

While the Ypres were revolutionary in the sense that they were the first extremely large space-going vessels dedicated to carrying a fighter wing, it was clear that they were insufficient to fulfill the full role of carriers in fleet operations. The key problems were their very low speeds and high maintenance costs, which were a substantial drag on the defense budget. After the Third Interstellar War ended the Independence-class CVs were quickly discarded by the battleship admirals but by 2275 a new crop of naval officers were running the TFN and they were open to new ideas. The Terrans took the next step, creating a Naval Development Board to assemble a new class of fleet carriers to carry the TFNs latest generation of strike fighters.

Names: *Wolfhound* and 40 additional units
Displacement: 100,000 tons
Overall length: 850 feet
Speed: 57 mikes
Crew compliment: 2,000
First Built: 2277 AD

This resulted in the most ambitious design specification for any TFN carrier to date. Named Project Wolfhound, this huge ship displaced 100,000 tons and carried thirty standard strikefighters. These fighters would serve as typical smallcraft escorts: capable of fulfilling the attack, escort, and spacebourne early warning roles. There were differences between the Wolfhound vessel and other previous carriers: they mounted no offensive weaponry. The Wolfhounds were the first carriers to make full-scale production, with forty-one units ordered. They primarily fought in the Theban Campaign and a half dozen were lost in the first shots of that war, prompting a Naval Review over the design (faulty placement in the battleline was eventually ruled as the cause of their initial high losses). During the Review elements within the Defense Ministry itself intervened on the Wolfhounds' behalf, citing the carrier's superior design and cost-effectiveness. When the war finally wound down, the Wolfhounds had been joined by the uprated Essex CV and the diminutive Sandfly CVEs (most of which were built in the Danzig System under Commodore Hannah Avram).

Independence CVLs

While the struggle over the future of Terran carrier design was taking place in the Admiralty, an interim carrier design aimed at providing Fringe coverage was undergoing development at planet Skidblader under the direction of Commodore Robert Rooks. This smaller vessel was 60,000 tons and carried 18 fighters; a somewhat light space wing to be sure but the their numbers were sufficient to provide round-the-clock coverage of light task forces that were based in the Fringe areas of the Federation. This class carried significant anti-fighter point defense and a single gun/missile launcher with 200 rounds, consisting mainly of costly anti-fighter munitions.

Names: *Independence* and 49 additional units
Displacement: 60,000 tons
Overall length: 600 feet
Speed: 67 mikes
Crew compliment: 1,200
First Built: 2289 AD

The first unit, Independence, was launched from Skidblader Shipyard in late 2290, commissioned a month later and quickly reassigned to Task Force Victory. The second and third units were also assigned to Victory as well. The last unit, Formosa, was launched in 2303; she was used as a development platform for a variety of command-and-control technologies. Central to the Formosa's new CIC suite was the "Space Watch" 3D planar array sensor system, which would eventually was to go into the Scylla-class. Unfortunately, Space Watch was unable to overcome its considerable technical problems and never achieved its' full potential (which included a highly integrated battle management system). Later in her career, the Formosa served as the test platform for the next generation Strikehawk fighter. Historical Note: Surviving Pegasus-class were upgraded to Independence-class during this conflict.

Borsoi

After the highly successful run of the Wolfhound-class CVs, the Terran Navy began looking for a replacement in 2345 when it was shown that the surviving Wolfhounds were getting long in the tooth. The Defense Naval Board (under Admiral Jaroslaw Anders) began working on a new fleet carrier design which would evolve into the very effective and massively produced Borsoi-class. The Borsois were mainly an updated version of the Wolfhound-class and incorporated everything learned from carrier operations up to that point. The first vessel, the Borsoi, was fielded in mid-2346 from the Midgard Naval Station and entered service with the Fourth Fleet patrolling the Ivy Chain of Terran space, completing her shakedown a month later. The original Borsoi was one of the last surviving Wolfhounds and she was considered a lucky ship, so the new class of fleet carriers was named in her honor. No other class of carrier was mass produced as the Borsois were (over 80 built) and they fought effectively in the gruesome Fourth Interstellar War alongside the more capable Scylla-class assault carriers. The Kodiaks' were

Names: *Borsoi* and 81 additional units
Displacement: 100,000 tons
Overall length: 850 feet
Speed: 57 mikes
Crew compliment: 2,000
First Built: 2346 AD

the Borsois command-carrier counterparts and performed with excellence during the war but most were scrapped after the fighting ended.

Shokaku

The Shokaku-class light carriers were designed and thrown into service more quickly than any Terran carrier ever built; design time was literally just two months and construction completed at Hecate Naval Base within two additional months. The major fighting that had broken out between the Grand Alliance and the Arachnid Omniovoracity had also pushed forward funding and design needs. The Shokaku-class was basically an updated version of the Independence CVL and performed admirably during the Fourth Interstellar War. These light units were quickly shifted to escort and Fringe patrol duty immediately after the war ended, sparing them from mothballs or the breakers like so many other surviving carriers of the war. A total of sixty-three units were built and twenty-seven were lost in combat, a high attrition rate for any class of vessel.

Names: *Shokaku* and 62 additional units
Displacement: 60,000 tons
Overall length: 600 feet
Speed: 67 mikes
Crew compliment: 1,200
First Built: 2363 AD

Scylla-class

Touted as "the best carrier design Terrans' ever built" by veteran Admiral Vanessa Murakuma, the Scylla-class assault carrier was constructed at the outbreak of the most brutal conflict the known galaxy has ever seen: the Fourth Interstellar War. Begun as a pet project by the Admiralty Board on Terra (with Rear-Admiral Ian Waldeck as its' senior chairman), the Scylla-class CVA was a completely new design, one of the largest carriers Terrans had built to date, and with that new design came new ideas. The first important idea for the Scyllas' was the idea of their usage: the TFN had a specialized need to send heavily protected carriers through a well-defended enemy warp point (they had learned of this need from the annual Brandenburg War Games). Although the Scyllas' were much larger than a Borsoi-class CV they carried approximately the same strike group as a Borsoi, the rest of the extra tonnage was put in as defenses: armor, new heavy shields, and even an advanced gun/missile launcher for self defense. The first ship in her class (the TFNS Scylla) was laid down in 2359 in orbit of Kawasaki Heavy Industries and five other units were completed two months after the Scylla completed her successful test trials. The class saw first use during the Centauris Raid (First Battle of Centuaris) under Vice Admiral Jessica van der Gelder and the 19th Carrier Assault Group and although the new assault carriers used specialized tactics to increase their survivability on the warp point (the so-called "launch-and-leave" tactic), over sixteen vessels were ultimately destroyed and 14,445 of their crew perished while battling the "Bugs". The Scyllas' went on after the war, making their mark during the outbreak of fighting within the Terran Federation which eventually became known as "the Insurrection" and later the final Armageddon War, which cost humanity so much.

Names: *Scylla* and 35 additional units
Displacement: 180,000 tons
Overall length: 1,300 feet
Speed: 57 mikes
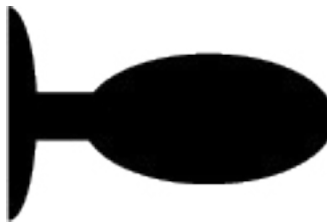Crew compliment: 3,000
First Built: 2359 AD

Historical Note: The Thor-class CVAs were also built in large numbers as they were the command carriers for this class.

Minerva Waldeck

One of the largest carrier-hybrids ever built, the Minerva Waldeck-class (named after the famed ISW3 Admiral) were titanically huge, massing over 285,000 tons and almost triple the size of standard TFN carriers. This monitor-sized vessel was a direct result of watching the effectiveness of Orion MT/Vs in combat, and after three years of fighting the "Bugs" the Orion's had learned a lot. Since this vessel took an inordinate amount of time to build, the Terran Federation Navy was only able to construct twelve of these stupendous vessels before the war ended and put them immediately into mothballs (at the Boneyard in the Deuteronomy System) the moment the fighting wound down. These ships are regarded as specialized assault units, with heavy armor, shields, and point defense that allowed them to survive the holocaust of point blank warp point fighting. Only three of these vessels were ever lost in combat: the Gregor Pappas (Second Battle of Pesthouse), the Janet Dupre and the Samuel Ascot (both at Home Hive IV), a grand testimony to their builders as they were used heavily in WP assaults. The first unit (Minerva Waldeck) was begun three years into the war at the renowned Torricelli Naval R&D Center in the Deuteronomy System and the construction of these monsters put a severe crimp in normal battle-line MT production, but they proved their worth in the end by pulverizing every Bug fleet that came near. The Minerva Waldeck-class was never refitted and all surviving vessels were eventually sent to the breakers in 2430.
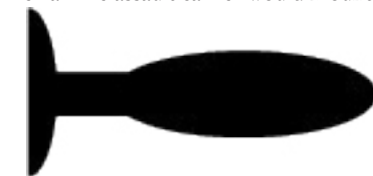
Names: *Minerva Waldeck* and 11 additional units
Displacement: 285,000 tons
Overall length: 2,000 feet
Speed: 30 mikes
Crew compliment: 5,000
First Built: 2363 AD

A radical new design for carrier construction was proposed by Fleet Admiral Edward Solomon in 2436, the Volga-class assault carrier. While Scylla and Thor-class CVAs performed admirably during the Fourth Interstellar War it was thought among several prominent Terran Admirals that their fighter wings were much too small for a ship of their size, so Admiral Solomon promoted the experimental Volga-class CVA at the Twelfth Naval Conference on Terra. The assault carrier would mount new rapid-reload fighter launchers and a brand new Flight Deck (FD); it was hoped that the Flight Deck system would double the total numbers of fighters carried by carriers. Another major design feature of the Volga-class was increased automation to lower personnel needs, since the TFN was severely strapped for pilots and experienced 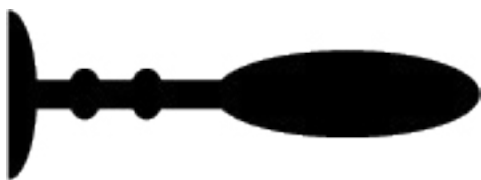NCOs during the inter-war period. Primary research and development took place at Skidblader Shipyards and for four months Admiral Solomon oversaw the beginning phase of Project Volga, until he was killed in a freak accident on Skidblader later

Names: *Volga*
Displacement: 180,000 tons
Overall length: 1,300 feet
Speed: 57 mikes
Crew compliment: 1,250
First Built: --

that year. The project went on and while the Navy wanted the new Flight Deck instead of standard fighter hangar bays (V) the Flight Deck (FD) concept failed feasibility tests and the TFN ultimately scraped the design just six weeks before the Insurrection broke out. Although the Volga-class design ultimately failed to meet expectations, several important technological features meant for the Volga were incorporated into the new Unicorn-class CVA, which saw heavy action in the Terran Civil War.

Historical Note: The Sparrow-class CVE was built during the Terran Civil War (the Insurrection) and the Unicorn-class CVA as well.

Direwolf

The Direwolf-class was the Pan-Sentient Unions' latest fleet carrier design and the class was a powerful breakthrough in technologies and tactics that led t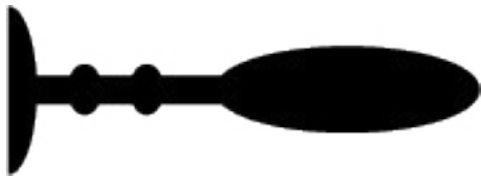he Pan-Sentient Union to deploy large numbers of these warships prior to the outbreak of the Armageddon War. The innovative strikefighter accelerator (Va) system that was incorporated into the Direwolf-class enabled fighters a breathtaking take off speed that could literally outpace any ship in existence, regardless of the fighters' payload. Additional features, including super dense armor alloys and a cutting-edge cloaking field, allowed Direwolfs to operate independently from the primary battleline. Although the strikefighter accelerator increased fighter speed on take off, their was a serious drawback: the new fighter bays took up 50% more space than the original V systems. However, under the supervision of Admiral Adam Troxel and Skymarshal Ellen Devore the class saw production, just in time for the brutal Battle of Red Rocks and the complete decimation of 30% of the PSUs standing fleet. Only twelve Direwolf-class fleet carriers escaped destruction that day, sheltering Admiral Noah Houses' retreat back to the planet Esteel. Direwolf-class CVs saw continual use throughout the conflict and most of the class was upgraded to the Hellhound-class once the fighting wound down.

Names: *Direwolf* and 53 additional units

Displacement: 100,000 tons

Overall length: 850 feet

Speed: 57 mikes

Crew compliment: 2,000

First Built: 2460 AD

Hellhound

Just before the outbreak of the Armageddon War the Terran Admiralty in conjunction with their Orion counterparts began work on a different type of fleet carrier: the highly advanced Hellhound-class. Three Direwolf-class battle carriers were modified to the Hellhound-class which began performing as test bed platforms for new CVH technologies in late 2363 at the Harn Shipyards (Akwaterra). The brainchild of Commodore Ian

Names: *Hellhound* and 22 additional units

Displacement: 100,000 tons

Overall length: 850 feet

Speed: 57 mikes

Crew compliment: 2,000

First Built: 2463 AD

King, the Hellhounds had fitted out late that year but they were desperately needed in the defense of the Beijing Chain and were lost in combat there on January 15th, 2464. The Hellhound-class has the new Fighter Mechanical Link (Vm) system installed on board, which virtually doubles the warships fighter component. Additional Hellhound-class vessels were procured throughout the war and by its' end over twenty had been built. All other Terran CVs were upgraded to the Hellhound-class at the end of the war, except for a dozen Direwolfs which were turned over to the Reformation Group and the Terran Republic.

Adamant

The new Adamant-class light carriers were crash designed for the Armageddon War and they performed admirably during that conflict. The Adamant CVLs have continued in inventory in several Terran navies after the war ended. They have Flight Deck (FD) system installed, making it a unique design from its' predecessors and literally doubling its' fighter component. The Flight Deck system was so versatile in fact that the large hangar bay could handle other small craft as well, including (if large enough) the Terran Hellraiser and Hardtack-class gunboats. A total of sixty-two of these CVLs were built, primarily at Galloway's World, Majipoor, and Militar.

Names: *Adamant* and 61 additional units

Displacement: 60,000 tons

Overall length: 600 feet

Speed: 67 mikes

Crew compliment: 1,200

First Built: 2464 AD

The Future of Terran Carrier Construction

The future of Terran carrier construction (and their allies as well) is undergoing serious instability following the catastrophic failure of naval forces in stopping the Hre'Daak from reaching Terra and New Valkha during the Armageddon War. The break-up of the Pan-Sentient Union into its' constituent states has brought about a devolution of carrier designs, with most lightly populated states focusing on small carrier (CVV) and microcarrier (CVX) designs. The larger states like the New Human League (centered on Galloway's World) and Frontier Alliance Worlds (centered on the new capital at Myerdahl) continue to build massive carrier warships, including the new Rossiya-, Yeager-, and Airbourne-class CVHs. Now that the Terran Federation has broken into five separate competing micro-states and the Khanate of Orion into the newly formed balkanized Orion Cantons, centralized naval planning has failed as an option and only the future knows the direction of ongoing carrier construction. Whatever the choices of the new empires of Known Space, carrier production will certainly continue and until then, the future awaits…..

*All ship crew compliments are based on CV crew compliments in IDG (Page 237), excluding flight crews.

** All ship tonnage is based on MT tonnage rated at 285,000 tons from Insurrection (Page 86).

Editors Note: This paper could not have been completed without the timely intervention of Jim Anderson. He literally kept the egg off my face by pointing out the errors. Thanks Jim!

CARRIER DESIGN CODES

THIRD INTERSTELLAR WAR (RIGELLIAN)

Independence-class CV   (AM2)   17 XO   85 HS   TL9

[1] Sx9Ax9ZHQ(BbS)QWaMgWaMgDi[Vx12](II)(III)(II)WaXrDiQ[Vx12]Mg(III)(II)LhQ?Di(III) [6/3]

85 RCP; 15 MCP; 24 FCP   Trg:1 Def -3   PV=177

Cost= 2102/315.3

76 HTK Sx9 Ax9 Dix3 Wax3 Vx24 Mgx3

Ypres-class SD/V   (AM)   26 XO   130HS   TL9

[5] Sx6Ax4HQQQLhQx6H(BbS)XrMgx3DiDi[Vx84]MgDi?LhQ(IcIcIcIc) [1/1]

Cost= 4,148

Sx6 Ax4 Dix3 Vx84 Mgx3

Pegasus-class CVL   (AM2)   12 XO   60HS   TL9

[1] Sx7AAAAAZHQ(BbS)WaMgDiQ(II)(II)(II)WaMgXr[Vx12]Mg(II)Di(II)DiLhQ?(II) [6/3]

60 RCP; 40 MCP; 12 FCP   Trg:1 Def -3   PV=116

Cost= 1476/221.4

53 HTK Sx7 Ax5 Dix3 Wax2 Vx12 Mgx3

CRUSADE (THEBAN WAR)

Pre-War - Active Fleet

Wolfhound-class CV   (AM2)   17 XO   85 HS   TL10

[1] S1x15AAAAAZHQHQ(BbS)[Vx15]Mg(II)(III)(II)(III)(II)QDx[Vx15]QLhMgXrDx?(?2)QsDxDx(III)(6) [6/3]

85 RCP; 15 MCP; 30 FCP   Trg:1 Def -3 Jam   PV=199

Cost= 2291/343.7

85 HTK S1x15 Ax5 Dxx4 Vx30 Mgx2 (6)x1   (AC)

Independence-class CVL   (AM2)   12 XO   60HS   TL10

[1] S1x18Ax6ZHQ(BbS)Q(II)(II)(II)WaDxLhQ[Vx18]Mg(II)Dx(II)DxQs?(II) [6/3]

60 RCP; 40 MCP; 18 FCP   Trg:1 Def -3   PV=139

Cost= 1672/250.8

68 HTK S1x18 Ax6 Dxx3 Wax1 Vx18 Mgx1   (AC)

Pre-War - Reserve Fleet

Essex-class CV   (AM2)   17 XO   85HS   TL9

[1] Sx11Ax10ZHQ(BbS)QMgWaMgDi[Vx12](II)(III)(II)WaXrDiQ[Vx12]Mg(III)(II)LhQ? Di(III) [6/3]

85 RCP; 15 MCP; 24 FCP   Trg:1 Def -3   PV=176

Cost= 2079/311.9

78 HTK Sx11 Ax10 Dix3 Wax2 Vx24 Mgx3   (AC)

Pegasus-class CVL   (AM2)   12 XO   60HS   TL9

[1] Sx7AAAAAZHQ(BbS)WaMgDiQ(II)(II)(II)WaMgXr[Vx12]Mg(II)Di(II)DiLhQ?(II) [6/3]

60 RCP; 40 MCP; 12 FCP   Trg:1 Def -3   PV=120

Cost= 1524/228.6

53 HTK Sx7 Ax5 Dix3 Wax2 Vx12 Mgx3   (AC)

Refits:

Wolfhound(A)-class CV   (AM2)   17 XO   85HS   TL11

[1] S1x15Ax6ZHQHQ(BbS)[Vx15]Mg(II)(III)(II)(III)(II)QXrWaDx[Vx15]QLhMgDx(?3)QsDxDx(III) [6/3]

85 RCP; 15 MCP; 30 FCP   Trg:1 Cloak   PV=171

Cost= 2413/362

85 HTK S1x15 Ax6 Dxx4 Wax1 Vx30 Mgx2 (AC)

Wolfhound(B)-class CV   (AM2)   17 XO   85HS   TL11

[1] S1x18Acx6ZHQQ(BbS)[Vx18]Mg(II)(III)(II)(III)(II)QXrWaDx[Vx18]QLhMgDx(?3)QDx(III) [6/3]

85 RCP; 15 MCP; 36 FCP   Trg:1 Cloak   PV=182

Cost= 2429/364.4

92 HTK S1x18 Acx6 Dxx3 Wax1 Vx36 Mgx2 (AC)

Independence-class CVL   (AM2)   12 XO   60HS   TL10

[1] S1x18Acx12ZHQ(BbS)Q(II)(II)(II)WaDxLhQ[Vx18]MgDx(II)Dx(II)DxQs?(II) [6/3]

60 RCP; 40 MCP; 18 FCP   Trg:1 Def -3   PV=147

Cost= 1795/269.3

75 HTK S1x18 Acx12 Dxx4 Wax1 Vx18 Mgx1   (AC)

Sandfly(Dd)-class CVE   (AM2)   6 XO   30HS   TL10

[1] S1S1S1ZH(I)(I)(I)(I)(I)(I)Q[Vx12]WaMgLhQDx(I) [7/3]

30 RCP; 20 MCP; 12 FCP   Trg:1   PV=61

Cost= 817/122.6

30 HTK S1x3 Dxx1 Wax1 Vx12 Mgx1   (AC)

FOURTH INTERSTELLAR WAR (BUGS)

Pre-War:

Borsoi-class CV   (AM2)   17 XO   85HS   TL12

[1] S1x15Ac2x12HQQ(BbS)[Vx18]Mg(II)(III)(II)(III)(II)QXr[Vx18]QMgDxz(?3)LhQDxz?Z2Dxz(III) [6/3]

85 RCP; 15 MCP; 36 FCP   Trg:1 Def -3 Cloak   PV=242

Cost= 2598/389.7

95 HTK S1x15 Ac2x12 Dxzx3 Vx36 Mgx2 (AC)

Kodiak(C)-class CV   (AM2)   17 XO   85HS   TL12

[1] S1x12Ac2x12HQQ(BbS)[Vx12](II)(III)(II)(III)(II)LhQXr[Vx18]QMgMgDxz(?3)QsDxz?(Z2c)Dxz(III) [6/3]

85 RCP; 15 MCP; 30 FCP   Trg:1 Def -3 Cloak   PV=239

Cost= 2694/404.1

86 HTK S1x12 Ac2x12 Dxzx3 Vx30 Mgx2   (AC)

Shokaku-class CVL   (AM2)   12 XO   60HS   TL12

[1] S1x18Ac2x18HQ(BbS)Q(II)(II)(II)WaLhQ[Vx18]MgDxz(II)Dxz(II)DxzZ2Qs?(II) [6/3]

60 RCP; 40 MCP; 18 FCP   Trg:1 Def -3   PV=170

Cost= 1997/299.6

80 HTK S1x18 Ac2x18 Dxzx3 Wax1 Vx18 Mgx1   (AC)

Refits and New Construction:

Minerva Waldeck-class MT/V   (AM2)   40 XO   200HS   TL13

[4] S2x65{Al2Ac2x3}x18HQ(BbS)HQ(IIIII)Q(IIIII)HQLhQDxzx4QQ[Vx42](IIIII)Q(It2)LhQDxzQDxzQDxzDxzWc[Vx42]MgMgDxz(?3)(?4)DxzLhQZ2(Ig)(IIIII) [5/2]

200 RCP; 50 MCP; 84 FCP   Trg:1 Def -4 Cloak   PV=838

Cost= 9295/1394.3

282 HTK S2x65 Al2x18 Ac2x54 Dxzx10 Wcx1 Vx84 Mgx2

Scylla-class CVA   (AM2)   26 XO   130HS   TL12

[2] S2x70{Al2Ac2Ac2}x19Al2H(BbS)H(BbS)QQQLh(III)(III)(III)[Vx18](III)(III)QQQDxzWa[Vx24]DxzMgMgXrDxzDxz(?3)LhQ?Z2(III) [6/3]

130 RCP; 20 MCP; 42 FCP   Trg:1 Def -3 Cloak   PV=463

Cost= 5610/841.5

218 HTK S2x70 Al2x20 Ac2x38 Dxzx4 Wax1 Vx42 Mgx2

Scylla(A)-class CVA   (AM2)   26 XO   130HS   TL13

[2] S2x60{Al2Ac2Ac2}x16Al2H(BbS)H(BbS)QQQLh(III)(III)Dxz(III)[Vx24](III)(III)(It2)QQQDxz[Vx18]DxzMgXrDxzDxz(?3)(?4)LhQZ2(III) [7/3]

130 RCP; 20 MCP; 42 FCP   Trg:1 Def -4 Cloak   PV=514

Cost= 5915/887.3

199 HTK S2x60 Al2x17 Ac2x32 Dxzx5 Vx42 Mgx1

Thor-class CVA   (AM2)   26 XO   130HS   TL12

[2] S2x80{Al2Ac2x4}x11H(BbS)HQQQLh(III)(III)(III)[Vx18](III)(III)QQLhQDxzWa[Vx18]DxzMgMgXrDxzDxz(?3)Qs?(Z2c)(III) [6/3]

130 RCP; 40 MCP; 36 FCP   Trg:1 Def -3 Cloak   PV=466

Cost= 5786/867.9

218 HTK S2x80 Al2x11 Ac2x44 Dxzx4 Wax1 Vx36 Mgx2

Thor(A)-class CVA   (AM2)   26 XO   130HS   TL13

[2] S2x60{Al2Ac2Ac2}x16Al2H(BbS)HQQQLh(III)(III)Dxz(III)[Vx18](III)(III)(It2)QQLhQDxz[Vx18]DxzMgXrDxzDxz(?3)(?4)Qs(Z2c)(III) [7/3]

130 RCP; 40 MCP; 36 FCP   Trg:1 Def -4 Cloak   PV=512

Cost= 6025/903.8

192 HTK S2x60 Al2x17 Ac2x32 Dxzx5 Vx36 Mgx1

Borsoi(A)-class CV   (AM2)   17 XO   85HS   TL12

[1] S2x20Ac2x12HQQH(BbS)[Vx18]Mg(II)(III)(II)(III)(II)QXr[Vx18]QMgDxz(?3)LhQDxz?Z2Dxz(III) [6/3]

85 RCP; 15 MCP; 36 FCP   Trg:1 Def -3 Cloak   PV=251

Cost= 2719/407.9

101 HTK S2x20 Ac2x12 Dxzx3 Vx36 Mgx2   (AC)

Borsoi(B)-class CV   (AM2)   17 XO   85HS   TL12

[1] S2x15Ac2x12HQQ(BbS)[Vx18]Mg(II)(III)(II)(III)(II)Q[Vx23]QMgLhQ(?3)DxzZ2?DxzQs(III) [6/3]

85 RCP; 15 MCP; 41 FCP   Trg:1 Def -3 Cloak   PV=249

Cost= 2553/383

99 HTK S2x15 Ac2x12 Dxzx2 Vx41 Mgx2   (AC)

Kodiak(A)-class CV   (AM2)   17 XO   85HS   TL12

[1] S2x20Ac2x18HQHQ(BbS)[Vx12](II)(III)(II)(III)(II)LhQXr[Vx18]QMgMgDxz(?3)QsDxz?(Z2c)(III) [6/3]

85 RCP; 15 MCP; 30 FCP   Trg:1 Def -3 Cloak   PV=245

Cost= 2773/416

100 HTK S2x20 Ac2x18 Dxzx2 Vx30 Mgx2   (AC)

Kodiak(B)-class CV   (AM2)   17 XO   85HS   TL12

[1] S2x15Ac2x18HQQ(BbS)[Vx18](II)(III)(II)(III)(II)Q[Vx18]QMgMg(?3)LhQDxz?(Z2c)(III) [6/3]

85 RCP; 15 MCP; 36 FCP   Trg:1 Def -3 Cloak   PV=242

Cost= 2592/388.8

98 HTK S2x15 Ac2x18 Dxzx1 Vx36 Mgx2   (AC)

Shokaku(A)-class CVL   (AM2)   12 XO   60HS   TL12

[1] S2x25Ac2x18HQ(BbS)Q(II)(II)(II)Q[Vx24]Mg(II)Dxz(II)DxzZ2LhQ?(II) [6/3]

60 RCP; 40 MCP; 24 FCP   Trg:1 Def -3   PV=179

Cost= 1973/296

91 HTK S2x25 Ac2x18 Dxzx2 Vx24 Mgx1   (AC)

INSURRECTION ERA

Sparrow-class CVE   (AM2)   6 XO   30HS   TL12

[1] S2x5Ac2x6H[Vx6]LhQ(I)(I)(I)(I)(I)(I)(?3)Z2DxzQsMg(I) [7/3]

30 RCP; 20 MCP; 6 FCP   Trg:1 Cloak   PV=65

Cost= 982/147.3

32 HTK S2x5 Ac2x6 Dxzx1 Vx6 Mgx1   (AC)

STARFIRE ERRATA

At the time of Insurrection, 50% of Battlefleet is in mothballs.

Crusade is 90+ years since ISW1 KON attack on Lorelei.

Danzigs' SY's produced 5 BC, 30+ DD, and 14 CVE during time cutoff from TF by SHT.

Fighters travel at .8c at full throttle.

General Directive 18: Genocide of a race.

Insurrection takes place in the 25th Century.

KON have the best known cyberneticists.

Ninty percent of all TF cargo is moved in Corporate World hulls.

Ophiuchi prefer lower atmospheric pressure, lower grav and drier environment.

Orions prefer higher atmospheric pressure, damper and warmer environment.

Pn have endurance of 30 days and max speed of .12c.

Sixty percent of TF systems are in the Fringe and Rim.

Terran Federation has the largest industrial base in the Alliance.

TF to date have only encountered 6 star-traveling races.

The darker the KON pelt, the more noble the lineage.

Treaty of Mattar: systems belong to the first one there.

Treaty of Tycho between TF and KON prohibits fortifying transit systems within 3 jumps of the border.

Unladen fighters have 45% speed advantage over GB.

War with Thebes lasted 32 months.