JUMP POINT

GREETINGS, CITIZENS!

This month we return to the company that started it all — Roberts Space Industries — along with a Galactic Guide to RSI's headquarters planet, Earth, and the development of their entry-level craft, the Aurora.

We also introduce a new author for **JUMP POINT** Chronicles, as Dave Haddock moves on to writing scenarios for the game itself. Doug Niles grabs the baton from Dave with the beginning of a three-part story, *The Void Rats*. Doug needs no introduction to many of you, but I'll clue in the rest: over 40 novels, including a couple dozen for *Dragonlance*, *Forgotten Realms* and other *D&D* worlds, plus several military and SF titles, along with games and scenarios for *Red Storm Rising* and other works. I think you'll enjoy his stories.

Hi Dave, I have two questions for you.

1) What does the max. class of a ship mean? For example the Hornet stats in **JUMP POINT** *have a max class of 'fusion' and the Aurora has a max class of 'fission.' What are the differences and do they matter when looking at the ultimate effectiveness of any given ship?*

2) How is the game being balanced so that the lower-end initial pledge ships aren't going to just flat out stink compared to later, more expensive ships?

Robert Lyons

AURORA MARQUE (MR) STATS

Builder: Roberts Space Industries

Length: 18.5 meters

Crew (max): 1

Mass (empty): 15,750 Kg

Focus: Interdiction

STRUCTURE STATS

Upgrade Capacity: 3

Cargo Capacity: 5 tonnes

Engines: Alliance Startech KS-9 Enhanced Fission Mount (L1)

Modifiers: 1

Max. Class: Fission

Main Thrusters: 1 x TR3 (Dragon STC Red)

Maneuvering Thrusters: 8 x TR1

HARDPOINTS

2 x Class 1: 2 X Behring Fixed M3A Laser Cannon
2 x Class 3: Nothing equipped

Rob Irving helps with these:
1) Basically, it indicates the maximum possible power for the engine, but we're still working out the details.

2) The overall goal is that bigger ships have more firepower and defense, but smaller ships are more maneuverable and frequently faster. There should be no limit on gameplay just because you prefer a smaller ship. The Aurora is much better suited for tricky missions than a big, clunky Gladiator, while the Gladiator is more suited for capital ship attacks than the Hornet, and so forth.
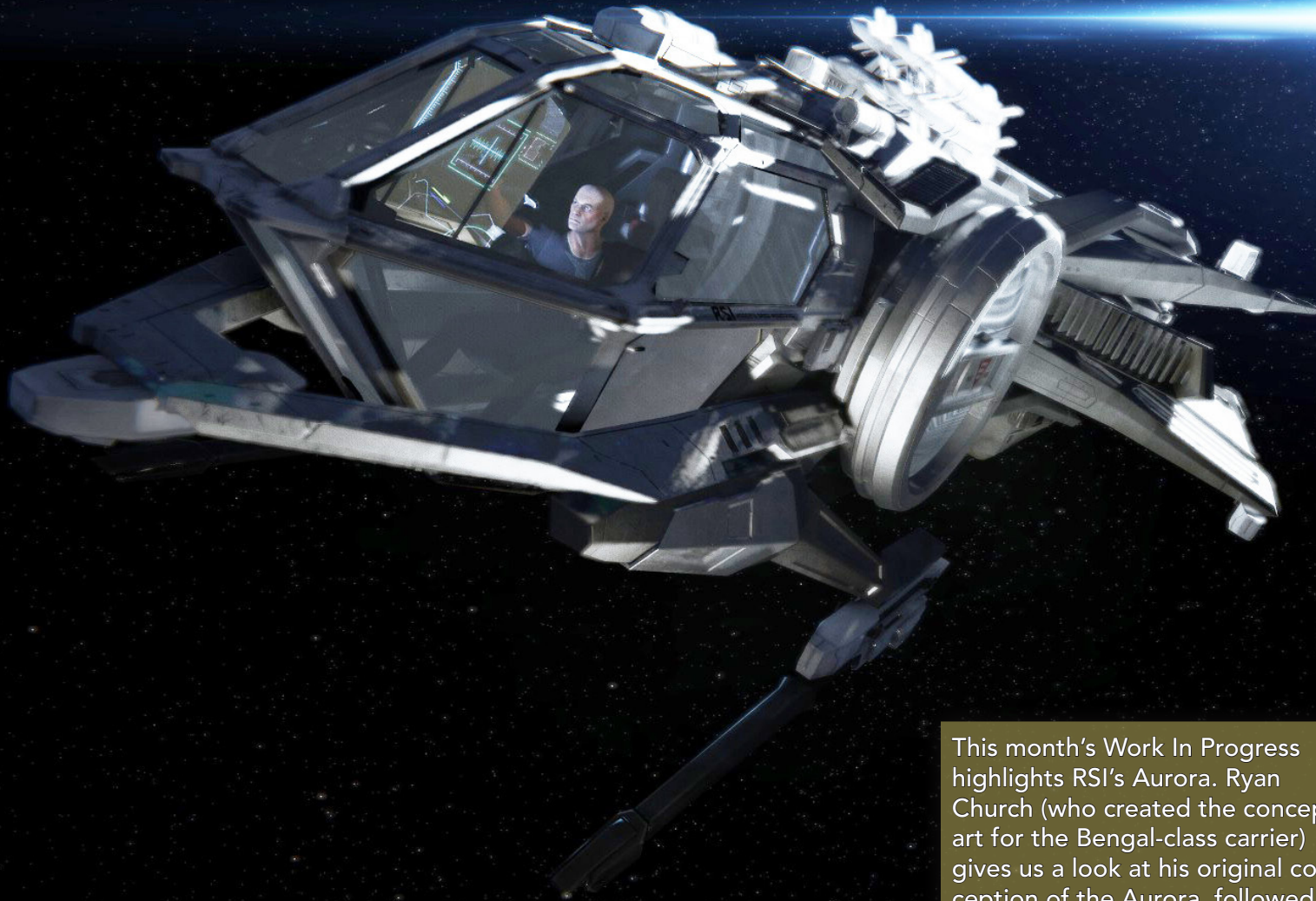
Hold on, it's gonna be a wild ride!

David

David.Ladyman@cloudimperiumgames.com
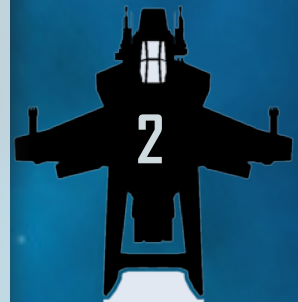
Aurora

This month's Work In Progress highlights RSI's Aurora. Ryan Church (who created the concept art for the Bengal-class carrier) gives us a look at his original conception of the Aurora, followed by CGBot's usual high-quality development work to get it into the game engine.

RC: THey're all single crew, I'm thinking a large cockpit and a tiny hypersleep bed behind you. For all of these the cargo would be kept in an exterior pod.

Engines could be mix and match or even different types for an even more eclectic look-

I was thinking that any of these could have a chair that kind of gimbaled so you could aim weapons with it, kind of a poor man's *Last Starfighter* type ship, keeping good visibility out the windows.

Each has lift fans around the CG.

Some two engine, some four. I haven't gotten to any type of detail yet like weapons or maneuvering thrusters, this is the 'squint' stage definitely.

A

B

C

D
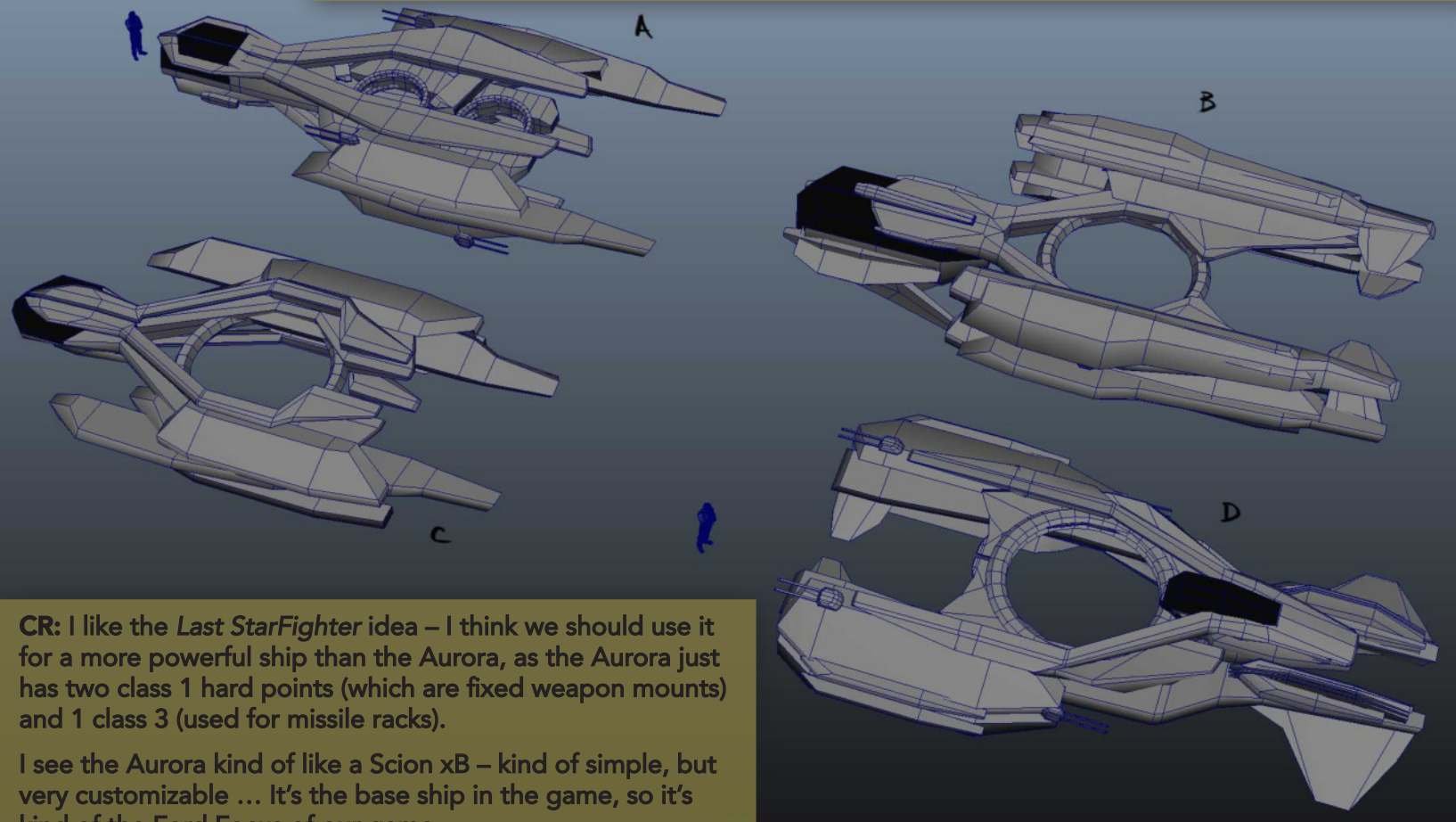
CR: I like the *Last StarFighter* idea – I think we should use it for a more powerful ship than the Aurora, as the Aurora just has two class 1 hard points (which are fixed weapon mounts) and 1 class 3 (used for missile racks).

I see the Aurora kind of like a Scion xB – kind of simple, but very customizable … It's the base ship in the game, so it's kind of the Ford Focus of our game.

It has 1 main engine and 8 maneuvering thrusters.

RC: Attached are some more variations, going for distinctive silhouettes and matching the brief, simpler look.

All have single engines and two gun hardpoints, I haven't put missiles on any of 'em or maneuvering thrusters, all are at a super low detail level but maybe far enough along to get some feedback. Any good directions here?
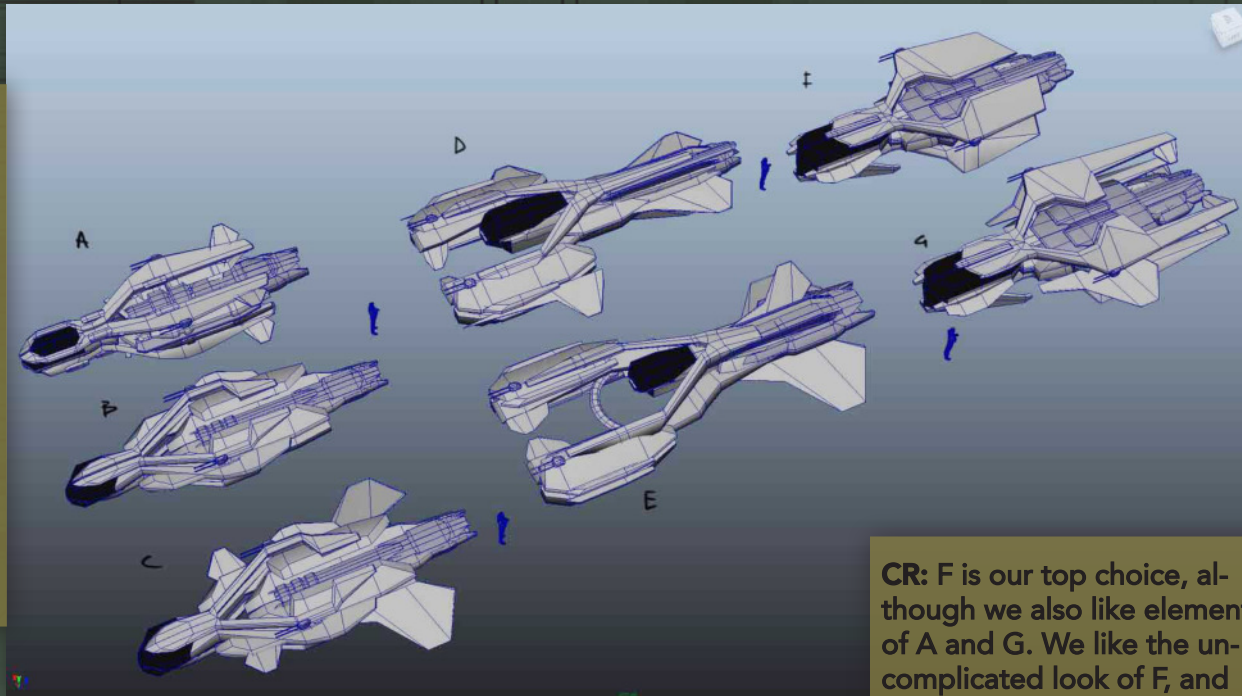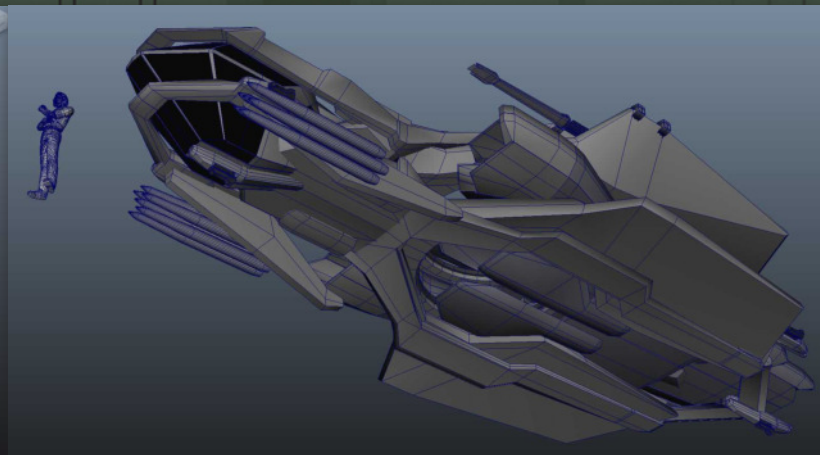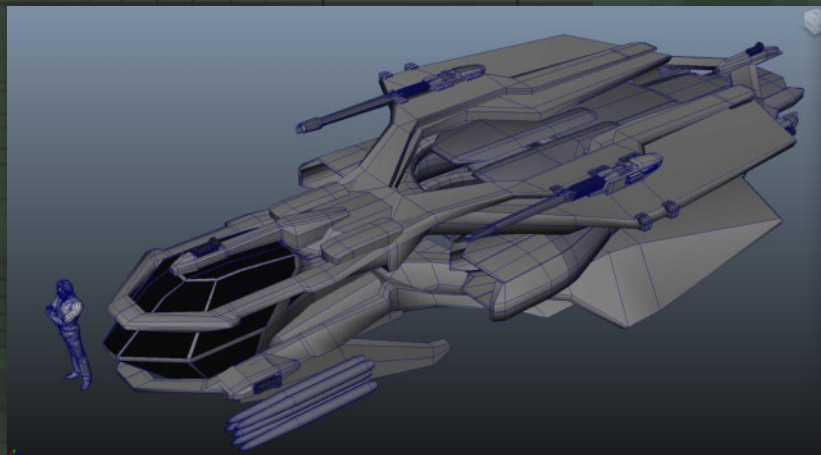

CR: F is our top choice, although we also like elements of A and G. We like the uncomplicated look of F, and those prongs that come down on either side from the cockpit. Might give it a really unique look to have missiles attached there?

We do like the top of cockpit on A, with the 2 top prong structure that encase around glass.

5
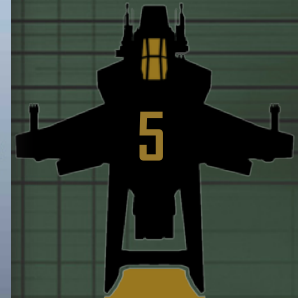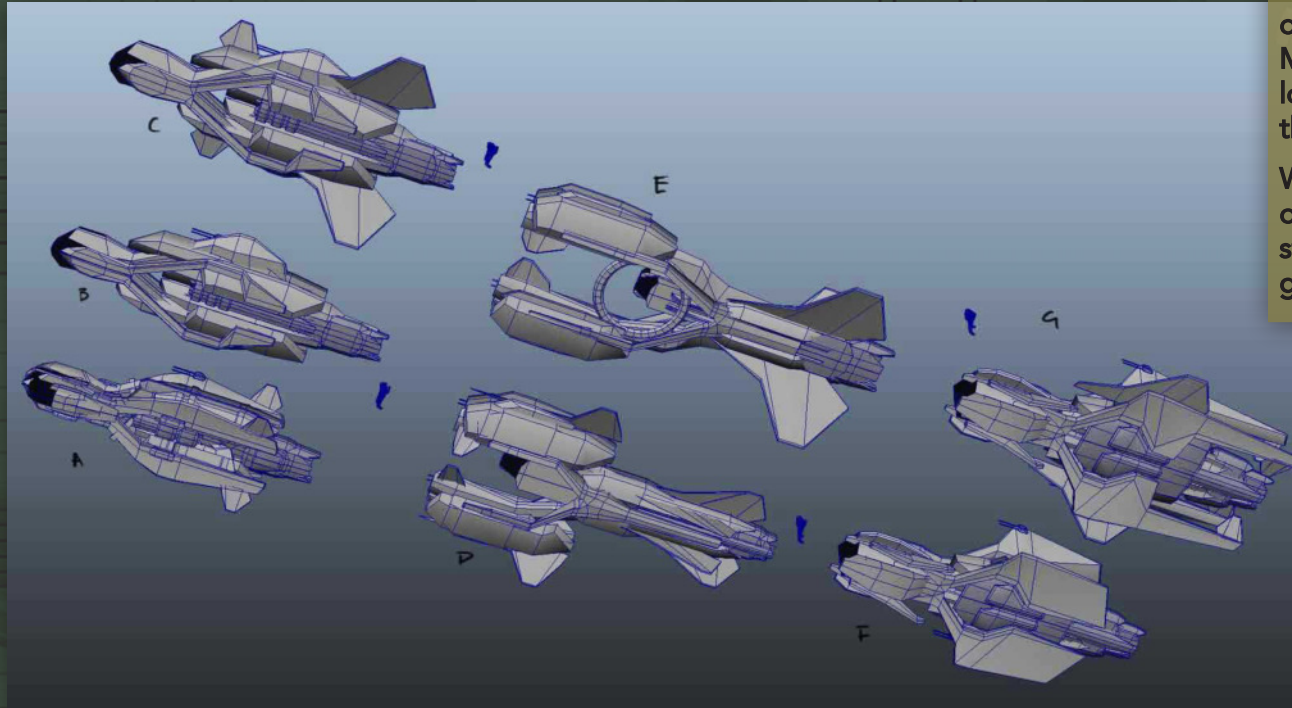
RC: Added maneuvering thrusters (rough).

Added large, shrouded VTOL fan in center — doors open to expose this. We could do something more articulated and complex than what I have here; it would look cooler.

Added missiles to front 'whisker' pylons. These missiles are the same size in scale to those on the Constellation.

Added guns (rough block in).

CR: It's a bit busy around the cockpit — maybe lose the top railing / ridge around the cockpit?

It also could be a little small; even though the Aurora weighs less than a Hornet, I don't think it would have less volume (the Hornet has more weight in dedicated weapons platforms, where the Aurora has a more open hull / frame for upgrades.

There also doesn't seem to be anywhere to put cargo — the Aurora carries 5 tonnes in default configuration.

It's a little busy for the base hull / frame. Maybe think about the current version being the Aurora with some upgrades modifications. For the design challenge, I think we may want to design it with just the base, then have some of the add-ons and upgrades designed so you can render it without and with the missile pylon add on.
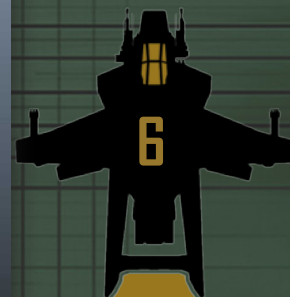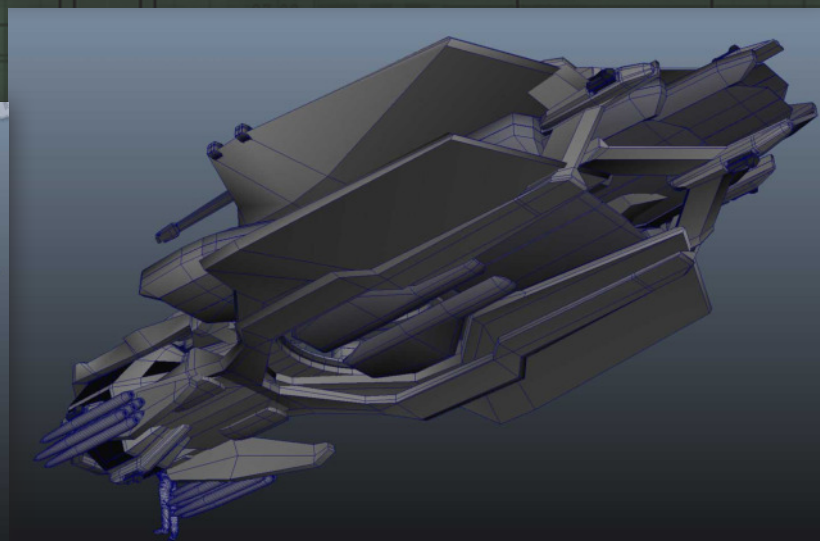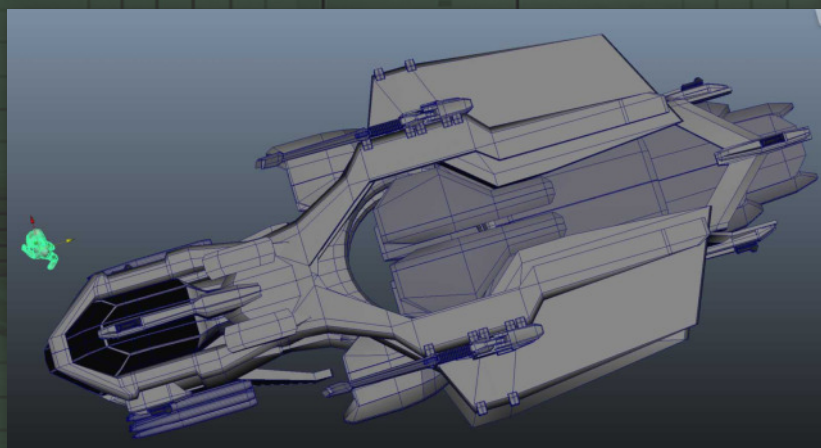
RC: Increased the size overall by adding interior storage volume behind cockpit and enlarged the back half — the new length is about 45 feet long.

Added 'gyro vtol nozzle flap' assembly to vtol fan area. This is still on the center of gravity, so works as a VTOL fan as well as maneuvering thruster.

Fixed cockpit railing stuff, added cockpit detail.

Missiles now on centerline nose pylon; 'whiskers' are now front landing gear support struts

Added cargo area behind cockpit. It's more than 120 cubic feet, which is 8 tons of carbon by my calculations, way more if the cargo is steel or whatever. Is this big enough? I also have optional cargo pods on the exterior that are over 20 cubic feet each.

Revised and refined the engine intake area. The big intake scoops are now an add-on option and there's a visible gridded intake at the front of the engine facing forward.

More detail overall — cockpit, landing gear, etc.

If we need more cargo room I can enlarge the behind-cockpit pressurized storage area and/or increase the exterior podded cargo.
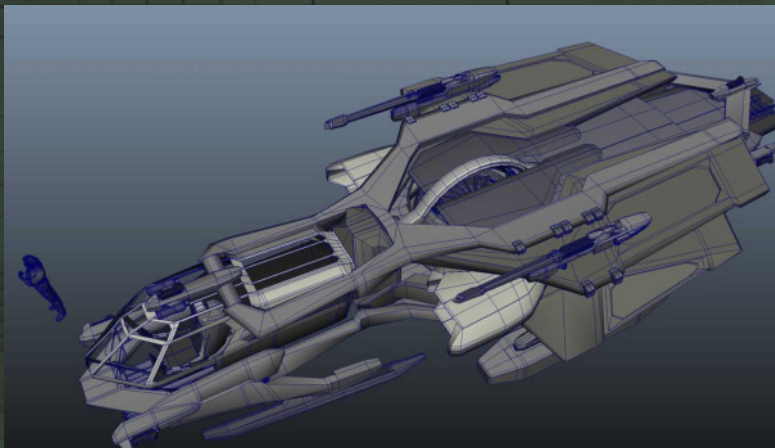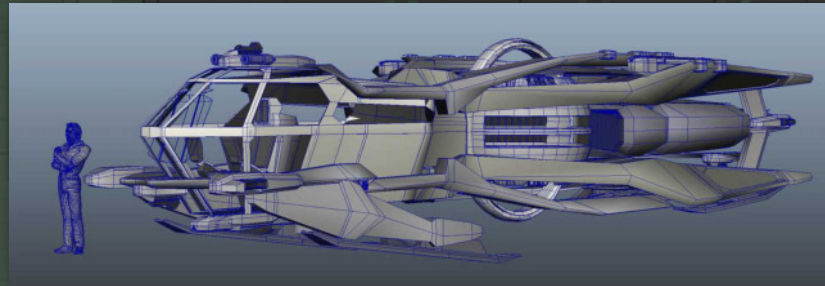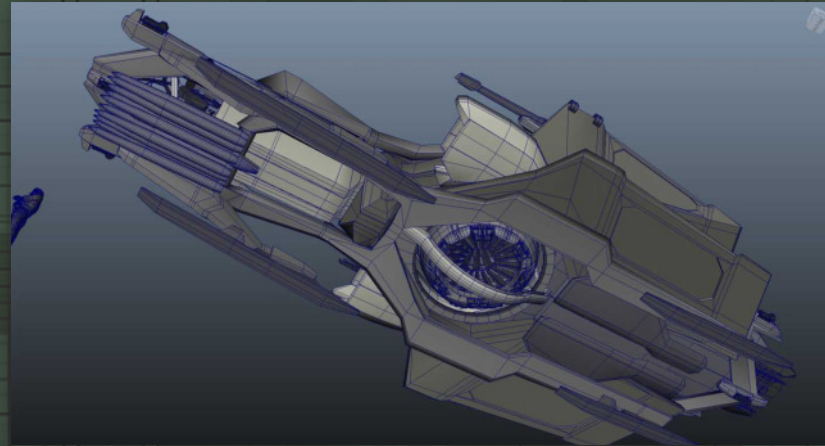
CR: The missile pylon should be towards the rear or smaller – feels like it would be unbalancing with so much mass / missiles. The Aurora is the starter, so it shouldn't be armed to the teeth with missiles. Maybe a max of 3-4 missiles could carried on the Aurora class 3 pylon vs. the 10 now.

Doesn't feel like the area behind the cockpit would be good for storage – maybe a more cramped sleeping space. I actually think that you could have a modular cargo system (think current-day ship containers) that locks in to the spine of the hull from below – think a Sikorsky Sky-crane helicopter that can hoist a container up to its spine. The engine on the current design could be shifted up to accommodate it. Without the cargo container the Aurora would look a little thin from profile.
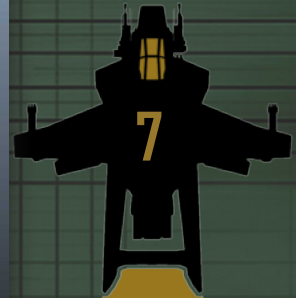
RC: VTOL fan doors detail: integration of side docking collars; these are exactly the same as those on the Constellation. We could keep this as a standard size so everybody can dock with one another. Like those in the Constellation, they function as mini airlocks too, with an interior door.

Refinements to the interior and cockpit area.

Also a small sleeping/hypersleep area in back — it's just a space now; I was thinking that doors could close that whole rear sleep berth off (separate from the tiny room with the airlocks on the sides; what else do we need in there? toilet? sink? display screen/entertainment? exercise equipment? some storage/survival stuff for sure), the entire thing is the hypersleep area. Let me know what you think of this and I can detail it out. There are some small windows in the back for looking out at the stars or for visual inspection of the engine, payload and intake area.

Additional engine detail: this whole engine can slide out pretty easily, you can put a different one in there — longer, shorter, more powerful, alien technology or whatever.

The pilot's chair can pivot 360 degrees; faces aft to sit in there and face the room and then rotate around to face forward to look out the cockpit and fly.

It's turning out to be a neat, utilitarian Jeep of a ship.
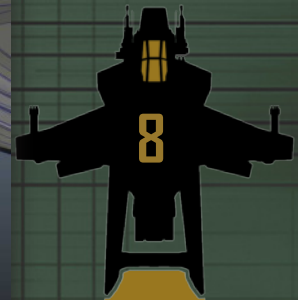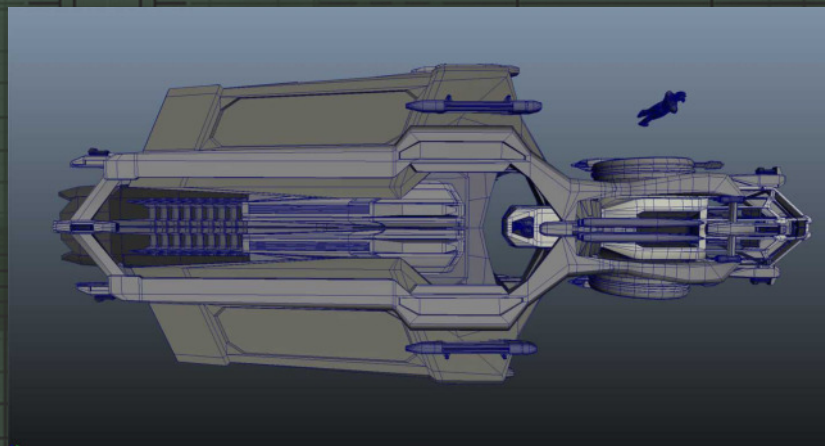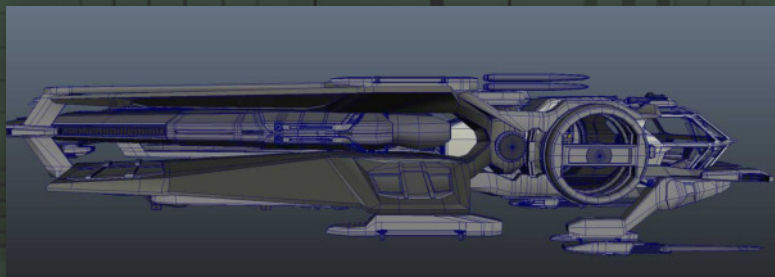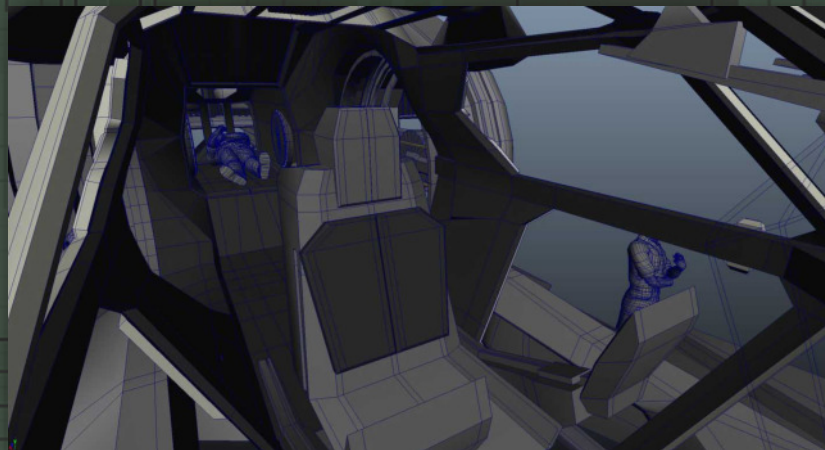
CR: Be good to do a render next to Constellation to see relative scale – don't have a good feel for length / height yet.

RC: Here's the side by side as requested, the Aurora next to the Constellation.
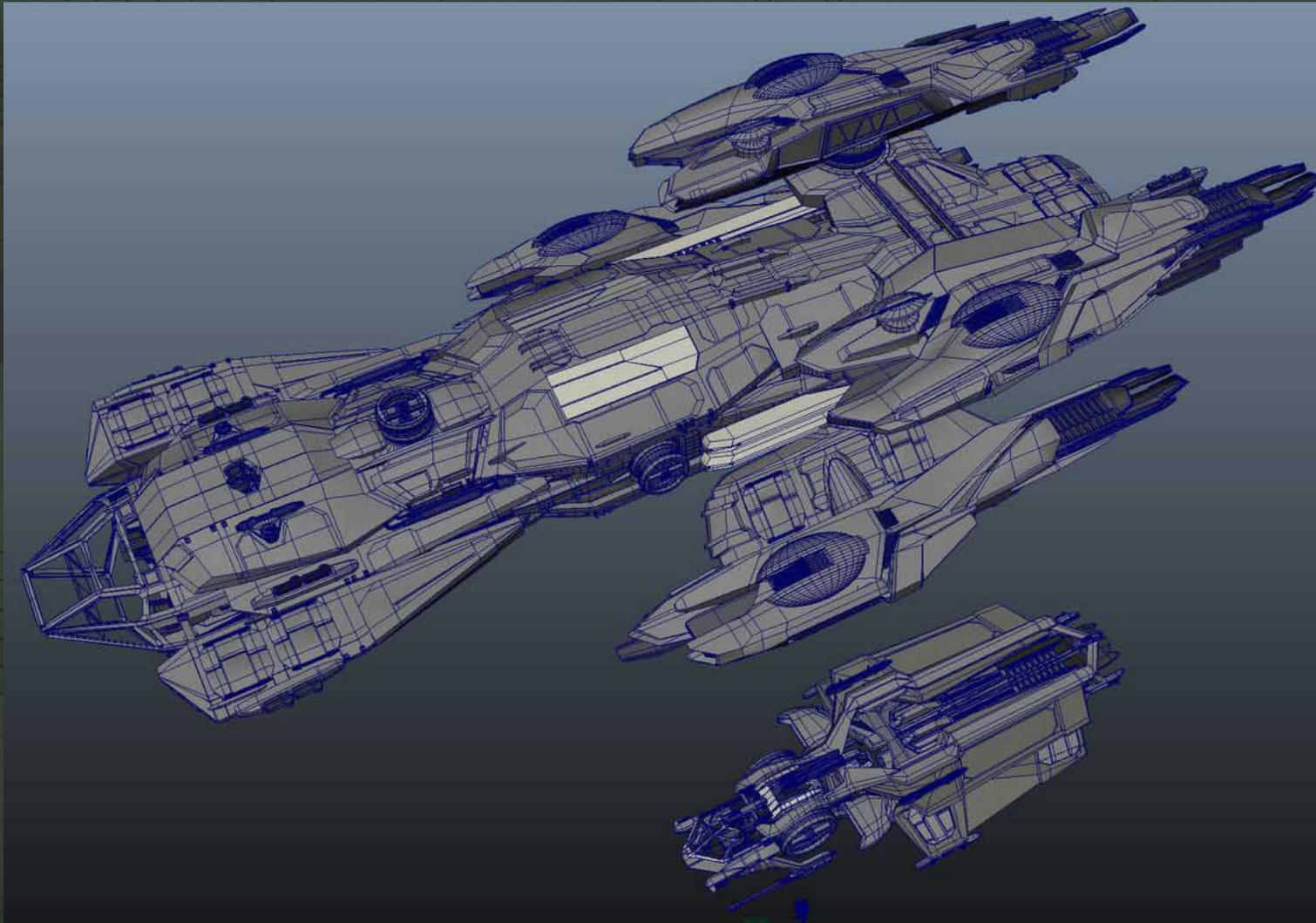
CR: Really cool! You totally get a sense of scale / difference … Be cool when we have these, the Hornet and some other ships on the landing pad!

RC: Yah they look good together. I'd totally want to try and dogfight the Constellation with the Aurora, that'd be a badass move if you could pull it off!

WORK IN PROGRESS

RC: Attached are some renders. Quick and dirty, but gives a good idea of the look.
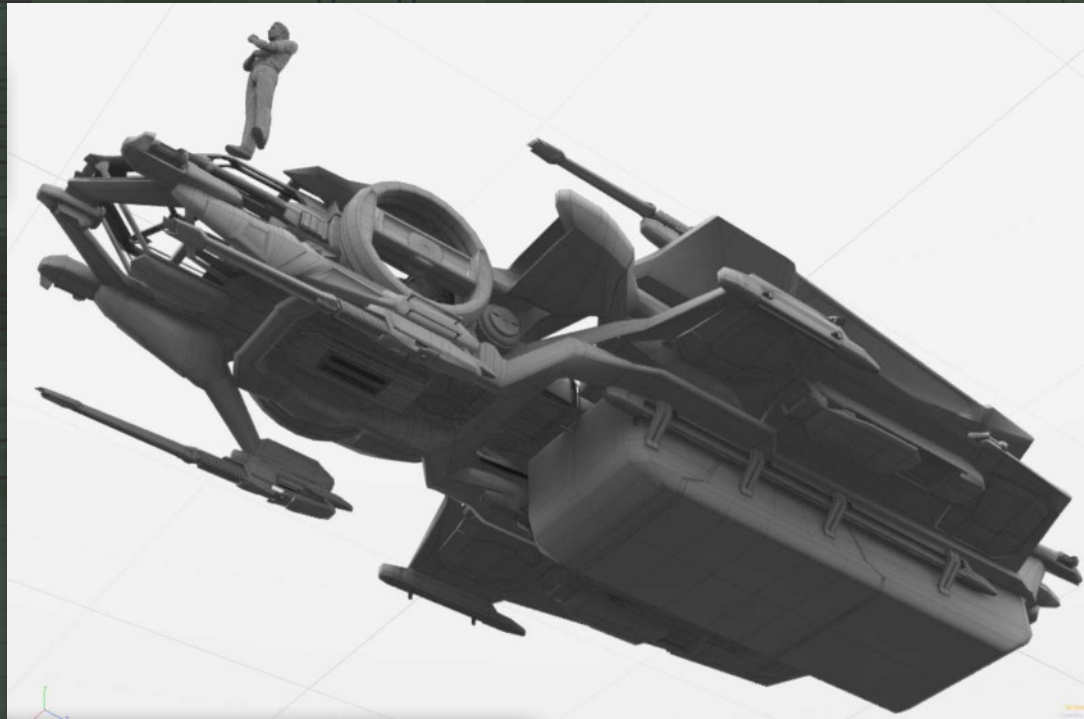
CR: Really like them so far. Don't mind utilitarian look in the cockpit — this is the starter civilian model — especially if we let players add stuff and bling it up.

WORK IN PROGRESS

RSI ROBERTS SPACE INDUSTRIES
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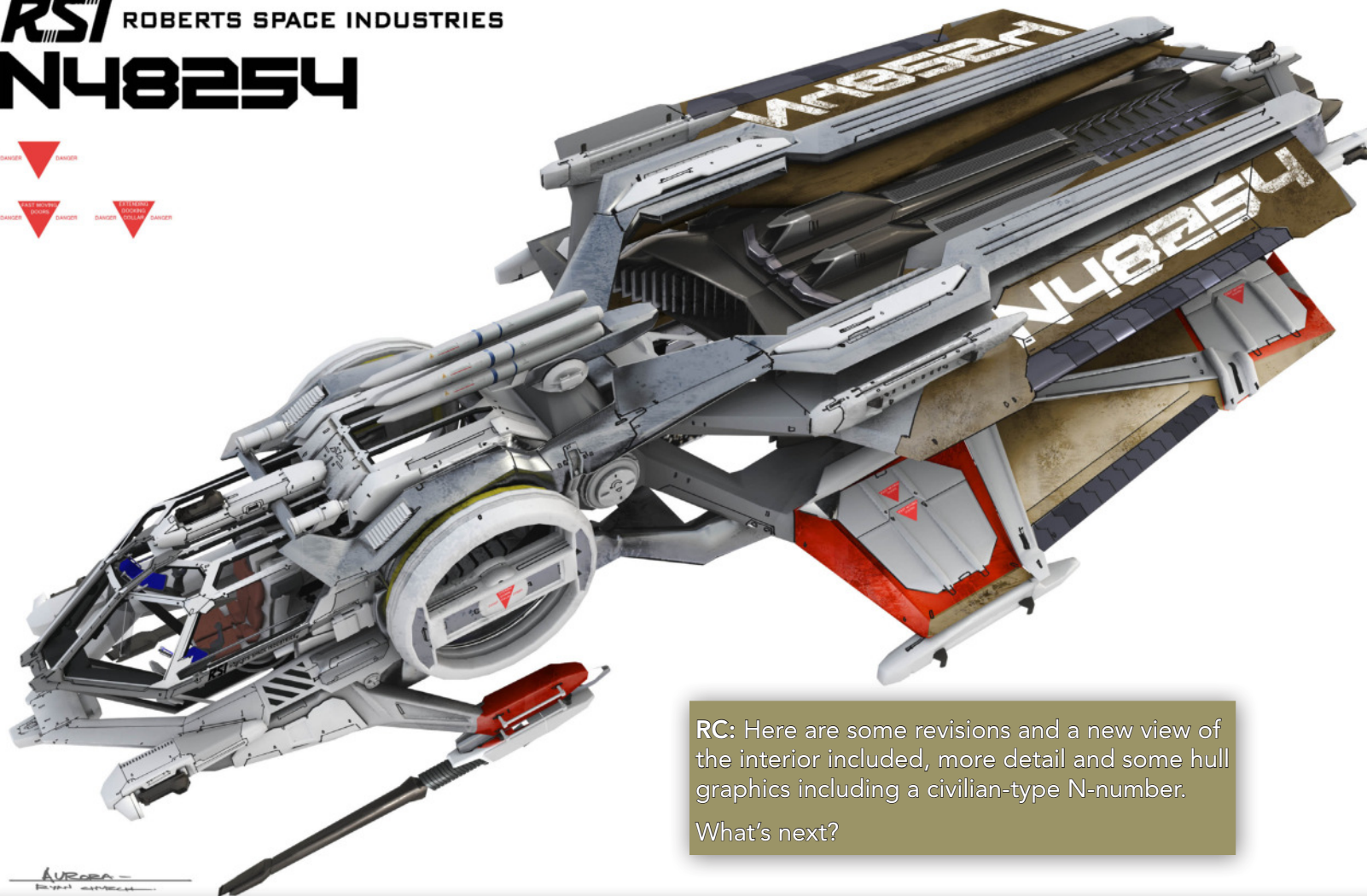
RC: Here are some revisions and a new view of the interior included, more detail and some hull graphics including a civilian-type N-number.

What's next?

Ryan Church: The brief for the Aurora was something new. The concept is that the Aurora is really a workhorse, utilitarian craft with swappable armament and cargo capability. I've thought of it as the *Star Citizen* version of an old Jeep, something utilitarian and functional. Not a heroic looking craft, but something very honest that expresses itself the first time you look at it. Keying off of that is the fact that it's all very structural looking and full of negative spaces, almost like it's just the chassis with all the skin peeled off, lightened and optimized for low weight and maximum usability. I wanted good visibility and I thought a lot about the views out of the craft. I often think of the designs as how they will be experienced when on autopilot for long missions — what's it like to just sit back and watch space float on by out your window — so there's the small bunk in back and I tried to incorporate as much hominess as possible in a small single-man ship. I went through a couple of new ways for the VTOL/engine to work, but they became too complex for this ship and we went with something more honest and straightforward. Maybe we'll use some of the other engine concepts in another design down the road ...
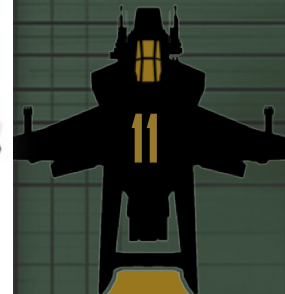
Ryan Church: It was particularly difficult with the Aurora to get it all in there, to keep the footprint down but still have a decent sized engine and cargo capability right over the center of gravity. I find that balance is one of the hardest aspects of a design to get right — I try to think as much like a real air/spacecraft designer as possible and it's a cool challenge to try to solve the same problems they have. Look at an F-22 some day and appreciate how they got all that stuff in there, plus thousands of pounds of fuel, with your expendables like munitions and ammo all fighting for the same exact space right at the center of gravity, and you'll begin to appreciate how incredible their engineering is. The nice part with these designs is we don't have to do the engineering part, but I like to keep the packaging and center of gravity/center of mass issues at the forefront. I find that it always takes the design away from the 'optimum' sleek silhouette I strive for, but in its place I almost always find a character, distinctiveness and realism missing from a lot of designs.

AURORA —
Ryan Church
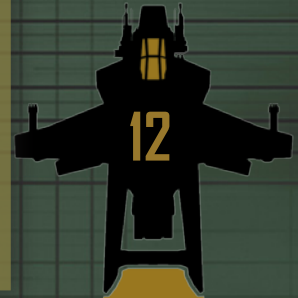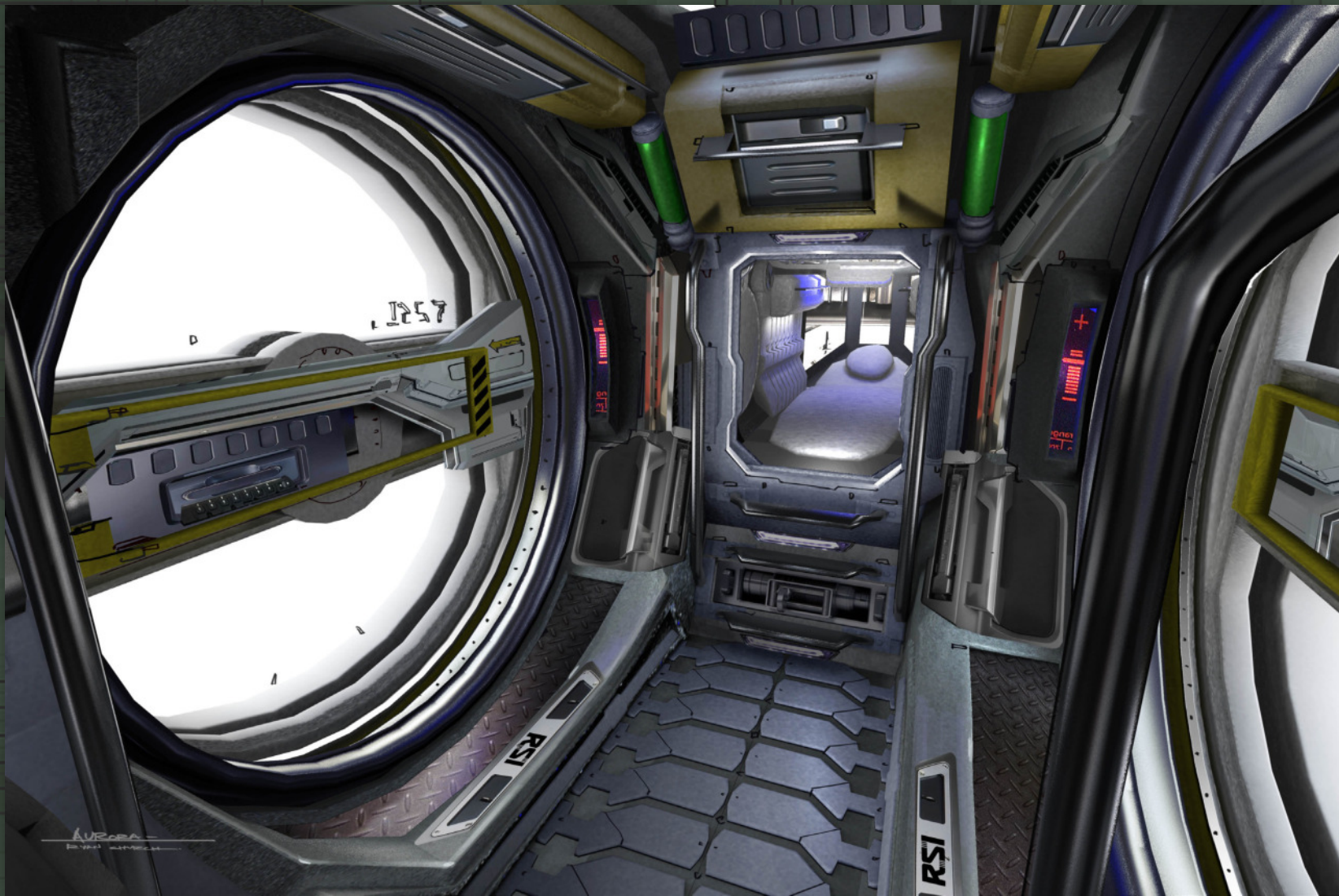
Ryan Church: This ship is different from the others we've done in that it's a utilitarian, single-man 'ship for the masses.' It's so optimized that it's up to the player to customize it; the equipment decisions that are made will really reflect the personality and character of the owner.

Finished with the Aurora concept model, Ryan handed the materials off to CGBot, a professional art outsourcing studio headed by Digital Anvil veteran Sergio Rosas. The CGBot team was then responsible for rebuilding Ryan's concepts as a fully functional in-game model inside the CryEngine. Their comments follow (**CGB**). (This section actually starts with four pages of the files that Ryan turned over to CGBot. Pages 18 – 27 detail their part of the development, converting Ryan's concept into a working, playable ship.)

All Polygons
Channels: 0

CGB: Ryan Church gave us an excellent concept with sharp sketch geometry to start with.

CGB: Interior renders from the sketch geometry.
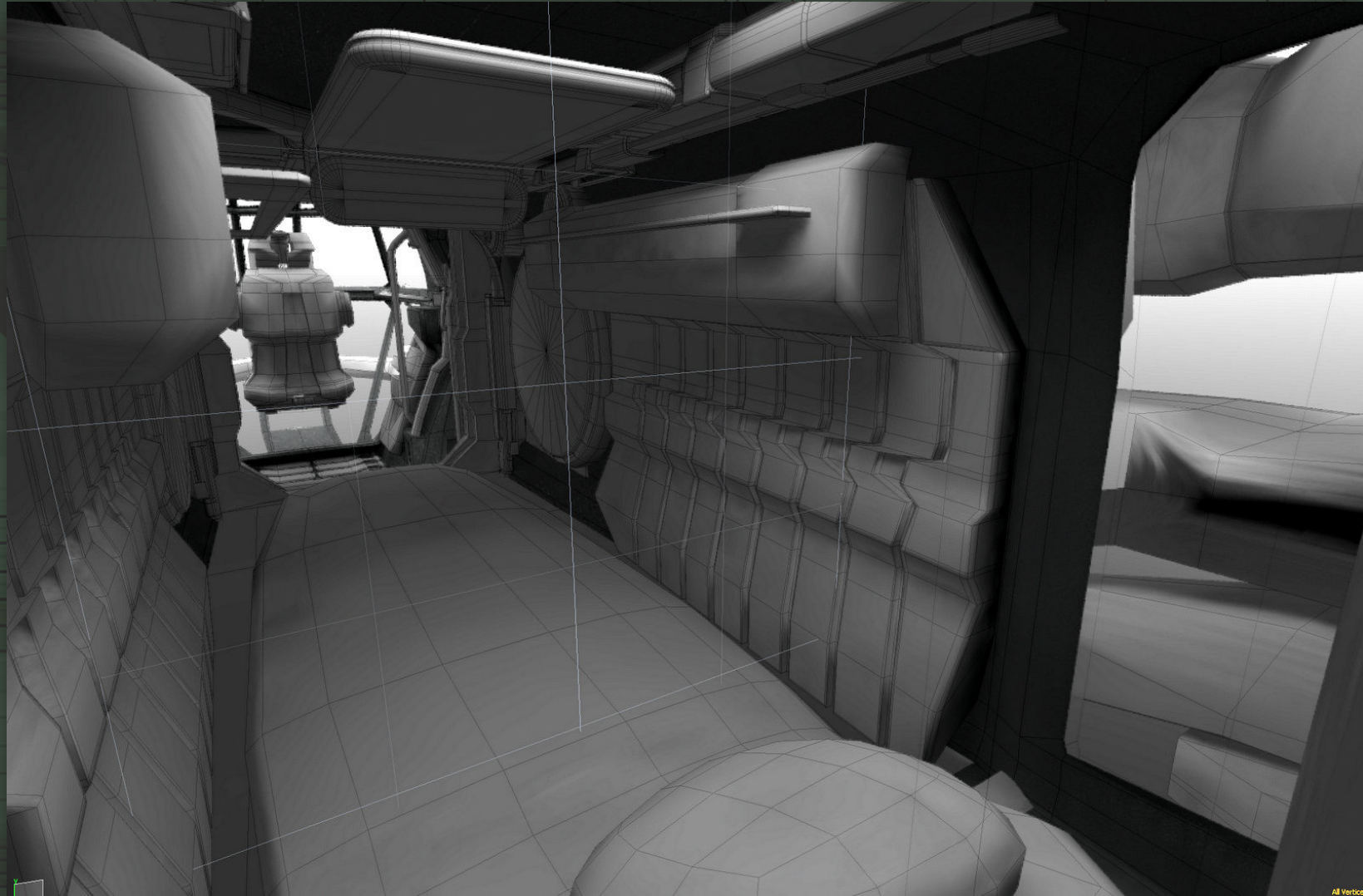
All Vertices

WORKINPROGRESS

Cockpit paint over by Ryan.
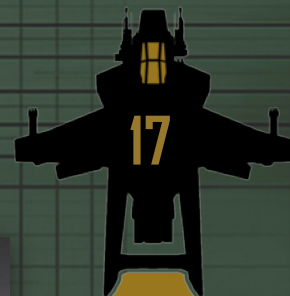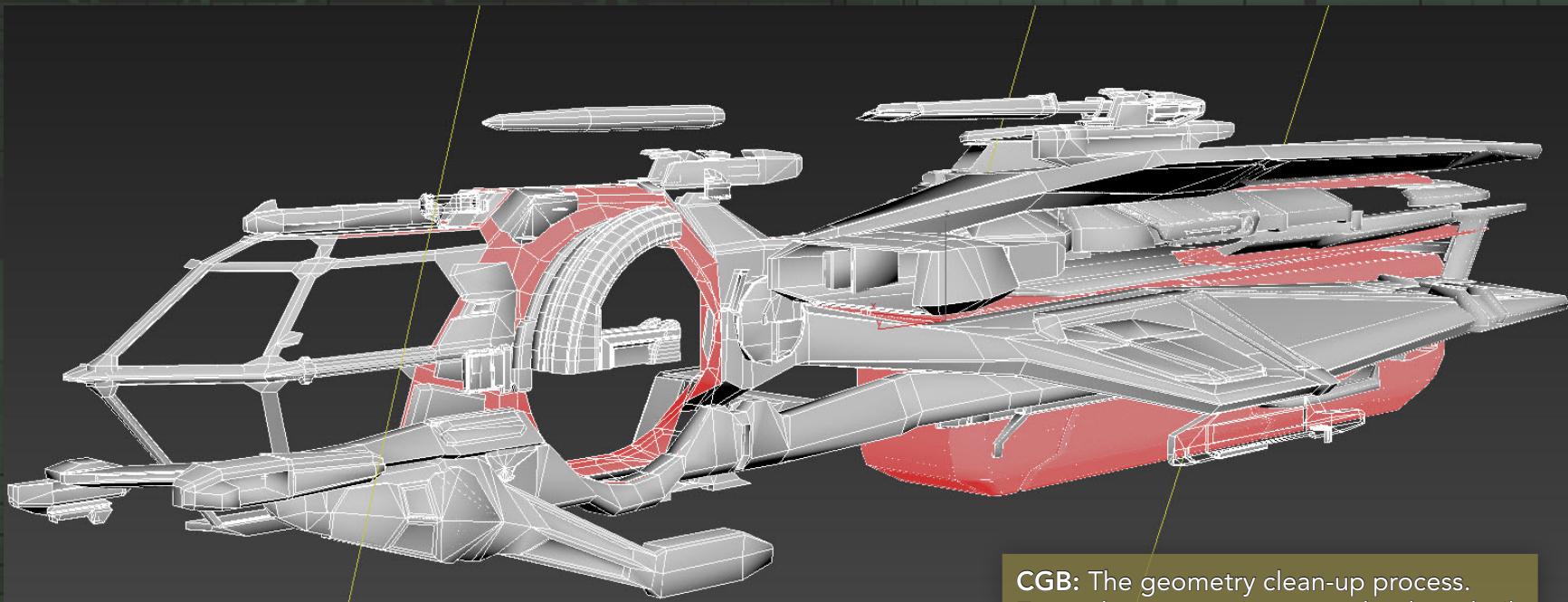
CGB: The geometry clean-up process. Even when some pieces need to be rebuilt from scratch, having the sketch geometry from Ryan helped to preserve volumes and proportions where they needed to be to give the ship the right feeling.

The number of pieces that go into creating this ship make it a little tricky to figure out how they fit together.

CGB: First in-engine geometry tests. This tells us a lot about how the shapes and silhouette will look in the engine, with lighting and ambient occlusion.

The engine make it easier to figure out how all those shapes appear.

|Aurora_GeoCleanup/Exterior | WIP | CGBOT
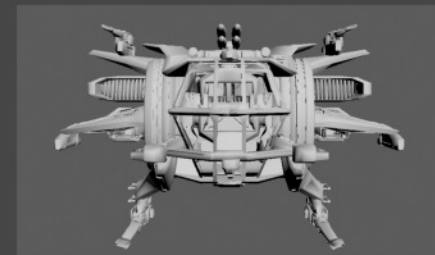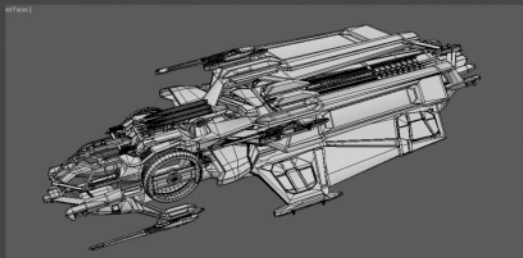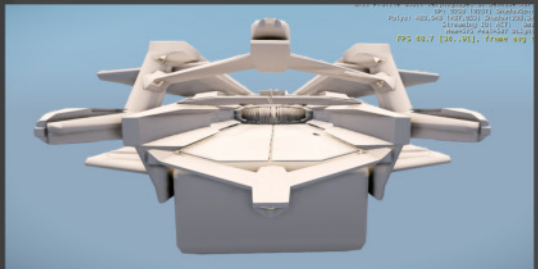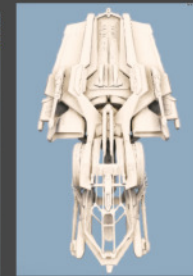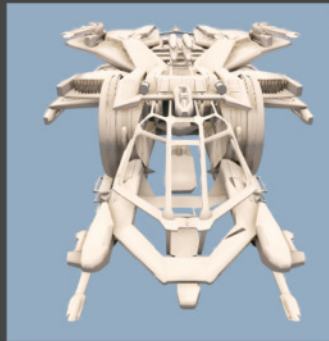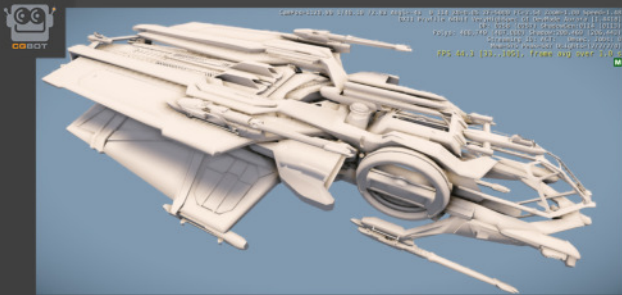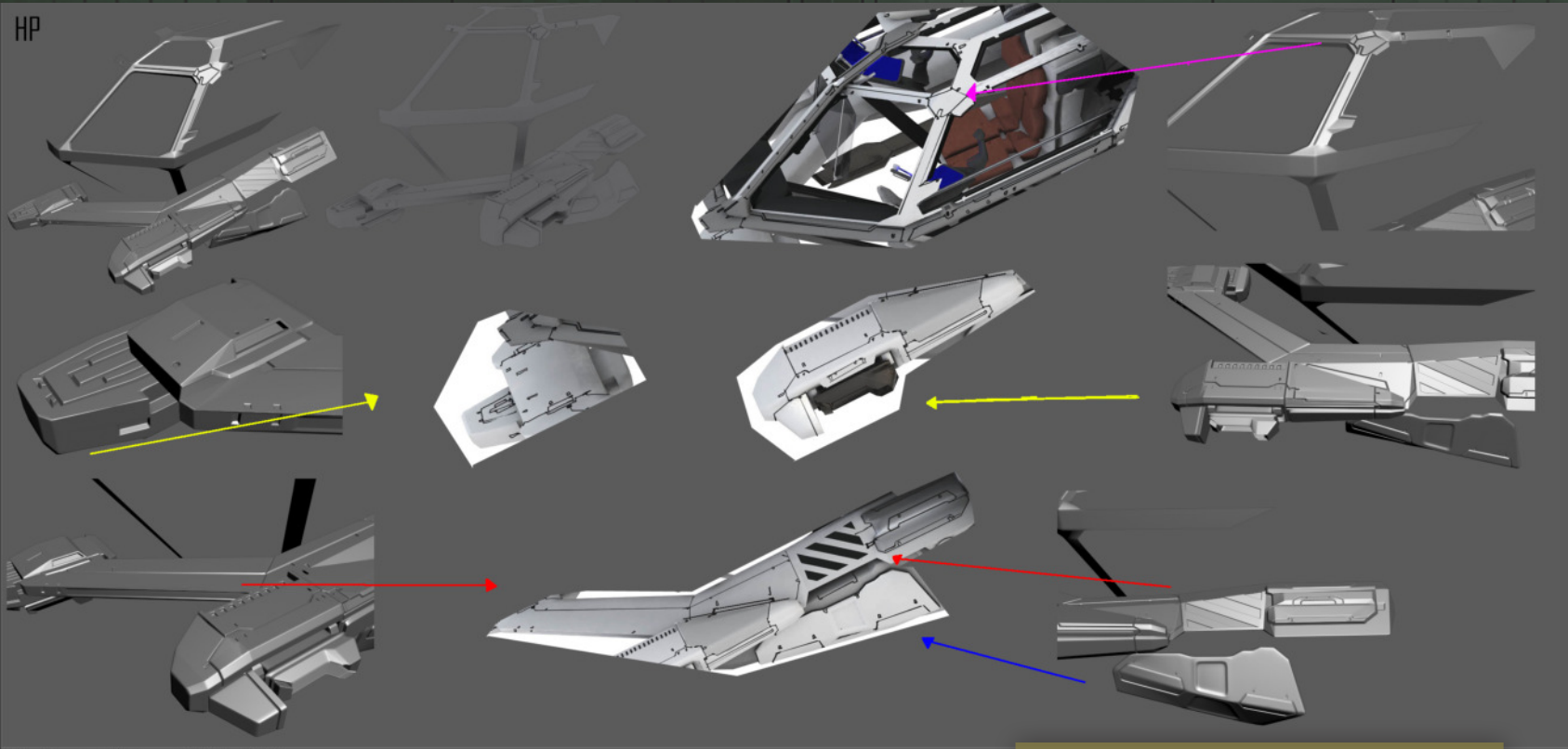
BW|ori_item_temple_fortress_table| Diffuse| CGBOT

CGB: After creating a mid-poly model, we go ahead to a high-poly version to get extra detail on the low-poly areas with the baking process. We can also tell at this point how the surfaces will react to lighting once textured.
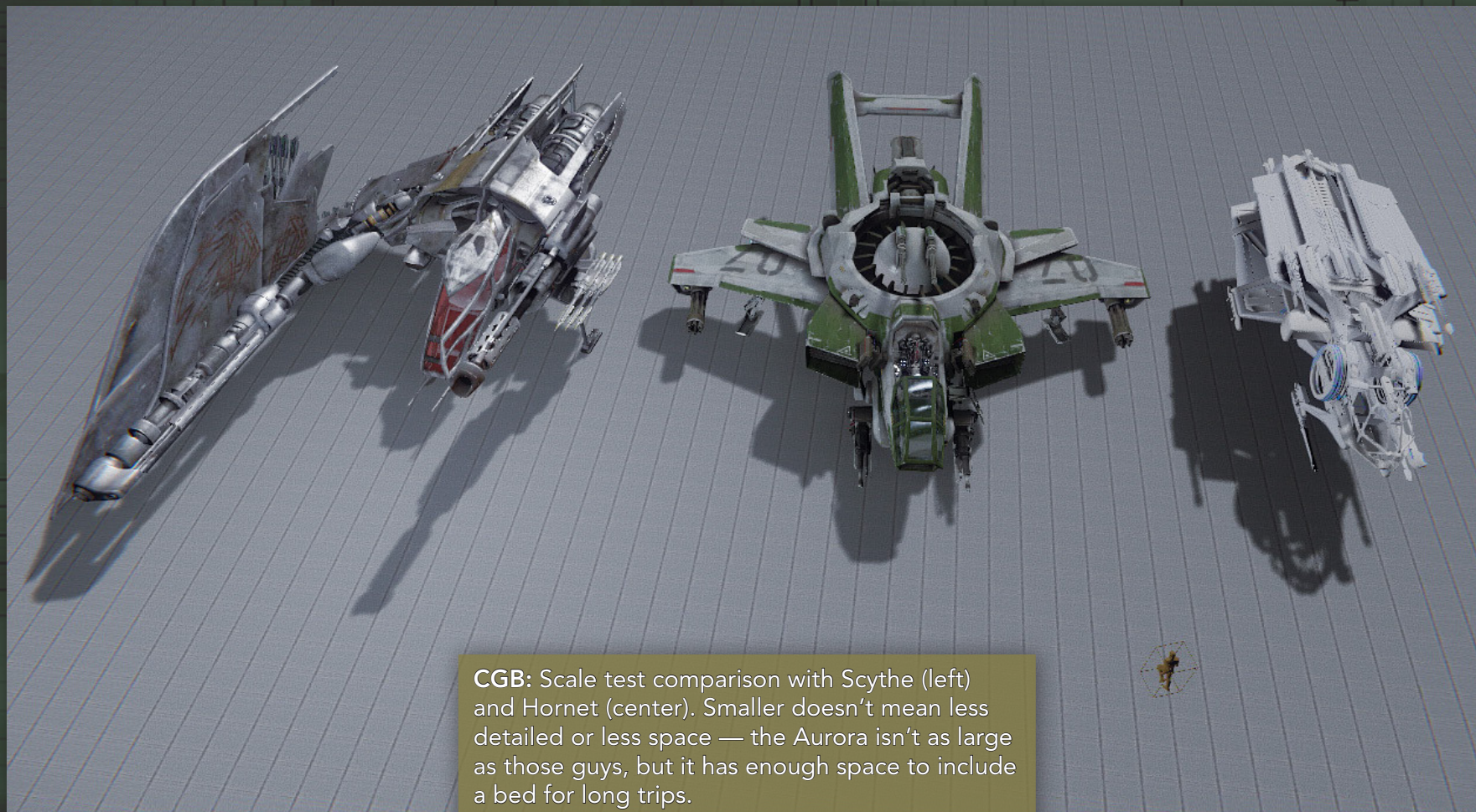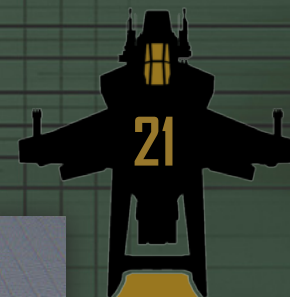
CGB: Scale test comparison with Scythe (left) and Hornet (center). Smaller doesn't mean less detailed or less space — the Aurora isn't as large as those guys, but it has enough space to include a bed for long trips.

Many tests were done at this point to find the best way to get all that detail into the final textures, which really adds a solid look.

CGB: Small detail tests in the game engine.

Even when the Aurora has no textures here, you can tell how good the design is, making it stand out with just geometric surfaces.
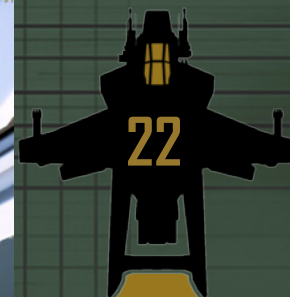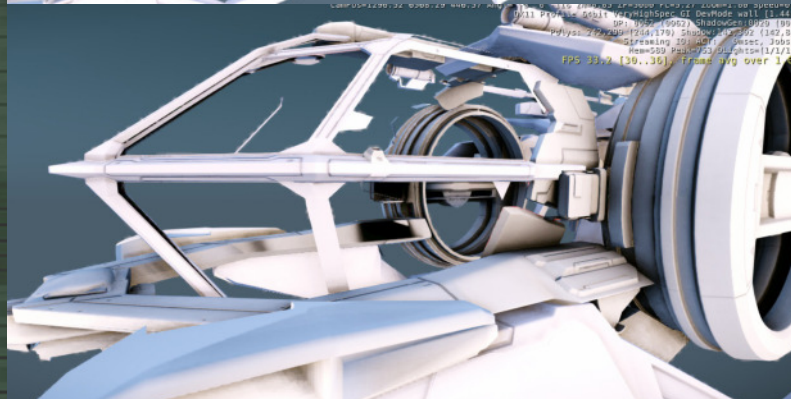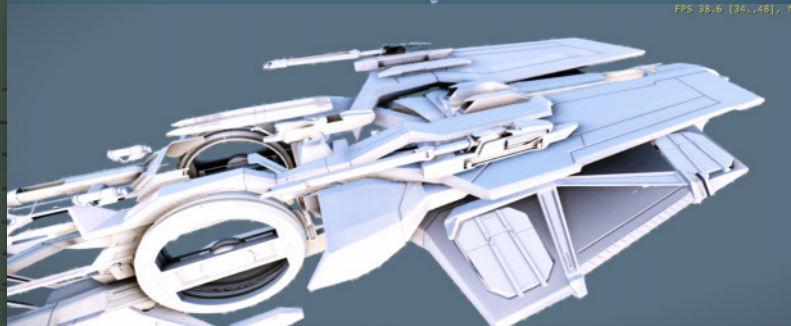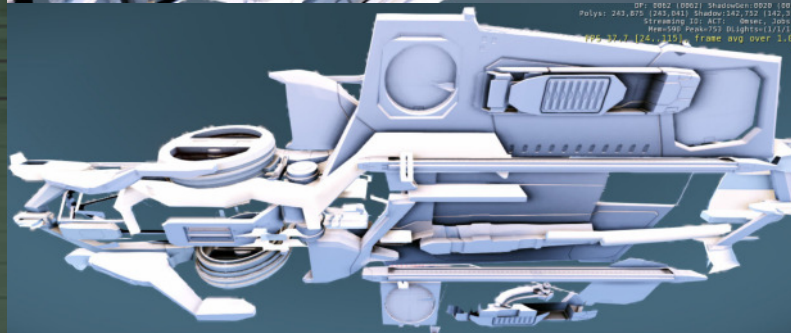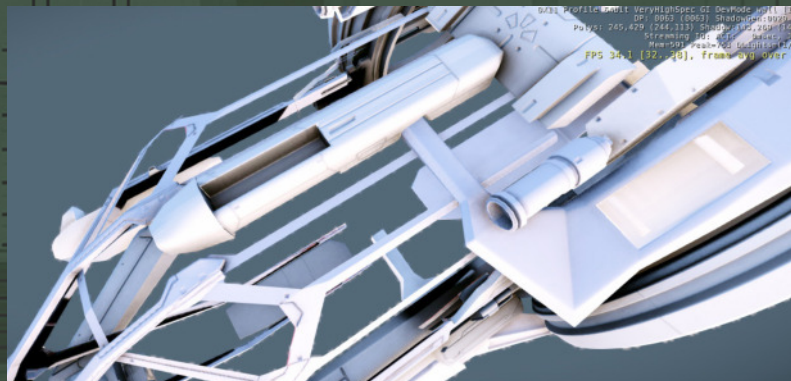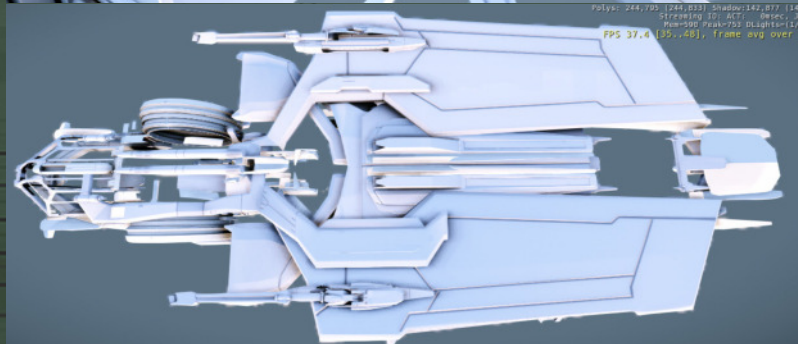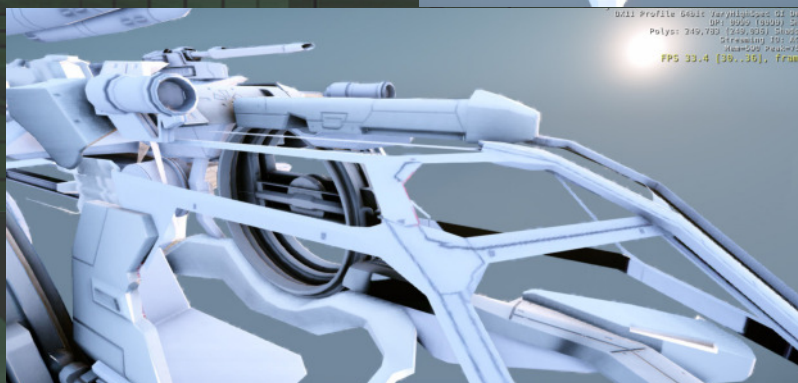
WORK IN PROGRESS

New exterior texel density
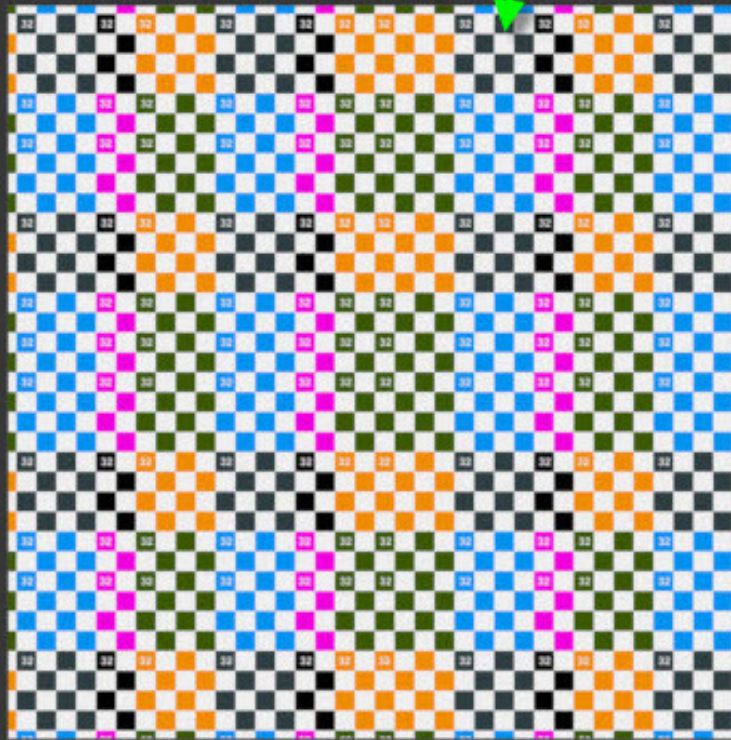
Aurora New Density
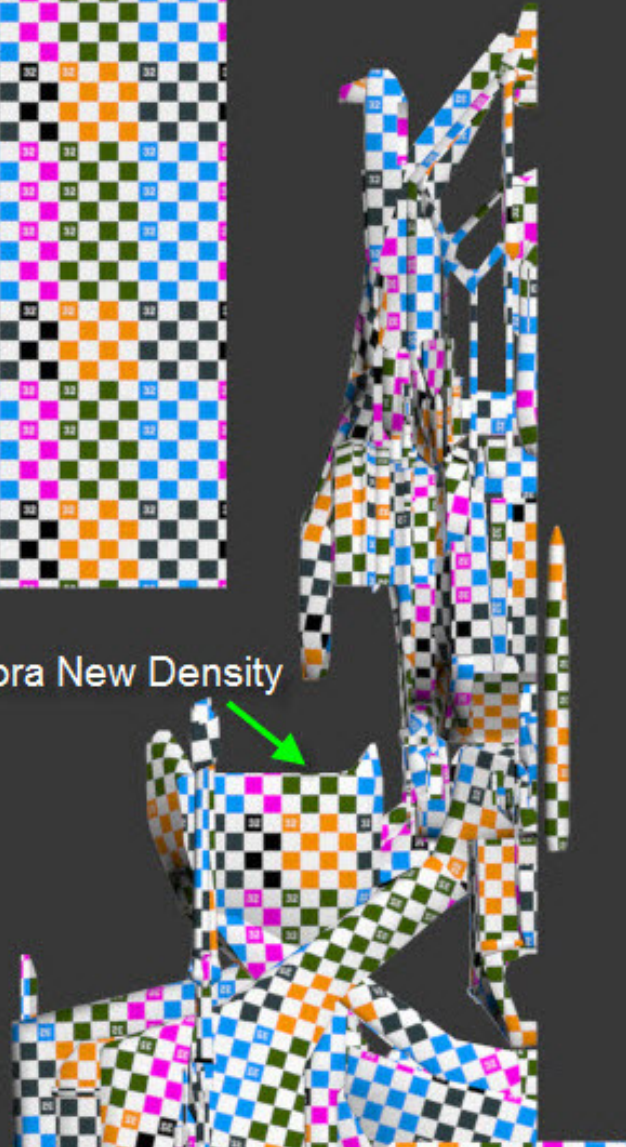
CGB: Texel density. When Chris Roberts asks us to focus on more polys over massive textures, that doesn't mean you won't have a good texture density. In fact, he's pushed higher on this so you can see the same texel on both exteriors and interiors.

It was difficult to find an optimal point of texture density, where details look consistent without sacrificing performance.

WIP

Aurora WIP Textures

Ceiling_Top

GeomEntity124
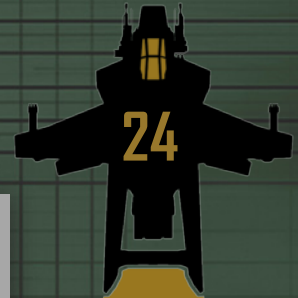
CGB: WIP exterior texturing and material tests.

it's great to see how all the tests and planning start coming together into a good looking final model.
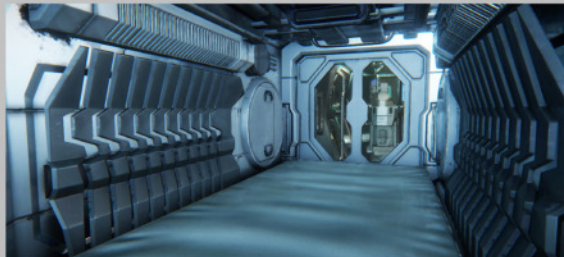
Aurora WIP Textures

CGB: In game-engine textures and materials, All this lacks is a few tweaks and a little additional polish, and it will be done.

Notice how the glass and all the other shiny surfaces make this ship come alive in the game engine.

Texture and material polish.
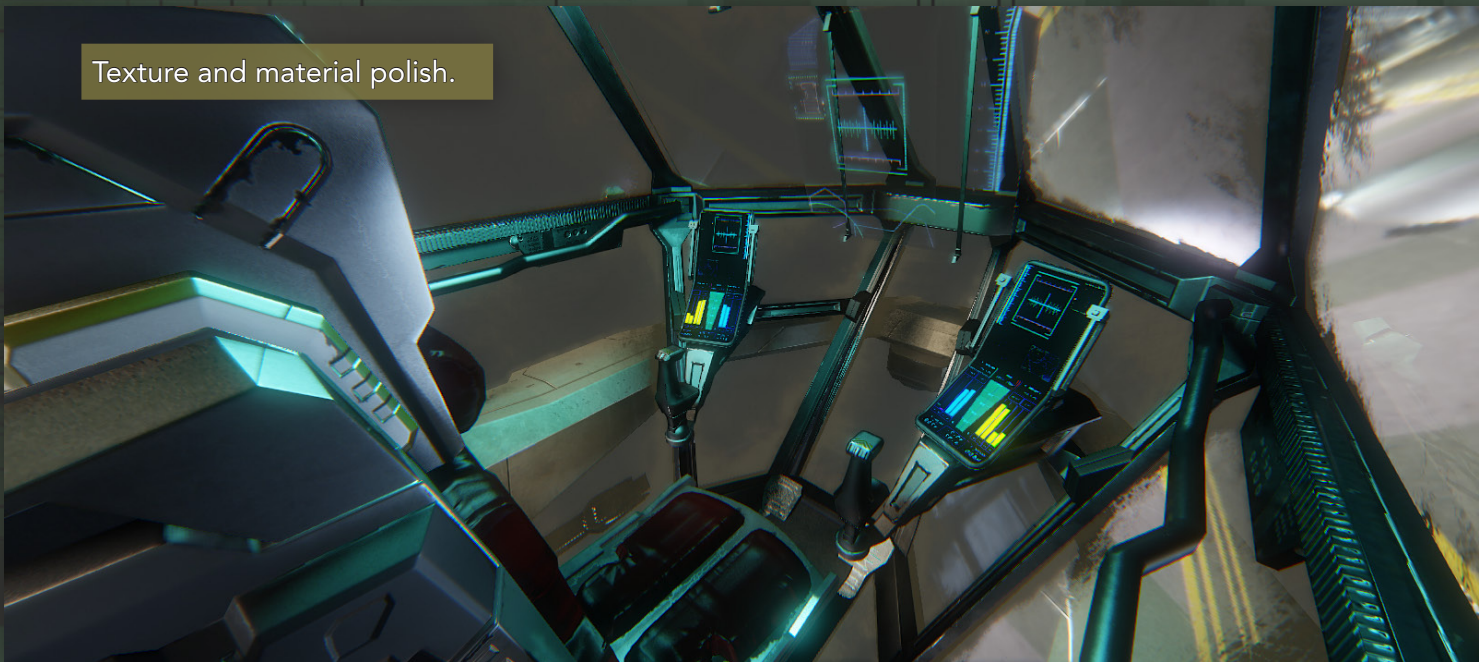
The finished Aurora, in-game

RSI
ROBERTS SPACE INDUSTRIES

27
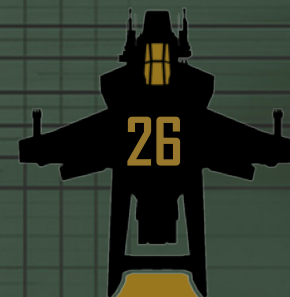
Roberts Space Industries is one of the oldest modern Human institutions, with a corporate history that stretches back all the way to mankind's first steps into the stars. Incorporated in the early 22nd century, RSI was responsible for the development of the Quantum Drive that ushered in the colonization of the galaxy. Governments and corporations quickly adopted the technology and began the relentless expansion that would lead to the modern United Empire of Earth.

But Chairman Roberts had a distinctly different dream: a future where the stars were available to the common man. In 2140, RSI premiered the first model of the Zeus, a quantum-drive equipped starship priced for private ownership. It was this corporate innovation, paired with the technological one of the previous decade, that allowed the Empire to take the form it has today. With a history that stretches so far into the past and so greatly impacts how star culture has evolved, RSI is as much studied by historians and sociologists as it is by corporate credit-watchers.

The company's corporate headquarters is located in New York City on Earth and boasts a showroom displaying the latest model spacecraft and an RSI Museum which displays hundreds of years of famed spacecraft stretching back to the original Zeus. The distinctive RSI tower has been a part of the landscape for generations and the showroom is as much a museum as it is a sales floor. It has become something of a tradition for those touching down on Earth for the first time to visit the facility that birthed "their" ship.

RSI development is divided into several major teams dispersed around the solar system:

ASTRO DEVELOPMENT TEAM

Smaller civilian-focused spacecraft, including the Aurora and Constellation lines. The ADT is arguably the "celebrity" group, the one most aligned to the company's original vision of affordable spacecraft. All ship lines designed by the ADT are distant ancestors of the original Zeus. (the Zeus name was retired in favor of the current star-themed system around 2550.)

CAPITAL DEVELOPMENT TEAM

Larger spacecraft, including military contracts. RSI CDT output includes the Mover transport. It also serves as prime contractor for the Bengal carriers, among other projects; RSI is involved with several dozen spacecraft lines at any one time, either as prime contractor or as a systems developer. It would be hard to name a larger spacecraft in service today that does not use at least some RSI-produced technology. The CDT is headquartered at L5, where larger spacecraft can be constructed in orbit.

ENGINE DEVELOPMENT TEAM

The organization from which the company evolved, the EDT is constantly refining the quantum drive technology the company patented almost nine hundred years ago. Modern jump engines are made ever more efficient in each generation of development, with a significant safety increase part of each iteration. EDT also develops in-house power plant and thruster systems for RSI space-

BENGAL-CLASS CARRIER

craft, with the overall goal of reducing cost in constant pursuit of the founder's dream of affordable private space travel. EDT design facilities and their prime engine factory are located in Moscow.

EXPERIMENTAL DEVELOPMENT TEAM

The experimental team is the so-called "Skunk Works" division of RSI, responsible for top secret government contracts and experimental projects using previously undeveloped technology. The XDT is headquartered on the dark side of Earth's moon, where vast tracts of territory were signed over to RSI in the early 23rd century for engine testing. XDT efforts are not formally budgeted by RSI and their projects never appear on any formal rosters. It is rumored that the XDT is responsible for much of the tear-down work down on Vanduul technologies captured on the frontier.

Civilian Craft

The civilian lines are the pride of RSI's efforts and account for nearly half of the company's gross income. The RSI Aurora remains the most produced spacecraft in history, continually refined over the past decades to allow for a minimum price point and a maximum of upgrade potential. While not as pretty as an ORIGIN or a MISC hull, the Aurora is sturdier, more modular and always ready for action. A variety of factory and after-market upgrades allow Aurora pilots to continually push their hulls to the limits.

The Constellation line is the crown jewel of the RSI private fleet. The latest Mark IV Constellation is a space merchant's dream, allowing for extreme modularity and enough cargo capacity to turn a profit on long runs. Constellations are used as transports, explorers, S&R ships and in dozens of other roles. They remain the most versatile ship capable of landing in heavy atmospheres, meaning they are the ideal craft for someone who wants to reach out into the unknown regions of space. Featuring distinct lines that are an evolution of the Aurora style, the Constellation is poised to take Roberts Space Industries into the 31st century.

Military Use

Although Roberts Space Industries has served as a major contractor on projects like the Bengal-class and other large-scale warships, it has been notoriously unsuccessful at landing lucrative military contracts for smaller craft. The UEE Navy uses a limited number of militarized Constellations as tenders and range-finders, but they have never been keen to adopt RSI craft in great numbers. The company recently lost an estimated 1.7 trillion star credits attempting to win the Next Generation Star Fighter bid, ultimately losing out to the Anvil F8A project. Adding insult to injury, RSI's bid came in a distant third after Aegis' Dogfighter 3000 effort (which the Navy is still considering for a future modified bid). The RSI prototype, dubbed "Black Widow," was deemed too expensive for front line service, which likely means it will also not see the light of day as a civilian craft.

Constellation/Aurora Comparison
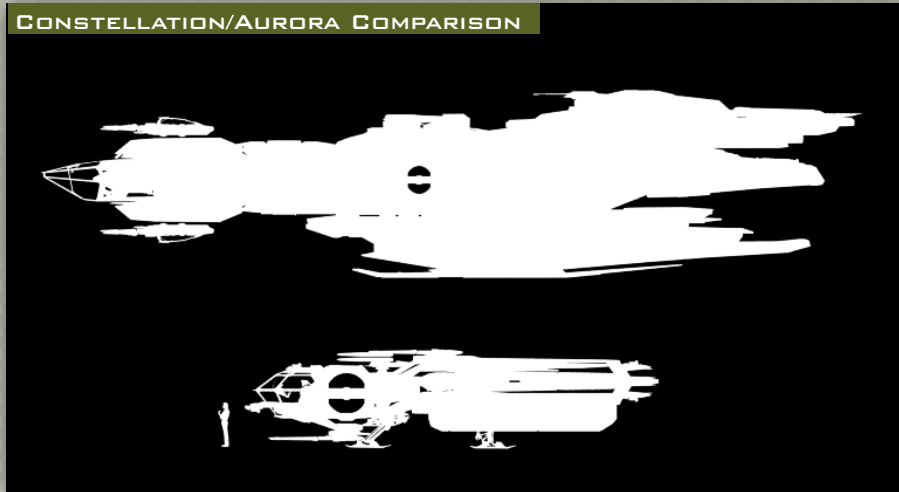
Future

Against all odds and in spite of heavy competition from upstart organizations like MISC and ORIGIN, Roberts Space Industries continues to expand their market share. While other companies have scored temporary successes in recent years, none has managed to diversify to the degree that RSI has. The Constellation alone holds the line against the MISC Starfarer and Freelancer, while the Aurora remains viable against ORIGIN's entire single-seat focus. Larger craft are also unparalleled in their class.

An Interview with Dave Haddock
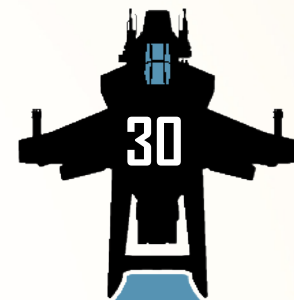
This month we go behind the scenes to talk with Dave Haddock, Lead Writer for Squadron 42 *and* Star Citizen.

JP: You're relatively new to the game industry. How did you get here?

DH: Honestly, it's been a strange path to this point. I went to School of Visual Arts in NYC for Film and the bulk of my work experience has been in movies. When I moved to Los Angeles in 2004, my first job was working the night shift as a Localization QA tester at Activision. Eventually I got an internship at Ascendant Pictures, Chris Roberts' production company. So for a few months I worked days at Ascendant then went straight to Activision where I worked until 2:00 AM.

Eventually they hired me to work as a PA on *Outlander* as it went into concept phase. Over the next two years, I managed to stay on *Outlander* in a variety of positions (director's assistant, behind the scenes videographer, etc.) but I'll get into that a little later.

After that project ended, I wanted to take some time and try to focus on my writing. So I wrote a handful of scripts, shot a short film, and did a comic book adaptation while looking for work.

In fact, the day I met with Chris to talk about *Star Citizen*, I had a job interview at a visual effects company immediately afterwards. To be perfectly honest, I was initially hesitant. I thought the demo looked spectacular and absolutely believed in Chris' vision for the project, but I had studied movies, I had never written a game. Even besides the massive scope of the universe, it's a totally different discipline to write interactively.

BEHIND THE SCENES

In short, I didn't want to screw it up.

JP: At the same time, you were one of Cloud Imperium's first employees. Tell us about what you worked on in the early days of Star Citizen.

DH: Initially, Chris and I would just discuss the potential for the universe. For myself, I was trying to get a sense of the tone and style of the experience he was envisioning. From that point, I started delving into source material, reference, and just started churning out a variety of responses to those ideas, usually just one or two page ideas of the broad strokes of the universe and the player's part in it.

We'd go back and forth, saving tidbits, tossing others and ultimately started sculpting the political relationships and examining them as if they were characters; who are the governing bodies? What is their past? How did they get along? If two don't like each other, why? It was like trying to create a political ecosystem, making sure that there was a balance of needs and wants.

From there we started working on the timeline. It was important to Chris that we don't go too far in the future. The idea being, if you go too far into the future (i.e. four thousand years), you'd risk losing the players' connection to the society because it's so vastly different. It becomes an intellectual connection rather than an emotional one. So the goal was for the universe to feel futuristic but lived in and relatable.

The timeline also helped characterize the various factions. I particularly enjoyed Humanity's roller coaster between the light and the dark side. The timeline, of course, went on to become the Time Capsules. Once we started posting those, that was pretty much all I did every day for that whole month leading up to the GDC announcement: writing the bits and building the images. Fortunately, we

were able to have a photo shoot for the characters in the pictures, which was massively helpful.

I'm having difficulty remembering most of that period though. It's still a bit of a blur.

JP: What are you working on now?

DH: I'm focusing more and more on the *Squadron 42* single-player campaign, assisting the designers in building the mission structure, creating some of the characters you'll interact with and starting on the script.

For the persistent universe, at the moment we're trying to build out the universe (deciding how many planets are in each system, how many are inhabited, etc.) and come up with potential corporations and ship manufacturers for the various parts you can use to customize your ship.

JP: Were you a gamer before this? What do you play?

DH: I grew up playing games, but was never really any good at them. The first computer game I ever bought was *King's Quest II*. There was actually a problem with my copy that wouldn't let me save my game so if I wanted to beat
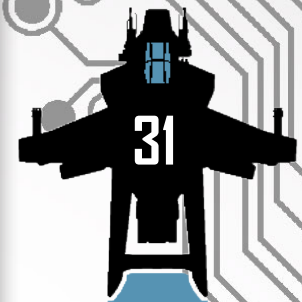
it, I'd have to play through the entire thing in one sitting. Probably one of my all-time favorites was a turn-based tactical robot game by Maxis called *RoboSport*.

I worked at a software store through high school so that was the point where I was probably the most informed as to what was happening in the industry. During college and after, I was pretty broke so my gaming drifted off a bit. Some of my friends from film school and I did have an ongoing *D&D* and *CthulhuPunk* game going.

Since I started on *Star Citizen*, I've been trying to play more games, partially for fun but mostly to see how they structure their stories, handle their dialogue, etc. I went through *Mass Effect*, tried a little bit of *Eve*, I think I just hit a wall in the new *XCOM*. Like I said, I'm not very good.

JP: You were on the set with Chris Roberts for Outlander. *What was that experience like?*

DH: That was a lot of fun and an ambitious shoot.

As I mentioned earlier, I had been on *Outlander* since the early concept phase so it was wonderful to be able to see all the fantastic artwork turned into great sets and props. I mean they cut down their own lumber to build a Viking village. Come on.

In a nutshell, I got to be on set everyday, film cast and crew interviews and watch the movie get made.

During the shoot, I was staying in a house with Howard McCain (the director), David Dodson (the editor), and David Kuklish (VFX Supervisor) which was appropriately nicknamed the Dave Cave. We were in Canada from October through Christmas so, after Los Angeles 'cold' (aka fifty degrees), to go back into a month of night-shoots was a little bit of system shock.

Movies are a lot of work; a twelve-hour day is a short day. It feels even longer when you're standing outside throughout the night in December in Nova Scotia. They're also like working in a bubble, the time commitment is so vast and the hours are so strange that you spend almost all of your waking hours around the same group of people. I've always loved movies and the process of making them, and loved the chance to watch all of the people involved.

I'm still good friends with a lot of the people from the shoot. Chris, Howard and Dirk Blackman (co-writer) were always incredibly helpful and supportive to me and I think the movie turned out to be a lot of fun too.

JP: Were you familiar with Chris' work before you met him?

DH: I was. I wore out my copy of *Wing Commander*. I mentioned I worked at a software store and sold quite a few copies of *Wing Commander III*, which was agony because, at the time, my computer couldn't run it.
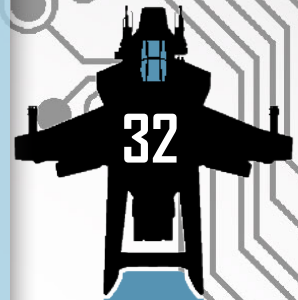
Wing Commander was really the first time I learned the creator of a game. At the time there were only a handful of people whose names were advertised with the title of the game so it became a stamp, a validation, like seeing a director's name on a movie. So I would see Chris's name pop up on various projects. A friend of mine from high school was also a programmer at Digital Anvil, so I would get updates from time to time on what they were working on.

That was part of the reason I sent my resumé to his production company when I saw that they were looking for interns.

JP: Tell us about your writing process. Where do your stories come from, how do you get them down on the page?

DH: Often times, the stories start out as an image or a feeling. It could be from anywhere in the story, not necessarily the beginning or finale. Kid Crimson's was the repeated line "You are not in control" from the opening and the scene where Quell (the Advocacy Agent) gets shot. Then I just build around that, trying to set up what you need to set up

to evoke that original image in your head. Otherwise, even though they're written in installments, the story follows a pretty standard three-act structure. The trick (and source of much enmity) is to always end on a cliffhanger. You gotta get people to want to come back, right?

The tricky thing about the writing I've been doing on *Star Citizen* is, based on the release schedule, I don't really get the opportunity to outline and rewrite, which is a massive part of refining any story. Ideally, you want to get your whole story out (often the most grueling part), then be able to look at it as a whole and decide what you need to tweak, lose, pump up, etc.

Cal Mason and Kid Crimson were written without an outline. The Time Capsules had ended and we were just entering the crowdfunding so we wanted to keep the content coming. I think I pitched Chris on a Monday something to the effect of "Two serials, one sort of a Flash Gordon do-gooder type, the other a film noir about a criminal." By Friday, the first issue of Cal posted.
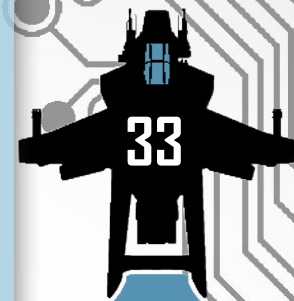
So it was a little nebulous there for a while, building a story as you go, making sure you don't seriously contradict facts that you presented in earlier issues. I think I finally figured out the root of the Kid Crimson mystery by issue 4 or 5. Cal came a little later.

When it comes to getting the stories down, I mentioned how much I use music to write. It's almost constant. I'll make playlists of songs that evoke the mood and feeling of the specific story I'm working on.

Another line that I find I go back to is a line from, oddly enough, a chess movie called *Searching For Bobby Fischer*, "don't move until you see it." For some reason, it impressed upon me meaning: don't start until you see where you're going. Of course, I can't sit for days waiting for inspiration to hit so sometimes you have to push yourself through it.

The trick is figuring out which type of circumstance you're in.

JP: What has it been like working remotely while the LA office is prepared? How do you stay in touch with the team in Austin?

DH: I'm not a big fan of working from home. I thought I would be, but I found it incredibly difficult to disconnect myself from work, made even more difficult because I live in a studio apartment so I've only got one room. It's also weird because you're basically working in a void. The bulk of my interactions would be through emails and the occasional Skype conference call.

CAPTAIN HADDOCK, FAMILIAR TO US AS DAVE'S ALTER-EGO ON SKYPE.
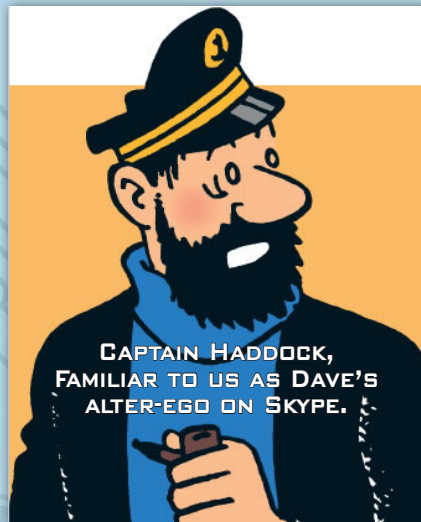
Now that the office is open, although it's not a quick commute — well, it should take thirty minutes, but Los Angeles is not a speedy place to get around — I'm enjoying having a place to go to work. The space itself is spectacular and location is even better.

JP: What are you most looking forward to in Star Citizen?

DH: The old *Populous* player in me is looking forward to watching the universe react to the players and vice versa, watching crime and the economy play off each other, and constantly tweaking the universe to keep the players on their toes.

JP: Are we going to see Tonya Oriel, Cal Mason or Kid Crimson again?

DH: I think so. I'm really happy with how their respective stories turned out and think there are a lot of places the characters could go. As a fan of Dashiell Hammett and film noir, I figured the Kid Crimson would be my favorite, but I was surprised with how much I enjoyed Tonya's story. And Cal is Cal — that Flash Gordon-esque almost ridiculously gallant derring-do is always a blast to write.

Actually I still haven't even started thinking about the novella … I should probably get on that.

JP: You recently wrote a story that Chris Roberts deemed too depressing to release. What was it about?

DH: A Vanduul raid, so not the most upbeat topic to start with. It's going to go through some rewrites and we'll probably release a version that's a little less relentlessly dark.

Although I absolutely agree that it needs to be toned down, a part of me was happy with that review. There wasn't a lot of blood or killing, but still had enough of a bleak tone to evoke that reaction so I count that as a win.
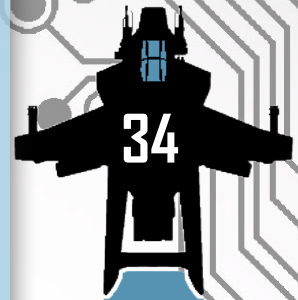
Earth

Earth: cradle of Humanity, heart of the Empire, birthplace of mankind … and a difficult place to turn a profit. It's no secret that Earth is set in its ways. All roads lead to Earth and the system is designed to support native-born Humans above all others. Tax policies support Earth-based corporations at the extreme disadvantage of those based on worlds like Terra, while representation in the UEE Senate continues to skew disproportionately in favor of Earth's populace.

Put simply, Earth is the capital and namesake of the United Empire of Earth and it is the seat of power that governs everything from rising systems like Terra to distant colony worlds that barely impact the homeworlds' economies. Home to the Imperator and the UEE Senate, Earth sets the standards for everything that happens in the Empire, from moderating economic models, to setting social trends, to organizing military campaigns. While other more strategically located star systems, like Terra, have begun to make claims for higher standing in the Empire, Earth is still the acknowledged center of the universe.

Contrarily, Earth wants for everything. Thousands of years of Human civilization have left many of the planet's natural resources exhausted and the system imports trillions upon trillions of tons of food, raw metals, manufactured goods and everything else imaginable. If it were not for the so-called "balance tariffs" keeping prices uncompetitive, this would be an ideal situation for any erstwhile shipping magnate. As it is, a run to Earth can barely be guaranteed to provide more than a 5% profit … and that's before you get to the exorbitant docking and refueling fees for spacecraft carrying other systems' registration numbers.

Earth is also safe, to an extreme. The UEE military, Advocacy and various police arms patrol the system ceaselessly and they are notoriously uncompromising when it comes to punishing wrongdoers in the system. There is no faster way to get an extremely high bounty on your head than to commit a crime, even a minor infraction, in space near Earth. The military dockyards in Earth orbit are home port to no less than five Bengal-class carriers and at least one is drydocked at any given time.

The planet itself is pockmarked with starports, a natural evolution of nearly a millennium of Human space travel. Three of these have taken the throne as the significant import/export centers of the world: New York in North America, Moscow in Europe and Beijing in Asia.

New York

New York is the cultural capital of the UEE, an intergalactic tastemaker and a celebrated blending of both old-style architecture and ultra-modern arcology construction. Most visitors immediately take note of the historical landmarks protected by a thick layer of domed visicrete, allowing such institutions as the Empire State Building and Central Park to continue to exist amidst a modern landscape of massive supertowers.

In terms of commodities, selling bulk goods in New York is like trying to get blood from a stone. Nowhere is more protected by UEE law than this city, and anyone but the most desperate traders are advised not to bother. Even

black market goods are extremely risky, as it is unquestionably the most well-policed area in known space. However, New Yorkers — even those who have never left the planet — still fancy themselves cosmopolitan men-of-the-galaxy. As such, there is an active market for cultural trinkets from distant stars. Trendy New York galleries happily display everything from Hadesian ice shoes to damaged Xi'an engine coils … a vivid example of one man's trash being another's treasure.

New York is also home to the famed Roberts Space Industries headquarters complex, featuring a showroom and museum. Many visitors make it a point to pay their respects upon arriving in the port, celebrating RSI's involvement in introducing mankind to the stars.

Possibly New York's greatest importance is that it truly is the junction point of the universe in terms of trading. While Earth produces few valuable raw materials in this day and age, almost everything moves through its most significant port on its way somewhere in the UEE. If you're on the prowl for a particularly rare upgrade or an extremely special commodity, the shopping district surrounding New York's spaceport is the place to seek it.

Moscow

Moscow is a no-nonsense kind of town with more of an urban blue-collar vibe than New York. Moscow is a major distribution center for manufactured goods, in particular jump engines and thrusters produced in the factory complexes that span the Urals. Goods are moved into the city for dispersal to the stars through a system of high-speed transport trains. Down on their luck spacers can always find hard work in the Moscow dockyards, which account for the vast majority of Earth's export shipping.

Despite this, Moscow is not a manufacturing town and has little need for raw materials (which are sourced elsewhere). The city tends to have a taste for the opulent, and luxury goods sell as well as anything can on Earth. Traders are advised to ship high-end electronics, artwork, high quality foods and various non-offensive black market items to Moscow before trying to turn a profit running guns or metals.

Beijing

The largest starport in Asia, Beijing has retained more of a link to the surrounding environment than the vast cityscapes of Moscow or New York. Though still a bustling metropolis, Beijing is your best chance for seeing a bit of foliage or natural water. Beijing boasts rail and transit lines stretching to the nearby Bohai sea, a port region capable of water-docking some larger types of spacecraft. The Aegis China factory produces Idris-class corvettes and puts them through their pre-space trials in the area.

Beijing has a need for raw materials, especially rarer extra-galactic varieties. The less likely a material is to be found on Earth, the more valuable it will be on the commodities market in Beijing: think Vanduul kan ores, thermacrete, isometal and the like. There is a bustling black market in the city, unlike any found in Earth's other major ports: if you're on the hunt for illegal cyborg upgrades, try Beijing first.

Market Deals — Earth

SELL:	IRON ORE (Beijing)	+1
SELL:	LUXURY GOODS (Moscow)	+1
BUY:	ENGINES, THRUSTERS (Moscow)	+2
BUY:	HIGH TECH COMPONENTS (New York)	+2
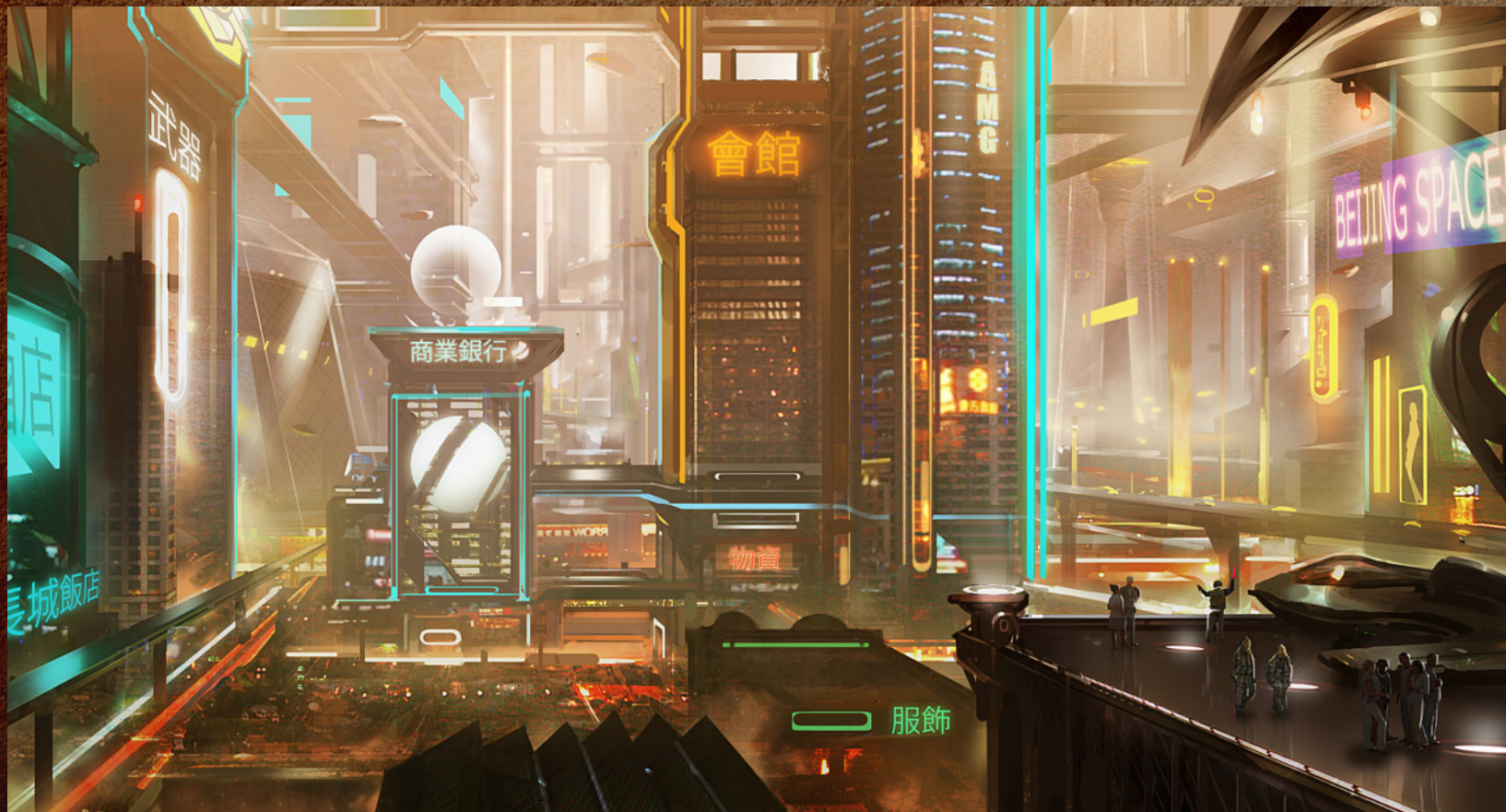
The Void Rats

by Doug Niles

PART One

Lieutenant Commander Naya Antoinette felt in her belly the familiar flutter of jump point passage as her F7 Hornet emerged into known space. She banked up and around and stabilized her ship, post-jump. Lieutenant Jackson's droll voice immediately crackled over her cockpit comm:

"Hey, Skip — what can go wrong?"

Of course it was Jackson asking the question — it was *always* Jackson. The squadron commander grimaced in private frustration but she kept the emotion out of her voice as she replied. "Just stay on station, Lieutenant. I'm pretty sure if you follow your orders, *nothing* can go wrong."

He didn't believe that any more than she did, but he was a perceptive enough subordinate to recognize his CO's tone. "Aye aye, Skip. I gotcha covered," he replied by way of sign-off.

She saw the brief flash of his thrusters as he veered in the opposite direction, circling around to keep the shimmering jump point in front of his eyes — and his forward-firing laser gatlings.

The other two pilots of the "A" element, Stern and Lorraine, arced around with equal speed, so that all four Hornets of the advance element reached ready stations within a matter of minutes. Stationary now — but with power plants humming at the ready — they settled down to wait, hoping it wouldn't be for long.

The other three ships were just blips on Antoinette's screen, posted as they were in a square about a hundred clicks on each side. The shimmering vagueness of the jump point was barely visible to the naked eye but clearly outlined on the HUD's J-Scan, in the middle of the square. Right now, it just sat there, almost taunting her — a reminder that a whole universe of possibilities, opportunities

and promotions waited beyond that portal.

But she, and her pilots, had been assigned here, to the Centauri system. She told herself that the orders were not intended as punishment — and Admiral Hackbarth had said the same thing — but in her heart she knew different-ly. If she had been a little more . . . what? What *should* she have done, when the alien fighters and their leader with the spidery-shaped quad burner had swarmed from the asteroid belt to ambush her once-splendid squadron?

She had been alert, as always, and she had anticipated contingencies. She had trained her pilots to the limits of endurance before they had dutifully performed a sweep through the Cathcart system — and they had still been am-bushed, decimated and demoralized. Eight good pilots, long-time comrades in arms, had perished, and the rest of the Void Rats still reeled, at least internally, from the shock.

So the now-understrength squadron, flying out-of-date fighters, had been sent to this system to recover, re-group, retrain. She'd been told that replacement pilots and ships would be coming to her, eventually. Centauri was not exactly a backwater — less than a year earlier a task force under Admiral Showalter himself, centered around the mighty fleet carrier *Gemini*, had fought a major battle against the Vanduul here. The raiders had been driven off, though, and the flow of combat had moved on to other systems. Centauri had been quiet ever since. It was not the kind of system where a disgraced officer could rebuild her reputation.

And now, all she could do was wait. She was grimly re-solved that she would do her job, and see that her people did their jobs, no matter how long it took. First order of business: make sure the coast was clear — it was — and be ready to escort their support ship when it arrived. *Africa-nus* would either emerge from the jump, or she wouldn't. Probably she would, but Antoinette's memory of that de-crepit old warship did not inspire confidence.

The squadron CO turned her attention, reluctantly, to the deployment and capabilities of her little four ship detach-ment. Like herself, each of her pilots flew an Anvil Aero-space F7 Hornet. The little ships were a now a generation obsolete, compared to the brand new F8s deployed aboard *Steed*, *Gemini* and other modern fleet carriers. Still, she liked the ships; and the F7 was the fighter she and her people had flown up until the incident, just a few short months ago. Before that spider-winged attacker had ended eight lives, and irrevocably altered so many more.

The F7s were in fact very capable machines. They lacked some of the speed and shield-power of the new F8s, but they had the same maneuver thrusters and the regulation arsenal of formidable weaponry: the dorsal ball turret with twin laser Gatlings; the canard turret with double neutron guns; a battery of Talon Devastator missiles; and of course, the pilots' favorites, the forward firing lasers that gave the person at the controls a clear view of the intended target.

And Antoinette had to admit that even the F7s were still a long sight more modern than *Africanus*, a ship a hundred years out of date. Once the warship had been a modern cruiser, among the pride of the UEEN. And once, at about the same time, Antoinette's grandmother had been play-ing tea party with her teddy bears back on Terra. But Grandma had grown old, and so had *Africanus*. Now the squadron's support ship had to be part fighter-carrier, part cargo-hauling tub — and the squadron's home for the foreseeable future.

With a flicker of the jump point and then a sudden, ever-startling appearance of mass, the ship emerged from unknown space, closely trailed by four more Hornets. With her eight outlying escorts falling into the standard Gear formation, four before and four behind, the big old ship steered toward the orbital station that was Centauri sys-tem's primary off-world business and military hub, and the squadron's new duty base.

Watching as *Africanus* shuddered slightly from a wavering power plant in one of her engines, Naya acknowledged that it was the "cargo-hauling tub" role that seemed to have defined her appearance. She needed a paint job, and several of the hard points on her hull — spots that once had been weapon mounts — had simply been left vacant, guns, missile launchers and turrets cannibalized by more modern vessels. She still had a few batteries along her flanks, and a duel rail-gun turret in her belly, but she would be outclassed by a fleet warship of anything higher than destroyer class.

Suppressing her disappointment, Antoinette checked her scans to make sure that the eight fighters formed up properly. It was a routine maneuver, but she wasn't leaving anything to chance. As if sensing her inspection, Jackson flared his burners in the #2 spot, a speck of brightness in the Void, but held his position with precision. She winced, irritated, even as she acknowledged that, though the young lieutenant was an annoying hotdog who thought he was God's gift to the universe, the man knew how to fly a fighter.

The trip to the orbital station passed routinely and in less than an hour *Africanus* reversed her thrusters and decelerated. She was far too large to attach to any of the docking ports on the station, so she settled into a matching orbit about 20 clicks out. A few smaller freighters clustered around those station-mounted space wharves, like piglets suckling from a sow. Other ships — small fighters, scouts, and interstellar cargo craft that were operated by individuals and small consortiums — would be inside the station's hangar bays, protected by secure airlocks. One other ship, an old ore hauler nearly twice as big as *Africanus*, drifted in space a few clicks farther out from the station.

Antoinette watched as her support ship's shuttle bay opened and the boxy cargo hauler dropped out. With a flash of thrusters it steered toward the station. Chief Petty Officer Bradryck MacClean would be at the controls,

Antoinette knew, and he'd have a list of necessary supplies as long as his arm. The veteran noncom, who had chosen to go into exile with the rest of the Void Rats, had made it known that he would whip the old warship into fighting shape or die trying. The fighter squadron skipper felt a flush of gratitude at the memory of his transfer request; she wasn't sure she could have kept these old fighters operational without him.

As for herself, she had to report to the UEEN liaison officer on the station, and she decided to take her #2 along. She issued the commands over the squadron's secure comm:

"Stern, Lorraine, stay on Combat Space Patrol for now. B Group, take your fighters aboard the flagship. Jackson, you're coming with me onto the station. Remember to mind your manners."

Somehow, she managed not to grimace when she called *Africanus* a flagship. She and Jackson took up position flanking the bulky shuttle, approaching the yawning hangar in the outer ring of the orbital. The large landing surface, screened by its energy curtain, beckoned with bright lights and the promise of creature comforts just beyond. The CSP fighters banked off, while the four Hornets of B Group eased into the big ship's hangar bay.

And then all hell broke loose.

*   *   *

Chief MacClean, at the controls of the shuttle, felt the impact of a dumbfire rocket on the starboard thruster, the explosion rocking the hull violently. His head snapped back, only the high back of his seat preventing a broken neck, and the tubby little ship began to yaw wildly, spinning and tumbling at the same time. Instinct took over and Mac kicked in the maneuver thrusters, steadying the now-crip-

pled vessel. The entrance to the orbital station's hangar bay glowed like a rectangular star — bright, promising, and so damned far away.

"Where the hell did that come from?" he demanded of Dirkson, the young helmsman in the #2 seat.

"Nowhere, Chief! I don't know!" the kid cried, his voice cracking. "We're under attack!" he added unnecessarily as another rocket flashed past, missing them by a hair.

Mac flipped the comm link to ship-wide broadcast, mindful of the half dozen crewmembers strapped into their hard seats in the windowless, but pressurized, cargo hold. "What's the report down there? Damage? Anyone hurt?" he snapped.

"All good, Chief," came the reply, some starman keeping his voice remarkably calm.

"Steady as she goes," the chief answered. "We're almost home," he added, exaggerating slightly.

A laser blasted from the darkness, and MacClean ducked in spite of himself. Annoyed by the involuntary gesture, he raised his head again and immediately smelled ozone. A couple more hits like that and the cargo shuttle would be so much ventilated space-junk. The vessel was underpowered, possessed only minimal shields, no weapons at all — just a tubby little craft that practically screamed "shoot me!" to any potential foe.

A glance out the side-Plexi answered Mac's first question: outlined as it was against the starry vastness of the void, the big ore hauler orbiting with the station was clearly much more than it had seemed. A huge opening gaped in the underbelly of the hull, revealing a sophisticated, brightly lit flight deck. From that suddenly-revealed space, some two dozen fighters had streamed forth. Most of them now swarmed around *Africanus*, but six or eight streaked toward the shuttle, spitting rockets and energy beams.

MacClean tried a quick evasion, a jig to starboard, but with the disabled thruster on that side of the ship the shuttle did a complete spin; it was all the chief could do to steady it onto course toward the docking bay once he came around. He dared not try that again — though the surprising little dance had carried the stubby ship through a hailstorm of lasers, probably because the unknown attackers had been dumbstruck by the silly-looking maneuver.

"Who the hell are they, anyway?" he demanded. He wrestled with the helm as the unwieldy ship again tried to pirouette; it took all of his strength and experience to maintain a semblance of a straight course with only the portside engine.

And that course could hardly be anything other than fatal, he knew. On the best of days the shuttle turned like an overweight old mining tractor. Now one engine was down, and they had to make an utterly predictable beeline toward the only hope of a safe landing. They would never make it.

At least five of the mysterious fighters formed up on the shuttle's tail, like they were preparing for one lethal volley. A sixth one, a quad-burner with a glowing silver electroskin and insect-like appendages fore and aft, circled around to plant itself between the shuttle and the station. Still, Mac had no choice but to plunge on, like a condemned prisoner marching to the firing squad.

Even as he gripped the stick and snarled audibly, something about that buglike fighter triggered a memory. He'd seen that silver spider before — not personally, but in the images of the flight recorders after the fight that had shattered his beloved Void Rats.

Abruptly the spider-ship rocked to the side as explosions sparked along its portside shields. Blasters from the attacker flashed at the shieldless shuttle, but the fire went wide, beams of energy searing past the cockpit. A Hornet swept in, shooting at the silver fighter and drawing its full

attention in return. Mac recognized Naya Antoinette's F7, and muttered a thank you to the skipper. With the lead attacker forced from their path, they might even have a chance to reach the hangar.

If not for the five fighters lined up behind them.

With agonizing slowness they chugged toward the tantalizing bright hangar bay on the station. The airlock was open, only a few clicks away. The shuttle was a perfect target, though, and Mac couldn't figure out why they were still alive.

"It's Jackson, Chief!" squawked Dirkson, checking the scanner to the rear. "He's mixing it up with a whole squadron!"

MacClean risked a glance at his own scanner, and saw a tangled melee raging in the shuttle's wake. "Good man, that Jackson," he growled. "I owe him a drink or five."

Somehow the ace pilot's little Hornet had disrupted the attack formation of all five of the fighters to the rear. Two of them vanished from the scanner, drawing a cheer from the young starman and an approving grunt from the CPO. The other three maneuvered desperately, exchanging shots with the F7 while the shuttle continued its long, slow dive toward the hangar bay.

Mac allowed real hope to grow. Once more he flicked the comm to broadcast. "Hang on down there. This might be a bumpy landing."

The spidery silver fighter suddenly flashed back into view from overhead. More rockets slammed into the shuttle just as the electromagnetic docking tractor from the station took hold. The second — and last — engine flashed a vain protest and broke away. Mac's ears suddenly popped and he knew they were leaking air, fast.

"Hold on!" he shouted to the young helmsman. They couldn't do anything else, and he hated the fact. The docking tractor pulled them into the airlock, but another vol-

ley of rockets lit up the shuttle's hull, and the boxy ship crashed heavily onto the hangar deck. Mac strained for breath — the air was mostly gone — and then fire and smoke filled his senses.

For a moment they did, at least. Then everything went black.

* * *

Jackson pulled his F7 through a turn so tight that he could feel the blood pooling in his feet — only the extreme compression of his flight suit kept him from blacking out. Like his CO, he had deeply resented the recent demotion to the earlier generation of Hornets, but he had to admit they could still turn on a dime.

He was out of missiles, but they had not been wasted: he flew past two glowing hulks, the attacking fighters that had been shattered by his surprise flank attack. Both cockpits were smashed, and the fading flashes of dying powerplants further confirmed their total destruction. And even without more missiles, his lasers were powered up, and he was eager for fresh targets.

The remaining three of the unknown bogies came at him, in a tight triangle formation. His shields were taking a pounding but he diverted power to the ball turret and unleashed the full fury of the twin laser Gatlings. The energy beams cut one of the attackers right in two, dissolving the cockpit and leaving two burning engines to spiral wildly past the station, careening toward the distant star.

But he paid the price as his little ship lurched under the impact of neutron blasts. Even through his breather he caught the scent of ozone, a crackling, electrical stink. He pulled on the controls, struggling to bring the Hornet under control, but the fighter cartwheeled crazily.

It was then that he caught sight of the massive flight deck inside the old hulk of the ore-hauler-that-was-not. The ship seemed almost as big as a UEE fleet carrier, yet from the outside it looked like a century-old wreck. Was it a Vanduul trick? It seemed unlikely — the raiders of that race had their own fleet warships, and they were proud, even arrogant, in their use of them. Such a ruse would be out of character for what he knew of the Vanduul — which knowledge, he admitted to himself, was not exactly encyclopedic.

The lieutenant had no time to ponder the mystery, as the two remaining fighters in his sights split up and banked around him. He saw a third ship, bigger and silver-skinned, and he felt a chilling flash of recognition mingled with barely suppressed fury. That *had* to be the one, the leader of the ambush that had wrecked the Void Rats in the Cathcart system. That attacker was engaged in a duel with the CO's Hornet, and the silver spider was getting the best of it. Antoinette evaded wildly, her shields flashing and quickly fading. She had no choice but to dive away, following the smoldering shuttle toward the station's hangar bay.

Fortunately, a battery of fat-barreled neutron cannons flashed from the station, just above the bay, and the covering fire distracted the enemy fighter enough that Antoinette could evade its otherwise lethal blasts. Jackson saw her swoop into the hangar behind the shuttle, only to have her Hornet vanish into the plume of flames erupting from the stricken cargo vessel. Fire raged across the deck as the airlock panels started to swing shut.

Both MacClean and Antoinette, he realized with sickening clarity, were trapped in that growing inferno. The hangar would soon be like the inside of a furnace.

He reacted without thinking: his own Hornet followed the CO's into the bay in a reckless plunge, just before the airlock snapped shut. Using every bit of his strength he hauled back on the throttle and deployed the landing gear. The little ship came to a bouncing stop, almost toppling onto its port wing before it stabilized. He was vaguely aware of the station's battery banging away from outside the hull, driving the pursuing fighters away from the fiery hangar.

Jackson had popped the canopy even before his ship stopped moving. He swung from the cockpit, his booted feet finding one of the rungs of the access ladder halfway down the hull. From there he dropped to the hangar deck and in a split second took in the situation:

Fire engulfed both Antoinette's F7 and the cargo shuttle. The Hornet rested on its belly, its landing gear either collapsed or never deployed. He started toward the smaller, closer ship, but the CO popped her own canopy and tumbled to the deck. Seeing several maintenance techs braving the flames to pull her free, Jackson turned his attention to the larger vessel.

The shuttle was a wreck, canted at a crippled angle, with the main cargo hatch torn off. Flames licked out of the hold, not quite obscuring the barbecued flesh of several hapless crewmen who had tried, and failed, to escape that way.

The fighter pilot scanned the cockpit, seeing flames and smoke — and flashes of movement behind the cracked Plexi of the viewports. He recognized Mac's crewcut scalp and realized that the chief was trying to free his copilot from his restraints. The second man seemed to be unconscious, but he must be alive or MacClean wouldn't be risking his own life.

"Fire suppression — there!" Jackson called to a damage control team advancing, hauling a long a hose. "Cover me!"

He pointed at the cockpit, and in seconds the team had unleashed a cloud of choking, white-vapored CO_2. Instantly the flames subsided, grudgingly yielding to the temporary lack of oxygen.

Still not bothering to stop and think, Jackson plunged forward, grabbing the ladder and climbing the low side of the shuttle's hull. Because of the overhanging angle his feet at first swung free, and red-hot rungs singed his gloves as he clawed his way upward. With a pull of his arms and shoulders, he swung his feet back to the ladder's rungs, and clambered toward the cockpit. His suit, which included a helmet breather, was fire resistant, but that resistance wouldn't hold out for long.

Finally he reached the top of the ladder, and his eyes met Mac's over the motionless, bleeding form of a young star-man. Several cracks marred the surface of Plexi, and Jackson picked a place where many of those cracks came together. Bracing his feet and his left hand against the hull, he rabbit punched the weakened surface — once, twice, again — until it buckled and caved in.

Mac pulled the shards of Plexi out of the way and hoisted the sailor's unconscious body in his arms. With surprising care he eased the young man through the port, face down, and Jackson took his weight over his right shoulder, clinging tightly to the ladder with his left hand. Another blast of CO_2 smothered the suddenly resurgent flames, and the pilot carefully stepped down the ladder, holding tight to the motionless man. He only hoped the guy was still alive.

Hands took hold of his legs, supporting him near the bottom of the ladder, and he gratefully released the unconscious starman into the arms of the damage control crew. Only then did Jackson look up to see Mac following him down the ladder. Lacking a flight suit, the chief had to be taking some nasty burns, and the pilot quickly tumbled out of the way.

"Jump!" he cried, and Mac instantly let go of the ladder, landing in a crouch and rolling away from the ship.

Jackson got to his feet but immediately collapsed on the deck, his legs shaking and weak as the adrenalin faded.

Several Medtechs bore the young crewman, still alive, in a stretcher as they headed into the station. MacClean, grim and soot-covered but apparently not badly injured, looked like he was ready to chew glass.

Then Lt. Commander Antoinette came around the fire, holding her helmet under her arm. Her eyes flashed, and her lip curled into a snarl. "Did you see that silver spider?" she demanded. "It's the same son of a bitch who led that ambush!"

"In the asteroids?" Jackson asked. "Yeah, I thought so too."

He had been part of that previous fight, and the memory still burned. But the silver spider's presence here begged all kinds of questions. "Who is it? And why are they here?" he wondered out loud.

"I don't give a damn about that. Let's find a ship and get after him," Antoinette barked. "I want that bastard — and I want him dead!"

Jackson's questions evaporated as he shared the skipper's resolve. Like Naya, he recalled only too clearly the first time the Void Rats had encountered that silver, eight-winged fighter . . . .

To Be Continued