



JUMP POINT

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IN THIS ISSUE

- Work in Progress: Constellation 3
by Ryan Church & CGBot
- Portfolio: Hurston Dynamics 38
by Ben Lesnick
- Behind the Scenes:
An Interview with Rob Irving 41
- Galactic Guide: Stanton 46
by Ben Lesnick
- The Void Rats (Part 2) 49
fiction by Doug Niles

GREETINGS, CITIZENS!

After repeated efforts to keep the size of **JUMP POINT** manageable, I may have to throw in the towel. The Constellation is just too big, and the conversation as they developed it too fascinating, to pin it down to 20 or 25 pages. Maybe next issue, when we're back to a single-seater ...



I think you're gonna find its development interesting, even if you prefer your **JP** to be light on ship evolution details. Meanwhile, Ben, Doug and the rest of the guys are up to their usual standards; me, I'm looking forward to visiting ArcCorp.

Without quoting any specific questions, we have plenty of requests and comments about what **JP** includes and doesn't include. Please excuse me if I don't reply to each of you individually — while various readers would like more or less of this or that, the majority of you seem to be happy with our current mix of content. A few specific replies:

Federicobt (and others), I expect we'll have more on gameplay mechanics once the game has gameplay mechanics

For **ElazarGer** and **gearmiester** (who would like **JP** to be more compatible with tablets and similar readers) and **Rarehero** (who makes several valid design suggestions), we're not ignoring you, but the short answer is that it is

CONSTELLATION STATS

Builder: Roberts Space Industries

Length: 55 meters

Crew (max): 4

Mass (empty): 75,000 Kg

Focus: Long-Range Mercantile / Space Superiority

STRUCTURE STATS

Upgrade Capacity: 14

Cargo Capacity: 35 tonnes

Engines: Yorm SWIFT D-12 Biofusion Furnace

Modifiers: 4

Main Thrusters: 4 x TR6

Maneuvering Thrusters: 8 x TR3

HARDPOINTS

2 x Class 1: 2 x Behring M3A Laser Cannon

4 x Class 2: 2 x A&R Pike IV Neutron Gun

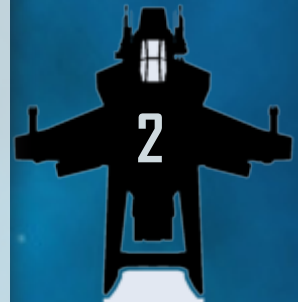
6 x Class 3: 2 x Behring Judge missiles (Friend or Foe)

2 x Class 4: 1 x Behring M5A Laser Cannon (turret)

what it is. **JP** is specifically formatted for viewing on a PC screen or a printout, with a design that went through several extensive phases before we locked in on this one.

Not in response to any question, but simply a comment: while we try to keep the fictional content of **JP** within game parameters, our authors constantly push that envelope, to make their stories as interesting as possible. So while some of what you read in the Chronicles includes cleverly planted factoids, other bits are purely fiction, unlikely to ever appear in the game. And while I won't be making public my list of ungamable plot devices that we've published, keep that speculation coming — it's intriguing!

(Continued on back page)



FROM THE HICKET

Constellation



This month's Work In Progress highlights RSI's Constellation. Ryan Church (who created the concept art for two other RSI ships, the Bengal-class carrier and the Aurora) gives us a look at his original conception of the Constellation, followed by CG-Bot's conversion from concept to in-game reality (beginning on page 30).

The Constellation includes a launch bay with a small P52 fightercraft, plus in-flight configurable arrays, optimized for travel, combat and other flight modes.

In the following discussions, **RC** is Ryan, **CR** is Chris Roberts and **CGB** notes CGBot's comments.



WORK IN PROGRESS

CR: The Constellation is the Rolls Royce of space adventure: think *Millennium Falcon* in size (small crew, a couple of turrets, cockpit, sleeping/mess quarters inside). Has a small single-man short-range recon fighter that isn't as heavy duty or weaponized as the Hornet but is handy in a dogfight — especially in tandem with the mothership. The design needs to make apparent how much fun it is to crew it with three people ... so you can see the cockpit, the turret and the flight deck/dock (maybe it has a Hornet already plugged in!) in your first glance. It's probably sleeker than the *Falcon* because we're selling them fresh off the lot rather than weathered through years of adventures. It balances the Freelancer and the Hornet in terms of visual cues ... you see both exposed weapons AND fancy engines when you look at it.

RC: Chris, here's a quick sketch on a possible RSI Constellation — might be totally wrong but I think it's cool based on my understanding of the brief.

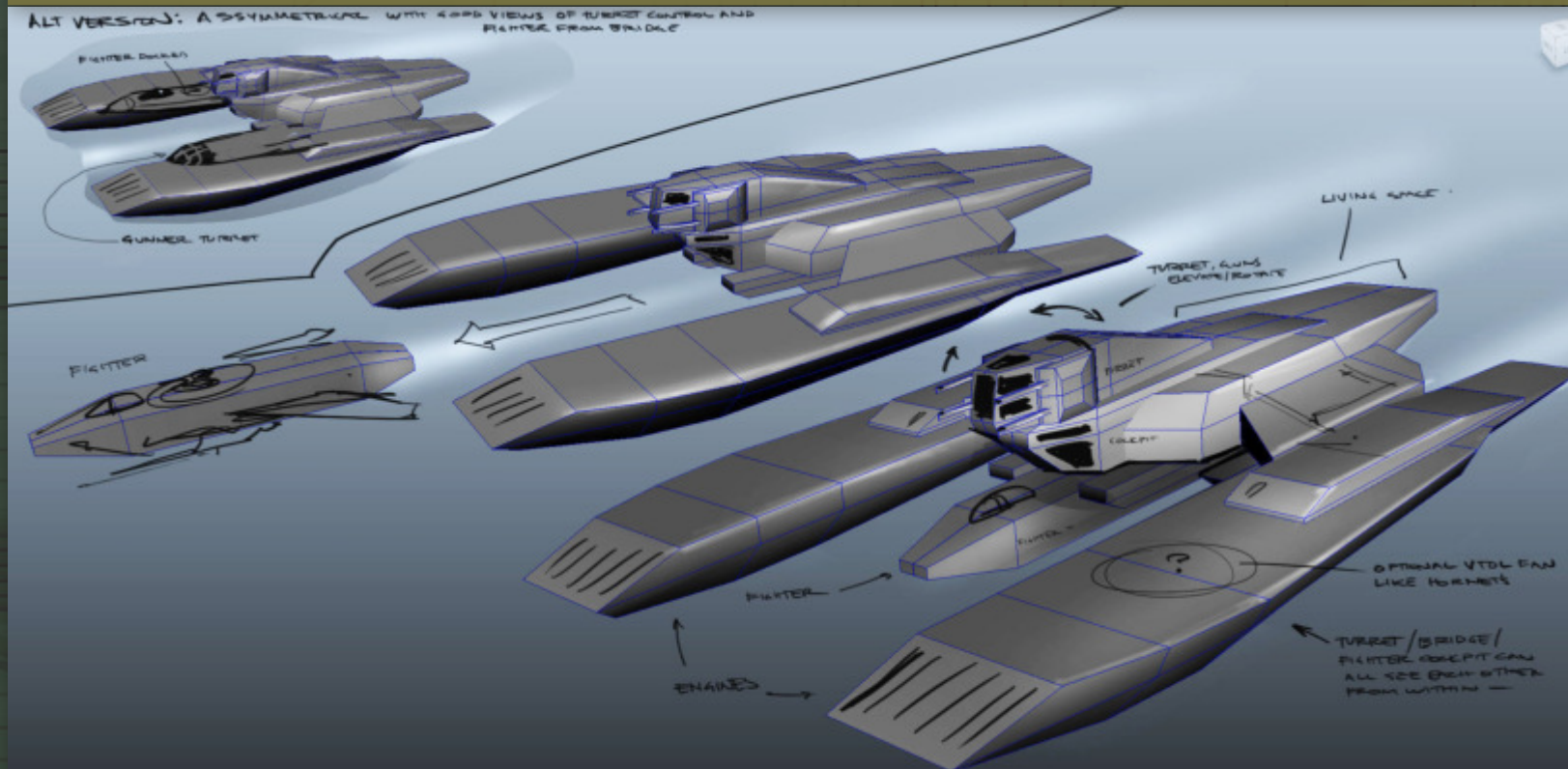
Kind of a stacked bridge, main bridge with a gunnery

turret over it and the fighter docked below it. Kind of fun 'cause people in each station could see each other, you could see the turret manipulating and firing from the bridge and from the fighter, you could see the fighter launch from the bridge and turret, etc. Good downward view when fighter is deployed as well.

In the corner is a variation of this with the fighter and gunnery turret asymmetrically placed, one on each of the two engines.

Should we give the ship VTOL fans like the Hornet? Would be kind of cool if you ever want to take this atmospheric. Let me know which of the ships are going to be atmosphere capable and would need VTOL kit.

I was just thinking, might be kind of cool if these ships ever lost (or chose to turn off) artificial gravity in the game. Could you imagine the *Millennium Falcon* with no gravity, you're just floating around in there? Give people suits with little microfans so they could control their movement somewhat—neuvering thrusters, this is the 'squint' stage definitely.



WORKING DRAFTS

CR: Ship doesn't feel sexy enough. For me, the Constellation itself needs to feel sexy and also capable of handling itself in a fight (like the *Millennium Falcon*), so shouldn't feel too slow or un-maneuverable. The current sketch feels too much like a slow freighter/transport. It feels like the fighter could be switched out for a container and you could see this ship ferrying cargo around between space bases.

The Constellation is the top of the line, an exploration/trading ship that packs a punch in a fight and can hang with all but the most maneuverable fighters. For that it has a small light fighter (perhaps below the main deck) that perhaps "opens up" (think the missile bay deploying) when you're ready to detach/launch. Some thought needs to be given to how the pilot gets into the cockpit (and in turn exits), as we'll allow the player to walk around the Constellation in first/third person and sit down in the cockpit, or man a turret, or clamber into the fighter's cockpit. Giving the Constellation some big engines and a wicked looking turret/gun would help — doesn't necessarily need to be symmetrical.

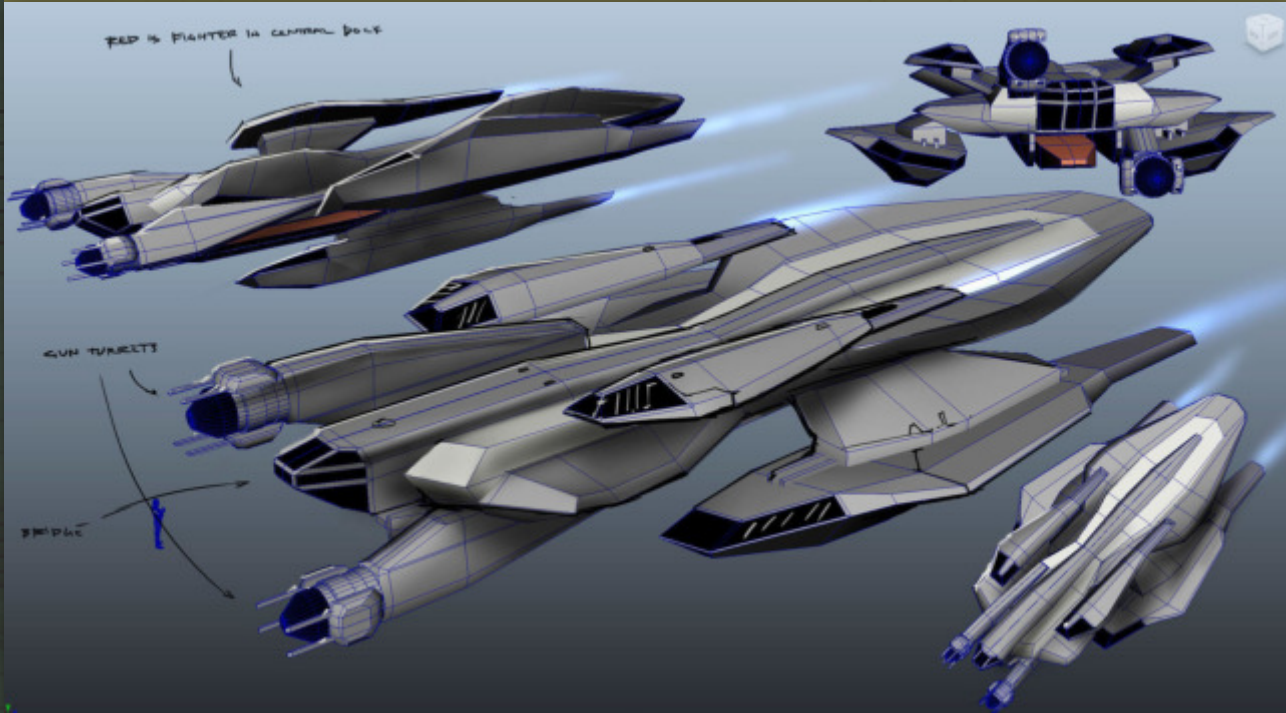
Could be like the *Prometheus* (in regards to the bay/hangar below and maybe a cool cockpit with wide vision for two people) but smaller and feeling a little more ready to rock and roll in combat.

This bad boy should feel styled and cool like a Aston Martin, just the bigger version (like the four-door Vantage).

Both the Constellation and the fighter will need the thruster/maneuvering jet set-up the Hornet (and the carrier) had. It's important that we cover the various ranges and they are equidistant from the center of mass or else we won't rotate correctly!

You should also think about upgrades/hard points. The basic ship comes with the default set but there should be additional hard points where more weapons, turrets, drop tanks, cargo holds or even thrusters could be added. You will be able to upgrade the engines too — just like a current-day jet could switch from a GE to a Rolls Royce engine ...

RC: Chris, here's a block in for another take at the design:



Four engines, central bridge in the front, fighter carried below and asymmetric turrets cantilevered out in front of and in view of the bridge so you can look out at them. Super rough and for basic proportions only.

Engines are cantilevered and could be swapped out for very different looks; also lots of flexibility in the type of fighter/cargo that is carried.



WORK IN PROGRESS

CR: Still not loving it. I think it's just a little too radical vs. normal ship designs. Maybe it's something to do with the front cockpit? From the top view I'm not keen on the three tubes (cockpit and 2 turrets) going forward ... Looks kind of like a bug. Perhaps something that feels more integrated for the main hull — with the engines being on separate nacelles?

You're also going to have to think about this thing touching down on a landing pad ...

RC: I've been placing the turrets out on stalks so they have the widest field of fire while still containing a guy next to the guns that can be pointed around. I'll try some other options.

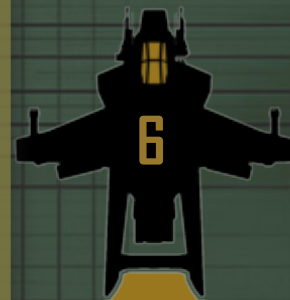
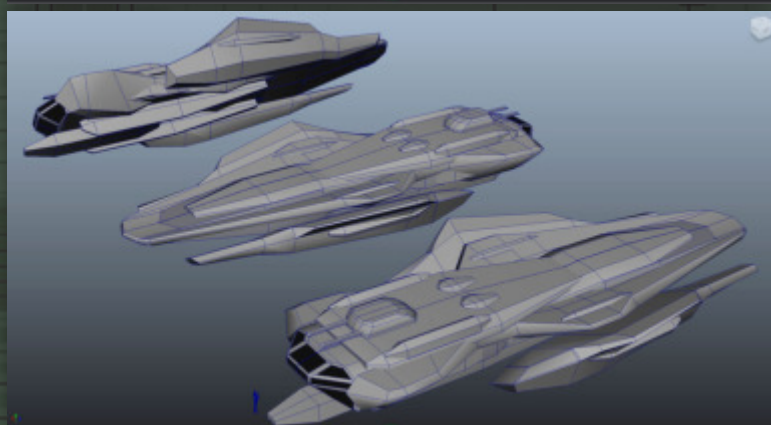
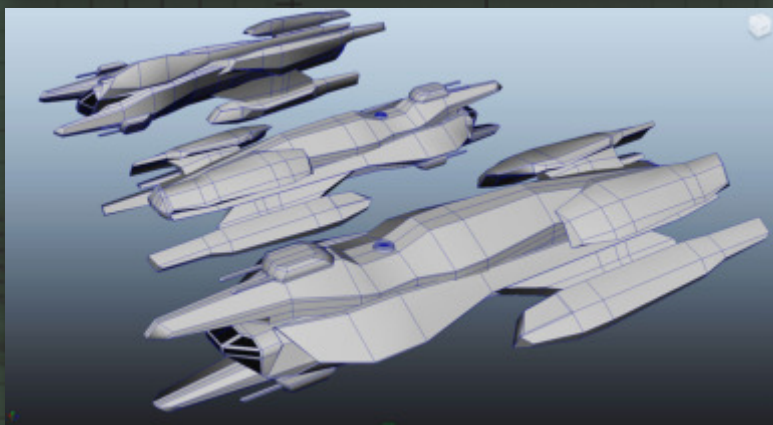
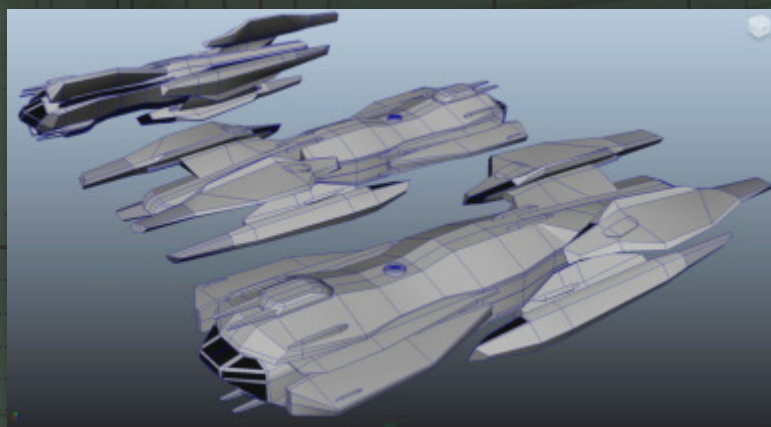
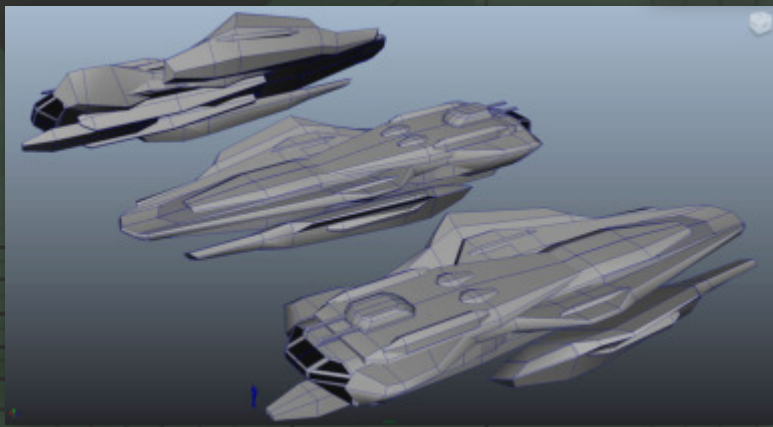
RC: Chris, here are some variations — super quick and low res, maybe something in here that's closer, based on the notes and looking for the right balance. I'm starting some rough fighter looks, too.

CR: So how about the upper right one, but let's try a few variations — maybe a sleeker cockpit? Also how about exploring a bigger back end/hull (so it's not so weighted to the front cockpit).

What also would be extremely cool (and I think people would dig it) would be to have deploying parts — looks like a simple freighter when putting around on trade runs, but when it goes into combat mode the engines/wings deploy and perhaps the cockpit locks into a cooler "attack" profile ... turrets deploy, etc. ... Essentially I could see this ship deploying into an intimidating gunship.

That would be pretty cool and something I would want to fly ...

RC: I'll get you some variations. A deploying attack mode will be cool!



WORKING IN PROGRESS

RC: Here's the retracted, high-speed version and the attack/maneuver/landing configuration.

I've placed 10 doors for VTOL fans on different spots that would allow for vertical takeoff à la the Hornet.

All four of the big engines extend/retract by traveling along tracks. They attach to the ship at large pivots to allow for vectoring by pivoting the entire engine.

The big engines could vector by rotating around the pivots that are integrated, top ones vector through the yaw axis and the bottom big engines rotate at an angle that would allow for pitch and roll. Could be kind of cool, the engines could rotate 180 degrees for some fierce deceleration.

CR: Ok, cool! I really like the Maneuver/Attack configuration. I do think we need to have some more weaponry options other than the turret on the top — some missile bays that open (kind of like the Hornet) and maybe some ball mounted auto guns (i.e., not manned, which is how I see the bigger turrets) on the front end of the four nacelles? Think of these as single (maybe upgradable to double) barreled laser cannon.

For the High Speed configuration it seems weird that the cockpit retracts — maybe that's for the "landing" configuration. For the High Speed configuration I could see the engine nacelles tucking in and going back (it kind of seems like this) and the cockpit dropping into a more extended streamlined position (more so than the Combat setting). Perhaps the side sections with the VTOL doors slide back? Also any weapon pods/bays would retract inside.

Where would the short-range fighter go?

You really like that *Star Trek* engine nacelle look! I could do with them feeling a less star-trek sleek and a little more beefy at the back ...

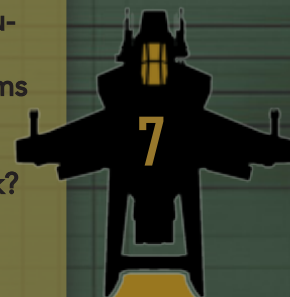
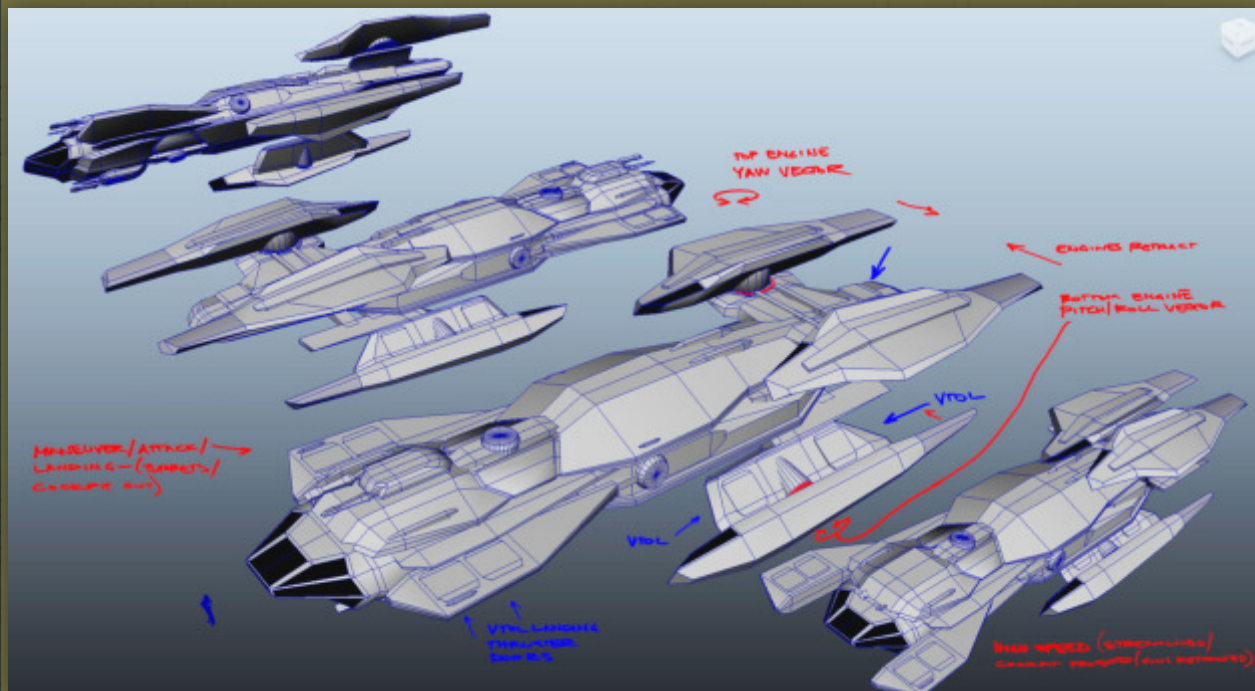
But very promising — everyone liked it when I shared!

RC: Ha! OK, it does look a little Trekkish, with the long nacelles — ours would pivot and vector though!! But yeah, I'll totally chunk 'em up and the surface detail and functionality with vents, louvers, blisters, pods, etc. will further differentiate 'em.

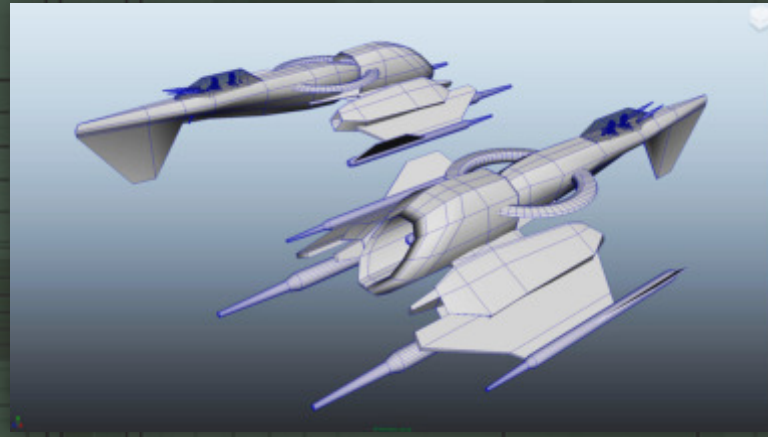
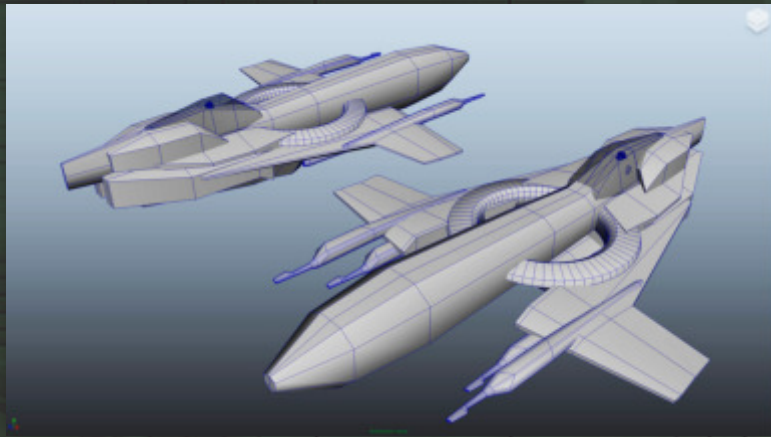
Actually the cockpit doesn't retract; all the movement is done by the flanking vanes which extend forward to shield the

cockpit — but point taken, I'll incorporate your notes into the next pass. My thinking was that the cockpit is more shielded at high speed and has more visibility for fighting, maneuvering and landing.

The short-range fighter fits into a belly bay, just where a B-17 would keep its bombs. I can put it anywhere, really, doors in the top, or in the back like a C-130 or whatever you think — maybe it could extend out on an elevator arm that pulls it in, maybe it docks and most of it remains hanging out with just the cockpit (or whatever) inside the mothership?



WORKING PROGRESS

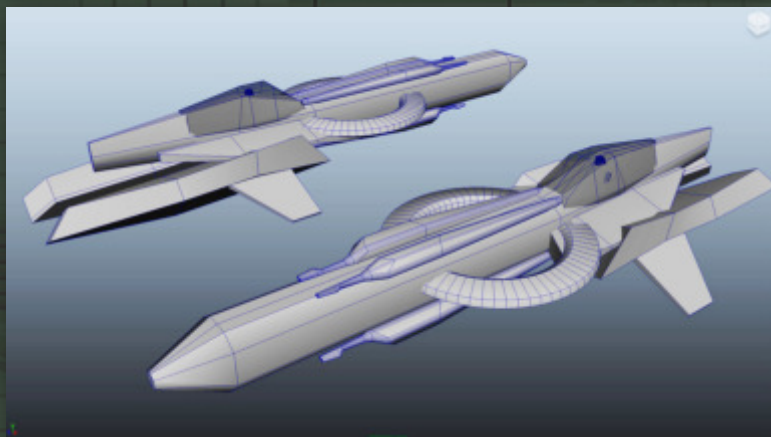
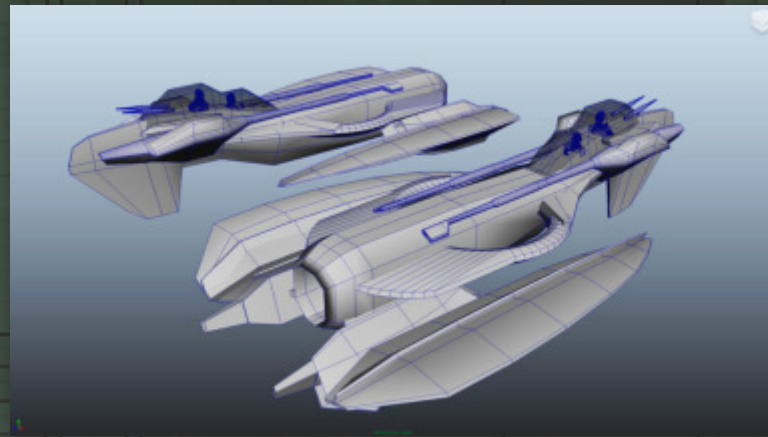


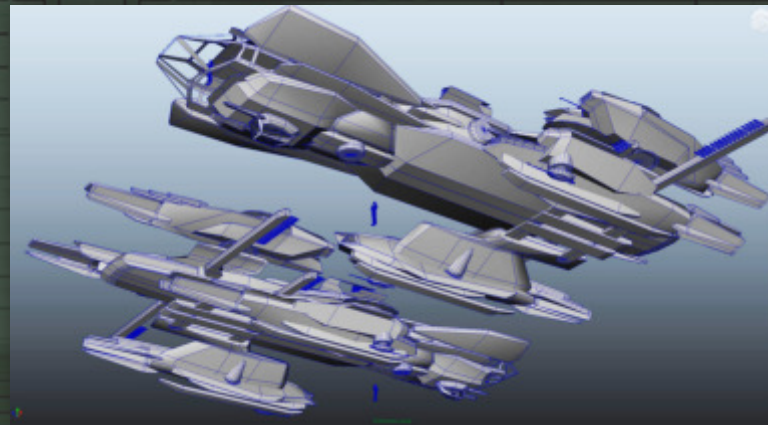
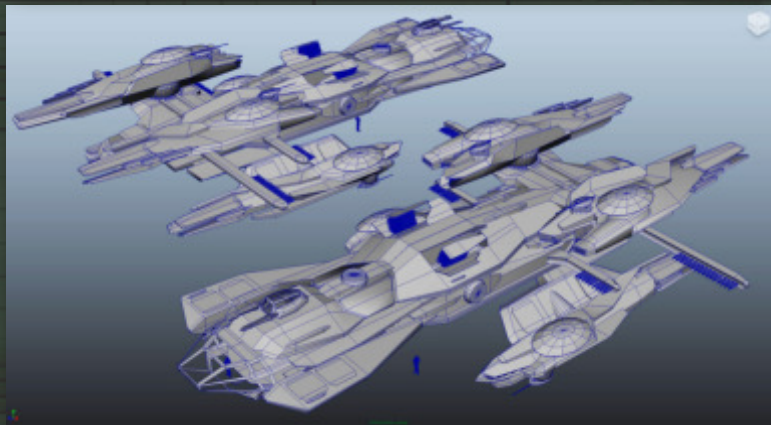
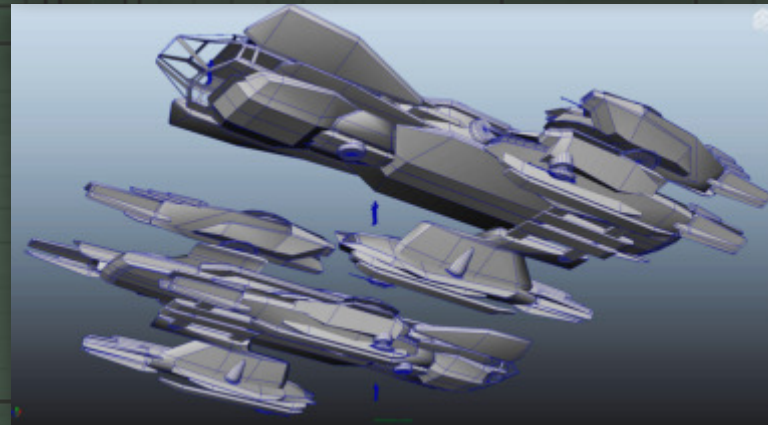
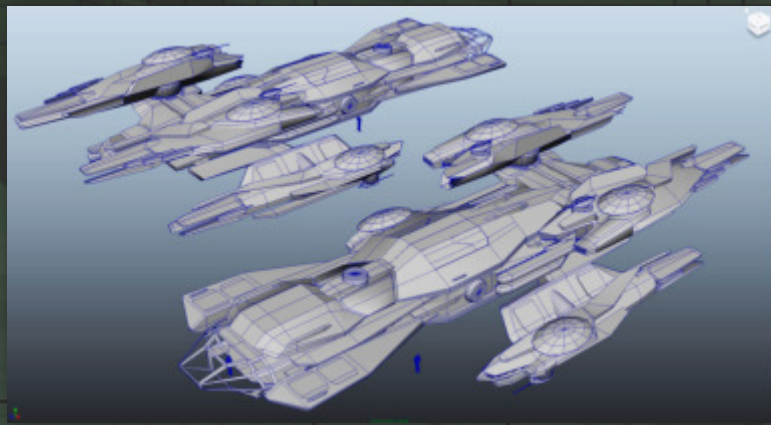
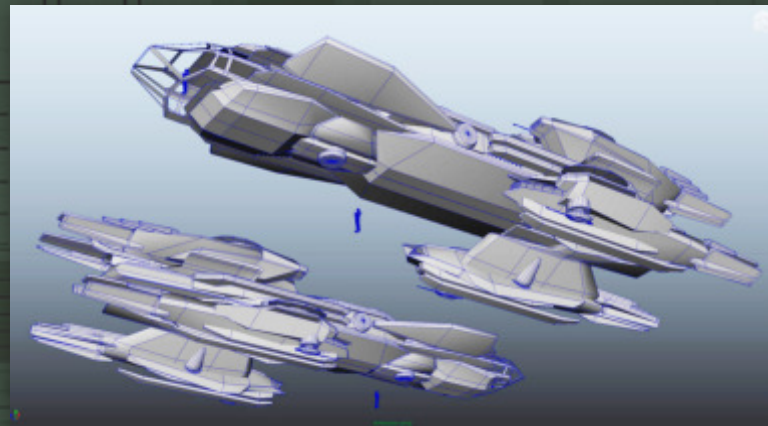
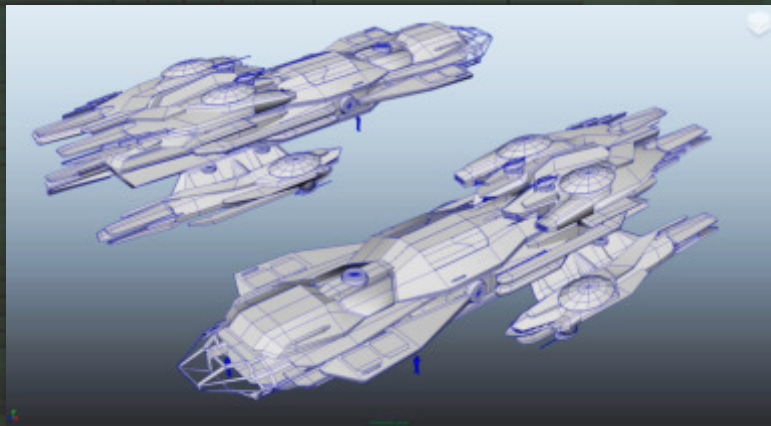
WORK IN PROGRESS

RC: Attached are quick studies for the fighter.

CR: The two left ones are my preferred ones — these should be single-man fighters.

RC: OK, sounds good. I'll proceed with those, adding detail, interior and functionality, including maneuvering thrusters.





RC: The ship is 170 feet long in attack mode.

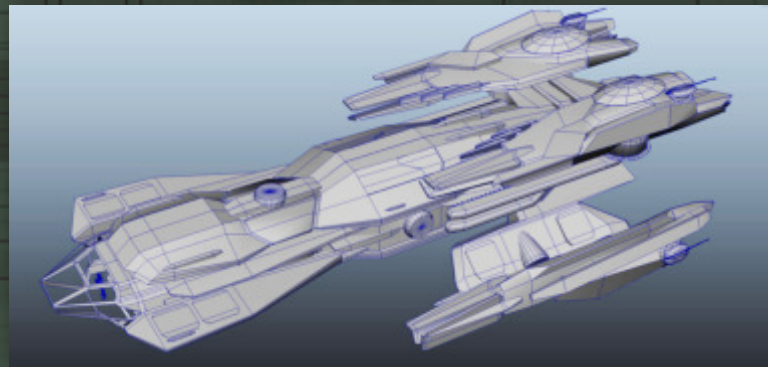
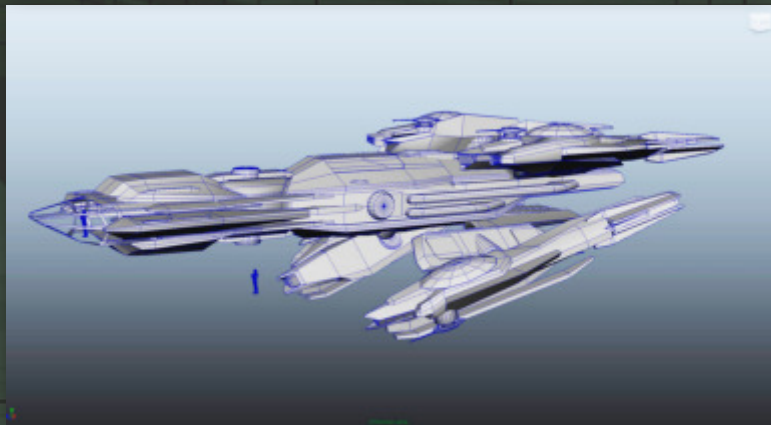
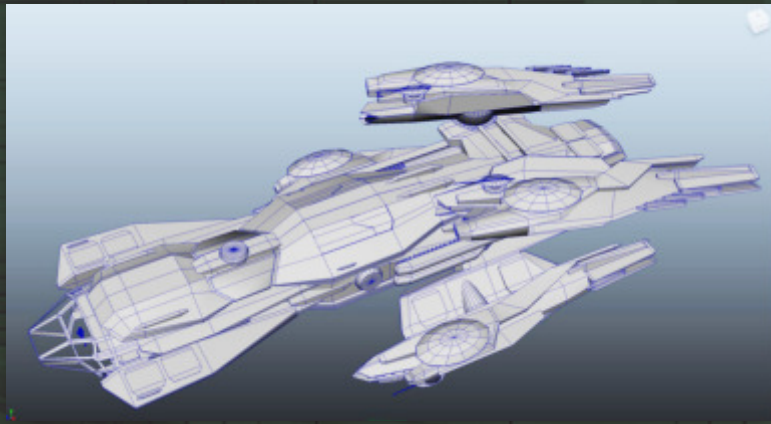
Missile pods raise from the top center and there are some swinging missile arms that come out from the sides.

There are long landing pads on each of the lower nacelles.

Added some vectoring paddles to the ends of the nacelles.



WORKING IN PROGRESS



RC: Cruise mode has the fins on the sides of the cockpit slide back, which exposes the cockpit more and opens up some windows, also the top engines slide together towards the center and the bottom engines slide aft and in towards the center.

I added images that show the large vectoring movements of the engines — one is showing the top engines swiveling, producing yaw, and another is showing a pitch movement by the lower engines.

One last image shows that you can swivel the nacelles 180° for rapid deceleration or even to roast somebody right in front of you or for a fast escape or something.

CR: The more detail you add, the more it feels like a *Star Citizen* ship!

I like the missile racks, etc. that articulate out ... Although it does seem a bit much for the base ship before you upgrade! I mean that is one hell swarm of missiles!

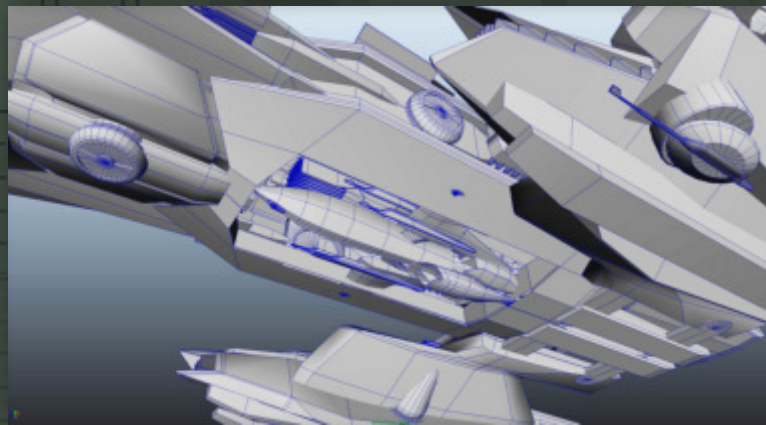
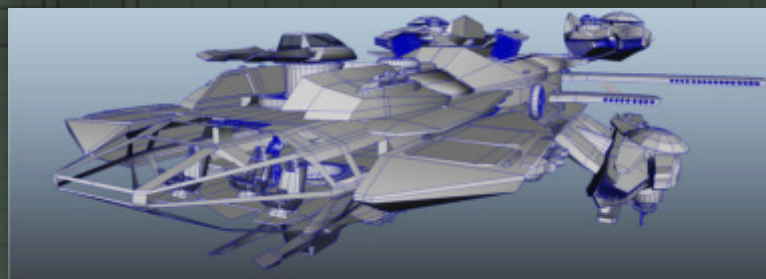
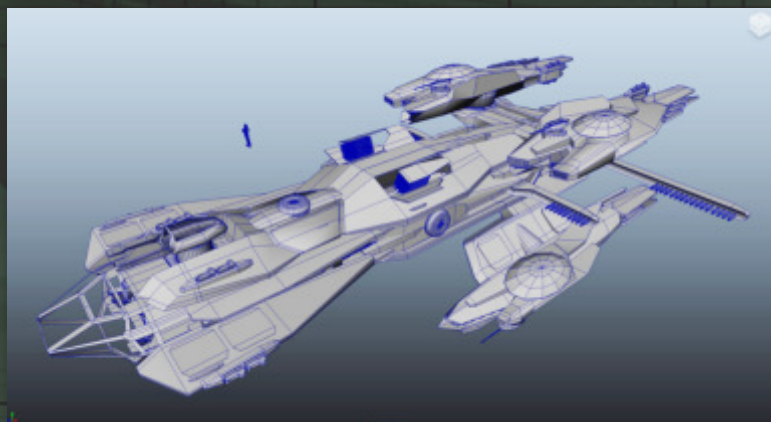
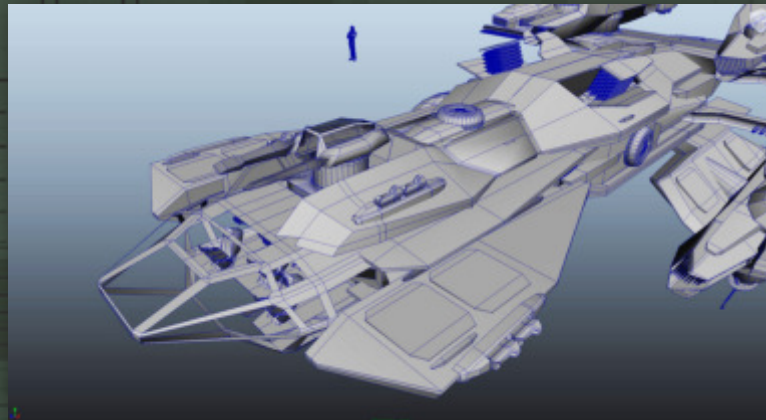
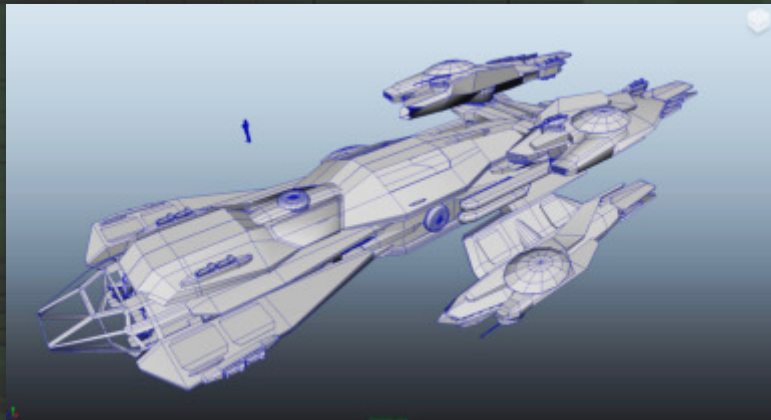
Is this your proposal of the various weapons upgrades you could purchase/customize your ship with? I could see those arms that articulate out having missiles, or instead guns that deploy — you could choose how you wanted to upgrade/outfit your ship weapons ... it could look pretty cool having some laser cannon on the end of the arms, that fold into the arm when retracted ...

On the deceleration side I saw the bottom engines as flipping 180° if you need massive deceleration, but otherwise the deceleration is handled by the front maneuvering thrusters that can point in the +Y direction.

I think getting an idea of the interior space would be good, too — this ship is something that you can fly with up to 3 friends (they could man a turret, get into the small fighter or perhaps do some level of fire control) — so we'll need a very small crew quarter, plus the cargo hold/hangar bay.



WORK IN PROGRESS



RC: Re: the missile racks. Yes, these are full featured versions with a crapload of missiles (FIRE ALL NNNOOOWWWW!!!). I'll do some versions with the base equipment level where you would have far fewer missiles that rotate out. But yeah, the modularity is there, you could totally customize whatever comes out of there and whatever is attached on the four large weapon arms that swing out. Very cool.

RC: I've added the maneuvering thrusters to the exterior.

CR: Looks good!

RC: Blocked out the gun doors in front; they would uncover and extend away from the hull on telescoping cylinders.

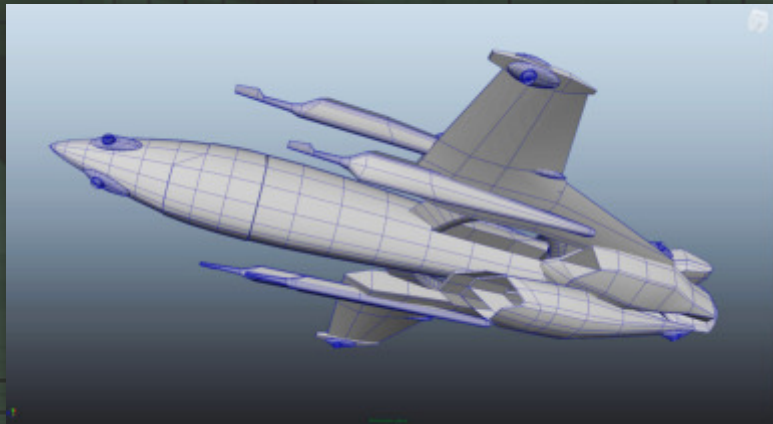
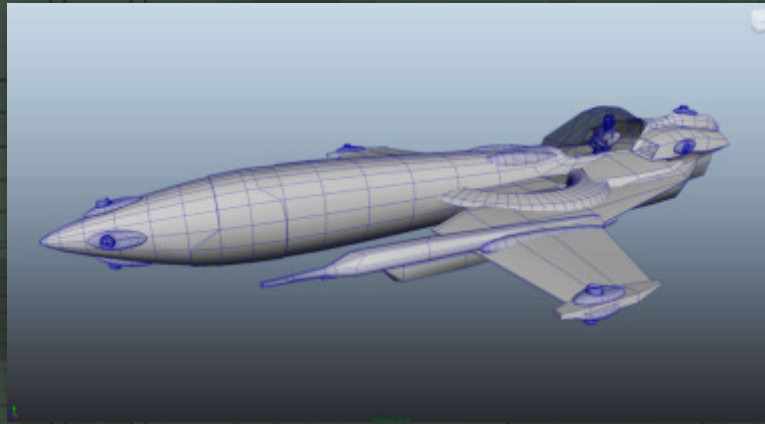
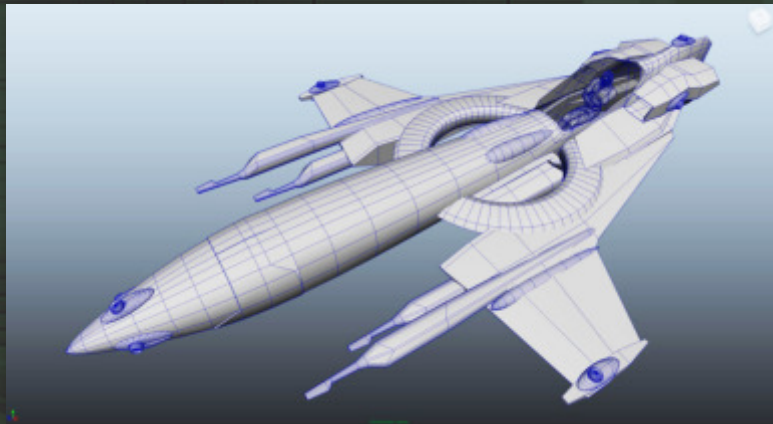
CR: I like this a lot. The only issue is that the Constellation has a blind spot in the very rear as the two turrets are on the front ... Don't know if this is a good or a bad thing ...

RC: Developed the bottom fighter bay door. I could make some kind of an airlock so that there are another set of doors in the interior of the Constellation that would open when you get in the fighter, then those close and the bottom doors open to deploy. Or we could just say the opening is a force field impervious to air — thoughts?

CR: We want the airlock. It'd be a cool detail — especially when you climb into the cockpit and get ready to launch!



WORKING IN PROGRESS



RC: I've also developed the fighter a bit, there are the maneuvering thrusters and refined shapes. I could make the thrusters more flush or exaggerated; let me know what you think.

CR: The fighter is the thing I'm digging the least. On the fighter I think you want to beef up the engines/rear part — it feels very small and underpowered, especially with such a long nose. Also, I like chunkier guns with nice muzzles/barrels that recoil — current ones feel a little fine. Maybe the main nose opens to reveal a bigger gun?

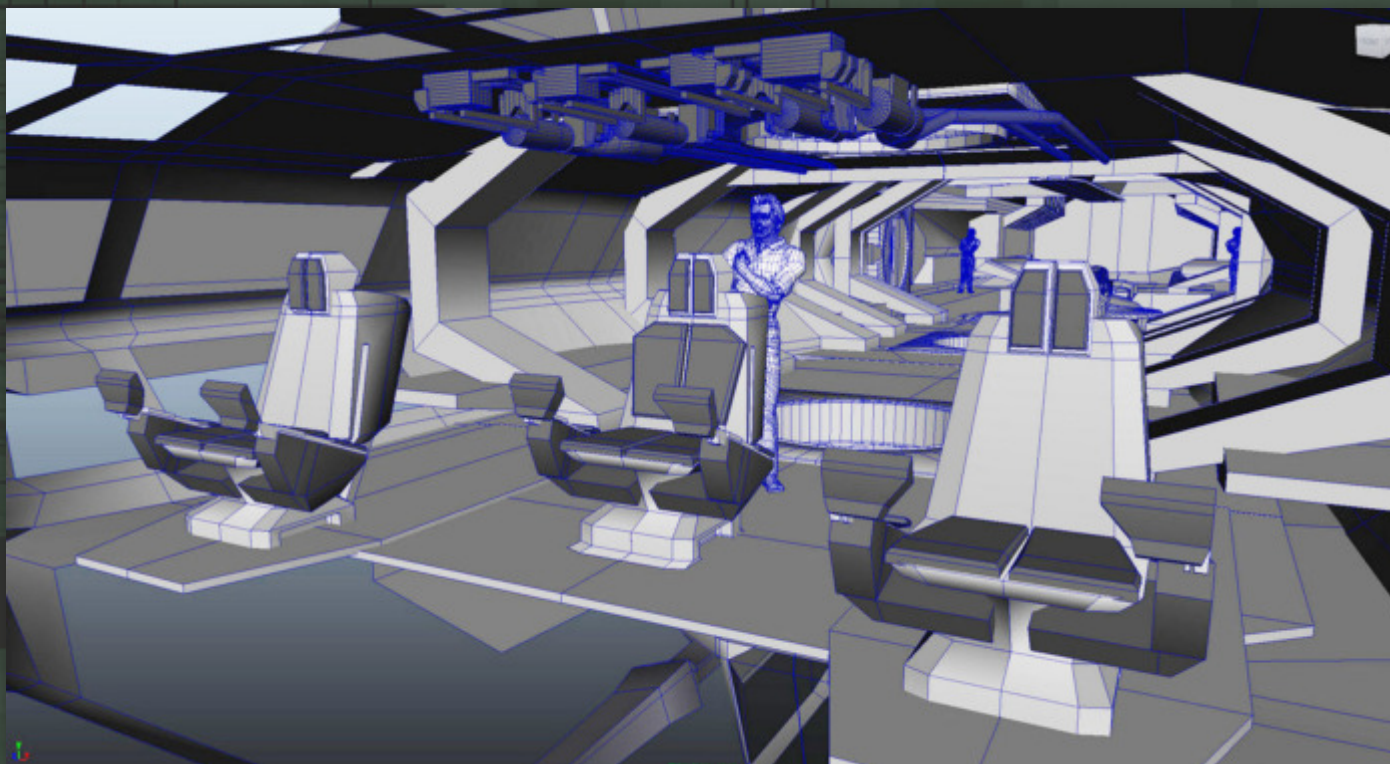
JP: How is the Constellation design different?

RC: The Constellation had to be able to do a bit of everything. Atmospheric, vtol, cargo, missiles, guns and four people living all in a pretty small space while retaining some charm and flexibility in terms of use. When I build the interiors I'm always thinking of them not only in how they're used, where visibility and utility are important; I place an almost equal value on what it will be like all those hours when nothing's really happening, when it's just you and the ship — basically the 90% of time that you wouldn't see in a movie 'cause it's too boring. But I think that time could be some of the most fun in the *Star Citizen* universe — navigating, sightseeing and just looking outside. I also pay a lot of attention to what the

ship will be like when it's parked in a garage, hangar bay or some uncharted worldlet — all the guns and navigation equipment are at that point just ballast, and the Constellation fills the function of a home base or parked RV. When building the ship I tried to keep all of these use cases in mind while preserving the looks. For the exterior design a lot of the compromise comes from weapon and eyesight fields of view, balanced against shielding and keeping the 'holes' small and the structure robust. For the Constellation I also wanted to make the engines able to vector a bit and even to rotate 180° for deceleration — in an interstellar vacuum, your deceleration capability needs to be as powerful as your acceleration capability or you won't be able to stop on your own!



WORK IN PROGRESS



RC: I've started working on the interior — very basic at this point — three chairs up front. I want to differentiate the different stations; let me know if there is any gameplay requirements that could feed the design.

CR: Chairs would be 1) Pilot/driver 2) Fire control? 3) Navigation? I would think that the pilot/driver could do all this if there's no one else there — maybe the pilot chair is the center one.

RC: Immediately behind the front seats are the top and bottom cylindrical connections to the guns. Do we want ladders up and down or some kind of retracting seat mechanism?

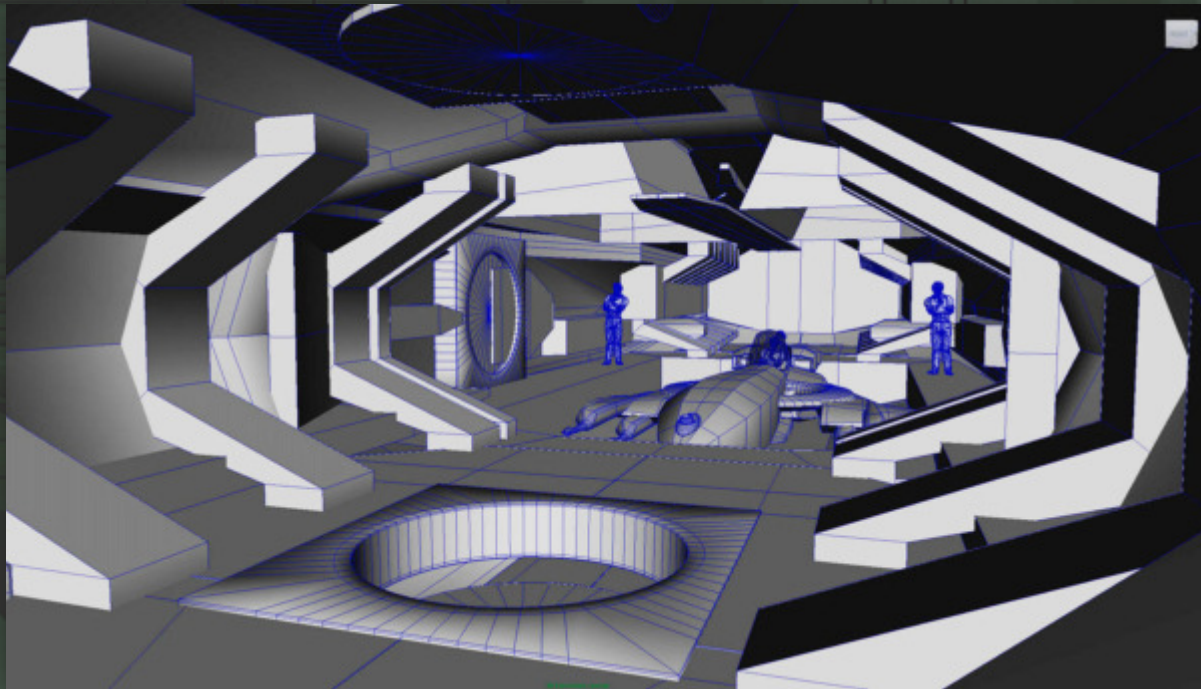
CR: Whichever you think is best. The player that mans it will have a first-person view, so you may want to consider that in your turret design. The players could "use" the ladder, causing an animation much like the pilot climbing into the Hornet cockpit. The same could happen with a chair — the player could "use" it, which would mean climbing into it, then once this happens the chair ascends/descends to the gunner position. I guess the call is based on what aesthetically and practically makes the most sense.

JP: *What did you like best about the Constellation design?*

RC: I like the way that the Constellation turned out and how tightly packaged and capable it is for its size. There's a lot going on with all of the folding parts, configuration changes, cargo capability and snub fighter use, and I really like the way it all fits together so tightly and efficiently. All of this while keeping it cool looking and purposeful and still giving the crew some room to stretch out. I even try to think about hull thicknesses as far as utility and shielding, and the Constellation fares well on this point. Chris' prompt was to make a more realistic 'Millennium Falcon' type of craft — a lot of the cool character, heavy weapons and cargo capability with all of the concessions to packaging and visibility we require in the *Star Citizen* universe.



WORKING PRINCIPLES

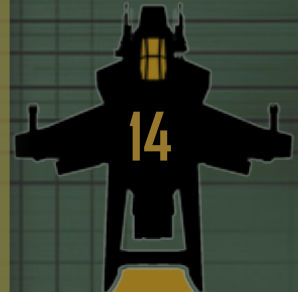
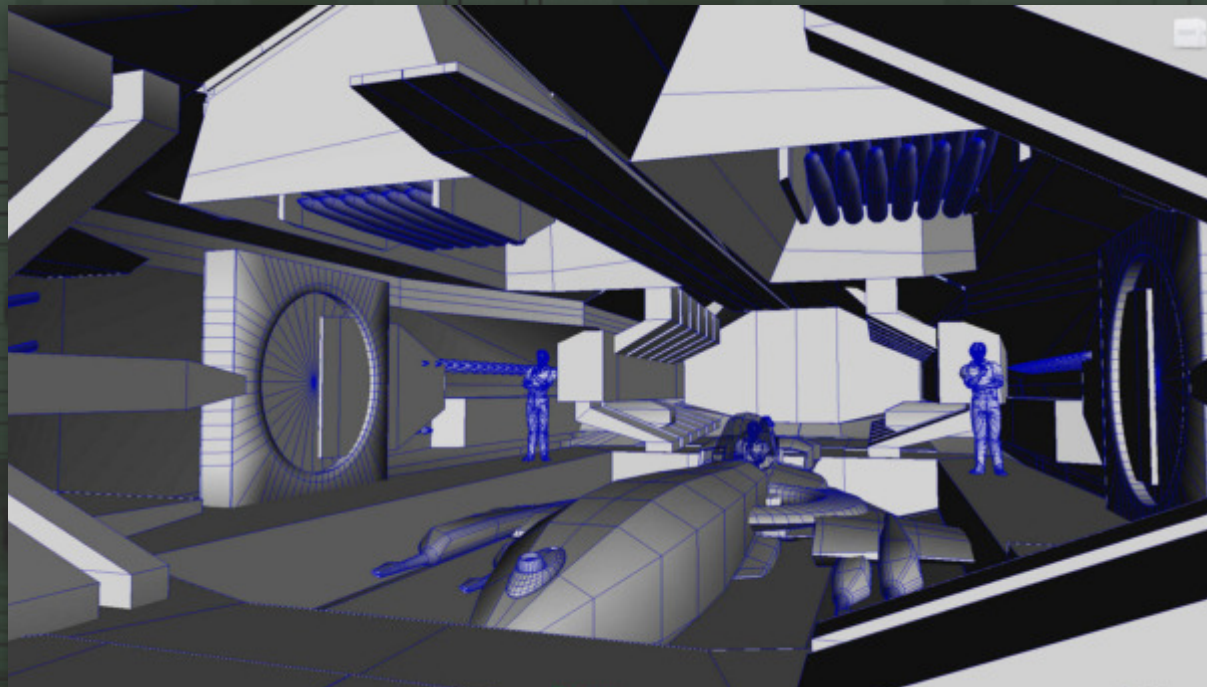


RC: Behind that is an open area (there is a docking collar in the floor here) that could be a small living area with a table, chairs, game table — something really reminiscent of the *Millennium Falcon's* little seating area. The seats and table (and small kitchen or whatever) could fold up to the walls murphy-bed-style if we wanted a cool way to get them out of the way for Combat mode or whatever.

CR: That sounds great — we really need these interior details; people are going to want to know where they eat/relax/bunk down.

RC: Then we get to the hangar. You can see in the ceiling the left and right missile bays. I guess you could reload those launchers if you got up on a ladder or there could be a robotic autoloader. There are docking collars on the left and right sides. The fighter is in the center there — note that the wings would have to fold up in order to fit it in, but that could be cool. I haven't shown them doing so here.

CR: Folding wings would be cool (and another small mechanical detail that people geek out on).



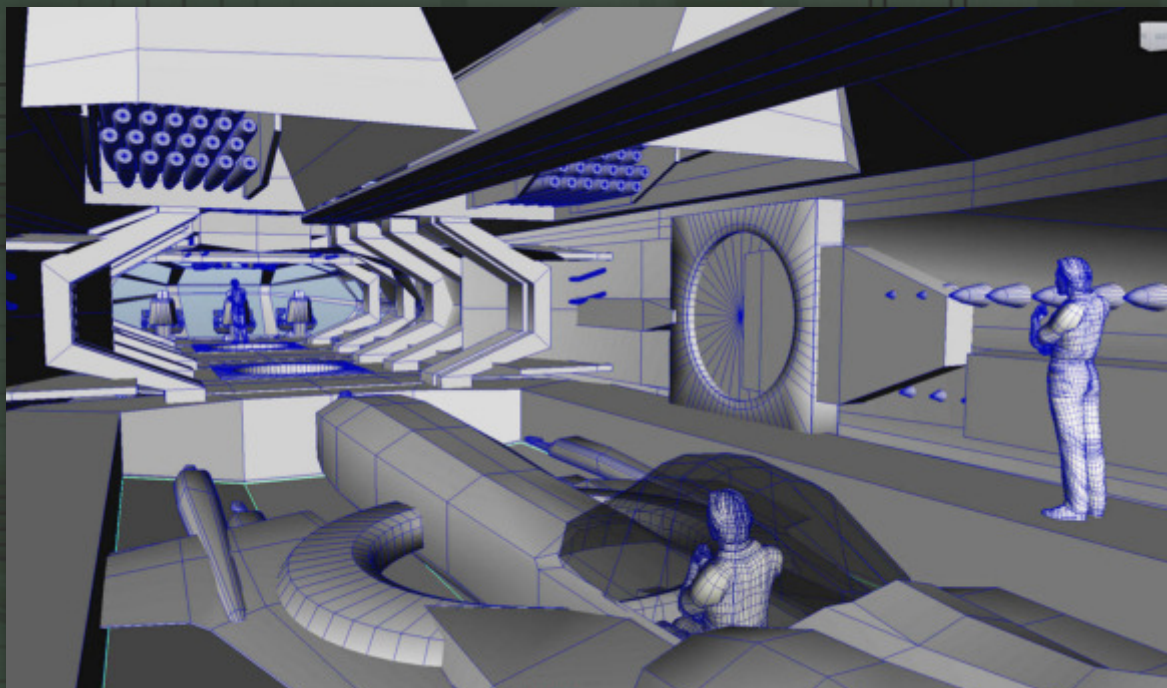
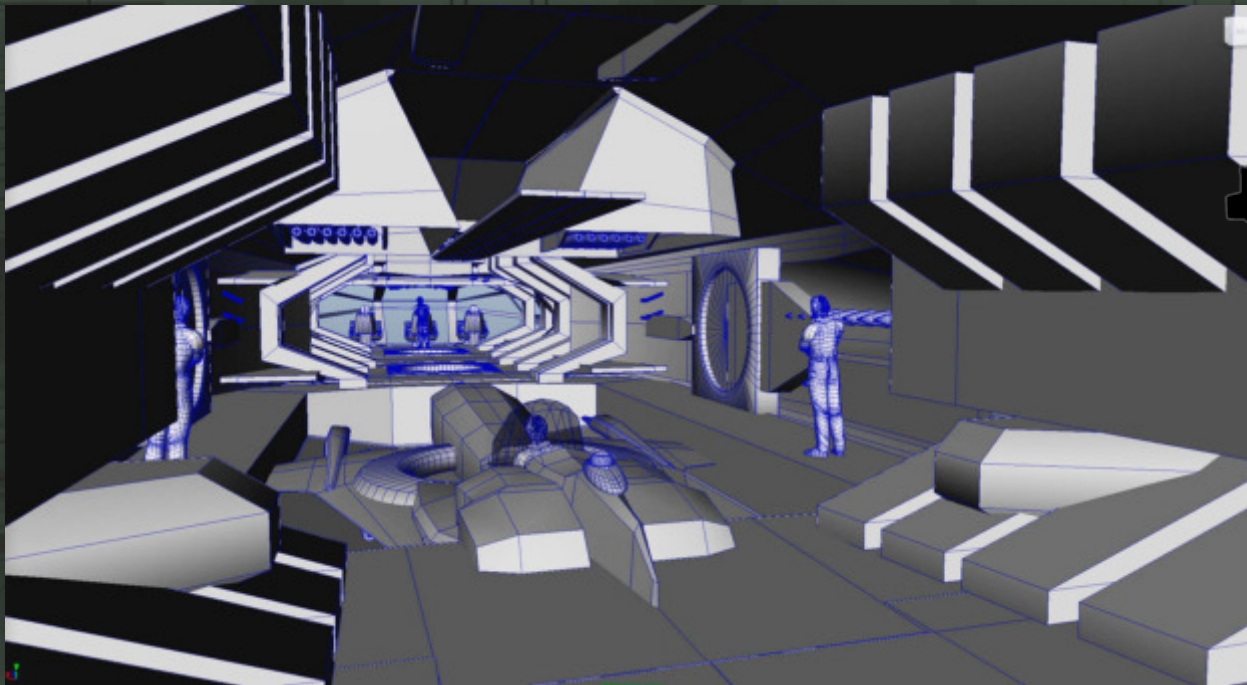
WORKING IN XALOM

RC: There could be a blast door between the crew quarters and the hangar.

CR: Yep, I would do that. It shouldn't be so open — I would think they would compartmentalize the design — plus it would be cool to walk around inside with the doors opening and closing ...

RC: There could be bunks on the sides of the walls in the hangar and a toilet/bath in the very back.

CR: That would work — it'd be great if the living quarters could have its own section, though.

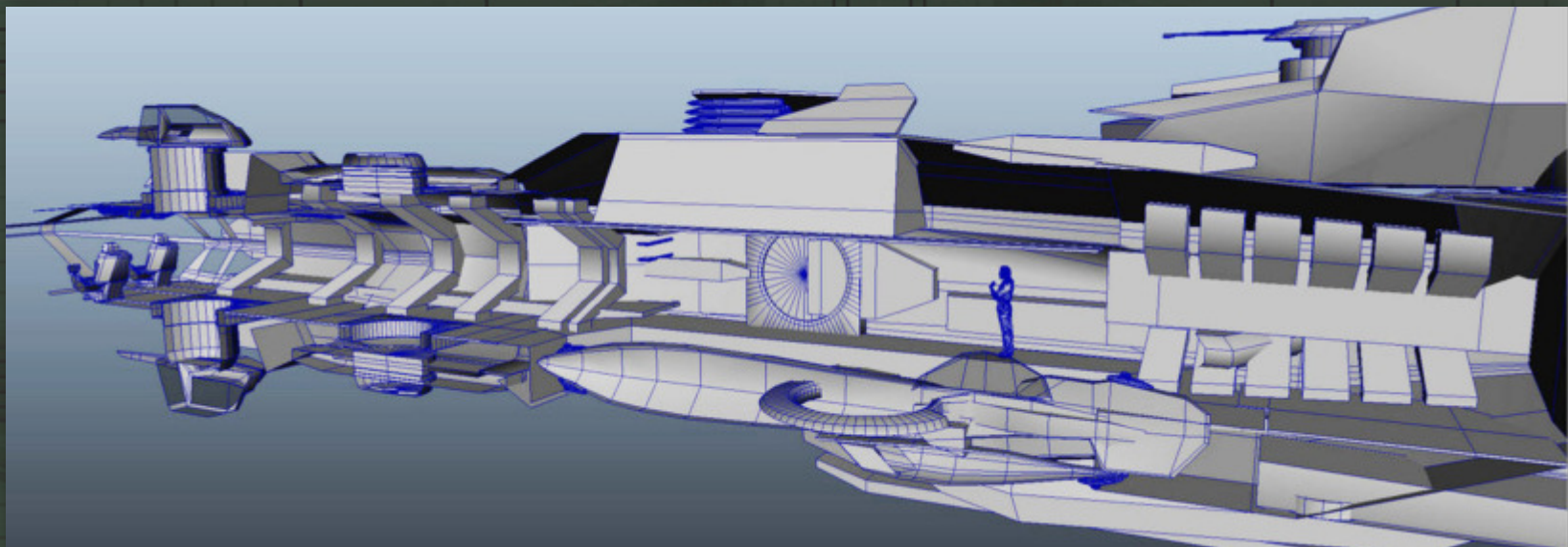
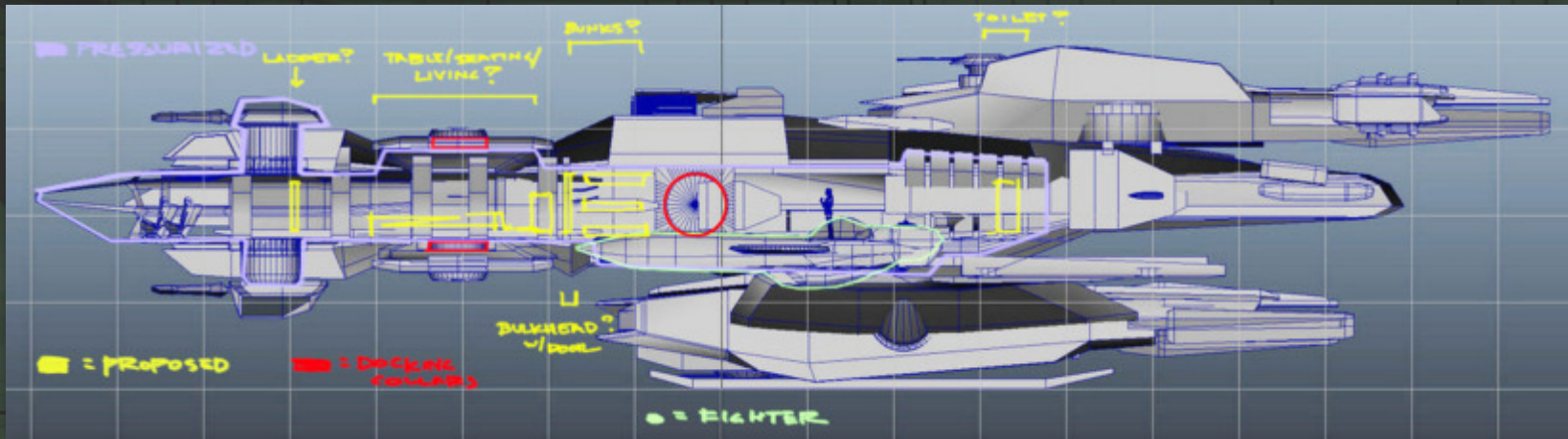
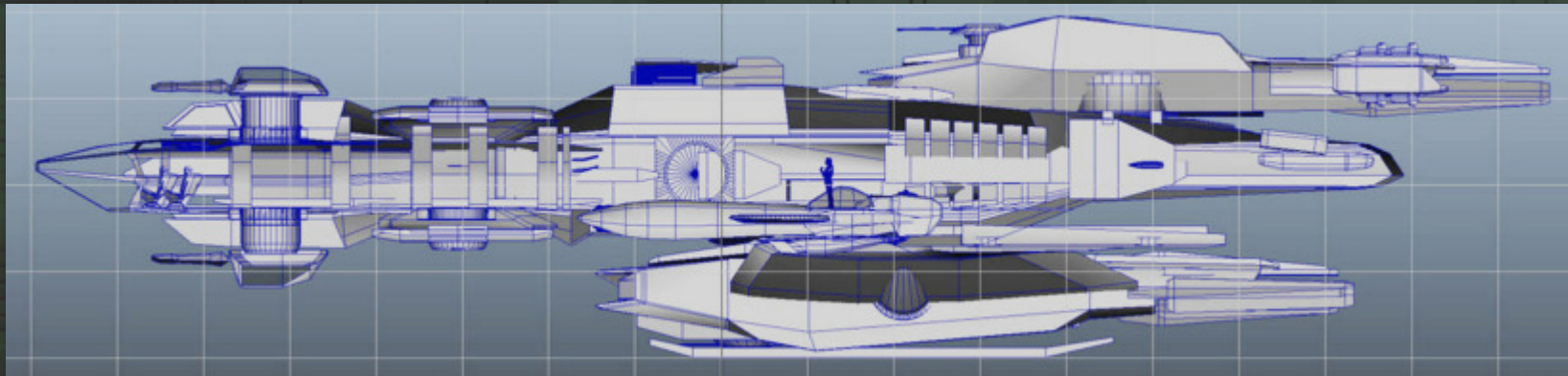


JP: What was the most difficult part of the design?

RC: Making everything fit without making it grow too big. There are parts of the ship that are almost like a Swiss Army knife, but unlike 99% of movie ships, we want to make sure there is no interpenetration or cheats — everything that needs to be is airlocked, there are redundancies and backups, and you can reload and do a lot of maintenance without drydocking. We do deal with shielding, but I treat it as a high-engineering-cost design point and don't like to rely on it too much where a mechanical solution would do the job.

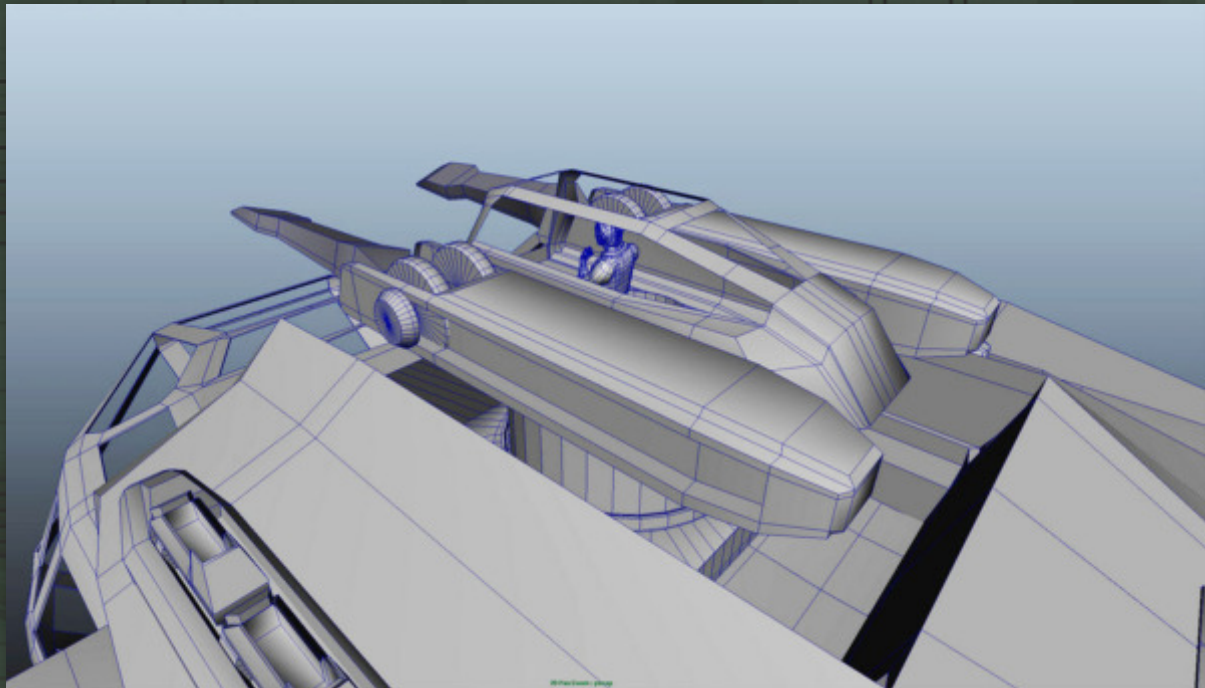
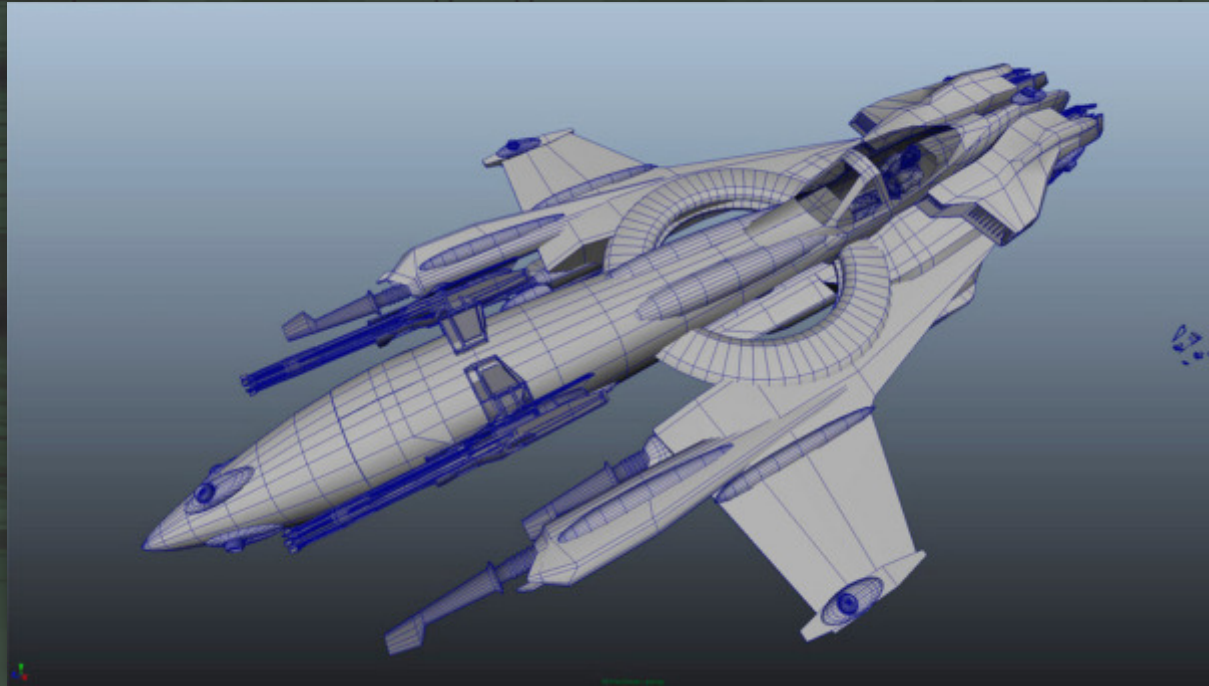


WORKING IN PROGRESS

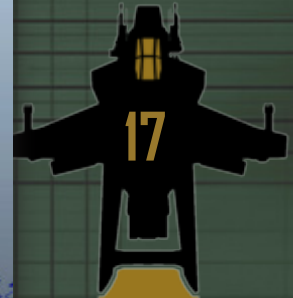


WORK IN PROGRESS

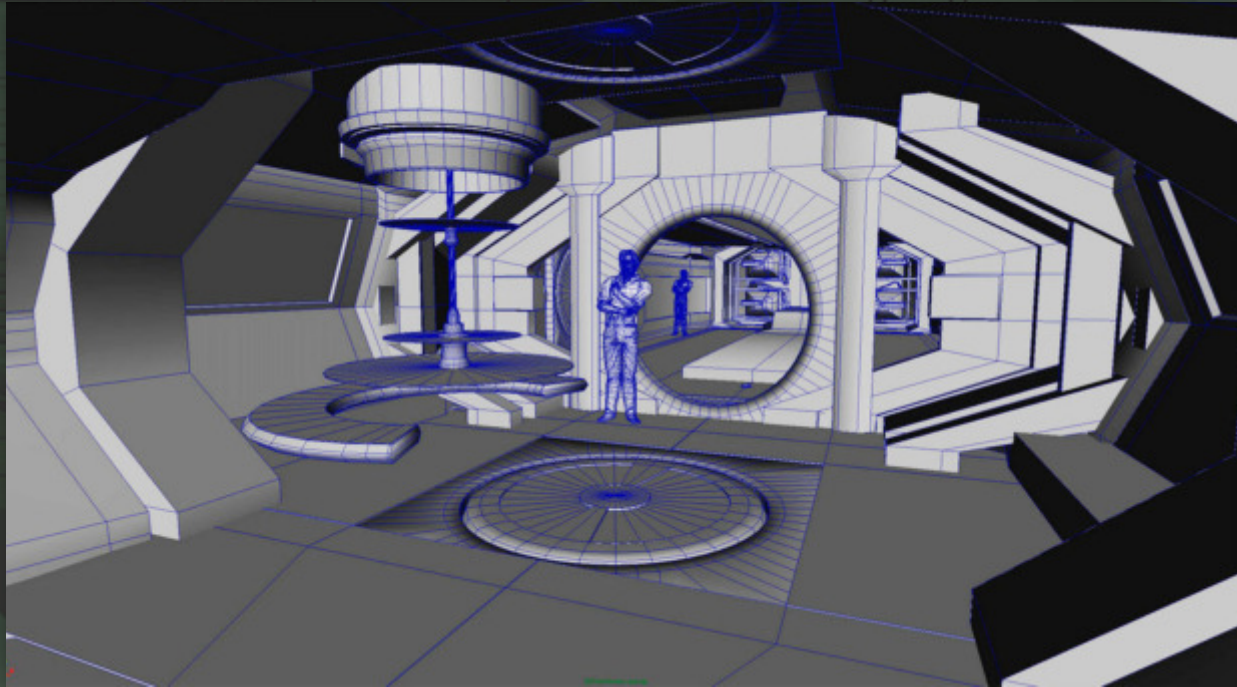
RC: The fighter is butched up a bit, especially in the back, and the guns are bigger. I've added two more Gatling-type guns that swing out of the nose up into firing position. I worked on the cockpit and engines too, added wingfold cylindrical joints, etc.



RC: I've done some work to the deployed top gun. With the pivots there, it's a balance between outward visibility and making it something that can retract down inside the space we have for it. These guns could pivot 360 degrees around and elevate -10 to +90; visibility is decent out and to the sides. Whatever gun we end up with will look a lot cooler; this is just blocked in.



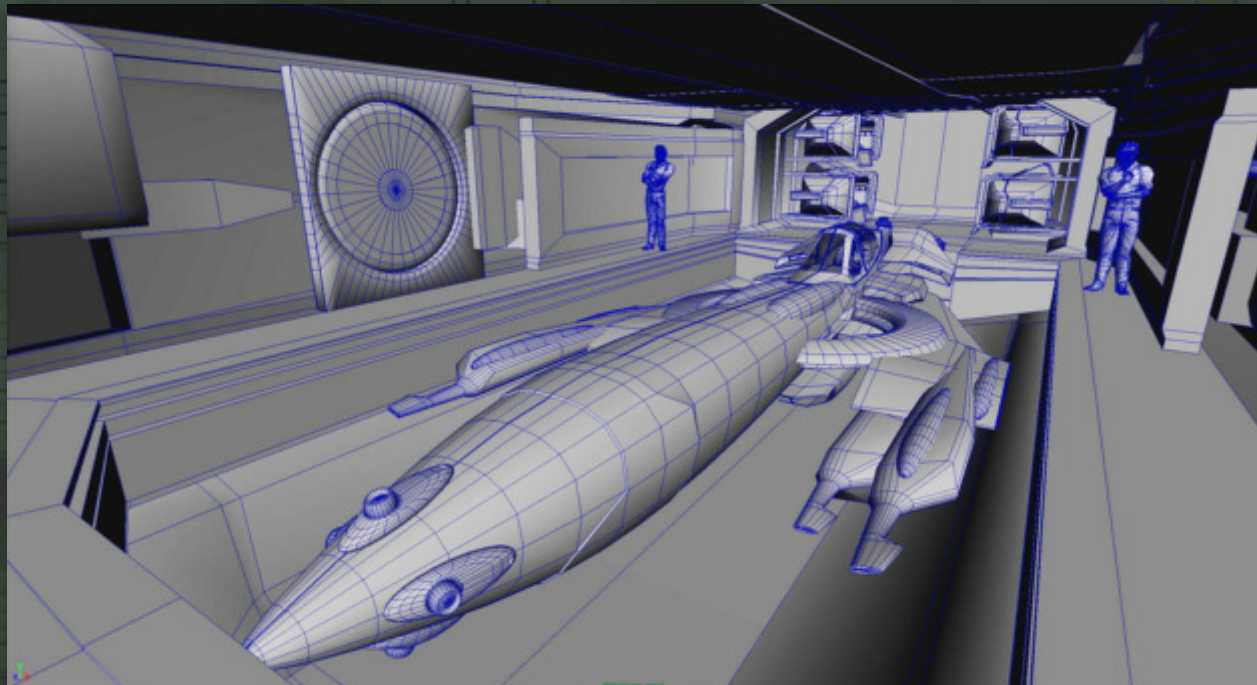
WORK IN PROGRESS



RC: A kitchen/seating area on the left there — the table could retract up into the ceiling. I see that cylinder up there as a refrigerator and the storage shelves can retract up into it. The table could retract up or down depending on where they want it, if they want open seating or an eating space. Let me know what else you'd want to see in this space (and cockpit): multi-use space, display screens, storage, what kind of stuff?

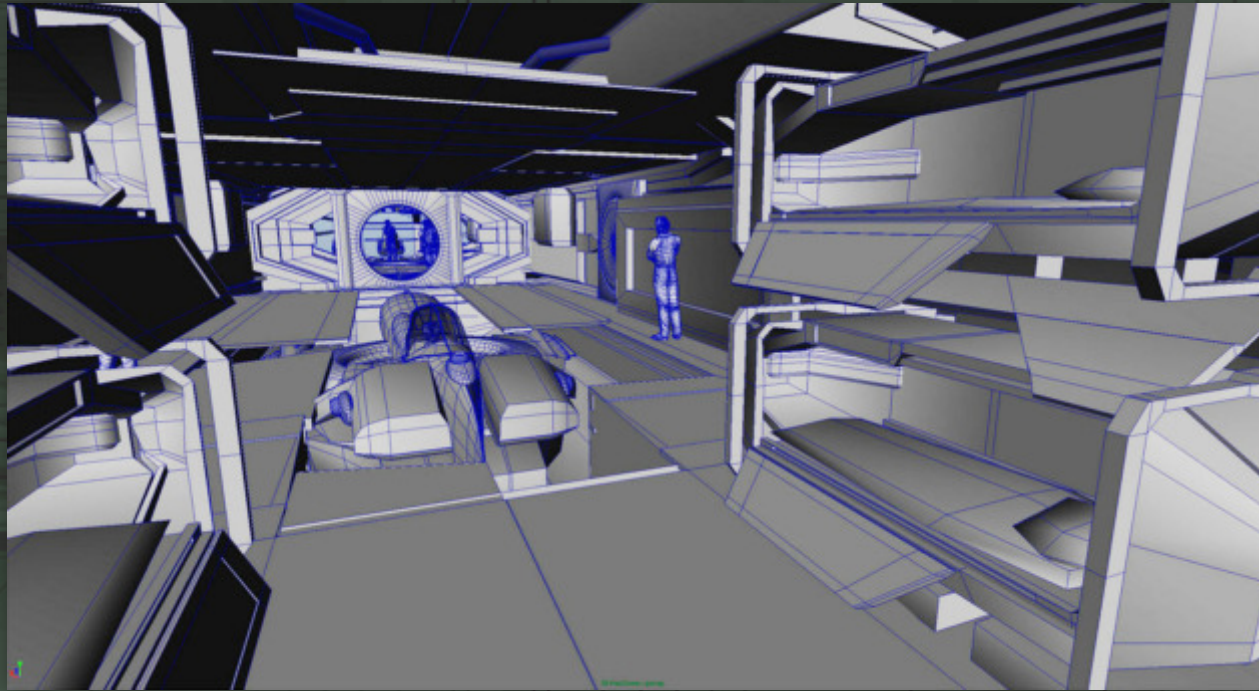
There's a big pressure door with windows on each side.

RC: Then we are in the big hangar space. There is an airlock 'lid' that comes down over the fighter. The small area around the cockpit would be for entering the fighter prior to deployment.

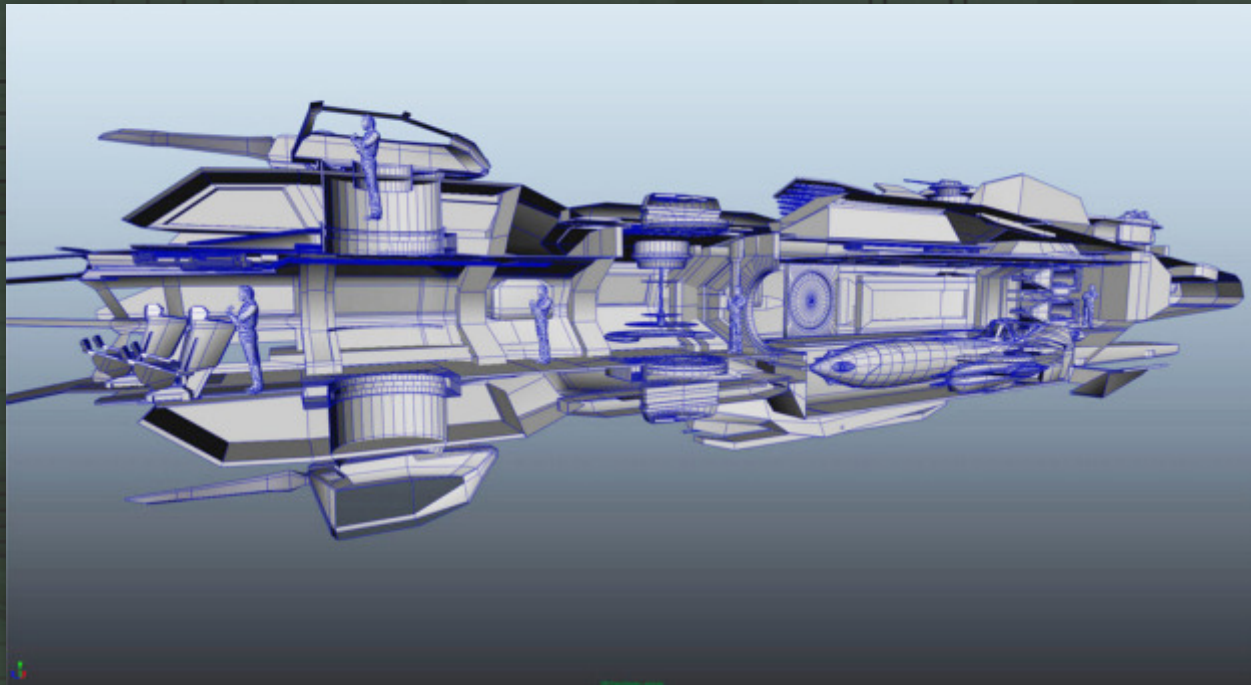


WORKING IN PROGRESS

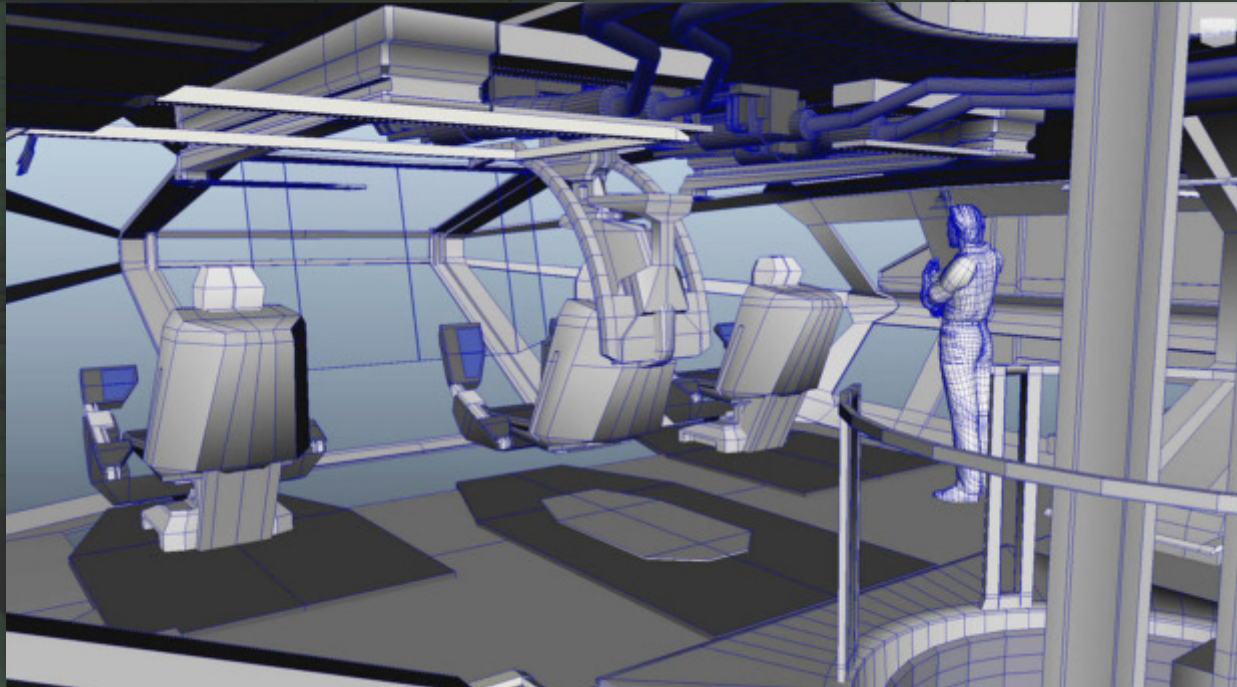
RC: Then we have the bed/hypersleep area at the back. These are pods/hypersleep for long trips and maybe even a type of escape pod or something. You can see here they have the doors open with mattress and pillow in there.



RC: There is space at the back for the toilet/shower, and if the lack of a rear gun is an issue for you there is room to put one back there. It's got a pretty limited field of view as it's between the engines back there, but let me know if you want something there.



WORK IN PROGRESS



RC: I made the central captain's chair attached to the ceiling. I can do the same with the other seats if you like the idea.

CR: I like the captain's chair a lot — it's a cool detail.

RC: I gave the central seat a large HUD. Do we need any more instruments other than the HUD? Small backup instruments in front of each seat (along with the small control pads they each have)?

CR: I think that works — 1 or 2 LCDs can articulate out for the pilot to use as a touch screen or put away.



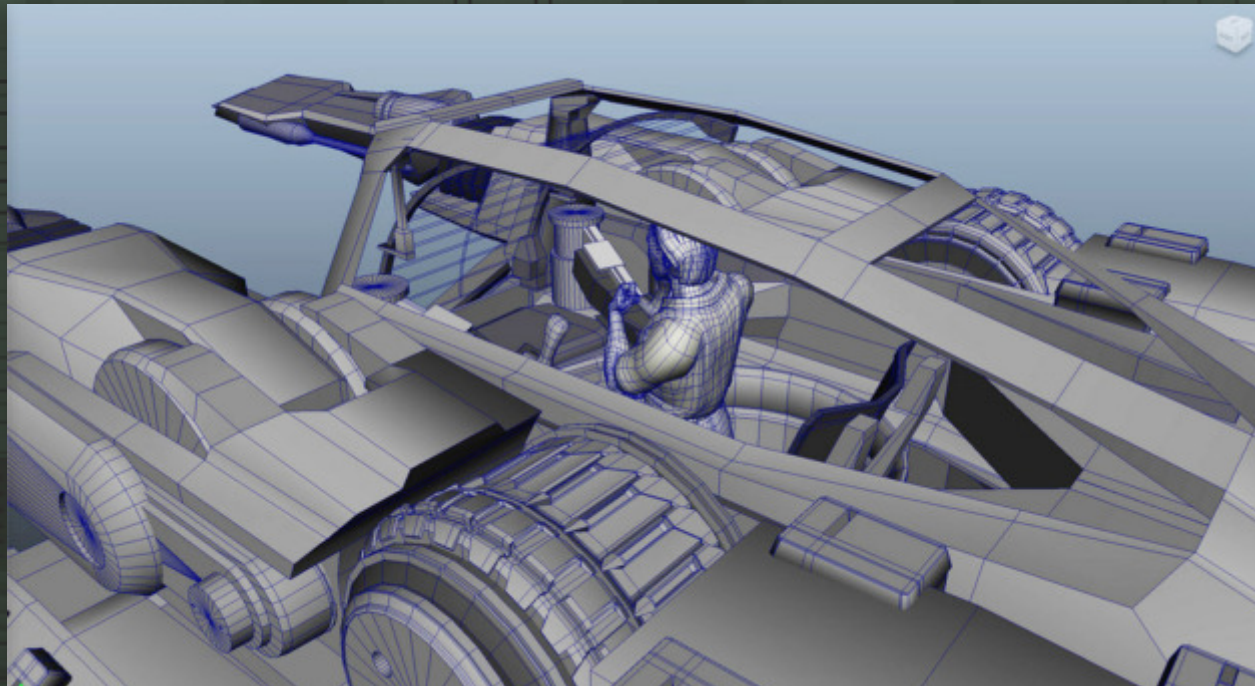
WORKING IN YELLOW

RC: The azimuth/elevation controls for the guns are always in the turrets. There is a curved HUD in front of the gunner. The top gun has great visibility all directions but down.

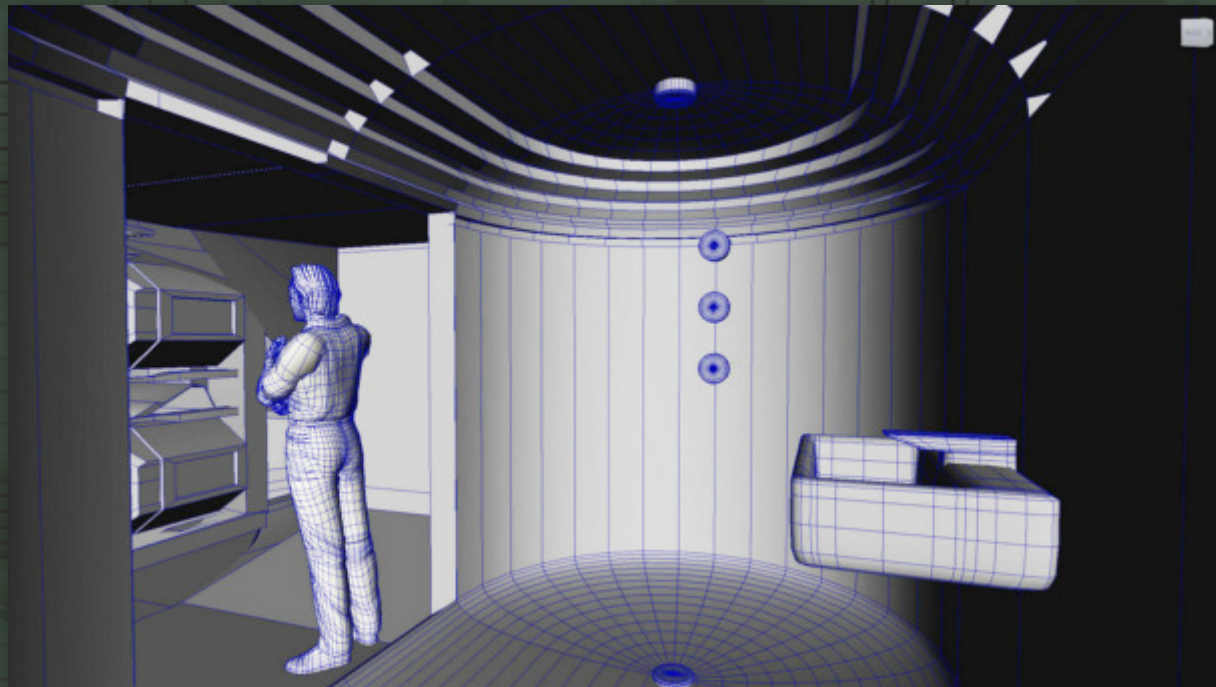
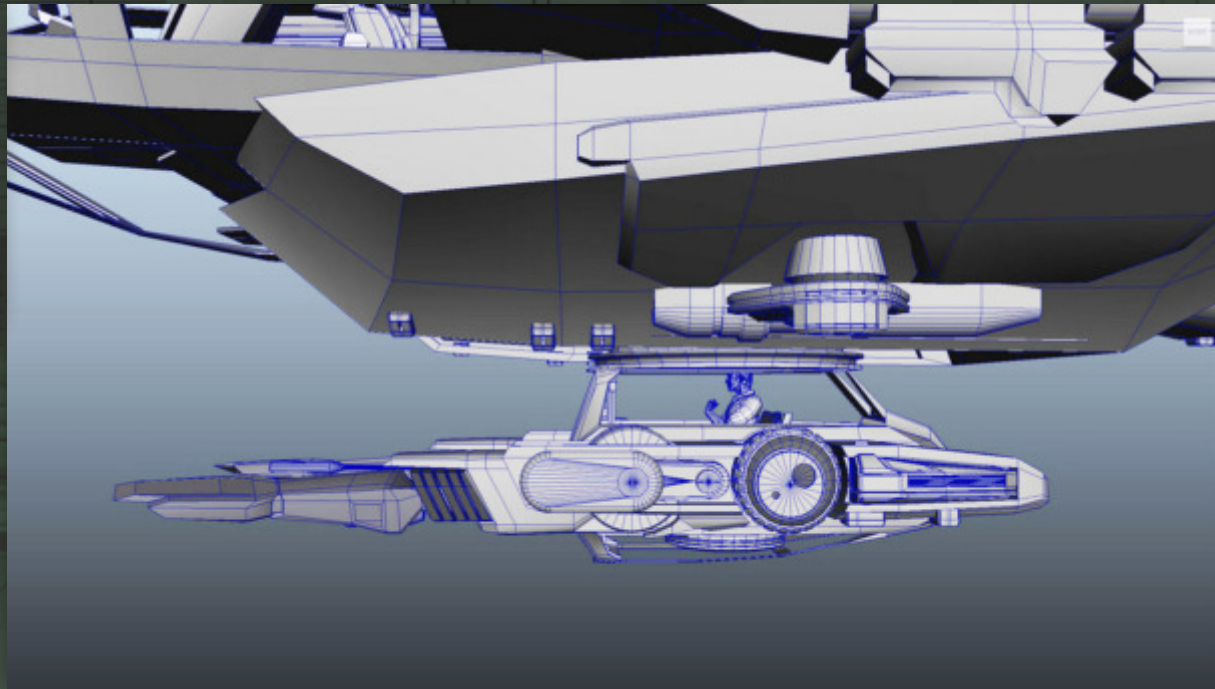
CR: I love it.

RC: I've added two 'reloader' or 'recharger' devices on each side of the guns. In order to recharge the gun you have to come around and face front, then the devices swing up and clamp on to recharge.

CR: Great detail.



RC: The bottom gunner is in a more seated position than the standing pose of the top gunner, with a HUD as well. It has good front and decent side and back views, but hardly any view up and bad visibility to the down sides.



RC: There's a blocked-in bathroom at the back — shower starboard [shown] and toilet port, sink straight back.

CR: Nice details — I guess we'll flesh out a bit more when we get to a paint-over, etc.?



WORK IN PROGRESS

RC: Here's a version of the fighter, to see if it's on the right track.

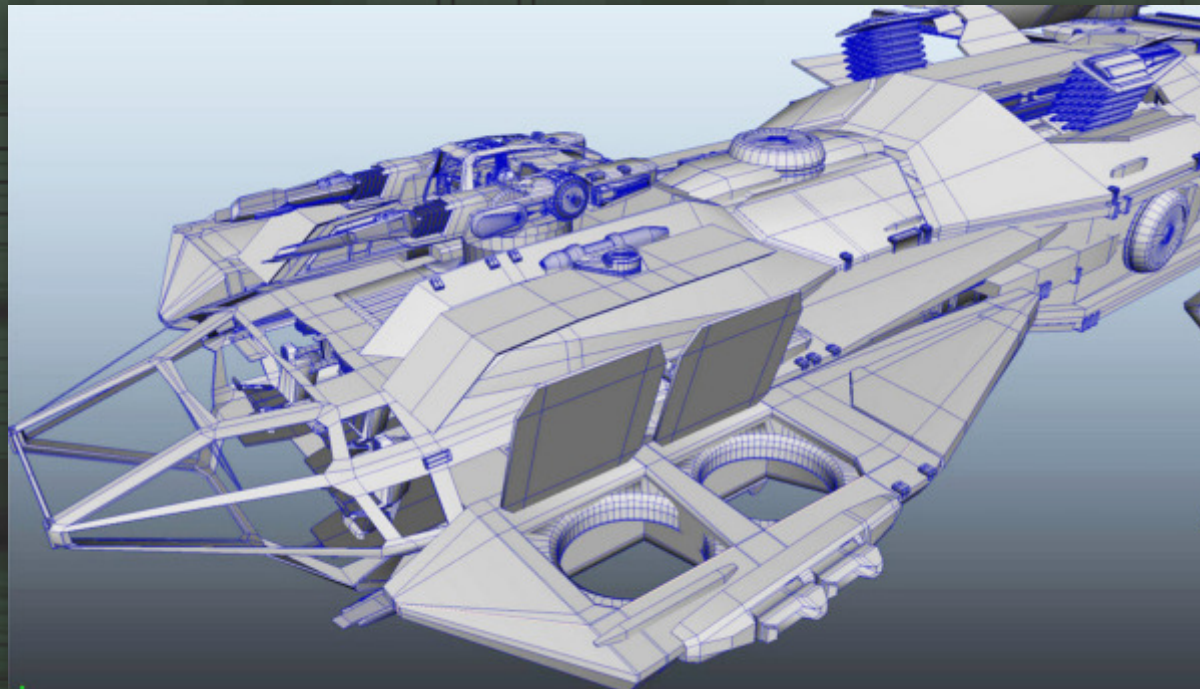
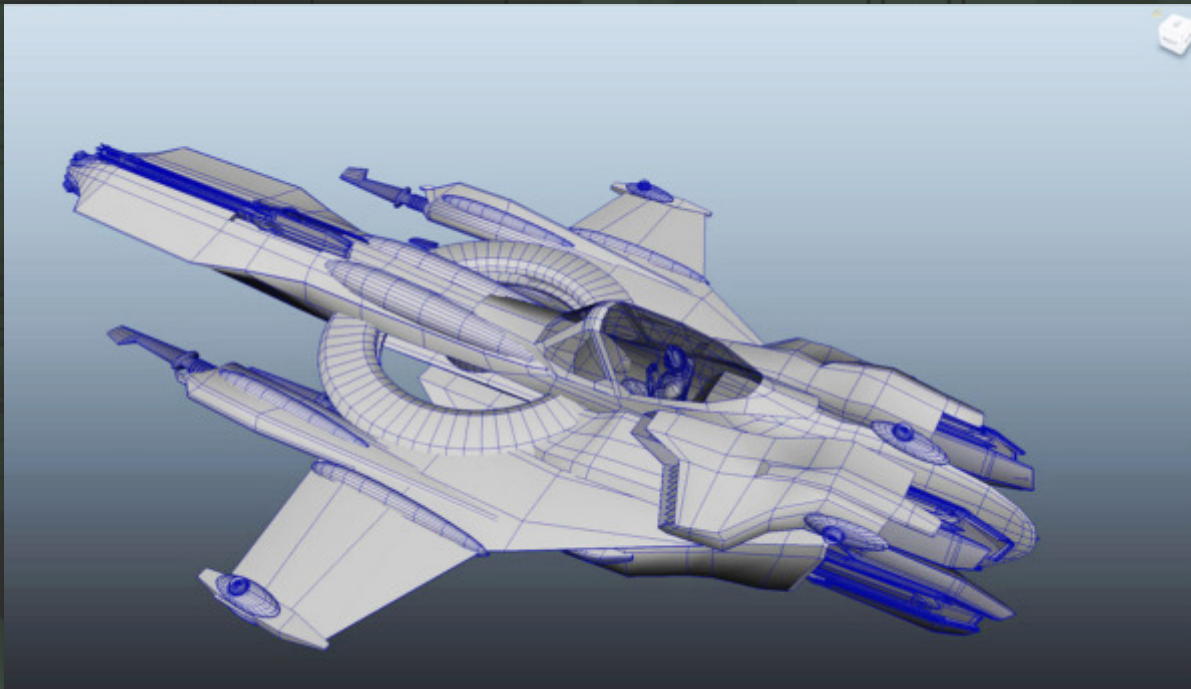
CR: Let's go with this, as it fits the style of the Constellation.

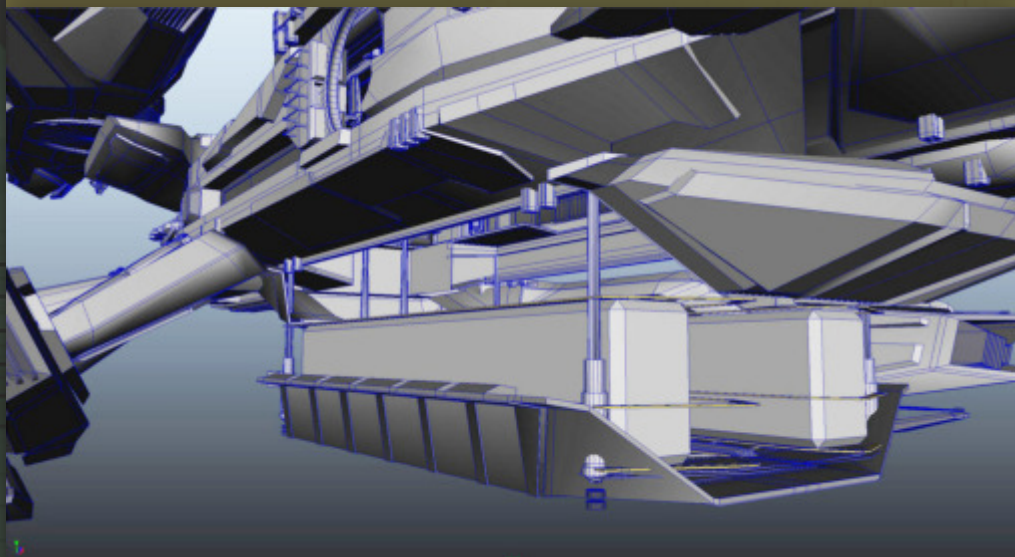
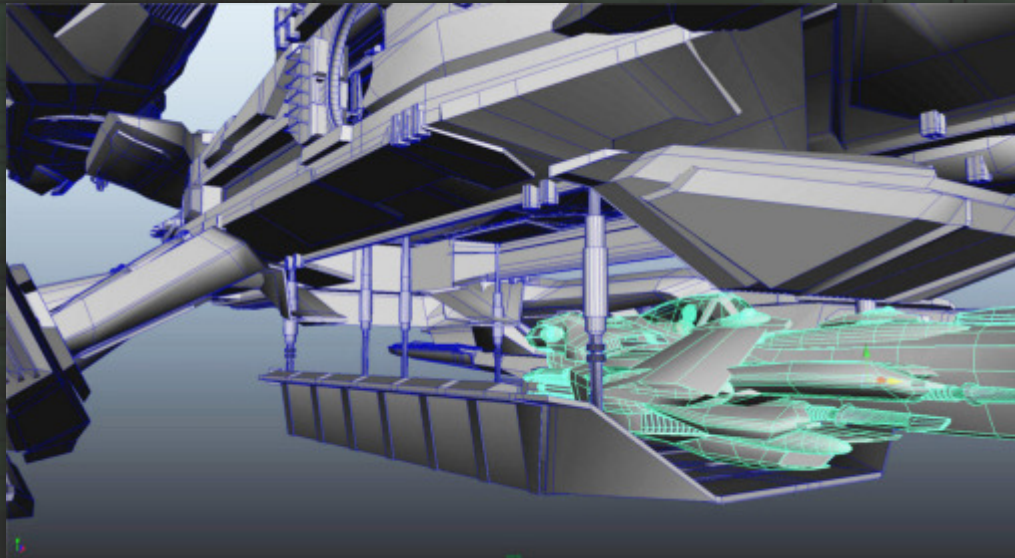
RC: I also did some work on the VTOL thrusters. If all is on the right track, then I'll continue with the detailing: panel details and set dressing for the interior — display monitors, conduits, panels, grips, consoles, handles, etc.

CR: ON TRACK! FULL SPEED AHEAD! It'd be good to flesh out the guns on the turrets, and if you provided some upgrade/outfitting options. Where does the cargo go on the current configuration? How does it get loaded? Can we replace the fighter bay with an extra cargo hold?



WORKING IN PROGRESS





CR: So how do you load the cargo? Does that have to be loaded in first (i.e., there is no way to load the big containers without moving the fighter out of the way)? Also, it seems the cargo has to be on top of the floor that sits on top of the fighter and keeps the inside pressurized and not exposed to space. How do you get the cargo onto that? (Isn't it on top of the hangar bay floor that lowers?)

Also the cargo can come in multiple pallets — think of the

big containers being pallets that can be packed with plenty of stuff — so it could be a cargo container (like you've drawn), but also there could be a lot of smaller boxes/drums, etc., bound on a pallet.

RC: Here is the process for loading/off-loading:

Constellation must be parked. The whole floor/fighter/floor/cargo assembly is lowered so the bottom of the outer door touches the ground. Fighter must be moved out of the way (the wings are always folded up when in the Constellation), then it hovertaxis forward and out, or we can put wheels on it instead of skids.

Cargo floor/cargo lowers further to the ground, into the space the fighter just vacated.

Once the lowered assembly has the cargo at ground level, you load/off-load/arrange as desired. Reverse the process to load.

There is a small cover over the fighter cockpit that opens up and down, allowing you to get in the fighter when you're in flight and there is cargo loaded.

CR: Is there an easy way to do this? The fighter is on skids. Also, the wings of the fighter seem like they would hit the cargo hull floor pistons. Or is that not the case?

RC: The fighter must be moved out of the way (the wings fold up, then it hovertaxis forward and out).

CR: It also seems like smaller cargo containers can sit next to the fighter on the lower part.

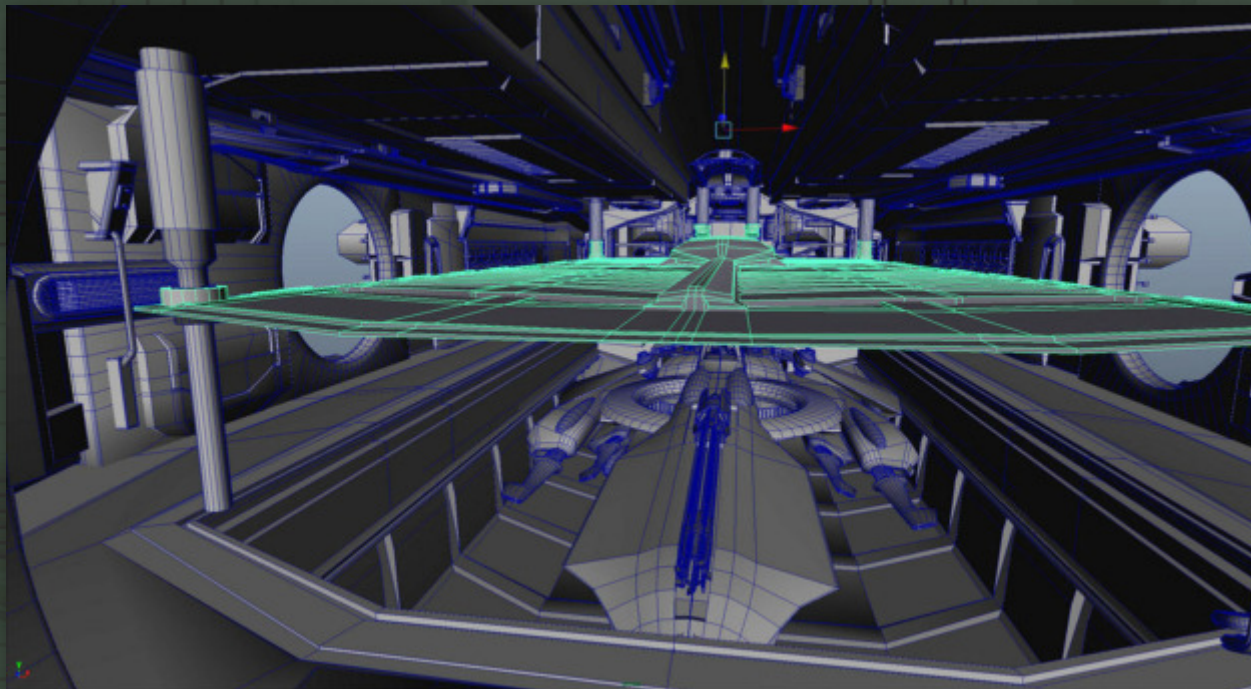
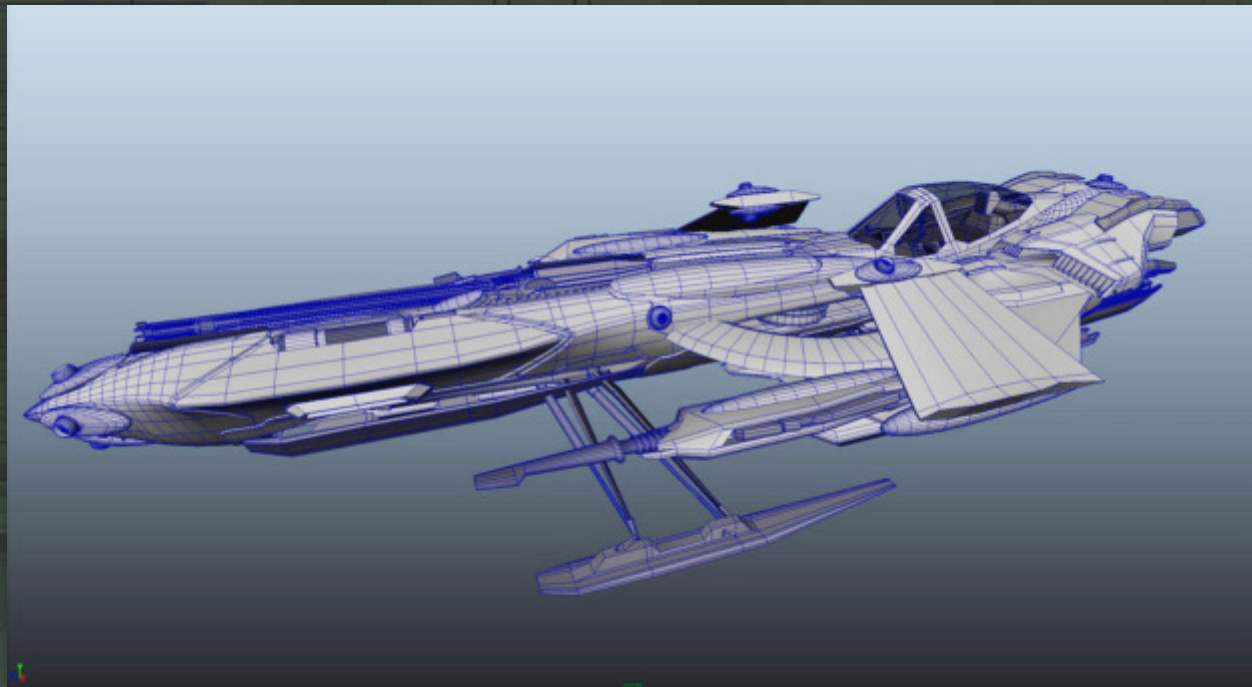
They would have to be vacuum-proof, since when you launch the fighter they will be exposed.

RC: We could put additional cargo next to the fighter on the lower part. It couldn't be too much or it would impede the forward movement of the fighter out of the bay. We could also do things like make the whole belly fatter to hold more stuff, or create different external places for it.

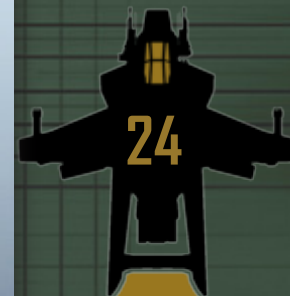


WORKING IN PROGRESS

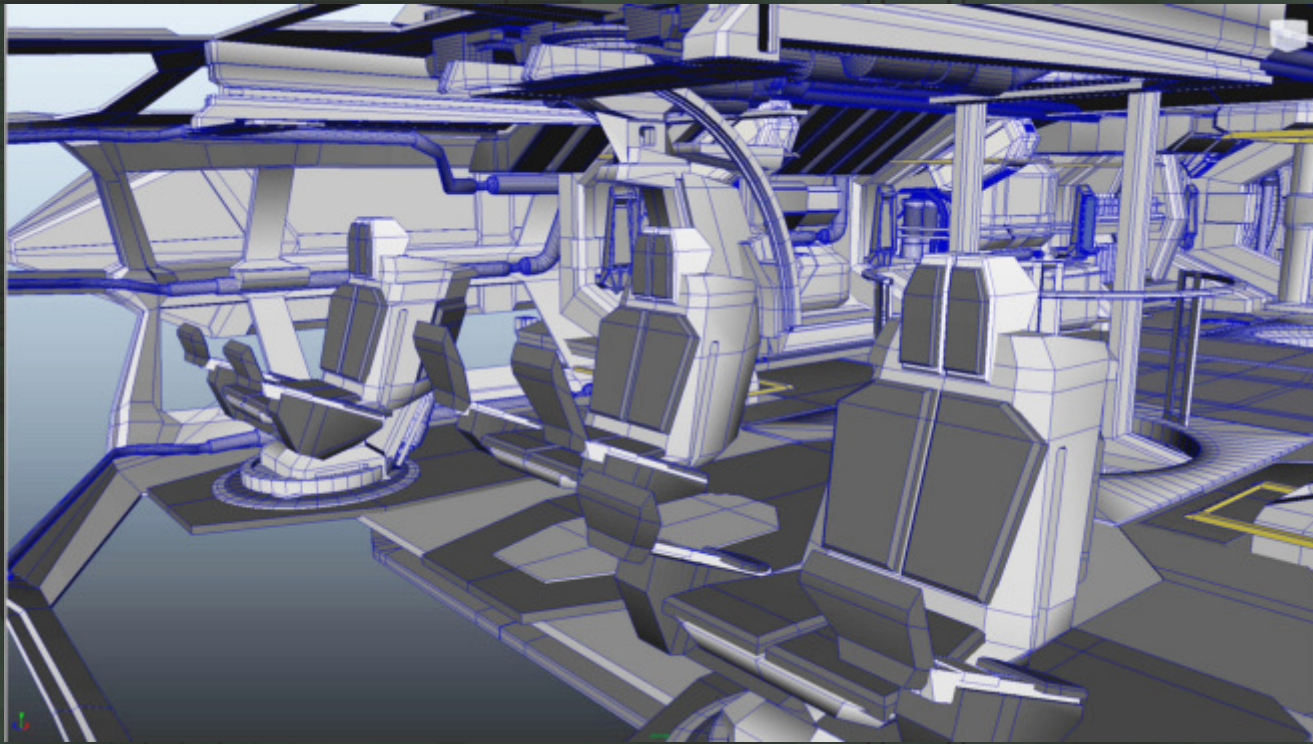
RC: The skids on the fighter.



RC: Cargo floor over the fighter.



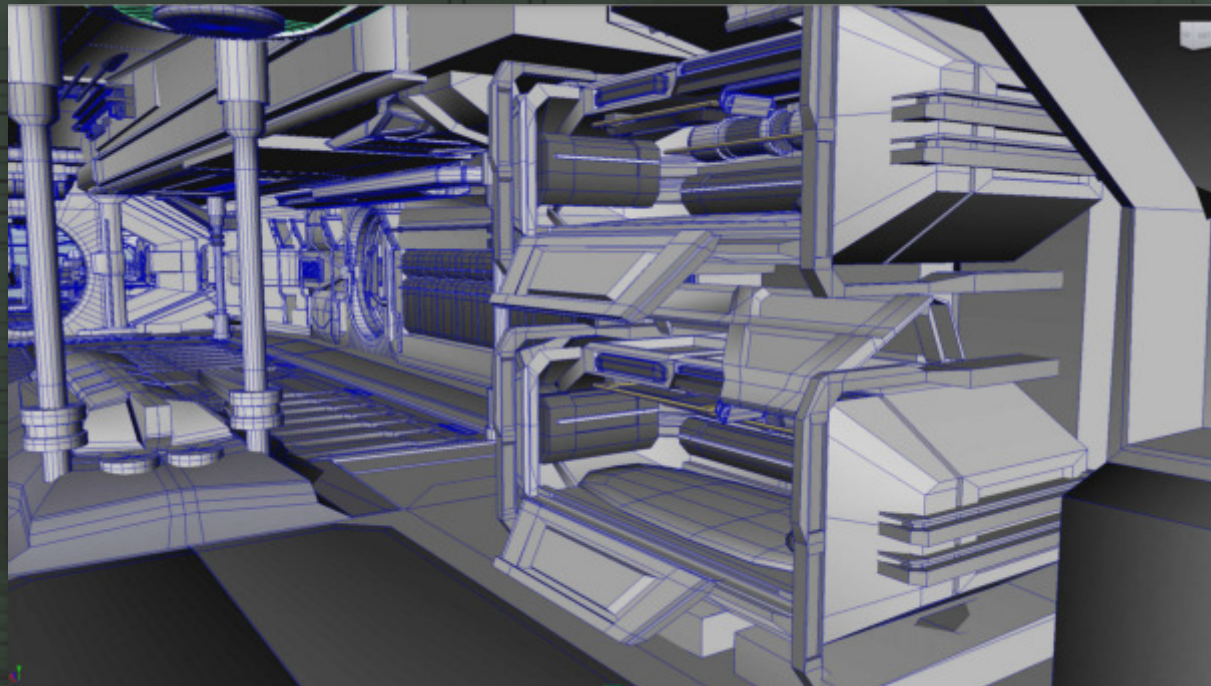
WORK IN PROGRESS



RC: More detail overall, interior and exterior. Front chairs can now swivel, into 'meeting' mode facing each other or back to normal 'piloting' mode.

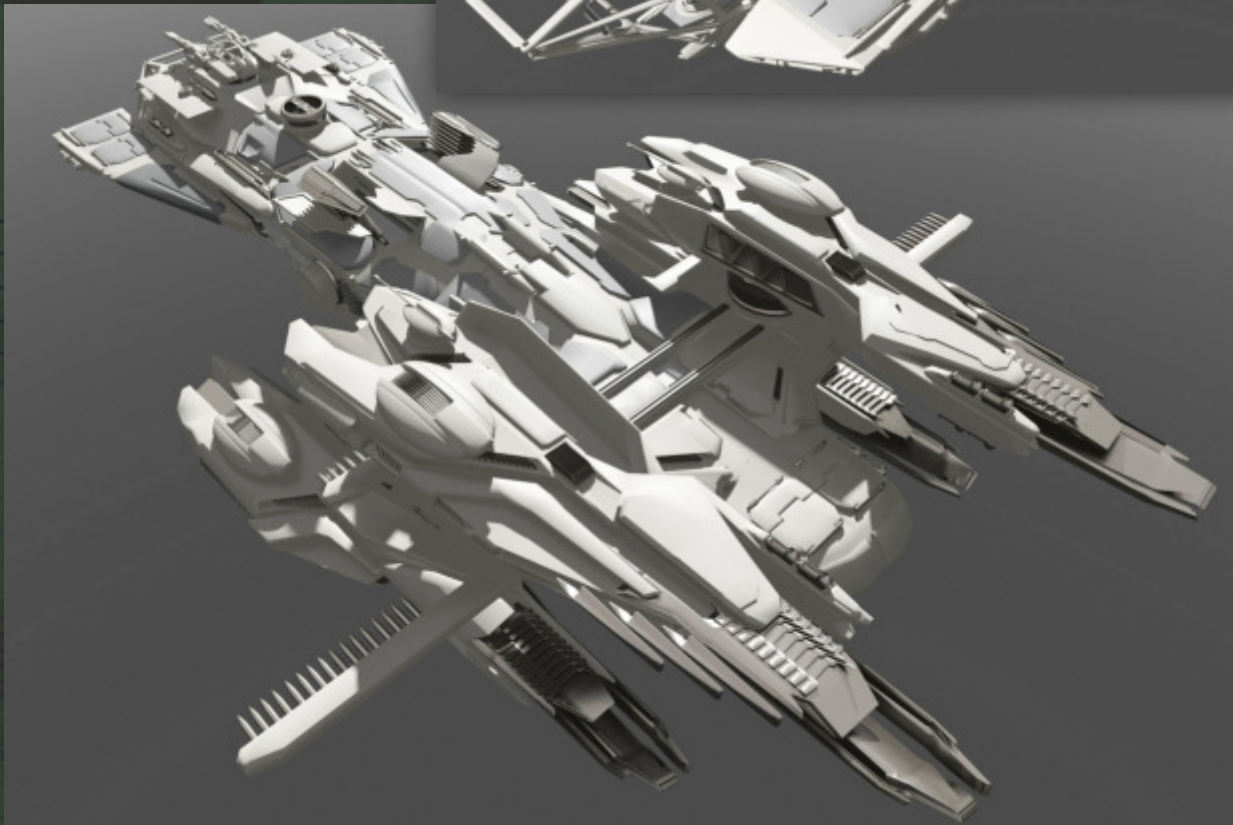
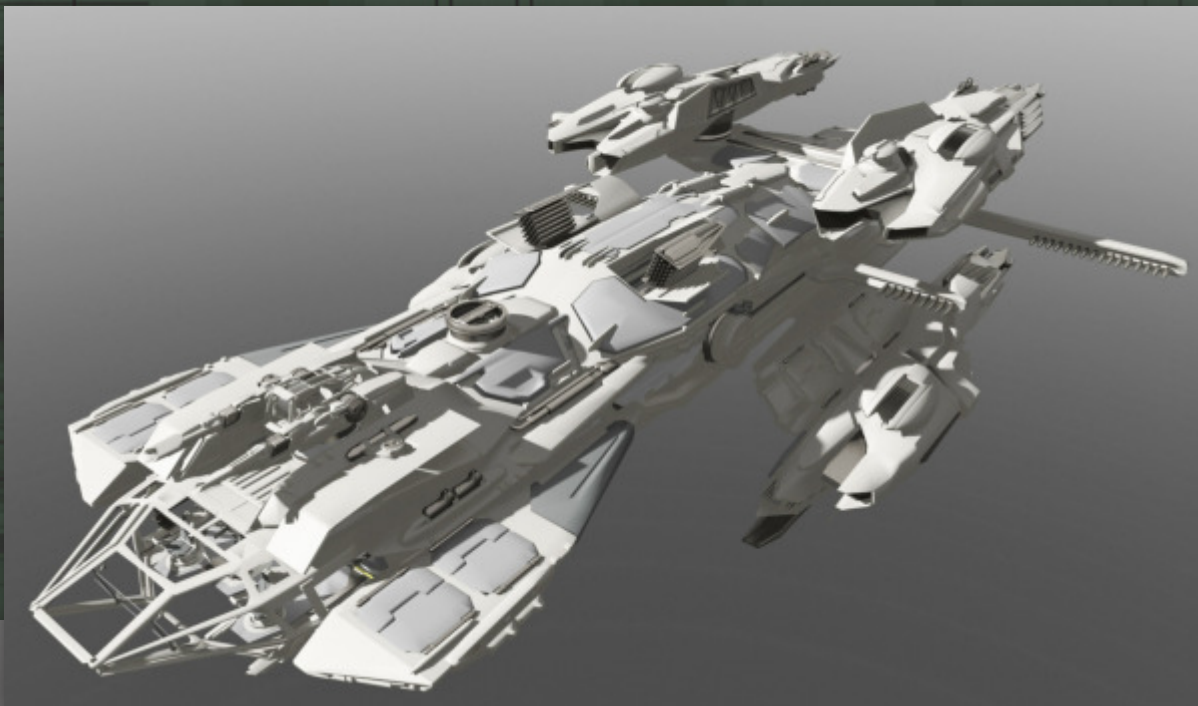
RC: Added detail to the beds/lifeboat escape pods. There are still mattresses and pillows, but there are now also oxygen bottles, handles, emergency kit stowage at your feet and a monitor/console on the ceiling that you face when you're lying down. As we discussed, in an ejection the whole tail of the ship would blow off and the four pods would shoot out; there are little rockets on the outside of the pod.

CR: I would say you nailed it all! Let's see some renders.

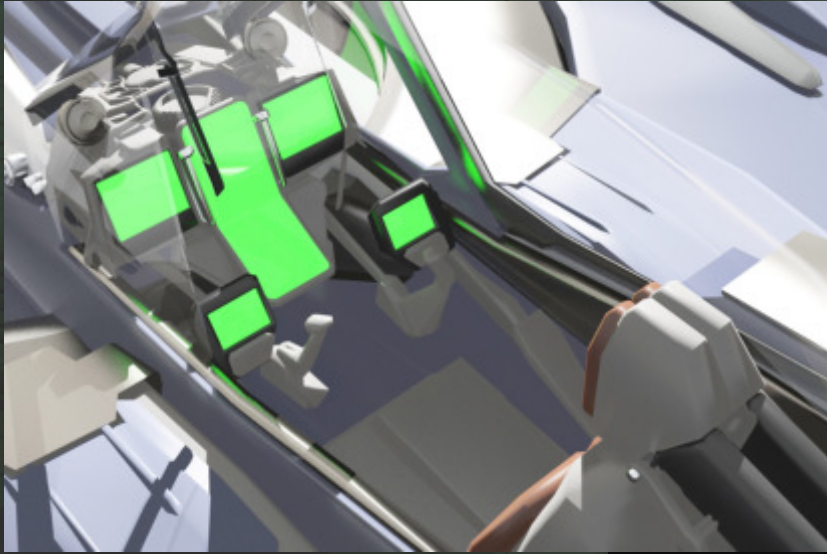


WORKING IN YELLOW

Rough renders:
Exterior



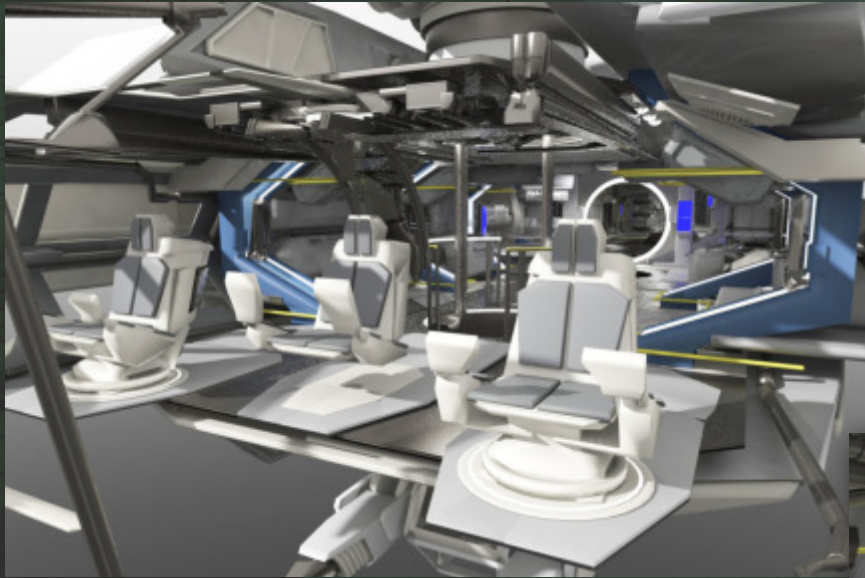
WORK IN PROGRESS



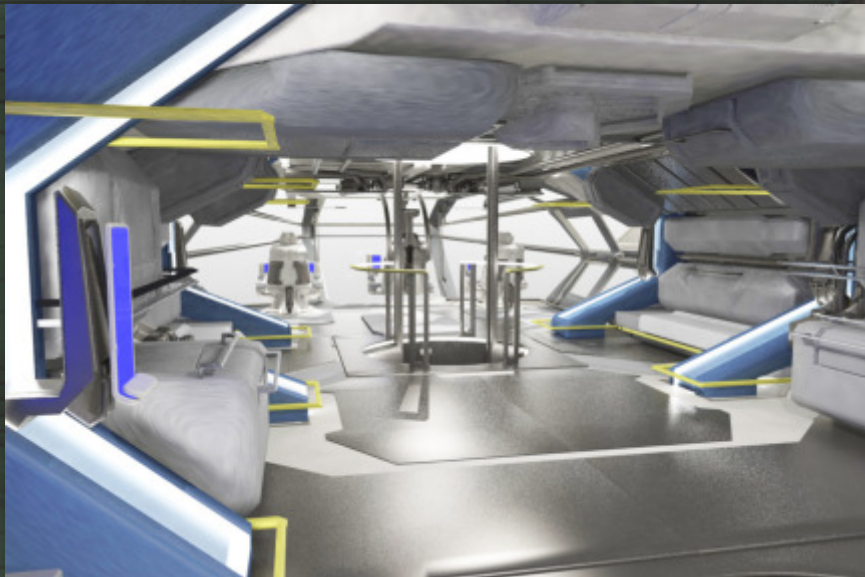
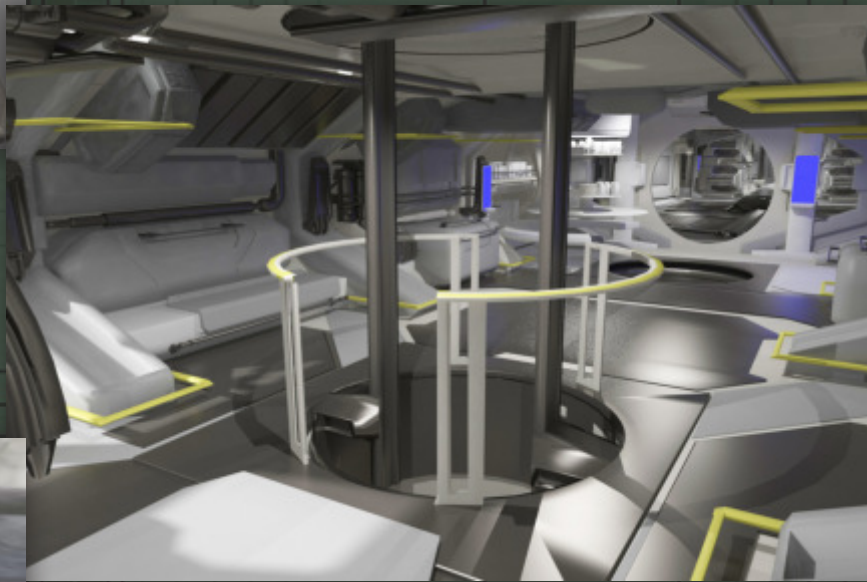
Rough renders:
P52 fighter



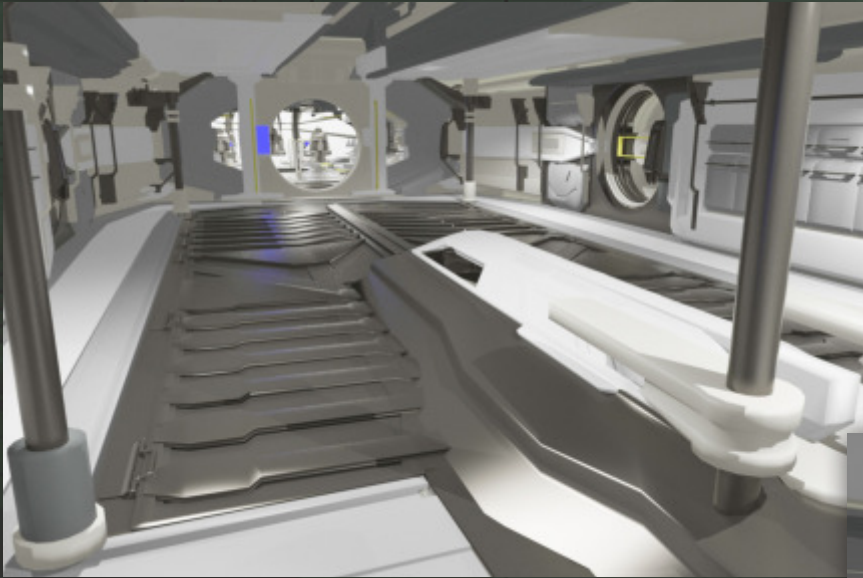
WORK IN PROGRESS



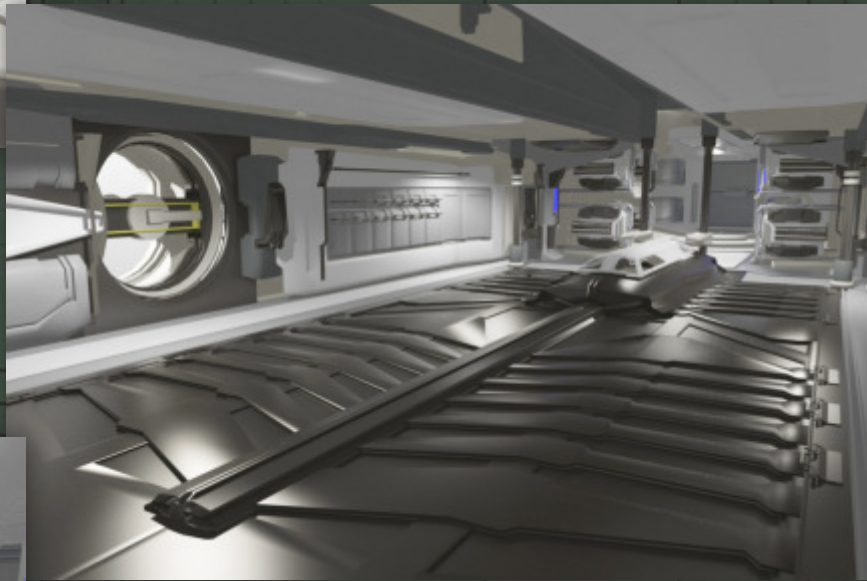
Rough renders:
Cockpit, turret ac-
cess, common area



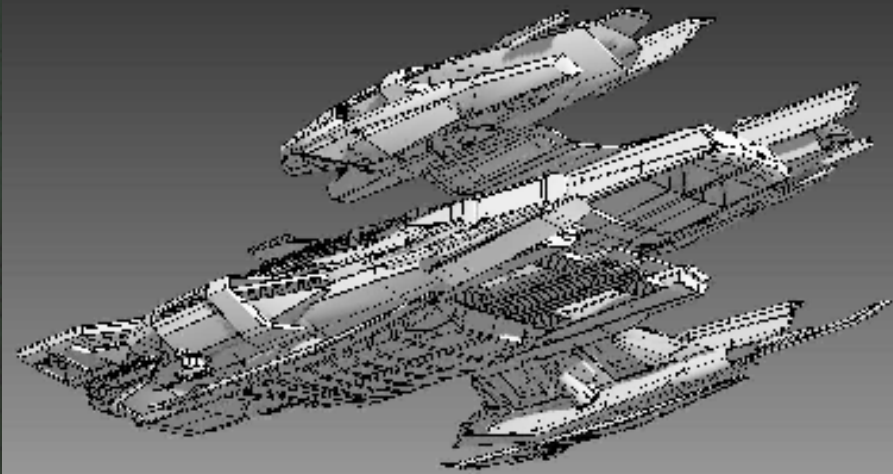
WORKING IN PROGRESS



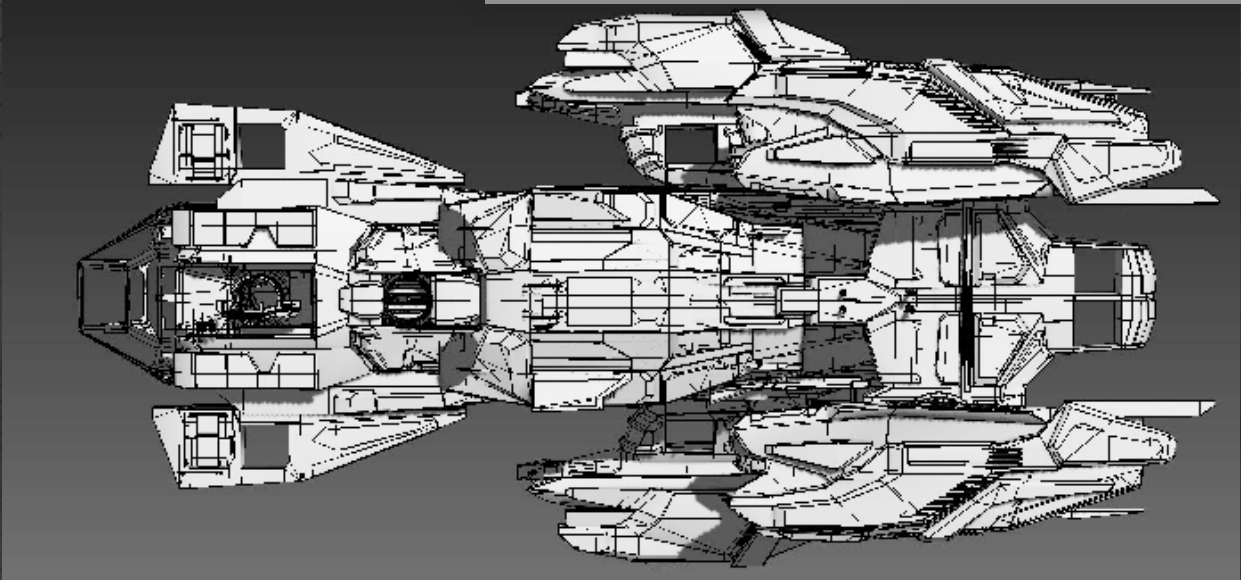
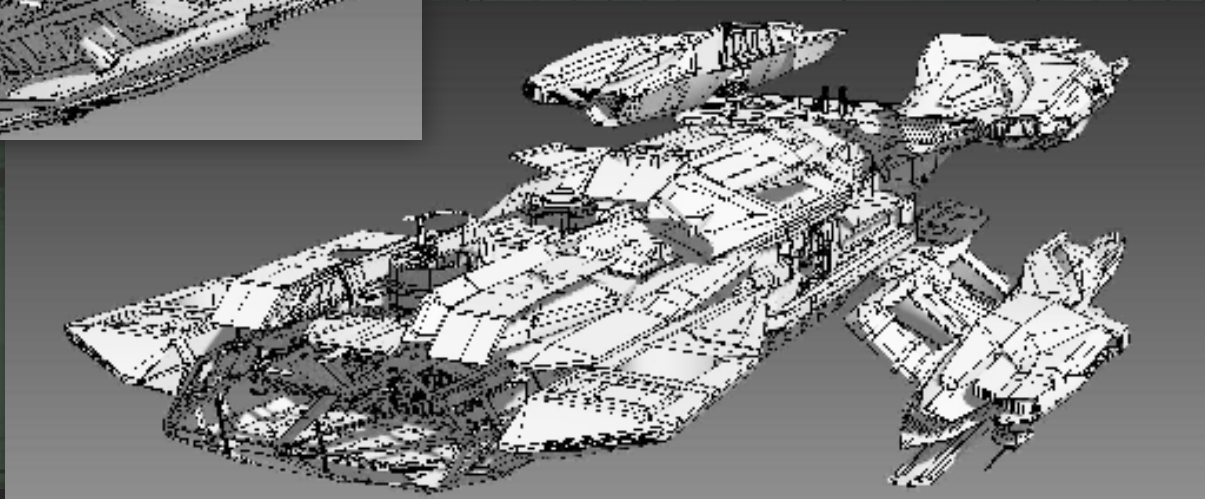
Rough renders:
Hangar, cargo,
beds



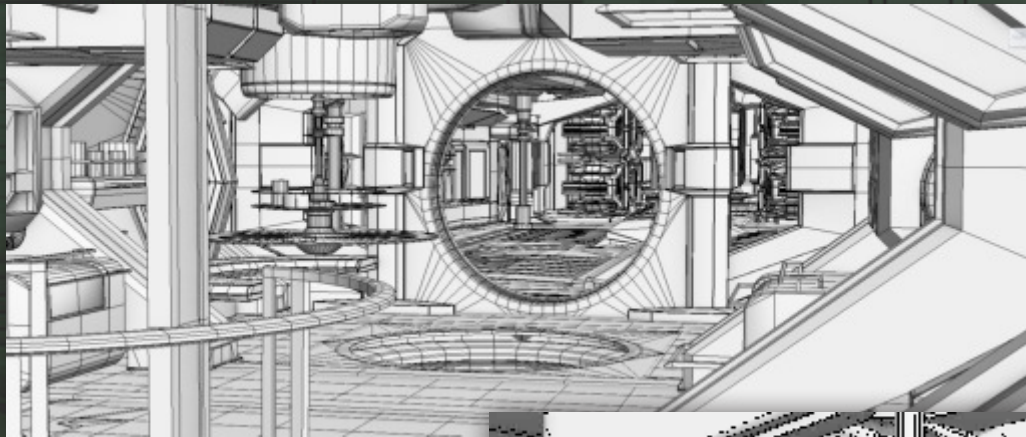
WORKING PRIORITIES



CGBot: The geometry cleaning up/re-build process. There are about a half million triangles on this ship. For this mid-sized ship, you need to boost up the geometry definition to have a good amount of detail.



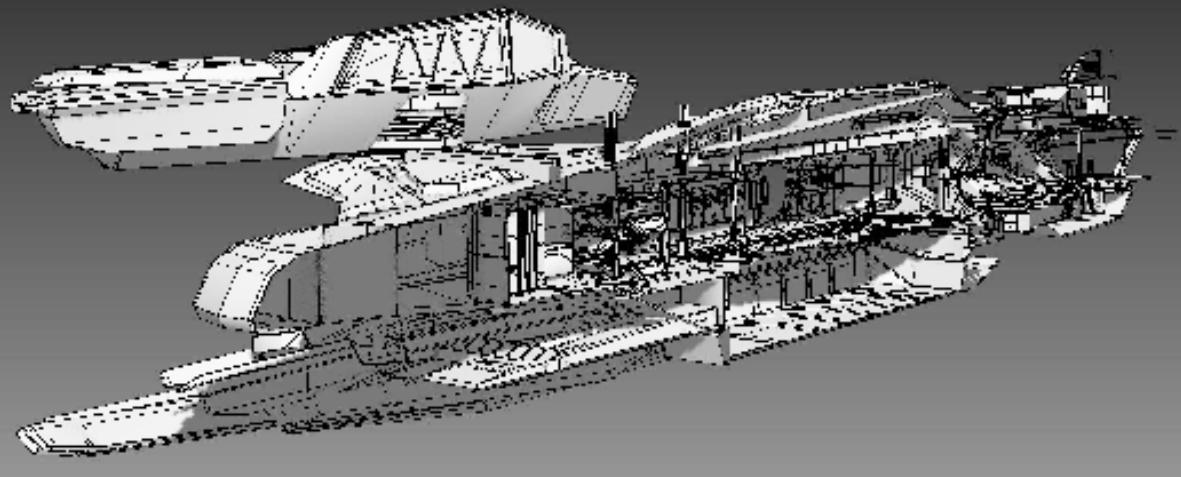
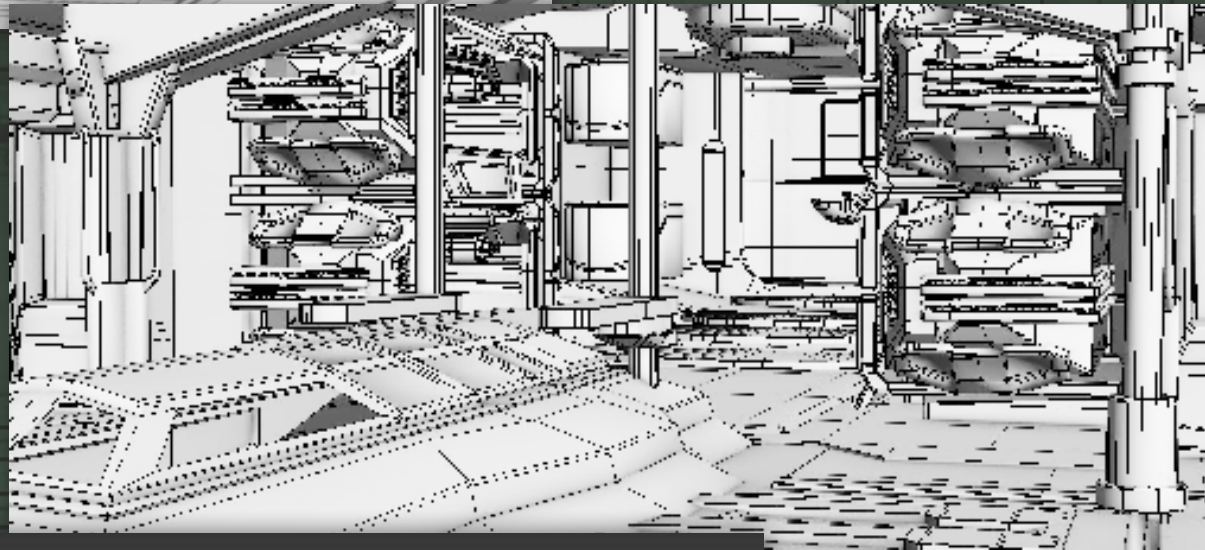
WORK IN PROGRESS



CGBot: Interior geometry clean-up. With some optimization still to do, this is really close to the geo definition for the in-game model.



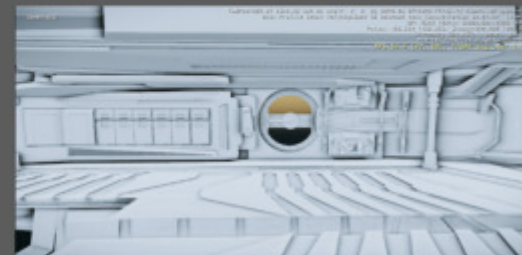
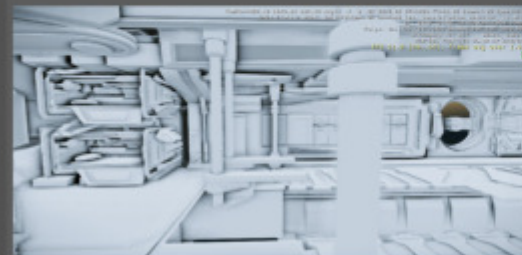
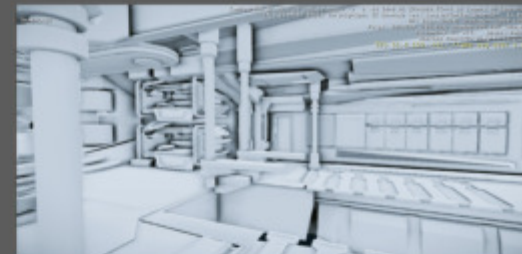
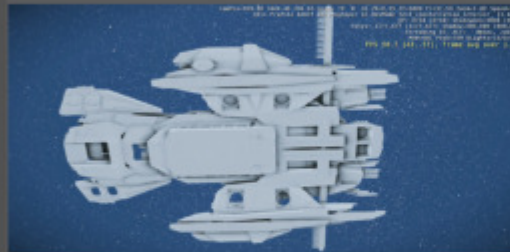
CGBot: One of the tricky parts on this ship was to take care of how the interior and exterior fit together, as sometimes the exterior and interior sketch geometry fought for the same space.



CGBot: Exterior and interior geometry fit. This is how Ryan Church's designs actually fit for a realtime space ship. Not just cool but functional.

WORK IN PROGRESS

CGBot: First in-engine geometry tests (exterior and interior).

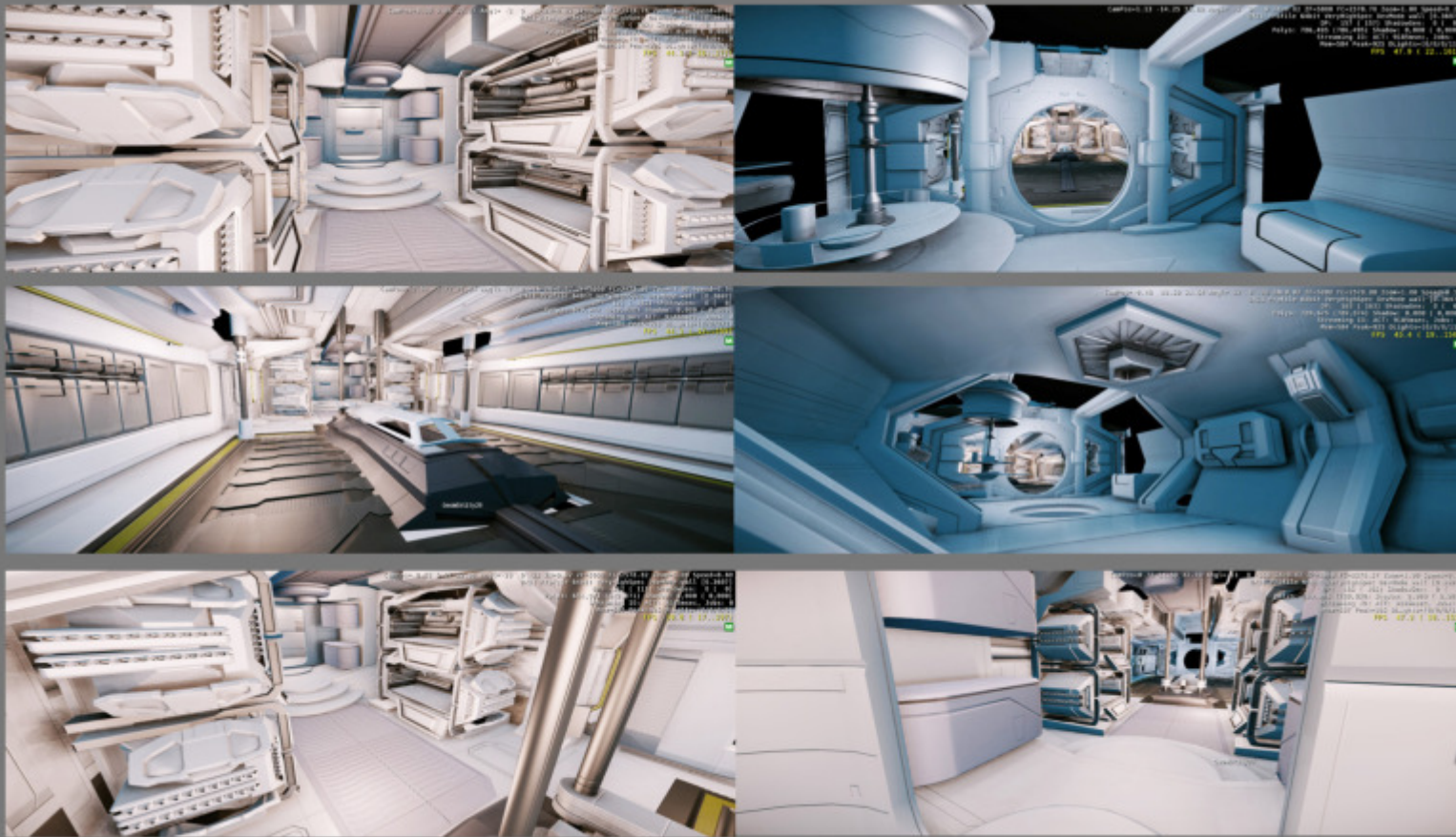


[Constellation Interior | CGBOT]



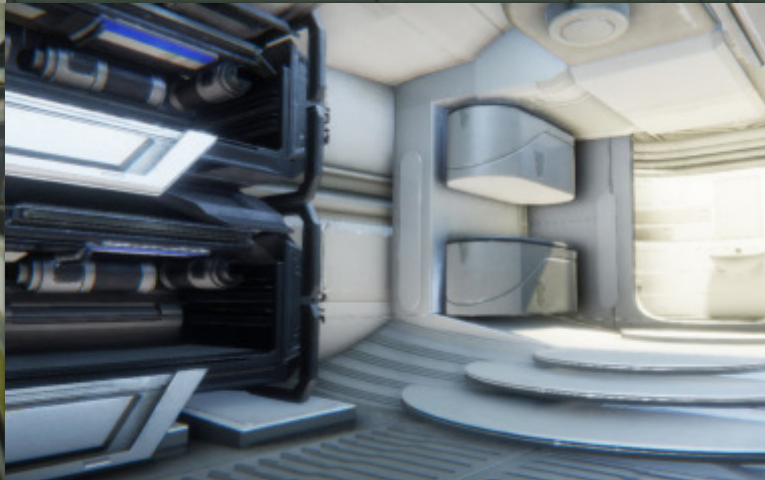
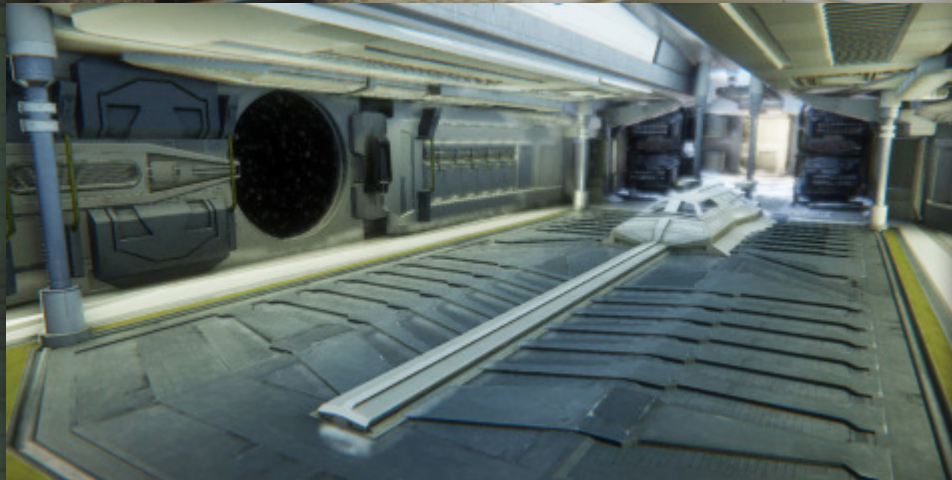
WORK IN PROGRESS

CGBot: Interior Normals and Baked AO maps tests.



| Constellation_Interior_WIP

WORKING IN PROGRESS



CGBot: In-engine interior texturing. Testing the textures in different lighting conditions lets us know how the spec and materials react, so we can make tweaks to get the look we're going for.



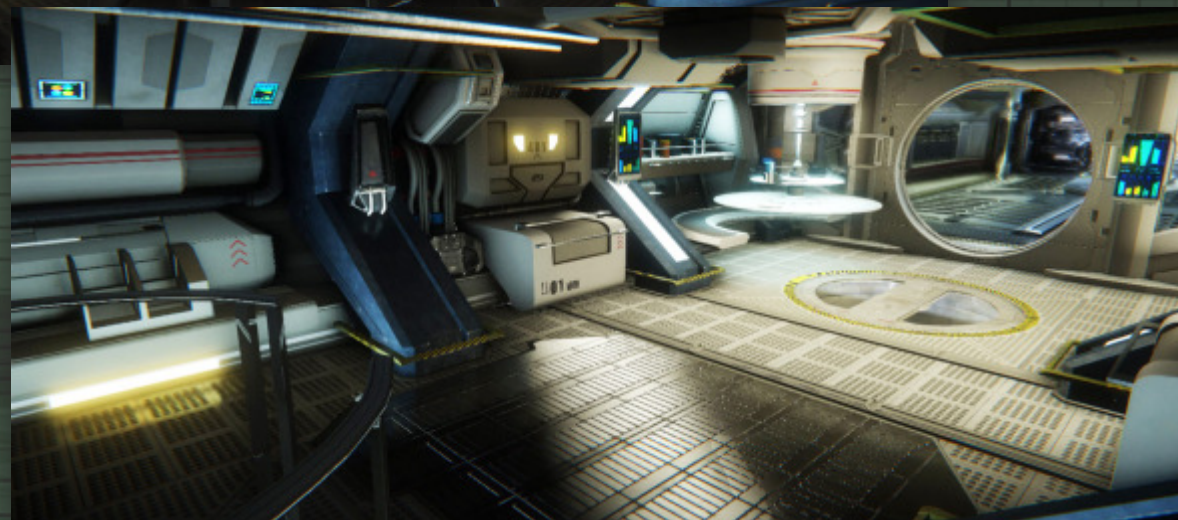
WORKING IN PROGRESS



CGBot: In-engine exterior texturing. Some paint and material tweaks to help shapes read better. Having lots of volumes, panels and machinery is cool! Making all of those integrate and work together is quite a challenge. At the end, all of Ryan and Chris's ideas came to life and made sense.



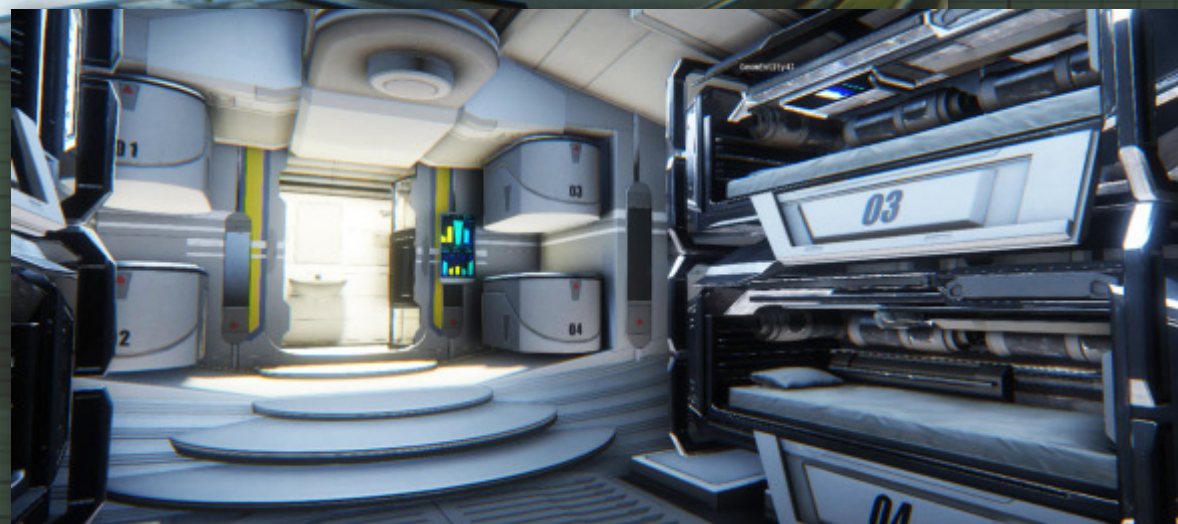
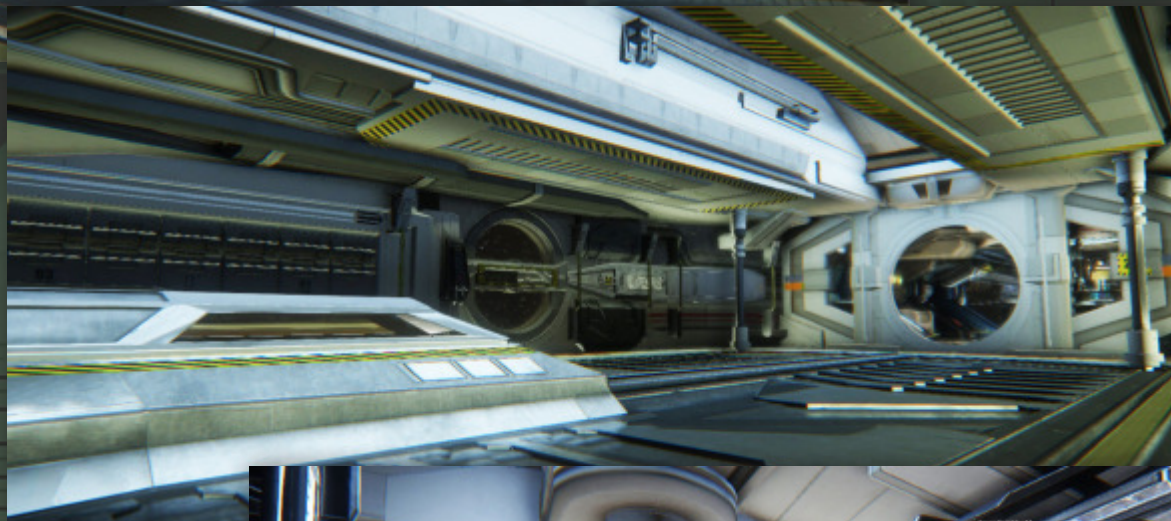
WORKING PRIORITIES



CGBot: Interior screens, decals and textures polish pass. Having decals is not just about adding color variation, but actually telling players (as in real life) the location of dangerous or important areas.



WORK IN PROGRESS



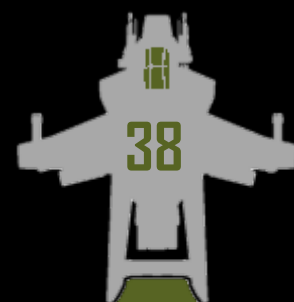
CGBot: More interior screens, decals and textures polish, in the back half of the ship.



WORK IN PROGRESS

HD

HURSTON DYNAMICS



PERFORMANCE

History

Hurston Dynamics is the United Empire of Earth's premier producer and distributor of both quantum cascade lasers and a wide variety of electron guns. They are also the single largest outsource producer of standard munitions warheads for military contracts and the third-largest refiner of antimatter precursor in today's economy. Though few finished products bear the Hurston name, their raw materials and manufactured components are found in nearly every piece of space technology in flight today. Copies of Hurston dies are used in manufacturing facilities across the galaxy, with illegal copies even crossing the border for use in Xi'An production hubs.

The Hurston family has been helping Humans make war on one another for generations. They can readily trace the name back five hundred years, to the development of the first power lasers for space defensive platforms. More fanciful family histories connect the present-day Hurstons to Earth's dark ages, crediting the family with everything from broad axes and crossbows to fixed-wing aircraft and atomic weapons. The current patriarch, "Colonel" Gavin E. Stanton, adopts this backstory wholeheartedly, decorating his office with millennia of killing tools and infusing the company's advertising and corporate culture with medieval weaponry wherever possible.

Whatever the true history, the old adage has proven correct with the current generation: war is good for business. Hurston Dynamics is one of the rare mega-corporations which can properly boast that it owns its own planet, having secured Stanton II from the UEE government in a money-and-stock deal worth an estimated fifty trillion credits. Prior to the acquisition of Stanton II, Hurston was based on Earth, with mining assets and weapons testing ranges scattered throughout the galaxy. In the past fifty years, these have been significantly consolidated to the

facilities on Stanton, making it the place to go for Hurston technology.

A glitzy showroom and an uncomfortably formal pilots' bar, Viola's, belie the overall situation on the planet. Unlike the other inhabitants of the Stanton "office park," Hurston has consciously run the planet into the ground: every inch of the world not assigned to corporate facilities is being mined for antimatter precursors or blasted apart in research and development tests. Soot and smog pollute the atmosphere to the point that inhabitants must be issued breathers when conducting work outside their habicubes. The worker satisfaction rating on Hurston is an astonishing 0.5 (out of 10), and very few miners last more than a single conscription tour. The corporation is always seeking to import low-skilled workers and rumors persist that there is a market for Human slaves on their planet. Whatever the truth, privateers will find that Hurston pays well to those who provide them with involuntary labor and is an excellent source of low-cost munitions and metals.

As a result of their disregard for Stanton II's ecology, Hurston frequently finds itself the prime target of environmentalist groups, including the Citizen's Clean World Alliance (CCWA) and the Wildlife Conservation Project (WCP). The Colonel does nothing to hide his disgust for such movements, frequently boasting about the number of indigenous species his company has exterminated (mounted Osoian heads and flatcat sensor nubs decorate his sitting room) and inciting further hatred from organizations unlikely to be purchasing radioactive munitions in the first place. In response, more militant environmental groups have even been known to target Hurston space convoys. Illegal bounties on Hurston corporate spacecraft are plentiful, though the corporation pays better for the requisite escort pilot muscle.



Weapons Systems

Though their weapons technology is found throughout the Empire and beyond, Hurston currently manufactures “only” two lines of branded ship weapons: quantum cascade lasers and electron guns. Both lines are available in multiple sizes, configurations and purposes. Weapons sizes range from tiny “needle” cannons to the massive capital batteries found on UEE warships. Hurston’s extensive tool and die experience allows for both weapon types to be sold in both Gatling repeater and strict cannon configuration. Variants of the guns (at various grades) are designed for different markets: Cheap for export, Standard to Quality for licensed civilian use and Excellent for the UEE military.

Hurston’s “Spectrum” line of external cavity quantum cascade lasers has been used effectively by a variety of operators for nearly a century. Quantum cascade lasers fire electromagnetic bolts that convert any material contacted into plasma, giving it a reasonable “bite” that is useful in most space combat encounters. A Hurston Dynamics Spectrum 7 QCL is recommended by the Bounty Hunter’s Guild as the gold standard for “starter” laser cannons, while the Spectrum 9 Gatling variant has been adopted by the UEE for their destroyer-based CIWS systems currently undergoing space trials. While many corporations produce cheaper quantum cascade lasers, mostly based on Hurston’s technologies, the Hurston name continues to convey a strong cachet.

The less-celebrated “Magnitude” line of electron guns is generally considered a specialist’s weapon. Standard UEE units do not use Magnitudes, although they are mounted on particular special operations and Advocacy spacecraft variants. The guns strip electrons from hydrogen atoms and then accelerate them at high speeds suspended in a

magnetic bolt focused through a multi-stage Einzel lens. A pilot trained in the use of his particular model of electron gun will find it an incredibly precise and powerful weapon ... a “newbie” activating such a gun for the first time will find it largely useless.

Extensive weapons labs have been established on Stanton II, and rumors of a third line of guns continue unabated. These rumors gained serious traction last year, when the corporation put out a record-high ten million credit bounty believed to be for a mercenary who stole a test artifact from the corporation. It is unknown whether or not the bounty was claimed or the artifact was recovered. Observers do consider it highly unusual that Hurston produces conventional and antimatter warheads without their own delivery system. Many believe it only a matter of time until the company premieres an entirely new antimatter-derived slug thrower gun type. When — or if — it happens, it is likely to throw the balance of power among civilian pilots wide open ... and potentially impact the course of the war against the Vanduul.





AN INTERVIEW WITH ROB IRVING



BEHIND THE SCENES

This month we go behind the scenes to talk with Rob Irving, Lead Designer for Squadron 42 and Star Citizen.

JP: *First things first: have you blown up any good planets lately?*

RI: Not any good ones! To explain, a lot of design work involves heavy-duty slogging through mounds of data — like naming all of the planets in over 100 starting systems. (Even as a shared task, that is a LOT of planets.) So when I got stuck trying to come up with names for all of the 13 planets in the Ellis system, I may have arranged for one of them to have a little accident.

JP: *How did you get your start in the gaming industry?*

RI: I was desperately trying to figure out what I would do with my “grown up” life out of college, and a good friend of mine mentioned an opening at Origin. It was like somebody had designed the perfect job for me. All of the things that I used to do as a kid (and on into college) — design, computer programming, gaming (both computer and paper), and writing — were all facets of the initial technical design assistant (TDA) job that I first interviewed for at Origin. I first interviewed with Warren Spector for *Arthurian Legends* (I may have misremembered this in a prior interview), and then ended up interviewing with the *Strike Commander* team.

JP: *What was it like working for Chris Roberts on Strike Commander?*

RI: To be honest, it wasn't much different than it is today. Chris doesn't want “just good enough”: he wants the best.

And he works just as hard as the rest of us to get there — if not harder. (I wonder if the man ever sleeps!) He has a vision in his head, and it's an amazing thing. The hardest part is trying to prognosticate precisely what that vision entails, and then get it down in such a way that everyone else on the team can understand it. A lot of times, it's just a matter of taking a stab at it and waiting for the feedback to tweak us onto the right course.

JP: *What other Origin titles did you go on to work on?*

RI: So very many ... Let's see if I can do this in order from memory. After *Strike*, it was *Pacific Strike* and a start on an awesome mission disk that never saw the light of day, a brief stint on *Wing Commander III* to help with the ground missions, *Wing Commander III* for the 3DO, *Prowler* (a mech game that didn't make it), *Abuse* (don't ask), *Longbow* and *Flashpoint: Korea*, *Wing Commander: Prophecy*, a long string of concepts and initial designs that didn't make it into full production, and then finally *Ultima Online's* live team.

JP: *What did you do after Origin?*

RI: Well, that's when my resumé starts looking like a series of game industry epitaphs. I worked for a while at 3DO's Austin office. After that went away, I moved out to LA to work at Universal on *The Lord of the Rings* (the books ...) franchise. At the time, I was actually producing a fantastic RPG title for Eric's company out in Austin. After VUG stopped working on *The Lord of the Rings* titles, I headed



up to Seattle to work on *SWAT 4* at Sierra. After that, I moved back to Austin to work for Eric again at Wart-hog, TX, which had been acquired by a little company called Gizmondo. If you haven't heard of them ... well, that's what Google is for. After that adventure, I decided that I wanted to move to the more stable "real world" and become a programmer, so I hired on at a Timesheet company named Journyx.

JP: *You're returning to game development after several years in the "real world." How has it changed?*

RI: Much of it is the same as when I left. I must admit that I'm still catching up on some of the new tools and terminology, but the ideas are the

same, and the process is very similar. In fact, I'd say I'm better at the process just because I did leave the industry for a while.

JP: *What are you doing on Star Citizen?*

RI: I'm the lead designer. What that means in a nutshell is that we define and refine the vision (after we extract it from the brain of Chris Roberts), and then document that vision so that it is accessible to everyone on the team. A lot of my job involves rounding up assets from other departments, reviewing for design input, and then adding information to our living design document.

JP: *What exactly is game design? How do you work with the programmers and artists we've already met?*



RI: Design encompasses many disciplines. Most of the design team have been programmers (or at least scripters, which is similar) at one time. Some of us have artistic talent, although I'm not one of those. We generate fiction for the game, including all of the massive lists of star systems, planets, corporations, equipment — whatever exists in the game has to be defined (and documented!) at some point. We also take those systems and build them into actual game elements using the CryEngine tools, some of which didn't even exist when we started. While we're at all of that, we're also designing rules for systems like the economy, mission system, mining, bounty hunting and many others. Meanwhile, we've got *Squadron 42* to think about, too.

As for the team, this is a great bunch. Our office is cozy, but we've worked hard to make sure that we gather personalities that fit in this space and on this team. Everyone communicates and collaborates *constantly*, and I've seen a number of examples of folks from every discipline gathered around a desk trying to put the finishing touches on an idea or a nearly completed system.

JP: What are your big influences? What movies/books/games are you carrying with you as you build *Star Citizen's* world?

RI: I think that pretty much everyone in the game industry



has a soft spot in his or her heart for *Star Wars* and *The Lord of the Rings*. I think those are two of the reasons we even have a game industry on this scale. Of course, I often look to other movies and TV shows about space (*Babylon 5*, *Battlestar Galactica*, *Firefly*, etc.) for inspiration on the visuals and the feel of spaceflight. World War II dogfighting is one of my passions, too, so that material helps since it coincides with the overall vision of fun space combat.

As for games, I take a lot of my views on strategy/sims from prior games that I've worked on, like *Longbow*, *Strike* and even *SWAT*, not to mention some very hard lessons from the *UO* live team. As for other games, it's really a combination of everything that I've ever played — cherry-picking an idea here, a mechanic there from practically anywhere. Any game can be fun, and at their core, most mechanics are universal. It's just a matter of getting that fun injected into whatever systems are being built.



BEHIND THE SCENES

JP: What are you most looking forward to seeing in Star Citizen? What are you most proud of designing?

RI: I'm really excited about starting up this massive event-driven engine and watching the universe come to life. If we do it right, it will be epic, and I'll honestly enjoy just looking out the window (metaphorically) and watching this living ecosystem go about its business.

It's so early in the process, it's hard to say what I'll be most proud of. The proof is in the pudding. (Why it's there, I will never know.) As a designer, I am proud when I see the paper document come to life far down the road.

JP: You're an avid board gamer. What do you play?

RI: I still love being able to sit down and plan massive strategies on board games. I've had games go for months at a time, just one move a day, and that's still satisfying. We play a lot of *Settlers of Catan*, and I'm looking forward to *Carcassonne*, as well. I own originals of several games from the Milton Bradley Gamemaster series, all of which have fantastic design. It seems like every day, somebody here is pointing out a different game, and my response is pretty much always "We need to try that one!"

JP: What's the story behind your unusual forum name?



BEHIND THE SCENES

RI: I really love to play with words. Since I have an English degree, I claim that I have a license to make any word real (like the Blue Fairy and Pinocchio). I wish I could say that there's a grand design to Designopotamus, but honestly, it just seemed like a great mashup. I've always been partial to hippos, because they look so cute, but are actually very ornery critters. So that's what I came up with after at least two minutes' thought.

JP: You're known for posting design questions to the RSI forums. What have you taken away from the community's responses?

RI: I think we could actually run out of words if we turned these people loose on a bigger stage.

All joking aside, I like seeing all of these diverse people exercising their own design skills. Just like any group, they have different skills and visions in different areas, and I just like collecting them. Plus, they often have knowledge that we don't, which comes in handy when you're designing an Illudium Pew-36 Explosive Space Modulator.

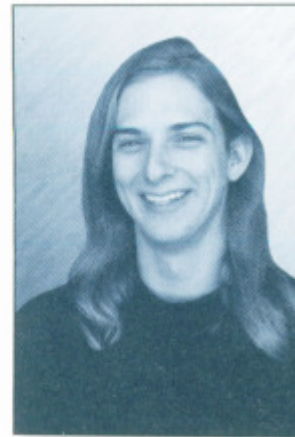
Sometimes they even surprise me by wanting mechanics that we all thought would be uninteresting to the players.

JP: And finally, how do you feel about potatoes?

RI: Some truths are timeless. There is still nothing bad that you can do with a potato.

Robert "Vampire" Irving

Age	23.
Time employed at ORIGIN	8 months.
Education	BA in English.
Favorite food	Potatoes.
Favorite sports	Racquetball, volleyball.
Free time activities	Creative writing, playing piano, role-playing games.
Favorite computer game genres	Strategy, simulations, fantasy.
What I like best about Strike	Vulcan cannon.
Favorite Strike maneuver	Pure pursuit.
Where I see myself in 10 years	Writing full time.
Most often heard quote	"Stop shooting me."



STRIKE COMMANDER PLAYTESTERS' GUIDE, CIRCA 1993 ...



BEHIND THE SCENES

guns might do well to visit here. The planet also produces a variety of munitions which are sold to other companies, and transport assistance is always well compensated. Workers are imported for year-long factory or mining contracts; few choose to re-up. Stanton is always in need of cheap labor and is a good source for traders looking to move antimatter precursors.

MARKET DEALS — HURSTON

BUY: ANTIMATTER	+2
BUY: EXPLOSIVES	+2
SELL: LABOR	+4

STANTON III: ARCORP

ArcCorp, Stanton III, is the most visually impressive of the worlds today. While the other planets, even polluted Hurston Dynamics, retain some indication of their natural origins, ArcCorp is now an entirely constructed world. All of the terrain has been sculpted, zoned and built upon, leaving nothing for nature. ArcCorp builds fusion engines in bulk, using the underground resources on Stanton III to provide engines for hundreds of thousands of civilian spacecraft every year. Traders porting at ArcCorp are advised that in addition to deals on weapons, they can find just about anything else here. ArcCorp is absolutely indiscriminate about who they lease property to, and hundreds of other smaller companies have made their home near the world's north polar region. Anthropologists familiar with the Xi'An have posited that ArcCorp is the closest human equivalent to a Xi'An factory world, and many have drawn the conclusion that our civilization will someday evolve along the same lines.

MARKET DEALS — ARCORP

BUY: FUSION ENGINES	+3
BUY: MINING EQUIPMENT	+1
SELL: REFINED BASE METALS (E.G., COPPER, IRON, TUNGSTEN)	+2

STANTON IV: CRUSADER

Stanton IV is Crusader, called "CI" by the natives; it is an unusual world. Formed midway between a telluric world and a gas giant, Crusader's small rocky core is enshrouded in an especially deep low-density atmosphere. Initial UEE terraforming efforts failed to allow unfettered habitation of the planet itself, but rendered the atmosphere breathable at high altitudes. The planet then became home to a military-constructed latticework of inhabitable floating platforms, since expanded exponentially to suit the needs of Crusader Industries. The situation is unusual, but ideal for Crusader, which makes large-scale commercial transport ships which would otherwise need to be built beyond the atmosphere. Being built in open air allows the cost of these ships to be reduced by almost 40% on the back end, which is often passed along to consumers. The company also provides quality housing for their employees — both in planetside domes and in habitats woven into the latticework — and the portion of the world available to visitors is usually considered the nicest port in the system. The shipyards themselves are eerily beautiful, with huge transport ships suspended in mid-atmosphere surrounded by a lighted webbing of Crusader facilities.

MARKET DEALS — CRUSADER

BUY: WEAPONS (LEGAL)	+2
SELL: STARSHIP SUBSYSTEMS	+2



The Void Rats

by Doug Niles



PART Two

Eight standard months ago . . .

The Void Rats had finally come together as a squadron, cutting their teeth on anti-smuggler patrols near the asteroid belt of the Nexus system. So far the mission had been active, aggressive and successful. The goal was simple: catch the slavers that came through with their hapless cargoes, rescue the captives, and dispose of the captors. Whether the slavers ended up as prisoners of the Advocacy, or just so much space-flotsam, mattered little: a minor distinction, at best.

Naya Antoinette, lieutenant commander in the UEEN and squadron leader of the Void Rats, liked it that way. There were quite a few unsavory activities known to the inhabitants of the UEE, and she disapproved of most of them. But the idea of holding sentient creatures prisoners, forcing them to perform labor or otherwise serve their ‘owners,’

was the one that crawled under her skin and itched like a radium rash. She was a good pilot and a good officer, and had learned that she was a capable warrior, though she didn’t particularly enjoy killing. Instead, she regarded it as a sometimes necessary part of her job. And she was damned good at that job.

In this mission she had truly found her calling, acknowledged by Admiral Hackbarth’s commendation just a week earlier. The Void Rats were her first command, and through combat, training and diligence she’d formed the squadron into a veteran, perhaps even an elite, outfit. They were the Void Rats, and they were hers.

Every time she had a chance to decommission a slaver caught red-handed in his brutal trade, she felt a thrill of accomplishment that was unmatched in any other endeavor of her life. Now, anticipation of another opportunity sent a ripple of that – there was no other term for it – blood

CHRONICLES

lust through her body. Her scans had flickered only briefly, showing a possible energy signal amid the asteroids, but her experience and instincts told her this was a real target.

“D-Jack!” she barked into her comm. “Take B section along the edge of this rock field – make it two megameters in the orbital direction. Wait for someone to poke his nose out. A section, follow me.”

She deftly touched her controls and turned her F7 Hornet into a gap between two large asteroids. The flight assist computer and auto-pilot were all right for cruising in a straight line through open space, but she’d never trust the machinery’s circuits for any kind of tactical maneuvering such as transiting an asteroid belt. Like every other reasonably competent pilot, she would trust her own senses and reflexes in a situation as perilous as this one could potentially become.

Fusion vents pulsed in her peripheral vision as her hotshot second-in-command, Lt. Darrison Jackson, tore off along the fringe of the asteroid belt. The eight F7s that made up B section flew a loose formation, a hundred clicks off the fringe of the belt, and Antoinette knew he’d be on station in a matter of minutes.

“Single file, people,” she ordered, banking to bring her Hornet around the far side of the big asteroid. She kept her eyes on the space before her, counting on her scanners to flash notice if they picked up any signature. The skipper was almost sure that had been a slaver’s ship she’d spotted, but as she veered among the drifting rocks, her seven wingmen trailing behind like a long tail, she began to feel some doubt.

“Back scan,” she murmured, still watching real space through her Plexi cockpit windows. The scanner dutifully replayed the image of the contact on her HUD, and she saw again a telltale brightening of dual exhaust vents just before the faint contact had ducked out of sight. Her doubts

vanished: that was certainly a large, fast ship, and the only explanation for such a ship weaving through these asteroids was an illicit one. If it didn’t carry slaves, it certainly carried some other high value – and highly illegal – contraband.

Without averting her eyes, she checked the HUD in real time now and saw that her weapons were charged. But she hoped she wouldn’t be using them to kill. The Rats had worked out a tactical approach that allowed them to weaken a target ship with precise hits to the thrusters and shield generator. Killing the bastards would be just too easy – and vaporizing the smuggler’s ship would mean killing the innocent slaves, as well. Instead, she wanted to batter the ship enough that she could employ one of the new non-lethal PCR-880 Grapplers. ASD’s new ionic net had proven reliable and effective in capturing suspect ships after their shields had been disabled. The tactic had worked several times, resulting in four cargoes of slaves liberated and four crews of slavers delivered to the Advocacy for justice. Who knows, at this rate maybe the Void Rats could eventually populate their own prison world with the scum of the universe?

A flicker on the scan instantly drew her full attention – a heat signature, moving deeper among the asteroids now, the ship traveling dangerously fast. She steered after it, cutting past a cluster of boulder-sized rocks orbiting in loose formation. An opening yawned before her and she pulsed the engines, knowing without looking that the other seven Hornets of her section followed close behind.

“D-Jack,” she spoke into her comm, unconsciously whispering. “They’re moving toward deep space. Bring your section through the field and meet us on the far side.”

“Roger, Skip,” the young pilot replied. For once he sounded dead serious, and Antoinette felt a flash of relief – this was no time for kidding around. Or for cocky free-lance hijinks, one of the failings she’d addressed with Jackson on more than one occasion.



CHRONICLES

The signature flashed on her scans again and she accelerated, then banked and spun through another cluster of rocks. She was closing in now, and the scanner showed her nearly a dozen thrusters bright on the stern of the target. Judging by that vast array of maneuvering pipes, she guessed the ship was a Cutlass-class, still too far away for a visual.

But the Void Rats narrowed the distance quickly. The asteroids thinned as they neared the outer edge of the belt, and the nimble Hornets bobbed and weaved at speed through the drifting obstacles. The larger Cutlass, though a very maneuverable ship in her own right, proceeded at a more gingerly approach. Naya wondered if her captain was hesitant or unskilled, or perhaps he hadn't yet realized he was under pursuit. The starry-patterned blackness of deep space loomed before her finally, and as the slaver broke into the open she slammed her own throttle forward. The F7 leaped like a living thing, and Naya felt the Gs slamming her into her seat even over the force of the gravity compensators. It was a good feeling.

She snapped out the commands, knowing her Rats would promptly respond. "We've got him now – A section – close in fast. Jackson, where are you with B section?"

"Just coming out now – a megameter away," the lieutenant's voice came back reassuringly. "I've got him on my scanners, and I see you too, Skip – Skipper, look out!"

"What?" demanded Antoinette, the word still echoing in her headset as her scanners came to life, squawking a contact klaxon. "There's another ship here!" she called, warning her team of the bogey riding to the starboard, perched on their flank as the eight fighters streamed, one after the other, from the asteroid belt –

And right into a kill zone.

The first ship to go was the Cutlass, which dissolved into a shimmer of white light. Naya's visor auto-filtered the flash,

which certainly would have blinded her if she hadn't been wearing her face screen. Even through the opaque masking she could see bits of the Cutlass, glowing white hot and streaking like meteors, blossoming outward from the spot where the ship had exploded. At the time she thought the ship had been hit by an unseen weapon; only later did she deduce that it probably had been unoccupied, remotely piloted. In other words, just a piece of bait to lure the Rats into a trap.

And they were well and truly trapped. Instinctively she arced the F7 through a tight turn, once again feeling the Gs slamming her into her seat. She saw the reflective image of a ship of unknown design, outlined in bright silver, perfectly positioned for a flanking attack, and now closing on the Void Rats as the eight fighters emerged in single file from the asteroids. Weapons – energy beams and rockets – flashed from a half dozen mounts on the ambushing fighter, and she felt a shock of horror as her wingman's Hornet, only a couple of clicks behind her, dissolved in a flash of blast wave and light.

For a split-second she pictured the pilot, Winggut's, guileless face, the kid fresh from the Academy after growing up on one of the Production worlds. He had trusted her, and she had put him on her wing because of his lack of experience. It was the first time she'd lost one of her own, and guilt savaged through her gut.

Ruthlessly she suppressed the emotion, replacing it with rage. "Come on, you sonofabitch!" she practically snarled at the silver fighter. "Try this on for size!"

Her twin laser Gatlings spewed bolts of searing energy, dead on target – but the attacker's shields were surprisingly powerful and the blasts dissipated into splashes of color. Another barrage erupted from the enemy, at least six, maybe eight weapons firing at once. A flash from behind told the skipper that, unbelievably, another of her Hornets had been blown out of space.



SEMINORIES

She checked the rear and watched in horror as the number four F7 veered wildly and collided with number five, both ships vanishing in a flash. Half the section, gone! Four pilots dead ... and she didn't even know who the enemy was.

Her thrusters continued to accelerate and she flashed in at a nearly suicidal closing speed. The silver ship jugged sideways with amazing maneuverability, and she couldn't help thinking of a spider crabbing quickly across the ground. Her own Hornet shook from the impact of a rocket, but at least her shields stood firm. She was jarred, almost stunned, but her F7 flashed past the mysterious ambusher and answered her touch on the controls, still spaceworthy.

The silver spider blasted away, leaving Antoinette far behind as she finished her high speed turn. She saw two more flashes at the center of a growing blossom of debris and understood, with a sense of numb disbelief, that the fifth and sixth fighters of her eight-ship section had been blown to pieces.

The silver spider rocketed away, skirting the edge of the asteroids.

"Lorraine," she barked to the remaining pilot of her section. "Follow me!"

"Aye aye, Skip," came the veteran pilot's reply. It should have been reassuring, but it only made her afraid: am I going to get him killed too? Despite her fear, the two fighters flashed in pursuit of the silver spider.

Far away, a least a thousand clicks, her scanners picked up eight more engine signatures as Darrison Jackson led the Hornets of the Void Rat's B section out of the asteroid belt. The young lieutenant must have analyzed the fight immediately, since all of his ships instantly turned. Like eight points of light, they assumed a perfect Double Diamond formation and moved to cut off the flight of the silver spider.

"Get that bastard!" Naya snapped – this time turning her commlink off first, since she knew the command was unnecessary. Instead, she concentrated on pouring all of her power into the Hornet's thrusters, but even under maximum acceleration she could see the spider pull away from her and Lorraine.

"Watch out – he's dangerous!" she called to the lieutenant, realizing that the word 'danger' didn't begin to describe the savage lethality of that strange, gangly ship.

She could only watch as Jackson led the eight F7s of his sections in a blazing head-on assault against the mysterious ambusher, eight ships to one. Lasers and rockets blasted from the UEE fighters, clearly visible to the skipper as she approached; she could only assume that the silver spider was shooting back with everything it had. Shields pulsed on the multi-winged ship as blasts and rounds struck home, only to be absorbed by what was obviously a very high level of effective screening.

Then another white spark ignited, another fighter – and one of Naya Antoinette's pilots – blasted into oblivion by the mysterious assailant. Still one more flashed, Hornet and pilot reduced to cosmic dust.

"No!" the skipper croaked, her voice hoarse, her mind clawing through a sense of disbelief. Surely this couldn't be happening!

The last two kills left a gap in the Double Diamond formation and the silver spider veered unerringly through it. Jackson and his five remaining wingmen started their long, high speed turns, but the attacker's speed was too great – and he was already following the bearing the others needed to turn to attain.

In another two minutes Antoinette and Lorraine had nearly caught up to the six B section fighters, but by that time the spider was just a pale flicker on the scanners, already a dozen megameters away. The surviving Hornets grouped



CHRONICLES

around the skipper, but even as they blasted in pursuit at top speed she could see the mysterious attacker dive into the muddle of the asteroid belt.

“No!” she whispered again, but she had to face the truth: Half the Void Rats had been wiped out in a matter of minutes, and they didn’t even know who was to blame.

* * *

Darrison Jackson stood beside Naya as the fire control teams doused the burning wreckage of their Hornets on the hangar deck of the orbital station. The fire aboard the shuttle from *Africanus* was already suppressed. Judging by the look on the skipper’s face, however, Antoinette’s emotions were blazing in a white hot inferno. No doubt she fought the same bitter memory that now cast such a grim pall over his own thoughts.

“That has to be the same ship, right?” she repeated her question to the lieutenant, her tone accusing.

His own nerves tingled at a fighting pitch, but the younger pilot made an uncharacteristic effort to restrain his angry reply. “Looked like it to me, skipper,” he grunted. “Silver outline, all those wings bristling every which way. Incredible shielding, too.”

“It came with the other attackers, from that false ore carrier,” she stated, as if confirming the facts in her own mind. Jackson nodded. The large ship they’d taken for a miner’s tub had moved in much closer after launching the squadron of attackers. Now it lurked out there, about a dozen clicks away. Some of the attackers had already returned to the carrier, no doubt to replenish weapons and energy. But the enemy squadron, some two dozen ships plus that silver spider, had most certainly not been defeated and Jackson knew they’d be coming back.

“We thought it was maybe a Vanduul ship at first – but here, in the Centauri system?” the skipper wondered aloud.

“Can’t say for sure,” Jackson admitted. “That spider ship doesn’t seem like a Vanduul craft, not like any I’ve heard of, anyway.”

They both turned to look through the airlock screen into space. Petty Officer MacClean came up behind them; Jackson didn’t realize he was there until the older man spoke.

“Thanks, L.T. You really pulled my fat out of the fire.”

Jackson had climbed through flames to pull the petty officer and a wounded starman from the wrecked and burning shuttle. The pilot was touched, but he could only shrug. “You’d do the same for me.”

Mac nodded; it was understood. He waved at the lights that flickered in space. *Africanus*, the Void Rats’ support ship and temporary headquarters, had taken a few hits, but the big old ship seemed to be holding up well so far, with the squadron of attacking fighters only nipping at her flanks like sand rats snapping at a bull lumberhoof.

“Look, there,” the chief said, pointing with his chin. Jackson saw the silver spider rocketing away from the orbital station and joining up with the smaller fighters. As they watched, those ships too flamed back to the support carrier. But they all sensed that the attack had only paused while the enemy replenished their fighter craft. They’d be back, for sure.

“We gotta get that SOB,” the NCO stated in a blunt tone that left no room for argument.

“Maybe you noticed our Hornets are smoldering space junk?” the skipper snapped. Jackson was surprised by the lack of emotion in her face – she had to be remembering the deaths of her pilots, less than a year ago, at the hands of that same silver killer. Every fiber of her being seemed to thrum with cold determination – but frustration and helplessness seemed to be winning out. “We need a ship!”



CHRONICLES

"We could commandeer a civilian craft," Mac replied calmly. "Say, that cutter over there?" He indicated a battered-looking Constellation-class vessel, the closest ship in the wide hangar deck.

Naya blinked, letting the idea sink in. "It's a legitimate use of the UEEN code," Jackson pointed out. "Taking temporary control of a civilian ship in an emergency. *Africanus* is still under attack, and if that isn't an emergency I don't know what is."

He really wasn't all that sure of the legalities – such matters were well above his pay grade – but he liked the suggestion, and he sensed the skipper did too. Even as he had the thought, he ducked over to the wreckage of his Hornet. The cockpit remained open, and his survival kit box lay within easy reach. In a second he popped the latch and pulled his powerful P4 laser submachine gun from the kit, before turning to rejoin his two comrades in appraising the civilian ship.

At first glance the cutter seemed like a tired old tub of questionable space-worthiness. Blast scars marked her hull in several locations, and her belly turret had been sealed over with an ugly yellow resin that might have kept her pressurization intact, but did nothing for her lines, or her appearance.

"Do you think it would even fly?" Naya wondered.

"Only one way to find out," Mac replied.

"Let's go," the skipper determined abruptly.

They ran across the deck, dodging the damage control crews. Jackson took another look out through the airlock screen and saw the silver spider was already returning to the fray, leading its supporting fighters back toward *Africanus*. Another barrage from the multi-winged ship took the bigger craft in her aft-quarters, and flashes of fire and white blasts of escaping air glowed against dark

space. The big ship lumbered into the beginning of a roll as her engineers fired maneuvering thrusters in an effort to hold her steady.

By then they had reached the cutter, and the close-up view did nothing to embolden their confidence. If the ship had a name, it wasn't emblazoned on the hull anywhere that they could see. "Probably a smuggler," Naya surmised contemptuously. She gestured to the dorsal turret, just barely visible atop the hull. "Twin Mark V laser cannons. A little heavy duty for an innocent freighter."

Jackson had already ducked down and under the ship's belly, skirting the bulging dome of resin to get a glimpse of a long, grimy barrel sticking like a stinger out of her stern. "She's an older model Constellation, maybe a Mark 1. Take a look at this," he said. "Unless I'm way off base, that's a particle cannon."

"Definitely not a cargo tub," Mac agreed, bending down to confirm the lieutenant's guess. "And she's parked nose-out, like they wanted to be ready for a quick getaway."

"Which suits our purposes," the skipper noted. She seemed to be warming to the merits of the ship, and Jackson could see why. The resin covering the missing turret was ugly as sin, but it had been applied evenly and matched smoothly into the hull. That outer surface was scarred, scuffed and stained, but from close up they could see that it was smooth and very solid. The Mark 1 Constellation, though old, had a sturdy hull and mounts for several powerful weapons. It lacked the small onboard fighter of the more current Mark 3 version, but this one seemed to make up for it with some seriously upgraded firepower.

The ship rested on three metal struts, and a quick glance showed that they were solid, heavy duty enough to handle even a very rough landing. It was a workhorse of a ship, but looked like it could work very hard indeed.



“Let’s give the crew the good news,” Naya said wryly. The boarding ramp was already lowered, leading up to a darkened interior. “Back me up, fellas,” she ordered, pulling her helmet – with its darksight adapter – over her tight cap of short blond hair.

Jackson pulled his sidearm and took up a position at her right shoulder. As was his usual practice, he carried a weapon that was a significant upgrade from the typical pilot’s sidearm, the Behring 33 laser pistol. Jackson preferred to carry the short-barrel version of the MaxOx P4. The laser submachine pistol lacked the range of the long-gun, but in close quarters it would certainly live up to the “room-broom” nickname of the lethal repeating energy weapon. He noticed that Mac, from somewhere in the hangar, had secured for himself a Behring, and the CPO took up position at the skipper’s left side, pistol held in firing position.

“This is Lieutenant Commander Naya Antoinette, of the UEEN,” she shouted upward into the ship’s darkened interior. “We are boarding in the face of an extreme emergency! Do not resist, and you will not be taken into custody. Your ship will be returned to you as soon as possible.”

They heard a clunk from somewhere inside the ship, followed by the pounding of footsteps outside. With a gesture, Naya sent Jackson back down to investigate while she and Mac continued up the ramp.

Holding his P4 in both hands, the young pilot darted down the ramp. He spotted a hatchway hanging open between the Constellation’s engines and just caught a glimpse of two men in grimy coveralls sprinting through the open public portal connecting the hangar to the business deck of the orbiting station.

“Looks like the crew gave up without sticking around to argue,” he reported, climbing back up the ramp to find the skipper had turned into the two-seat cockpit. “Two men.

They’ve probably already bellied up to the bar in some nearby dive. My guess is you were right about this being a smuggler’s ship.”

“Well, that at least means she’s likely to fly,” Antoinette declared grudgingly. “I’ll have a look at the flight controls. You men check out the rest of the cabin.”

“Aye aye, skip,” Jackson agreed. He started along the passageway toward the engine compartment while Mac slipped into the dorsal turret. Before the pilot had reached the far end of the tube-like corridor the petty officer had the turret powered up. From below, Jackson could hear that it swiveled freely and ran quietly, with barely a vibration passing through the hull.

He checked to port and found a cargo bay, small and compartmented. There was nothing large in there, though he didn’t take the time to look in all the cabinets. To the starboard he found another hold, similar except that the cabinets were open and empty. Perhaps she’d been in the middle of off-loading, he speculated.

Another hatch opened into an equipment locker between the engines, and even a quick glance showed that it was very well equipped. The ship was divided into more compartments than other cutters Jackson had seen – another mark of an older model. He saw racks of spare parts for the engines and guns, as well as an arc-weld station, and a very impressive bank of computer analysis machinery. The circuits were sleeping for now, but a few flashing blue lights confirmed that it wouldn’t take them long to power up.

He reached the last hatch, just above the firing station for the particle cannon. A glance at the power plant and trigger installation confirmed his first guess: this was an A&R Centurion plasma cannon, with a fixed mount for stern fire. In other words, a very potent weapon, certainly non-standard for an innocent civilian ship whose crew intended to follow all the laws.



CHRONICLES

He was still admiring the plasma gun as he opened the last hatch, which is probably why he had no warning of the hard fist that jabbed out of the darkness to smash into his nose.

“Dammit!” he cried reflexively, tumbling backward, holding a hand to his bleeding face. He tried to blink away the involuntary tears flowing in response to the pain, while tasting the blood and knowing he was at an extreme disadvantage.

He pulled up the P4 but it was already too late: a figure lunged from the darkness to knock the gun from his hand. Another fist flew toward his pain-wracked nostrils and he barely parried the punch with his free hand.

“Who are you?” his attacker demanded in an unmistakably female voice. “And what in all Hades are you doing on my ship?”

The woman tried a side-kick that would have wrecked his knee, but Jackson had recovered enough to back away, letting her momentum carry her from the darkened cabin. He grabbed her, twisting in the air, and smashing to the floor on top of her. The force of the landing drove the breath from

her lungs – and that breath, stinking with whiskey and stale stim-smoke, almost caused the pilot to gag.

He held her down, ignoring the blood that flowed from his surely-broken nose, and glared at her. She was strong, and struggled mightily to get free, but he was bigger and more pissed off.

And she, he guessed, was still drunk. She wore dirty khakis, with a shirt half open – yes, she was female, for sure – and had a greasy, scowling face framed by a mop of unkempt black hair. Nearly blinded by the pain in his nose, Jackson made all this out as he groped for his P4, finding the smooth grip and raising it so the barrel was centered right on her nose.

“What in the whole dark void do you think you’re doing?” she snarled. “Let me go, you son of a bitch!”

“Didn’t you get the word?” he said coldly, powering the laser pistol with a very audible click. “This is our ship now.”

To Be Continued

(Continued from Page 2)

In one of your first e-mails, you were asked for German translations. I thought I could help you out there. Kodiak

After lengthy discussion, we’ve decided the best way (at present) is for you to annotate PDF pages with translations and post them to the Subscriber forum yourselves. We’re not able to officially review and approve them, but you’re free to tag and post them (for subscribers only, please).

I can help with half of **philneal’s** request: 8,11,13,15,19 & 55
The other half: a ship comparison guide is a good idea, but we probably won’t have one until more of the ships are actually built.

Hold on, it’s gonna be a wild ride!

David

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PAGE 38: HURSTON LOGO, CLINT SCHULTZ

PAGES 41-44: STRIKE COMMANDER AND THE STRIKE COMMANDER PLAYTESTERS’ GUIDE, ELECTRONIC ARTS; PHOTOS BY MICHAEL MORLAN

PAGE 46: ARCCORP, CORENTIN CHEVANNE (BEHAVIOR INTERACTIVE)

PAGE 49: CAPTURE OF IN-GAME VIDEO



CHRONICLES