

**IN THIS ISSUE**

Work in Progress: Idris Initial Design. . . 3  
*by Ryan Church*

Portfolio: Behring Applied Technology .63  
*by Ben Lesnick*

Behind the Scenes:  
The Next Great Starship . . . . . 66  
*an interview with Sandi Gardiner*

Galactic Guide: Odin. . . . . 70  
*by Ben Lesnick*

Hunter & Swan (Part 2). . . . . 73  
*fiction by Robert E Waters*

# JUMP POINT

A ROBERTS SPACE INDUSTRIES PUBLICATION      ISSUE 02.02



## GREETINGS, CITIZENS!

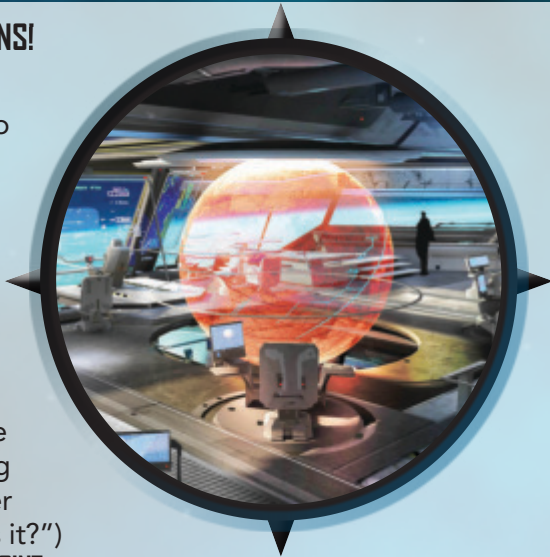
The original plan this month was to show the Idris corvette, from start to finish. That's not going to happen, for a couple of reasons. (1) It has come to my attention that the Idris is a really big ship. (All together now, "How big is it?")

I'll put it in **JUMP POINT** terms.

Normally, I have about 50 to 80 images to work with, and I can include nearly all of them in the WIP article. For the Idris, designer Ryan Church supplied over 400 screens. Even cutting way back, that's still over twice as many images as usual. And that's just the initial design phase. (Quick side note: in trying to fit as many as possible, I ran some of them smaller than I wanted to. All the images will be in the Vault within a day or so; if you want to see one of them larger, check it out in the Vault.) So the initial design by itself is twice as long as a normal WIP article. (2) It's not done yet. I know, no ship is ever finally done, but the guys at Foundry 42 are giving it a thorough revamp. And once they're done, the plan is for CGBot to convert it into the engine.

So, the new plan: run all the initial design article this month (yes, I know now that we could have done that earlier, but we didn't know earlier what we know now, etc., etc.). Run two more articles as soon as the material is available, one covering the F42 work, and one covering CGBot.

Meanwhile, where are the Idris stats? Again, two answers. (1) The initial stats are actually listed once or twice in the WIP article itself. (2) Those are the initial stats, not what it is now or what it will be once CGBot gets done. Case in point: the initial length was 85 meters. (That's about 2/3 of



a football field (either flavor), or a rugby field if you're down under.) After trying to squeeze everything into that length (and the ship bulging out more and more to the sides), the length got bumped up to 140 meters, and then to 180 meters. And F42 has taken it even longer. So it seemed pointless to list stats here when many of them have changed.

Enough about the Idris. What else do we have? Portfolio covers Behring's Applied Technology division. BAT makes a lot of the ship weapons that you're going to meet (one way or the other) in the 'verse. We go Behind the Scenes to talk about *The Next Great Starship* with Sandi. As long as we're talking about guns in Portfolio, we decided to feature Odin in the Galactic Guide, Odin being where a lot of those guns are tested. And we've got the second part (of four) of *Hunter & Swan*, Robert Waters' tale of two key activities in our brave new world: bounty hunting and . . . singing (well, that's better than Vanduul bacon recipes).

Finally, a couple of shout outs — first, to Logante and Judas, the first ones on record to notice the ancestry of last month's **JP** cover. It mirrored the original *Wing Commander* box cover art. And second, to our first ever Subscriber of the Month:

### Hitcher

I don't expect to make a habit of it, but Hitcher deserves it, and kindness should always be encouraged; check out the Den if you're not up to speed. Printed **JP** is almost ready (I'm getting a sample today), and review of writing submissions is still slowly inching along.

*Hold on, it's gonna be a wild ride!*

David

David.Ladyman@cloudimperiumgames.com

**EDITOR: DAVID LADYMAN, INGAN MONKEY GOD STUDIOS**  
**ROVING CORRESPONDENT: BEN LESNICK**  
**COPYRIGHT 2014, CLOUD IMPERIUM SERVICES**  
**STAR CITIZEN IS A TRADEMARK OF CLOUD IMPERIUM GAMES, LLC**

**COVER, PAGE 65: RYAN CHURCH**  
**PAGE 63: BAT LOGO, DAVID SCOTT**  
**PAGES 66-69: MICHAEL MORLAN (68: GALIT MCCORD)**  
**PAGES 70, 72: CHRIS OLIVIA, ANDREW LEY**  
**PAGE 73: RYAN ARCHER**



FROM THE HITCHER



# Idris Initial Design



WORK IN PROGRESS

Last year, Chris asked Ryan Church (RC), who had already designed the Bengal carrier, to create the Idris corvette. Our other Work In Progress contributors this month include:

Chris Roberts (CR)

Chris Olivia (CO) Chief Visual Officer

Ben Lesnick (BL) Community Manager

Dave Haddock (DH) Lead Writer

Rob Irving (RI) Lead Designer

Chris Smith (CS) Lead Vehicle Artist

Pete Mackay (PM) Designer

**CR:** The Idris Corvette. Going to be cool (go with a slightly retro / older look for this compared to RSI lines).

**BL:** Here are my notes on the Idris:

*Builder:* Aegis Dynamics

*Crew (max):* 10

*Mass (empty):* 38,000 kg

*Length:* 85 meters

*Focus:* Corvette

*Cargo Capacity:* 100 tonnes

*The Idris has room to dock two single-seat fighters: Aurora, 300i or Hornet-level.*

*Thrusters:* 8 x TR4, 8 x TR3

## Hardpoints

6 x Class 1: Equipped 2 x Behring M3A Laser Cannon

4 x Class 2: Nothing Equipped

12 x Class 3: Nothing Equipped

10 x Class 4: Equipped 4 x Behring M5A Laser Cannon (single-turret)

*The Idris has dual mount nose, tail, top and bottom turrets and single mount left/right turrets.*

**DH:** We named the Idris after the famous battle of the First Tevarin War, so it could definitely be an Aegis ship (that was their heyday). If you like the idea of it being a decommissioned military ship, maybe it could have originally been designed as a blockade runner – something sturdy and well-armored but with transport capacity to punch through enemy lines and dump off a couple units of ground forces to raise a little hell.

**RC:** Thanks for this. Can the Idris class go atmospheric/land on a planet?

**CR:** Probably – if so, it would be the biggest to able to touch down.

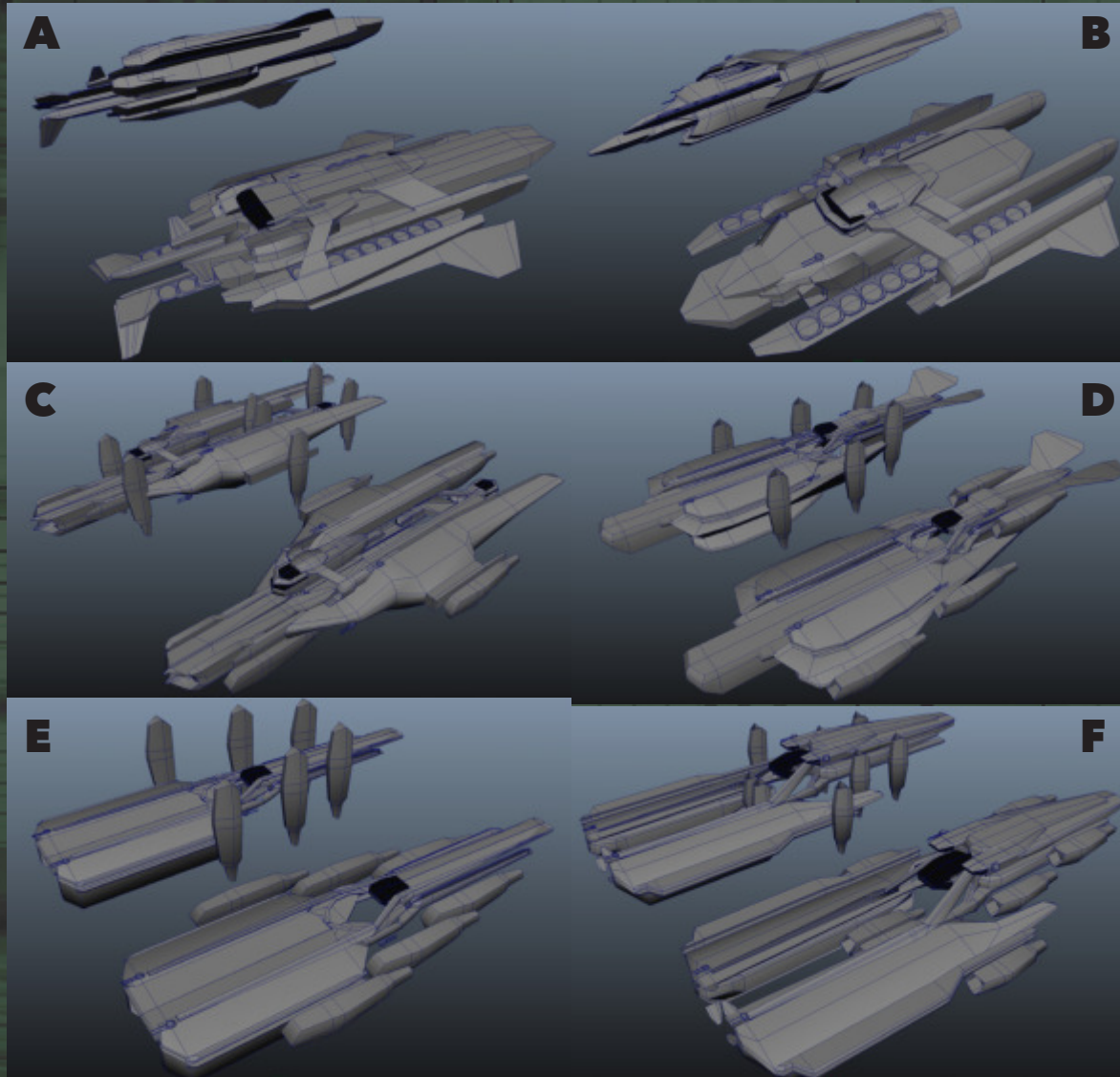


**RC:** Attached are a few **\*\*\*really\*\*\*** rough block-ins to get a feel for configuration for the Idris class. Some of them have separate lift fans and thrust engines; you can see the circles marking the lift fans pointing down for lift. The other ones have swivelling engines that point down for landing/vector for flightpath control. All fit the brief; think of them with all the detail, doors, bristling with guns, etc. Just trying to plow through some variations.

**RC:** Got it, sounds good. I'll do a few more explorations, some combining what you like about these and some more towards the Japanese reference (and all older school).

**CR:** C is the one I like best. The only other one I think worth exploring is B (because of the profile view).

But I do feel that both designs (all of them really) vibrate a little too much like the Constellation and Aurora, which are both RSI ships. This is Aegis, which is meant to be a little old school and dated – shall we try something that suggests a small present-day naval corvette / destroyer, kind of like some of the Japanese reference stuff I sent a while ago?



WORKING DRAFTS



**RC:** These combine the two preferred, including the side view you liked. I also added a lot of the look of a present day/WW2 destroyer/corvette and riffed off of the naval look: large sculptured sides, long shiplike forms, bridge and flat top (and bottom) 'decks' that will house all the guns and antennas and details to differentiate it from the RSI angular techy look.

Also, you'll notice that all of them have the engines arranged around the center of gravity and pivot to land and take off. Huge moving engines will look pretty cool, I think.

I'll add all the antennas, guns, etc. to further differentiate from RSI offerings.

**CR:** I like C the best, but I feel like we need more substantial interior space for interior combat / boarding and a small hangar deck (I'm thinking it would be like the side of a super yacht, where it opens to reveal motorboats and fancy cars). It may be a little too sub-like right now.

**DH:** I agree with the substantial note. I feel like they're missing the mass that would inherently come with a larger ship. I feel like these are all very wispy (lots of pockets in the silhouette, thin rails, etc.).

**RI:** Agreed. I think that this bad boy needs to look a little more muscle-bound. I mean, not *Millennium Falcon* shaped, but with some more turf to fight over and man. (We're talking about a crew of 10-ish.)

**BL:** I've had the Kamekh from *Privateer* in my head while thinking about

the Idris – a ship with a much more solid chunk of a center to it.

**CR:** Of the three, C is my favorite, but it feels too "submarine" / narrow for me.

One of the cool things with the bigger ships is having some interiors to walk around in and also fight battles for control of the ship during boarding actions. I feel like we need more of a naval hull for the corvettes and above. Below this, we're more in the airplane aesthetic. The nod to a naval look and design made the carrier work well.

Therefore I would prefer we key off some modern corvette shapes and have a much more substantial hull. I like the idea of the pivoting engines, so keep those. I would also think about where the 2 fighters / launch would go. I was thinking you would have a door in the side of the hull that would be similar to the doors on the hull of a modern super yacht, which open to reveal a few motorboats and the exotic car collection of the rich owner.

I actually think we will want to reduce the amount of weaponry; it feels a little too much of an upgrade for a corvette.

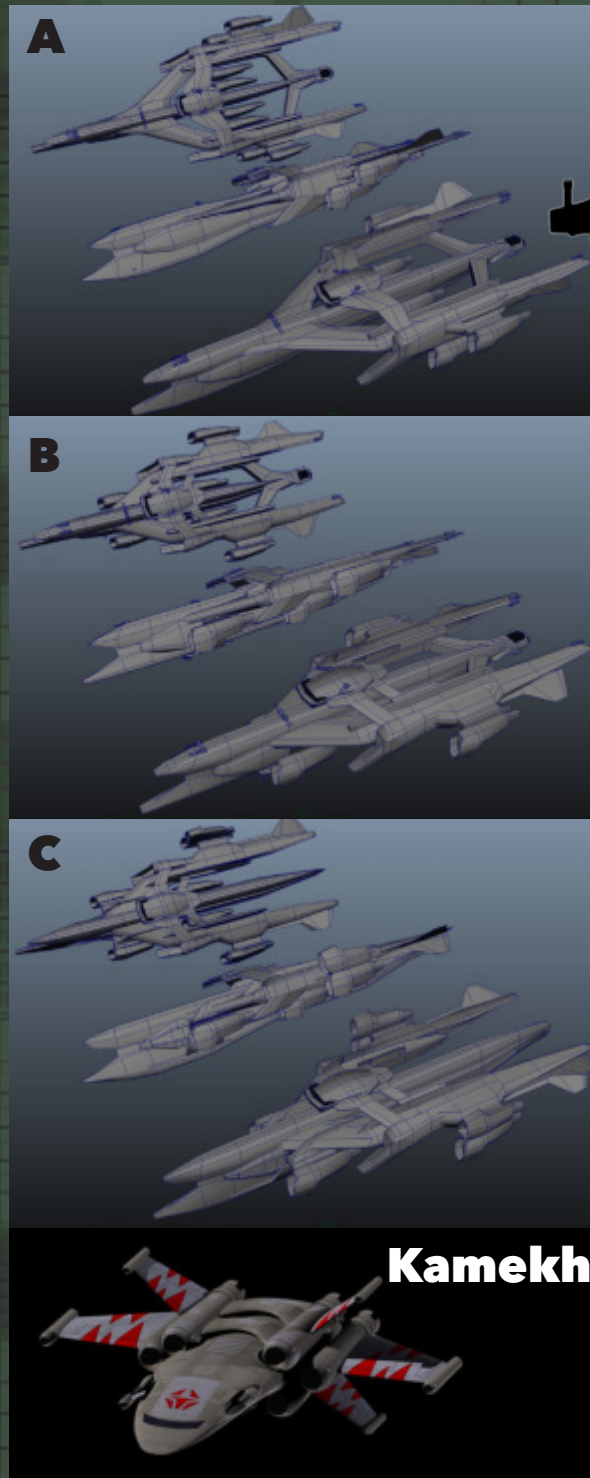
6 x Class 1: Equipped 2 x Behring-M3A Laser Cannon

4 x Class 2: Equipped 2x Ion cannons (class 2 are articulated vs class 1 which is fixed)

12 4 x Class 3: None Equipped

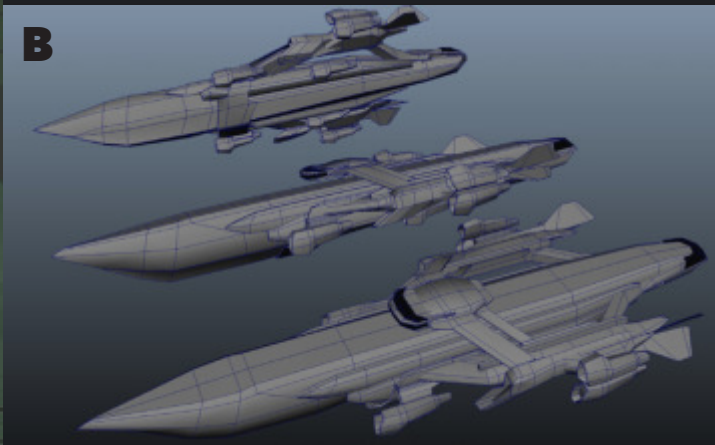
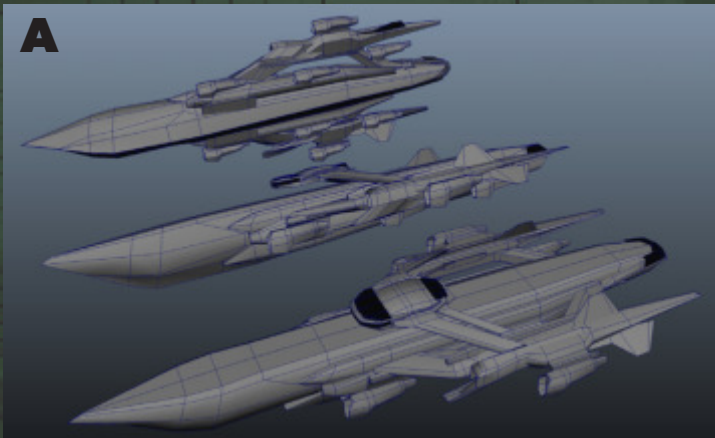
10 8 x Class 4: Equipped 4 x Behring M5A Laser Cannon (single-turret)

**RC:** Got this, makes sense. I'll get you some revised choices soon, along these lines.



WORKING IN PROGRESS





**RC:** Chris, here are some quick revisions based on the notes from last time. It's got a much bigger hull based on the corvette reference, retains the pivoting engines, doesn't address where the fighter bays are, but they would be in the nose behind side-opening doors as you describe.

**CR:** I like B the best. I would change the prow / front to be less a literal interpretation of a ship's prow (I know the Battleship Yamato stuff was in this direction but I don't think we are quite as literal). Maybe experiment with some other shapes – perhaps with a bigger turret or weapon front mounted? (I think the design calls for two front-mounted turrets – one top side, one underneath.)

**CO:** Yea, B.

What about instead of the sleek pointy front, more of a concave approach. Something like a stacked vertical split, with openings ... or a large recessed intake... or wedge. Might lend itself to the top and bottom turrets.

**RC:** Sounds good, will do: concave detailed front with top and bottom turrets, side opening doors to fighter dock airlock behind that.

**RC:** Here is a tiny amount of work on the Idris, based off the last notes: splitting the nose and adding the front guns, also an idea of where the side doors could be. It looks like I'll need to widen the ship overall to accommodate two small ships inside, but I'll see what you think of this progress for right now.

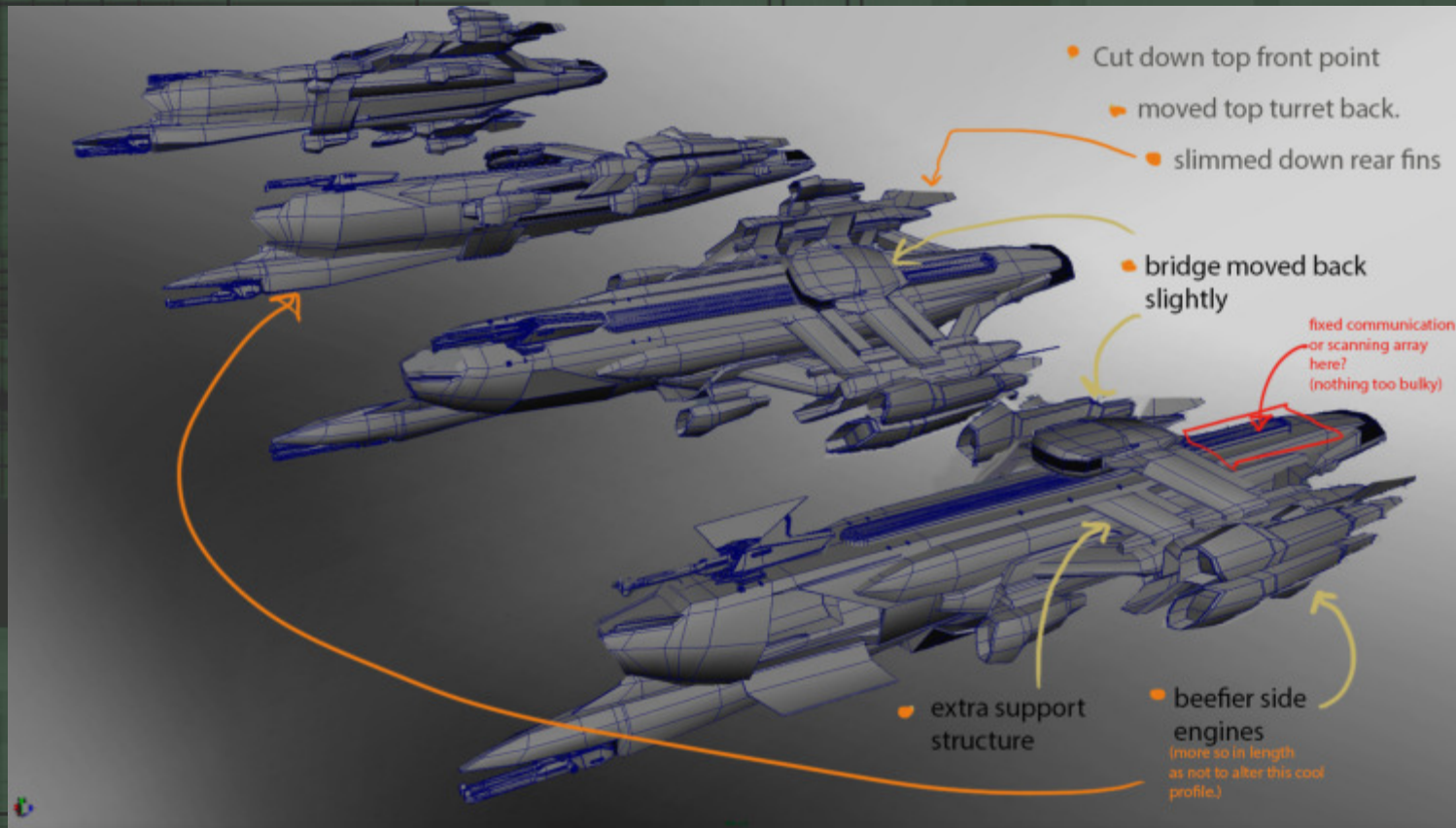
**CO:** Notes on image. [see next page]

**CR:** That's looking good!



WORK IN PROGRESS





WORK IN PROGRESS

**CR:** Our feedback is mostly in the paint-over that Chris Olivia did, but in general:

- 1) Get rid of the upper triangular part of the front of the hull.
- 2) Move the bridge back a little.
- 3) Beef up the engines to feel more substantial (close to the feel of the carrier ones but obviously not as big).
- 4) Reduce the tail fins (see paint-over) so they don't overpower the engines and rear (currently they're making it feel too much like a sub for my taste).
- 5) I'm wondering about access to the bridge from the main body of the ship.

6) Guns should not feel like the AA ones from the carrier (and this ship is also by a different manufacturer).

7) Consider making the under-mounted gun / turret a rail gun for small ship-to-ship action?

8) Build in the other turrets – which should be smaller. I think we should have one heavy duty anti-ship turret on upper fore deck (bring the current one back a little), the under-mounted rail gun, then six more anti-fighter style turrets (think more in the Constellation size / scale) that can be manned or on auto and are used for close-in fighter defense, two anti-fighter missile turrets

(think the ones on the carrier) and then perhaps two torpedo tubes.

9) Add a radar / scanning array behind the bridge. (Maybe elevate this so it clears the bridge?)

**RC:** Here are the dimensions:

*Length:* 142 meters

*Height (space configuration, with landing gear up and radar retracted):* 26 meters

*Height (landed, from bottom of landing gear to top of deployed radar dish):* 30 meters

*Width:* 64 meters



**RC:** I've done most of the quick changes minus the guns, I've included the Aurora and Hornet for scale, and the Idris at 85 meters. For reference, the Constellation is 60 meters long. You can see that the Aurora would fit inside once I enlarge the doors, but the Hornet's wingspan is too great. I can widen the cargo hull, enlarge the Idris overall, or a combination of both.

Another option would be to just widen the front so you could carry max one Hornet in the nose (plus one Aurora or similar in the rear).

**CR:** This could work.

**RC:** In either case it looks like adding another set of doors to the Idris might be a good idea – something at the back, so each of the two ships has its own doors so you're not trapping one of them in

there if the other is parked in front of you.

**CR:** OK.

**RC:** Also, describe the type of airlocking you want with these ships and the Idris cargo hold. We could compartmentalize it in there to seal off vacuum-exposure sections, maybe one front airlock ship compartment and one aft airlock ship compartment, with a middle section being constantly atmospherically pressurized?

**CR:** This works for me.

**RC:** In other words, a normal pressur-

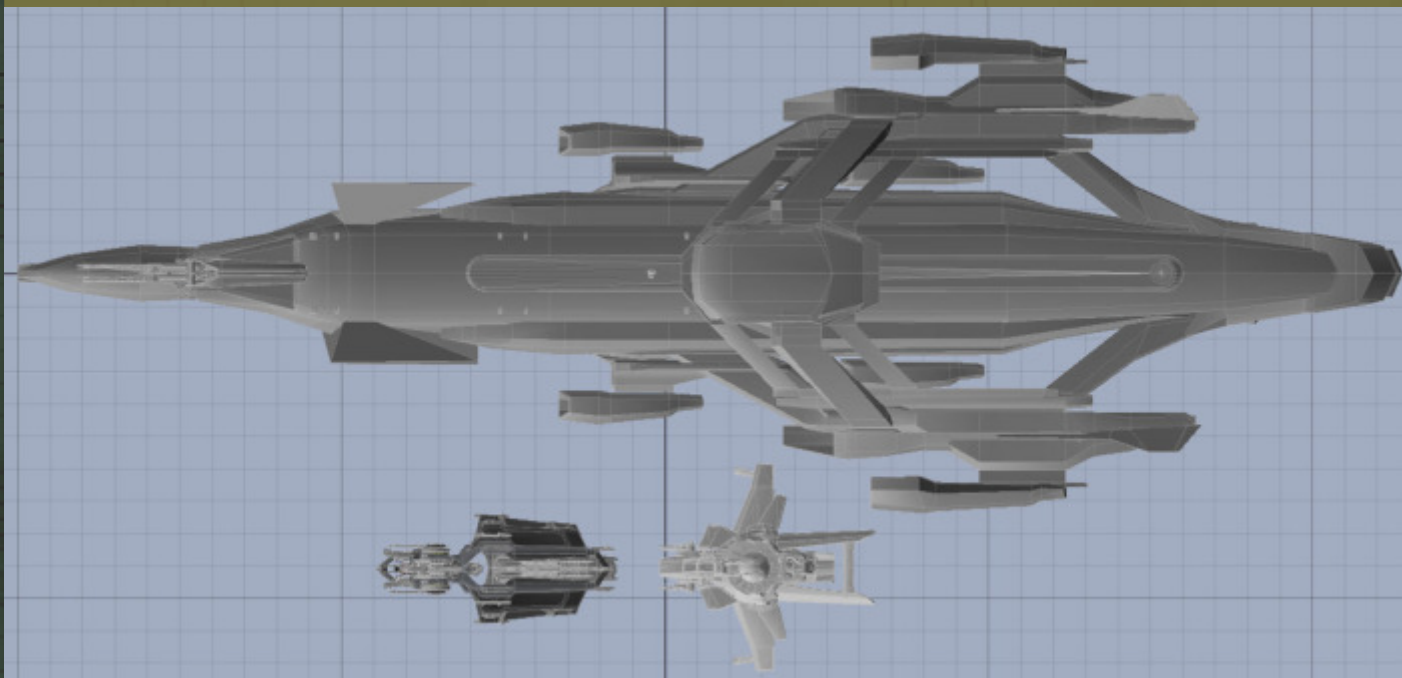


ized section in the middle, below the bridge. And two airlock hangars, one in the nose and one in the rear, each with their own doors on each side.

**CR:** Makes sense. Also think about boarding actions. We want to start making this fun / challenging on ships as large as or larger than the Idris.

So where would you breach? What would be the path to the engine room or bridge to seize control? What places could you defend? Think of the breaching boarding of the Blockade Runner in Episode IV.

**CR:** I feel like 85 meters is possibly too small, as the ship needs to be able to fit two of the Hornet / 300i / Aurora size fighters; widening the hull would also help.



WORK IN PROGRESS



**RC:** Here's a big size change, revisions per your notes, and additional detail and refinement. (I have not yet addressed the scanner array behind the bridge.)

You can see I've addressed the guns: the Y-shaped missile battery fore top and aft bottom, the front top big gun, the bottom huge rail gun (which is super rough but I'm thinking these rough dimensions; eventually going for something very complex and mechanical looking) and the six antifighter guns mounted around the ship.

The new ship length is 180 meters long, up from the 85 meters. There's room for a Hornet/Aurora in front and in back.

The bridge is coming along, but I think I want to go for something less like the other ships, more streamlined and differentiated, maybe asymmetrical?

**CR:** Cool!

I think an asymmetrical bridge would definitely be more interesting. I also would think about moving the bridge back a little.

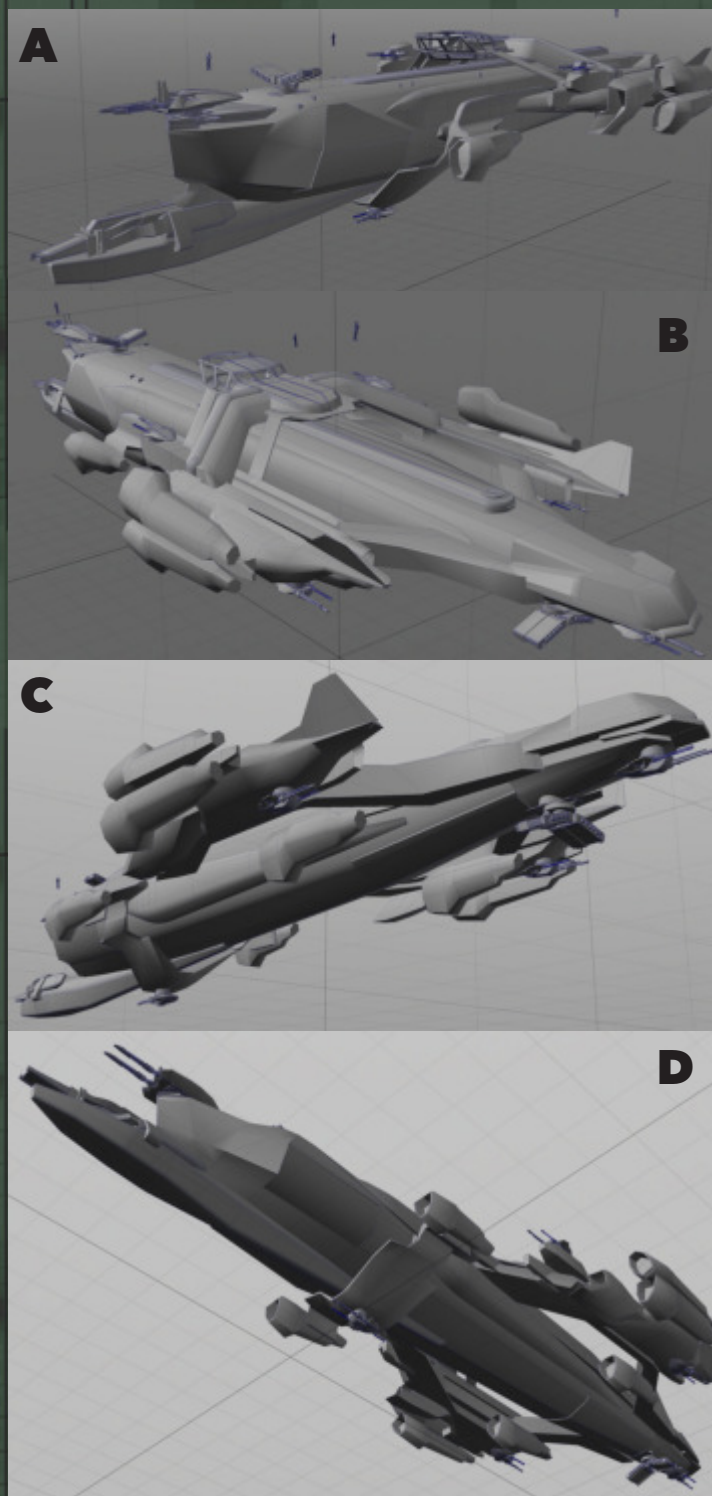
The new length is good.

My favorite view is the underside shot (D) – it feels pretty sleek and cool. You don't get the same feeling from the  $\frac{3}{4}$  shot from the side (A), maybe because of the bridge and the stubbiness that comes across on the upper hull (and the bridge being more forward)?

As there is a gap between the rail gun and ship-to-ship gun, I think the front of the hull could open for the fighters to land / take off rather than using the side opening. I think that would be more efficient / effective / practical.

Engines still feel like they need to be increased in size / juiced up – right now they look like the nozzles are pointing forward – making the reverse underside shot (C) almost look like the front of the ship!

I like the idea of a super mechanical / built-up rail gun, plus maybe some good detail on the missile turrets. I also like the Y shape – maybe they articulate for different firing positions, or perhaps fold up and retract into the hull for reloading / hiding?



WIRKIN PRINCE



**CO:** I might be wrong but based on the grid, it looks like the underside shot is using a wider angle lens, which is making it look sleeker than the other screen grabs.

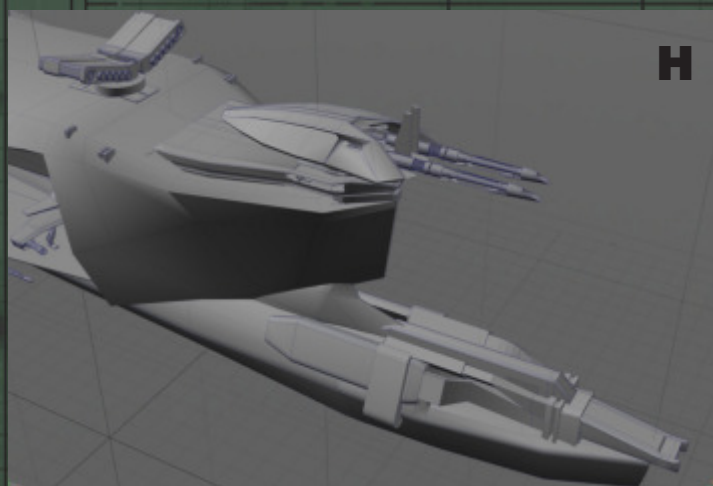
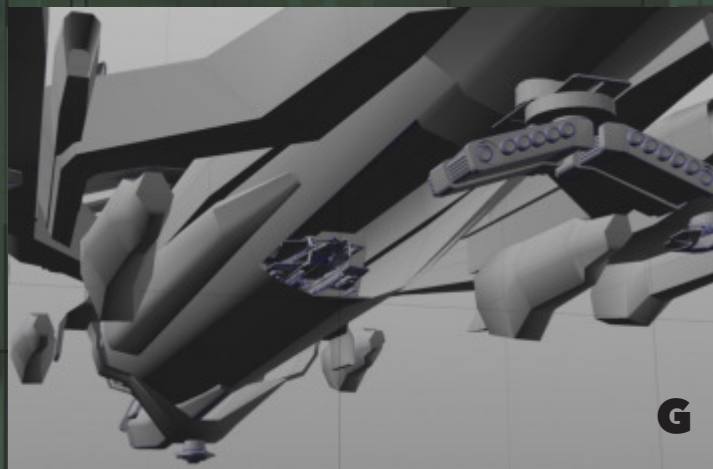
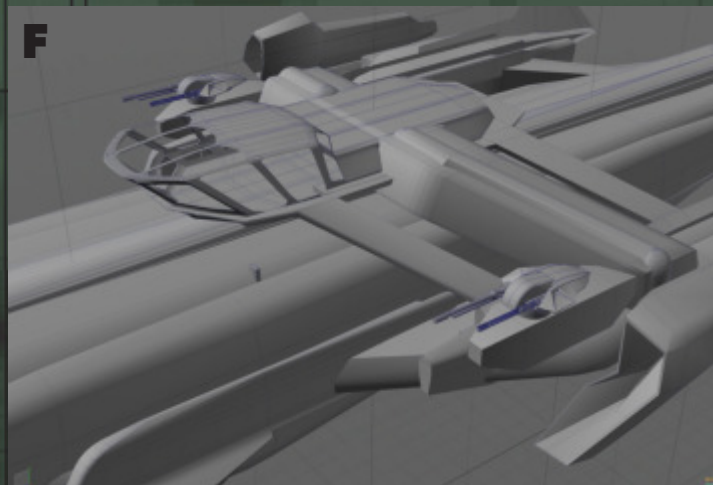
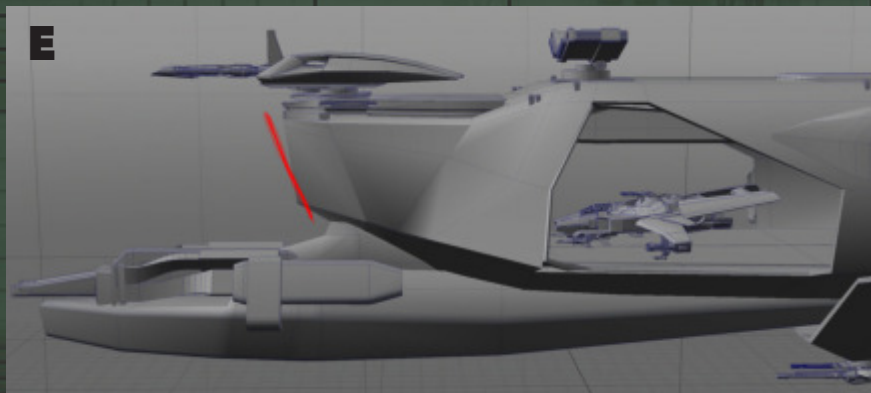
Ryan, could we also get a full side and top orthographic view on the next round?

Chris's comments sound good.

I'd also like to see a bit more angle cut on the front wedge, per the marked-up image (E).

**RC:** Part of the 'streamlined look' issue is indeed the lens, part is because I've made the forward fuselage thicker in order to accommodate the width of the Hornet wingspan in the front. I can stretch it out a bit more if you'd like it to look sleeker overall, but the width is fixed at that wingspan. In fact, the rear fuselage needs to be widened a bit as well to do the same.

Other stuff is no problem and I'll continue: move the bridge back, juice up the engines, switch to a front door between the guns for front ships to land, etc.



WORKING DRAFTS



**RC:** Here [pages 11-14] are lots of revisions and additions, all in progress and under-detailed but on the way and pretty representative.

Bridge is under way, not there yet. I want to add some asymmetry, but as it is, it's sleeker and better integrated into the cantilever/walkways; the whole assembly is moved back.

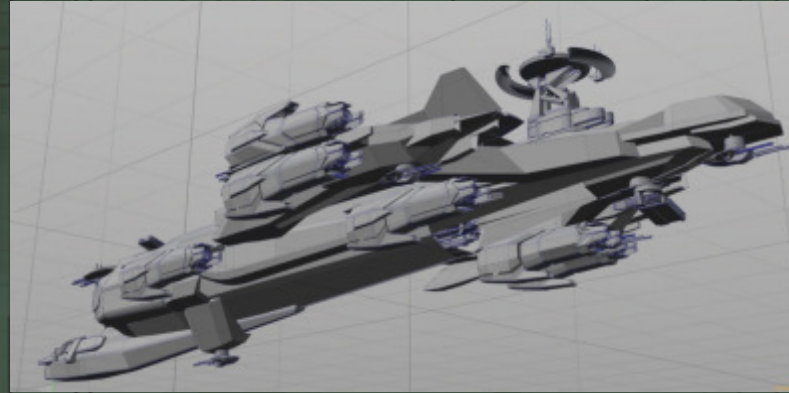
Swept forward the cantilever/walkways; looks a lot better this way I think.

Worked up a front-loading door for the front hangar.

Added engine detail/function-

ality. Not shown is how (atmospherically) the front of the engine would open up a bit for added airflow. The exhaust has an axisymmetric nozzle with vectoring paddle and has some more moving parts there; I have a few more I'd like to add as I continue detailing.

Added AWACS-style antenna array in the rear; the idea is that it would extend in space and retract in atmosphere, where they'd have to rely on flush antennas/sensors. We may want to add a supplementary array to cover the bottom direction.



WORK IN PROGRESS





**CR: AWESOME!**

I think we're up and running, Mr. Church! There are going to be a lot of happy, proud corvette owners.

I don't have a lot of notes, other than to say I like where it's going and am looking forward to more details being fleshed out, especially the interiors!

As always there is style, purpose and function in your designs.

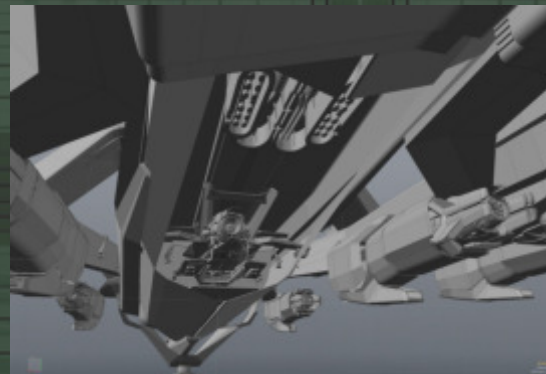
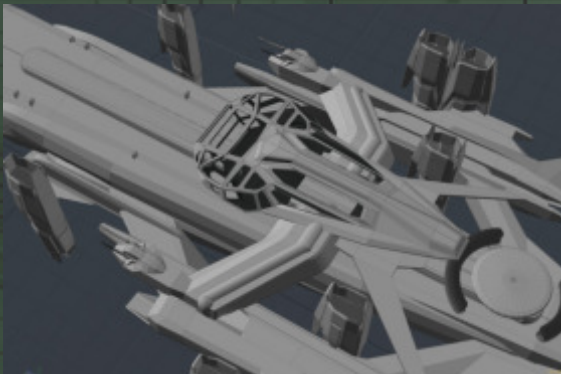
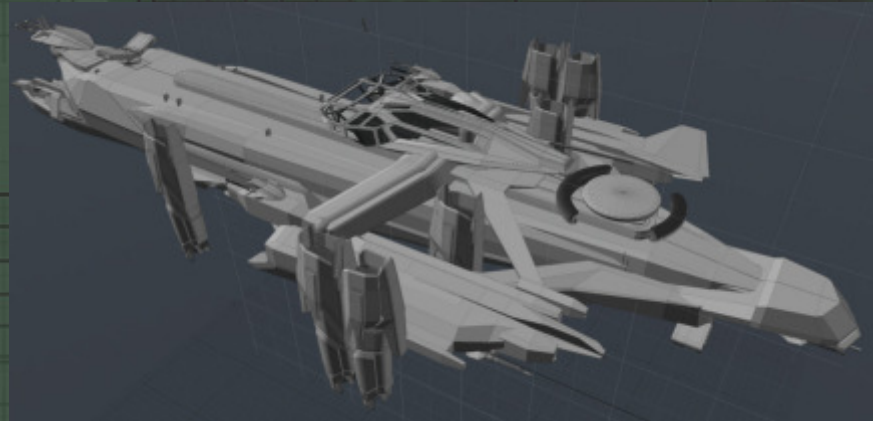
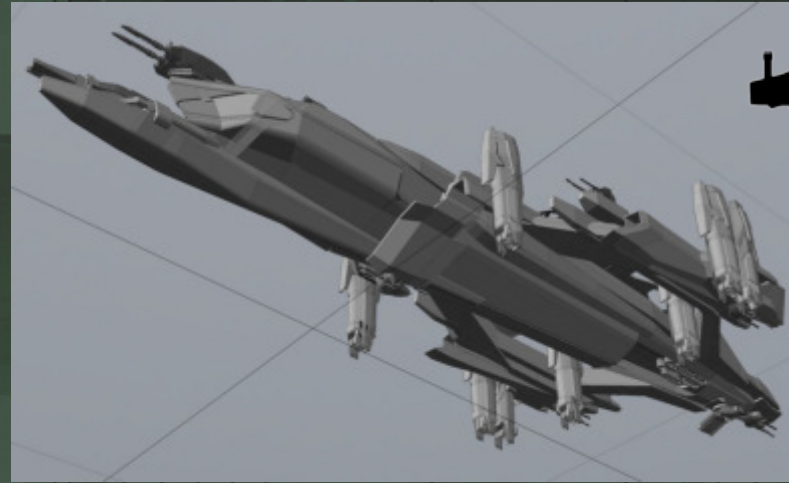
**CO:** I want one. Lovin' it!

**RC:** Cool, yeah – it is starting to look pretty brutish, isn't it?

I like that it's a different aesthetic (manufacturer) than the other stuff I've been working on. Fun stuff; I'll continue.

**CO:** When you get a moment, could you send me a current rough length in feet of that ship? Just your best guess. Thanks!

**RC:** The current length of the ship is 180 meters; the chubbiness comes from needing to fit the Hornet in there; its wingspan dictates the width.



WORKING IN PROGRESS

**RC:** When you have a sec to consider it, can you give me an idea of how much of the interior of the Idris class we will want to see. Which of these:

- \* Bridge
- \* Fore and aft hangars
- \* Corridors from bridge to midship guns
- \* Boarding airlocks
- \* C&C
- \* Individual gunnery stations
- \* Sleeping
- \* Toilet
- \* Mess
- \* Engineering/mechanical/

engine room (reactor room or whatever)

\* Window deck

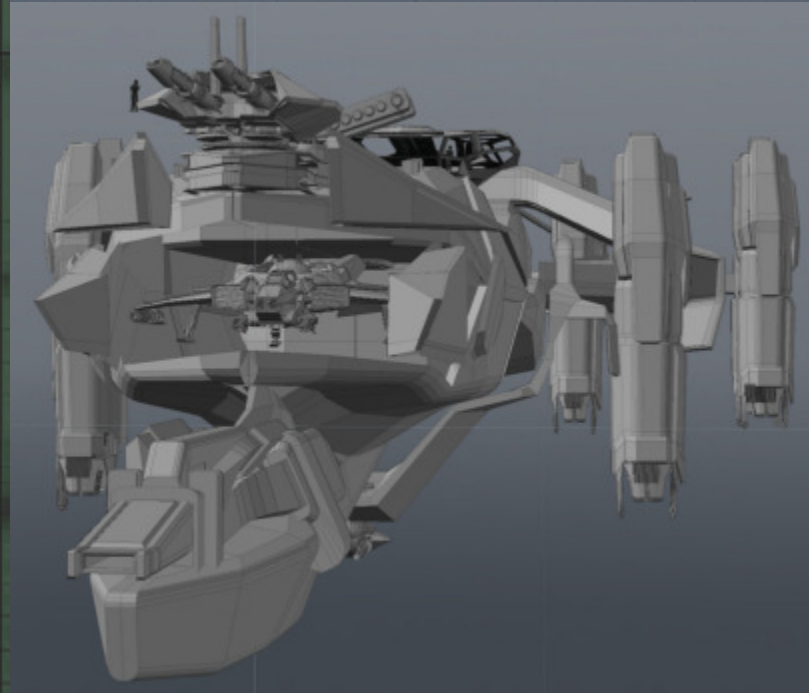
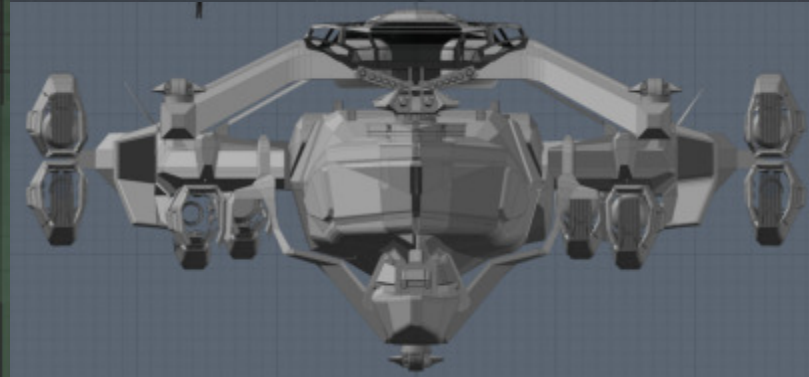
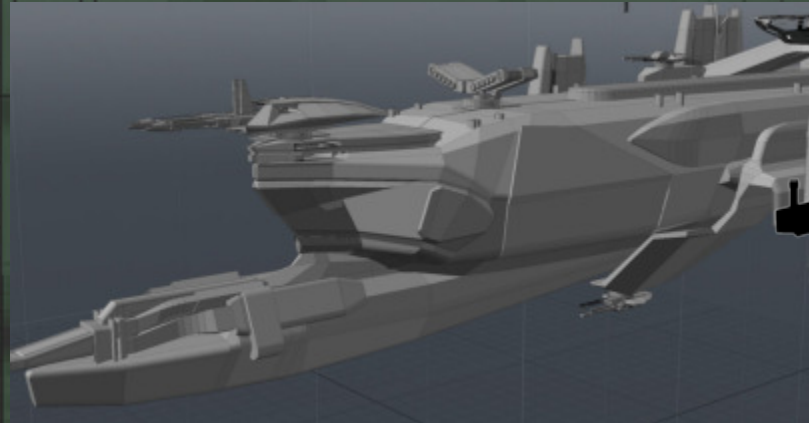
Thanks!

**CR:** Looks like a great list to me. :)

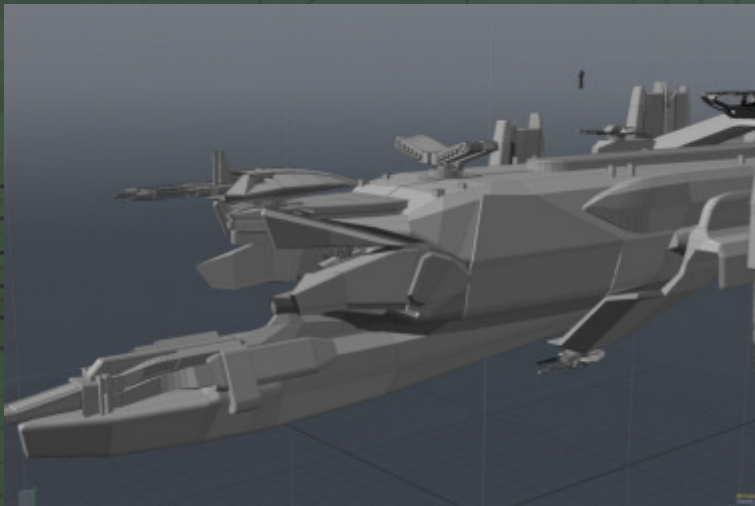
The only thing I can think to add is an armory / storage for missiles, etc. for the two fighters and the corvette itself.

If you wanted to reduce, I think you could combine C&C and the bridge.

Others all seem like they would be needed.



WORKING IN PROGRESS



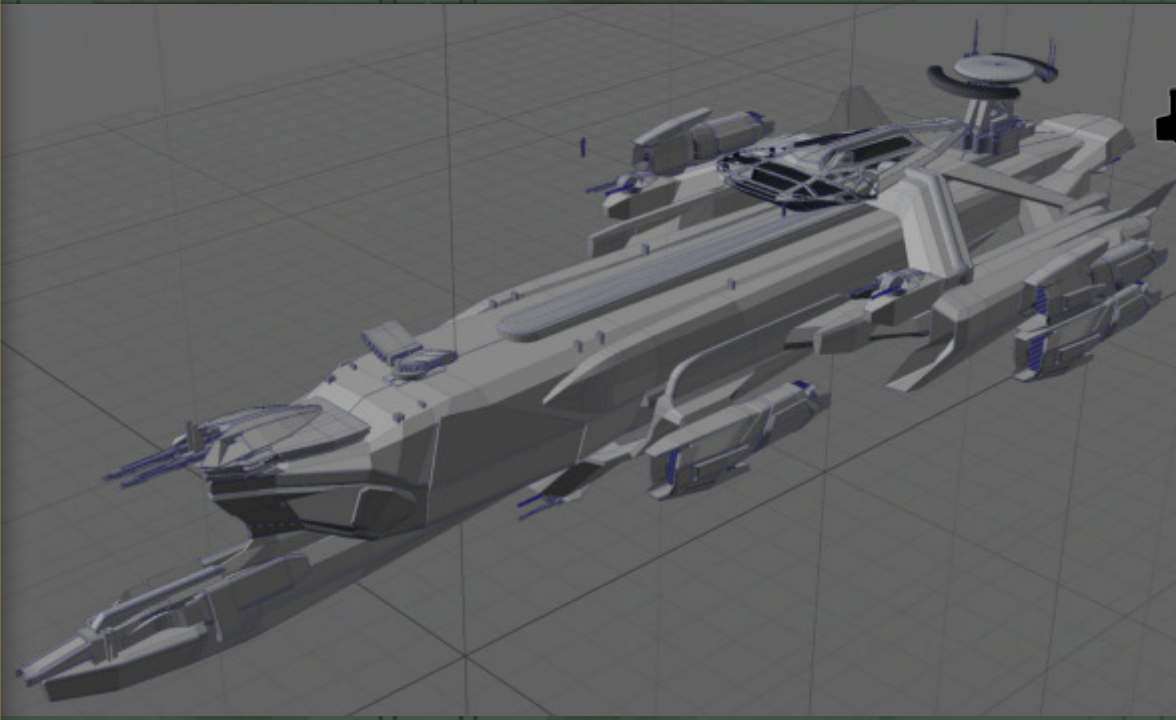


**RC:** One more question: as it is now, the hull has the front and rear fighter bays which are separated by a large room in the center. If you wanted to, we could connect the front and rear bays by deleting the center room, which would leave us with one long bay. I didn't do this because it sounded like you want only room for two fighters, and if we deleted the central room we'd have room for three at least.

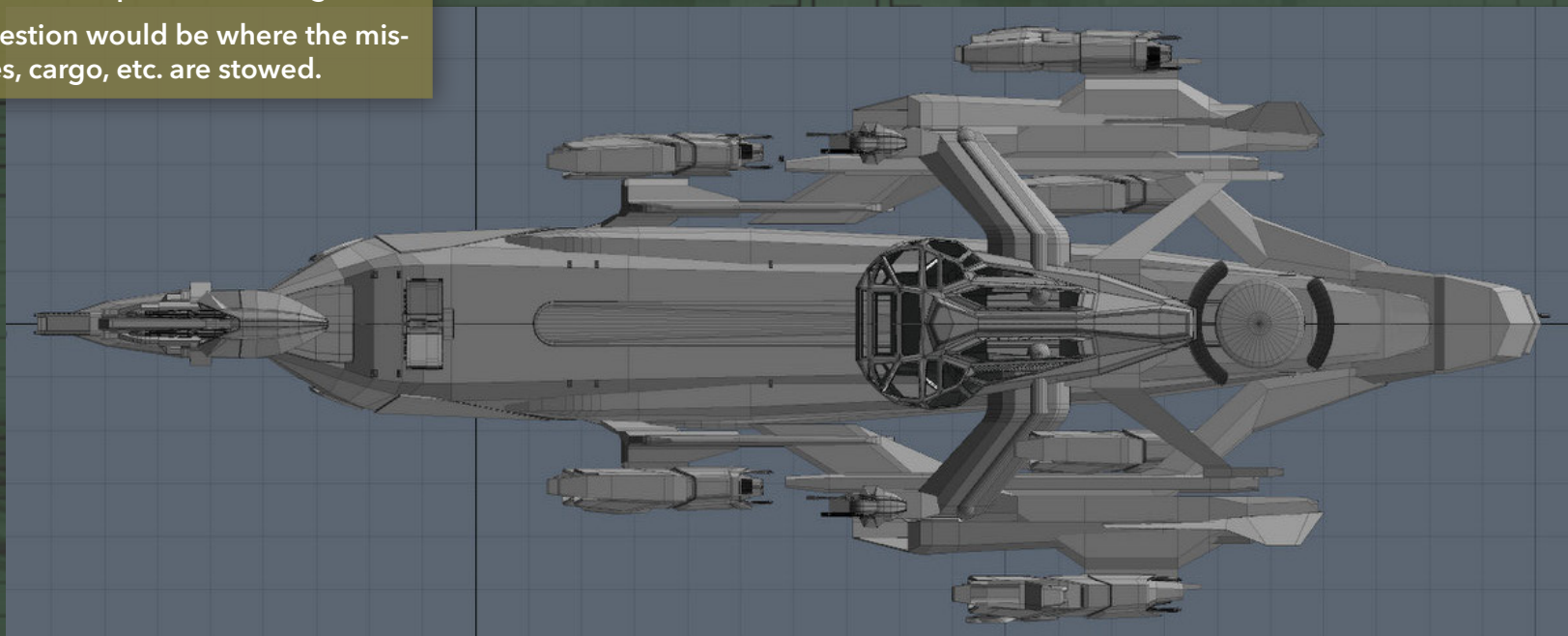
Or that central room area could be a separate pressurized or unpressurized cargo area. Or it could just be part of the pressurized ship interior.

**CR:** I think I would make it one big hangar / cargo hold – it seems like the ships would land in the back and take off through the front. Don't forget you need room to work on / repair / arm the fighters.

Question would be where the missiles, cargo, etc. are stowed.



WORKING DRAFTS



**RC:** These [pages 15-17] concentrate on packaging the interior and working on the bridge.

I've color-coded things out, but you can see that the bridge is up top.

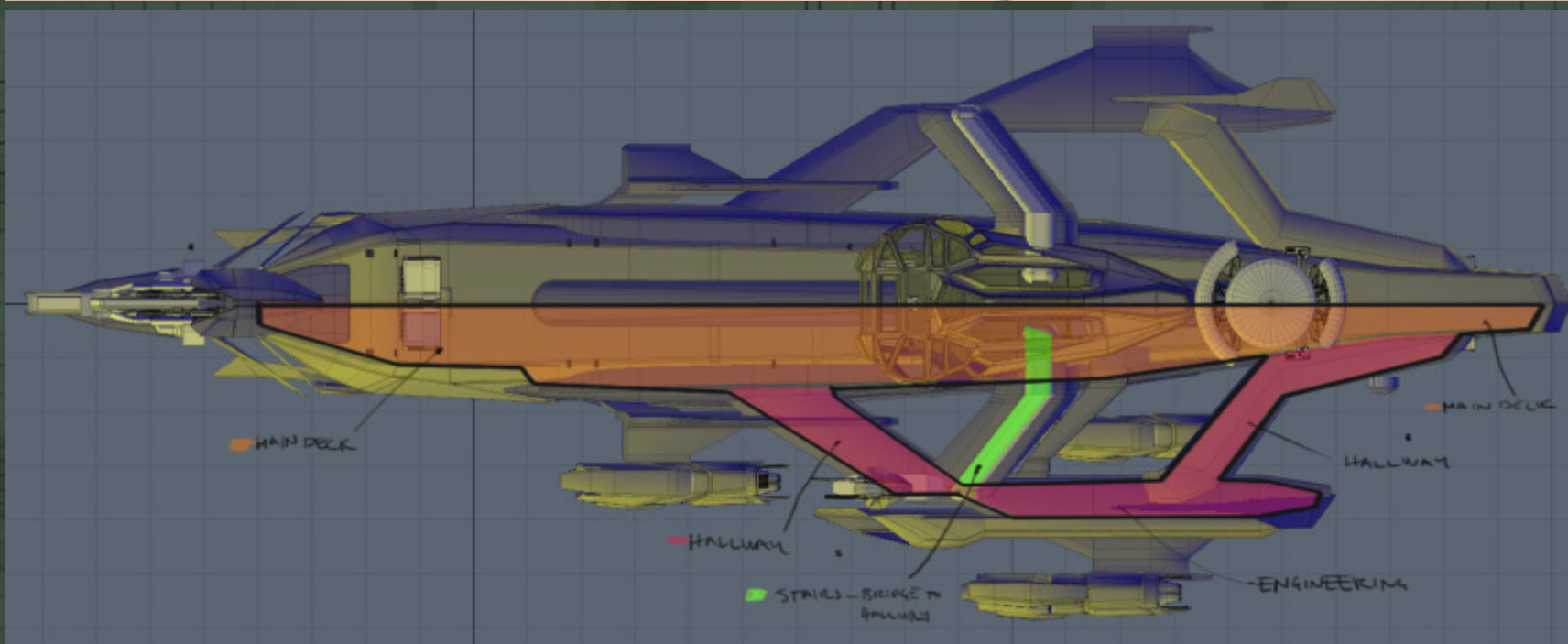
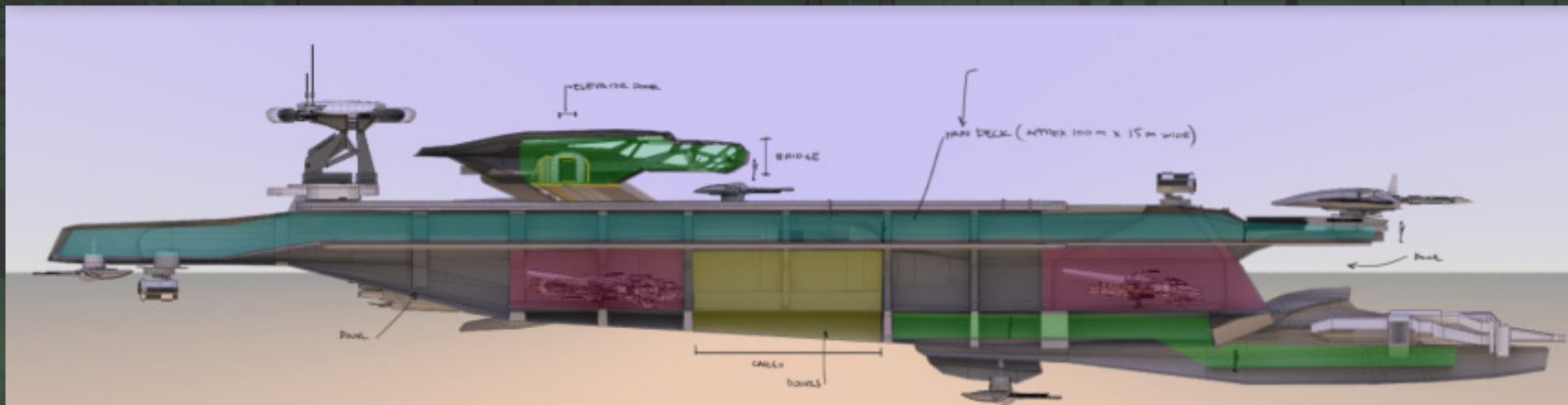
The bridge is coming along but still rough. I've put some chairs in there that

serve as placeholders – there are two chairs in the front corners of the space that extend further out, maybe for navigation and gunnery. I would imagine that when finished, the bridge will be much more cramped, with more stations.

Long stair hallways connect bridge to

main deck hallways. You can see in the aft bridge there's a door on each side that opens to stairwells that connect the bridge to the rest of the ship.

Hallways go forward to the main deck, rearwards through engineering to the aft main deck.





**RC:** Main deck stretches along the length of the ship. It would include:

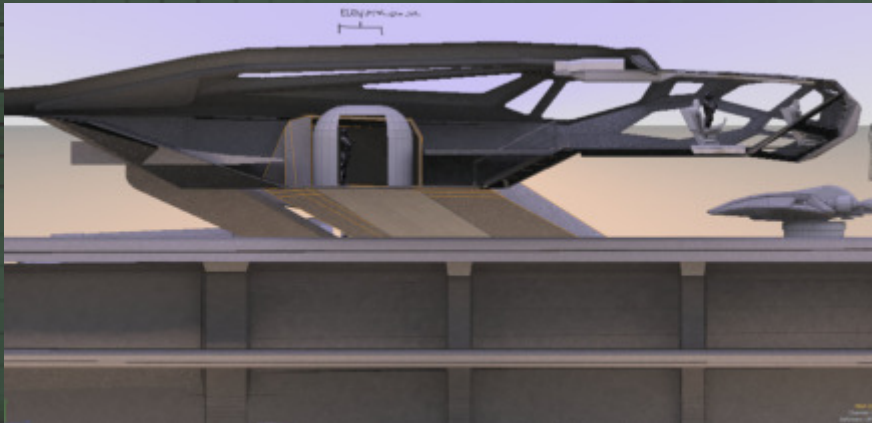
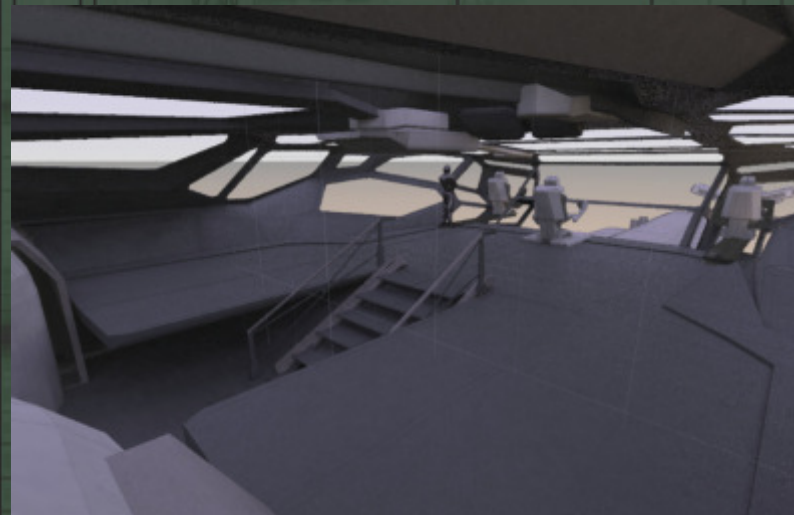
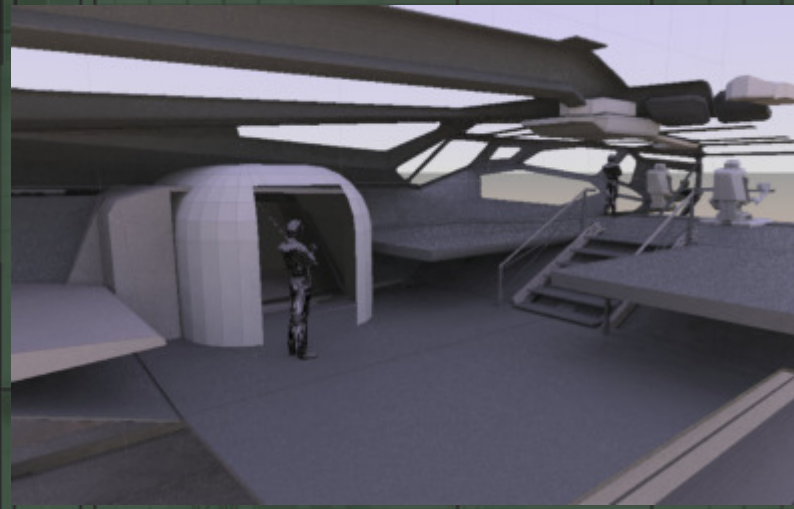
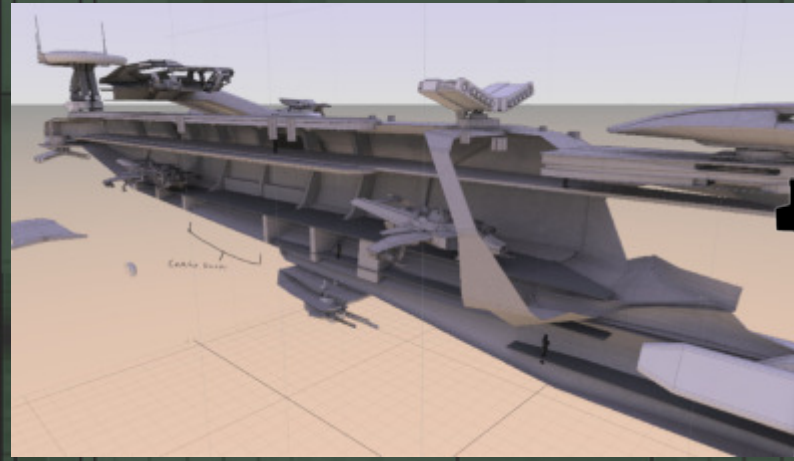
- \* Boarding airlocks
- \* C&C
- \* Individual gunnery stations
- \* Sleeping
- \* Toilet
- \* Mess
- \* Window deck

Long hangar deck with front multisegment clamshell doors, ventral cargo doors (with B-52 style doors and cranes or platforms to load cargo), and aft C-17 style door for the aft hangar.

There are also long rooms in the bottom nose, maybe for rail gun engineering or for some other purpose.

Let me know if there are any show-stoppers or notes; I'll continue detailing and breaking things down.

How many crew are we looking for and do we need any more rooms than listed above? For now, my idea is to have the sleeping berths in the form of hypersleep pods, so every crew member gets a bed/pod and that's where you sleep. (Pods all in one room or spread out through the ship here and there.)



WORKING PRIORITIES

**CR:** Looking good.

I don't see any show-stoppers – layout looks good once filled out.

Crew would be 8-10 people.

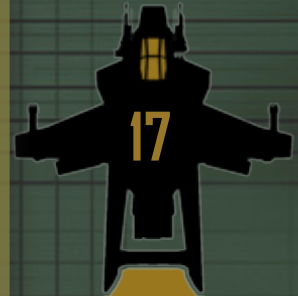
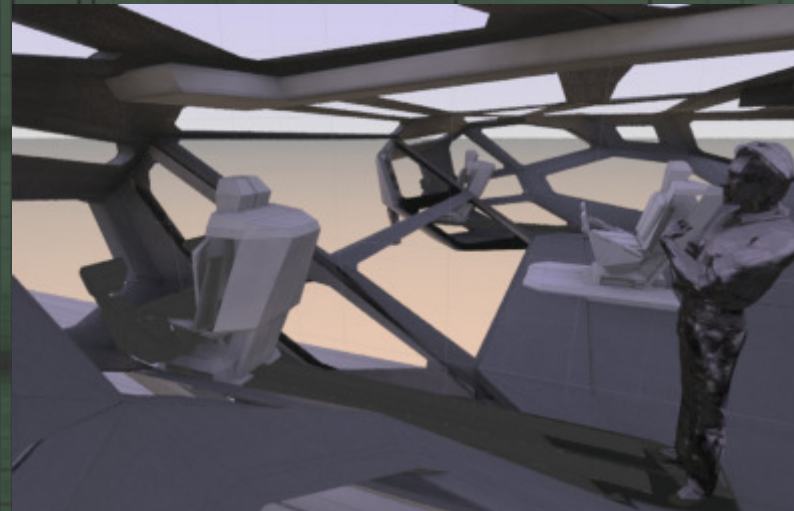
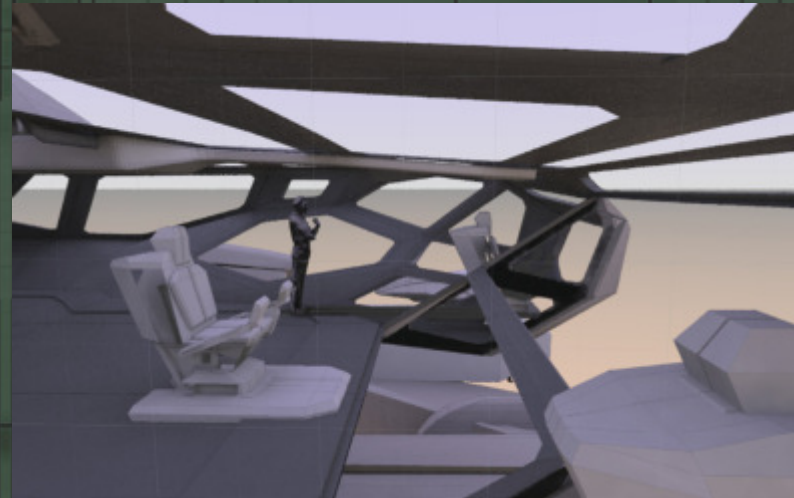
Only note from my side would be to remember that the Aegis Idris is an older warship than the carrier and by a more old-school manufacturer / shipyard, so the interior

and other details should feel a little less slick / clean than the Bengal carrier. One example of this would be perhaps not to have an elevator to the bridge, but rather ladders / stairs you climb?

**CO:** Freaking sweet!

Can the Hornet's wings fold back during storage?

Love it all.



WORKING IN PROGRESS



RC: Here [pp 18-top 21] are more captures, showing interior detailing and space planning mostly; the images are labeled so are hopefully clear.

Beginning detail work on the bridge. A different look for the details, a bit clunkier and utilitarian than the RSI offerings, more exposed ductwork and complexity to the surfaces, less sleek. The chairs are the furthest along, but are a good indication of the direction I'm looking to go in. Any thoughts?

I need to add some windows to some of the rooms;

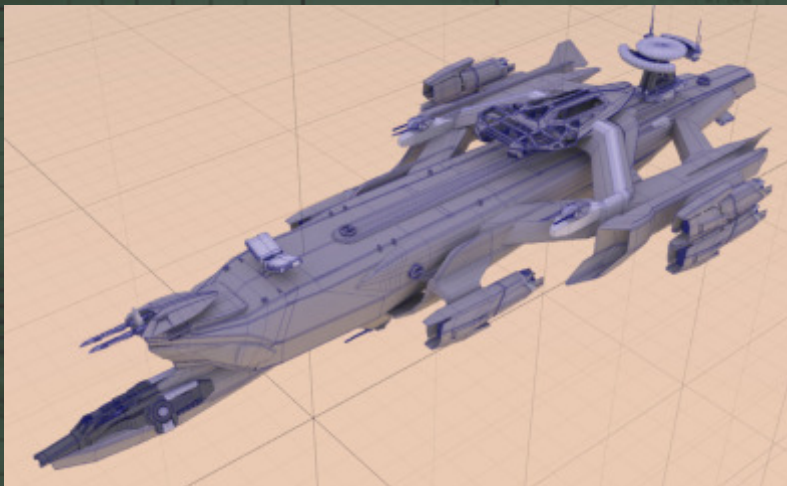
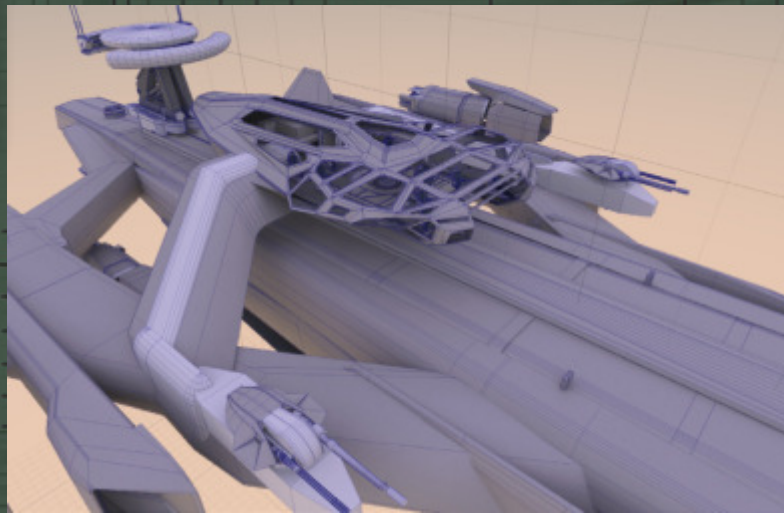
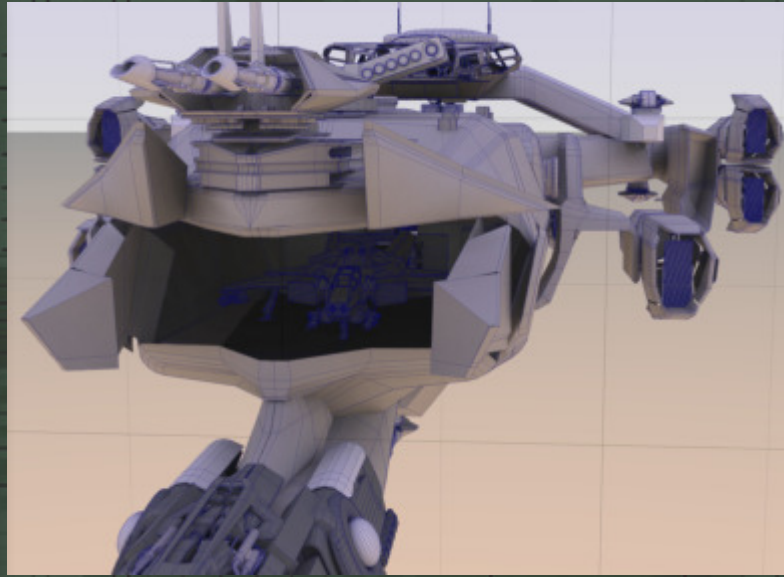
the ceilings in the upper level are low enough that I may add some skylight-style windows as well.

There are a few one-man airlocks visible from the outside; I'll add more.

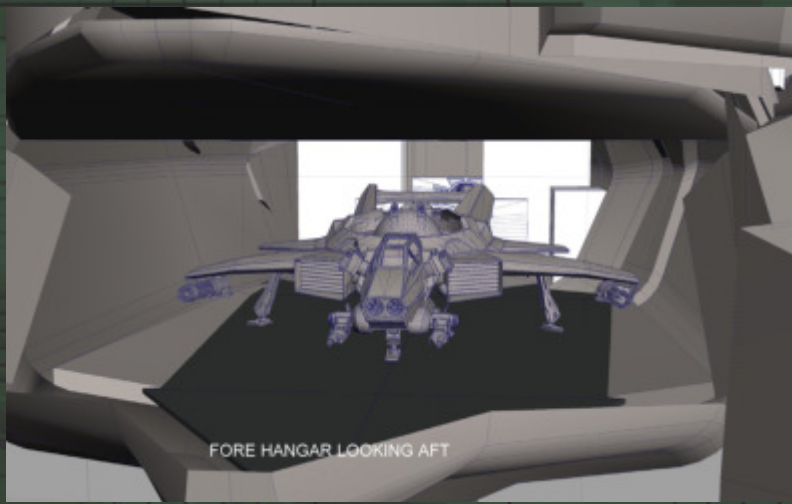
If there are any interior areas you don't want finished out (leave them sealed off) let me know.

For the exterior, overall detail is coming, major things to address are the engine vectoring and landing gear.

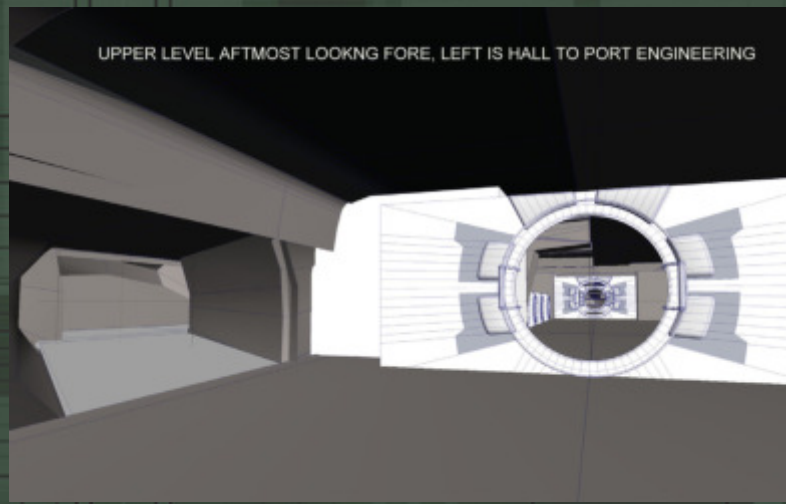
Oh, from your last email: yes, the Hornet wings could totally fold for storage.



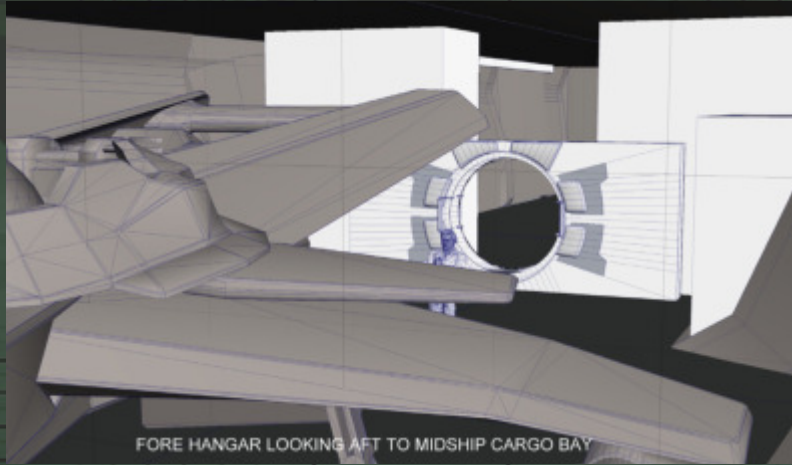
WORK IN PROGRESS



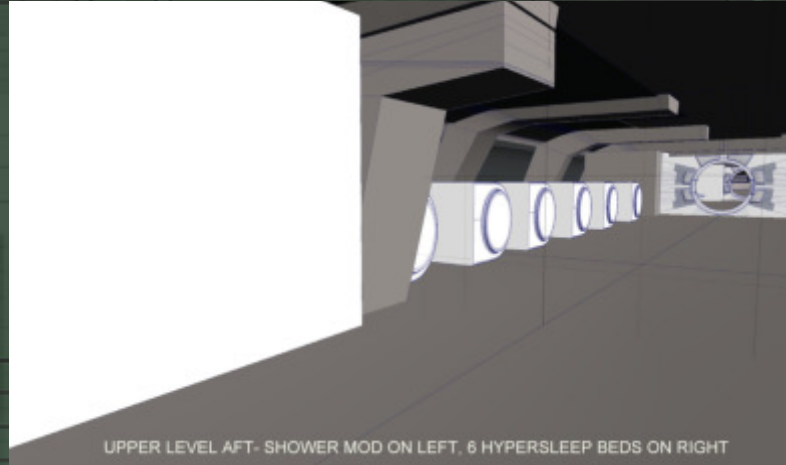
FORE HANGAR LOOKING AFT



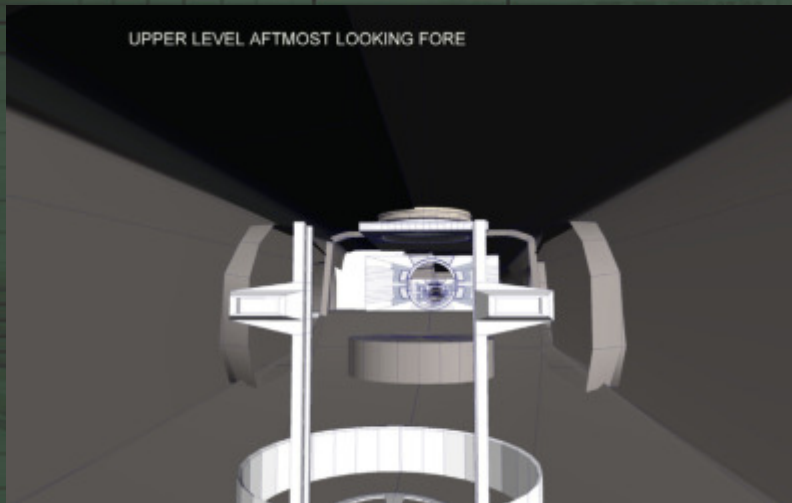
UPPER LEVEL AFTMOST LOOKING FORE, LEFT IS HALL TO PORT ENGINEERING



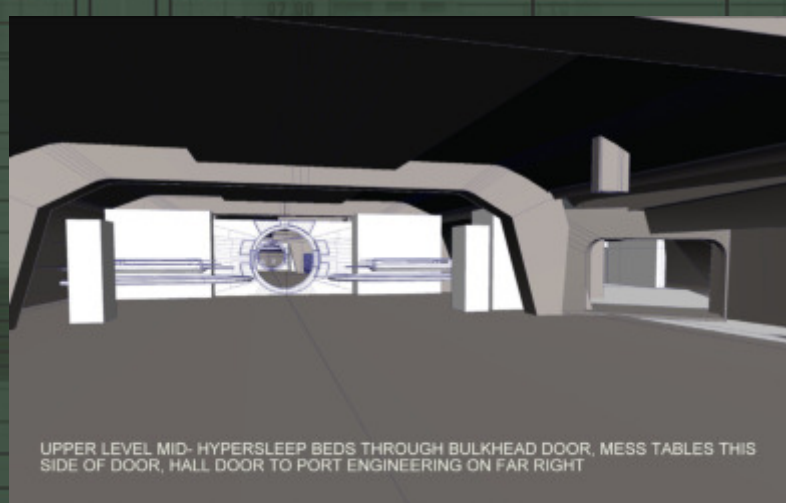
FORE HANGAR LOOKING AFT TO MIDSHIP CARGO BAY



UPPER LEVEL AFT- SHOWER MOD ON LEFT, 6 HYPERSLEEP BEDS ON RIGHT



UPPER LEVEL AFTMOST LOOKING FORE



UPPER LEVEL MID- HYPERSLEEP BEDS THROUGH BULKHEAD DOOR, MESS TABLES THIS SIDE OF DOOR, HALL DOOR TO PORT ENGINEERING ON FAR RIGHT



WORKING IN PROGRESS



**CR:** Looking great! Like the chunkier look – makes it feel a little more dated – I would do more of that. Skylights would be cool, too.

Interior areas look good – I would build them all out. One thing I don't see is the engine / power plant room. Part of gameplay will be fixing / adjusting things in first person on the bigger ships (think Scotty down in the reactor room trying to juice the warp drive). Where would this be? In the nacelles? I think there would be a central

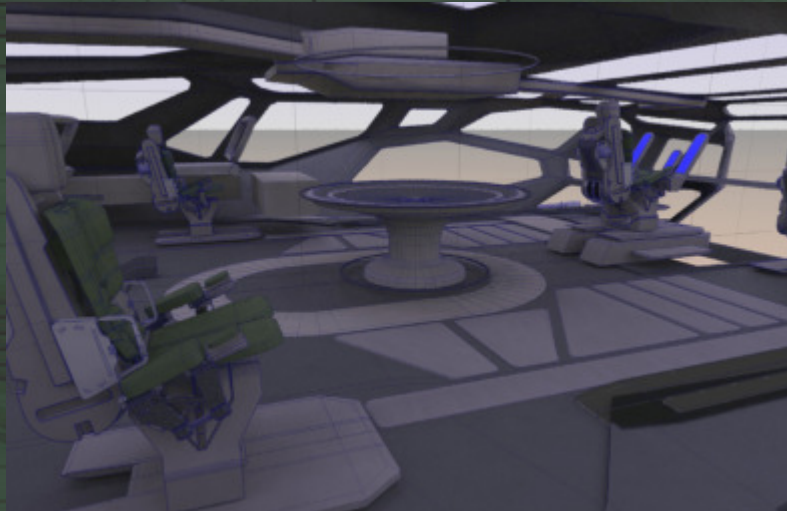
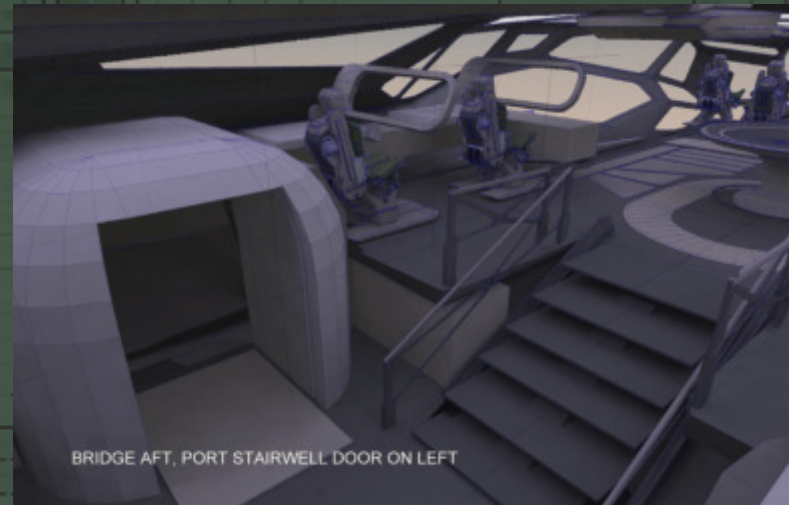
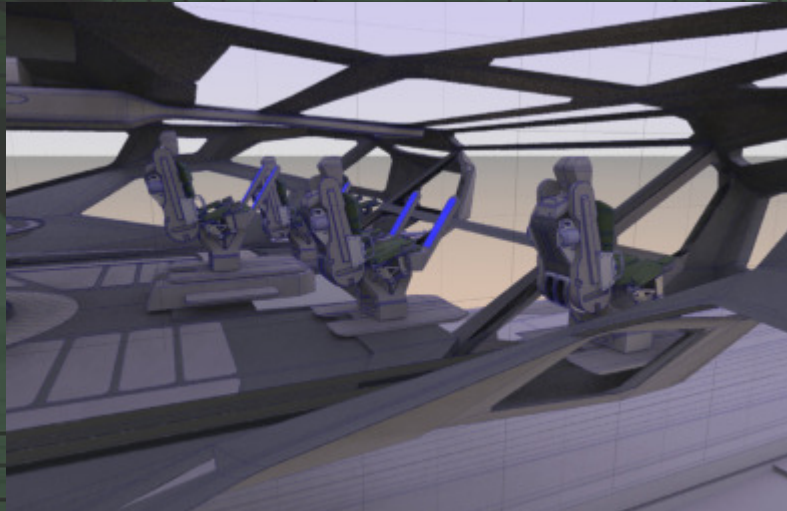
power plant (fusion or antimatter) that delivers power for the whole ship and also provides the energy to cause the engines / thrusters to combust or expel the onboard fuel (likely hydrogen – think ram jet).

Other than that, I say full steam ahead!

**CO:** Looks very cool!

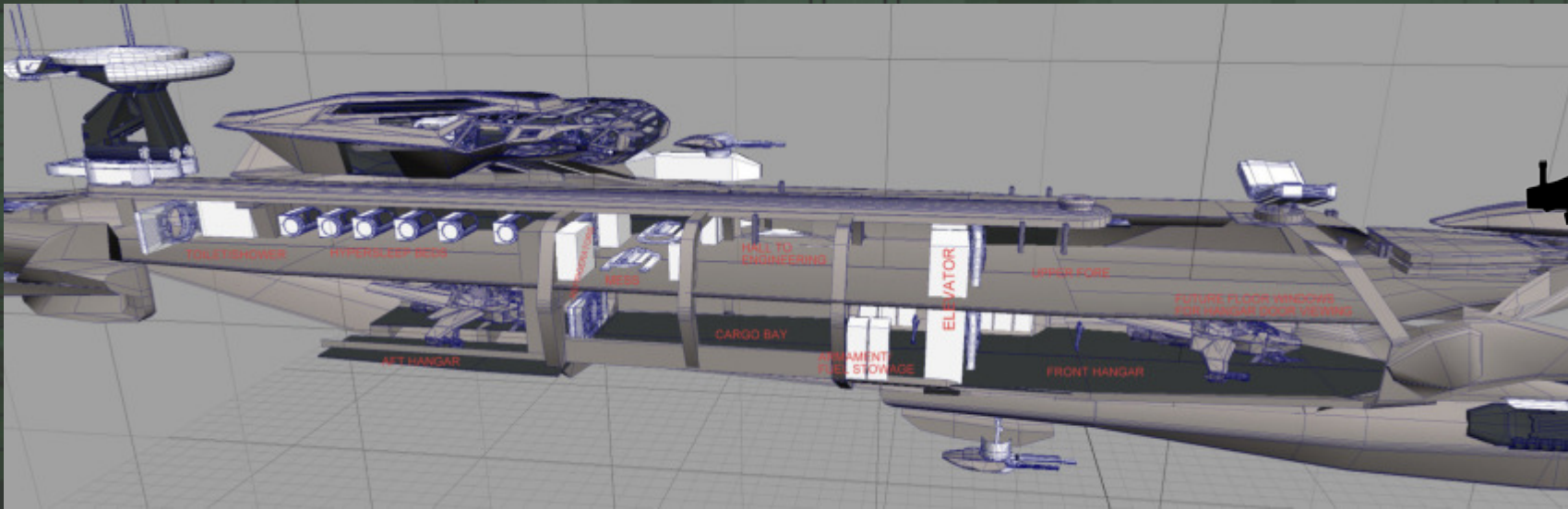
Can you add some additional support structure?

Awesome!

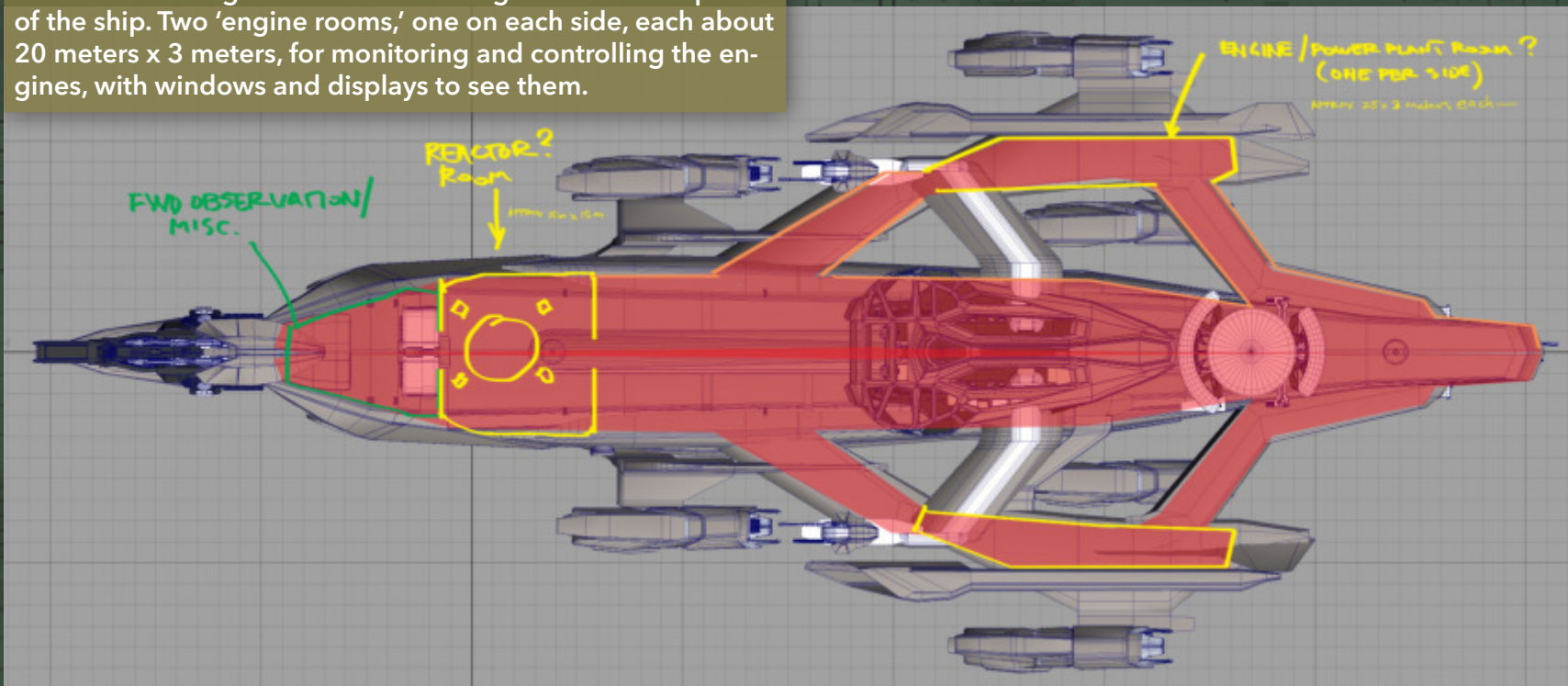


WORKING IN PROGRESS





**RC:** What do you think of this layout? A large central reactor room in the nose for Scotty and crew, with big pipes and conduits radiating out from it to the engines and other parts of the ship. Two 'engine rooms,' one on each side, each about 20 meters x 3 meters, for monitoring and controlling the engines, with windows and displays to see them.





RC: [Pages 22-24] Started the power plant room and conduits that branch out to each of the engines and throughout the ship (currently in yellow with disk-shaped 'relays' along the way).

Now there is a fore and aft living space, with a floor window overlooking the hangar and nose in the fore living space.

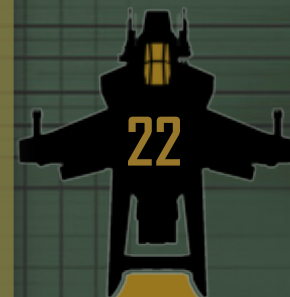
There are 6 hypersleep/escape pods each side of the nose and 4 each side of the aft living space. These will have openings in the side of the ship for use as escape pods, ejecting out the sides.

You can see that I've made progress in the bridge-engineering stairwells, engineering rooms (one on each side),

and the midship guns (one on each side, at the front of the engineering rooms). It's a complicated area there, pretty tight, but you can see that it works.

As I go along there are lots of intersection issues that show up as I hack this together. I'm incorporating rough wall thicknesses and am roughing them in as much as I can. I will leave a lot of the very fine work (wall thickness and polygon optimization/clean-up) to the 3D guys that go in and turn it into an asset.

Next steps (assuming this is all looking OK) are to keep going with details now that all's blocked out: more conduits, storage, elevators, landing gear, engine pivot mechanism, etc.







**CR:** Looking good to me.

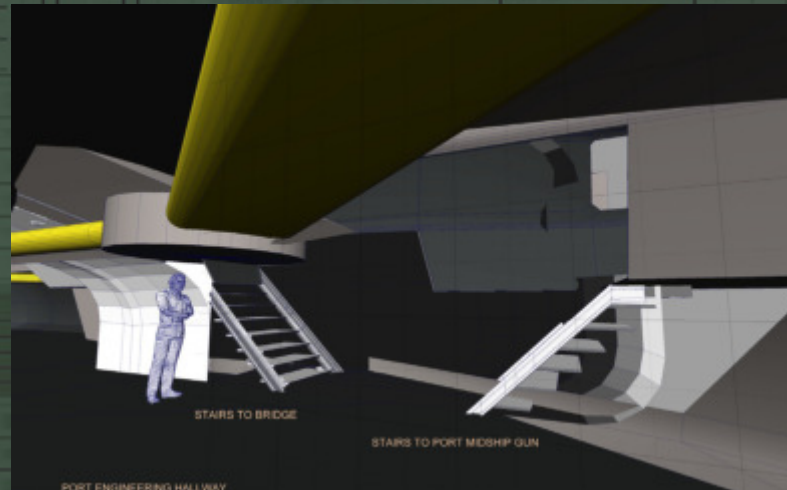
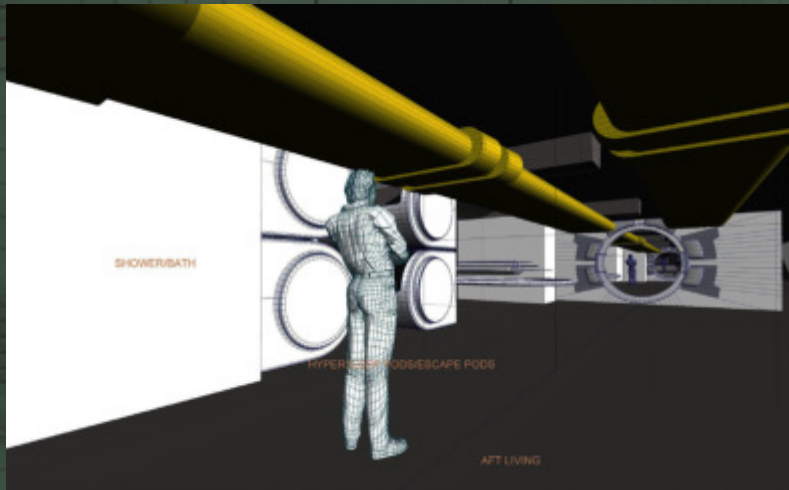
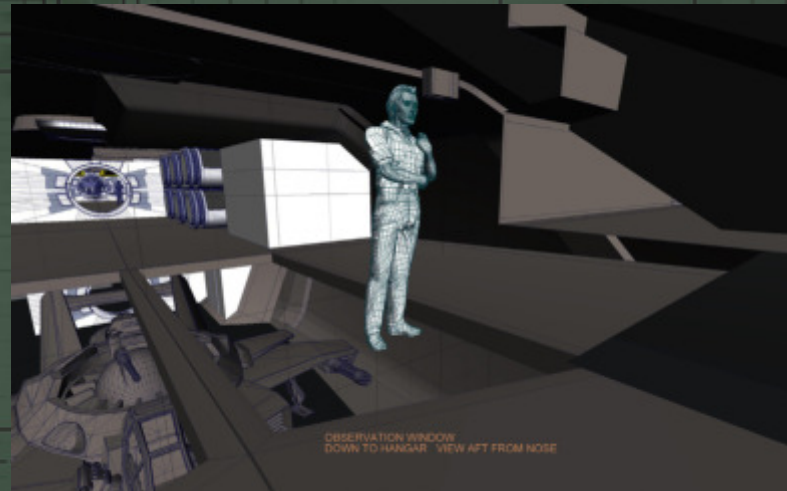
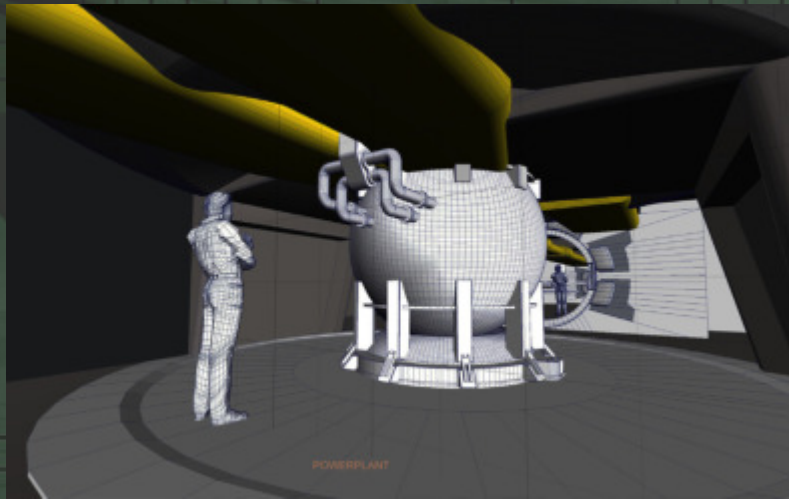
Couple of notes –

1. I would make the reactor / engine room equipment a bit bigger / more clunky. The Idris is meant to be an older ship so the elegant reactor sphere right now feels almost too sleek – maybe more machinery and pipes around it? Like a not very efficient cooling system?

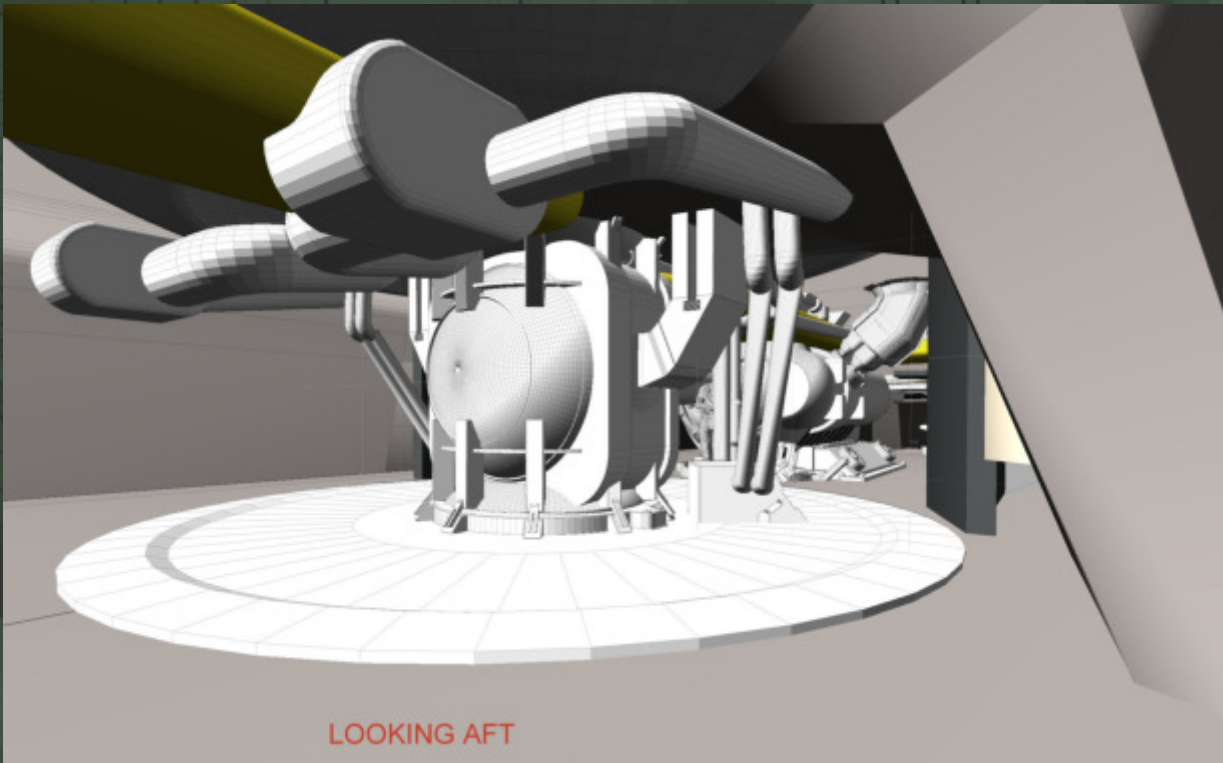
2. I would make the aft hangar / cargo hold / fore hangar

capable of being all one space with the bulkhead doors being emergency doors that can close (if needed due to a hull breach), but when open will allow a Hornet to go from back to front (land though back, take off through front). Then it's up to the player whether he loads up cargo instead of fighters (or a bunch of cargo in the rear and middle sections and just one fighter fore).

**RC:** Gotcha, sounds good – will do.

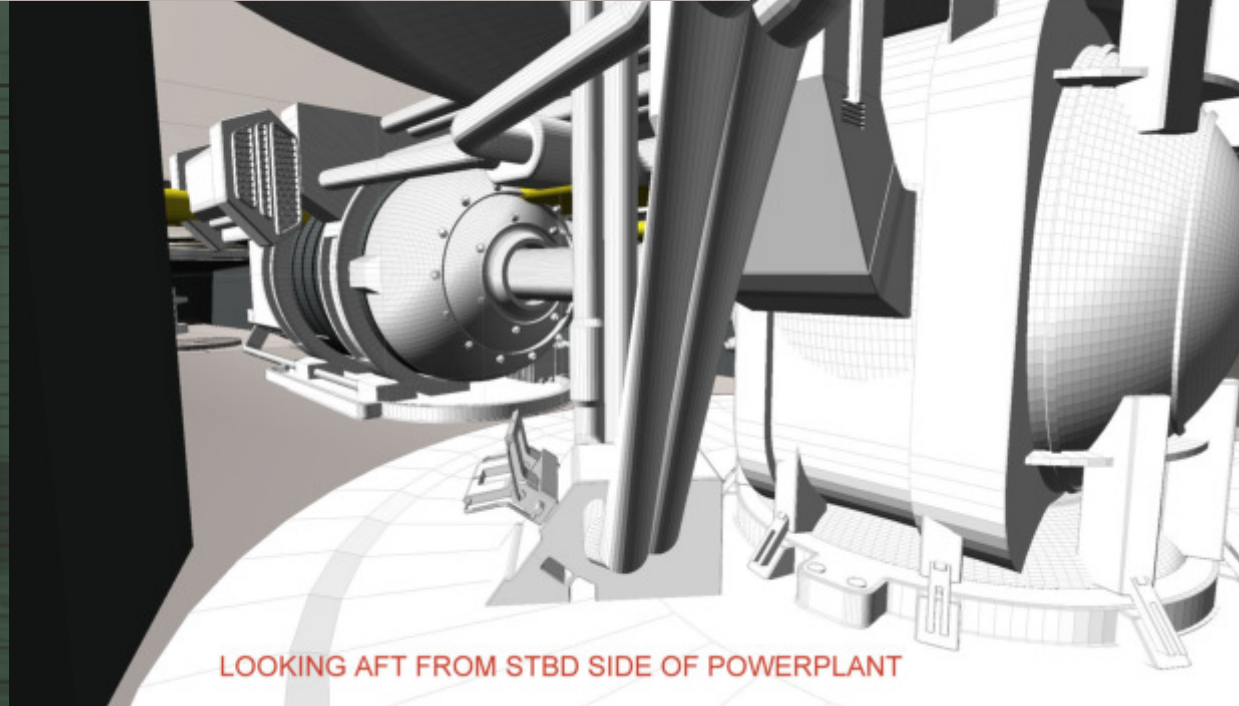


WORKING PRIORITIES



LOOKING AFT

**RC:** I've spent time mostly on the power plant and made it into a much more industrial, functional looking space. It's a bit tight in there; let me know if I need to make it smaller to walk past and through. If you're liking the aesthetic, I personally like the pipe and conduit look and it might be good to keep going with it throughout the ship (but concentrated at the power plant and power distribution nodes).

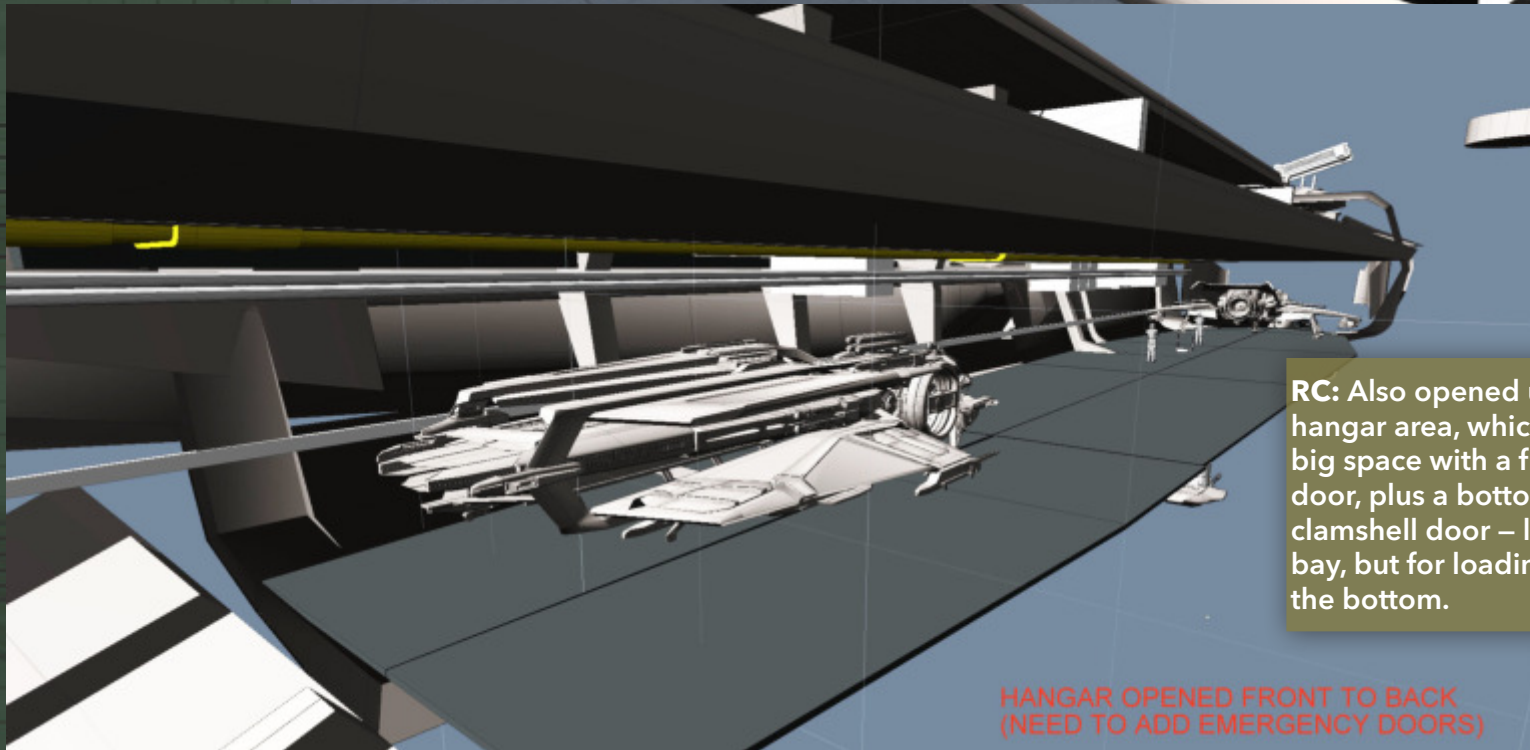
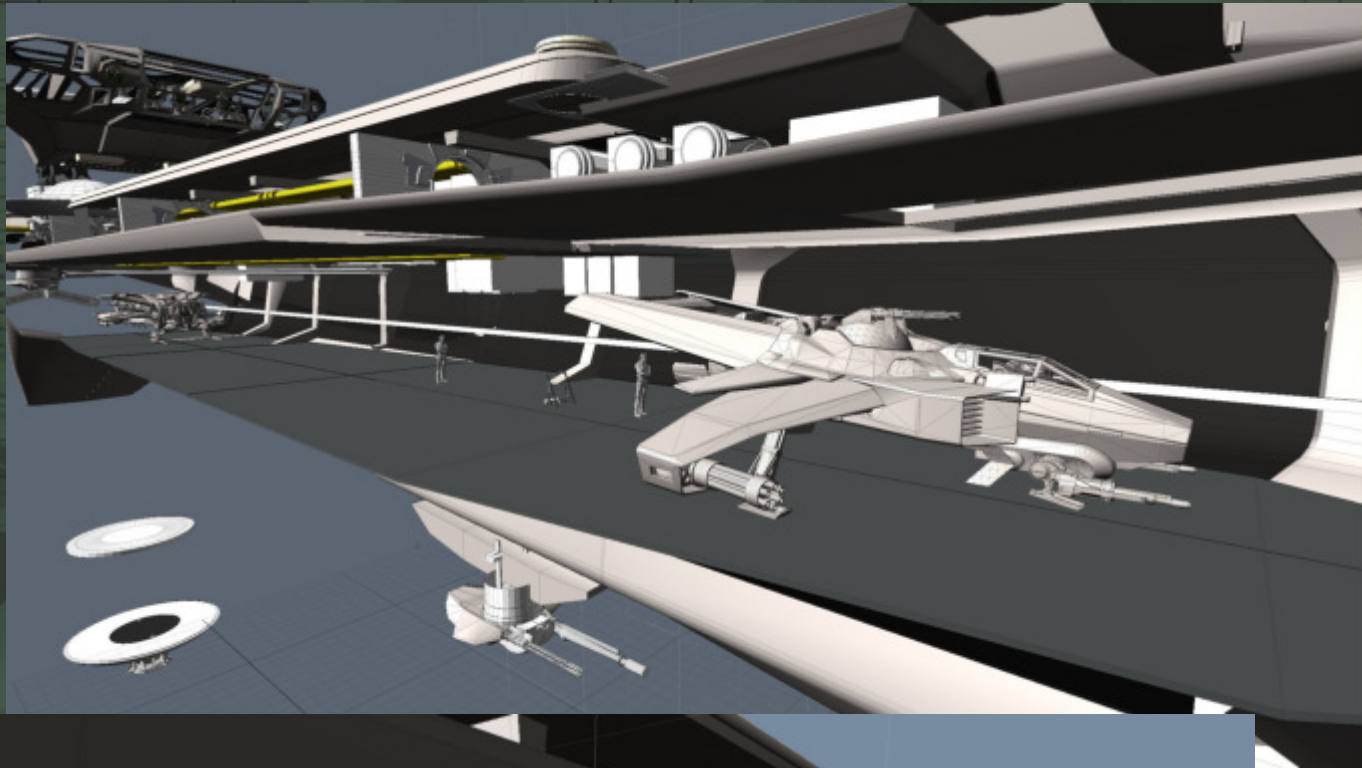


LOOKING AFT FROM STBD SIDE OF POWERPLANT



WORK IN PROGRESS





RC: Also opened up the bottom hangar area, which is now one big space with a front and rear door, plus a bottom-loading clamshell door – like a bomb bay, but for loading cargo from the bottom.

HANGAR OPENED FRONT TO BACK  
(NEED TO ADD EMERGENCY DOORS)

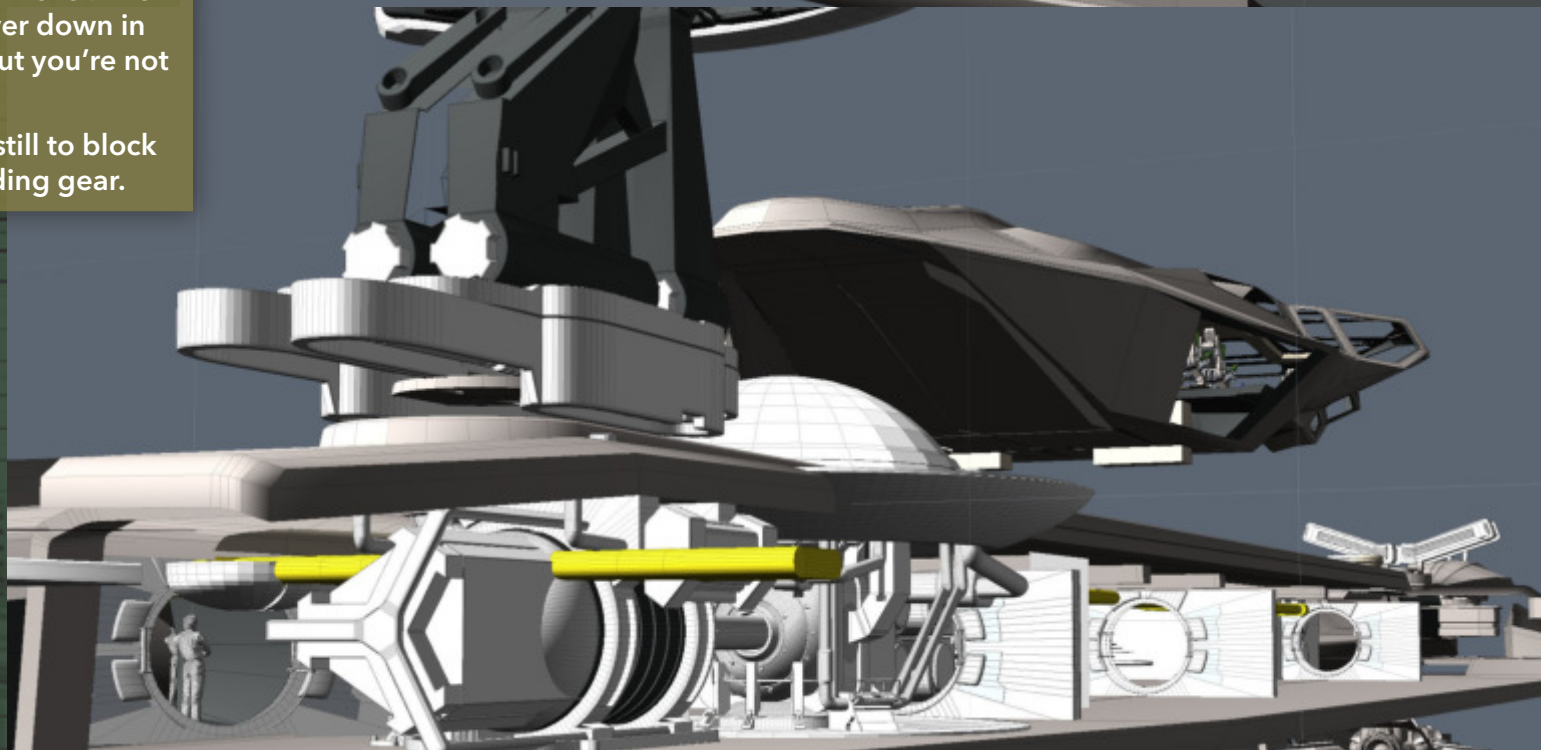
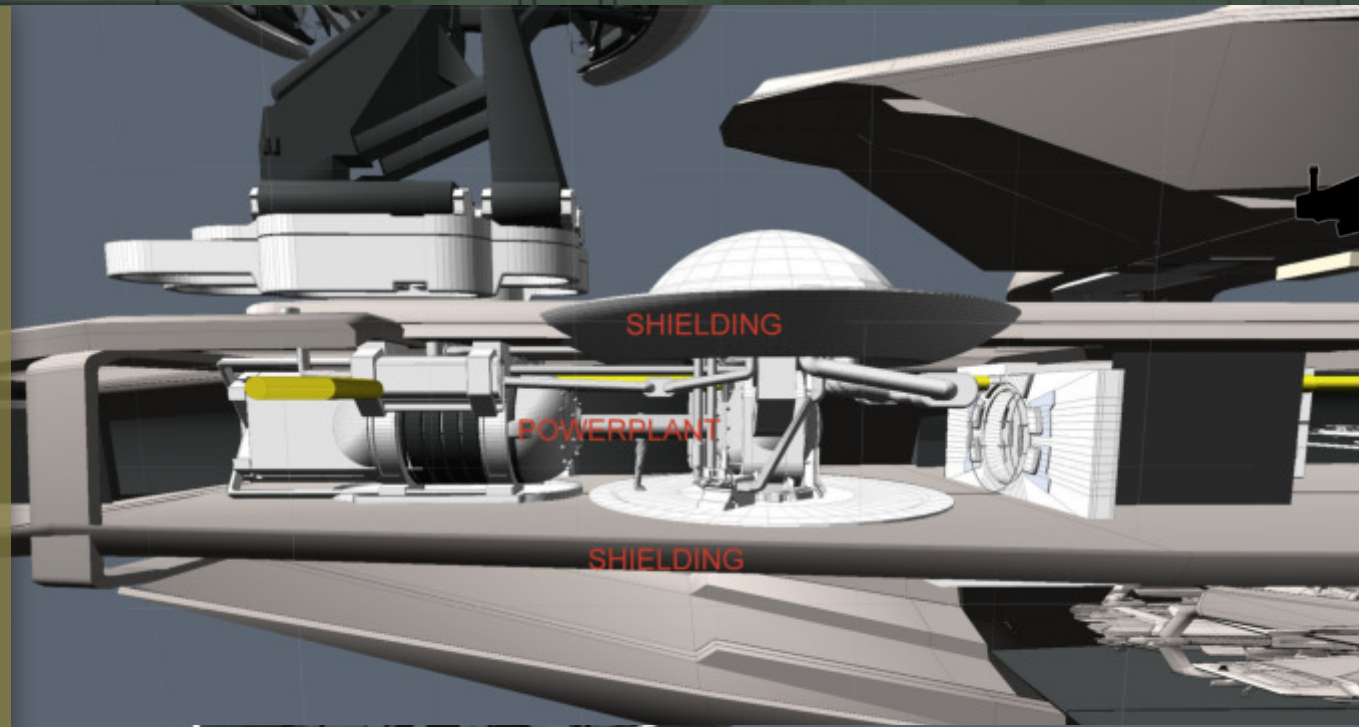


WORKING IN PROGRESS

RC: Doing this clears out a lot of the side space, so I'm thinking that a lot of the munition and maintenance storage can now be further to the side blisters, which I've opened up for access, with a crane mounted up at the ceiling. Then we have a ton of space under the floor that could be accessed by floor doors and small storage elevators.

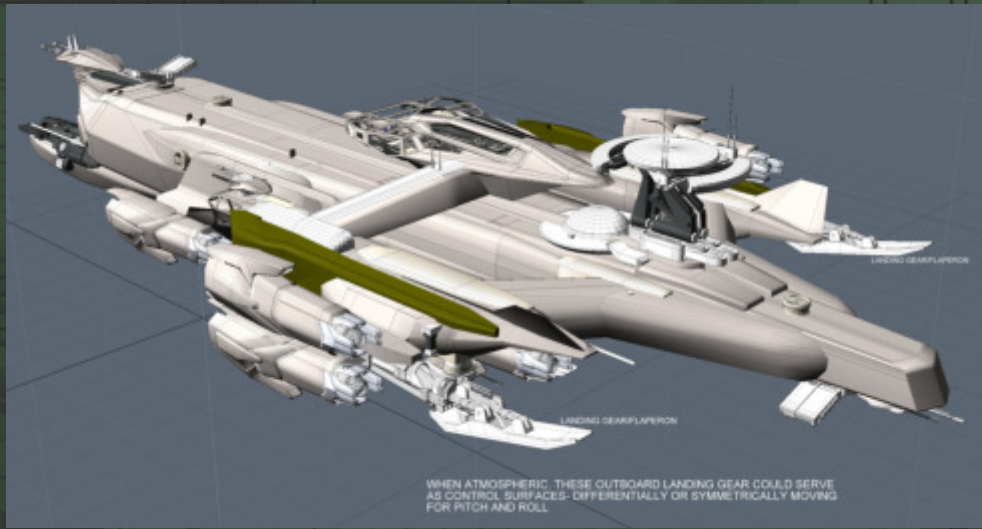
The main elevators will need to be modified too, so that the shafts don't extend all the way down to the hangar level. The cars just lower down in some way but you're not in a shaft.

A big thing still to block in is the landing gear.



WORKING IN PROGRESS



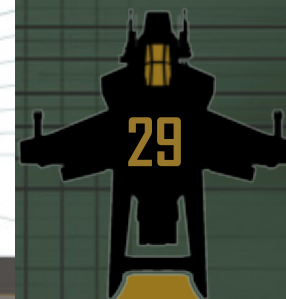
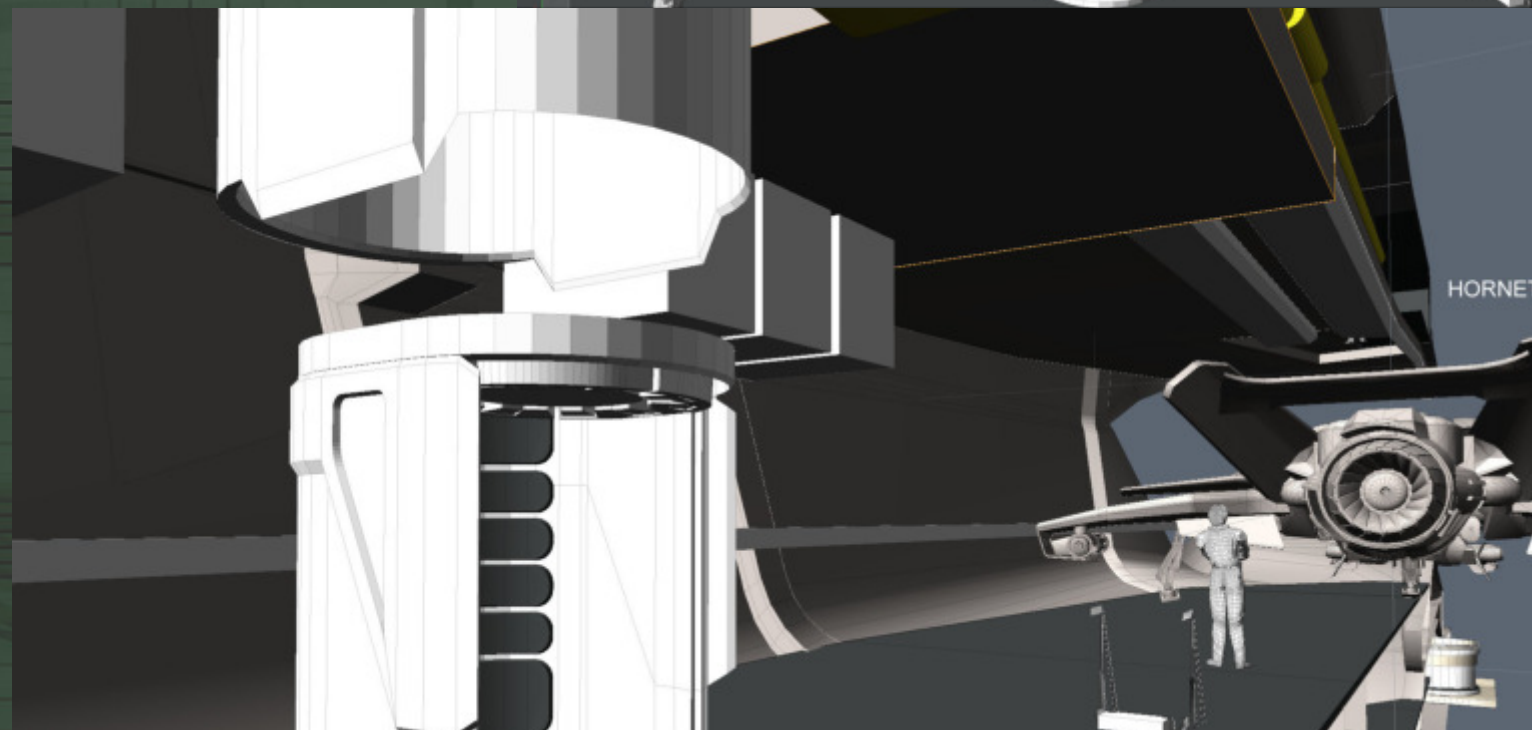
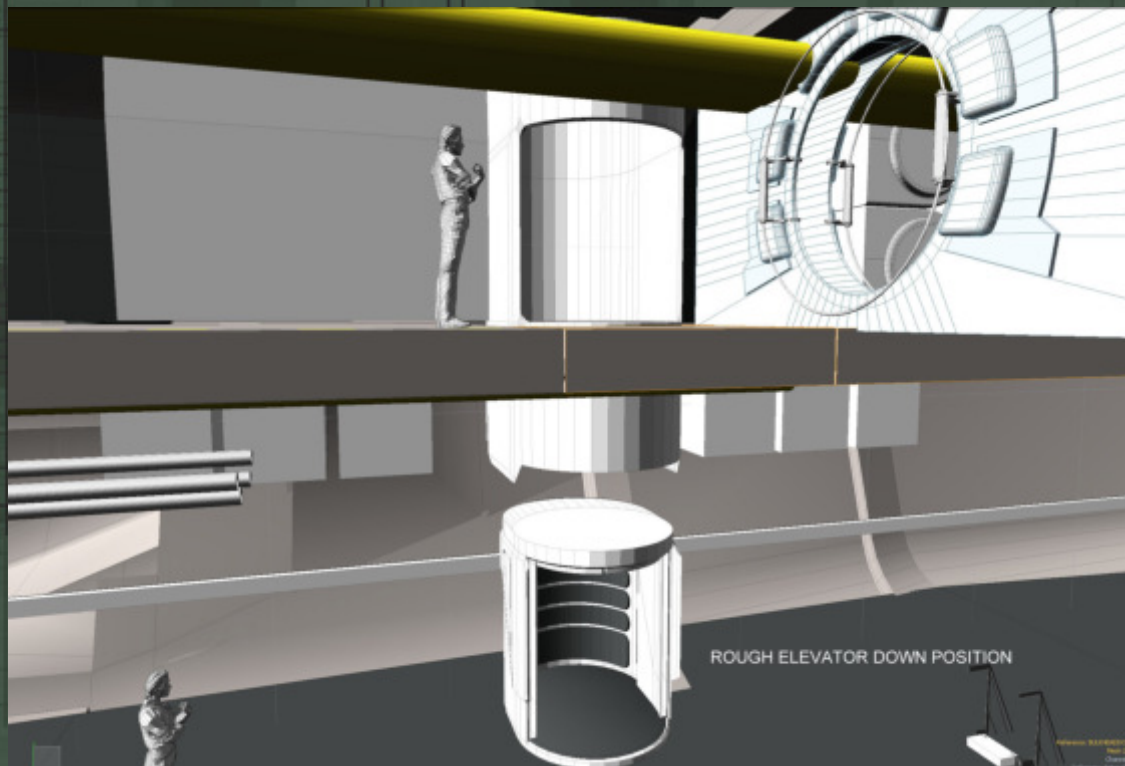


RC: Here are screen grabs showing the landing gear down and up. They're spread out around the center of gravity and allow loading via the rear ramp and the belly cargo bay as well. When they're retracted, I was thinking that the outboard ones could be used as control surfaces, helping with pitch and roll when you pivot the 'foot' part, which is flat and flap-shaped anyways.



WORKING PROGRESS

RC: There's basic block in work on the front elevator. If this is working for you, I'll continue to detail and add another one to the rear area as well (one on each side for a total of four).

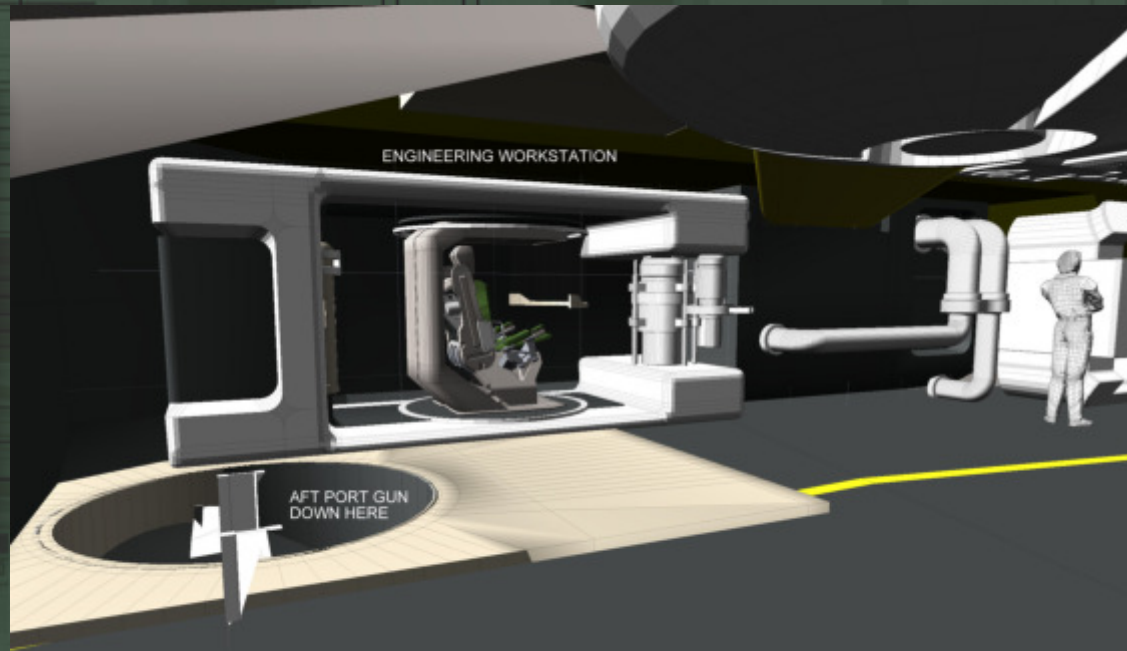


WORK IN PROGRESS

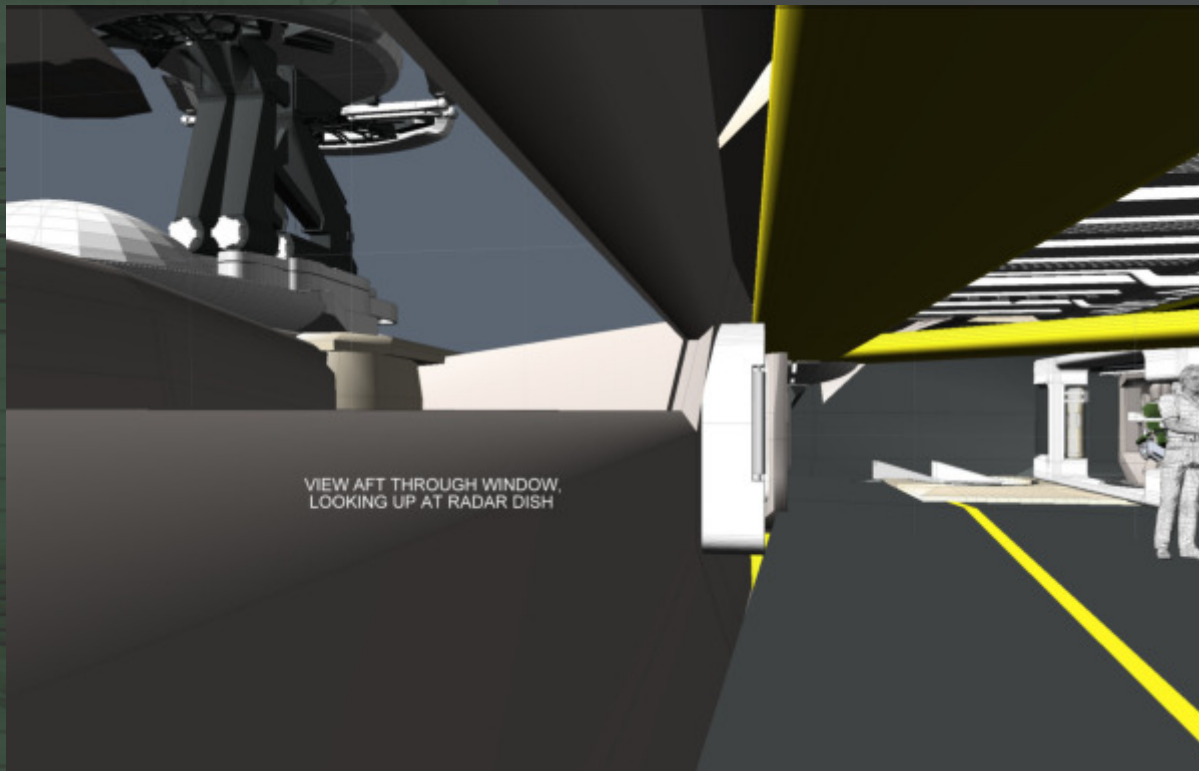


**RC:** I added windows to the side room that makes up the engineering room and hallways. There's a forward-facing window in the front hall and an inboard-facing window in the room itself.

I also started to detail out the engineering room. It's very rough, but starting to get a sense of structure and detail. There's an engineering workstation and some pipes and repeated detail.



Most of the main stuff is blocked in now. I can continue adding the mid and small detail throughout, interior and exterior. If you start to see details you especially like, I can start to copy them and spread them around so not so much of it is custom.



WORKING IN PROGRESS

**CO:** The landing gear: how cool!

**CR:** Yea – very nice! I wonder if it could retract even more? (Maybe the control surfaces can slide in when in space and then be deployed to trail and be used for control surfaces in atmosphere.)

**RC:** Yes, I can make it retract some more. If there is more telescoping in the various parts, it will help compact it down. The downside is that it looks more complex and sci-fi when it does fold into itself too much (which we're nowhere near yet but just something to be aware of).

**CR:** Also, how about ladders instead of elevators for personnel, reinforcing the older tech feel, and just keep a freight elevator for heavy equipment in the middle (seems overkill to have an elevator for one floor)?

**RC:** Gotcha, will go with ladders. I'll keep a freight elevator for upper floor resupply.

**CR:** How is cargo (and people) loaded when on ground?

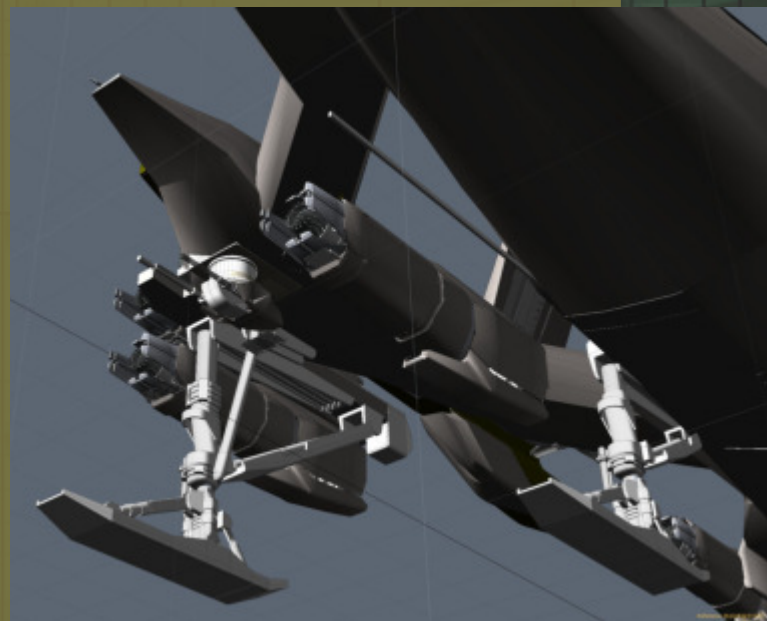
**RC:** I'll get to work on that, but you have the giant rear door ramp (C-17 style) that you can walk up, plus the belly clamshell doors for cargo, then I'll put in a small personnel elevator or two a la Nostromo to get on individually and nearer the front of the ship.

**CO:** Yes, maybe instead of a straight fold up, part of the main base structure collapses, so it could hide more in a basic covered or partial-covered shell ...

**RC:** I'll work on optimizing this so it is a little more 'retracted' when up. I actually like it all exposed though, I haven't seen that before on a spaceship (especially with the landing gear feet acting as control surfaces while atmospheric) and it's less '747' as well. In addition to optimizing the size of the pieces to help minimize the gear overall, I can add some more aerodynamic fairings that, when closed, keep things tidier. I guess my thought was that this thing is so butch and angular anyways that a little bit of landing gear drag isn't going to change things that much.

**CO:** And push out as needed. (maybe a cheat? ... once it's hidden, not worried about actual space or interpenetration?)

**RC:** I'd like to keep the cheat to a minimum if we can. Somebody's gonna have to go in there and do the real engineering/moving parts and I'm sure there will be interpenetration and stuff going on, but maybe we shouldn't start with it that way. :)



WORK IN PROGRESS





OVERALL



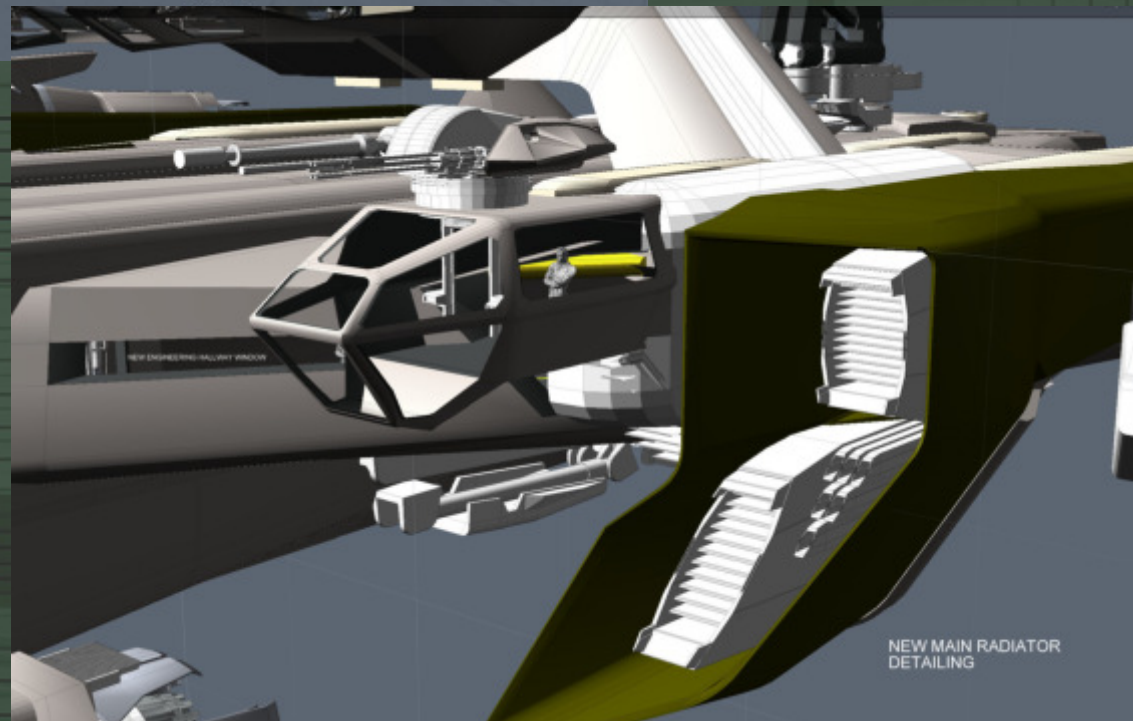
WORK IN PROGRESS

**CO:** Also: Fireman Pole!

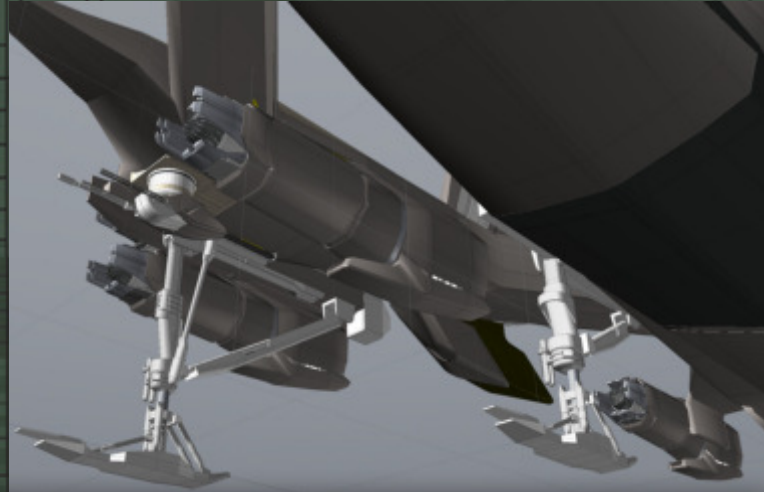
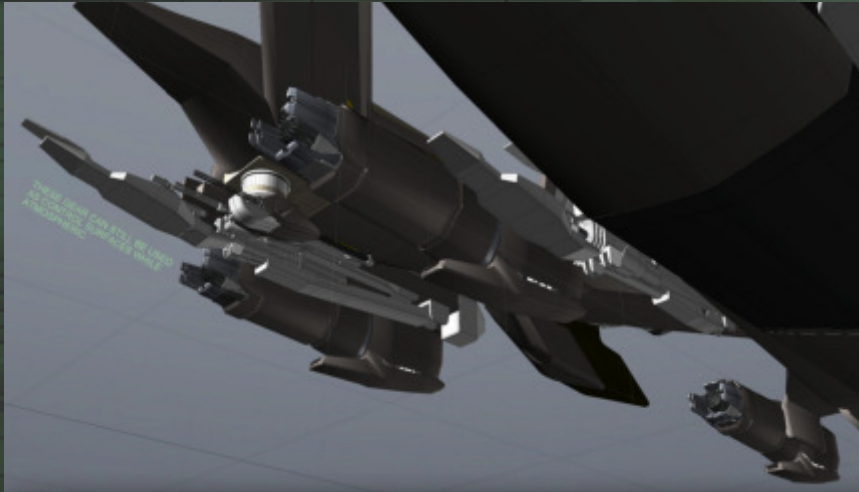
**RC:** Love it!

**CO:** Your scale-reference contemplative human model needs to make a cameo in the game.

**RC:** Ha, totally! I wish I could take credit for that guy, but I got it from somebody a while back on some show and can't remember where he came from! Yeah, I like that he just kind of stands back and surveys the progress.

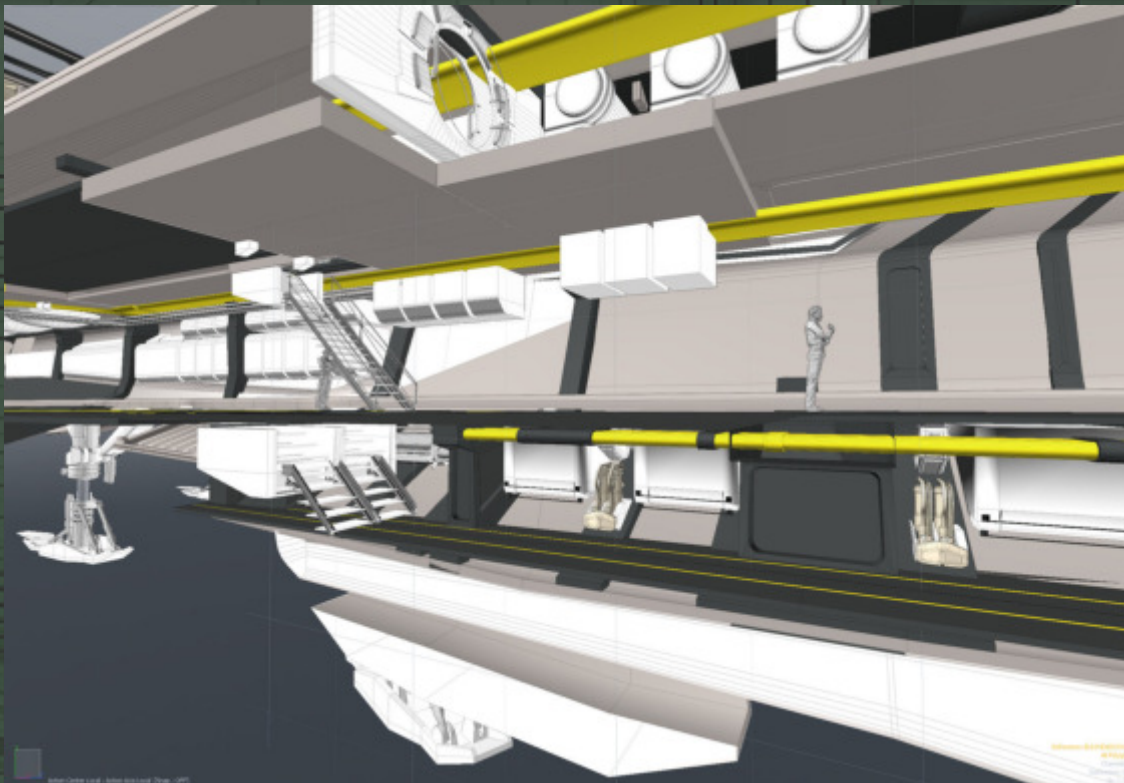


NEW MAIN RADIATOR  
DETAILING



**RC:** Landing gear are more detailed, less bulky, and have an improved retraction geometry that lets the outboard ones still function as control surfaces in atmosphere but take up a lot less room when retracted. Now some of the

points where they attach to the hull can slide forward as they retract, which lets them take up a lot less room. They also do some nested retracting as they come up.

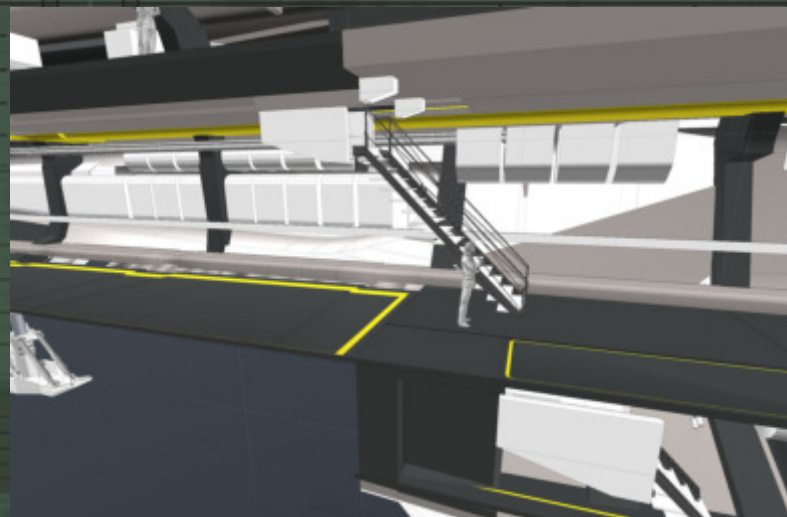
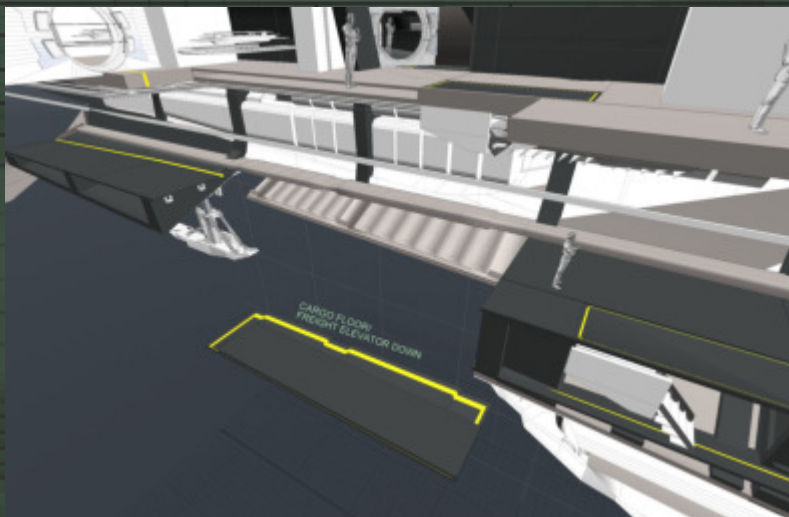
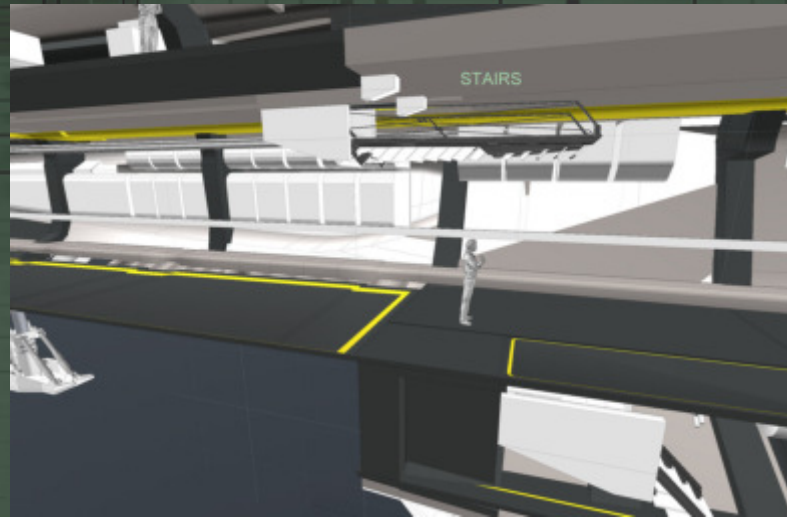
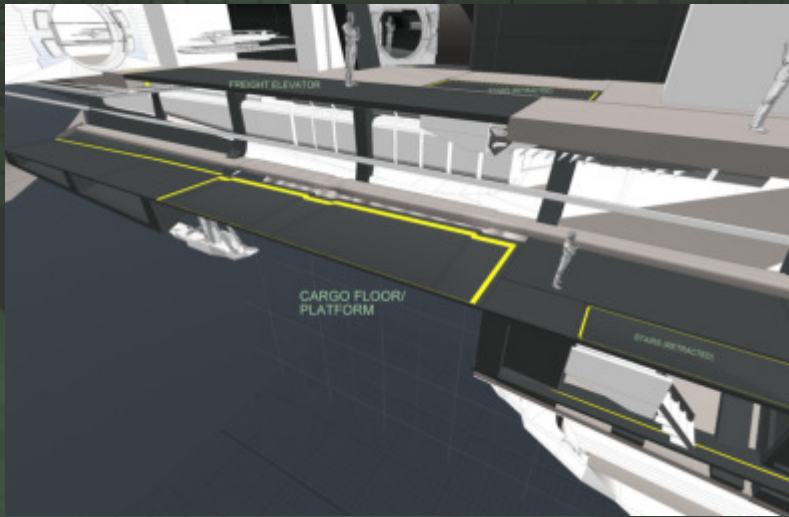


WORK IN PROGRESS



RC: I've added retracting ladders that connect the hangar floor to the top floor. Sliding airtight doors connect the top floor and the hangar floor.

Also added a small stairway accessed via a sliding door in the hangar floor. This leads to storage under the hangar and some control or maintenance for the rail gun.



WORKING PRINCIPLES



SINK

TOILET



SHOWER HEADS

**RC:** Additional detail throughout, mostly storage and details along hangar walls.

Bathroom detail.

If this is all working I think that's the last of the basic functionality that needs to be added, other than boarding stairs that let you get into the ship, separate from the rear folding door to the hangar deck (C-17 style). So I can just continue to detail: cockpit, gunnery stations, halls, cryotubes, mess area, displays, exterior engine articulation, etc.



WORK IN PROGRESS

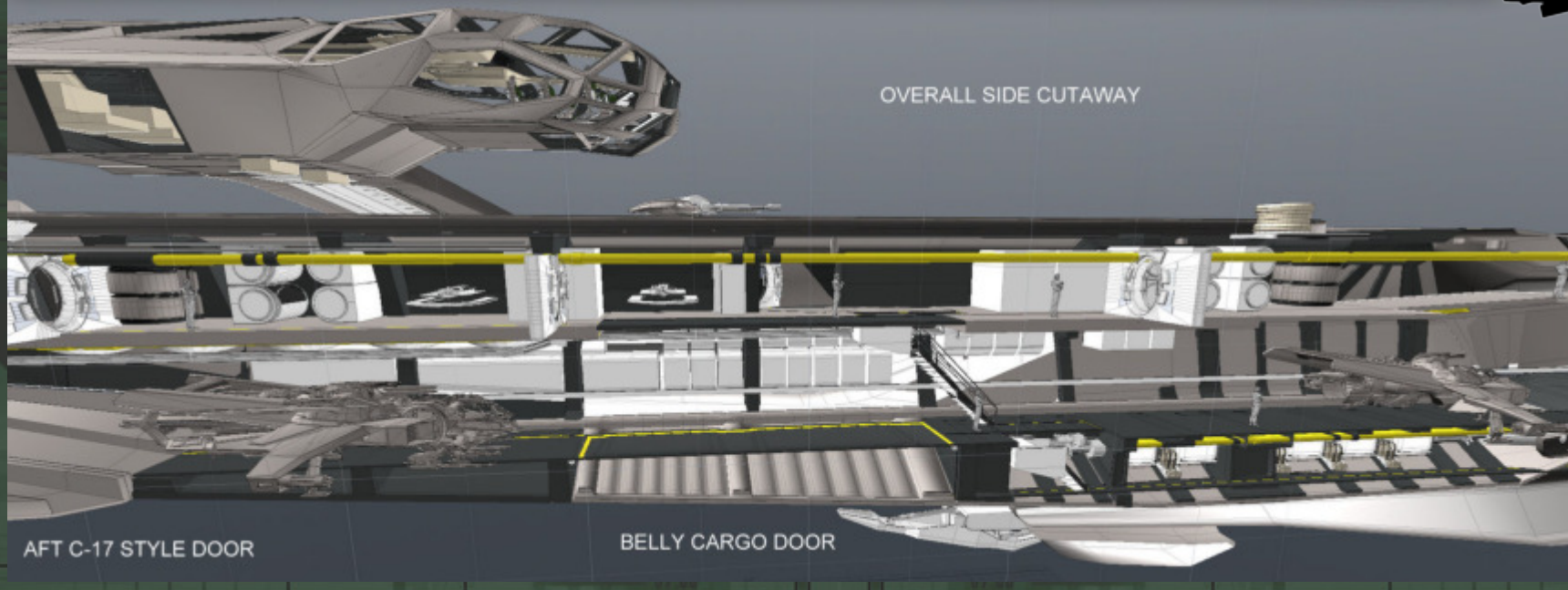


**CR:** Seriously AWESOME!

I don't have any particular notes other than I'm looking forward to you finishing the detailing and doing a few paint-overs. I think people will flip for her and I can't wait to fly her in the game with a few friends. The carrier is

cool, but this one feels like you and about five friends could have fun with it!

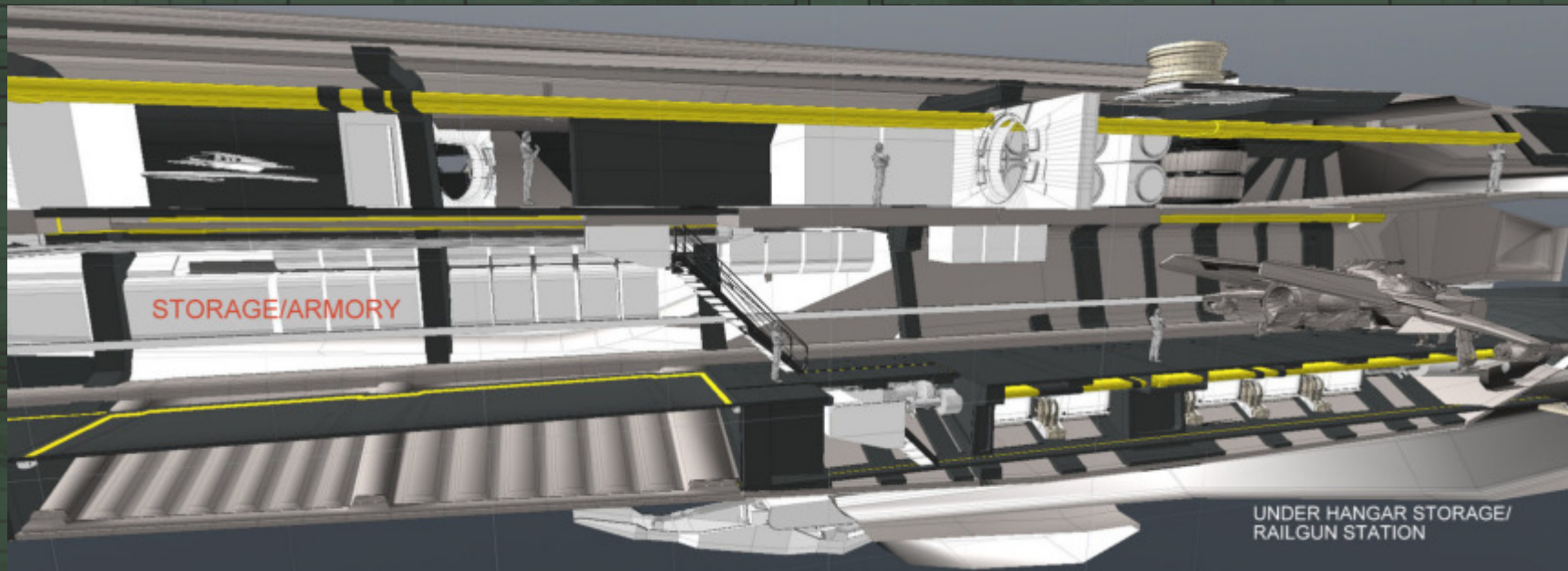
**RC:** Sounds good! Thanks, yeah I think it's working in a fun way – big enough to do your own thing but the right size to actually get in and run everything.



OVERALL SIDE CUTAWAY

AFT C-17 STYLE DOOR

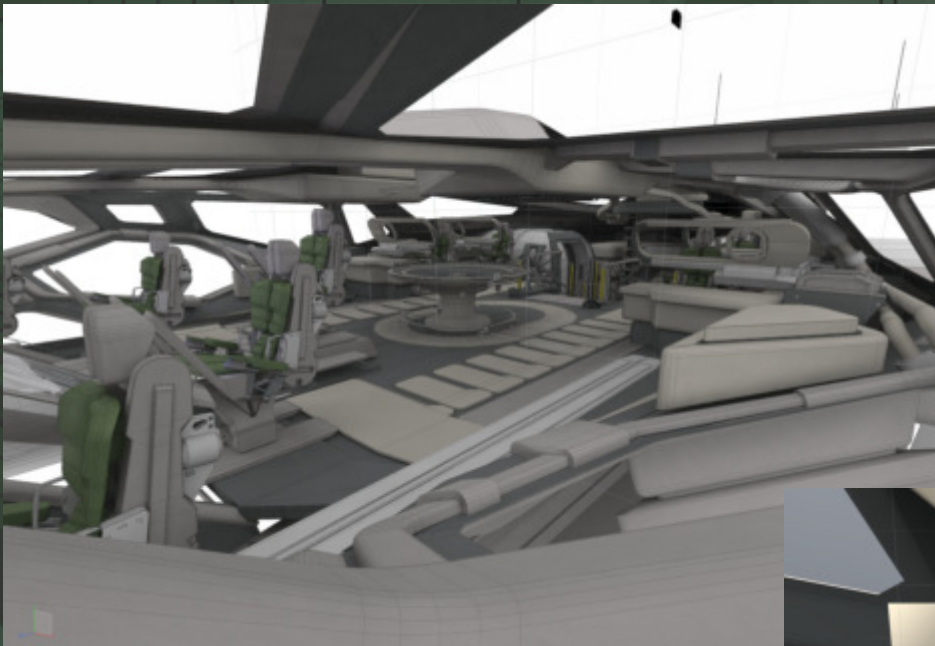
BELLY CARGO DOOR



STORAGE/ARMORY

UNDER HANGAR STORAGE/  
RAILGUN STATION

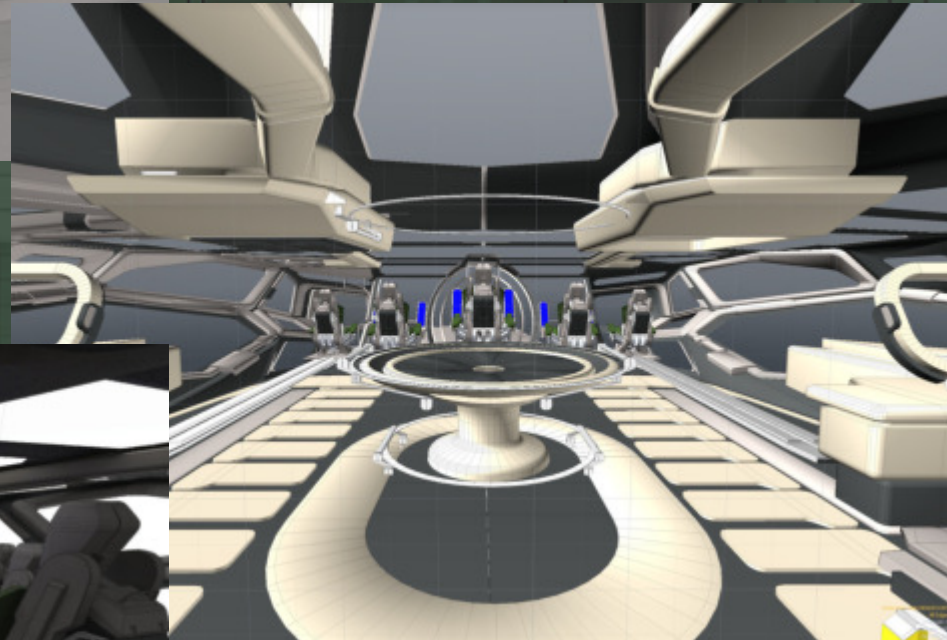




**RC:** These detail out the bridge and kitchen area. It's to the point where I think any smaller additional details would be best handled in a paint-over. That would show a lot of smaller details and panel lines, controls, buttons, displays, etc.

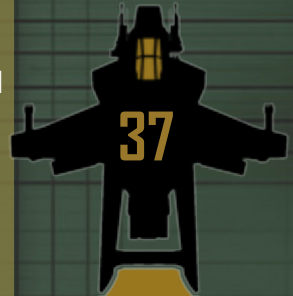
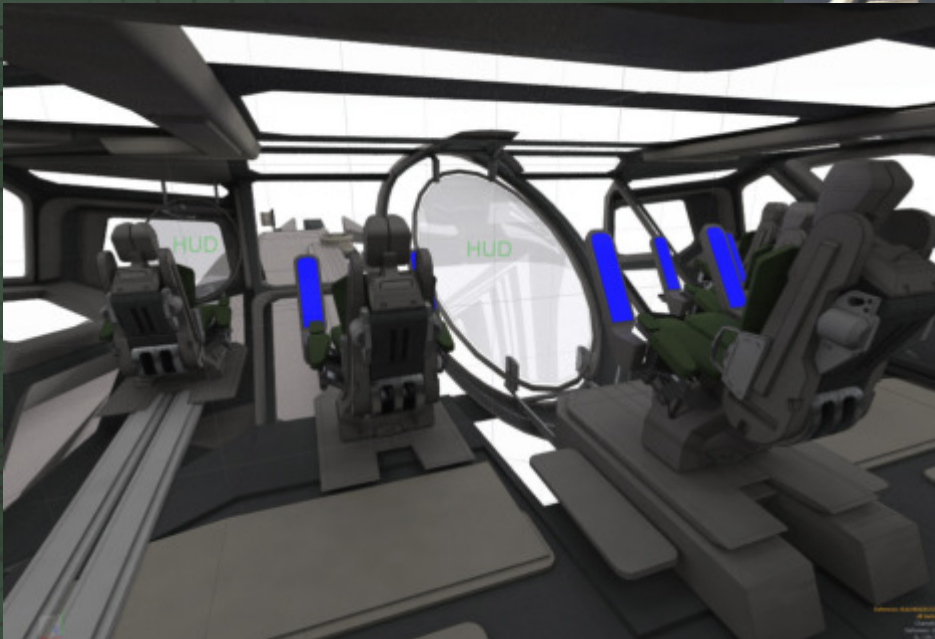
I'm set to continue detailing the rest of the ship interior/exterior to this level, keeping in mind that this is by far the area with the most specific/highest concentration of geometry.

**CR:** Looks great! Continue on – can't wait to fly this thing into battle!



**CO:** Very nice!

Feel free to start calling out with annotations on the images anything you think will move or animate, and noting with arrows what you think the basic movement or function would be, so we can start thinking about those things on our end.

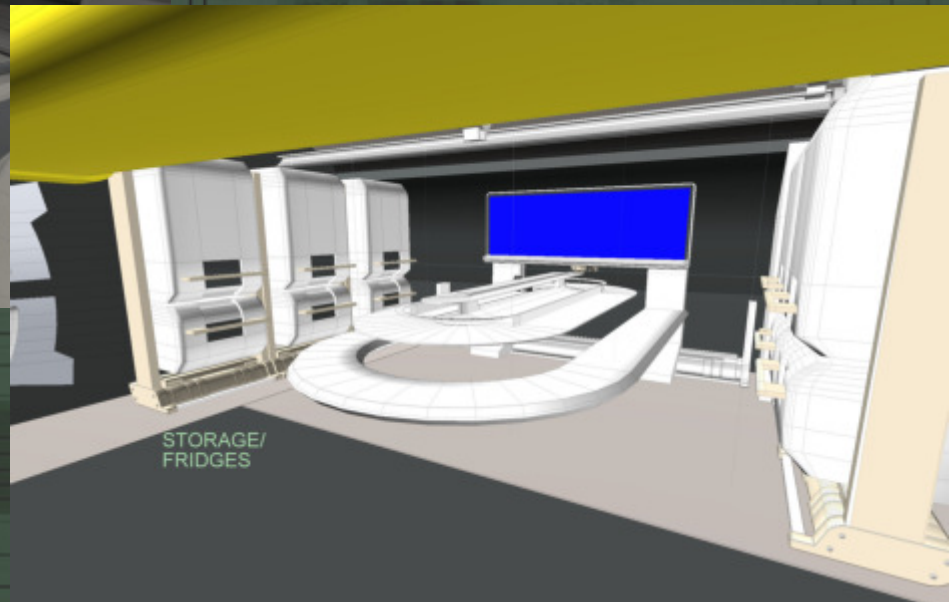
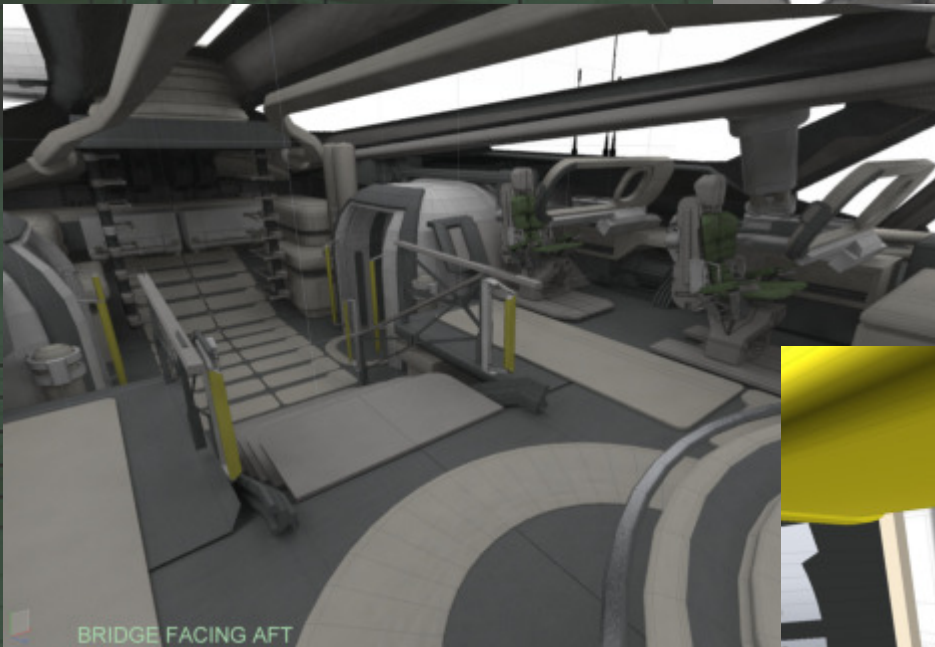
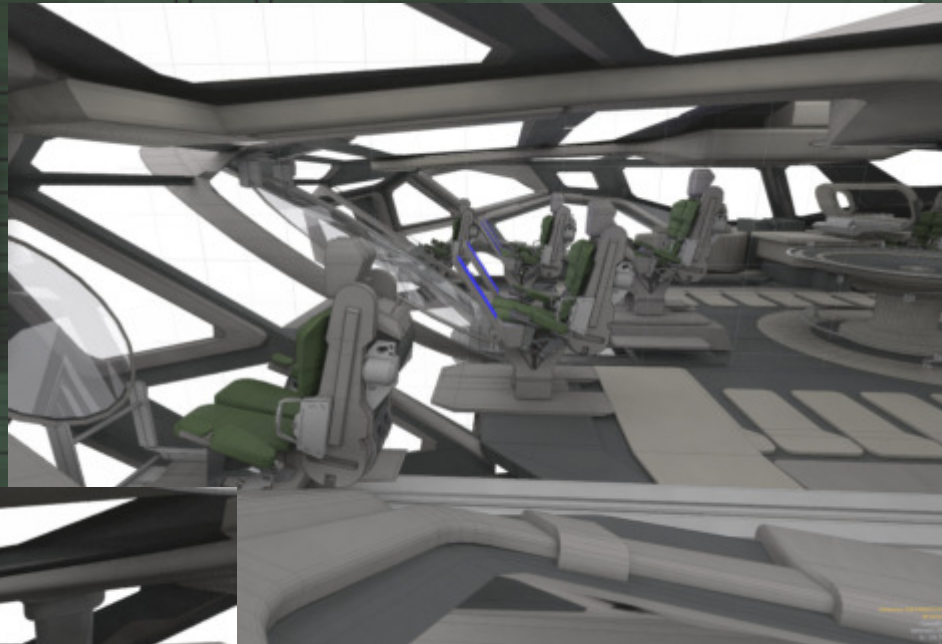


WORKING PRIORITIES

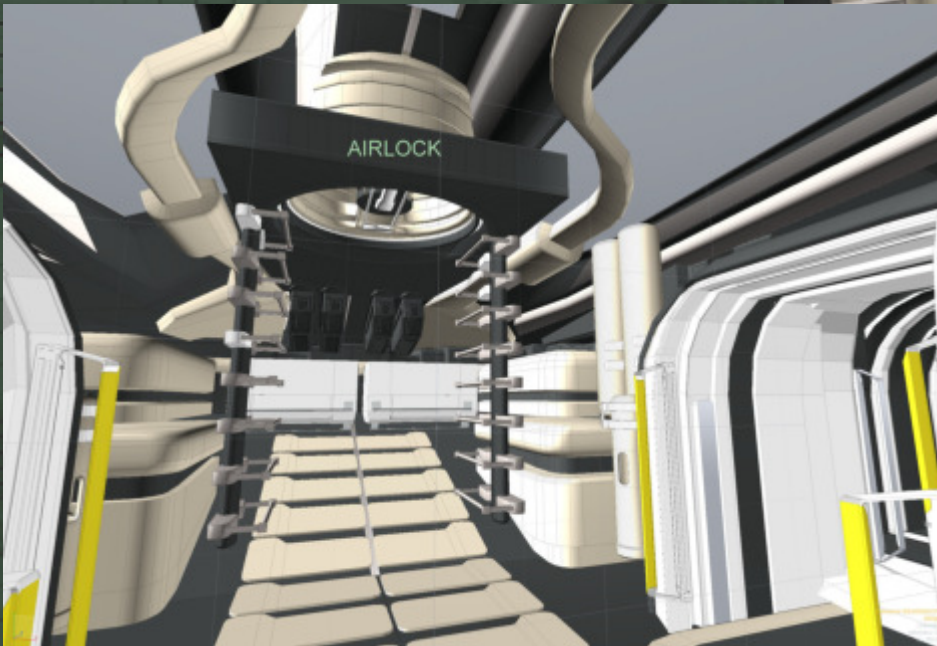
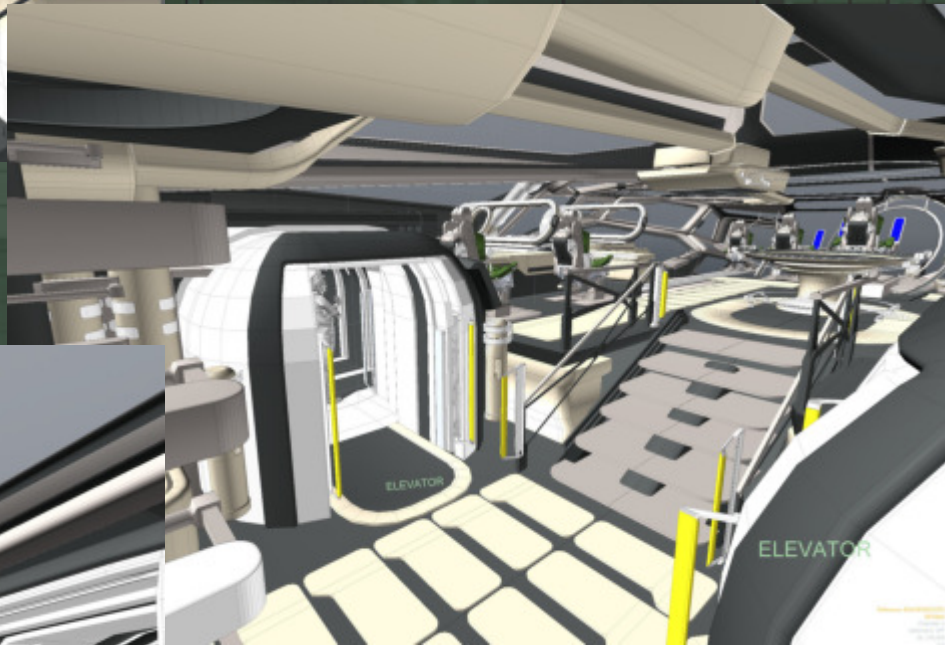
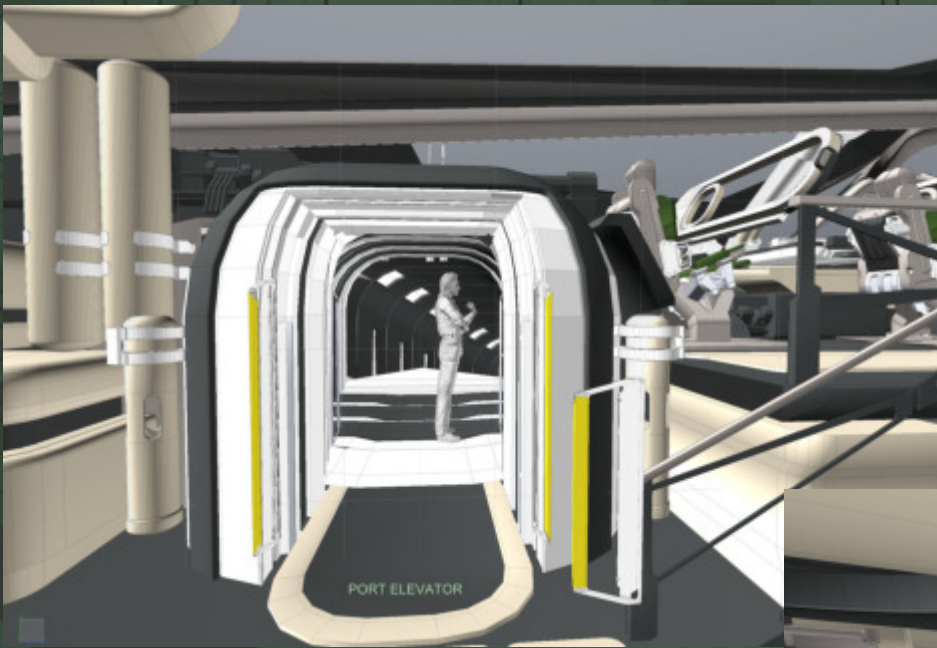


CO: Very nice!

Feel free to start calling out with annotations on the images anything you think will move or animate, and noting with arrows what you think the basic movement or function would be, so we can start thinking about those things on our end.



WORK IN PROGRESS



WORKING IN PROGRESS



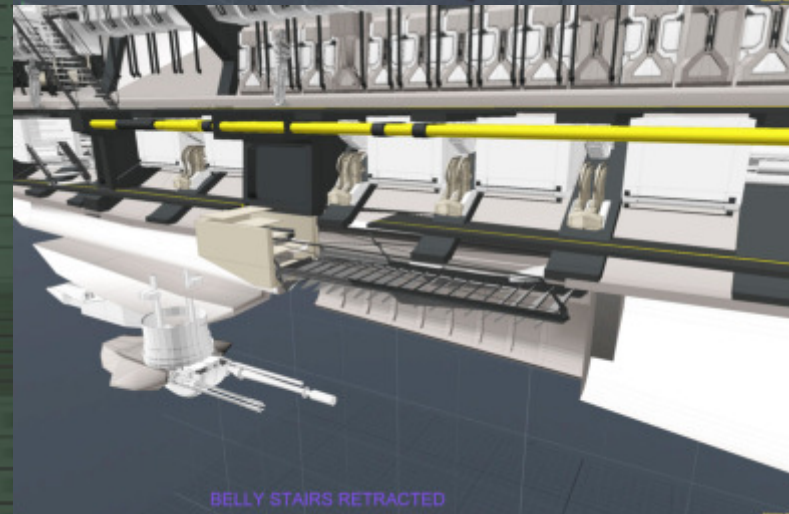
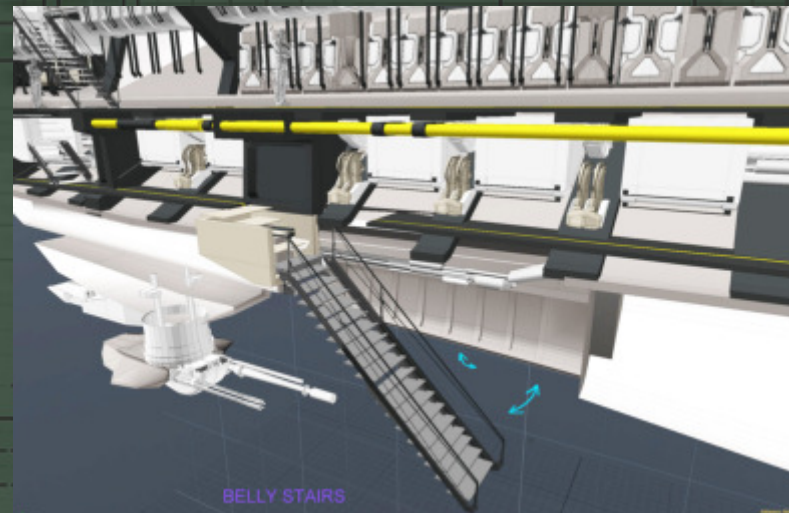
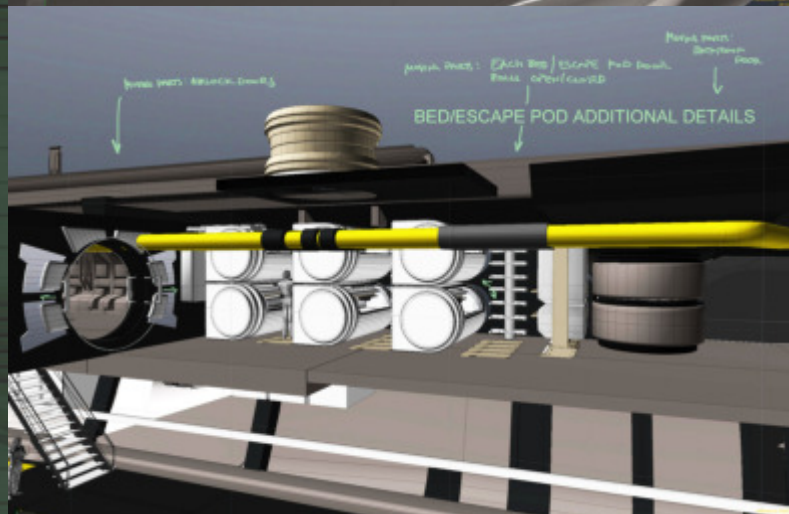
RC: These [pages 40-42] are getting a lot of the details done. It's starting to feel like a real ship now. Lots are repetitive, most of which looks good to me, but let me know. Modular is good, but trying for a realistic blend of modular and specific areas is trickier. Let me know if there's anything you think is missing, room-wise.

You'll see the cryosleep/bed/escape pod area detailed inside and out. My thinking is that the big doors will open up and they will eject out the sides, six per side. Each of the cylinders fires out of the holding structure, each in kind of a bunkbed formation.

There is a lot of new wall detail and storage space. Wall detail is repeated techie sections, panels and handles in the upper floor and down on the cargo floor.

Added a belly door/ladder for personnel to board.

On the cargo floor, you can see that a lot of the walls are taken up by a compartmental storage system. The storage boxes pull up off the floor when a ship is coming through, but they can also be lowered down on their rails to get into the boxes.



WORK IN PROGRESS

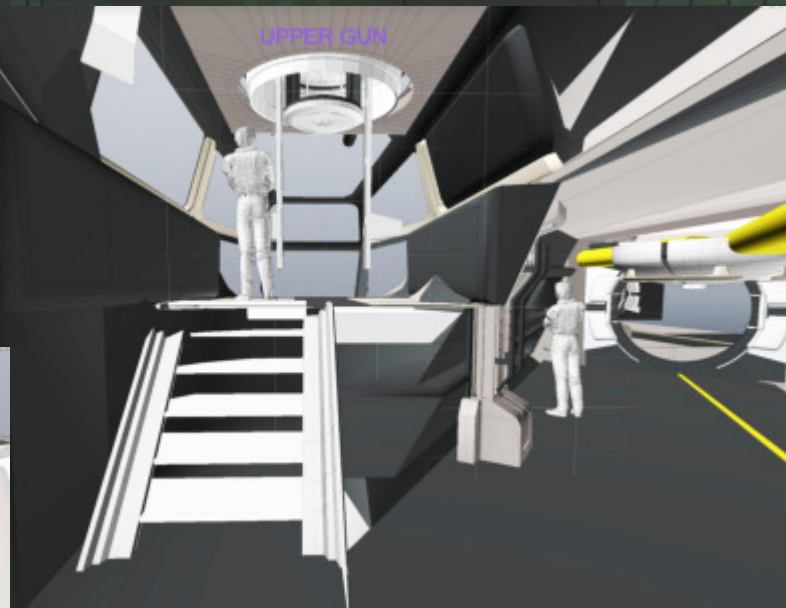




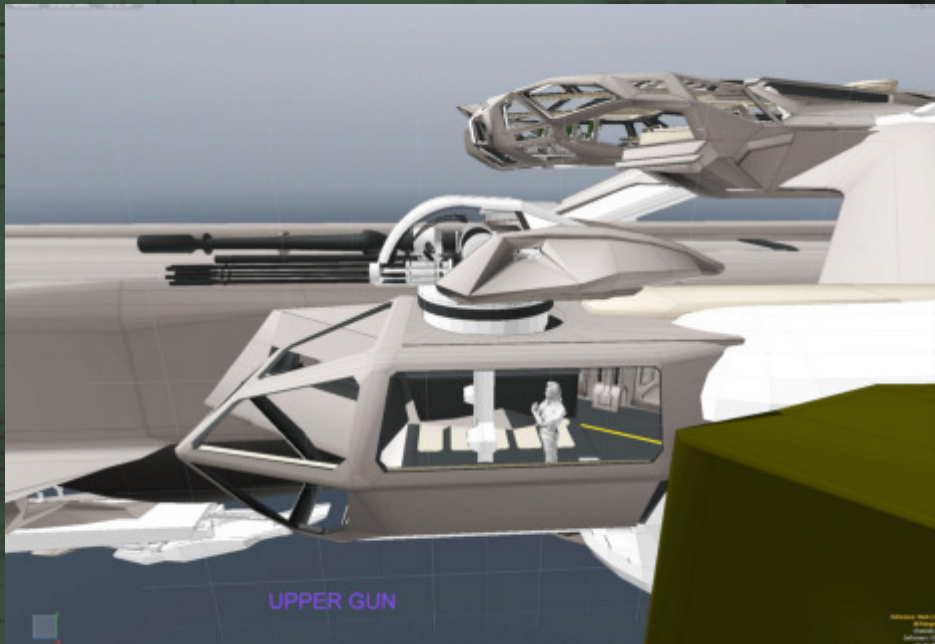
FORE CARGO  
LOOKING FORE

RC: A few questions are coming up as I plan next steps – finishing up the guns, the mechanism of how the belly cargo system works, and finishing detailing the interior and exterior, rail gun, etc.

Would you like the missile launchers to be able to retract into the ship and be reloaded? I think there are 3 options: (1) magic reloading, (2) robotic reloading where an arm reaches up and loads it or something, and (3) where the whole thing can retract through an airlock and be reloaded from inside. Retracting might make some sense in that it could clean up a bit for atmospheric flight.



UPPER GUN



UPPER GUN

RC: Do we need any more windows? There aren't a lot of them now, just the bridge and some in the engineering sections.

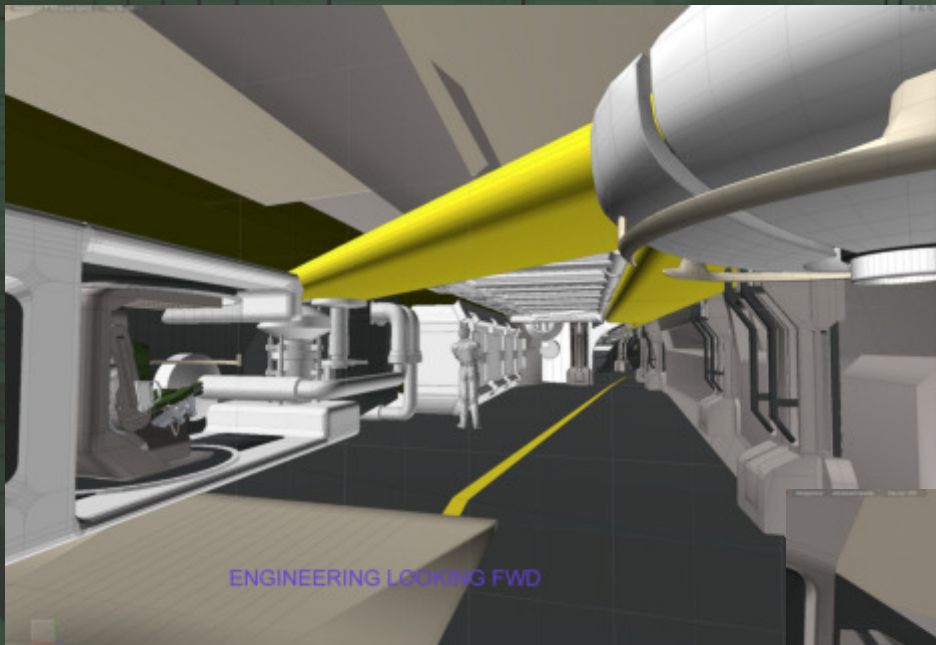
I'm thinking of keeping the exterior skin fairly smooth without a lot of raised panel detail like the Constellation – more streamlined and fewer details, more like an aircraft since it flies in the atmosphere.

Are we missing any rooms or spaces? (Rooftop/ belly observation dome?) We still have room.



WORKING PROGRESS





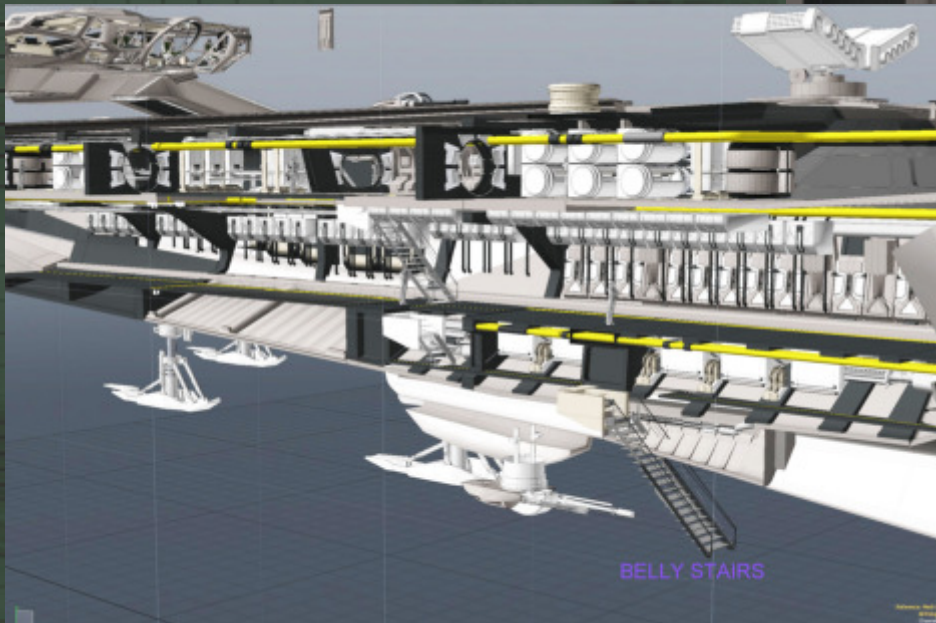
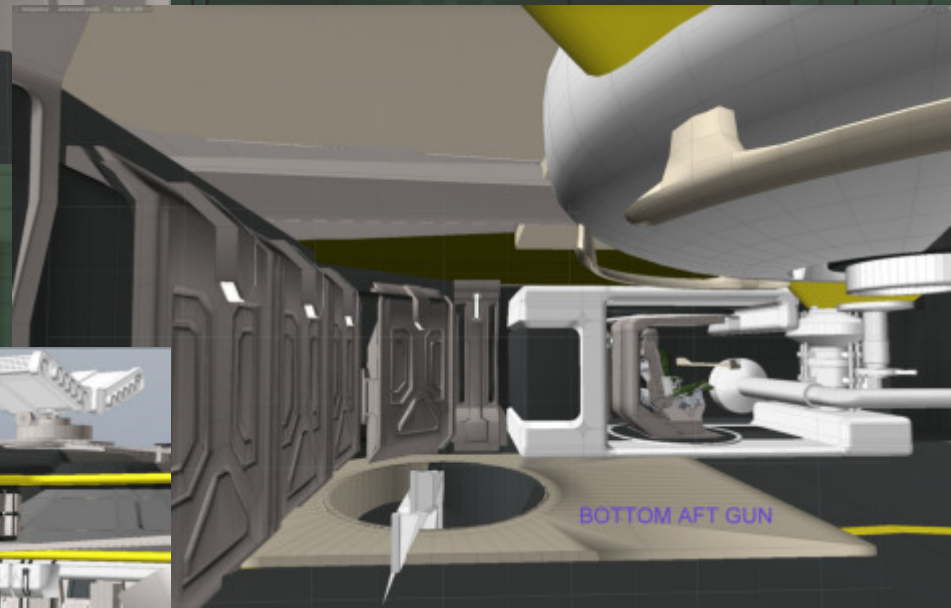
**CO:** You can make an entire exciting game just inside this ship.

Holy crap. Looks very cool!

Love it.

**RC:** Thanks! Yep, the final stretch with all the reality details.

**CR:** Seconded! Awesome work! Can't wait to code up the functionality in the engine – imagine flying this with some friends into a battle. Seriously awesome!



WORK IN PROGRESS

**RC:** Here are more details [pages 43-48]:

- \* Exterior details: panels, relief, conduits, etc. overall
- \* Added RCS (reaction control system) thrusters in multiple appropriate locations.

\* Additional detail to rail gun.

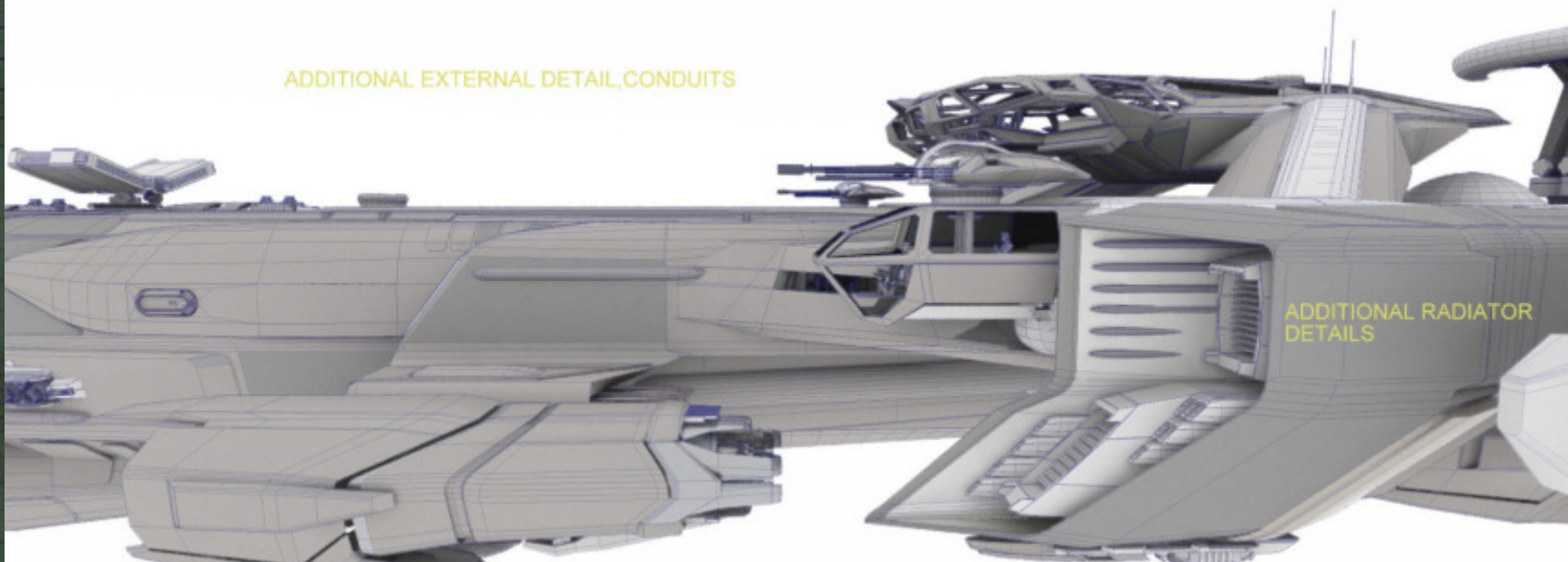
\* Added cargo door functionality.

\* Misc. interior details, hole cutting, fixing intersecting geometry, etc.

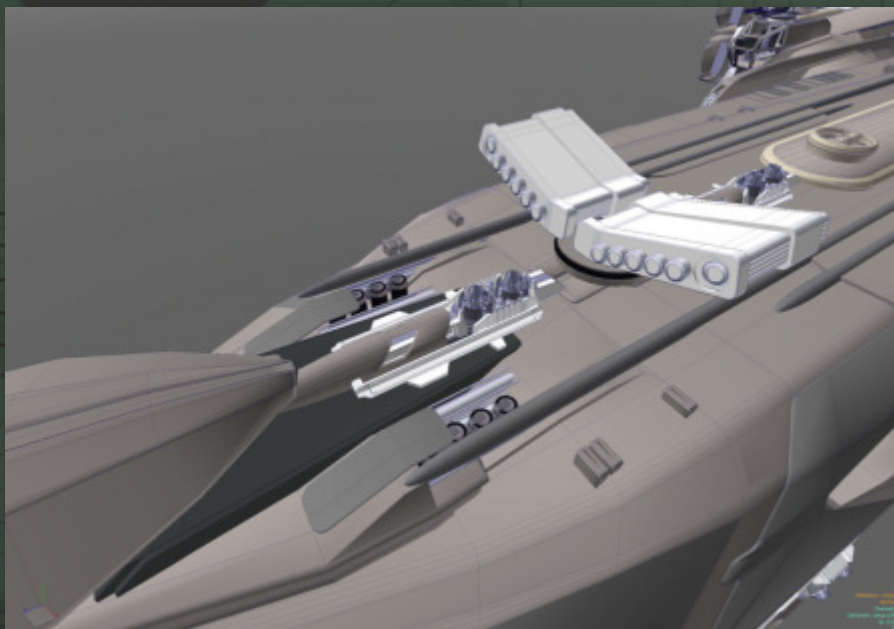
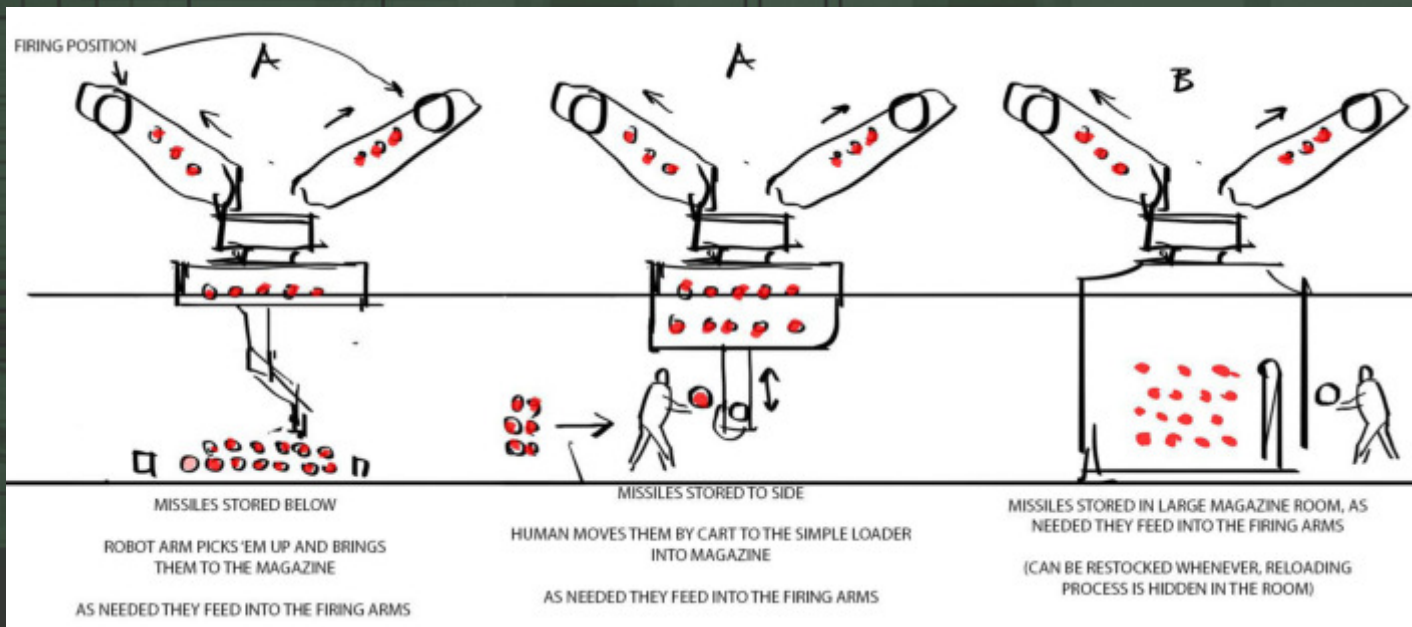
ADDITIONAL EXTERIOR DETAILS



ADDITIONAL EXTERNAL DETAIL, CONDUITS







**RC:** Let me know what you think. There's not as much detail per square foot as the smaller ships, but there aren't too many blank walls or surfaces and it has a decent feeling as far as not being too repetitive (except in the hangar bay which is a modular space intentionally). Of course, textures

will take it a lot farther.

There are a few quite blank areas, the extreme nose and tail are among them. I can blank these off, repeat stuff I already have or turn them into something. The tail is a tiny space, but if you want something specific in the extreme nose let me know.

One question I have is how you want to handle the missile launchers. I've attached a sketch with some options, all of which assume you want to be able to reload them and keep track of how many you have. If not, we can just leave it as is and not ever show the reloading. The last option, making them retract into the hull, would be the hardest. This would require a lot of work and need airlocking and all of that.

Back to the overall detailing, I could get the detail density up, or maybe get right into sketching over what we have here and having somebody else do the modeling.

The model's in Modo, so let me know if there are any technical considerations I need to know about to get it to you guys in good shape.

Ok, thanks, let me know any more questions or whatever!!



WORKING PROGRESS



**CR:** This looks GREAT!

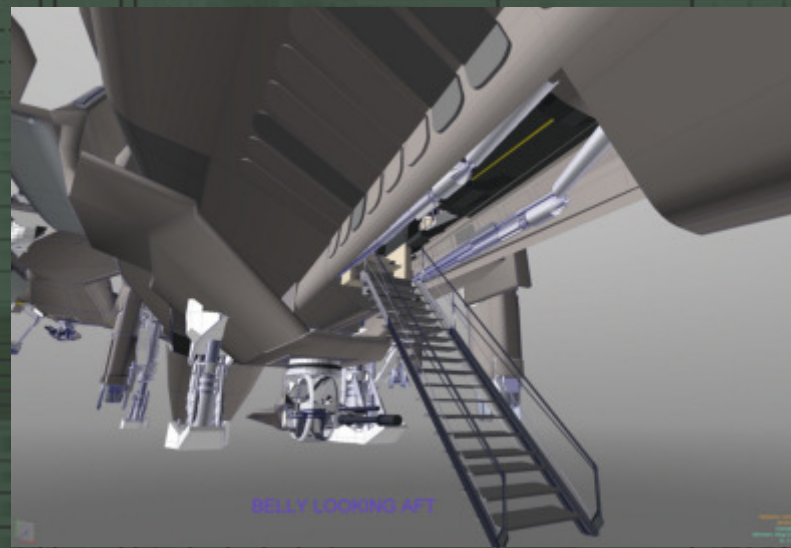
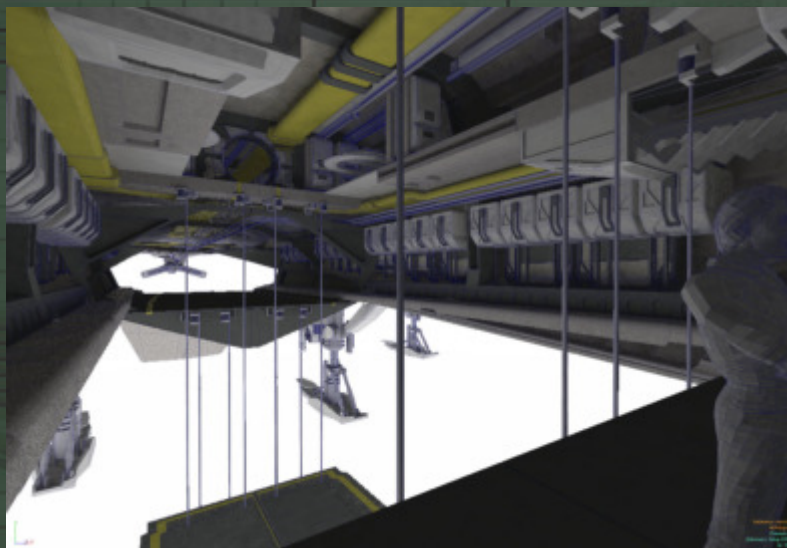
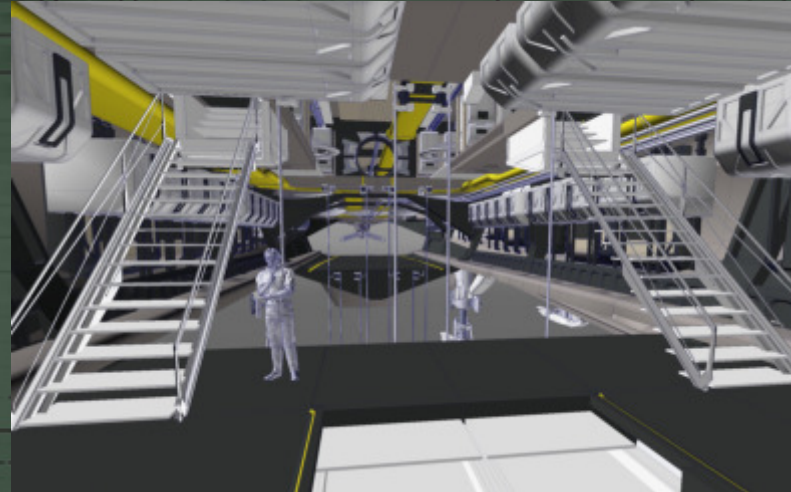
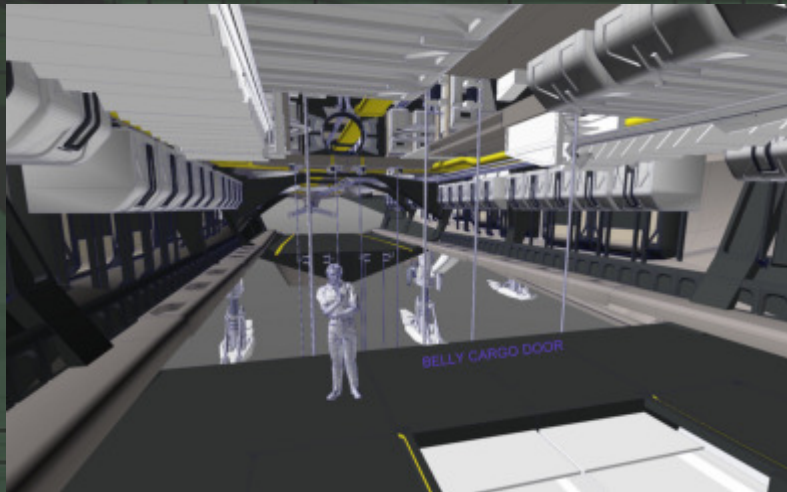
I don't have many comments other than I wonder if we need the platform in the middle that lowers on the wires / rods (belly cargo bay), when you have a rear hatchway that lowers and can be used for loading and unloading. The wires / rods of the belly cargo bay seem like they might not be strong enough, and also look like they would get in the way of the operation of the hangar deck.

**RC:** Ok, we can go either way with this. Here's what I was thinking:

Cables are very strong, much thicker even than those you see on cranes that load container ships, which can make them a good way to raise/lower the platforms.

Belly bay allows access to the large space between the nose and tail doors; it can be filled with cargo even when two smaller ships are in the hangar bay.

Belly bay also allows not only the hangar bay to have an "elevator" platform, but for the top floor to have one as well – so you can load big stuff up there without having to carry it upstairs: food, missiles, etc.



WORK IN PROGRESS



**CR:** On the missile reloading front, I think it would be cool to have a missile feeder that is exposed below in the decks – kind of a belt-driven feeder that you can place missiles on and they get fed into the arms above. It would actually be good to make a gameplay element out of it – if you have multiple people on the ship, several of them can make sure the missile turrets are reloaded as they fire.

**RC:** Sounds good, will do. I'll also put racks along the

walls nearby for storage of additional missiles to be loaded as you describe.

**CR:** On the overall detailing, I'm good with whatever way you want to take it – if you just want to do paint-overs for the final level of detail / texture information, that's ok as we always have a certain amount of re-modeling / clean-up of your meshes to make them as efficient as possible in the engine. If it's simplest to model the extra detail, that's cool, too!



WORK IN PROGRESS

**RC:** Yeah, it's always best for me to model detail (especially repeated detail) before starting the final detail /texture paint-overs, so I'll continue like that.

**CR:** Also I think it's worth it for you to take some time to illustrate / detail how you envision various parts animating (turrets, rail gun, missile launchers, stairs, hull doors, etc.) as that's very helpful for both the animators and the engine modelers – it helps them know what parts they need to break up for animation.

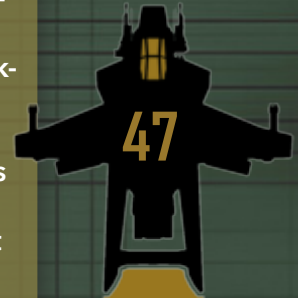
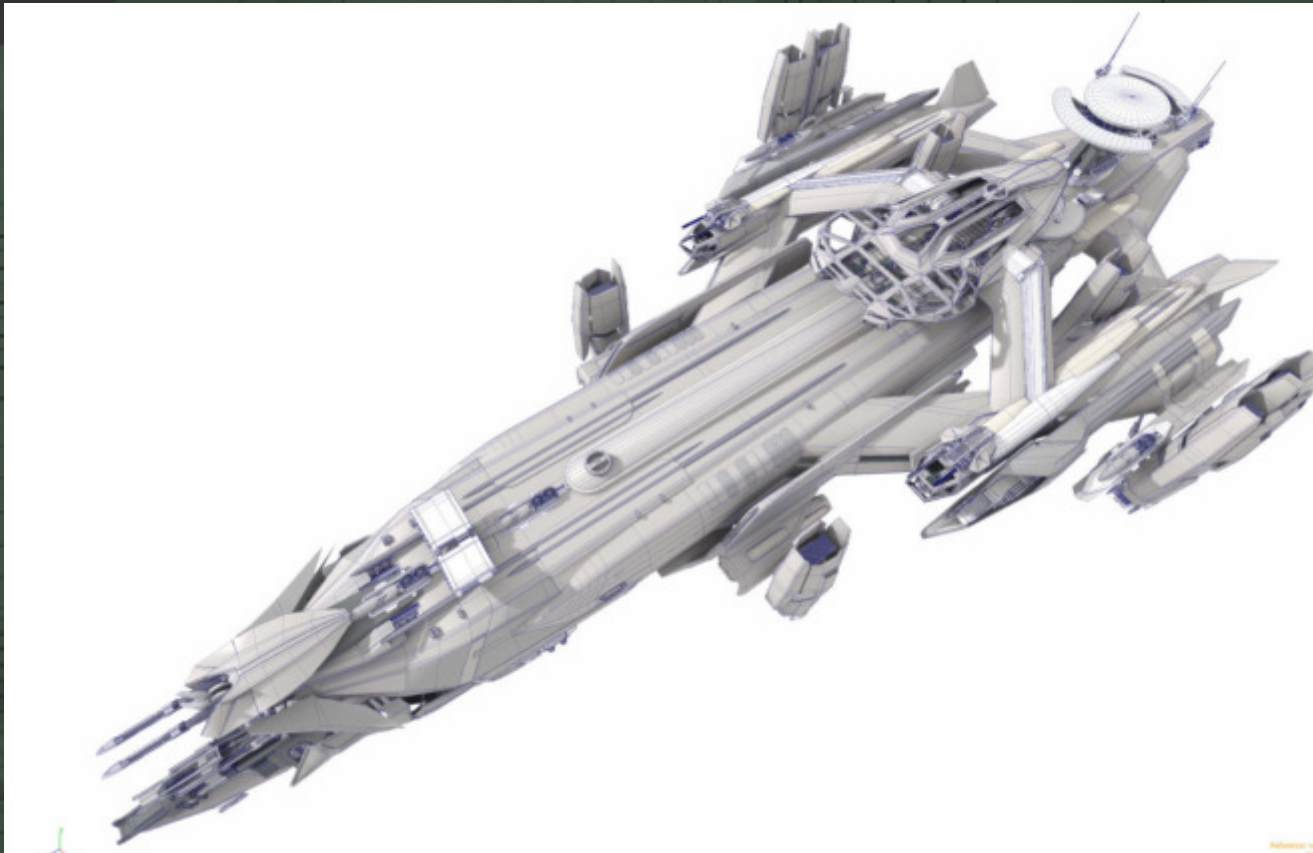
**RC:** Will keep this in mind and do it as I do the paint-overs/detail sketches

**RI:** The ship looks fantastic. Man, that thing is packing some power!

We need to start thinking about where all of the other parts go on the ship (power plant and the like).

I notice it has landing gear and VTOL capability, which implies landing on planets. I guess it's time to establish whether or not we're going to let the small capital ships (Idris & Starfarer) go planetside, or if they are limited to orbital docking only. Right now, the Idris would blow out the hangar dimensions, as it is so much more massive than any of the other ships – 2½ times the length of the Caterpillar, which is the biggest non-capital ship. The Starfarer is only 1½ times the Cat's length, and not much taller, so it could probably fit in a hangar, although it would dwarf the other ships.

Also, to clear up one point: hangars are supposed to be on planets, correct? (with the exception of the asteroid base, which is only sort of a planet) So if the bigger ships can only dock in space, we'd need to make the biggest hangar on a space station or something similar, in order to allow access for the big ships.



WORK IN PROGRESS



**CR:** Power plant is already inside the ship – there’s an engine room with a boiler / reactor contraption that is the power plant.

Corvette and smaller can land on planets (Starfarer definitely so).

Hangars are on planets, with the exception of the asteroid hangar (but I’m not sure how we will work that, as hangars are meant to be safe zones, but if you’re on an asteroid base you won’t be safe). We may need to have some pirate planets that are essentially just very big asteroids but are treated like a planet, versus a vulnerable persistent location (like an asteroid base for raiding trading lanes, or a starbase).

I would imagine that for the Idris, we would need a different kind of extension for it – maybe it always sits on

a landing pad versus being inside a hangar. Perhaps our planet background is modular enough that we can switch out some foreground geometry for a landing pad that can hold it, or perhaps all landing pads should be big enough to hold an Idris (or maybe you can only land on a planet with a big enough pad – which would give a reason for smaller ships to do some runs).

**EP:** Man, are the fans going to go crazy for this.

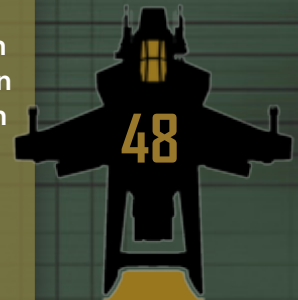
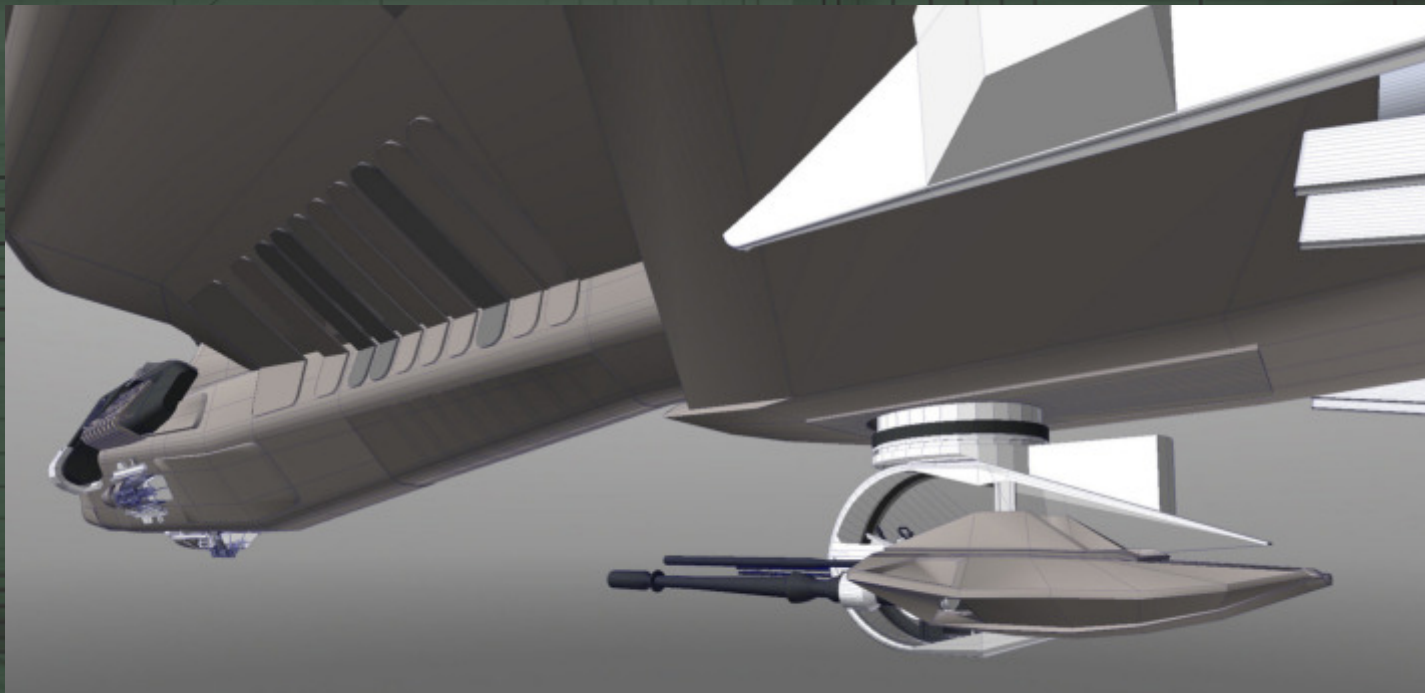
**PM:** No kidding. The people who got these are going to be very, very happy.

**CS:** Looks awesome!

**DH:** Agreed. That think looks pretty boss.

**CO:** All sounds good.

So much coolness to take in, inside and out.

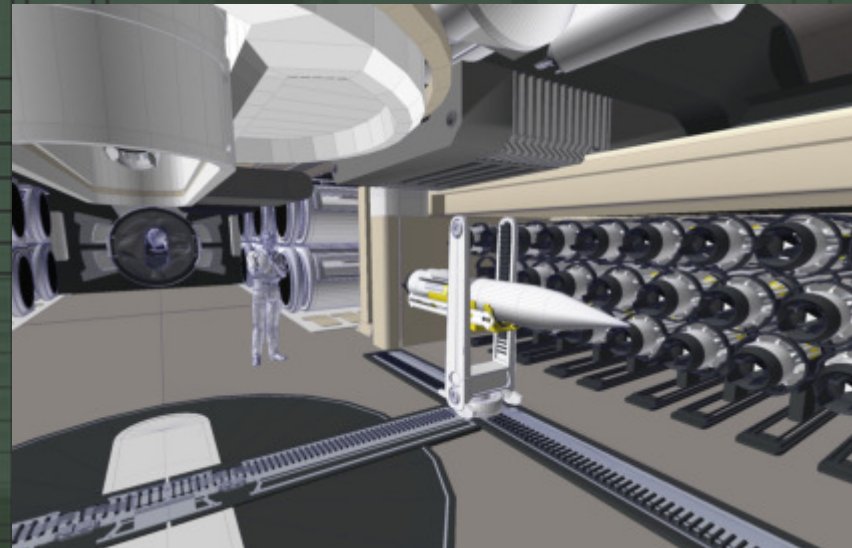
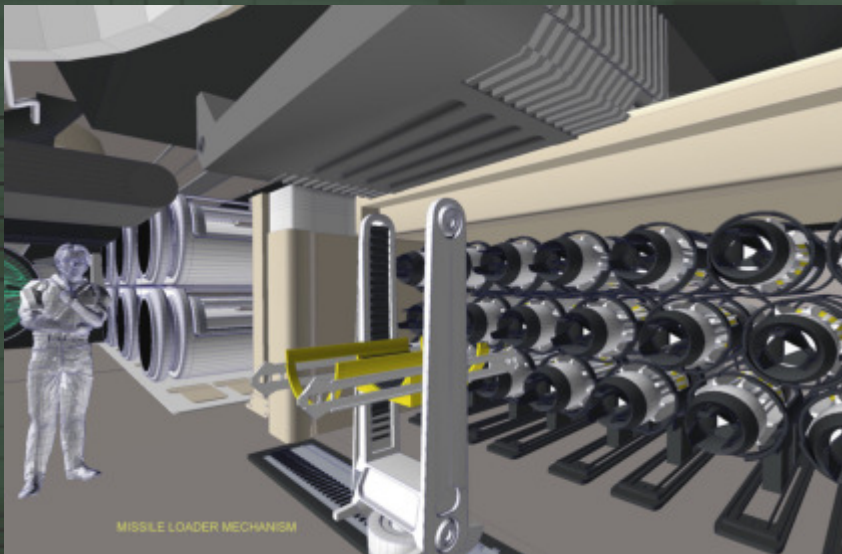


WORKING IN PROGRESS

RC: Chris, these [pages 49-50] concentrate on the missile launchers, based on your last notes. It's not complete but I want to see what you think of the concept so far.

Missing are details and major elements like the mechanism that actually grabs the missiles from the racks and put them on the tracked holder, and also the arms that would be attached to the ceiling and lift the missile up or down into the chamber. Then it goes from the chamber up or down into the exterior launcher.

You can see how the 'loader' travels on the floor on a track and can access either side. If you don't have the tracked loader, then I could see where a character could use either a cart to manually get the missiles to the launcher or two people could manually lift and carry a missile from the rack to the chamber, where the arms would reach down and pull up the missile.



WORK IN PROGRESS





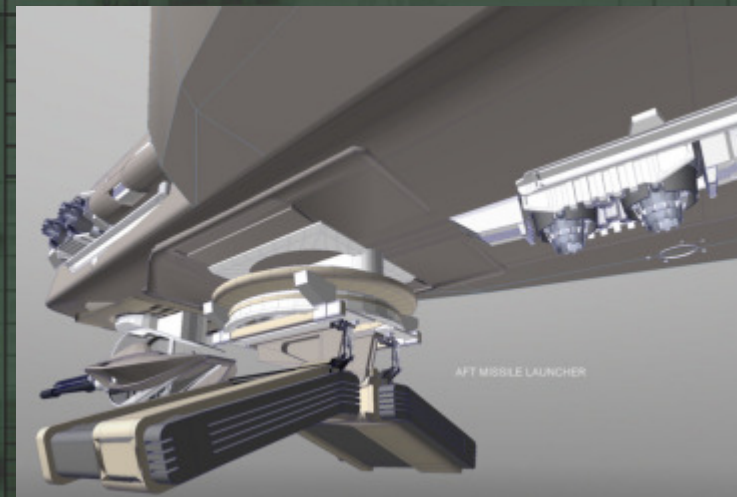
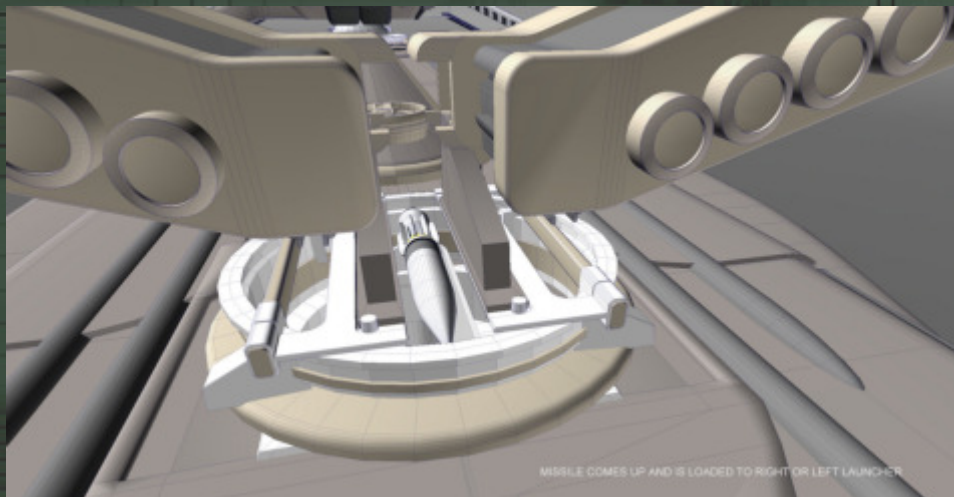
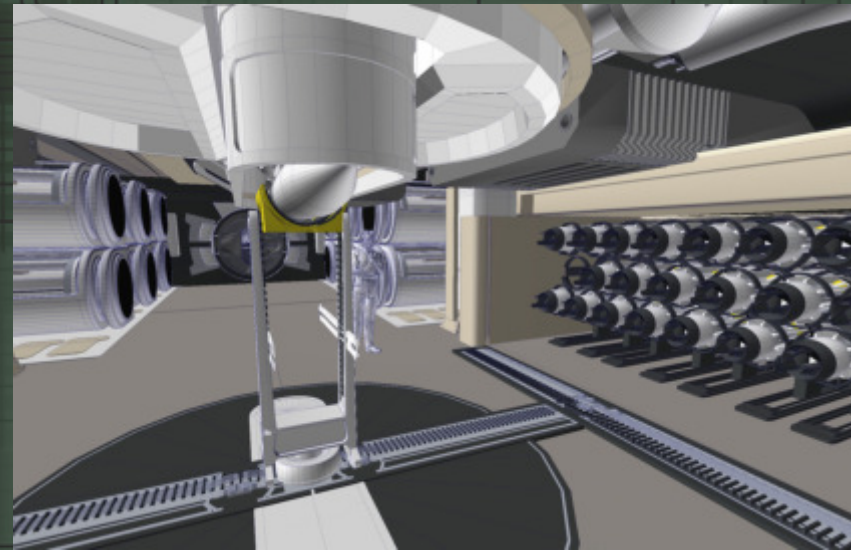
**RC:** Or you could have a missile loading vehicle (or power-loader!).

Also missing are the missile racks for the aft launcher in the extreme aft tail.

One thing we may want to do is put another bulkhead/door separating each of these areas from the next. In other words, another bulkhead/door behind the front missile launcher and in front of the aft missile launcher. What do you think?

I'll continue detailing out the other areas. Let me know if this missile loader/launcher concept is working for you.

**CR:** All looks good to me. I prefer a power loader, as its always best to have a cool bit of machinery the player can activate.



WORKING IN PROGRESS

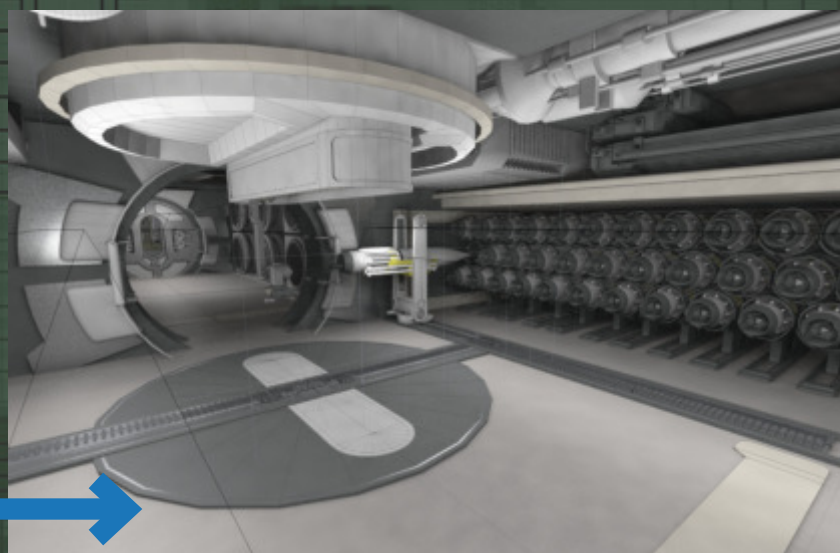
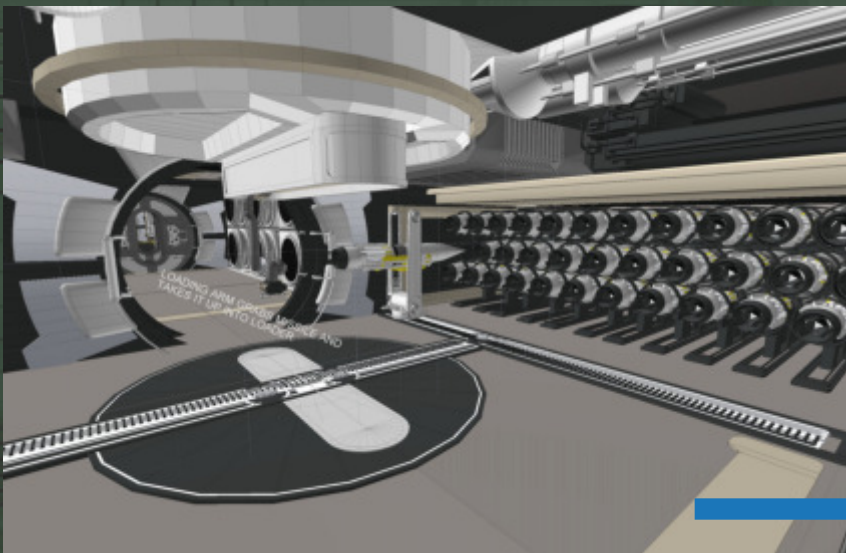
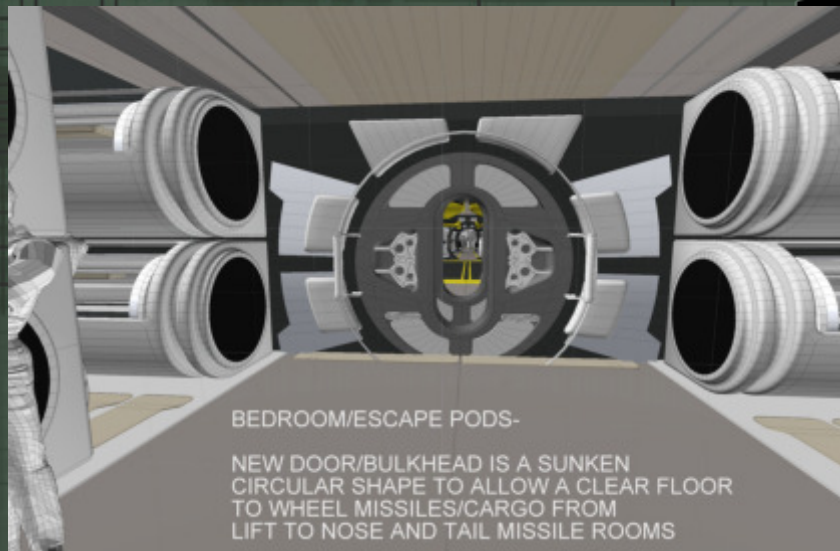


**RC:** These [51-54] have a lot of details added and some major new sections.

Revised/added front missile bay. There's now an arm that comes down from the top and pulls the missile up into the launcher, with added details.

Additional detail throughout, mainly on the upper floor. It's still a bit sparse in places, but textures/graphics will help.

I lowered the large circular bulkhead doors into the floor and enlarged them a bit. This doesn't look as cool, but part of what I was doing is making sure there was clearance to get missiles and cargo from the loading elevator to all of the rooms and the front and aft missile rooms. We will need carts or powerloaders or something to do the heavy lifting.



WORK IN PROGRESS

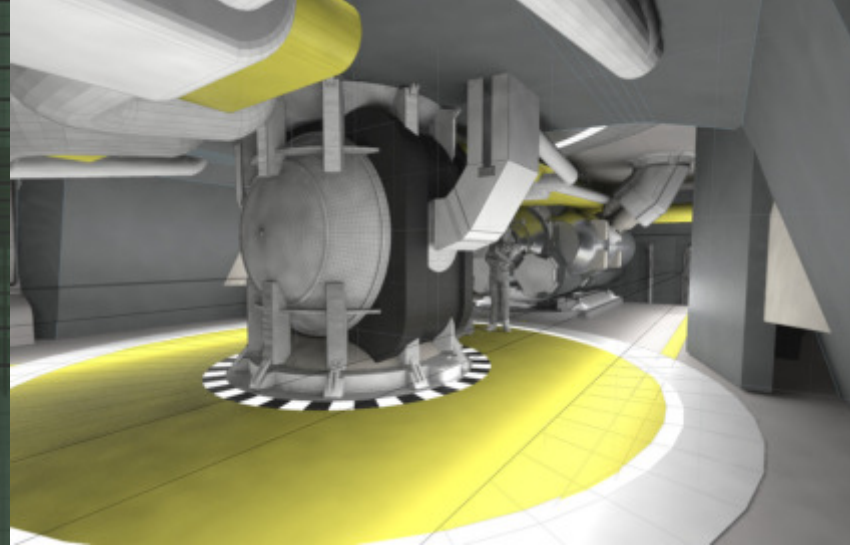


**RC:** Reworked the power plant room for maximum floor cart clearance.

Added a rear bulkhead between the power plant room and the aft missile room per notes. There are two doors in this bulkhead, one on each side of the power plant.

Aft missile room holds almost as many missiles as the front one. There's a tracked loader arm that takes the missiles from their rows on the sides and carries them down the center to the launcher. An arm comes up out of the launcher and takes the missile down into the launcher.

Added and opened one belly and two top docking collars. They're now functional, with the holes cut.



WORK IN PROGRESS

**RC:** Showed how the aft sensor array can retract.

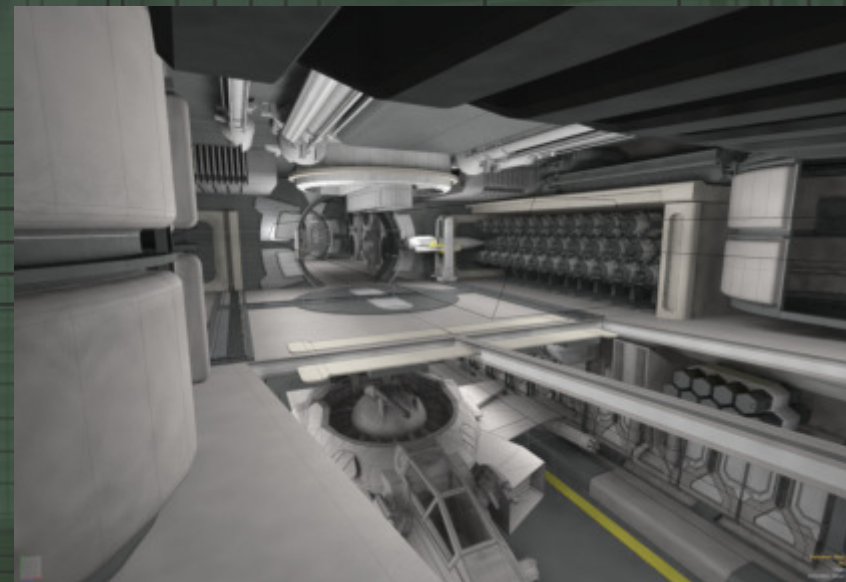
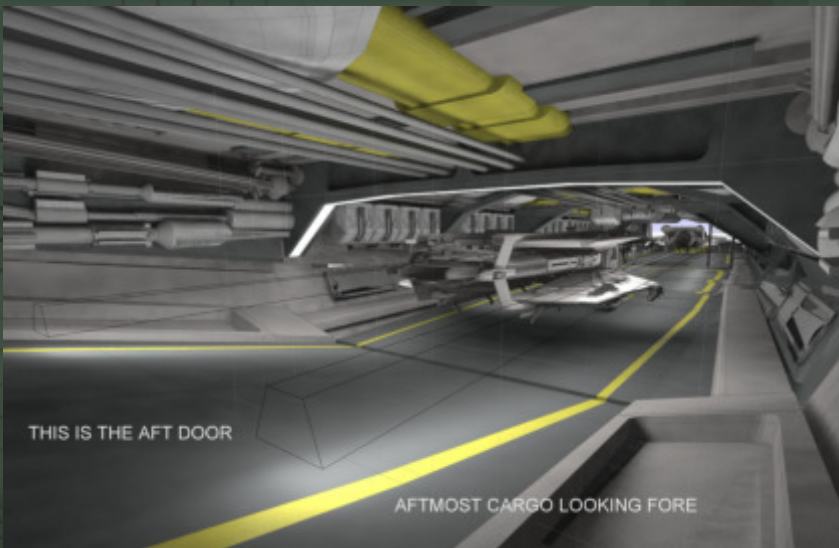
Additional detail in extreme aft cargo bay/cargo door area.

So that may be it as far as geometrical detail for now. I'm going to get to work on paint-overs and renders if that sounds good to you.

I'm thinking it's a civilian ship, so it would be overall gray/metal with some personalized graphics, maybe a big number and maybe a name on it; perhaps some stripes? Do you want it pretty clean overall to look good in a brochure, or some wear and tear that looks tougher? Any ideas?

**CR:** Wow – she looks great!

I would say move on to the paint-overs and renders!

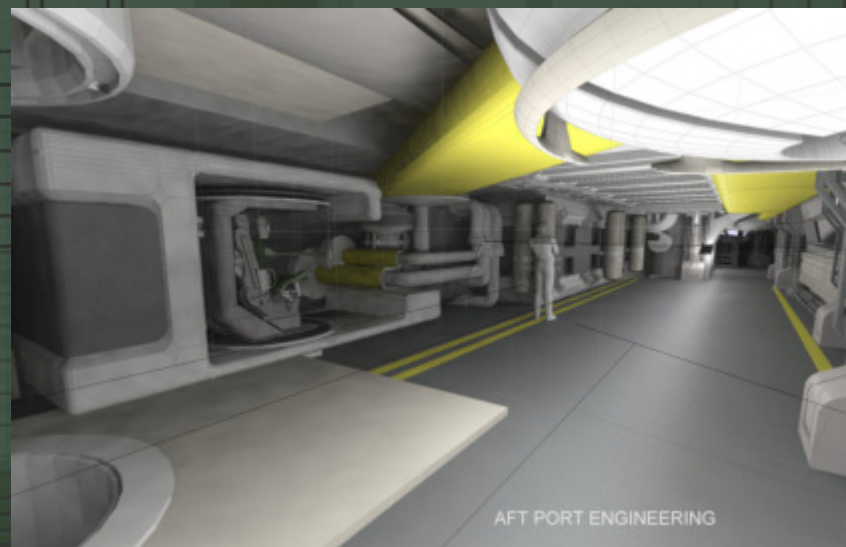
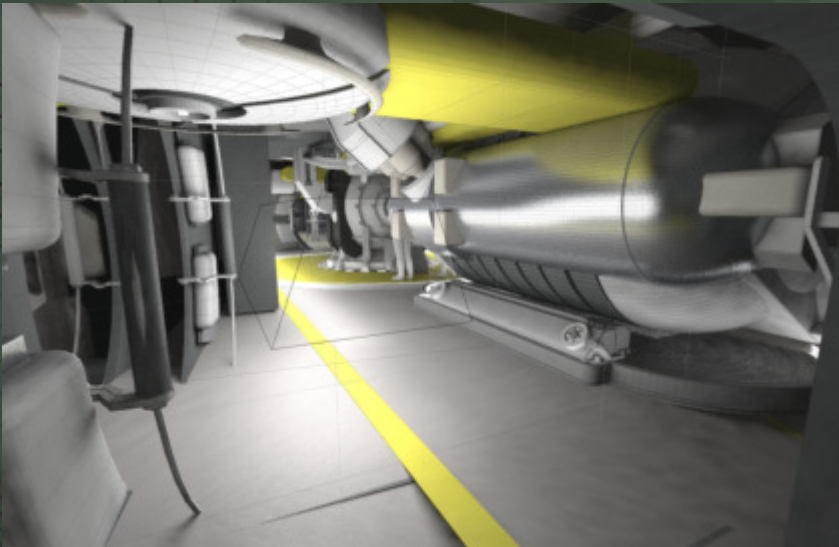
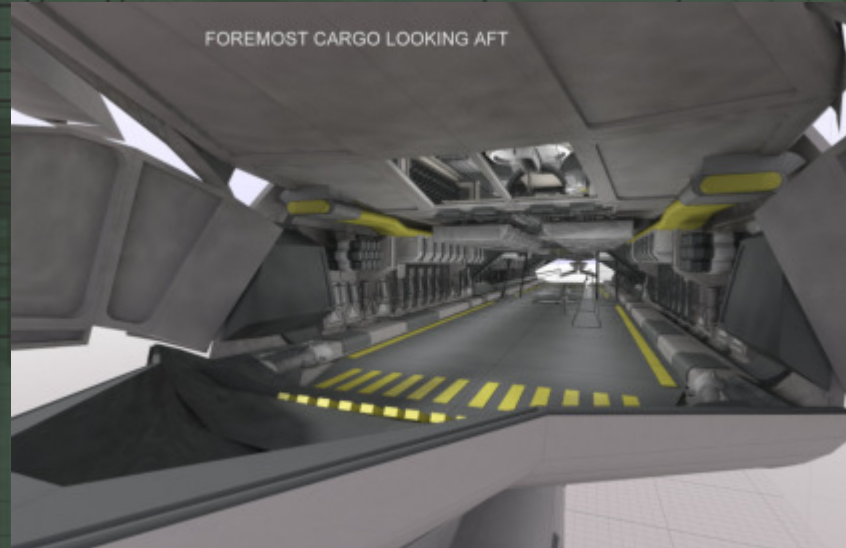




**CR:** We've got two versions of the Idris Corvette – a military version and a demilitarized version. In essence, the two are the same (and have mostly the same functionality), but have a few slightly different features. Would it be easy to do this and have it for your renders – maybe one profile paint-over is the military version and a second has the civilian paint scheme?

**RC:** Chris, yes that sounds doable. To confirm, the default version will be military (the one I've been showing you). I'll get you a side view of the new, demilitarized version with:

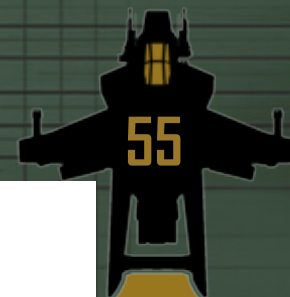
- \* Civilian paint job
- \* No rail gun
- \* Smaller sensor array
- \* Less 'armored' looking, sleeker (by removing the guns and some of the lumps/bumps)
- \* A lot lighter and therefore faster/more maneuverable?



WORK IN PROGRESS

RC: Chries – attached [pages 55-61] are the revisions and new stuff, let me know if anything is missing.

CR: Looks OUTSTANDING! People are going to freak!



MILITARY VERSION LANDED



MILITARY VERSION

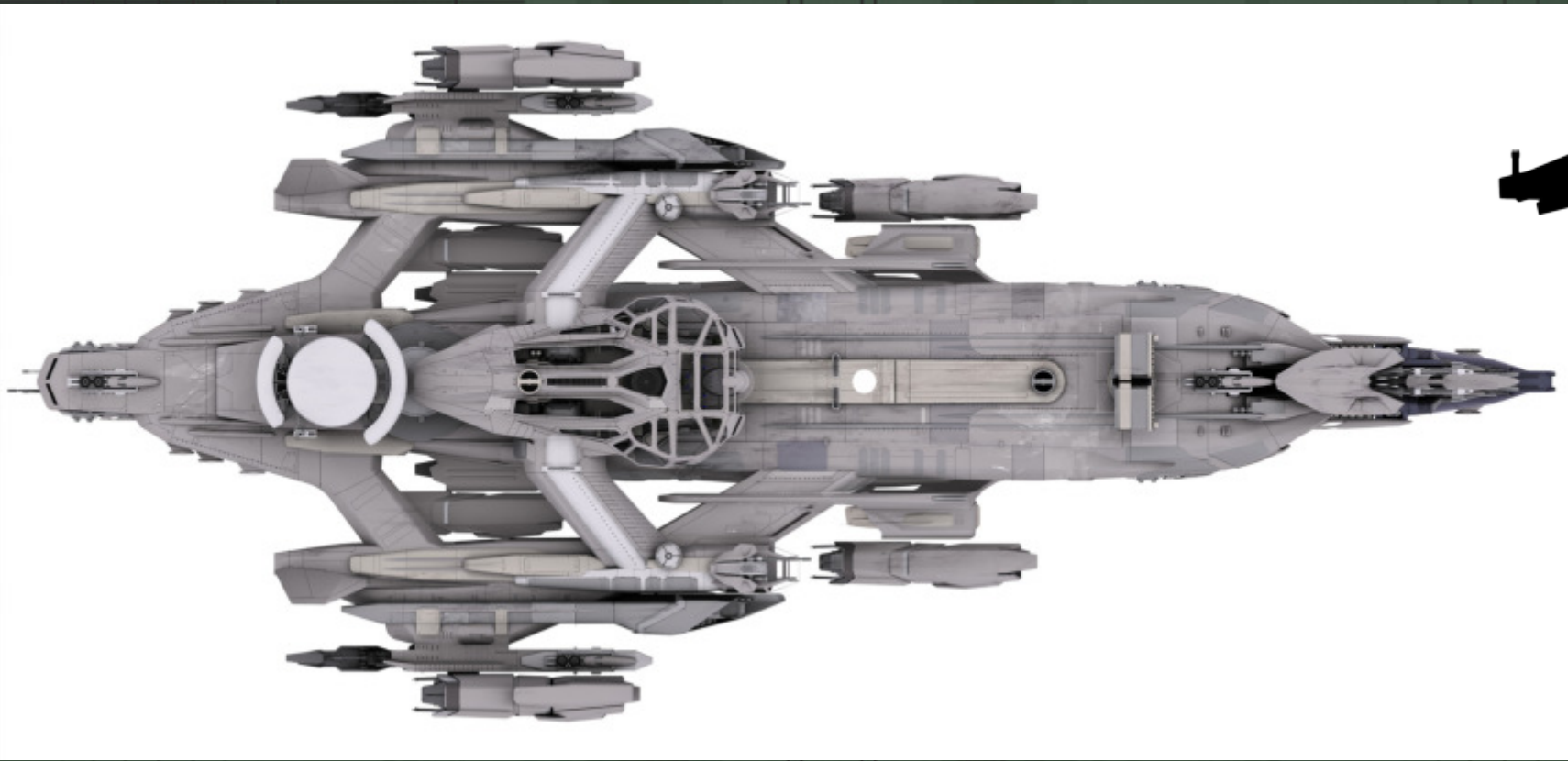


CIVILIAN VERSION

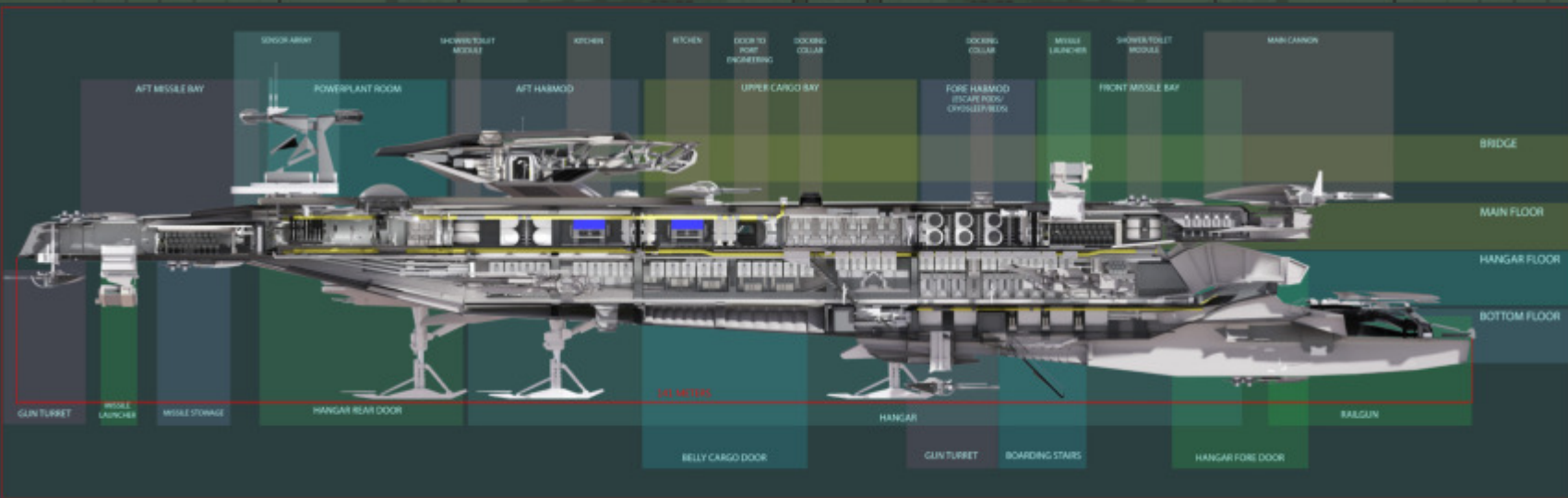


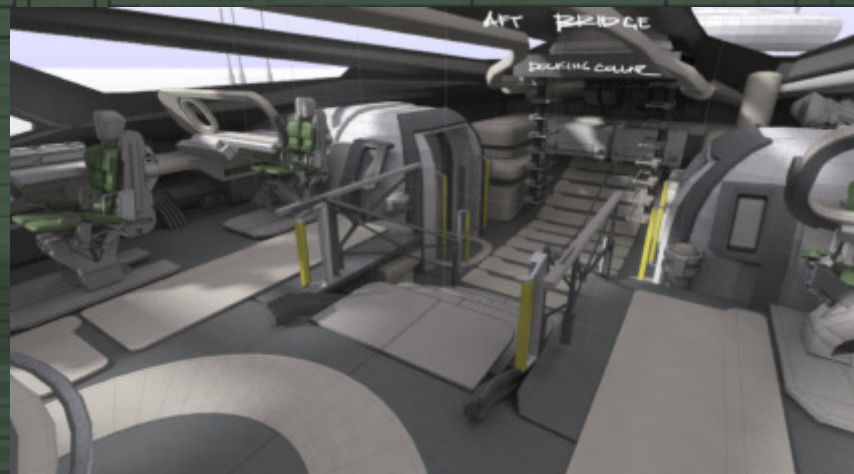
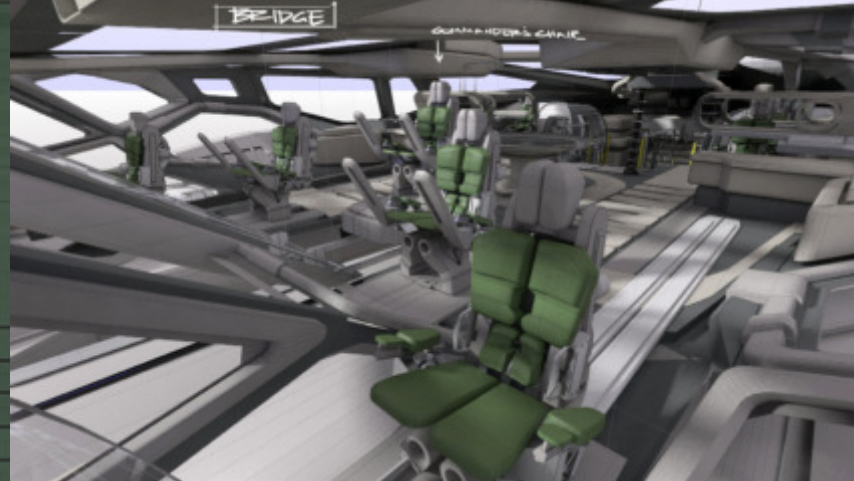
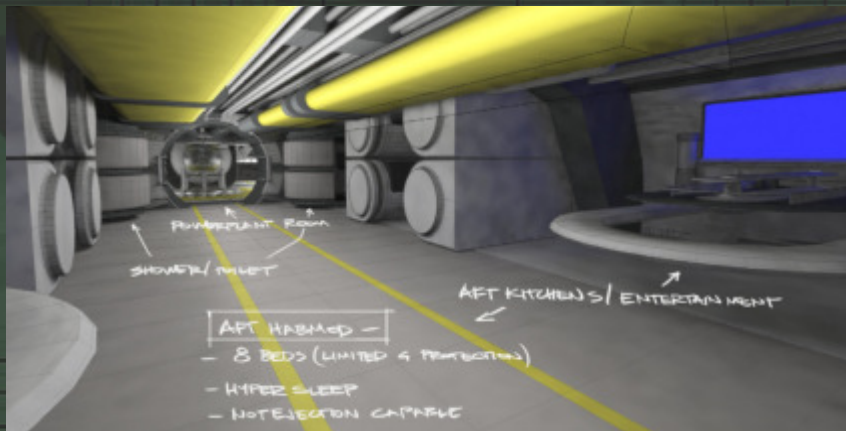
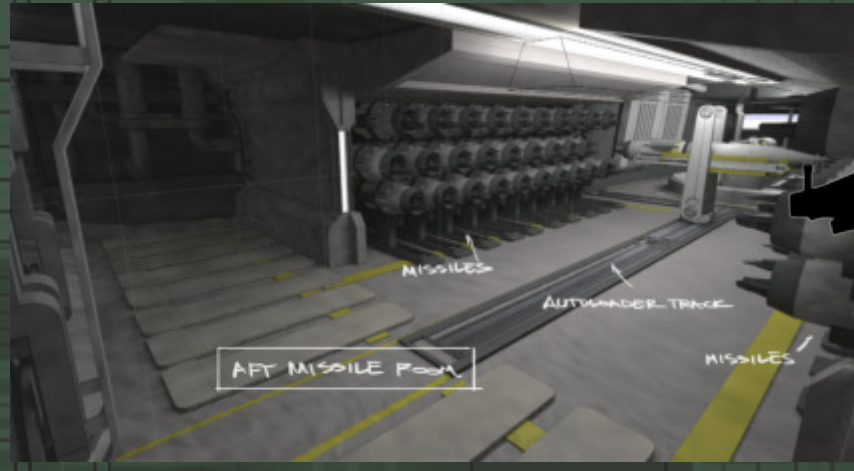
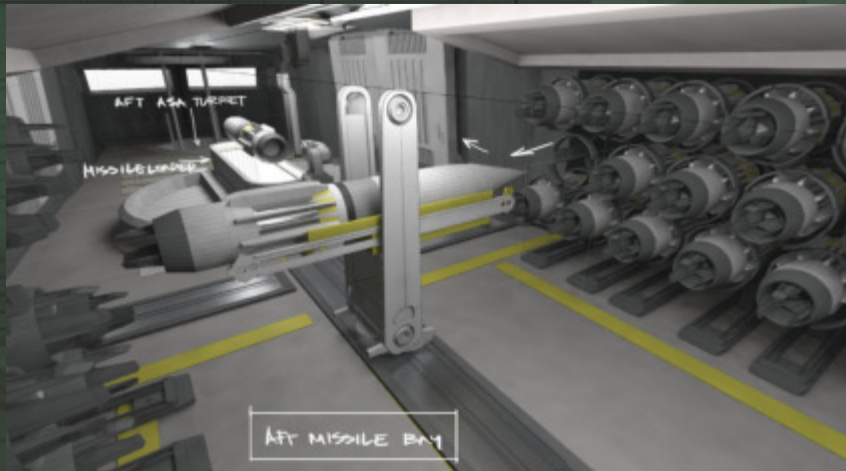
WORKING PRIORITIES





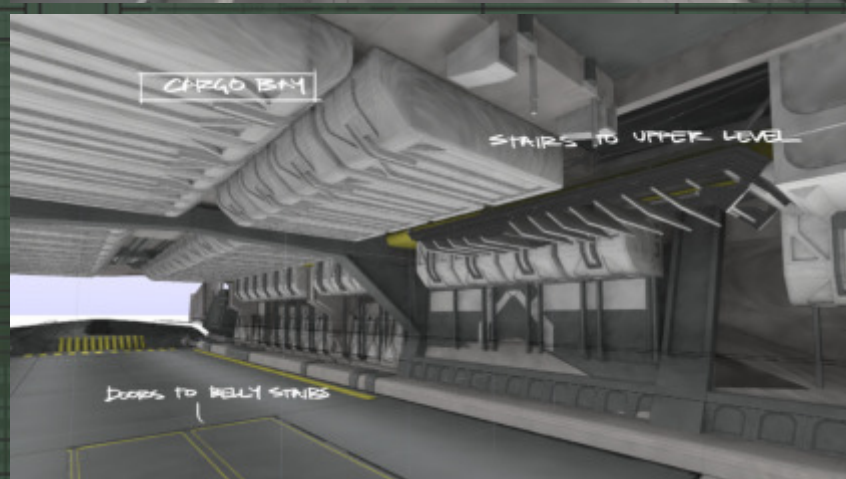
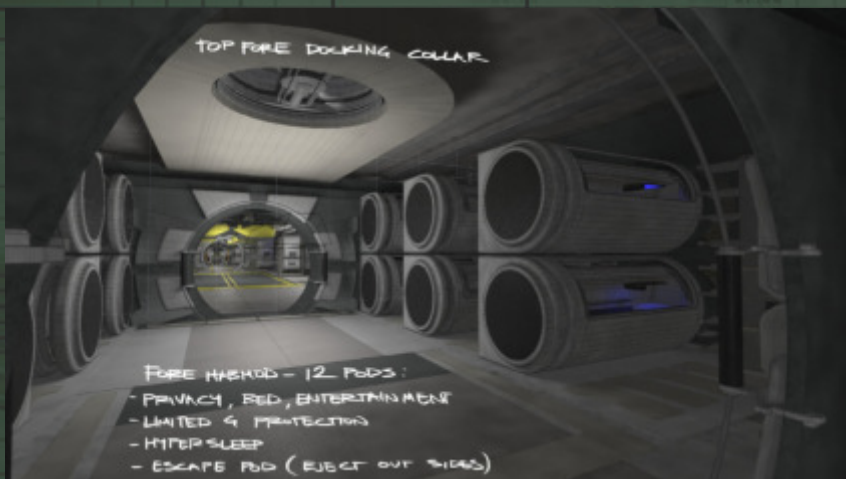
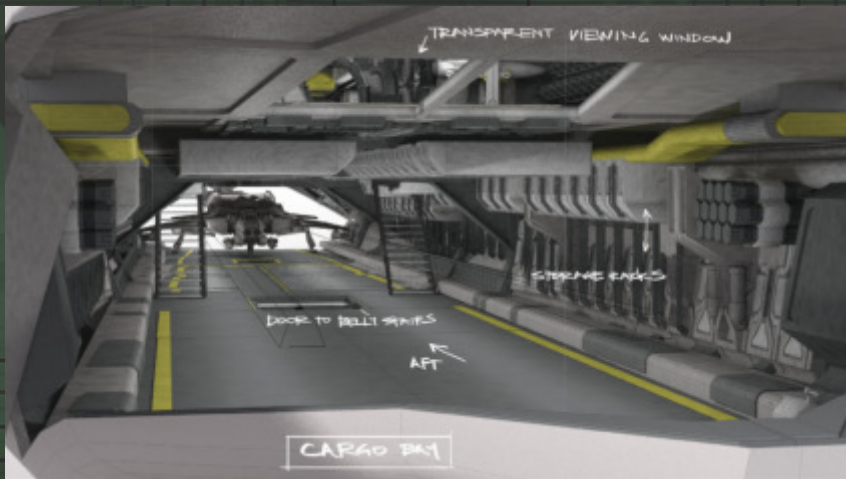
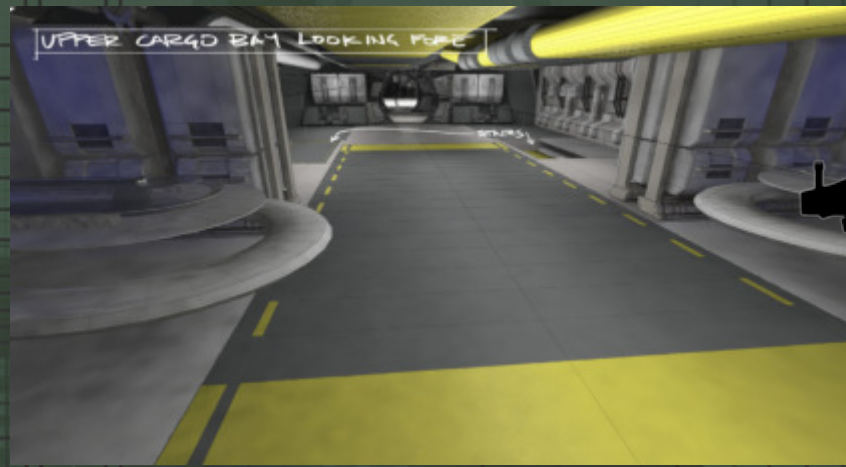
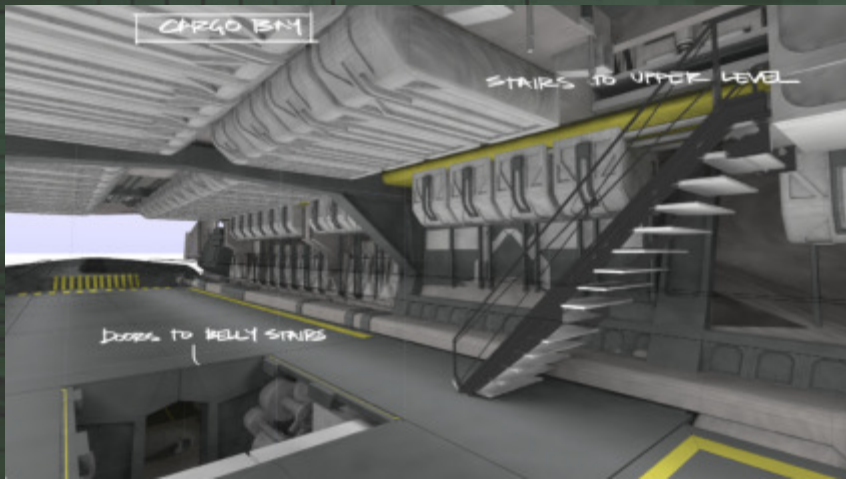
WORKING IN PROGRESS



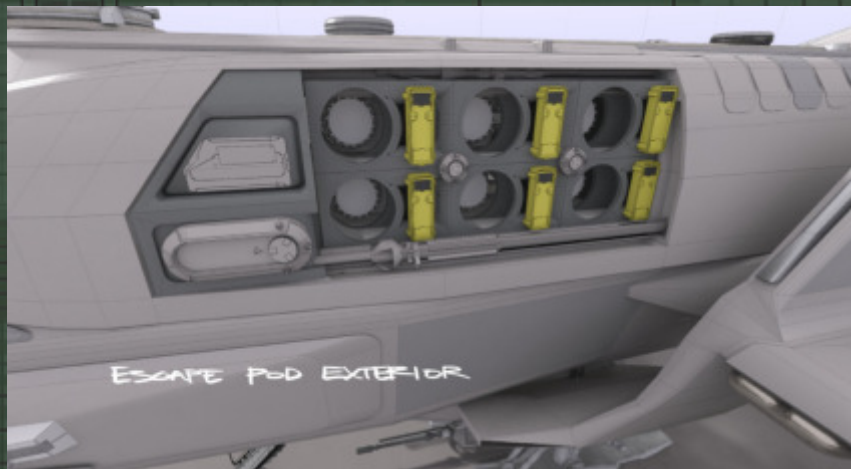
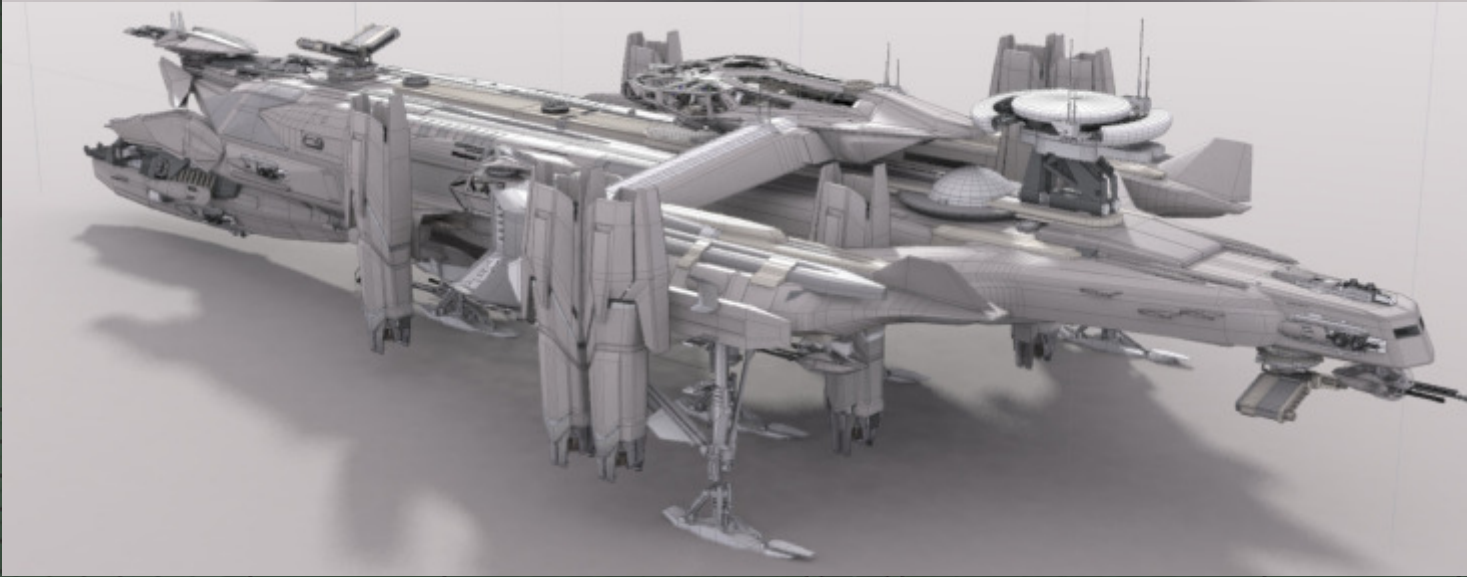
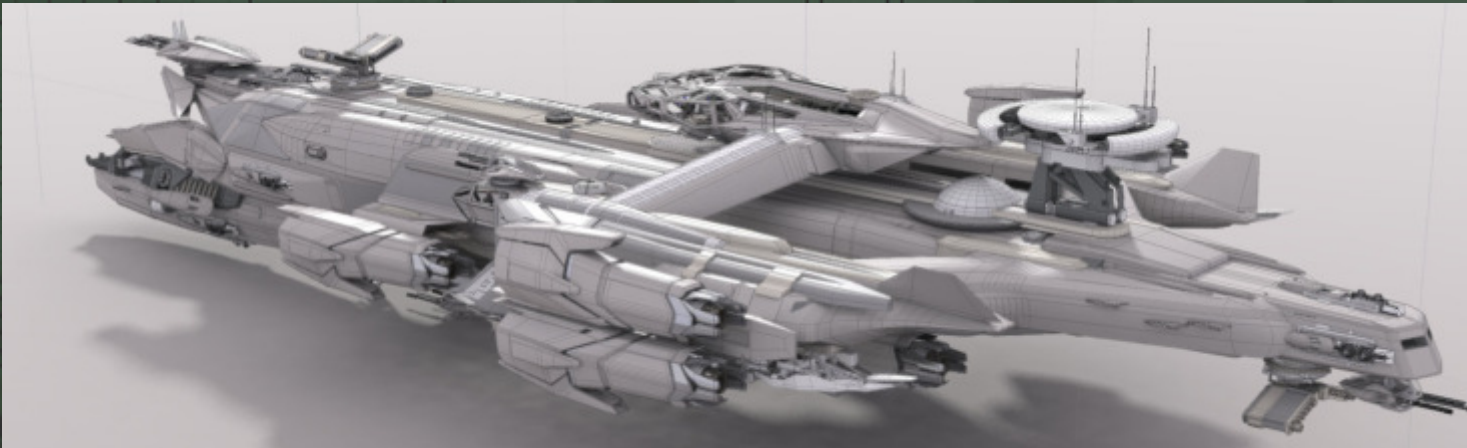


WORKING PRIORITIES



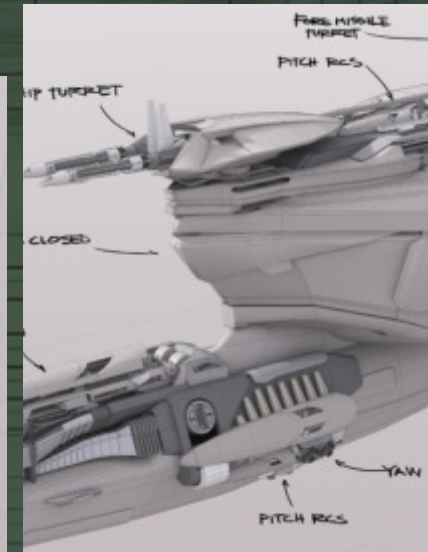
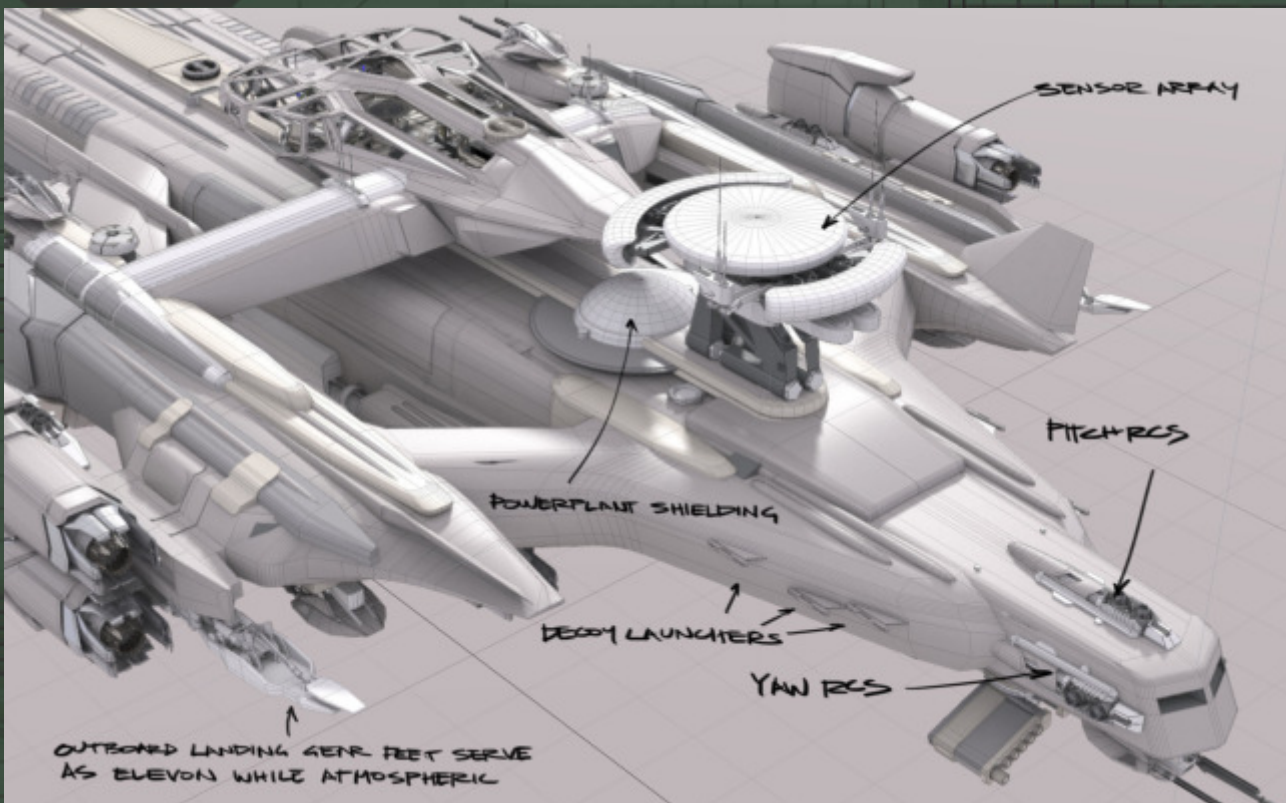
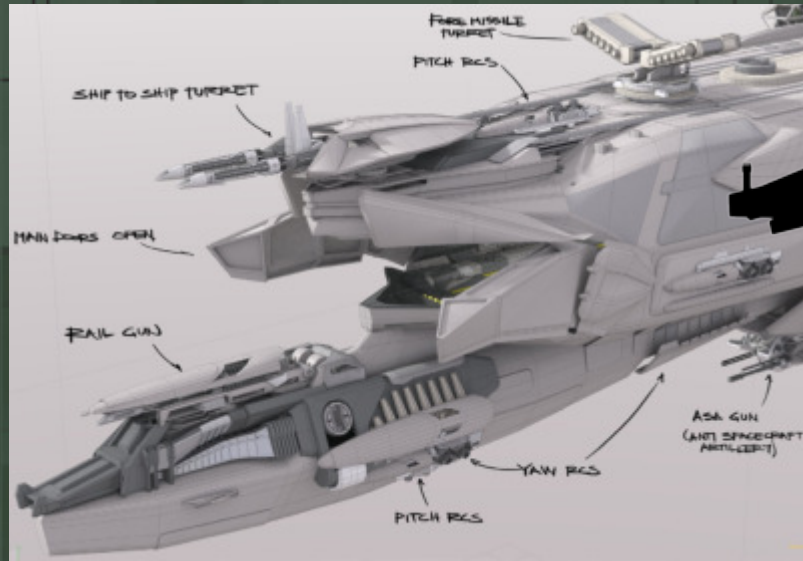
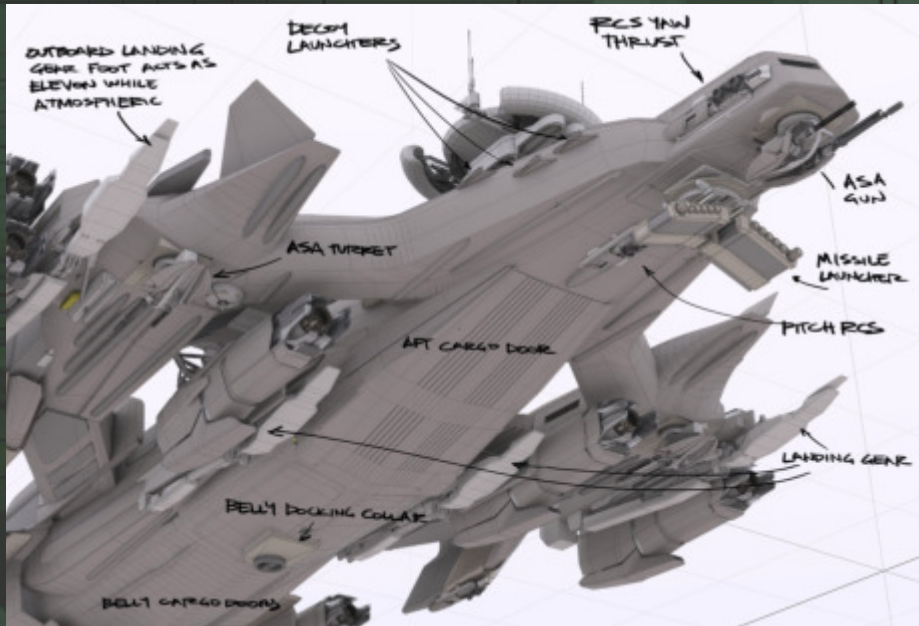


WORKING DRAFTS



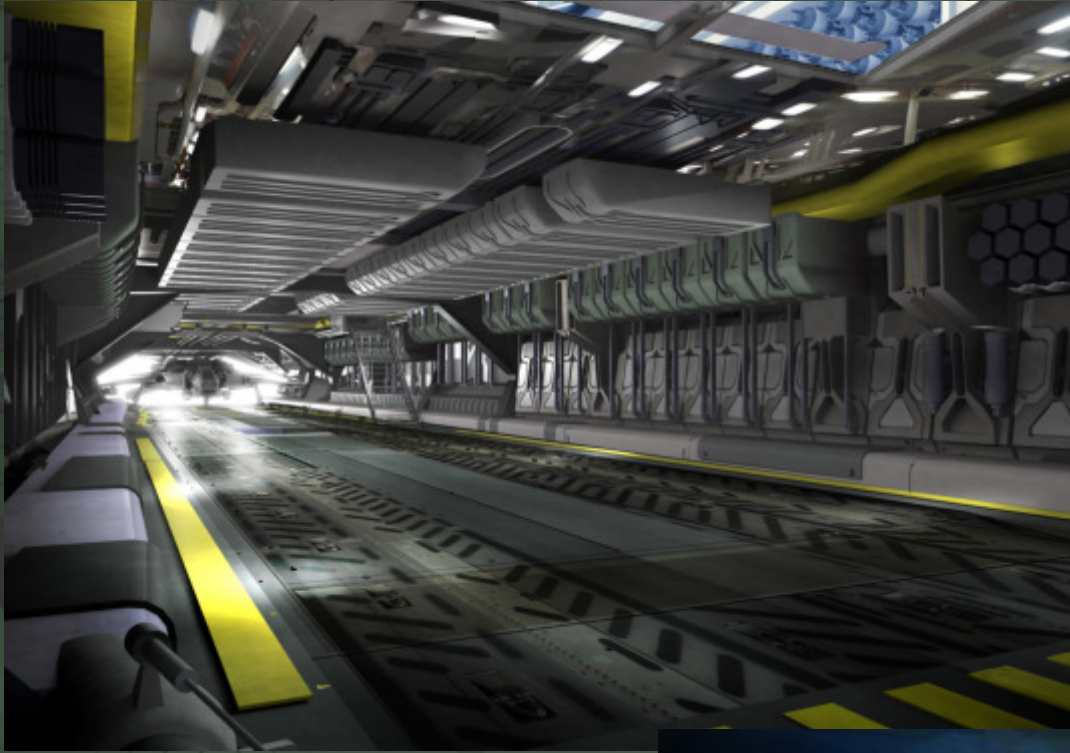
WORK IN PROGRESS





WORK IN PROGRESS





WORK IN PROGRESS



This completes the Idris initial design.



Stay tuned for F42 updates coming soonish to a Jump Point near you.



WORKING IN PROGRESS





# BEHRING

## APPLIED TECHNOLOGY

The Behring Applied Technology division stands in an interesting place: while its existence may have been one of the worst kept secrets in the galaxy, its overall reach and impact on military (and spin-off) technologies may never be truly known. The incorporation papers for the Behring weapons consortium make no mention of the division, press inquiries are ignored or dodged, and corporate org charts show no oversight . . . but a steady one quarter of the company's profits vanish with every published budget. For years, all mention of the division was strictly forbidden. When pressed at a formal dinner, Evan Behring himself famously acknowledged that the division exists, but then claimed that they "develop next-generation home goods." Today, the company acknowledges that BAT exists and

that they are responsible for the heavy weaponry found on naval warships, but denies the budgetary implication that they have a much wider role in top-secret research.

Although BAT's existence was formally denied, its effect was always widely felt and its role is widely recognized across the galaxy; after all, even before the admission, the massive laser weapons used by UEE ships-of-the-line had to come from somewhere. Thanks to the general collection of folklore and the overall passage of time, BAT's long history, stretching back to the early days of spaceflight, is now well explored. The Behring consortium was founded in 2554, a combination of several dozen smaller research and development firms. This arrangement gave rise to the famed Terra laboratory responsible for standard laser

THE MIND



weaponry and dozens of other Behring innovations. Quietly, though, it also birthed BAT. Initially hidden on a Teran moon (and now beneath the surface of Odin II's moon, Vili), BAT was charged with meeting the needs of military black budget projects. BAT is known for its unflinching attitude toward experimentation and research; the scientists and engineers who compose the team have labored ceaselessly and loyally creating weapons of both conquest and defense across a variety of political landscapes.

To this day, it is difficult to say what innovations originate at BAT beyond the fact that the division must be respon-

sible for much of the UEE's capital-class naval weaponry. Certainly, Behring has taken no credit for weapons or other technologies developed there. It is none the less believed that BAT has developed the technologies of a wide variety of fields, the most obvious of which can be found in significant enhancements to shield, propulsion, laser mirroring, and remote sensing technologies. One thing that is widely known today is that the BAT division's unofficial mascot is Barrie, a cartoon bat who has been lovingly painted on countless prototype killing machines.

---

## Capital-Class Turrets

In particular, the Behring Applied Technology laboratory has been given credit for two types of high yield capital ship weaponry: Anti-Ship Artillery (ASA) weapons and Ship to Ship (STS) turret weapons. ASA turret mounts are designed, simply, to protect large ships from smaller ones. With lightning-quick hydraulics and integrated targeting interfaces, ASA turrets are generally sited in a ring around a capital ship's hull to offer as full an arc of protection as possible. ASA turrets mount smaller yield laser weapons similar to those found on civilian spacecraft. The stock military Idris-M corvette, for instance, carries six ASA turrets that each mount a Behring M3C laser system.

Ship to Ship turrets are a much more powerful affair, designed to punch through the shields and hull of other large starships. Although they lack the quick reaction time of ASA turrets and so are generally unsuitable for flak coverage, their higher caliber weaponry will ensure that any hit against a fighter or bomber is likely deadly. Like their smaller cousins, STS turrets are modular and can be outfitted with a variety of individual guns. For example,

the Idris-M corvette mounts a centerline STS 'stinger' turret featuring a Behring M5C laser cannon. The workhorse of the Navy, the Javelin corvette, mounts a pair of Behring M6A laser cannons on STS turrets standard.

While the concern is responsible for manufacturing, antimatter yield coring, and other important processes in turret development, likely the most significant advancement they have been credited with is the development of the shield interphase kits that are now standard on all turrets. Prior to the 28th century, it was believed impossible to design a shield system that could operate with a rotating turret; where early shields were designed with 'blind spots' that could allow fixed cannons to fire out of a designated hardpoint, they lacked the ability to do the same with a gun whose position was impossible to predict before firing. Capital ships of an earlier era would need to drop their shields entirely before firing, which made arming with anti-spacecraft weaponry impractical. With BAT's interphase kits, almost anything can be shot out from within a standard shield.



THE  
MILITARY



## Rail Guns

What would you do if you had the biggest gun in the galaxy? BAT offers the opportunity to answer that question in the form of their massive 130mm "Ship Buster" rail gun system. The most powerful single-charge rail gun in known space, a hit from a Ship Buster is capable of smashing a destroyer as though it were a tin can. A single Ship Buster forms the keel mount of the Bengal carrier,

while a series of the weapons forms the fighting power of the Retribution-class. These rail guns use the same technologies as standard fighter-based mass drivers, on a massive scale once thought impossible to achieve. Series of thousands and thousands of charged electromagnets generate the power needed to throw the 130mm slugs.



SHIP BUSTER MOUNTED ON  
BENGAL-CLASS CARRIER  
(ARTIST'S CONCEPT)

## Black Ops

It seems undeniable that BAT is heavily involved in black ops research. Recent advancements in remote sensing, automated camo and jointed thruster technologies have likely sprung from Behring's top secret labs. Although this will never be formally confirmed, the trillions of UEC funneled into the research efforts within Vili's core could retrofit the standing navy's wide caliber lasers a dozen

times over. More horrific rumors imply that BAT is responsible for biological warfare research. There is clear evidence that a number of eminent xenobiologists have 'gone grey' and disappeared into the black ops wing of the military. Whether or not the fringe claims are accurate that they are taking part in the vivisection of Vanduul prisoners of war is less clear.





SANDI, THE JUDGES AND THE PRODUCERS

PRODUCERS CHRIS ROACH  
AND MATTHEW RICHMOND,  
FLANKING SANDI

CHRIS SMITH,  
LEAD SHIP MODELER

MARK SKELTON,  
ART DIRECTOR

CHRIS ROBERTS

DAVID HOBBS,  
CONCEPT ARTIST  
(SITTING IN FOR  
CRYTEK'S SEAN TRACY)

CHRIS OLIVIA,  
CHIEF VISUAL OFFICER

# THE NEXT GREAT STARSHIP

We won't claim that a computer game has never created a television series before, but they are definitely few and far between. With our community's interest in participating in the game, we realized that a challenge to create a new starship was an obvious opportunity for all of us, both developers and players. **JUMP POINT** tracked down Sandi Gardiner, our head of Marketing, to get her insight on the process.

**JP:** How did The Next Great Starship get started? Who came up with the idea?

**SG:** What got it started was that Crytek, in May 2013, suggested to us they would like to do a competition for modders and partner with us.

**JP:** What was CIG's response?

**SG:** Chris suggested we open this up to a broader audience and engage the community as a whole and let them in on the process. He wanted to give artists, modelers, texturers and CryEngine specialists a platform to showcase their work and also put a starship into the world of Star Citizen. I thought it was a really great idea and started to work on it right after Gamescom in August 2013.

**JP:** What did that involve?

**SG:** I first put together a proposal and outline of what the show would be about and how it would work. We had a couple of networks show interest, but they wanted to take over creative control, and what they wanted wasn't what we wanted. There were lots of sponsors who were keen to participate in the show, so we went with that, as they were not



BEHIND THE SCENES



PREPPING FOR AN EPISODE

interested in changing the vision of the show. We worked backwards from the finalé date (which coincides with E3) to have a start date, and before that a preliminary test and submission period for qualifying to the final 24 teams. I received a lot of help from the web team, including Zane on the graphics side and also from our legal counsel for the guidelines and rules for the competition.

**JP:** How did you get the word out, and what was the response like?

**SG:** Right before CitizenCon on October 10, we shot a quick green-screen promo video and our PR put out a press release. Our sponsors synced up as well to push out the word on their social channels. The response in the press, on the forums, and throughout our community was very positive. By Christmas, we had 270 initial entries, but I have to admit to being very nervous that we wouldn't have a competition, as we only had only received a handful of completed submissions. But on December 30 and 31, we had videos flood in almost every other minute, with questions and adjustments and all sorts of traffic, so it was a very busy working New Year's Eve for me!

**JP:** Did any of the teams "wrap" their submission in unusual ways?

**SG:** All of the teams were quite creative and it was really cool that some teams had made friendships and partnered from our forums. There were some really pretty cities shown off in the videos and it was great that artists who didn't speak English so well weren't shy to enter. There were plenty of professionals from the gaming industry and similar industries who entered, and kudos to them for taking the time and making the effort to do so. There was one really interesting entry that included playing a flute with no explanation. It didn't make the final 24, but a couple of judges voted for it, and it was so unusual that I noticed it immediately. Solo "teams" also stood out, as it was just so impressive the amount of work one person could do, especially all the way to in-engine implementation. Several of the solo teams made the first cut. I watched all videos at least once and then the final 42 candidates quite a few times, until we got down to 24.

**JP:** How many complete submissions did you end up with once the dust had settled on New Year's Eve? How did you cut it down to the initial 24?



BETWEEN CONTESTANTS



BEHIND THE SCENES



**SG:** We ended up with 270 videos. The judges looked at them throughout their holiday break and sent in their favorites. Of the 270, at least one judge voted for 42. I tallied up votes from each judge to get to the 24 that had the most votes. Any submissions that were tied near the cut-off line I had the judges review again and make hard choices. We had to go through this process quite a few times before we got down to 24.

**JP:** *Did you review the videos yourself?*

**SG:** I watched them, but I didn't do any of the judging myself.

**JP:** *Did you have any favorites yourself? Did they make it into the 24?*

**SG:** I liked Skyguard a lot, and Troyka and 3Dingo. Also Shimapan and 1bit Amoeba. A couple of my favorites didn't make it into the final 24, Space Ninjas being one of them.

**JP:** *What it was like to organize the show?*

**SG:** I have mostly been in front of the camera in my previous experience, so organizing the show as well as being in front of the camera was a lot more work than I anticipated. Finding the right people to produce the show and finding all the right crew, plus working with each of the judges and all of the finalist teams required (and still requires) some heavy-duty planning and organization. Looking at the end goal — 13 more episodes at this point! — is overwhelming, but I'm trying to focus on each step at a time with a hard deadline, and so far I've been ready to go for our shoot dates.

**JP:** *Is it getting any easier after the first few weeks?*

**SG:** As the responses came back from the judges, they were genuinely impressed with our competitors, so I felt pretty relieved about that and was more confident we would have a good competition and show. I'm also becoming more savvy as to what the judges are looking for, and that feels pretty good. Not that my opinion counts in the



#### WHAT IS YOUR NAME?

Sandi Gardiner

#### WHAT IS YOUR QUEST?

This is the first video game I've worked on, and it's very exciting and rewarding on all levels. I would like to say that all my college degrees help with this type of project, but I'm not sure. Crowdfunding is such a new and different way to go to market. It's got very fast feedback that can be both energizing and daunting at the same time. The community is so integral to the game that it's a very fine tightrope to walk with marketing. We hardly spend anything on traditional marketing in fact, but of course we have to do something to keep ourselves out there. I try to find things that are already part of the game development that can be enhanced and used for viral marketing, thus reducing the cost to the company.

#### WHAT IS YOUR FAVOURITE COLOUR?

My favorite color is turquoise. I love to read books, but that seems to have disappeared from my current lifestyle. (Mark Skelton just gave me my first audio book, so I'm going to give that a shot.) I'm a big fan of the ocean and my first degree was actually a Bachelor in Marine Biology. Too bad California waters are freezing, at best! Another hobby is playing the piano, but I don't have one right now. Ha! There's a running theme, isn't there? My current spare time is spent with my family, and we all just went to see *The LEGO Movie* — 'Everything is Awesome!'



BEHIND THE SCENES

judging, but if I can keep up, I feel the audience is able to do the same as you watch along at home.

**JP:** *Who else had a key role in making the show (other than you and the judges)?*

**SG:** Our producers Christopher Roach and Matthew Richmond have been key; they both have an extensive background from *Big Brother*. Also our wonderful editor Patrick Franks.

**JP:** *What's Big Brother?*

**SG:** It's a reality game show with a group of housemates filmed 24/7 in one house together. I interviewed many producers for this show, and the two I hired really understand the content and find it interesting. It was difficult for other producers to understand that the community is truly interested in the details of how spaceships get made and to find entertainment in that.

**JP:** *What's next? How many total shows in this season's competition? And what do you plan for an encore?*

**SG:** We are doing 19 episodes total, although three of these will be mostly dogfight specials while the teams work



on the modeling/texturing phase of the competition. An encore? We'll see how this goes and whether the community would like to see it brought back again for another season.

**JP:** *I hear there are big plans for the final . Can you give us any hints?*

**SG:** June 7th live at the YouTube Studios in LA, both finalist teams will be flown in to compete in front of a live audience and the community will decide who the ultimate 'Next Great Starship' winning team will be.

**JP:** *And most importantly, what's going on with Mark Skelton's shirt?*

**SG:** Ha, the Gold Shirt. We came back to shoot the concept art stage and Mark had gone and cut off his tag!! We were planning to do a whole segment on that thing! We just wanted to have a little fun and embrace the different judges' personalities — gold shirt said 'I'm Mark Skelton!' He did have other options, but they just didn't look right so we kept him in the shirt. I think it's on its last legs though ...



BEHIND THE SCENES



# ODIN SYSTEM VILI



E  
C  
I  
I  
H  
H  
H  
H  
V  
V  
H

First discovered in 2532, Odin (marked on the initial transit logs as "Odom") was one of the first star systems reached during mankind's initial extrasolar expansion. A scant fifty millennia ago, a brief flicker in geological time, the system was home to multiple vibrant ecosystems similar to Earth or Terra. That all changed abruptly when Odin's star collapsed into a white dwarf. The immediate trauma completely enveloped the system's first planet and quickly boiled off the biospheres of the others, killing all native life. When Earth's first explorers jumped to Odin, they found a system of icy rock worlds with uniformly foreboding exteriors.

The immediate thought was that the system could become a mining hub, but its lack of jump transit points and some unique stellar features quickly made it clear that such operations were infeasible. Thus, lacking a strategic

position or a terraformable world, Odin was relegated to the saddest fate for a star system: weapons testing area. By the early 27th century, the demonic crags of Odin's core worlds were quickly being flattened by experimental weaponry intended for sale to the UEE military.

Odin most recently became a cause celebre of the scientific community when a group of noted geobiologists came forward to point out that the government was allowing companies like Behring to wipe clean an otherwise well-preserved fossil record that could tell the story of the life that came to evolve in the Odin system. While a grassroots "SAVE THE FOSSILS" movement initially gained some traction in popular culture, interest soon faded.

**TRAVEL WARNING** We won't say don't, but we will say, if you go there, stay very alert.



## THE BELT (~ODIN I)

The Odin I Asteroid Field, commonly called the Belt, is possibly the most interesting area of the system. The remnants of the system's pre-catastrophe first planet, the Belt is a seemingly unending field of minerals. Ore located in the Belt runs the gamut from basic slough to valuable heavy metals, with extremely valuable (and distinctive) caches of gemstones being discovered more often than one would expect. The UEE formally bans mining in the Odin system, but garrisons no forces there and generally takes a blind eye to the practice. There are, however, bigger dangers to mining operations seeking to skirt the law and take advantage of the former world's riches. The first is an electromagnetic phenomenon called arch charges.

The result of the exposed planetary core's iron-rich content coming into contact with cast-off stellar remnants, arc charges are deadly to any ship unlucky enough to be

caught in their embrace. So many have been destroyed over time that legitimate mining operations have given up entirely on petitioning the Senate for licenses to exploit the Odin system. Heavily shielded independent ships may fare better, but the best advice is to stay away.

And if the arc charges don't get you, the pirates may. A warren of well-armed pirates, seemingly immune to the electromagnetic phenomenon, is believed to be based deep within the Belt. This group, whose organization and formal allegiance are unknown, has been involved in dozens of hit-and-run strikes against legitimate operations within a jump or two of Odin. The sum total of their effect on the countless black market gun runners and mining operations that attempt to wring a quick UEC out of the Belt is unknown.

---

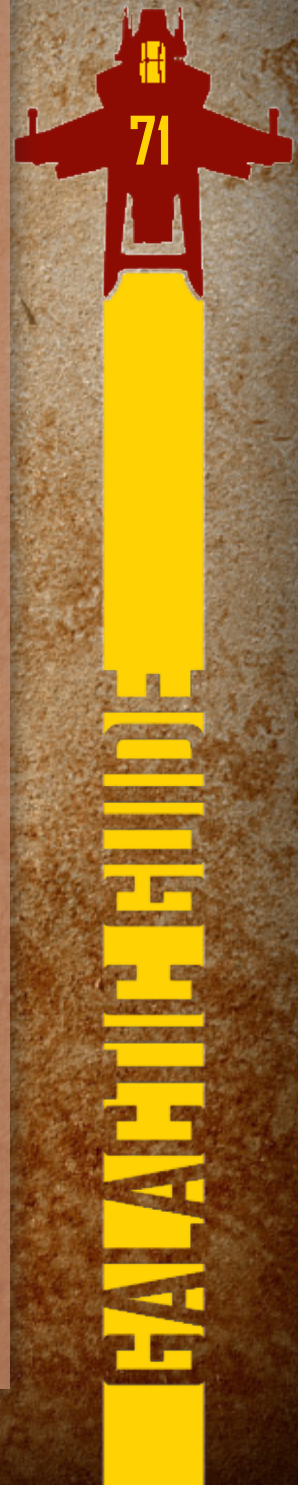
## ODIN II (AND VILI)

Odin II is ostensibly within the star's green band, although the planet has only what little atmosphere it has naturally gathered in the last 50,000 years. Officially a UEE military operations base, Odin II is home to the occasional temporary "deep freeze" expedition. Scientists and military forces training for trans-polar combat operations pass through the world, but no one lives here permanently. Most of the surface of the planet has been curtained off for weapons testing operations, with robotic survey labs belonging to A&R, Behring and others dotting the equatorial planes.

However, the planet's moon, Vili, is the most famous corporate weapons testing range in the system (and possibly the galaxy). Much of the surface is exclusively owned by Behring's shadowy Applied Technology division, and a notable percent of munitions expended by man in the past decade have been launched against lifeless rock formations and artificially deposited synthe-peeps on Vili.

BAT research laboratories are located deep beneath the surface of the moon, away from all varieties of prying eyes. Testing ranges and a variety of supporting factories (antimatter refineries, chemical compulsion units and the like) surround the few Human-occupied locations on the moon.

The one part of the moon, and indeed the star system at large, open to travelers is Raleigh Station, a snowy space base erected by the UEE to allow the government (and civilian contractors) to bring in supplies and to ferry out weapons projects after their test cycles. Raleigh Station is not the most welcoming place in the galaxy, but there is enough to keep a traveler busy. Standard bulk food and medical supplies are always in demand here, and pilots have reported finding occasional deals on discarded military-grade surplus.





## ODIN III & IV

The second planet in the Odin system, Odin III (natives are notoriously insistent that the Belt still be considered the first planet, to the point of influencing official star charts) is another insignificant, dead world. Although weapons testing is officially forbidden here, the surface of the planet has still been burnt to a cinder and irradiated beyond recognition. A famous photograph of the planet taken from orbit and used during the abandoned ecological campaign shows a massive, glowing delta-shaped blast impact cutting directly into the surface. Military sources formally deny that a weapon capable of causing such damage to a planet's crust exists.

Odin IV is a gas giant and home to a UEE-sponsored hydrogen rendering station and fuel depot in geosynchronous orbit. While the station is crewed, the facilities for interacting with outsiders are wholly automated: a supplier drops off unrefined hydrogen and takes on fuel without ever encountering any of the occupants. Starship crews are actively discouraged from layovers on Odin IV, although the station has a limited number of poorly maintained rental habit-cubes. Fuel prices are notoriously inexpensive for this region of the galaxy, and it is sometimes even worthwhile to make the jump to Odin to refuel a larger ship.

### MARKET DEALS — ODIN SYSTEM

BUY: WEAPONS (BLACK MARKET)	+3
BUY: GEMSTONES (BLACK MARKET)	+2
BUY: RARE METALS (BLACK MARKET)	+2
SELL: MEDICAL SUPPLIES	+2
SELL: BASIC FOODSTUFFS	+1



EMERGENCY  
EVACUATION  
PROCEDURES





# Hunter & Swan

by Robert E Waters



CHRONICLES

## Part 2

*Bounty hunter Benito Redmoon has been given a pending bounty on Kimmy Swanson, wanted by tycoon Angus Barone for the murder of his son. The kicker in the deal is that run-away servant Swanson is now the Swan, idolized pop singer and daughter of the Hurston family consortium. Redmoon has succeeded in the initial grab and escaped out of Terra system . . .*

The *Ahagahe* slowed out of jump, and Benito Redmoon braced for the imminent wash of nausea. He had come out of jump hundreds of times over the course of his life, and sickness was rarely a concern. But he was wounded,

his shoulder, arm, the ribs on the right side, all grazed and bleeding by bullets from security as they had fled Terra. It was hard to say how a jump would affect him under such conditions. He braced for sickness, but none came. He exhaled, thankful for finally catching a break. The girl, bound and lying on the floor at his side, had a different reaction. She moaned, rolled her eyes, turned her head, and puked all over the cockpit floor.

*Damn!*

It was his fault. He should have secured her in the cell he had built in the primary cargo hold of his Freelancer. But when you're dodging bullets and laser beams, you can't al-



ways take the time to do everything perfectly. The security response was particularly savage as they fled; understandable given the circumstances, and they would not be able to stay for long here in the Kilian System. UEE law enforcement would be coming, and in strength. The Swan needed to be in her cell to ensure her safety for the rest of the trip. But before that, he needed to do something.

"I'm sorry," Swan said weakly as she tried clearing her throat. "I didn't mean to —"

"Sit up," he said, putting the ship on auto and standing. "You'll feel better if you do."

She pushed herself up as best she could, given her bindings. Redmoon pulled a DNA tester from his pocket and knelt down beside her, careful to keep his boots out of the vomit. He wriggled his nose against its sickly-sweet smell and concentrated on a small needle inside the kit.

"What are you doing, Reincroft?"

Redmoon chuckled at that. "Don't be naïve, girl," he said, pulling the needle from the kit and quickly jabbing it into the base of her neck. She squealed as he pulled the needle back out. "My name isn't Reincroft."

He put the needle back in the kit, touched a few buttons, and waited.

"Who *are* you then?"

He ignored the question. Double helixes rolled into view on the kit's tiny vid screen. Redmoon watched as each allele, each codon, each amino acid along both samples were marked with green highlights. He closed the kit and tucked it away. A perfect match. This woman *was* Kimmy Swanson. But how marvelous, how well designed, had been her reconstruction. No wonder Barone had spent years looking for her. A murderer in plain sight.

"Look, whoever you are, I can pay you. I can pay you double whatever you're getting now."

"I'm sure you could," Redmoon said, rising and pulling Swan to her feet. She could probably pay triple and possibly four times as much. "Money is not everything. There is also justice to consider."

Swan paused at that last remark. Then her eyes grew large, her face paled as if she were going to vomit again. "No," she said, her voice growing agitated, unsteady. "Don't take me back there. Don't take me to Nemo. I won't go back there. No . . . I did nothing wrong. *I'm innocent!*"

"That is not for me to decide," Redmoon said, yanking her forward. He pulled her down the steps, past the jump seats and into the galley. She struggled and pleaded the entire way, desperate to avoid his restraining cage.

"Let . . . let me help you clean up my mess at least."

"No."

"Then, then let me help you with your wounds. I used to —"

"No."

She flailed around, pushed her feet into the floor, trying to gain purchase. She halted, seeing the weathered Marine insignia on his sleeve. "Are you a Marine?"

Redmoon paused. He looked at the patch. "I was, once," he said. "A long time ago."

He pulled her into the secondary cargo hold. "I know a song about a Marine," she said. "Do you want to hear it?"

"No."

She ignored him and began singing. Her voice was lithe, subtle, bereft of fear and apprehension.

*There once was a brave Marine who sang and danced,  
and all the ladies loved him, until the day  
the music stopped, until he danced the pirate's dance,  
and death and sorrow found him.*



CHRONICLES



He knew the song well. He had sung it himself many times in his youth, although the version that he and his pals had sung over mugs of beer had been bawdier . . . *There once was a brave Marine who liked to f . . .* Well, no time for that now. Swan's version was better, her voice much more pleasing than a bunch of horny Marines on R&R. Redmoon halted, kept holding her bound arms tight, but let her sing, let her voice wash over him like warm spring air. He was exhausted. The fight and flight from Terra had taken more out of him than he realized.

"Let me help you," Swan said once she finished the song. Her hands were tied behind her back, but she moved closer to him, her face mere inches from his own. "I'll do whatever you want. Just don't take me back there."

He pulled back, reinforced his grip on her arms and clutched her neck. He pulled her through the secondary cargo hold and into the primary. "Don't mistake me for one of your fan boys, Ms. Swan."

Now she began to cry, scream, continuing to insist that she was innocent. Redmoon ignored her, reached the cell, tapped the panel outside its door. When it opened, he pushed her inside. He followed and secured her in a jump seat, strapping her in tight. This made her angry.

"You won't get away with this, whoever you are," she threatened, spitting the words at him. "I'm Cassidy Hurston, the Swan. My family is powerful, and they make guns – big ones! They'll find me, and when they do, they'll kill you!"

He closed the door and lowered the volume on the monitor he had installed to keep tabs on his bounties. She would go on for some time, he figured. It wasn't unusual. Many bounties did, professing their innocence loudly and with great enthusiasm. None of them ever were innocent in the end. None of Redmoon's bounties had been, at least. Mirage had taught him great care in picking jobs.

He returned to the cockpit and began cleaning up the vomit. The mess came up quickly. He adjusted the air flow to cycle the foul smell away, then tossed the dirty rags in the chute in the galley. He then grabbed a med kit and began to swab and dress his wounds, Swan's claw marks on his face, and especially the cut across his ribs. It hurt and had bled the most. He winced at the tenderness of it, but finished patching it up, then pulled his coat back into place.

It would have been nice to let Swan clean his wounds, he confessed to himself. She certainly had a delicate touch, a soft demeanor. But that would have been a major error of judgment on his part. Mirage would never have allowed such a thing. Hell, Mirage would never have let his guard down and allowed her to try serenading him. *That was a stupid move, Benito.* He could almost hear his mentor's disapproving voice on the recycled air. *Yes it was, Mirage,* Redmoon replied to himself as he strapped into the pilot's seat. *But you know what? You aren't here, and I have to deal with this matter in my own way.*

Something wasn't right about this whole situation. Redmoon couldn't put his finger on it exactly, but something in Swan's manner, in the way she pleaded her innocence, made him pause. He could usually tell whether someone was telling the truth, but Swan's proclamations of innocence left him confused. The bounty on her, while pending, was legitimate. He had studied it carefully after leaving the Barone complex, and the woman in the cargo hold was without doubt Kimmy Swanson. But was that all? Mirage would never have questioned anything at this point. The bounty was above board. He would have finished the job with an impressive moral clarity. *But what am I going to do?*

Redmoon looked down at the coordinates punched in for an Ellis jump. He shook his head and deleted them, then punched in new coordinates to Magnus. Ellis would be a mistake at this point. A more direct path, indeed, but quite foolish. Now that the Murray Cup Race was about to start,



CHRONICLES



security in and around that system would be ridiculously tight. No, the best path was to Magnus. Besides, Vernon Bosch was there, and if there was anyone who could provide him with some answers, it was Bosch.

Redmoon turned off the auto-pilot, took the sticks, and made for the jump point to Magnus.

\* \* \*

Redmoon removed her bindings, gave her food and water and told her that if she behaved herself, he would not re-bind her arms. She nodded quietly, rubbed her wrists until they felt better, then dove into the food. Redmoon sealed the door of the cell behind him and returned to the cockpit, where he secured the ship for docking.

He had settled on Odyssa, Magnus's industrial city and chief manufacturer of spacecraft. It also had a healthy criminal element, and thus it was a perfect place for a man like Vernon Bosch to reside. In truth, Bosch was an easy man to find, for the right price and intent. He was a data specialist in the criminal underworld, and his information did not come cheap.

He found Bosch in a club called *The Night Stick*, nestled in Odyssa's very small but prosperous money district. He paid the doorman triple to ignore the pat down, then stepped into a shaking, uncontrollable darkness. The place was wall-to-wall bodies, the dance floor nothing more than a mosh pit of young people with more booze and less clothing than morally prudent. The music being piped in was too loud and too kinetic, the singer brash and incomprehensible. In his own youth, he might have joined in. Now, he ignored it all, cutting through the shifting sea of bodies like a knife, until he found the person he was looking for.

Vernon Bosch was thin to the point of emaciation. His hair was a long mane of tiger white, his eyes perpetually covered with sunglasses, no matter the brightness of a room. He drew incessantly on a stim, and nursed a gin and tonic.

When he saw Redmoon, he waved him over. The women at his side got up and walked away.

"Ah, Benito," Bosch said in his high-pitched voice. "Come, and sit . . . and let us tell sad stories of the death of kings."

Redmoon took a stool and cleared his throat. "You say that to me every time we meet, Vernon. You need to find a better line, perhaps from a play that's more modern."

"Shakespeare will never die," Bosch said, taking a long draw from his stim. He finished his drink and pushed the glass away. "But you seem like a man with a lot on his mind, one who wishes to engage in heady conversation. What can we speak about today?"

"Not the death of kings. Let's talk about the death of a prince."

That piqued Bosch's interest. He sat up straight. "Yes, please continue."

Redmoon waved off a waitress, then asked, "What do you know of the Barone family?"

Bosch shrugged. "As much as anyone, I suppose. They're oil barons, but of course a family like that never keeps its interest and assets confined to one industry. Angus has his greedy little fingers in a lot of pots. Manufacturing, entertainment, textiles . . . charity events."

"What do you know of Garryn Barone?"

"Ah, the late baby boy Barone." Bosch shifted in his seat and his face soured in a show of great sorrow. "It's a shame what happened to him. Such a model citizen, a paragon of moral certitude, a great son. To be cut down in his youth in a fluke hunting accident no less. What a tragedy."

"That's the public story. Peel back a layer for me."

"You want the truth." Bosch said it as a definitive, crossing his thin legs and lighting up another stim. "The truth comes at a price, Benito. You know that."



CHRONICLES



"I removed a rival of yours from circulation not long ago, Bosch. I've paid in full and then some."

Bosch drew long from the stim. "Fair enough. Garryn was a complicated boy, as most boys are. He was indeed a charitable fellow and a good son as far as it goes, but behind closed doors . . . let's just say he was less than pure."

"Say it."

"He was a gambler, excessive if I may say. Loved the pit fights. In fact, I procured fighters for him on occasion, and I want to say on the record, that that is a *legal* endeavor on Nemo."

Redmoon chuckled and waved away a waft of smoke in his face. "Don't worry, Bosch. There's no bounty on you . . . yet."

That seemed to put the thin man in better spirits. "As I say, he loved the fights. Would get in the pit once in a while himself, although only after several drinks."

"He'd win a lot of money on the fights?"

Bosch nodded. "On occasion, although he'd blow it all afterwards on one failed pipe dream after another. Garryn never had his father's good business sense."

They were interrupted briefly when one of Bosch's girls came to the table, whispered something into his ear. He whispered something back, then she left. "Sorry about that," Bosch said. "Business never rests."

Redmoon continued. "What kind of person was he?"

"We weren't friends, Benito. He never invited me to dinner."

"Did you ever see him act violently? Did he have a temper?"

"Not that I ever saw, although as I said, after a few drinks, he'd sometimes drop into the pit and duke it out. I think

that's where he'd work out his demons, whatever they were. We all have demons to exorcise, Benito." Bosch drew again on his stim then set it down in a tray on the table. "What's your interest in Garryn?"

Redmoon shook his head. "Nothing special. Just asking some questions."

"A bounty hunter never 'just asks questions'."

"It's not your purview to know, Vernon. I ask, you answer . . . or not. That's as far as our relationship goes."

Bosch seemed to take offense at that. He clasped his long fingers together and leaned into the table. "Then I guess this conversation is over. Let me sum it up for you quickly. As I said, Garryn Barone was a complicated boy. Complicated boys turn into complicated men. Complicated men rule the universe, Benito, and sometimes these men reach a point in their lives where they feel entitled to control the *lives* of their toys. Garryn Barone had a lot of toys, and he loved playing with every single one of them. And he'd break one once in a while. Do we understand each other?"

Redmoon nodded. "Yes, I think we do."

He stood up, and the music in the room changed. The crowd on the dance floor drifted away to their tables as a more solemn, sensual song played over their mindless banter. The song was lifted into the air on a voice so pure, so delightful, that even the most ardent clubber had to pause a moment and pay it homage. A quiet fell across the dark space, and Redmoon paused to listen as well. He recognized the voice immediately.

"Breathtaking, isn't she?"

He barely heard Bosch's comment. "What?"

"The singer," the thin man said, pointing to the ceiling. "Such a terrible thing that's happened to her, isn't it? To be snatched off Terra, and in broad daylight no less. Who could have pulled off such a feat, I wonder?"



CHRONICLES



Redmoon shook his head, felt at his side for the laser pistol hidden away beneath his belt. "I wouldn't know anything about it. I'm a bounty hunter, not a kidnapper. There's no bounty on the Swan."

"Of course. But there is a big reward for her safe return. An astronomical amount, in fact."

"I'm sure there is. Thank you for your information, Vernon. We'll speak again."

Bosch juiced up another stim. "What's your hurry? Please stay, as I always enjoy your company. The cold expanse of space feels so much warmer when you tell your wondrous tales of bounty and breathtaking escapes. Sit. I'll buy you a drink, and I'll have one of my assistants be nice to you."

Redmoon waved him off. "No thanks. I don't drink."

Bosch held there for a moment, the stim suspended between his thin lips. He smiled broadly. "As you wish. Nice to see you again, Benito. Take care of yourself, and next time, let us *speak* of the death of kings."

Redmoon, ignoring that last comment, turned and walked quickly out of the nightclub.

\* \* \*

There were three armed men at the *Ahagahe*, trying to pry open its stairwell. He expected more, but apparently the order that Bosch had whispered to the girl during their conversation had not translated to swift action. Bosch was running on a hunch that the Swan was in the Freelancer, and Redmoon had upset his plans by refusing to sit back down and chat. His goons had not mobilized fast enough. More would be coming for sure, but here was an opportunity.

Redmoon stepped into their line of sight, drew his laser pistol and fired. The closest man went down with a hole through his throat. The other two, shocked at the abruptness of the assault, stood paralyzed for a moment, then raised their lasers

and fired. Too slowly, however, for Redmoon had already taken cover behind another ship in dock. Their shots hit its hull but did little damage. Redmoon waited until the fire subsided, then rose again. He put a pulse of intense laser light between the guards and hit his own ship. *Shit!* He hated missing. As Mirage had never tired of reminding him, missing meant your enemy could retaliate. But the wound in his side was still giving him fits, causing him to be inaccurate, to pull the shot to the right. He fired again, aiming more to the left. The beam of light cut into the guard's shoulder. The man went down screaming, his weapon skidding across the bay floor.

That left only one man, and he was falling back, desperately popping off shots that pinned Redmoon behind the landing gear of another Freelancer. He waited again until the shots subsided, rose and fired. A grazing shot. Just a flesh wound. The man yelped, raised this arm and fired. Another pause, then Redmoon stood boldly, aimed carefully, and put a shot in the center of the man's chest. He went down without a sound.

Redmoon ran to his ship, picking up the discarded laser that the wounded guard had dropped. For good measure, he drove his boot into the man's face, silencing his moans of pain. The laser had cauterized the chest wound so there was only a small trace of blood. He didn't like working this way, attacking so savagely. Bosch had left him no choice, however. Redmoon tapped a box on his belt, and the middle landing gear stairwell began to drop. He didn't wait for the stairs to deploy fully; he jumped on it and began shuffling upward.

Laser fire hit the hull of his ship.

He fell back to the bay floor of the landing zone, wincing at the pain in his side. *Am I hit?* He checked. No. It was the Terra wound, newly torn open by his abrupt move. It was bleeding again, through his shirt, but he had no time to worry about it. He lay flat on the bay floor, keeping his head protected behind the landing gear.



CHRONICLES



The laser fire stopped. "Give it up, Benito," Bosch shouted across the bay. "We don't want to kill you. We just want the girl."

"Sorry," he said. "She's not for sale."

"Funny," Bosch said, "but foolish. Whatever Angus Barone is paying you for her bounty is nothing against the reward for her safe return. Give her up. I'll share the reward with you, but keep your name out of the loop. Sixty-forty split. The authorities will not know of your involvement. What do you say?"

As his finger found the trigger, Redmoon considered the offer. It was tempting, and from anyone else, it might have been worth pursuing. But not from Vernon Bosch. Redmoon didn't believe for a minute that Bosch would keep his word. He would keep it until the very end, and then bail. The crook had done it before; he'd most certainly do it again.

Redmoon didn't bother answering. He rose from behind the landing gear and popped off three quick shots, scattering the men around Bosch. The white-haired man fell down as well, clutching his arm. Redmoon sent several more shots their way, pinning them behind a long line of crates, barrels, and ship hulls. He jumped onto the stairs and scrambled into the ship before they recovered and returned fire once more.

He tapped panels, and the stairwell began to close. One of Bosch's men had grown a pair and tried jumping onto the stairs as they folded up into the ship. Redmoon fired his pistol again and burned a hole into the man's hand, forcing him to scream and drop. The stairs closed and Redmoon made for the cockpit.

He strapped in and punched more panels. The engines fired. Their sweet, incessant roar sounded good as it vibrated through the deck like music against the scrape of laser fire on the hull. Bosch was persistent, Redmoon had to give him that, but as he said himself, foolish. There would not

be enough damage from all that fire to chip paint, let alone cause a breach. Redmoon tapped thrusters and guided his Freelancer back and up. Then he clicked a button on his chair. The vid and voice monitor of his passenger's cell activated.

"Strap in. Now!" He barked, guiding the ship back and accelerating. "It's going to get ugly."

"No!" Swan said, holding up her right hand in an obscene gesture. "Let me out of here!"

He thoroughly regretted his leniency when they had arrived. "Negative! We've got to move fast. Strap in, or be killed."

"Then I'll be killed! What's Angus Barone going to say when you deliver my corpse? Let me out. I can help you."

Redmoon cleared docking and let his ship rise with light thrust. By now, he should have gunned it. They'd be in Magnus's stratosphere already if he had. But she simply stood there, her face on the vid screen, looking petulant.

"What can you possibly do for me?"

"Whatever you may believe about me, *I am a Hurston!*" She screamed and punched the screen with an index finger. "I can help!"

Her claims to proficiency were an obvious sham, but she had a point about her broken corpse. That wouldn't fly with Angus or Nemo authorities. The job was to deliver her alive and unblemished. He could guarantee her life; but her health and physical safety? The way things were going . . .

He tapped the pad again on his chair, and the door to her cell slid open. "Get up here and strap into the co-pilot seat," he ordered. "Fast!"

He watched her scramble through the secondary cargo bay, up the narrow ramp, and into the cockpit. She was shaking, clearly scared, but glad to be out of her cell. She reached the co-pilot seat, strapped in quickly, and said, "Who is firing at us?"



CHRONICLES



"Nobody you ever want to meet," Redmoon said, banking left as they shot through the troposphere.

"Turn on navigation and sensors for me," she said. "I want to see what's happening."

He gave her access. "What's happening is that we are about to be jumped, I suspect, by Auroras. Don't know how many though."

"Do you know what kind?"

Redmoon shrugged. "Probably ES's. At best, forward-firing Behring lasers."

Swan huffed. "Fixed lasers. Nothing special. You can take them."

They slipped through the stratosphere and into the mesosphere, both pushed hard against the backs of their seats from strong G. It was not a good time to talk or move or do anything. "Yeah, but they might have missiles, so keep quiet," he said to her, "or I'll —"

Radar sounded, and blips appeared on Redmoon's display. *Damn! Three of them.* Individually, the Aurora was no match for a Freelancer, but three . . . Redmoon sighed deeply and shook his head.

"Don't worry. You have a good complement of lasers and missiles on this bird," she said. "My recommendation is to fire lasers on the Aurora's forward shielding to bring it down. Then pound the cockpit with missiles. You'll cook the pilot right where he sits."

He paused and absorbed her chatter. "How the hell do you know all that?"

"My father ran one of Hurston's proving facilities on Stanton 2. We conducted missile trials on Aurora cockpits all the time. Once its shielding is severely weakened, its cockpit can't withstand a powerful barrage of missiles. Not from a Freelancer anyway. Trust me, it'll work."

*Trust you?* This was a first for Redmoon . . . one of his bounties asking him for trust. It usually went the other way. He knew the tactics necessary to defeat an Aurora, but he was actually impressed with her knowledge of it, and he understood what she was doing. She did not know who it was that had sent these fighters against them. Perhaps it was the UEE, perhaps it was the Hurstons themselves. But what she did know was that Redmoon had her life in his hands, and that was forcing her to be nice. She was playing for time, providing help so that they could get past this matter and perhaps proceed to a better accommodation. Just like Mirage would often say: Tomorrow was another day.

"You may know a lot about weapons, Swan," Redmoon said, banking right to position himself for the first volley, "but you know nothing about dogfighting. Three against one. It's not so easy to get off a frontal shot like that on a ship that's faster and more maneuverable than you."

She paused, then replied, "You're right, but it's your best chance."

The Auroras moved in a tight pack against the *Ahagahe's* port side. Their best bet was to pour laser fire upon one shield face to bring it down quickly, and then follow up with missile fire. Redmoon's best bet was to crowd them, to fly as close to them as possible, to get parallel with their wings and thus disrupt their tight pattern and force them to spread their attack across his entire hull, thus diminishing the effectiveness of their lasers. With best luck, the Auroras would accidentally fire on one of their own ships. Luckily for Redmoon, these were Bosch's men, better at blades in the back than laser play in space.

Redmoon banked hard right. The closest Aurora broke pattern, tried to recover, turned its nose toward the Freelancer to try to get off a shot. Laser fire from the other ships clawed at the Freelancer's shields.



CHRONICLES



Redmoon looked down at his monitors and saw that one of the other Auroras had dropped below the Freelancer, attempting to turn upward and bring both its lasers to bear against his belly and the jump drives. They were trying to immobilize him, to keep him from escaping the system. “Not this time,” Redmoon whispered, and banked hard right again, taking his ship into what Mirage called an Immelmann.

Redmoon conducted the maneuver and lay hard on his laser cannon, pounding the forward shield of the Aurora until his monitors indicated a sixty percent drop in its strength. Not quite the overwhelming strike that Swan was clearly recommending, but close enough. He baked the forward shield with another barrage, then fired a Talon into the weakened field.

Just as she said, the missile struck the Aurora’s cockpit, shattering its canopy and immolating the occupant in a gout of fire that torched the Aurora’s controls and ripped the pilot from his restraints, tossing him into the void. Redmoon had to bank hard left to keep from taking collateral damage from the destroyed Aurora.

The other two attackers continued their assault against the jump drive, pouring more laser fire into his shield, which had fallen dangerously to thirty percent. But they had not yet fired missiles. Clearly that meant they did not have them, and were trying to bring him to heel with just lasers. Redmoon felt like chuckling. *Thank the gods of war*, he thought, letting his ship fall behind them. He struck the closest with a laser shot and followed it quickly with another missile. *Three, two, one . . . Boom!* The missile struck the Aurora and sent it spinning. Redmoon checked his sensors. The ship’s engine was gone. He smiled. *Dead in the water.*

The last ship, seeing its cohorts eliminated from the fight, turned tail and fled. Apparently, the pilot was not as interested as Bosch was in Swan’s reward.

Redmoon turned off his weapon systems and brought the ship back into normal flight conditions. He checked damage. Shields weakened fore and aft. Laser burns along the starboard hull. Scorch spots near the cockpit. Minor damage to the power plant casing. Nothing to worry about. Nothing that would keep him from leaving the system; the jump drives were still intact.

“Thank you, Swan,” he said, catching his breath. “You were helpful.” *Not really – she hadn’t said anything he didn’t already know – but she definitely had more on the ball than he’d expected.*

“You’re welcome, sir.”

Redmoon cleared his throat. “My name is Benito Redmoon.”

“Redmoon . . . I like that.”

“It isn’t my real name. It’s a moniker. An old friend gave it to me.”

“What does it mean?”

Redmoon shook his head and punched in the coordinates for their jump into the Nexus System. “I don’t know. He never told me.”

There was a long pause, then Swan said, “Are you still going to take me back to Nemo?”

There was a sinking feeling in his gut. Was he? Considering all that had transpired, all that he had learned from Vernon Bosch, was it practical to see this mission through? He considered his options carefully, but in the end, there was only one correct answer. *I’m a bounty hunter.* And as such, the expectations of his current, active contract took precedence over everything else. There was only one answer he could give.

“Yes,” he said, swallowing back the bile in this throat. “I’m still going to take you back to Nemo.”

***To be continued***



**CHRONICLES**