

JUMP POINT

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FROM THE COCKPIT

GREETINGS, CITIZENS!

Happy Holidays! I'm writing this earlier in the month as *Star Citizen's* development teams will be on a much-needed break when this year's final **Jump Point** publishes, but hopefully peace and goodwill towards beings are still the order of the day. *Star Citizen* has had its most exciting year yet, with so much of the long-dreamt game coming into focus these past twelve months... and it has been my honor to help record some of that development for posterity. (It's going to be a lot of fun revisiting old **Jump Points** down the line.)

Our feature interview this month covers one of *Star Citizen's* latest additions that you might not have paid much attention to: gas clouds. In fact, when Jared suggested I look into the work being done on gas clouds my first thought was that he was pulling my leg. After all, everyone can remember the start of *Star Trek VI* where we're meant to chuckle over the fact that the mighty *Excelsior* has been spending all its time "charting gaseous anomalies." But sure enough, it turns out gas clouds are pretty darned interesting! Not only do they address one of the oldest issues facing space sims, the emptiness of space, but they involve a lot of fascinating work to implement and look to have some pretty interesting future applications. And heck, they look real pretty, too! A very special thank you to Jake Dunlop, the person behind the gas clouds you might have spotted in Stanton, for taking the time to educate me!

Our second feature covers one of the fantastic new ships revealed at the Intergalactic Aerospace Expo, the Roberts Space Industries Perseus gunship. This impressive new warship concept was developed by the dream team of Paul Jones and Gavin Rothery, and I sure can't wait to see it in-game. For this article, we take a deep dive into the art process and follow it all the way from the initial design blurb to what you saw on the show floor. (I know you have other new favorites from the IAE, too... we'll check into them in the new year!)

On the lore side, we have a Whitley's Guide that gives us a topical look at the *Esperia Talon*, the second resurrected Tevarin spacecraft that's going through the launch process as I type. We covered the internal development of the *Talon* in a recent issue and it's always fun to finish the story with the in-lore history. Finally, we end the year by letting the Portfolio feature fulfill a fantasy I think we've all had once or twice: crashing a Javelin-class destroyer on Daymar! Check it out.

With that, I'll see you when we kick off the ninth (!) year of **Jump Point**... I'm sure it's going to be a good one!

Ben

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BEHIND THE SCENES: CREATING GAS CLOUDS

Eagle-eyed citizens may have already noticed that the 'verse has recently become a little bit more colorful with the latest patch. That's due to the addition of a brand-new system that allows for gaseous clouds. Take a look the next time you hit up a refueling station located at a Lagrange point to see the start of the system in action. It's a technology that will drive a lot of small elements of gameplay that will make a big difference in the long-term. It's also something that helps address the age-old problem of space combat games: finding realistic ways to make space itself visually interesting. What's more, the new gas clouds are an example of a technology that has spun off of the development of *Squadron 42* and how the parallel development of both games allows them to share technologies that benefit one another in different ways. We sat down with Jake Dunlop, the developer behind the gas clouds you'll come across in Stanton (and beyond!) to find out how they're created, how they're impacting gameplay, and how they might become even more important in the future.

BEGIN TRANSMISSION →

JUMP POINT: Please give us your title and tell us what else you've worked on on *Star Citizen*.

JAKE DUNLOP: Hey! I'm an environment artist and for *Star Citizen* and recently worked on Lorville, Area18, and the modular space stations.

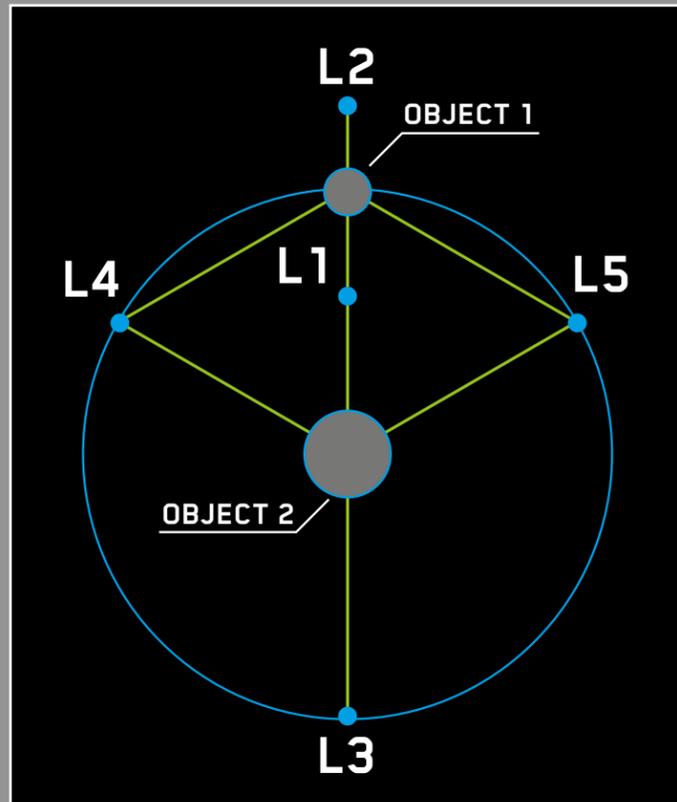
JP: Why does *Star Citizen* need gasses? Where are they used in the game?

JD: The reason why we have been adding gas clouds to *Star Citizen* recently is because the coil tech for *Squadron 42* has proven to be more versatile than the primary circumstance it was made for. So, we have been experimenting with ways to use it in the PU. Our first implementation is adding gas clouds to Lagrange points in the Stanton system. The reason we chose this is because they were just pockets of popcorn asteroid clusters in empty space - it was really high contrast and not easy on the eyes from some angles. We prefer our game to look a bit more cinematic, at least on the art side, so we knew using the gas cloud tech would allow us to create some beautiful shapes and

colors. For the design side of this decision, it was clear that this would enhance gameplay around these areas by firstly adding some cool gas to fly around and chase bounties in. And secondly, the gas also has added effects for the player and their ships. Now you might want to consider if it is worth it to mine a certain asteroid or not depending on how thick the cloud is and what effects it brings. For example, some clouds can be very hot and some can be very cold, so it is a decision to consider when traveling inside them. These effects are very basic right now and will expand in the future, but right now it is a nice base to work from.

JP: Walk us through the process of starting to create a new gas. Where do you start?

JD: The way we start planning gas clouds is firstly finding where we want them in the game. After we figure that out, we then talk to the *SQ42* gas cloud experts for advice on how to go about it, as they've been working with this tech for years and have very good knowledge about its limitations and strengths. Once we have all the info we can



WHAT IS A LAGRANGE POINT?

Lagrange points are a set of five areas in space that are located between and astride any two large bodies (such as stars, planets, and moons). Any two such objects will generate their own set of shared points which are designated L1 through L5. L1 through L3 are located along a straight line between the two objects while L4 and L5 are positioned either side on the vertices of equilateral triangles, whose size is determined by the masses of the objects in question. Every pair of objects generates its own Lagrange points; so there is, for instance, an Earth-Moon L5 and a Sun-Jupiter L5 which are different points in our solar system.

Because of the gravity generated by the two orbital objects, Lagrange points provide essentially a static point in space where objects can remain without needing to stay in place under their own power. In nature, they may collect so-called "trojan asteroids" and other spaceborne material (like the new gas clouds) which make them natural points of interest. They're even more interesting to space explorers (and future science fiction universes) because they're points in a solar system where satellites and stations might be very effectively constructed. While an orbital station (like the ISS) needs to carefully maintain its orbit, a theoretical space station (or 30th-century gas station!) could be placed at a Lagrange point with the minimal possible use of resources.



get, we will start some experimentation in Houdini; try out a couple of different approaches with the advice from the SQ42 gang and choose the best option on the side of looks and gameplay.

JP: *What exactly is Houdini?*

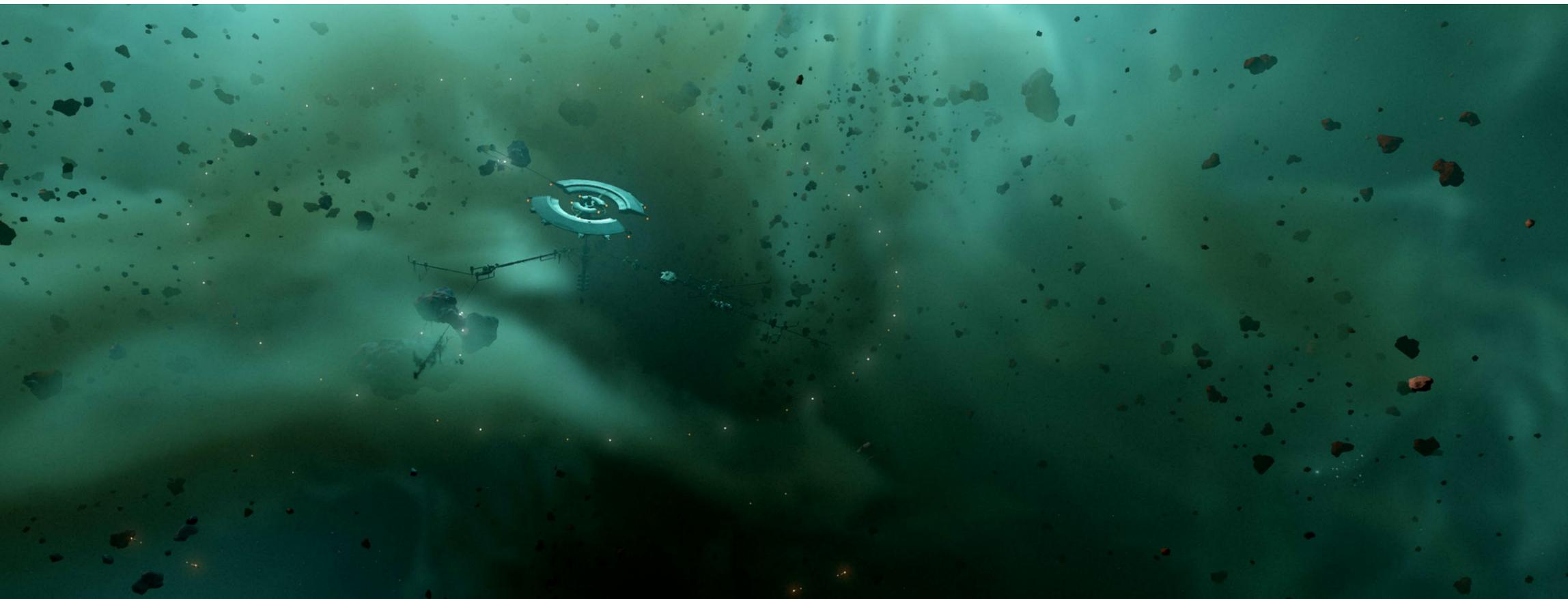
JD: Houdini is a program that is used by many film studios for big effects and simulations. It can do a wide variety of things and so even our VFX artists are able to use it for many of our particle effects you see in-game. I'm currently using Houdini to create some smoke simulations, editing them a little bit, and then exporting them for use in the game as gas clouds.

JP: *Do you always use smoke as the basis for the gasses?*

JD: I've been experimenting with different simulation methods to find the best result, but currently smoke simulations have been the best. I am constantly looking for different ways to get more detail out of them though.

JP: *What kind of work goes into editing from that starting point?*

JD: After I have a basic smoke simulation, I will usually add a 3D noise to it that will push it around a little bit and add lots of smaller details that you can't easily get from that base simulation. Afterwards, I will add in a couple of layers of simple fog that fades out around the edges. This fog really helps make the cloud feel more atmospheric and moody.



transparency costs go up very quickly on very high resolutions. The Graphics Team is always looking into performance, so it's not like this is the last time they'll be touching it.

JP: *What else could they indicate in future gameplay?*

JD: For future gameplay, the gas clouds will mainly be additive to existing and new areas of the game to make them more interesting on both the gameplay and art side.

JP: *What's the difference between a parent and a child gas cloud?*

JD: The difference between the parent and child relationships that gas clouds have is that parents are great for a background or the core shape of a whole cloud, whilst the child clouds can be placed inside to add detail and be more gameplay sized, usually with more detail than the parent.

JP: *Is it ever possible to fly far enough to interact with the parent?*

JD: In the Lagrange points you could possibly get close enough to a thick area of the parent and 'interact' with it, but all that would happen is it might get a little warmer in that space as the voxels are so large it's hard to have anything meaningful happen there. That's why we have the child clouds - those are where you want to be.

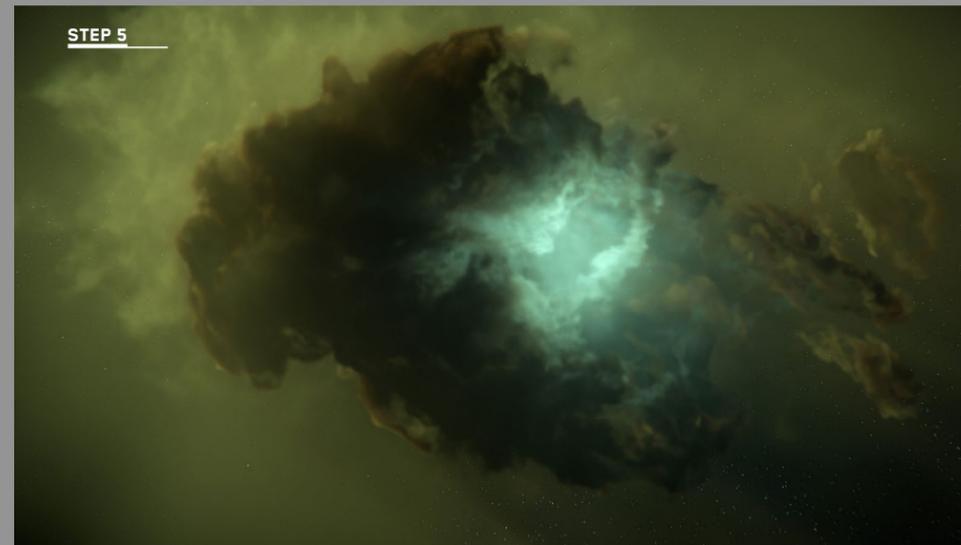
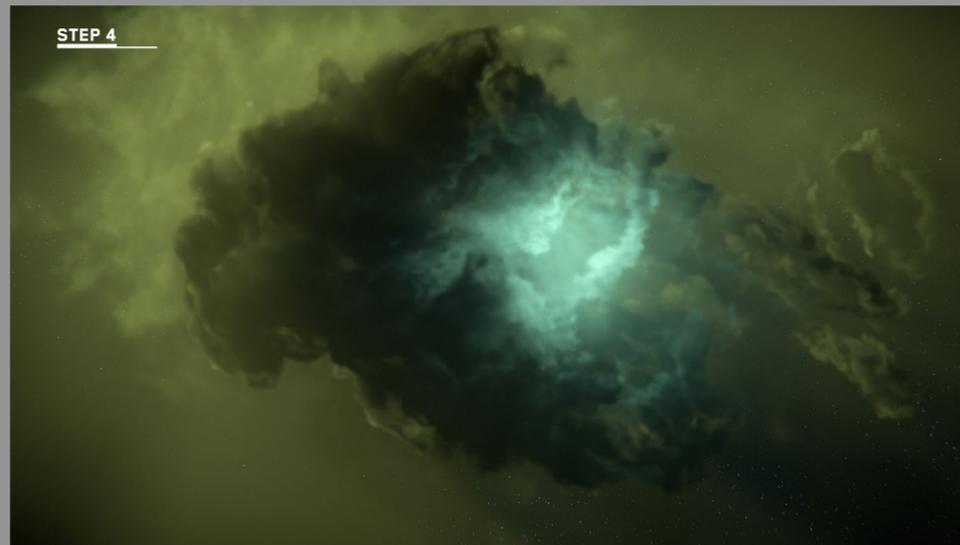
JP: *Why don't we see gas clouds at stations orbiting planets?*

JD: Gas clouds are around Lagrange point rest stops and not planet rest stops because there are currently tech restrictions on rendering a planet's atmosphere and gas clouds at the same time. They're both very advanced pieces of tech that have not been created for many games before ours, so it's not an easy task getting all of these working together in harmony.

JP: *What kind of limits are there to the resolution of the gases? (And what does it mean that they are voxels?)*

JD: There are a couple of limits to gas clouds to get them to perform well right now. The first one is resolution of the cloud, and by resolution, I mean how many voxels you can fit inside it. An easy way to explain a voxel is it's basically a 3D pixel, pixels just like we use on our textures. Every game has texture limits and ours is no different. You might be able to guess that rendering a 3D pixel is a little bit harder than a 2D one, plus you can't have as high of a resolution as you might think because you're not working with a 2D texture and a 2D resolution, you have to multiply all that by a third dimension. The second limit is transparency in games is very expensive. The gas cloud is a giant screen-filling transparent-tech nightmare. If you do have any performance hits when traveling around gas clouds, turning your graphics settings down will help and most of the time you can't tell any difference in the cloud's detail! Lowering your resolution even by a small amount is also a very good idea if you're struggling as





STEP 1/ This is a gas cloud that's lit with the sun and a gas cloud light (a light that is used to light the cloud but does not add any gameplay effects to that area).

STEP 2/ This is what it looks like when you turn on shadows (we don't use shadows on all lights mostly to save performance).

STEP 3/ Here the gas cloud light is changed to blue.

STEP 4/ Here the gas cloud color is

changed to a warm green. This makes the blue light feel like more of an aqua color because a blue light shining on a green gas particle would essentially blend the colors together.

STEP 5/ The final step is to add a light leak color of orange. This changes the light color as it passes through the cloud, so the deeper it goes the more orange it will get. You might notice this light leak effect on your own ship as you fly through these clouds in-game; the deeper you go the more the light will be tinted.

JP: How will players interact with the child clouds as they fly through them? Should they be avoided?

JD: Currently the child clouds do get pretty dense, dense enough that it's sometimes hard to see asteroids. That itself is a bit of a threat, so you should be a little more careful when flying inside a gas cloud than you might normally be in an asteroid field.

JP: Tell us about the colors used for the gas clouds. Will they all be the same as those seen in the Stanton System?

JD: In the Stanton system, the idea is to keep them in the Stanton theme, but depending on which planet they associate with, they are colored slightly towards the feeling of that planet. For example, the Hurston Lagrange points are tinted a slightly more desert orange.

JP: How do you make sure the clouds look 'right' from different angles?

JD: I test the clouds from every angle I can, but I mainly look at the angles the player will quantum travel from. Then, if there is something wrong with the lighting or cloud itself, I will go in and make a decision on what to do next.

JP: What impact does lighting have on the gas clouds?

JD: For me, the lighting of the clouds is very important as it really gives off a mood. The lighting intensity, color, gas cloud color, and light leak all contribute to this. The cloud can easily feel unnatural or fake if one of these components is not dialed in by an artist.

JP: Do you work with any other disciplines when creating these gas clouds? Is there a sound component, for instance?

JD: I work with many disciplines to create the gas clouds. I stick close to design throughout the whole process but also talk with Lighting, VFX,

Narrative, and Audio. There are a lot of elements to make these gas clouds feel right but one of the most important elements is community feedback. It helps to show me if I have any blind spots when having my head down in development.

JP: Is this the final form for interstellar gasses or does work continue?

JD: Our game is very iterative. Lagrange points are in a really good position right now, much better than what they have been and so they've already been improved. It does not mean that this is the last improvement they can or will get, as I know when we work on new locations we will learn and improve and be able to use this new knowledge.

JP: Do you have any special message for fans who will soon be exploring your work?

JD: A message I would want to tell backers would be to go out and play

the game and express your opinions on the clouds as I am constantly reading feedback!

JP: Is there anyone else we should include in the credits for the gas clouds?

JD: There are many people that have been working on the gas clouds, but the main person who has made this tech possible is Ben Parry, previously a senior graphics programmer here at CIG. He spent a solid 2 years working on this piece of tech and deserves the praise.

WORK IN PROGRESS... ROBERTS SPACE INDUSTRIES PERSEUS



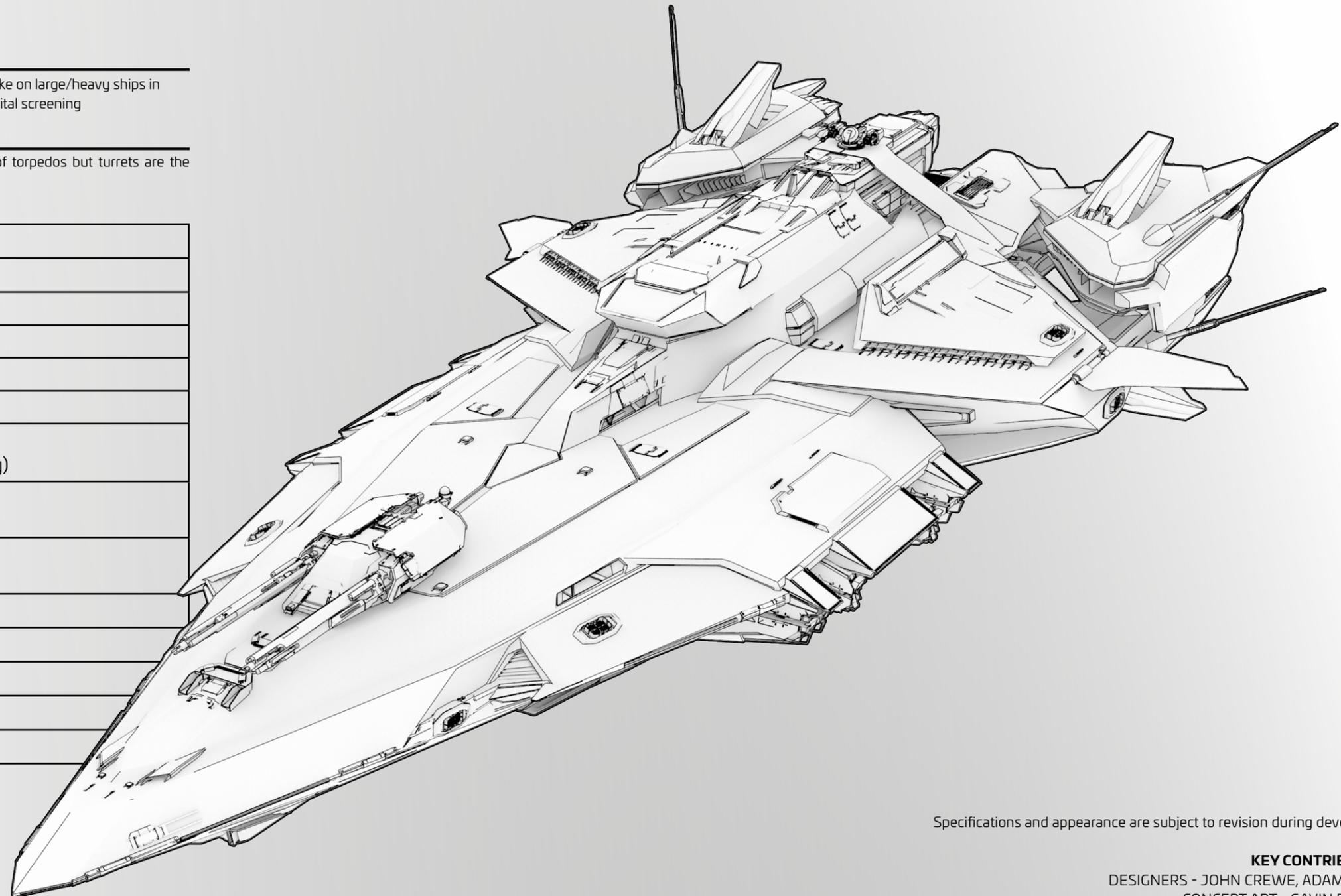
AIMS

- RSI's large turret focused heavy point defence ship, akin to a Gun Boat. Designed to take on large/heavy ships in fleet defence. The Hammerhead is designed to screen fighters, this is for large/subcapital screening

AESTHETIC

- Heavy turreted ship for engaging large/sub capital ships – has a small quantity of torpedos but turrets are the main focus.

Length	100m
Width	50m
Height	21m
Cargo Capacity	50 SCU
Max Speed	92m/s
Max Crew	6
Turrets	2x Manned (Twin S7 Weapons) 2x Auto/Remote (Twin S3 Ballistic Gatling)
Missiles	2x S5 Tube Torpedo Launchers (10 Torpedos per launcher)
Thrusters	Engines - 2x Main, 2x VTOL Thrusters - 12x Fixed
Quantum Drive	1x Large
Life Support	1x Large
Fuel Tanks	2x Large
Power Plant	2x Large
Jump Drive	1 x Large



Specifications and appearance are subject to revision during development.

KEY CONTRIBUTORS :
 DESIGNERS - JOHN CREWE, ADAM PARKER
 CONCEPT ART - GAVIN ROTHERY
 ART DIRECTOR - PAUL JONES

WHAT'S A GUNBOAT?

As Chris Roberts and the team looked forward to 2020, there was a clear understanding that the annual Intergalactic Aerospace Expo (IAE) would be the place to premiere *Star Citizen's* next warship. But what kind of warship would provide a new and different experience to the community? Previous events had launched everything from colony ships to blockade runners, while *Star Citizen's* existing fleet included destroyers, torpedo boats, carriers, and more. Wanting to avoid simply offering larger battleships, Roberts hit on another type of warship not so often paralleled in space: the gunboat.

Most familiar for their role in the American Civil War, ironclad gunboats were the very first warships with armored metal hulls and steam-powered engines. In the middle of the 19th century, they put an end to centuries of traditional warfare as a new type of deadlier seafaring threat that would force navies around the world to rebuild their fleets and rethink their tactics. *Star Citizen's* equivalent could be a smaller warship built around a large, heavy-hitting turret. What's more, it would be a chance to revisit the Roberts Space Industries (RSI) lineup, relatively undeveloped for the past year.

The Design Team, lead by John Crewe, developed a brief for the ship around Roberts' description, imagining a smaller point defense ship designed to take on heavier warships during fleet operations. Perseus, they pictured, would shield UEE battlegroups from Vanduul destroyers and the like, often partnering with the Hammerhead, which would be responsible for anti-fighter operations. The final name Perseus, after the Greek hero and demigod, came very late in the development process, with the Concept Team referring to the design as the RSI Gunboat.



CONCEPT STAGE ONE

With the brief in hand, the job of visualizing the gunboat fell to Art Director Paul Jones to interpret both the designers' specifications and Chris Roberts' overall vision for adding a gunboat to *Star Citizen*. "It had been a while since we'd done a large ship like this," Jones notes, "and a while since we'd done an RSI ship." Reviewing the brief, Jones made three notes:

1. "Avoid the trap of it looking like a Polaris"
2. "Ask ourselves, what's the visual hook? An aggressive, threatening silhouette"
3. "Can things deploy? What's the cool factor?"

Answering these questions meant bringing in someone with plenty of experience to help flesh-out the new warship. For the initial pitch, he chose one of *Star Citizen's* most experienced outsource concept artists, Gavin Rothery. Rothery's extensive *Star Citizen* vehicle catalog already included the Aegis Gladius, MISC Prospector, Esperia Prowler, Aegis Terrapin, and others... and now he would be adding an RSI ship to his portfolio.

For reference, the time spent since last working on an RSI spacecraft meant taking a long look back... way, way back. Jones collected a fleet of existing RSI artwork ranging from the more recent Mantis and going all the way back to Ryan Church's original ortho of the Bengal strike carrier from 2012. More recent ships, like the Mantis and the Apollo, would heavily inform the design but work on warships like the Polaris and the Bengal would also

provide a great deal of strong material. Treating the Perseus as one of RSI's latest designs, Jones was keen to follow the very visible progression of the manufacturer that had been developed over the years. Concept artwork on the Perseus began in earnest in July 2020, with a hard release date set for the IAE event three months later. That kind of timeframe would have been impossible to achieve earlier in the project but constant improvements to the concept pipeline meant that the team could now fire on all cylinders.

As included in his original notes, Jones thought that developing a 'baby Polaris' was the obvious route and he wanted Rothery to explore other ideas first. To that end, Jones sketched a series of exploratory silhouettes

that he described as being a bit like "the Mantis on steroids." From there, Rothery returned with four rough 3D models representing four very different directions:

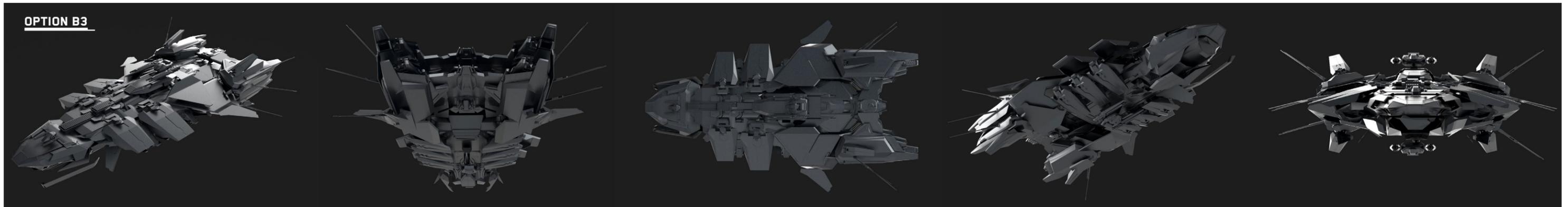
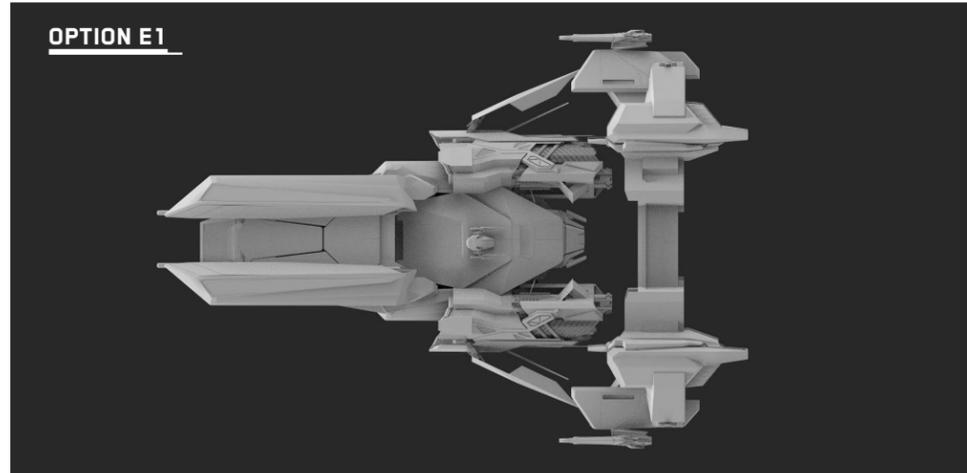
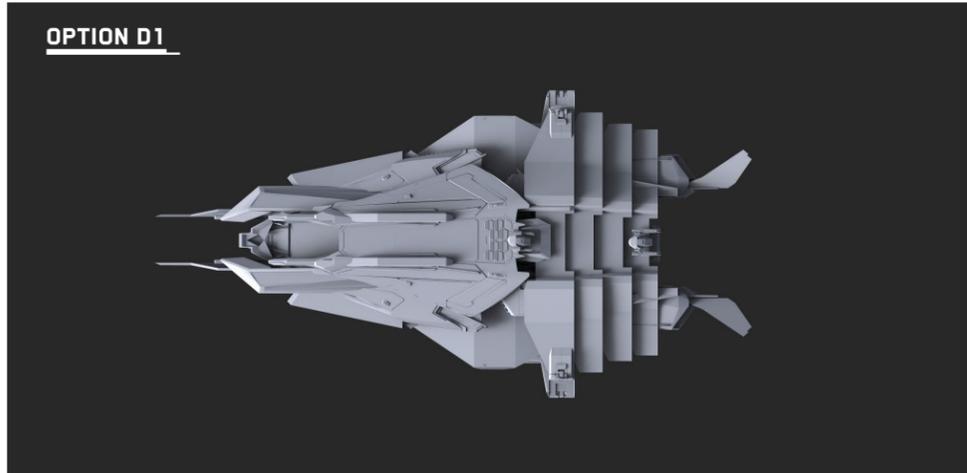
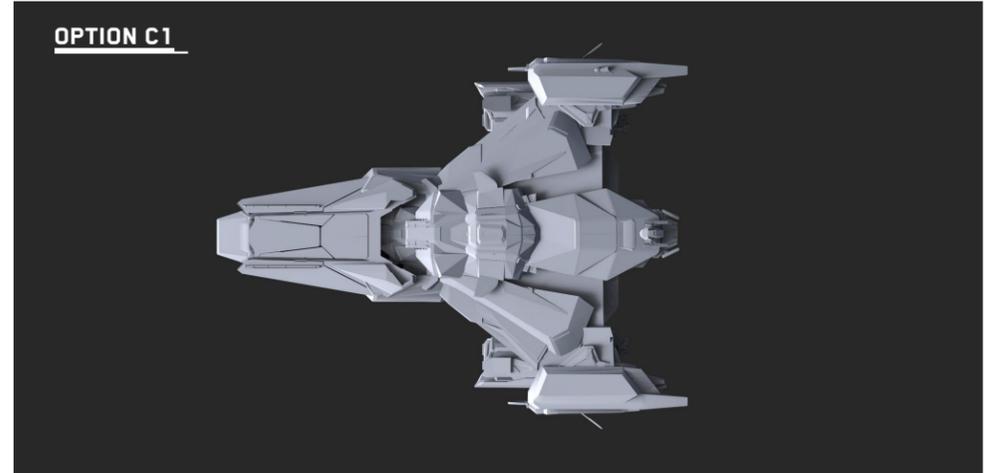
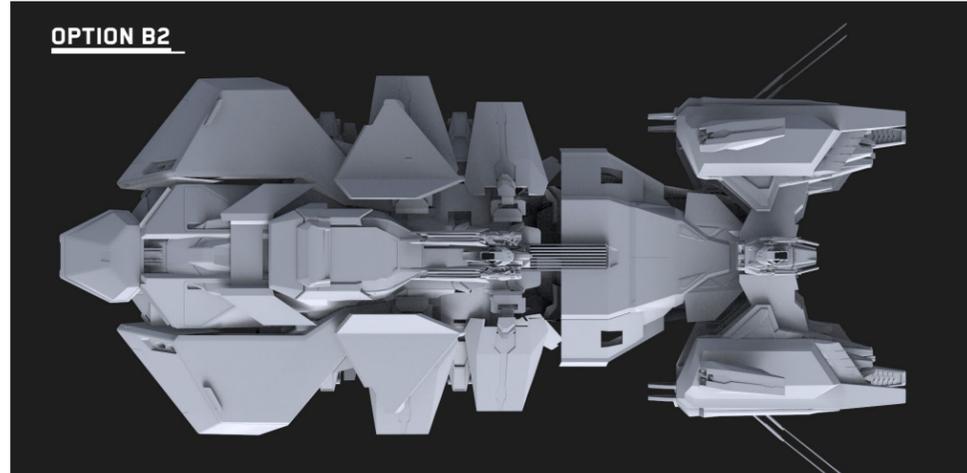
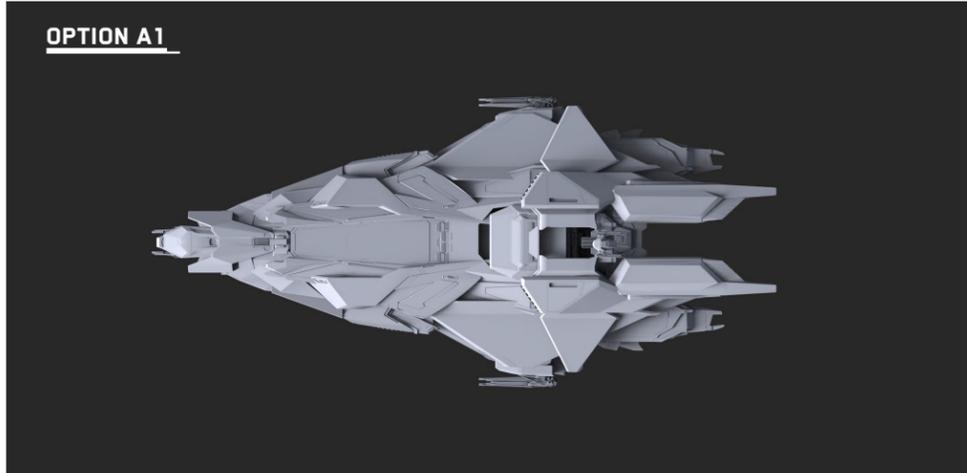
- A1 offered a triangular arrowhead that mirrored the Polaris' aggressive shape
- B2 was a take on Paul's sketches that offered a more elaborate, ribbed design
- C1 featured large engine nacelles somewhat reminiscent of the Constellation as its visual catch
- D1 featured split lines and a ribbed hull

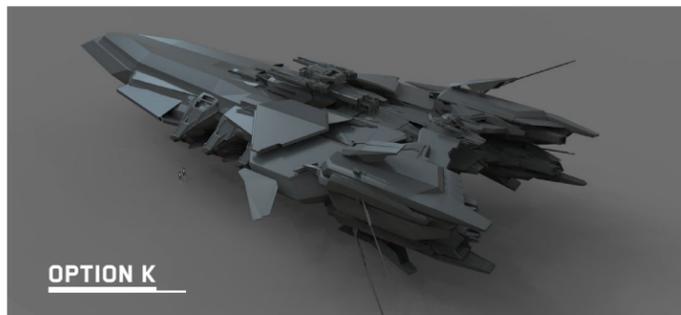
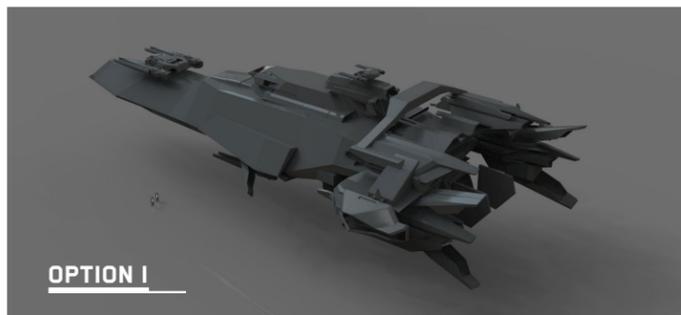
Jones notes that he works very well with Rothery on this kind of concept, with the two able to effortlessly complement one another to develop ship ideas neither might have come across on their own.

Jones presented the four ship options to Chris Roberts for feedback and in the hope of nailing down a more singular direction. Roberts' feedback was that he felt the ship needed less interior space but also display more distinct external guns to match its gunboat classification. Rothery first returned with two more distinct options, E1 and F1, which featured more distinct split lines and a sort of ringed drive array to the stern. These Jones noted felt more like explorers than warships, with the idea filed

away for future consideration. Taking Chris' feedback regarding internal space and guns into effect, Jones and Rothery massaged the initial four concepts into second-tier versions that tweaked the overall lines and proportions and added more visible turrets.

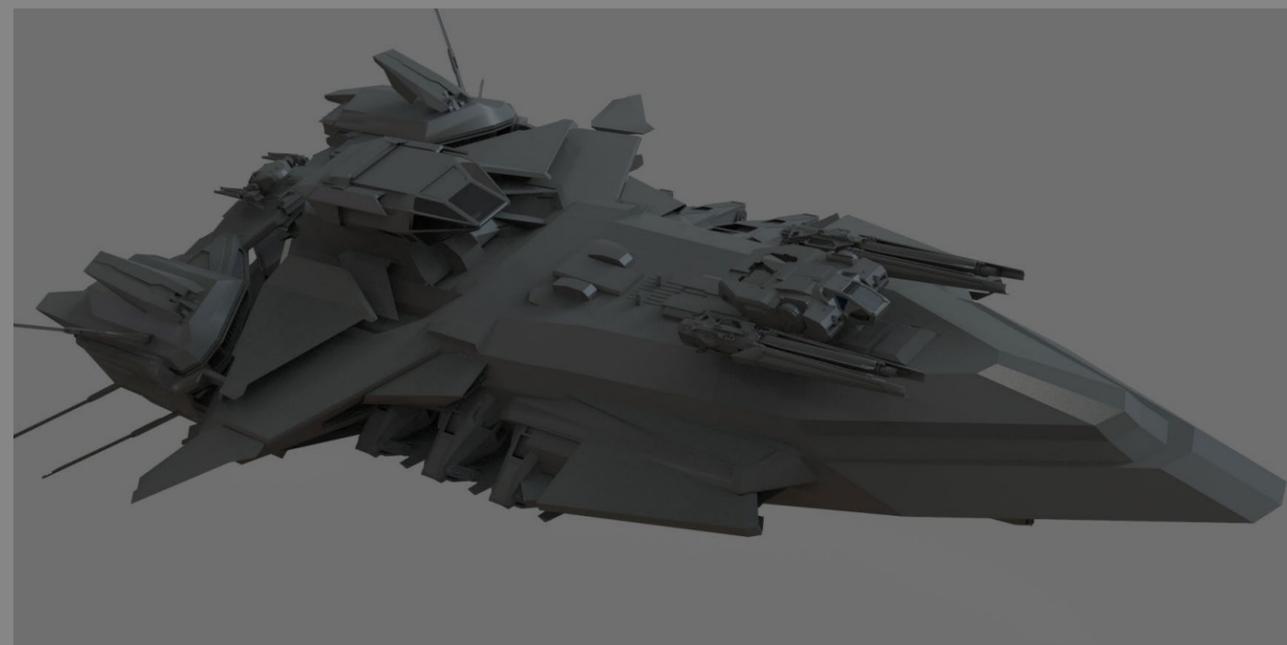
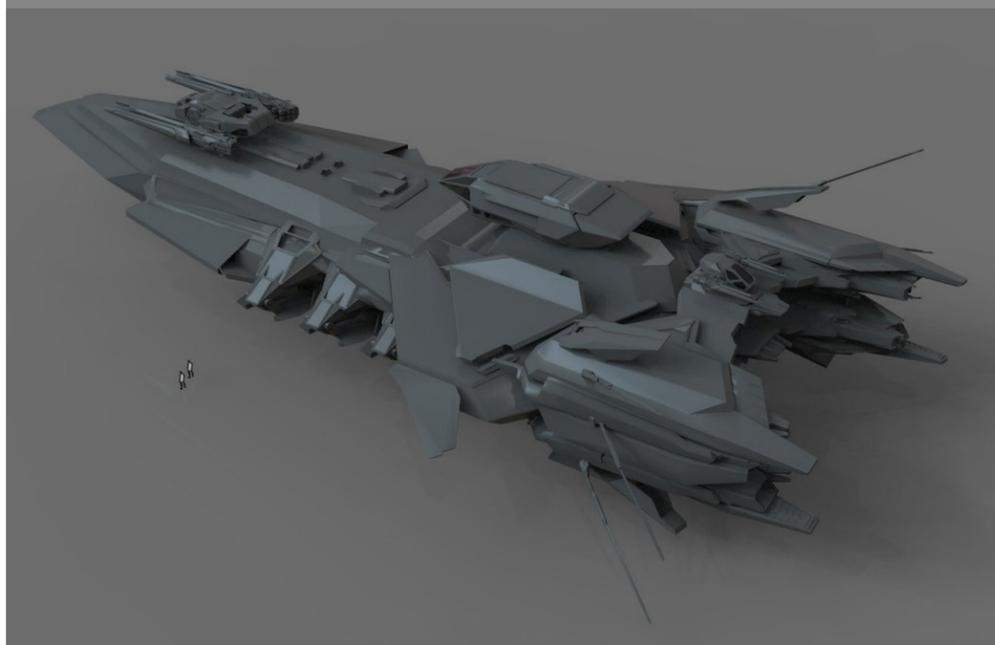
From here, Paul chose option B2 and took his own pass, merging the model with one of his original sketches, heavily tweaking the two in the process. "It was 'rule of cool' at this point," Jones explains, "we had components with no purpose yet. But we wanted to go for an aggressive shape and it already had a lot of the DNA that would end up in the final design." Jones chose from the latest concepts to present options to



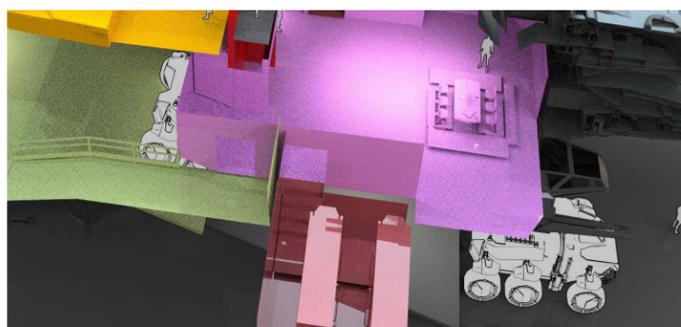
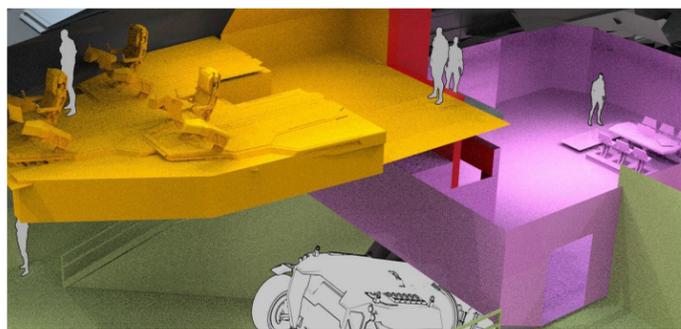
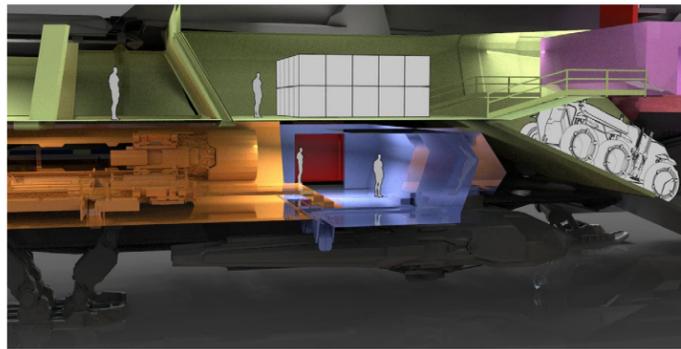
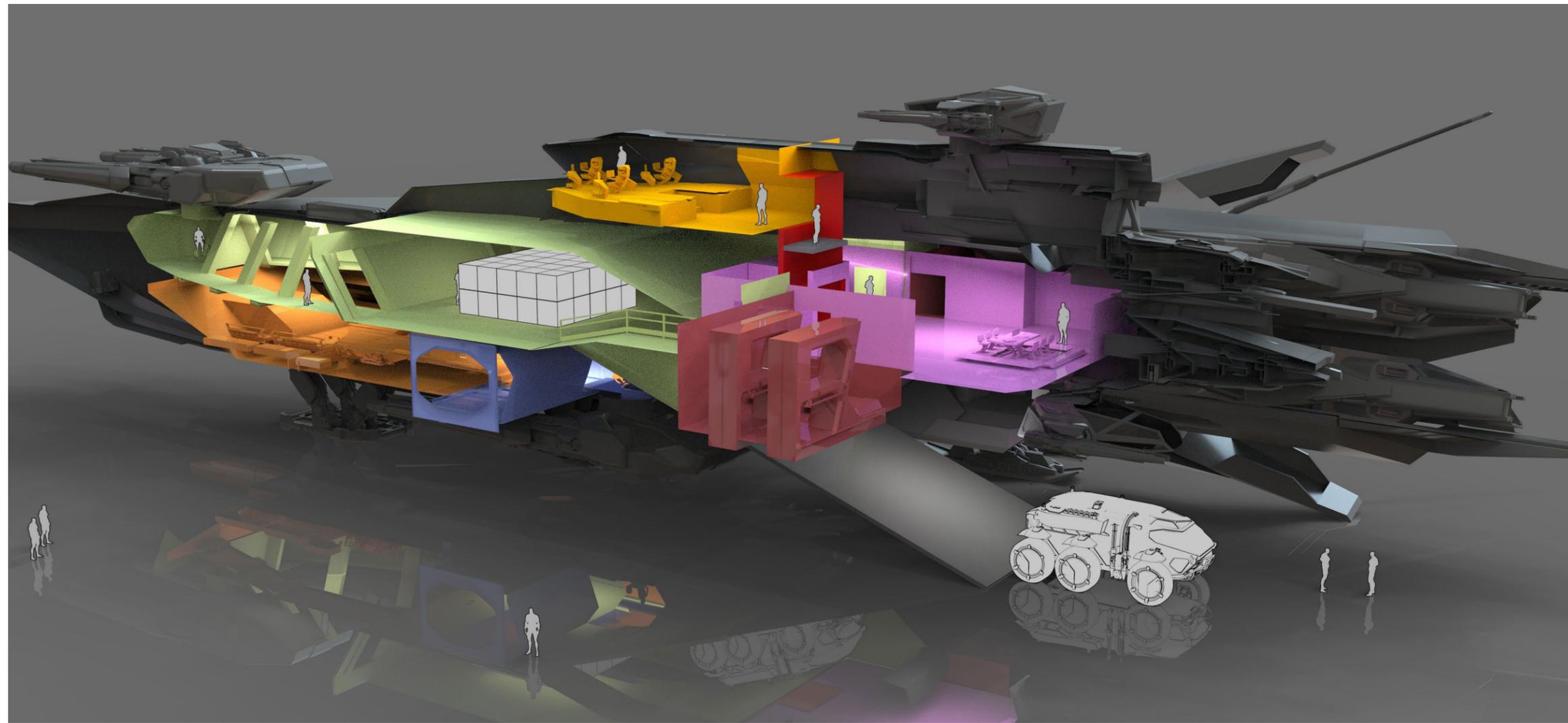


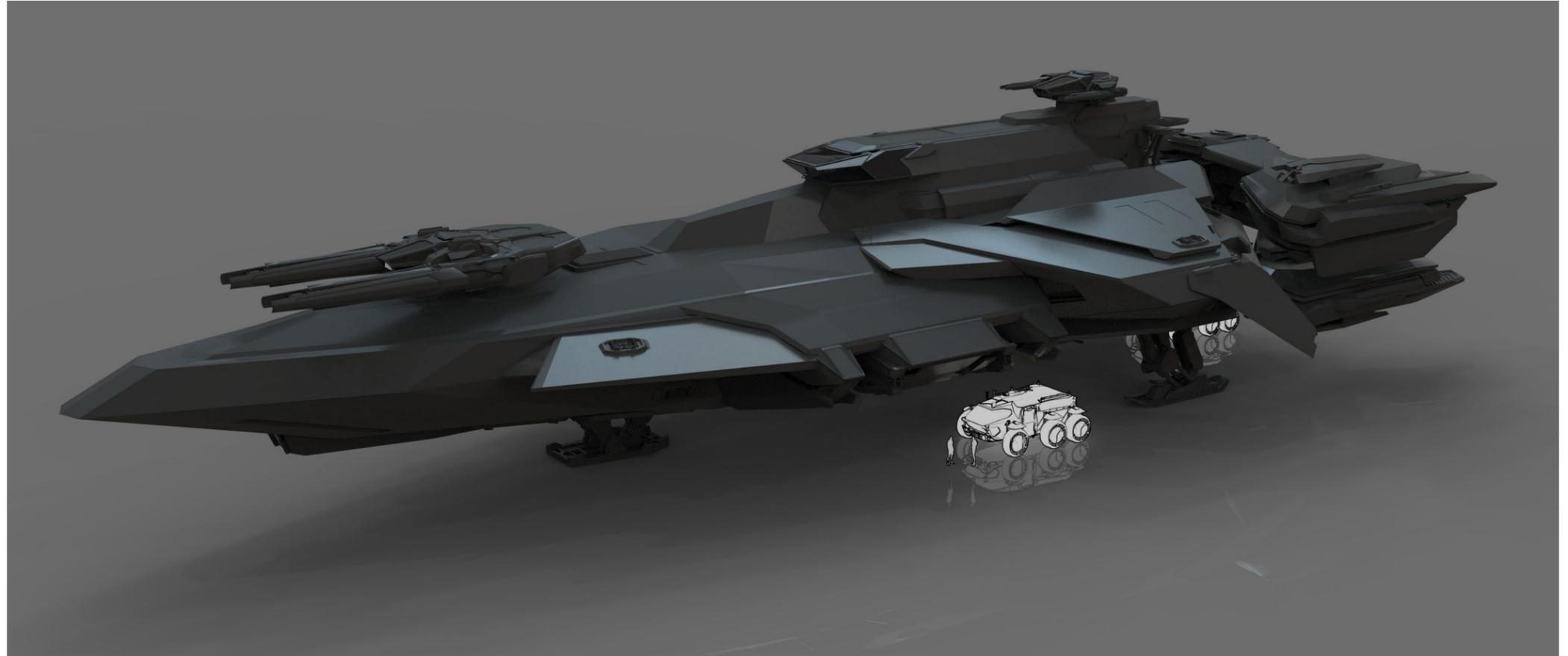
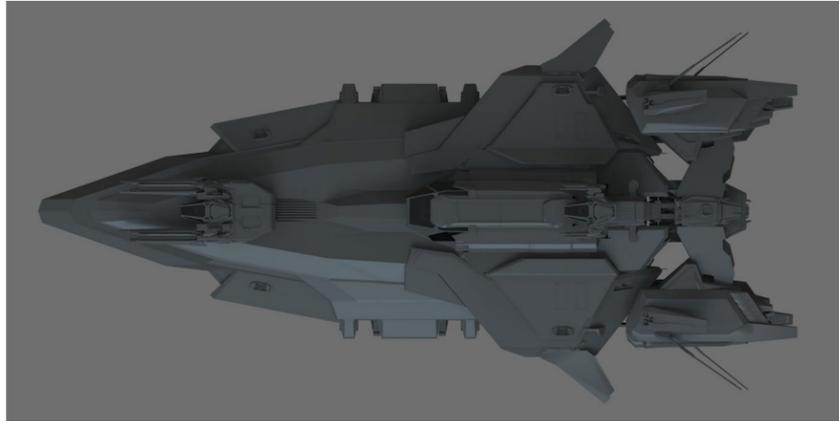
Roberts, careful not to offer too many directions at once, which can confuse the process. Roberts replied that he liked the direction of B2 but wanted bigger guns, an elevated bridge, and a chin turret. He also provided some important references that had not been considered previously: artwork of Civil War ironclad gunboats.

Jones and Rothery returned to work to create another round of options with more distinct bridges and chunkier turrets. Options H and J were more literal takes on the ironclad look with Jones trying to spark imagination by creating a slab-based ship, while K finally hit on the happy medium that would lead to the final work. K3 followed with a more elevated bridge and the team began to move from finding a direction to properly refining it. Roberts approved of the direction but had more feedback, asking that side prongs be removed and wanting the design to center around a custom gun rather than a modular turret.



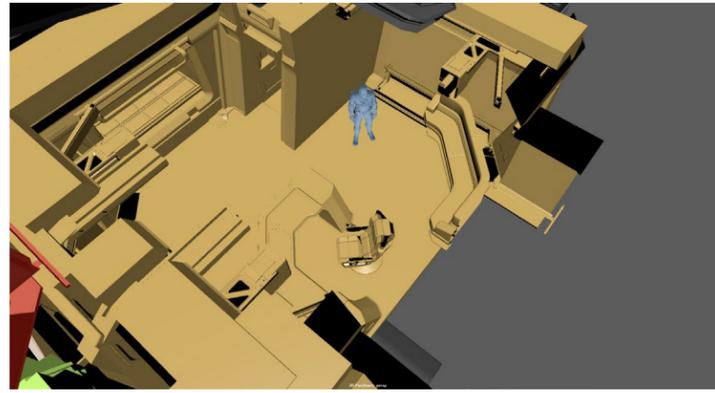
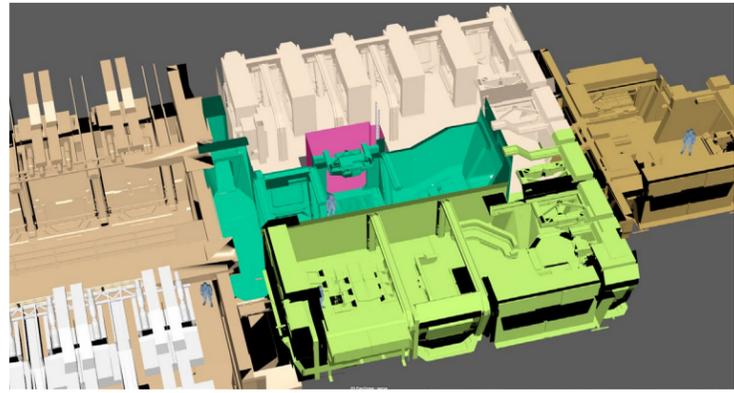
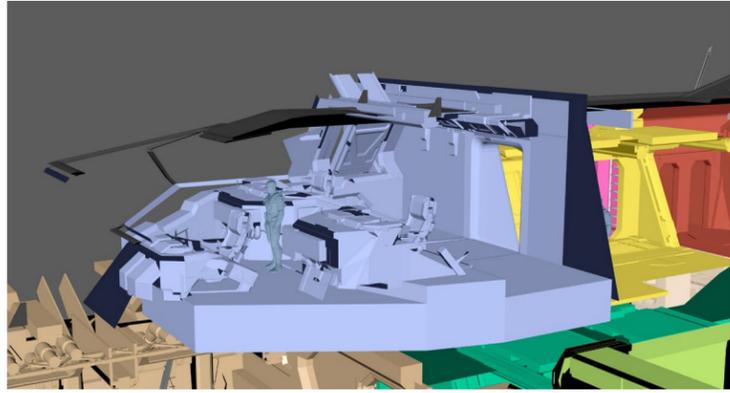
The next job was to flesh out the interior. What rooms would go where, where could cargo be loaded, where would rovers deploy? Design had not provided a detailed list of rooms in the original brief, leading to a meeting to determine exactly what would be needed. The first take on the Perseus' interior was developed around a large buggy ramp which seemed appropriate from the exterior but left Jones unhappy with the internal flow. "A lot more time goes into thinking about flow at this point than earlier in the project when you are just trying to nail down the overall look." To accomplish this, concept artists must visualize the player experience that might be months or even years from being completed and imagine what it is like to move from point to point aboard the ship. Can the turrets be personed quickly? Can the bridge be reached? In general, does it make sense that the ship is designed in this way? In the first take, Jones did not like the elaborate path from the rover bay through the cargo bay to the operational parts of the ship. Together, he and Rothery reimagined the interior with a series of colored 3D models. But even changes to the cargo lift and the addition of missing rooms still fell off to Jones, though there wasn't one clear problem. Interior work would need to continue after the first pass review.



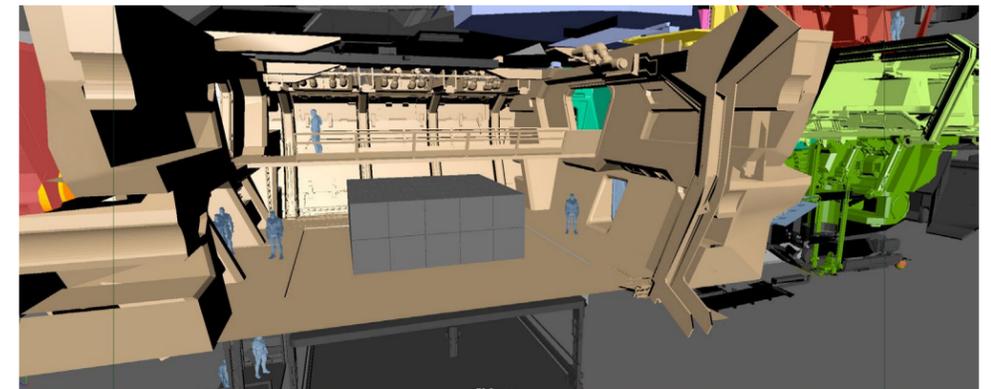
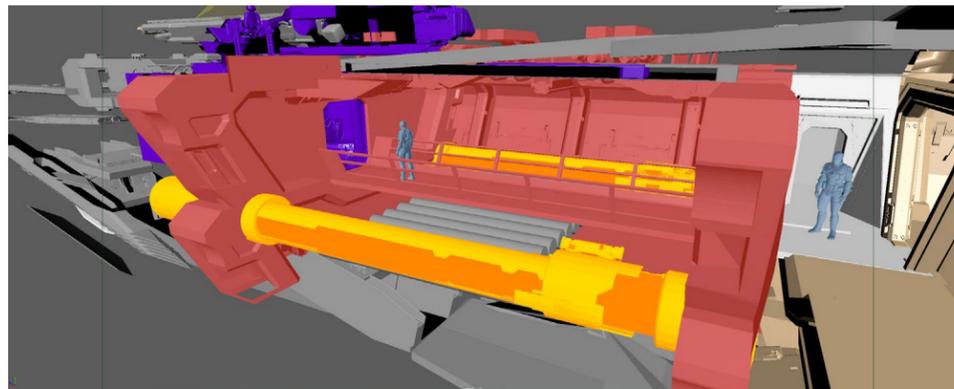
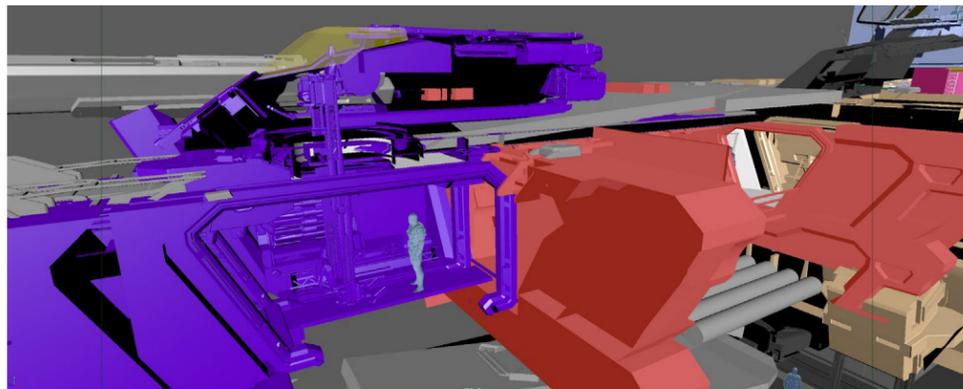
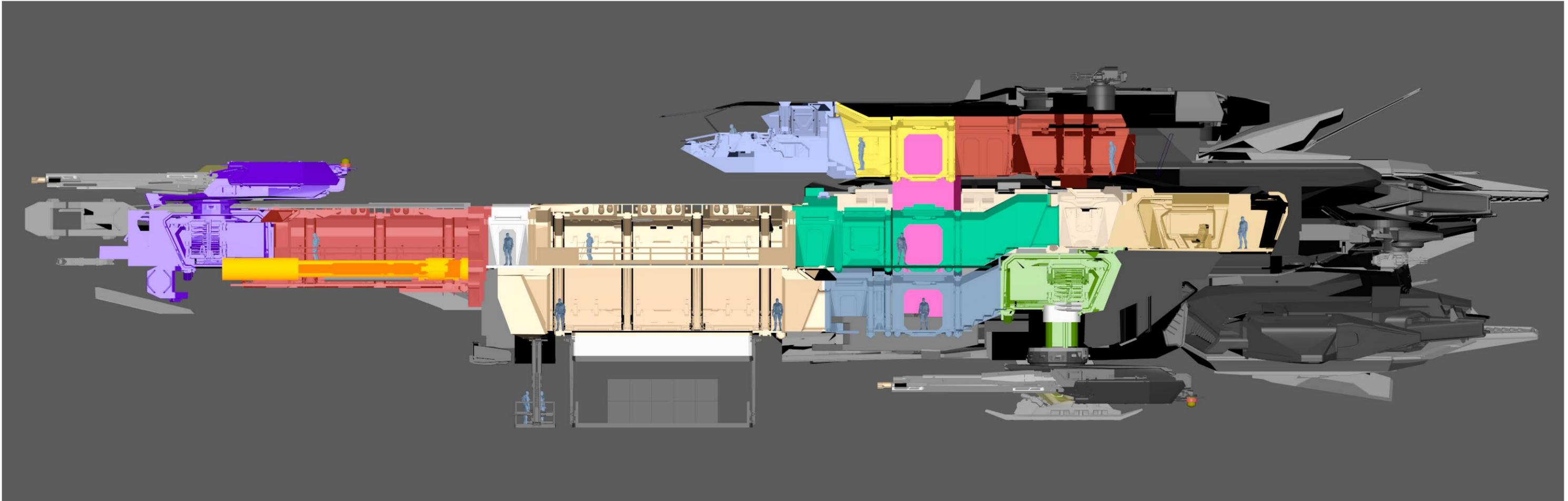


CONCEPT STAGE TWO

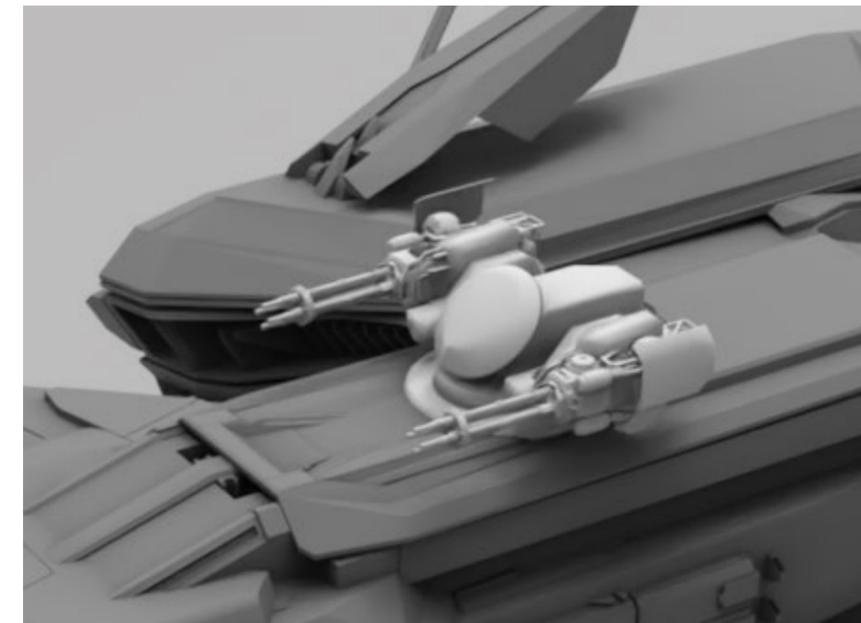
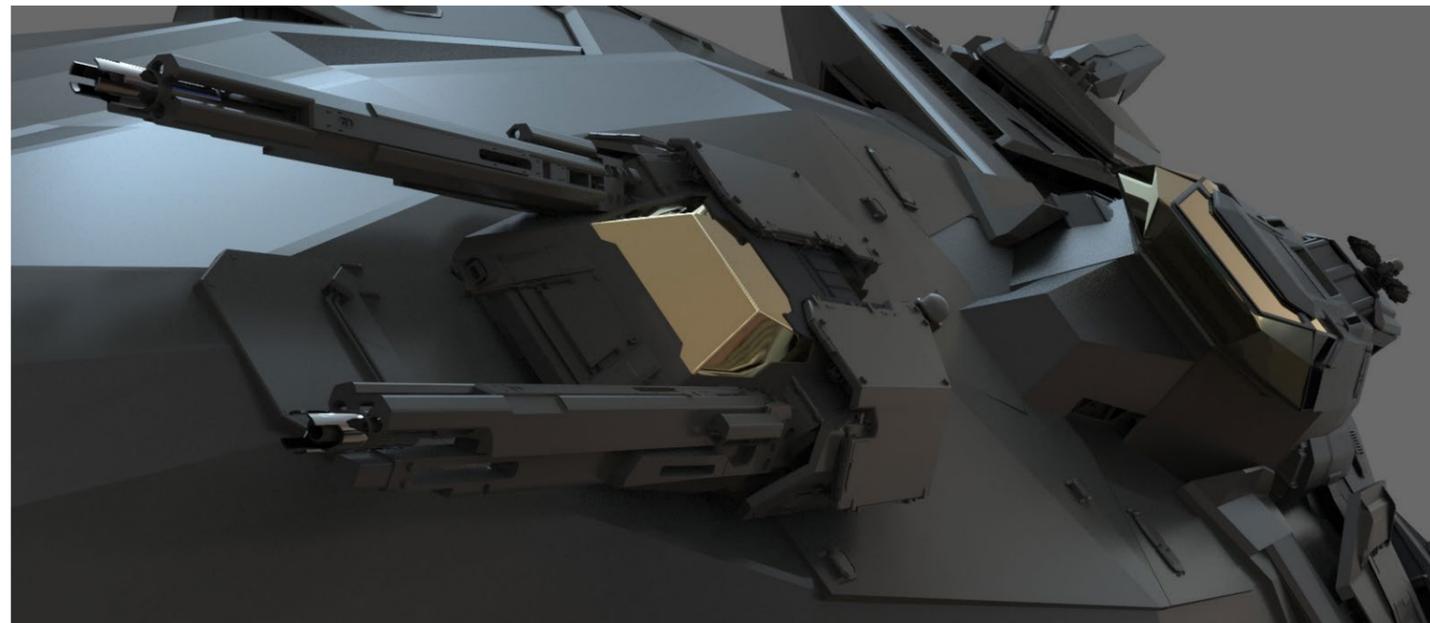
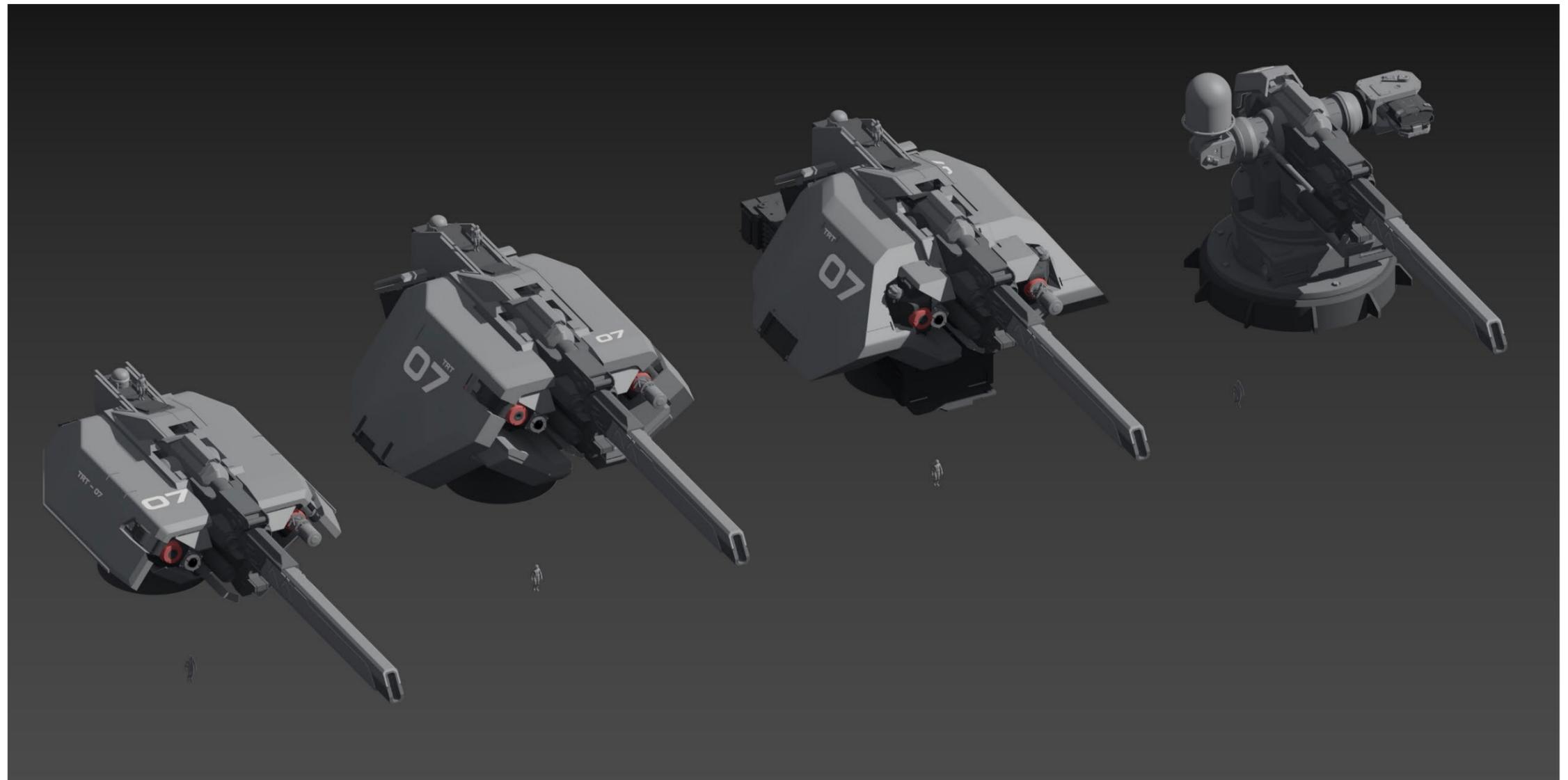
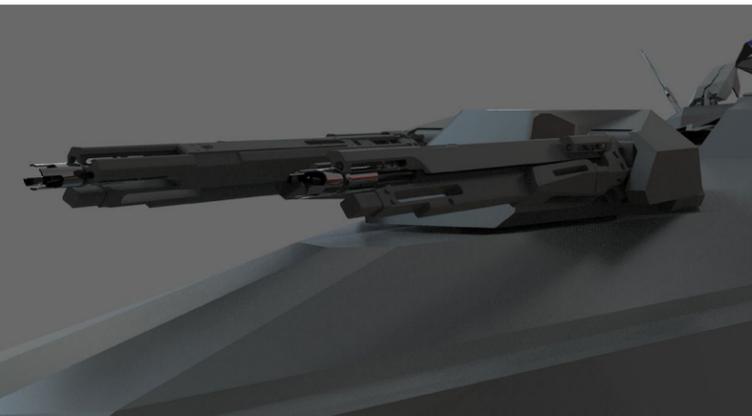
For the first pass review, Jones presented the work he and Rothery had done so far to a variety of teams. The meeting was as much gut check as project update, making sure that everything needed from design had been decided and that the current plan would not cause problems to other teams who would be responsible for building the ship in-engine and animating the various movements needed for players while aboard. The meeting identified that the underslung turret would be a problem for landing the ship and led to a somewhat significant design change, a jump from four to six crew members. Luckily, this was not the first time the Art Team needed to expand the size of one of *Star Citizen's* multi-crew ships! The discussion also led to a plan to change the cargo bay to make it more similar to the Hammerhead and to a series of tests to make sure the large gun could achieve good angles of elevation.

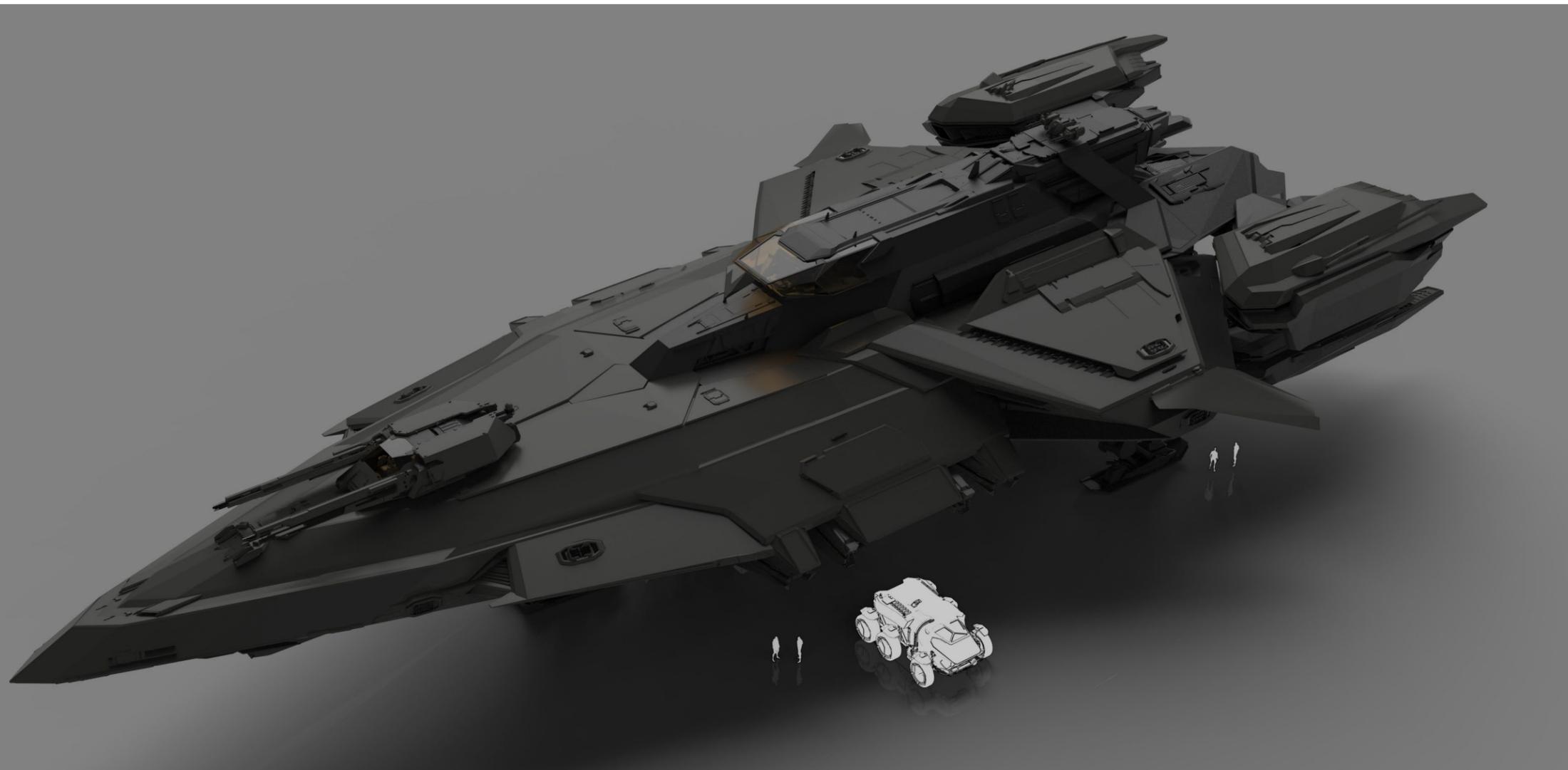


The concept artists' job for this next stage was two-fold: a general refinement of the exterior and a major reworking of the interior. The latter started with the addition of animated torpedo storage racks and the movement of the docking collar to connect its airlock to the cargo room. An elevated walkway over the cargo room would allow the player to pass into the torpedo and mechanic room and then forward to the torpedo entrance. Finally, a nice flow! Jones notes that the elevated walkway improves the space significantly and that he expects it will look particularly cool in-game. The internal layout would have one more major change after Chris Roberts decided the ship should also have a captain's cabin, with the current version adapting to allow for its inclusion.



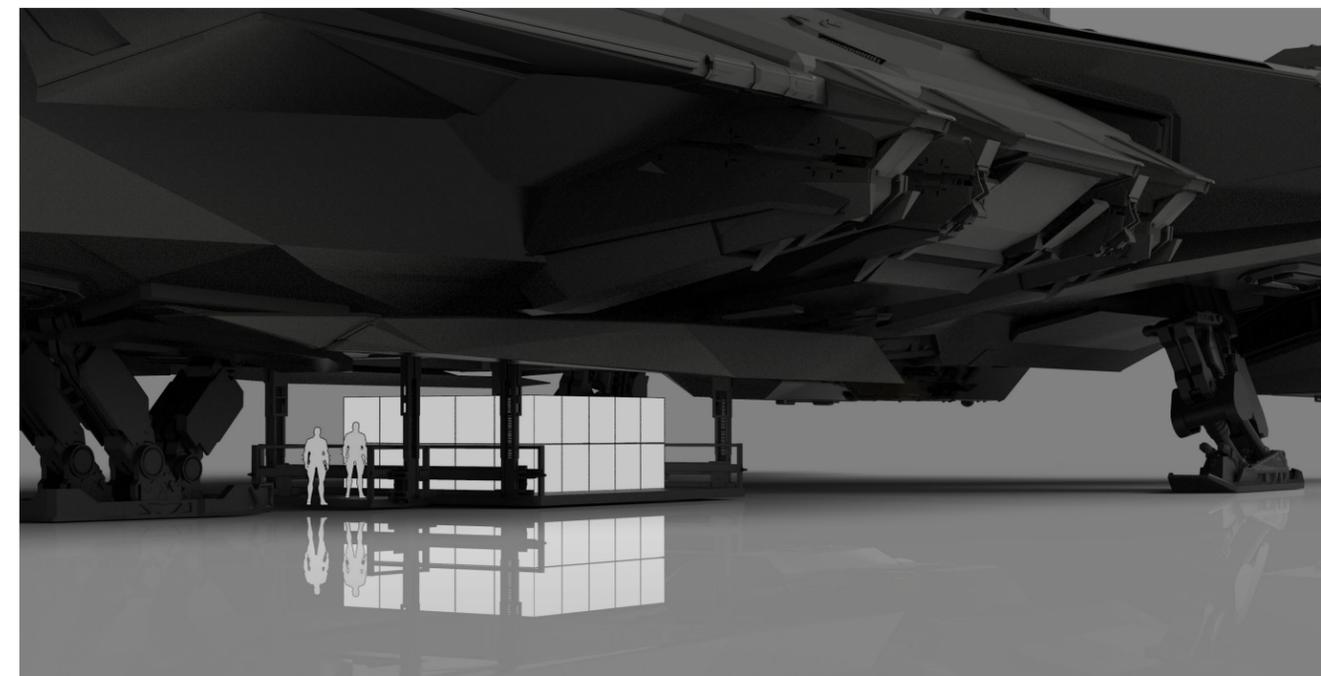
On the exterior side of the project, the first objective was to make the fixes to the turret identified in the feedback session. Beyond just needing to rework the location further back in the ship, the team wanted a heftier, bulkier turret that would read more as a distinct type of weapon. Jones and Rothery adapted existing kit from the Bengal, Apollo, and the Polaris to work the hull. Meanwhile, Roberts provided valuable feedback on maneuvering thruster placement and the ship's upper gun was upgraded from a standard turret to a sort of CIWS-style defensive emplacement. The ship received larger VTOLs for landing and an additional pass was conducted on the docking collar to make it functional, with a mirrored area being added on the other side of the ship to maintain symmetry.

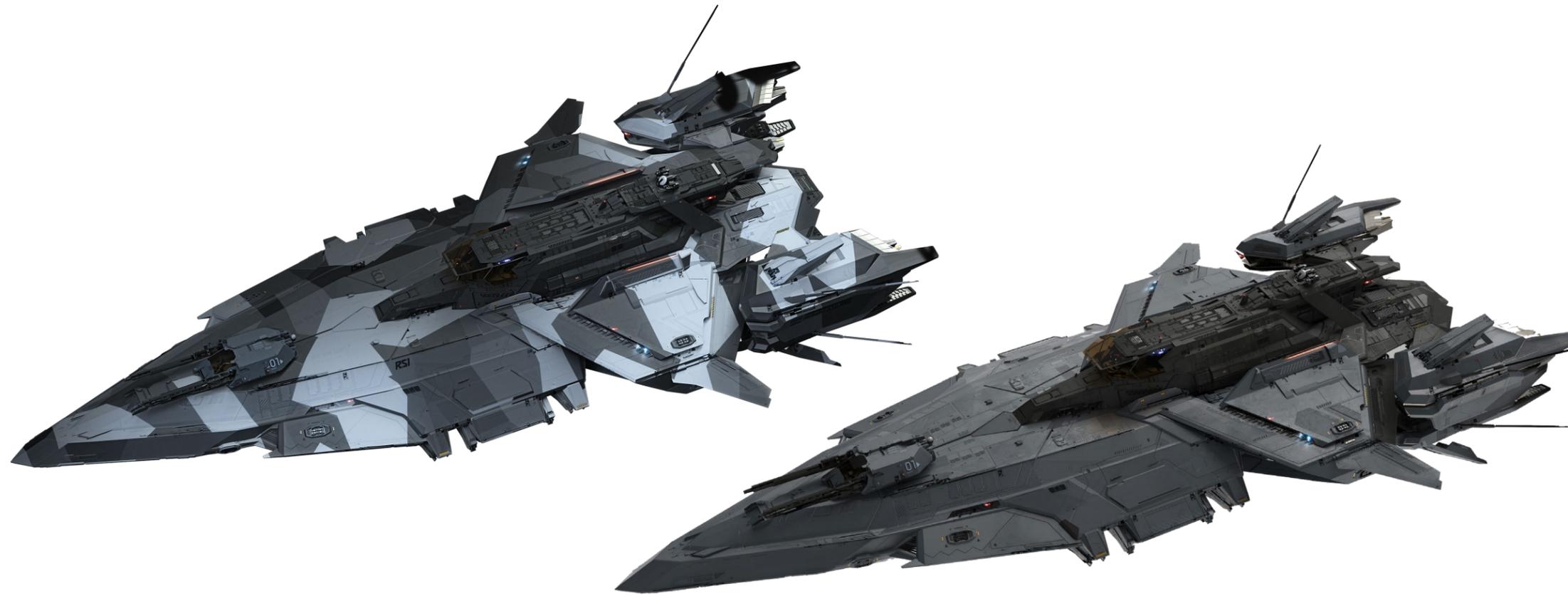




Next came the second pass review, the Perseus' biggest presentation yet. Gavin Rothery delivered a beautiful 3D model of the current concept for the presentation and Jones conducted a minor paintover to add some details and split lines. "At this point there can be snow blindness for artists," he says, "so working together keeps us honest."

An updated internal presentation showed off the accommodations, mess room, captain's quarters, bridge, engineering, and more. Jones made some last-minute changes to rework the flow of the mess, adding a TV to the wall and flipping it around so that the entrance was more accessible. Jones was particularly happy with the vibe of the captain's cabin with its desk, toilet, shower, and bed all in one area. He notes that he expects the crew barracks to change during implementation, though they have been designed with the correct number of beds.

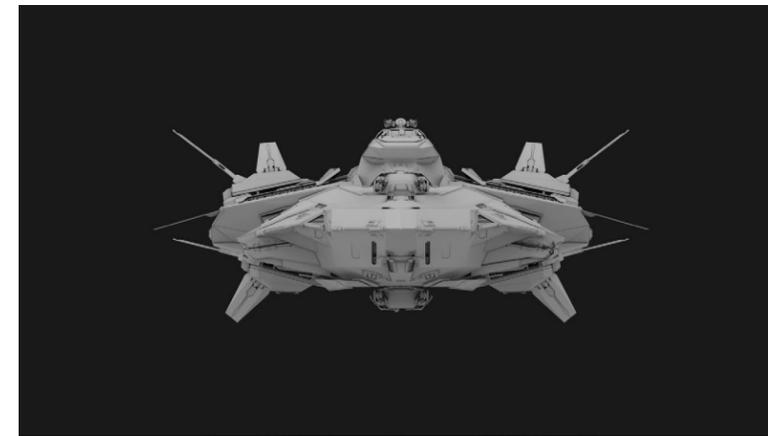


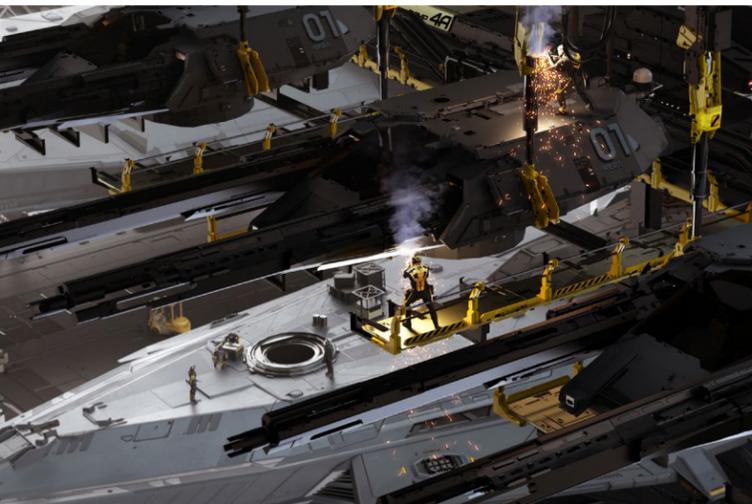


FINAL DELIVERY

The final stage of the concept work came next, which involved delivering the material that would be used for the concept reveal and for the eventual implementation into *Star Citizen* itself. The first part of this work meant placing lights, breakups, markings, and other smaller details. Jones made several small alterations to the exterior as this went along, minor edits to make the form and the shape of the ship better. "There are lots of forms and shapes underneath the design but they get lost with the detail," he explains, "so we backed off on the detail to get you to appreciate the shape of the ship." The team did not do many color variations for the Perseus. Jones started with a very simple set of options with Roberts didn't like. A second pass provided more detailed schemes which were overly complex. Jones decided to experiment with some wildcard ideas including one which used a World War I-style dazzle scheme.

The artists created a final delivery board for art director signoff, which presented the final version of the ship plus a variety of paint schemes, variant options, ambient occlusion versions, and more. Much as promo images explain how the ship will play to the general public, the final delivery board provides future implementers with everything they need to know: what materials the ship should use, where the breakup is, what does and doesn't display camos, what are the final dimensions, where are the weapons and thrusters, and more. And by referencing the final delivery board for a ship, new artists can easily understand what is important for planning out a new ship.





To help explain the newly christened Perseus to the community alongside the IAE launch, the Concept Team developed over a dozen images of the ship in action. For the first time, the Perseus posed alongside other warships, firing its torpedoes and massive guns in a variety of thrilling action shots. Jones joined Rothery to assist in getting the concept presentation artwork completed in time, taking charge of a series of internal concepts himself. In the process, he managed to make several final changes to be reflected in the concept materials passed on to future implementers, including an expansion of the torpedo room

with larger racks and a more visible magazine-fed launcher. He also updated the bridge to give the command station more visibility, proving it's never too late to keep thinking about the player experience! Jones noted he was very happy with the finished interior, with its moving turret seats and moving ballistic magazines. "Plenty of opportunities for animation and audio," he excitedly explains... after all, one of the most exciting things about building a ship on *Star Citizen* is seeing the expertise everyone else adds to the final product.

ROBERTS SPACE INDUSTRIES PERSEUS SHIP PAGE

<https://robertsspaceindustries.com/pledge/ships/perseus/RSI-Perseus>

SHIP PRESENTATION

<https://robertsspaceindustries.com/comm-link/transmission/17881-RSI-Perseus>

Q&A

<https://robertsspaceindustries.com/comm-link/engineering/17915-Q-A-RSI-Perseus>



THE
**ESPERIA
TALON**

DEVELOPMENT HISTORY



DEVELOPMENT HISTORY



TEVARIN SERVICE

Firsthand accounts of the Tevarin wars often describe sudden, unexpected attacks in which squadrons of bird-like spacecraft seemed to appear from nowhere, deliver deadly ordinance, and then quickly fade away. This is the legacy of the famed Tevarin Talon-class light fighter and its modified twin, the Shrike, considered by many to be the most effective space combat equipment wielded by Tevarin forces during their two wars with Earth. Details of pre-contact Tevarin aerospace technology are sparse, although there is strong evidence that development of the Talon began roughly a century before the species first encountered Humans during a period of significant technological advancement. The first Talons, which were roughly 1.5 times the size of the more familiar war-era models, were produced as escort craft to serve the then-expanding Tevarin mercantile interests. The Talon seems to have served as a sort of technology demonstrator/flagship, updated regularly with the latest advancements in weapons, engines, stealth systems, and especially shield generators. These upgrades and reworks meant that when the war came, the Talon, having developed into its familiar appearance and capabilities, was the deadliest weapon in the species' arsenal.

At the outset of the First Tevarin War, Talons were primarily serving as escort ships for freighters and for the ground forces that played a major role in that phase of the conflict. As the war continued, Tevarin leadership

determined that the design was even more effective when used as an attack fighter against vulnerable Human supply lines. This resulted in the quick development of the Talon Shrike, first classed as a missile boat by Human intelligence. Shrike upgrade kits were applied to roughly a third of the extant Talon force, creating mixed units of escort fighters and strike craft that could operate together to attack larger assets. Coupled with the existing advantage in terms of shielding and stealth characteristics that left contemporary Human defenses unable to easily track them at a distance, Shrikes saw a chain of anti-shipping successes starting with the destruction of the merchantman Kentlands. These attacks coupled with the Talon's sharp, flowing wings and threatening, beak-like nose quickly defined the design as the symbol of enemy aggression among Human civilians. The fighter pilots tasked with engaging the Talons, however, focused on a distinctly different element of the design: the complete lack of traditional windscreen. Human designers had been attempting to develop a fully digital viewscreen since the early days of space travel but would inevitably run into a limitation of Human psychology that led to confusion and a reduced average reaction time without a natural view outwards. Either Tevarin engineers had solved this or the Tevarin themselves were not impacted by this limitation. In either event, battling seemingly sightless enemy fighters introduced an element to dogfights that Human pilots found particularly uncanny. As the conflict wore on,

they began to nickname the fighters "blinders" and "specters" because of this sensation.

Talon production continued effectively throughout the first conflict, with factories moving underground towards the end of the conflict without a significant reduction in output. Talon manufacturing was somewhat unusual among personed spacecraft owing to the unusual construction ratio of seven full ships for every ten hulls constructed. Tevarin manufacturing took into account the high survivability of the ejectable cockpits, recognizing that a significant number could remain in service after the destruction of their original mothership.

By the conclusion of the Second Tevarin War, Talons had seen a considerable reversal of fortunes. Human tactics for engaging Tevarin spacecraft had adapted quickly and were followed by their own significant technological advances. The Tevarin found themselves unable to update the Talon quickly enough in the face of new Human technology like the Gladius light fighter, which proved to be a strong match. At the same time, human sensor technology advanced significantly, removing the Talon's stealth advantage and allowing longer-range human fighters to easily pick them off at a distance before they could even enter the visual range of their targets. As Tevarin pilot training fell by the wayside, Talons, which needed hundreds of flight hours to master, were eliminated

by the thousands as they formed part of the desperate defense. Only a tiny number of the functional ships were known to survive the war, all of which were fully scrapped for their valuable hull alloys within a matter of years.

FINDING THE TALON

In 2946, Esperia CEO Charlotte Hussion unveiled the company's first mass-produced Tevarin replica spacecraft, a modified, modernized adaptation of the classic Prowler-class dropship. Although initially developed at the behest of the UEEN, the Prowler became a fast favorite on the civilian and militia markets, propelling Esperia into a significantly larger area of the personal spacecraft sales industry. Immediately, observers and analysts were sure they knew what would be next: a recreation of the Talon, arguably a design that was far more infamous (and properly modernized applicable to present circumstances) than the Prowler. Considered the 'worst kept secret in the industry', the expectation was that Esperia would premiere their take on the Talon in 2947, then 2948, and again in 2949. And yet no announcement was forthcoming.

What analysts did not realize was that Esperia did not have access to a functional Talon spacecraft upon which to base the design. While three partial hulls were recovered from the hoard at Kabal III, none were independently functional as all three lacked their forward control

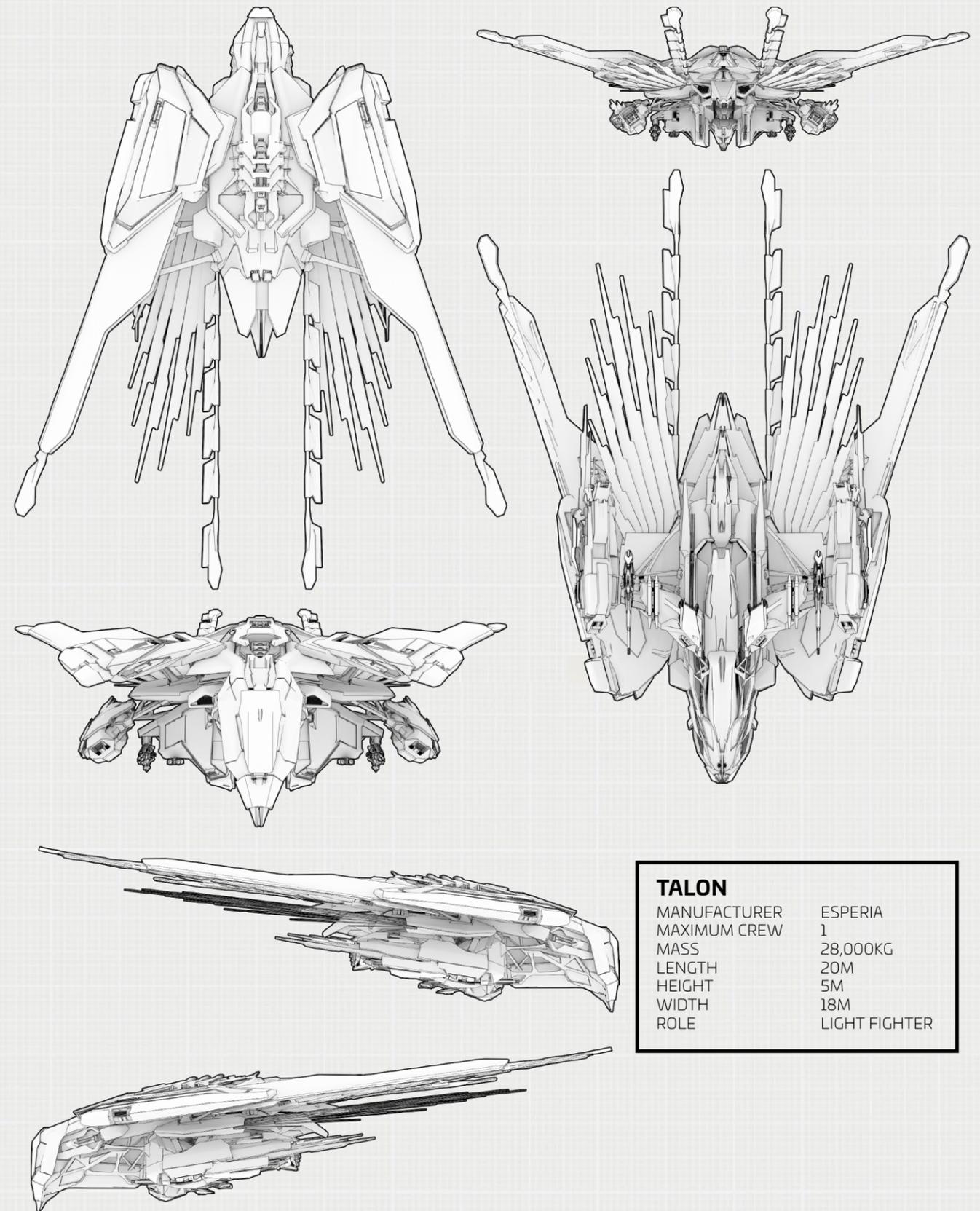


modules. Like many Tevarin bases in the final days of the war, Kabal had used up their supply of fighters in ground-to-space strike missions and had only the manufactured spare hulls remaining. The UEEN happily declassified these hulls per their agreement with Esperia and a great deal of deconstruction had allowed the Talon replica project to proceed to a roughly halfway point by 2947. In spite of this fast success, it quickly became apparent to Esperia's recreation team that historical references and translated blueprints would not be enough to properly recreate the Talon cockpit. From the digital cockpit to the elaborate tie-ins with the rest of the hulls' subsystems, the project seemed doomed to be an animal cloned without a brain. Looking forward to FY2948, Esperia's leadership planned to cut the project entirely and focus its budget instead on a planned historical human replica project.

Until Jeremy McHale, a junior engineer on the project and an aerospace historian by hobby, suggested one last hope: with a small budget he believed he and a team of researchers might be able to locate and recover a war-era Talon cockpit from a former battlefield. While Talons were especially prized for their value as salvage material in the years following the wars, they were produced in such large numbers and served in so many engagements that it was possible that one might have sufficiently survived a shutdown. To find out, McHale reached out to Project Home, an Earth-based charity organization dedicated to grave registration and the recovery and reinterment of Human war remains. Pouring through the group's research, the team identified four possible dogfights that might have resulted in a stranded or crashed Talon cockpit. Hired expeditions to all four sites were conducted at Esperia's cost. Two proved inconclusive

and the third provided only the crushed remains of a cockpit. On the fourth, however, the team found exactly what they needed: a perfectly intact Talon cockpit. Identifying a flight report in which a pair of Human fighters had engaged and shot down two Talons in the last days of the Second Tevarin War, the researchers found a single after-action account that mentioned one of the fighters had potentially ejected in dead space. And there, centuries later, it remained. The Esperia-funded expeditions also resulted in the recovery of the remains of three human pilots, an additional PR boon for the company.

Like the Prowler, Esperia's engineers paid special attention to balance the recreation of the original design with the necessities of adapting the ship for Human physiology and for making it competitive with modern spacecraft (up to and including the still-serving Aegis Gladius, now ready to fly alongside a new version of the design it once hunted). A great deal of discussion surrounded the digital cockpit, which studies revealed indeed had zero measurable input lag. Test flights showed that human pilots were still disconcerted by the lack of window but also that the lack of an 'eye spot' on the ship was also still a benefit when dogfighting. In the end, the decision was made to keep the cockpit digital to better armor the pilot and to give those interested the true Tevarin experience. Also, like the Prowler, a modern take on the unique Tevarin shield system was implemented in the Talon and a variety of quality-of-life upgrades were made to better seat a single Human pilot. The completed Talon premiered at the 2950 Intergalactic Aerospace Expo alongside a modernized take on the Talon Shrike variant which Esperia had decided to produce in more limited numbers.



TALON	
MANUFACTURER	ESPERIA
MAXIMUM CREW	1
MASS	28,000KG
LENGTH	20M
HEIGHT	5M
WIDTH	18M
ROLE	LIGHT FIGHTER



THE FATE OF UEES FLYSSA

In a comms call made early in March of 2862, Admiral Pavlina Marlin confessed to a friend that she felt frustrated with her posting. Assigned to oversee the naval shipyards positioned among the clouds of Stanton II (it wouldn't become known as Crusader until 2865), she didn't see it as the plum position others claimed it to be. The command was one others coveted, sporting some of the most extraordinary views in the UEE, but it felt too quiet and calm for the ambitious admiral who was certain that, despite the prestige of the position, her skills were being wasted.

Marlin made it clear through her entire career that her ultimate goal lay in leading the defense of the Vanduul front. It's why she joined

the navy. Her grandparents had fled the Vanduul conquest of Virgil in 2737 and told her harrowing stories of their escape and tragic demise of those less fortunate. In her office, she kept a framed photo of the former family home on Virgil, telling any who asked that it was "long since burned, bombed, and churned through a Vanduul Harvester to fuel their war against us." Despite Admiral Marlin's crystal-clear ambition, she always found herself commanding fleets assigned to rearguard or administrative duties. She constantly lamented her lack of combat command experience and believed this shortcoming truly kept her from the frontline. This trend continued in 2858 when she was reassigned to sleepy and safe Stanton. While High-Commander Irya

Ruybal admired Admiral Marlin's ambition, he hoped a few more years away from the frontlines would season her into a more patient and cautious commander.

Admiral Marlin knew the assignment was a test and sought to prove her potential. She improved the shipyard's production output and convinced the tight-fisted budgetary committee to expand the network of platforms to increase manufacturing capabilities. To break the administrative monotony and hone her combat command experience, she frequently organized wargames to test her fleet's readiness for anything, from outlaws blockading a space station to a Vanduul clan appearing in-

system via an undiscovered jump point. Yet, after four years at the post, she saw herself no closer to her ultimate goal and wondered privately if she had done too good of a job for Naval Command to let her leave.

Amid this growing frustration in 2862, Admiral Marlin received a report that an illegal mining operation had sprung up on Daymar. The UEE had restricted most commercial and industrial development in Stanton since its discovery a decade earlier, a stance that confused and angered many at the time. The reasoning behind it only made sense when, in 2865, the UEE sold each planet to the highest bidder. Still, in the fourteen years between Stanton's discovery and sale, independent miners often



visited the system to extract a little ore and the navy mostly ignored them. People were still reeling from the economic downturn of the late 2850s and many still struggled to eke out a living. The navy had little interest in harassing hardworking civilians, as long as their mining runs were within reason.

Reports of this new Daymar operation went well beyond anything the Admiral had seen during her command. With a fleet of ships working together, they were stripping an incredible amount of ore in a very short period of time. Understanding that inaction would only encourage further incursions of such scale, Admiral Marlin sent a fleet of fighters and the UEES Flyssa, a Javelin-class destroyer, to Daymar to escort the offending ships to an impound lot and levy severe fines to dissuade similar operations. Admiral Marlin authorized the use of non-lethal force if they proved uncooperative and insisted that all ships involved in the operation be brought to justice. She was determined to drive home the point in emphatic fashion and give her crew some valuable in-field experience. She believed the proactive response would be a good test for her starmen and read well on her report to Naval High-Command. She never could have expected the terrible fate to come.

UEES Flyssa positioned itself above Daymar as the other navy ships entered atmosphere to find and escort the offending ships off-world. Admiral Marlin's insistence that all involved be detained meant the navy sent no comms alerting the miners to their presence and intentions. The navy's ships located the active mining site and approached it fast and hard, inspired by Admiral Marlin's directive to announce their presence in a way that would "rattle their screws loose and shock them into immediate submission." Instead, their sudden appearance scared the miners, who immediately ceased operations and fled in different directions. While most of the ships were quickly subdued via non-lethal ordnance, one managed to slip away and began to exit the atmosphere. UEES Flyssa tracked the fleeing ship and moved into position to neutralize it once free from Daymar's gravity. Tragedy struck the moment it did. The mining ship, long overdue for much needed repairs, suffered a series of catastrophic component failures moments after it exited atmosphere. This triggered a chain reaction of explosions only

intensified by a cargo hold filled to capacity with highly unstable ore. The concussive wave unleashed by the massive explosion hit the UEES Flyssa as it approached. Unable to adjust course or quickly reinforce its shield, ship debris and ore fragments peppered the UEES Flyssa, piercing the hull in dozens of places. Captain Chin Ormiston, believing the Javelin to be under attack, ordered a quick retreat only to realize too late that two of the ship's thrusters had been damaged. The sudden directional change caused them to overload, followed rapidly by a series of system failures. Fires spread throughout the ship as the UEES Flyssa began to uncontrollably careen to the moon's surface.

Already shedding parts due to the cascading onboard explosions, UEES Flyssa crashed upon a high ridge and came to rest with its bow dangling over a precarious ledge. All 65 crewmembers aboard died, making it one of the worst naval crashes of the 29th century. The subsequent naval investigation acknowledged the unlikelihood of the entire series of events, grading the chance of such a crash to happen again as infinitesimal, but still placed the blame squarely on Admiral Marlin. They deemed her order to send ships after the miners without first broadcasting their intentions to be the fatal decision. They highlighted comms where Admiral Marlin expressed frustration over her command and desire to distinguish herself as a motive for her ordering "overly intimidating and aggressive tactics not commensurate with the situation." With this report, a once promising career was destroyed.

Admiral Marlin was finally transferred out of Stanton, but not to the Vanduul front. She would be pushed into administrative duty in Kilian until she was granted a general discharge in 2868. Her dream of commanding a frontline fleet would never come true. Today, few remember Admiral Marlin, or her role in the crash of UEES Flyssa, but the ship's skeleton remains a landmark on Daymar. The navy decommissioned the ship of its ordnance and military computers with the intent to remove the wreck on a future date, but with the privatization of the moon, the plans never fully materialized. The site receives few visitors despite its historical significance and impressive views, as rumors abound that outlaws often inhabit it. A tragic fate for the ship, its crew, and the ambitious admiral who only wanted to prove herself.



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