

JUMP POINT

ISSUE: 09 07

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FROM THE COCKPIT

GREETINGS, CITIZENS!

The dog days of summer are here and I, for one, am grateful for the opportunity to stay inside working up another issue of **Jump Point!** Okay, that's a pretty lame introduction but these are normally topical and when I look at the news these days I immediately think to myself... I'd rather be playing *Star Citizen*. And how's this for a segue: I know we are all eagerly watching the rollout of *Star Citizen* Alpha 3.14 right now but, before we explore all the new work, I thought it was important to look back at last month's big reveal, the Gatac Railen. It's another small-but-major moment to see our Xi'an fleet move beyond just fighting ships... and to see the launch of a brand-new ship manufacturer, not something we do every day in the 'verse! The Design, Narrative, and Concept teams worked together to do something special with the Railen and I hope you enjoy reading how it all came together.

Next up is the third part of our Visual Guide to Corporations that covers the makers of a variety of different ship components this time around. Just this past weekend, I was chatting with a group of Wing Commander fans I'd never met and I had to marvel at the fact that in minutes the discussion already turned entirely to 'which ship did you fly in Privateer' and 'how did you outfit it?' And Privateer was a game with four ships and perhaps thirty components! But just that was enough to give us decades and decades

of arguing over which gun is the most efficient. I sincerely hope the amount of lore and design that has gone into developing *Star Citizen's* components and their related corporations will help ensure that in twenty years people are still arguing over which is the right configuration to fly. (By the way, one of the corporations is named after my childhood cat. But I'm not saying which!

Over in the lore quadrant, we've got a Portfolio that introduces us to the Brentworth Care Center, one of the premiere medical services in Human space. This one is really neat, especially since *Star Citizen* features medical gameplay that will be greatly enhanced by this level of detail to its medical lore. We also have a Galactapedia entry covering the famed Kavische, which longtime subscribers may remember as the space cactus developed on Yar that was a subscriber gift during the planet series.

Tune in at the same **Jump Point** time, same **Jump Point** channel next month for a deeper look at some of the material winging its way to us in Alpha 3.14... once the developers behind it have had a well-deserved chance to rest!

Ben

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WORK IN PROGRESS... GATAC RAILEN

KEY CONTRIBUTORS :
DESIGNERS - JOHN CREWE, ADAM PARKER
CONCEPT ART - MICHAEL OBERSCHNEIDER
ART DIRECTOR - PAUL JONES

Specifications and appearance are subject to revision during development.

INTRODUCTION

In November 2013, the *Star Citizen* team presented their first player-flyable Xi'an spacecraft concept, now called the Aopoa Khartu-al (then commonly referred to as the "Xi'an Scout"). While the Khartu-al may have been small as far as 30th-century spacecraft go, it carried a massive responsibility: defining Xi'an spacecraft design as something totally alien to the player but also being something accessible enough to pick up and fly the same way one would a Hornet or a Cutlass. That first

ship was a hit and defined a lot of what would become pillars of the Xi'an aesthetic, including vertical designs, ships that change shape when they land, and elaborate exterior panels around a central hull. Several other Xi'an ships followed along those lines from Aopoa, including the Nox bike and the Santok.yāi fighter.

At the same time, work continued to deepen and enhance the original concept of the Xi'an as a species, as *Star Citizen's* Narrative Team worked

to not only develop Xi'an history and define distinct elements of their culture, but to develop a real, functional language. As the complexity of the Xi'an deepened, so too did the need to develop beyond a single manufacturer and an early focus on combat-related ships. In late 2019, Chris Roberts decided that the next Xi'an ship would be a hauler and that it would come from a new and distinct manufacturer. This meant work for *Star Citizen's* designers, writers, and artists would be spread across the following year.

DESIGN

The task of initially designing the new “small Xi’an cargo ship” (or hauler) fell as always to John Crewe’s Ship Team. To create the brief, Crewe tapped designers Jon Dudley and Geoff Coffin. The logline was ultimately very simple - a distinctly Xi’an ship that would fall somewhere between the smaller Freelancer and the larger Caterpillar in terms of cargo capacity: “A small Xi’an cargo ship to compete with the Freelancer MAX and Caterpillar, possessing a capacity and weapon loadout placed between the two.” In addition to the usual metrics and component planning, the designers also developed a more in-depth list of desires for the ship that aimed to make it distinctly Xi’an:

- Produced by Gatac Manufacture
- The ship will be vertical, rather than horizontal - much like the other Xi’an capital and cargo ships designed and shown in concept art. As one entity manufactures all Xi’an ships for a given role (one manufacturer makes all transport, one makes all light fighters, etc.), it stands to reason that they might all follow a loose template, so it would be nice for the ship to be vertically aligned

- Can use an elevator running up and down the spine of the ship to travel between its few floors:
 - Top: Bridge/Tractor Beam with turret access
 - Middle: Living quarters
 - Bottom: Engine floor with turret access
- Should have amenities so it can be flown for long periods of time - beds, toilets, etc.
- Cargo is held on the exterior
- We could represent the Xi’an as “masters of gravity” by having the entry ramp made of floating platforms similar to the steps of the Xi’an scout. Their mastery could perhaps also be represented in the landing gear, or how the lift works as well

They went on to add a tractor beam to manage external cargo, which would also provide gameplay for the ship’s co-pilot and the array of missiles that were mentioned in the initial Xi’an lore writeup. The designers passed along suggestions for animation references to the concept artists too, basing the enter/exit on the RSI Constellation and then the select/deselect and idle animations on the Khartu-al.



Knowing that the concept artists would want as much material as possible to make the ship distinctly Xi’an, *Star Citizen’s* writers put together a 16-page document titled *Xi’an Habitation Set Dressing*, covering how the Xi’an address all of the familiar ship components in their own distinct way. The document covered everything from sleeping quarters:

The Xi’an have evolved the habit of resting with their backs against a tall, flat surface. This is to minimize threats approaching them from behind. Rather than sleeping like Humans, Xi’an squat/kneel and enter into a deep meditative state. From this state, they can tell when a threat approaches from the front, but use the tall block at their back to provide protection and comfort.

... to how the Xi’an store and prepare food:

Xi’an eat mostly aged and fermented foods. Typically, they cut the ingredients up into large pieces that are seasoned and left to ripen inside large vessels. They are left open at first to expose the food to healthy yeasts, molds, and bacteria before being sealed. The vessels often feature regulators to allow for the gas produced during fermentation to safely escape.

The document would prove invaluable as the Concept Art Team worked to develop the new ship’s internals. Art Director Paul Jones notes it was used repeatedly to develop everything from the ship’s distinct bridge seating to its showers and toilets (modified to be useable, thankfully, by Humans as well as Xi’an). Finally, the designers settled on an appropriately Xi’an name for the new ship: the Railen, meaning “smooth/peaceful cargo.” Next, the Concept Art Team in the UK would be charged with taking over the process and bringing the Railen, and with it a brand-new ship company, to life.

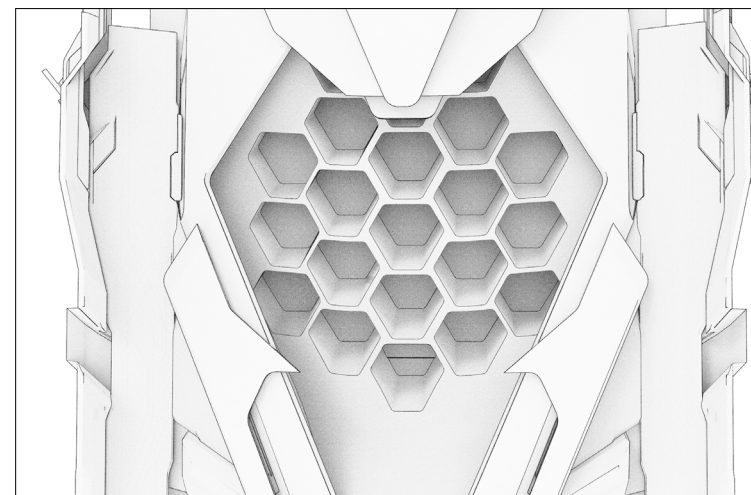
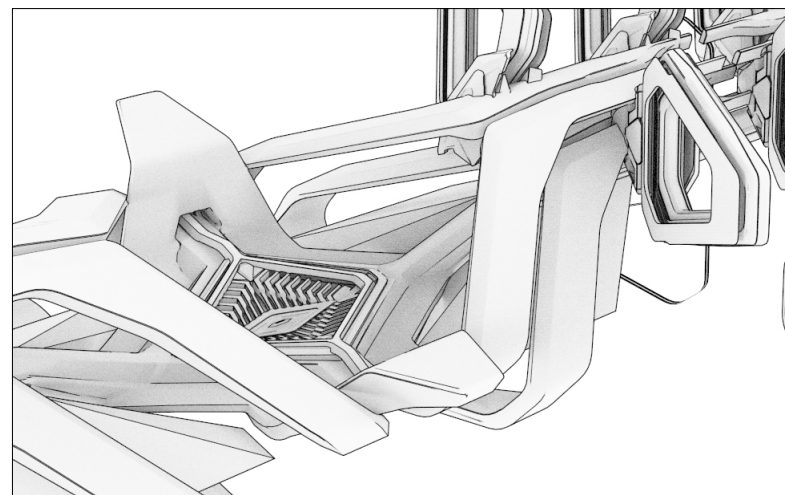
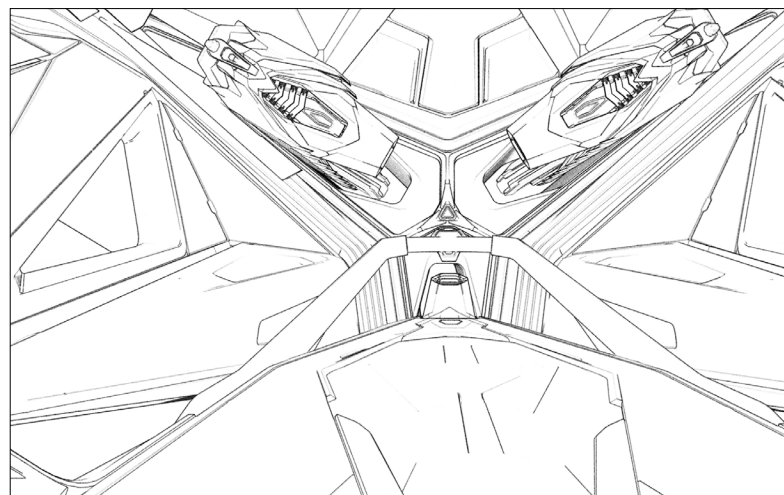
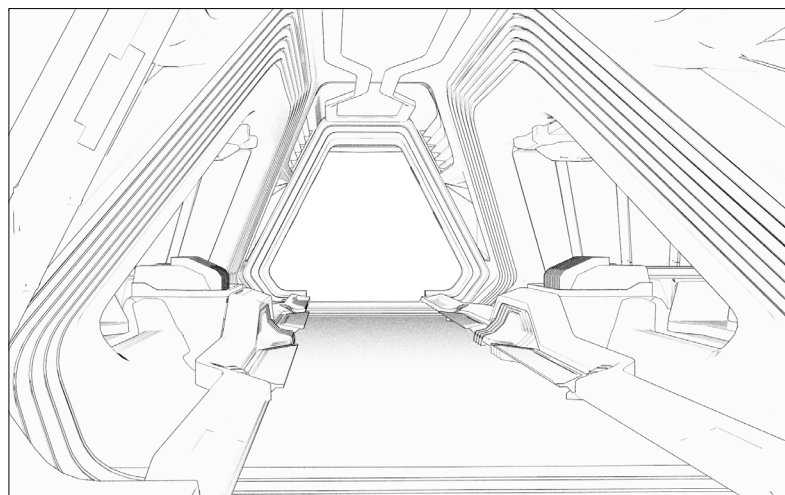
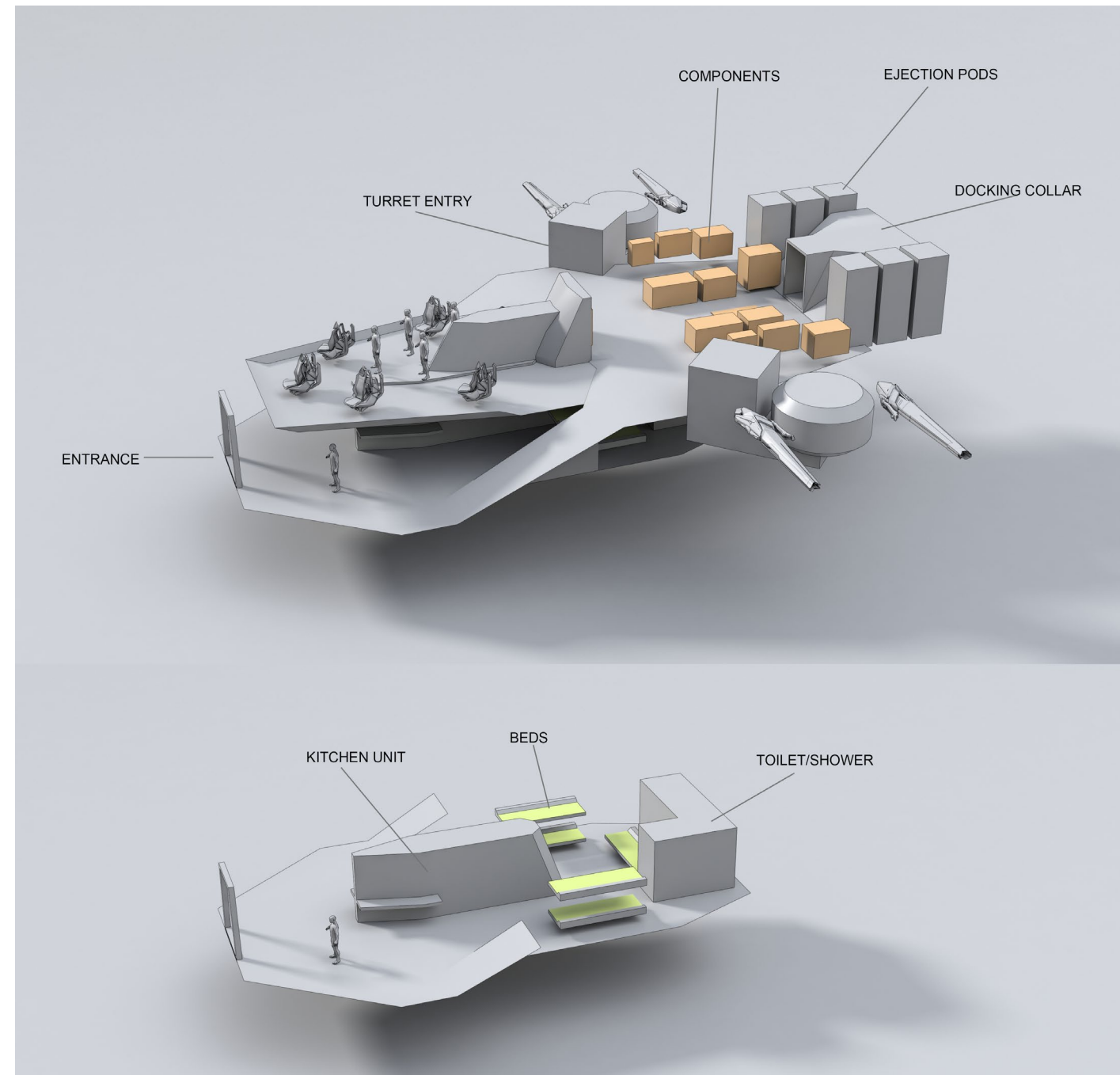
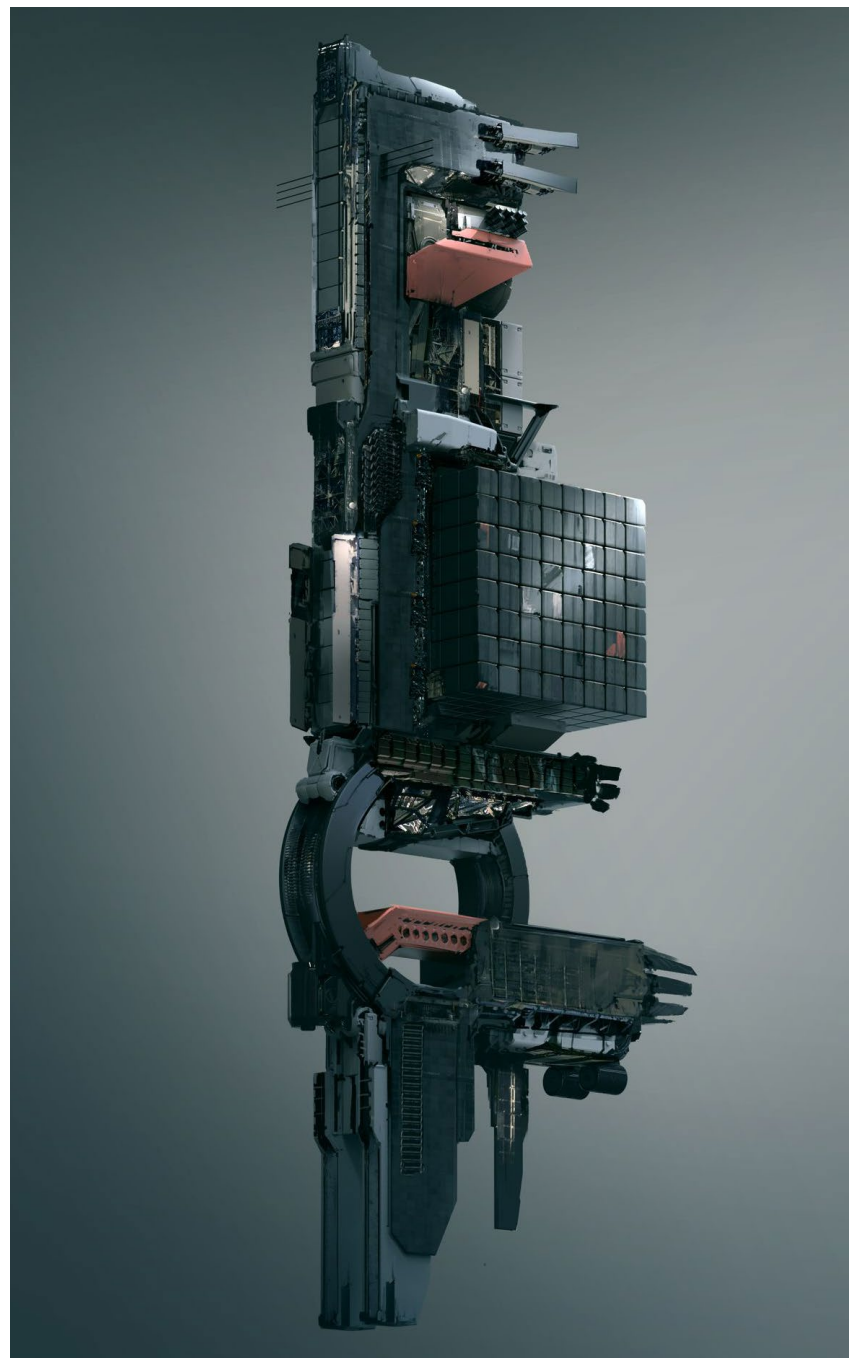
CONCEPT

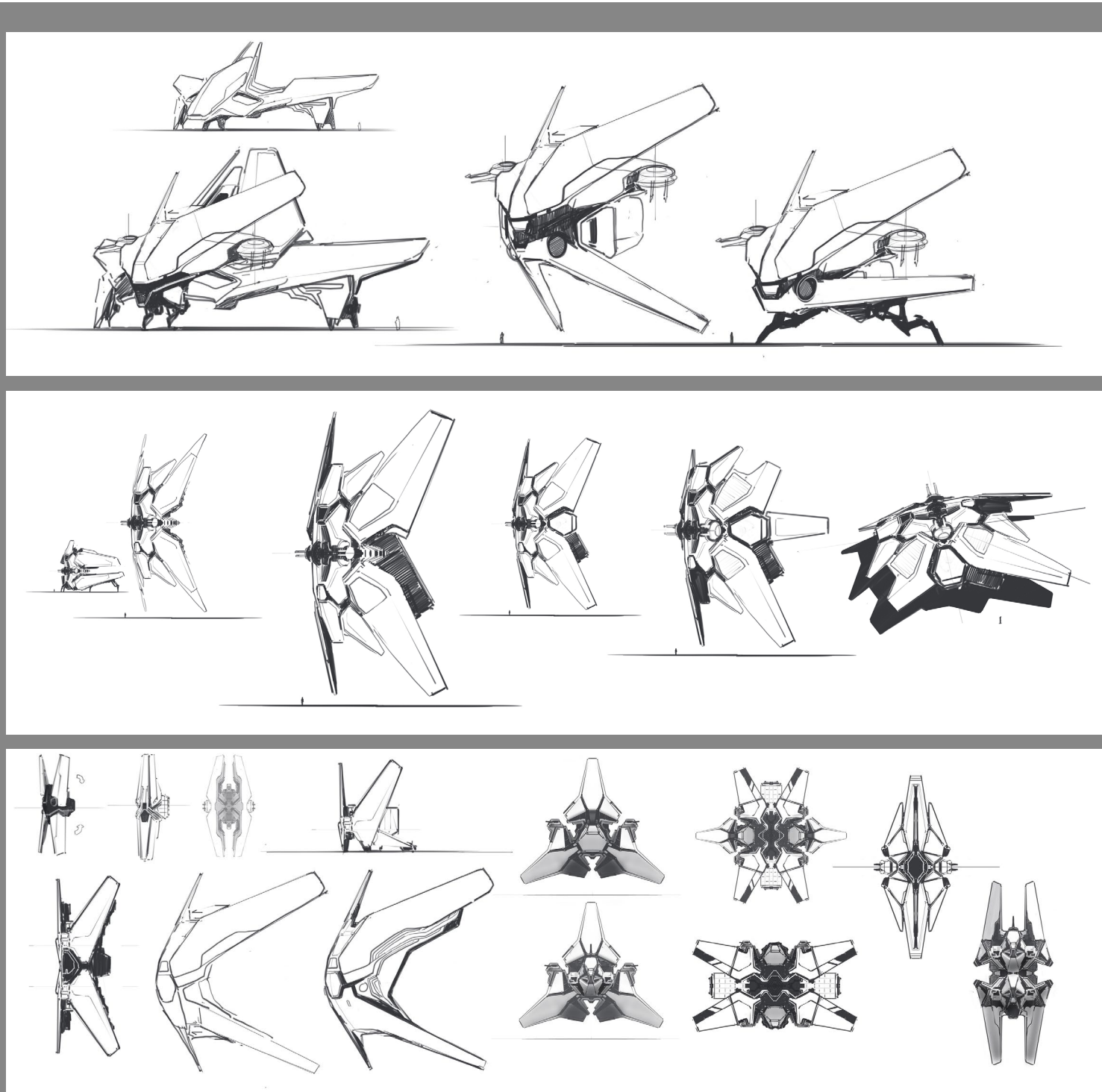
In addition to the design brief and the invaluable curated cultural information, an initial description of Gatac Manufacture itself was developed for the artists and designers to work from. This placed the company in the known world and, more particularly, in the evolving hierarchy of Xi'an corporations:

Responsible for the design and construction of any ships with commercial or industrial applications, Gatac Manufacture has ensured its continued existence not only through its cutting edge and practical tech, but also because its Council features two direct relatives of Emperor Kr.ē. Gatac has a long-standing reputation as a 'knowledge-driven' corporation. It shares several of its top ship designers with [capship company], but it is also committed to looking to other civilizations for interesting engineering approaches to incorporate into its own designs. If there is any kind of conference or discussion about ship-making techniques (no matter how high or low level), odds are, there will be a Gatac representative there, studiously taking notes.

Armed with a great deal of written material early in the process, Art Director Paul Jones first had Artist Aleks Akstinas (RSI Mantis, Aopoa Santok.yāi, and others) do a quick pass at the interior based on the design specifications. What would the rough three-level layout look like given that the need for different components and a particular amount of cargo capacity were already defined? With this in hand, Jones assigned the task of conceiving the Railen to internal concept artist Michael Oberschneider. Oberschneider had previously worked on the Crusader Hercules, Drake Corsair, and the Anvil Hawk and had proven himself a great talent on all three ships.

Jones notes that the team had a comfortable amount of Xi'an design references having put together several ships over the years, including a larger Xi'an cargo ship concept seen early in the campaign. The big unknown here was Gatac and the responsibility for making a ship that would form the basis of a future company style guide. Working from the very rough internal layout, design brief, and extra documentation from the Narrative Team, Jones and Oberschneider discussed what was particularly important for the new ship. Jones asked Oberschneider to continue with a more industrial kind of theme for his first pass, something not classically Human. He particularly wanted to have floating chairs to help open up what was initially imagined as a smaller bridge space.

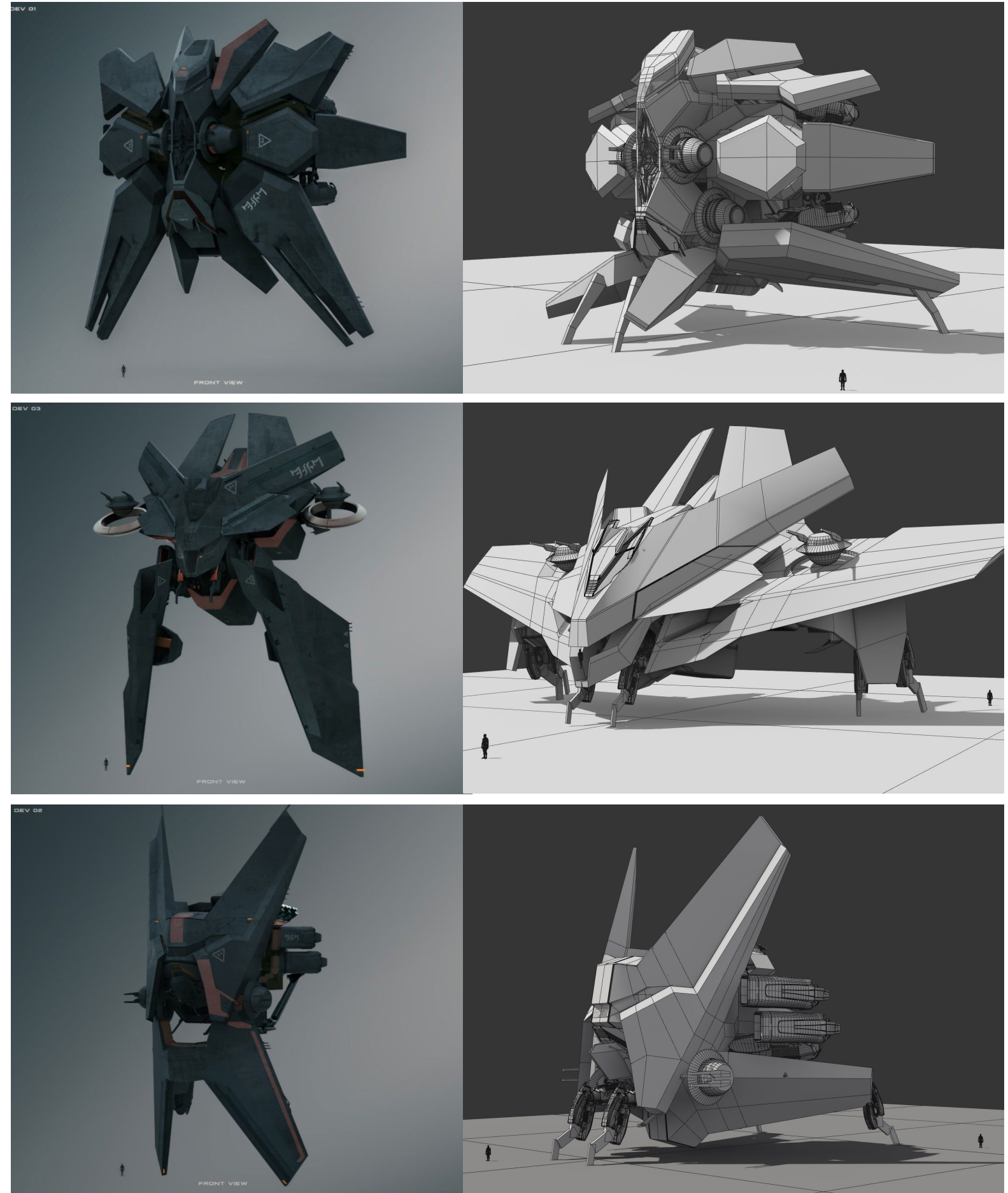


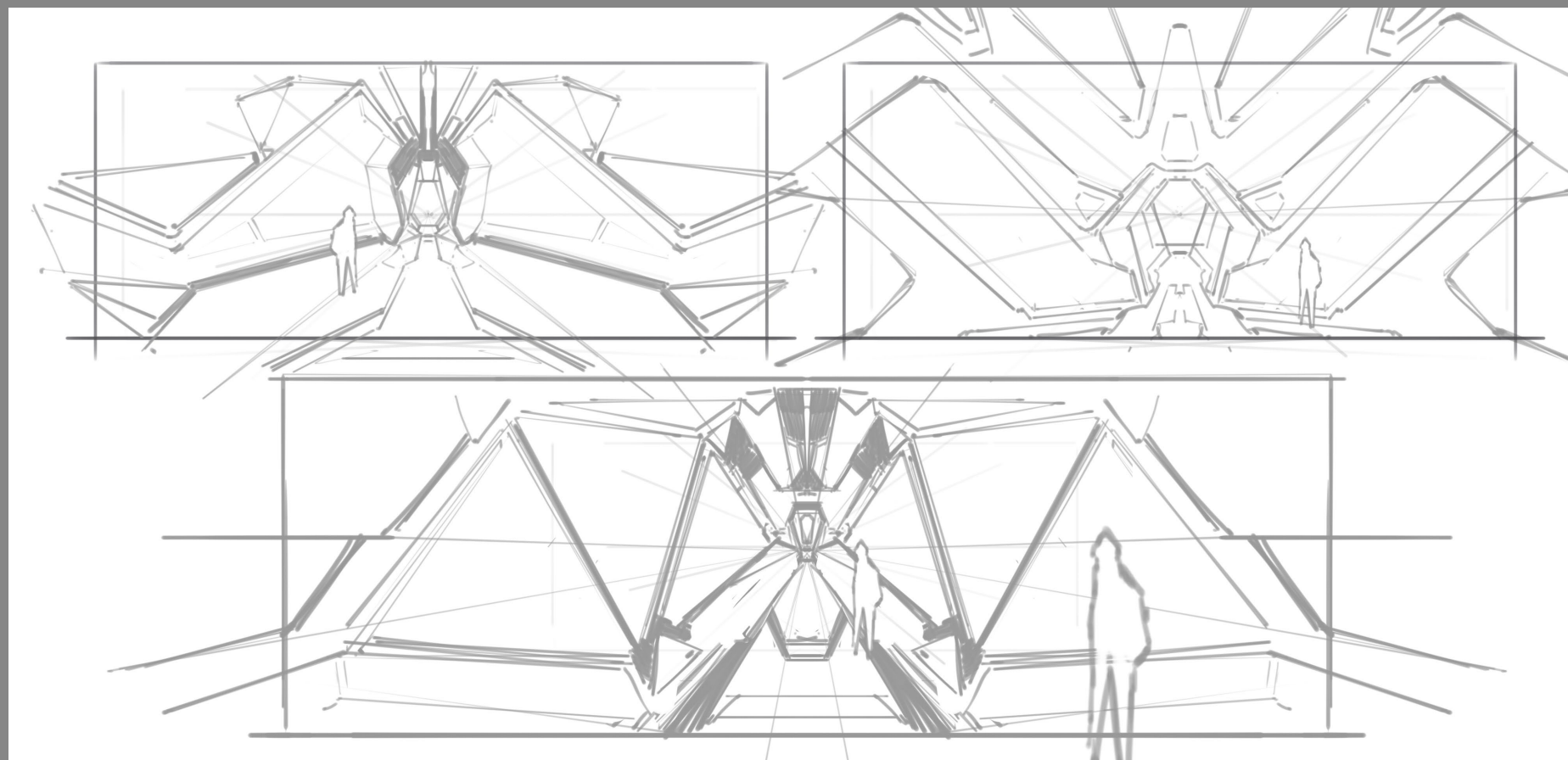
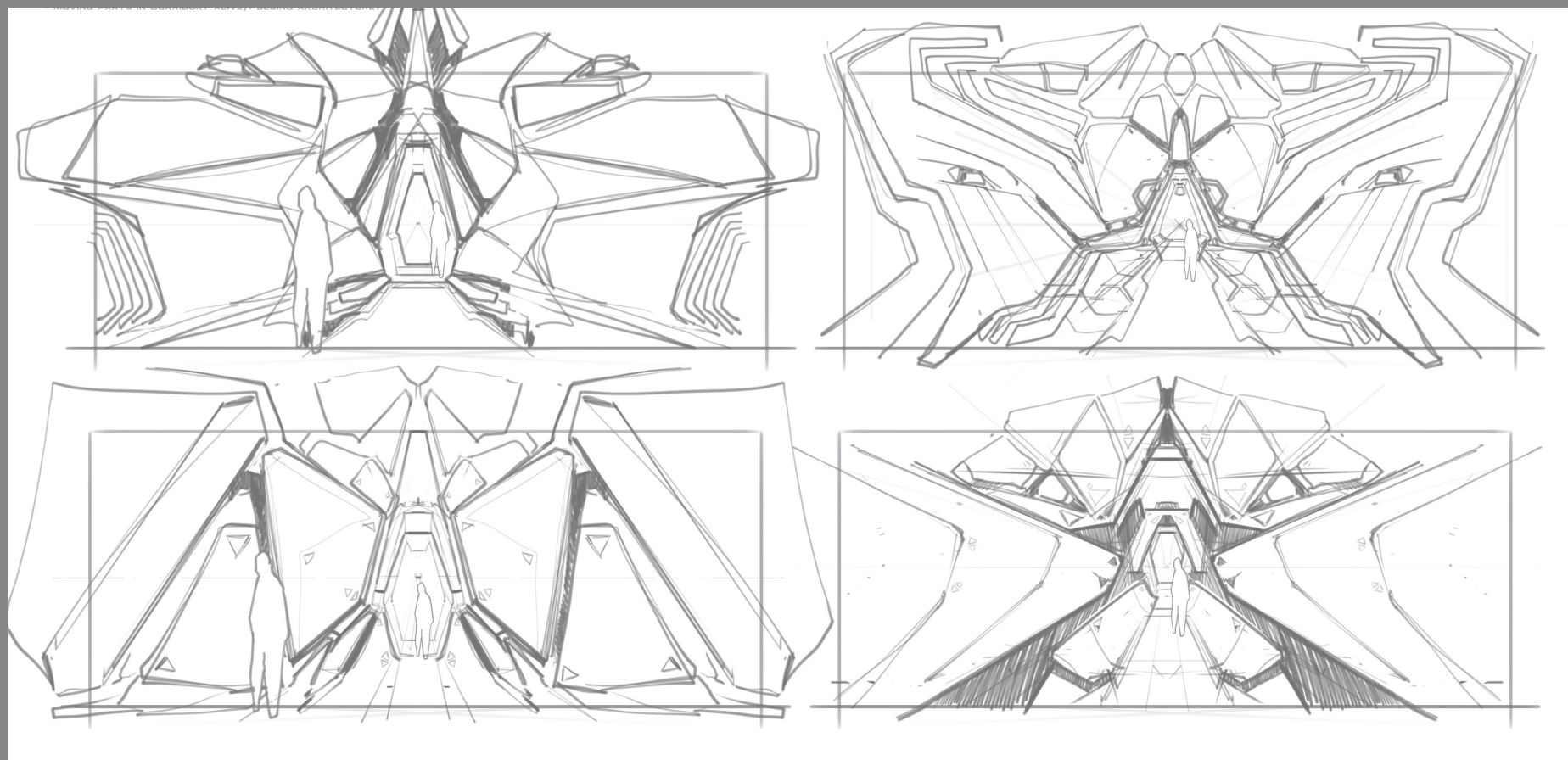


The two were particularly interested in the cultural material, with Jones eagerly learning about how Xi'an beds can be folded up for meditation and that they traditionally store their food in large amphorae. These special details, he noted, would really help the final ship stand out. Jones also brought out earlier Xi'an work to decide the industrial, complex geometry that would eventually define the Railen.

Oberschneider began his work with a page of 2D sketches. Jones

prefers to allow artists free rein at this point, using their imagination as much as possible without micromanagement. Oberschneider developed rough sketches of four directions for the ship: a katydid-looking hopper that transformed as it took off, a flatter mantis-like ship, a star-shaped flyer, and one ship that became totally horizontal when landing. Jones said the designs were impressively unique but that they did not seem vertical enough. He asked Oberschneider to develop three of the ships as rough 3D meshes keeping that feedback in mind.



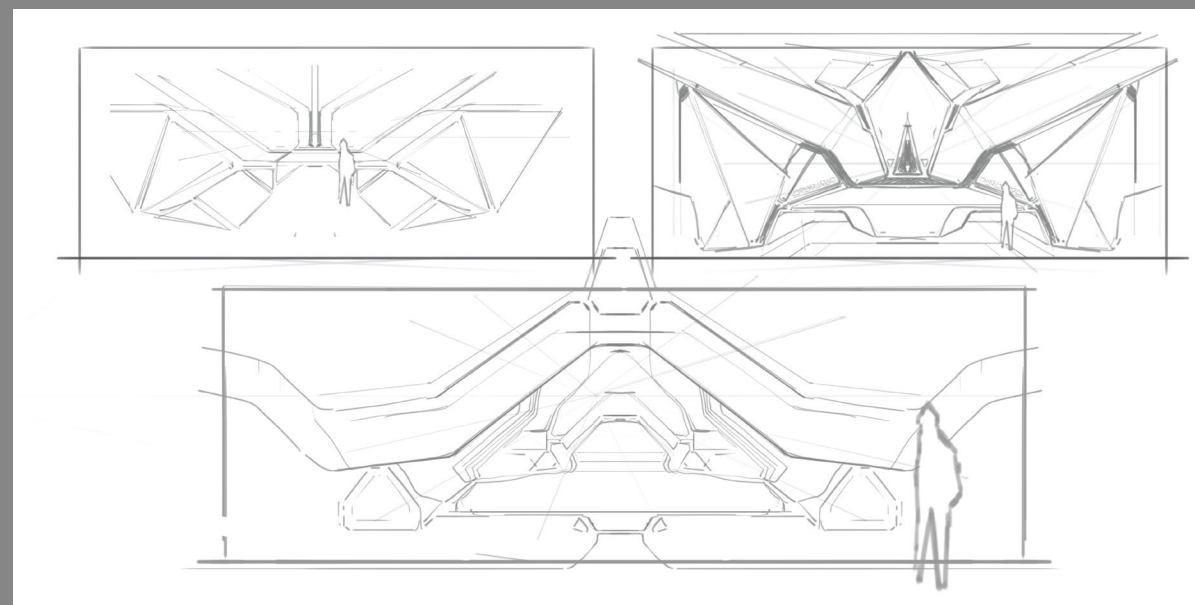


With this second pass, Oberschneider introduced more alien shapes and a more abstract verticality. Jones wanted the ships to make you take a moment to figure out: where's the cockpit? Which end is the front? Additional work to account for the necessary cargo volume further impacted these concepts. Next, Jones made a quick color pass and applied some initial materials from the library. He added strips of color to bring the rough design into line with color schemes previously used on the Xi'an in the past. At this stage, Jones presented the three options to Chris Roberts, who chose number three, the modified star-shaped design that had become more vertical than expected.

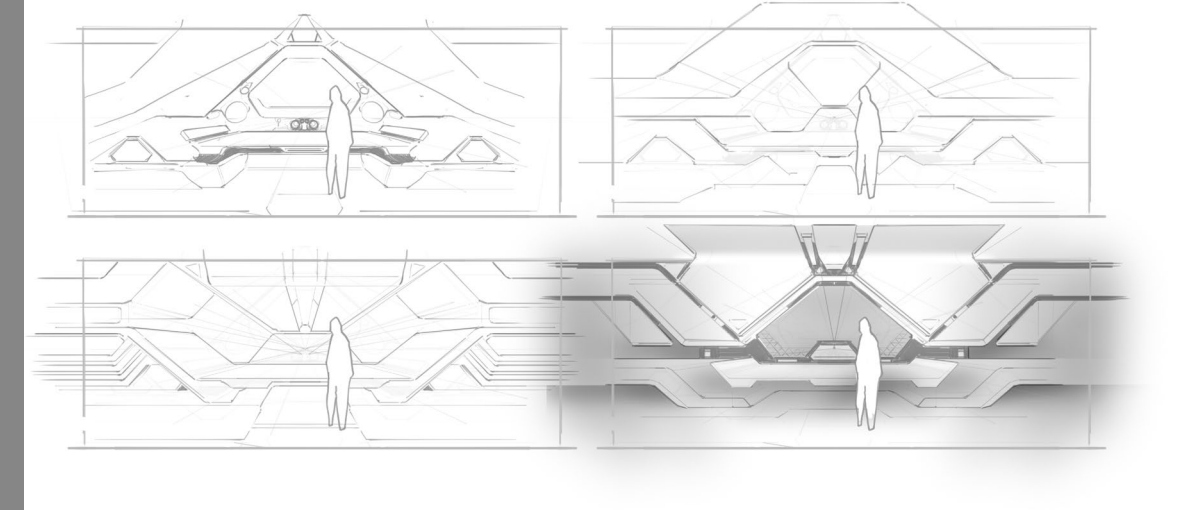
With the rough exterior direction decided, the next step was to develop the interior. Here again, Jones asked Oberschneider to begin with 2D sketches based on the exterior shape. He obliged, developing a number of sketches of internal architecture that defined the flow and the loop of the ship's

substructure (something Jones likens to an infinity loop that always comes back on itself). The only problem here, Jones points out, is deciding a direction when there are so many good ideas. "You have to break it down: what does it need to do? What are its functions? How does it read? Is it too complex? It's a constant struggle to do something new but also not completely crazy."

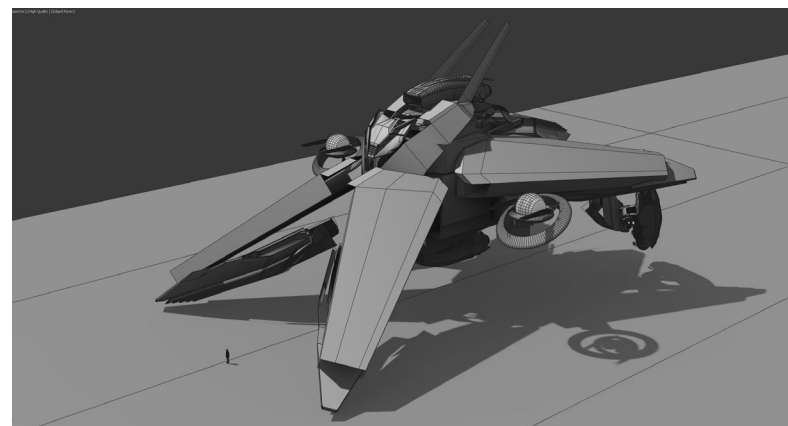
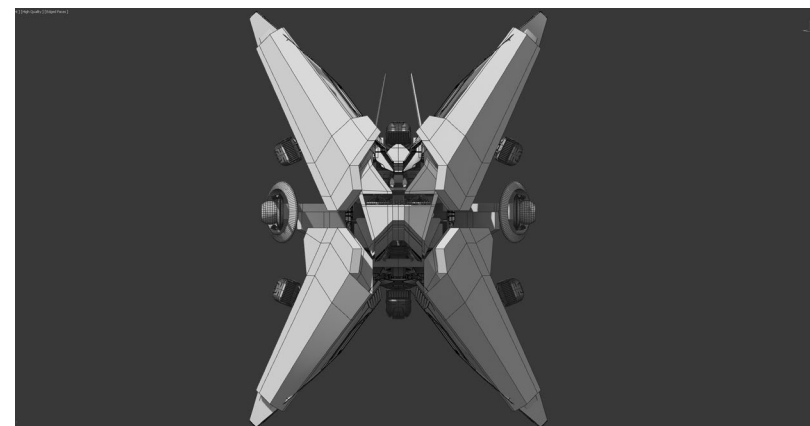
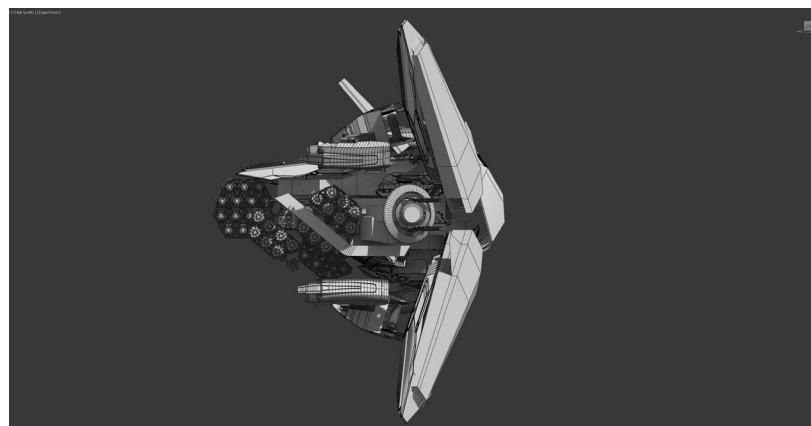
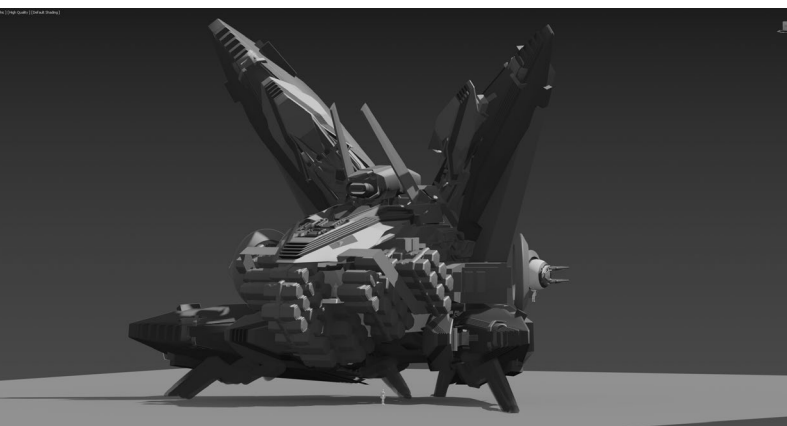
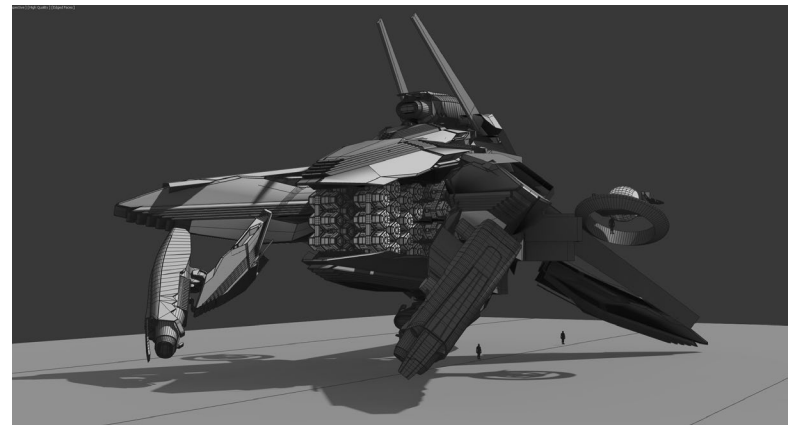
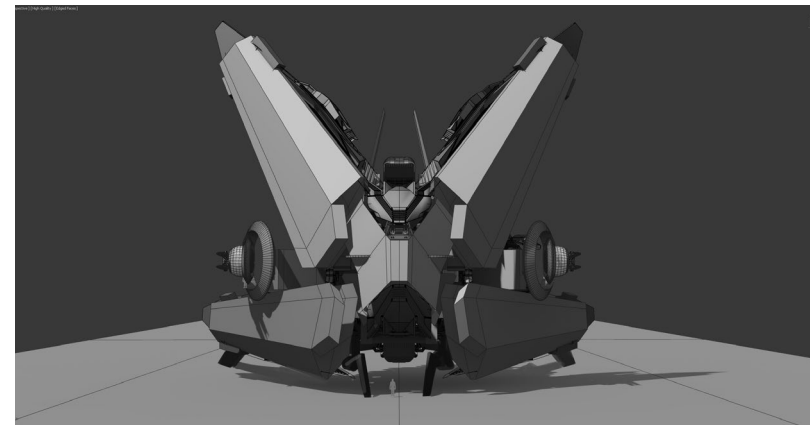
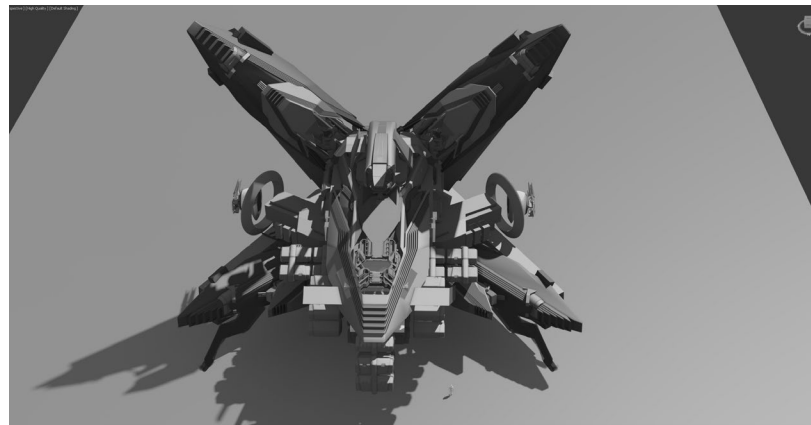
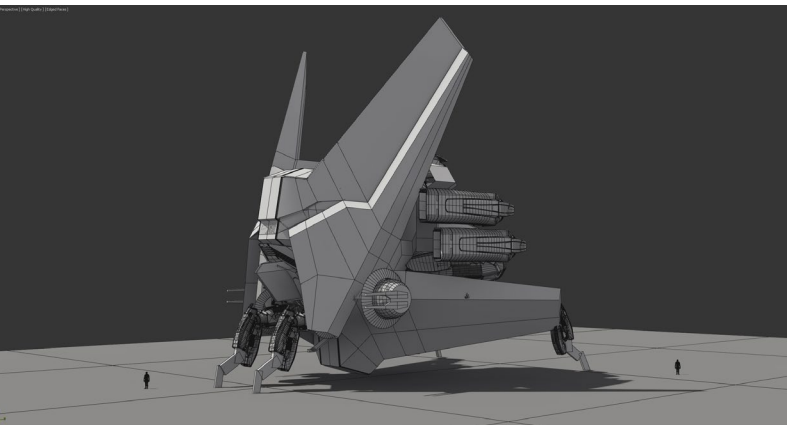
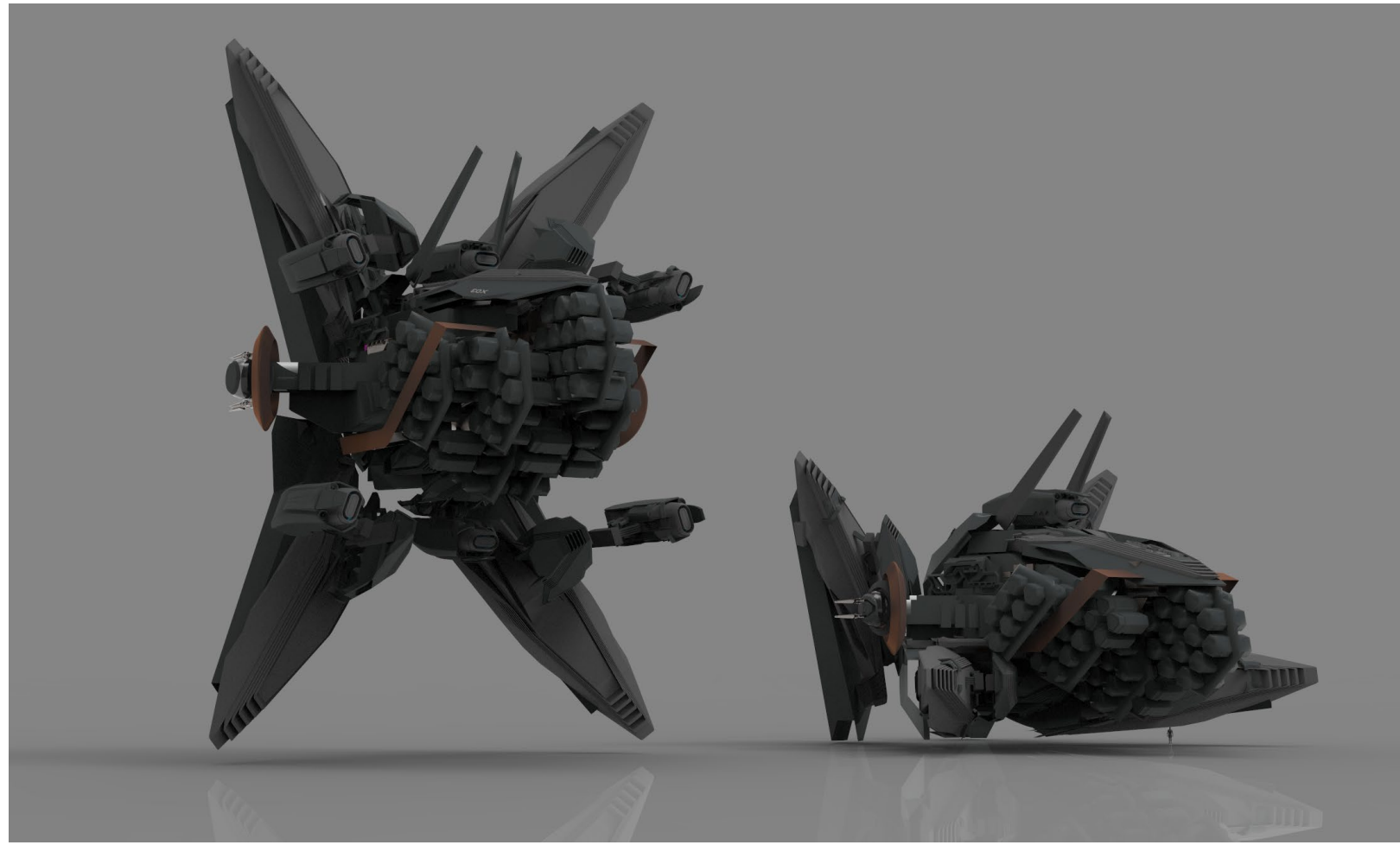
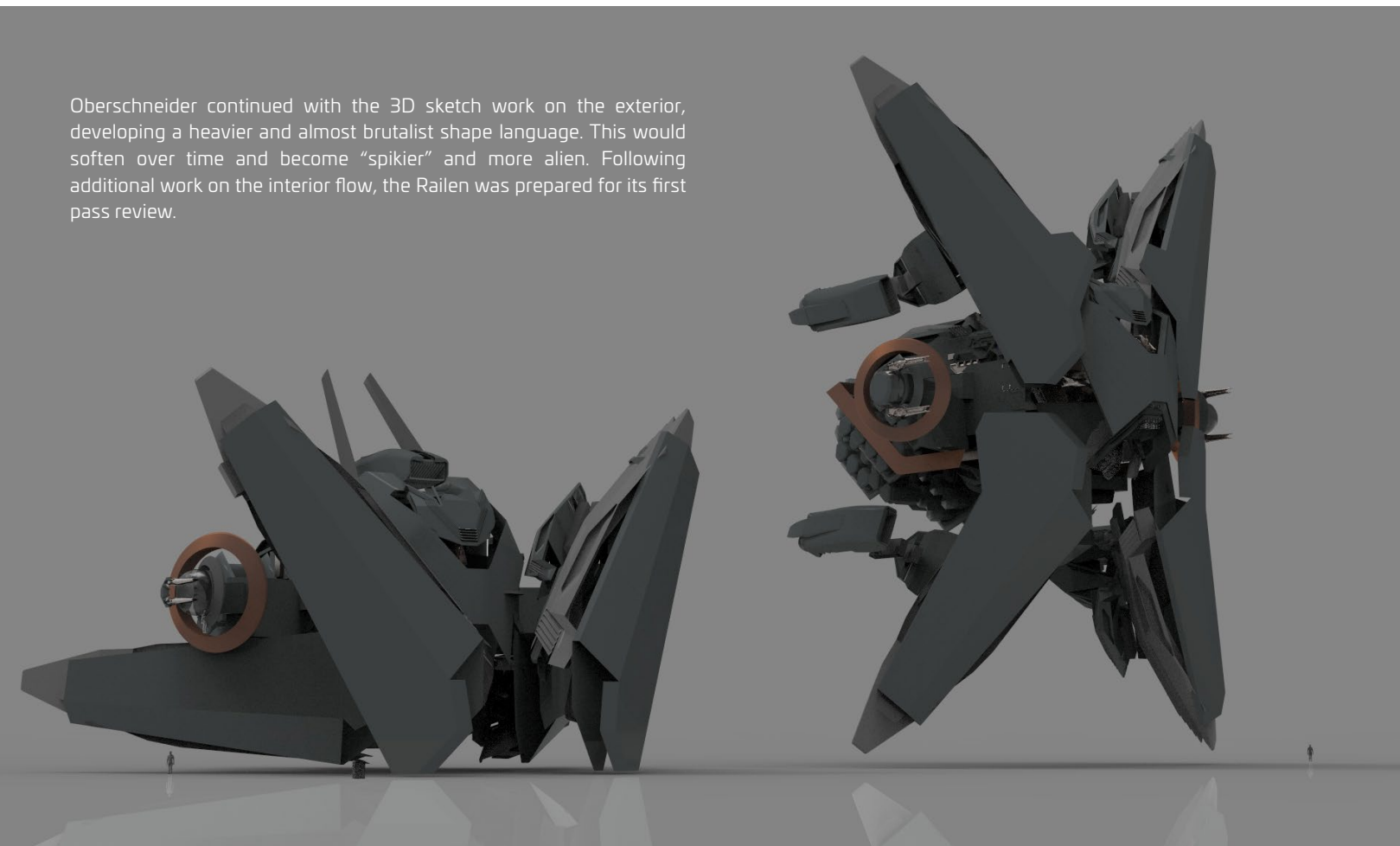
He also points out that gravity is the great equalizer in alien ships as, without 2001-style walking on the walls, traditional gravity will always be something that connects all ship interiors. With favorites from the 2D work selected, Oberschneider went on to block out the interior placement. Then, Jones followed by adding additional pieces to get across the idea that the superstructure is recognizable on the inside. He found they formed a very strong visual part of the ship, with the circular seats and the angular lift elevator complementing them.

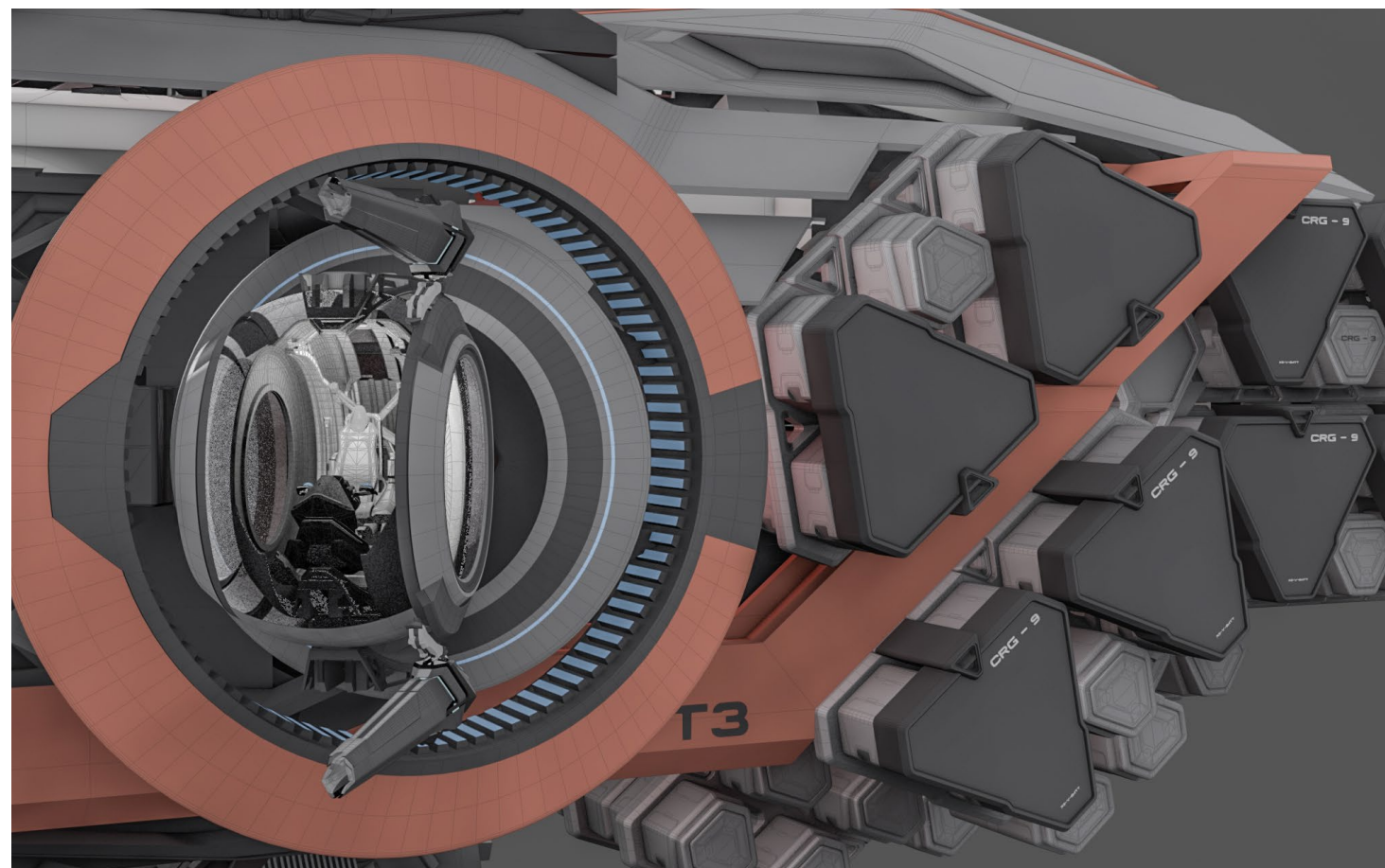
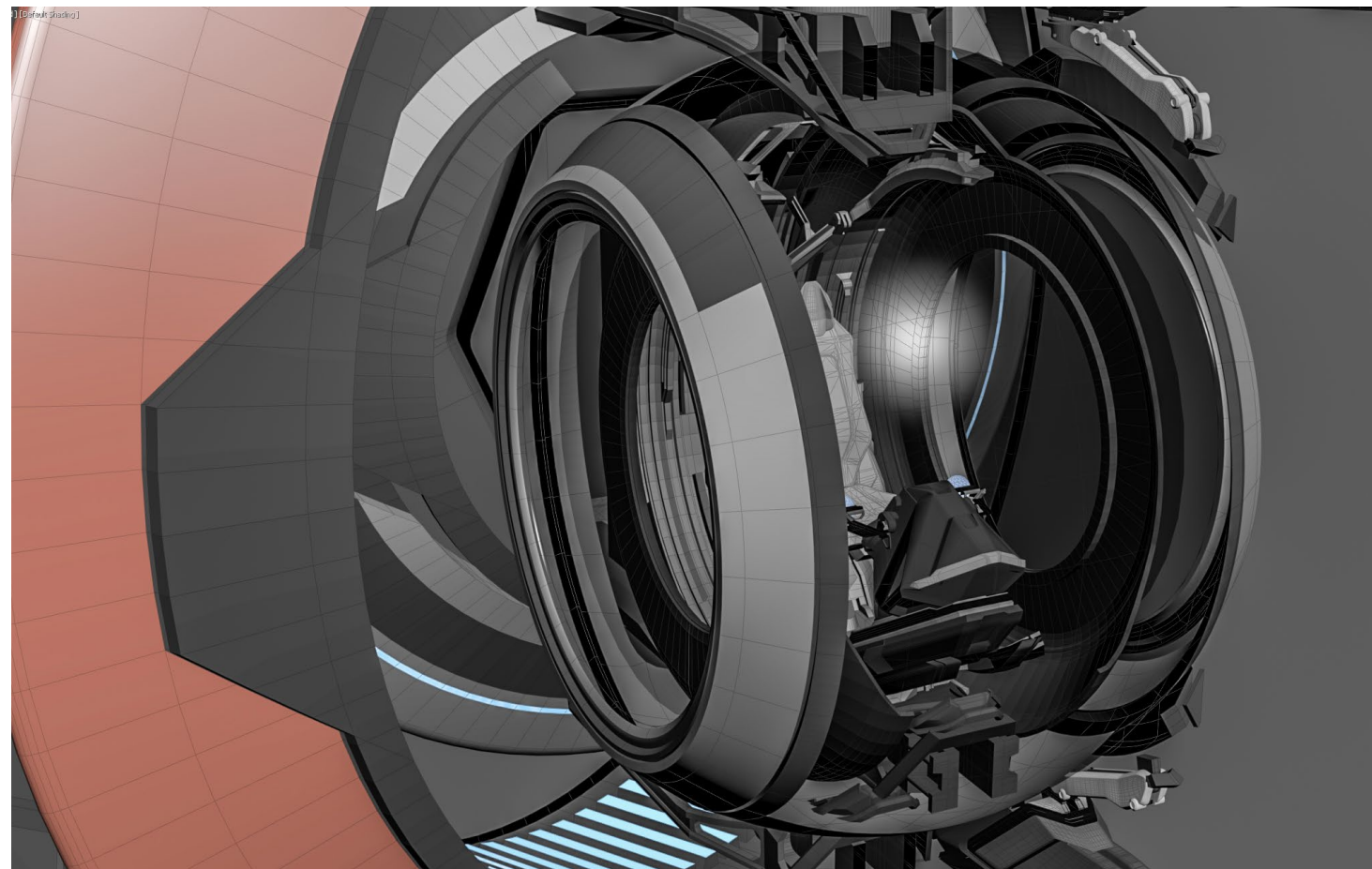
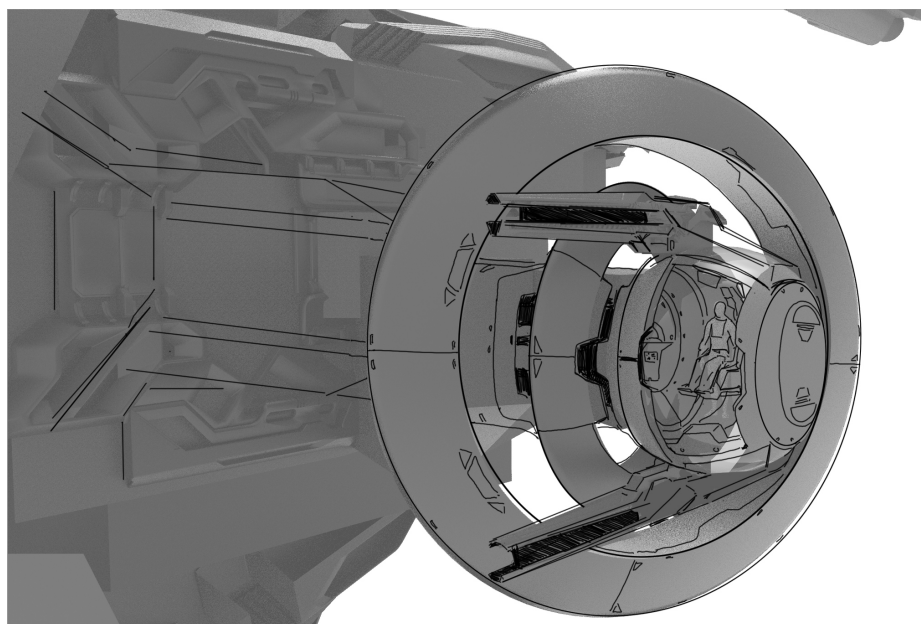
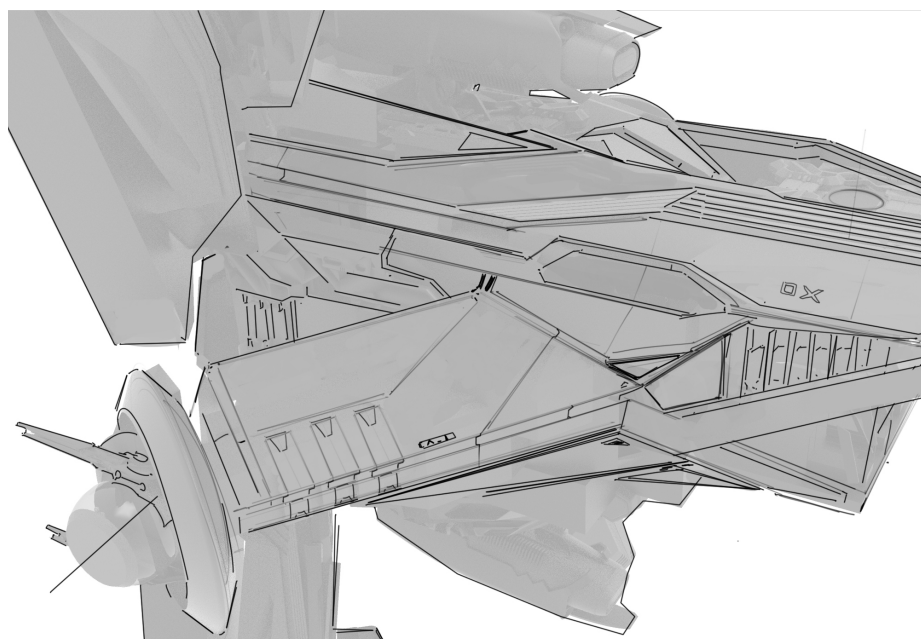
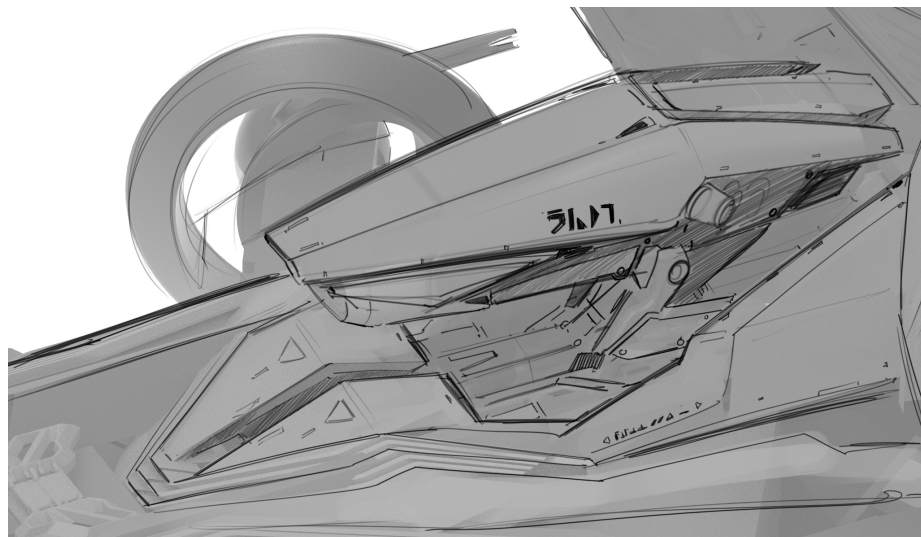
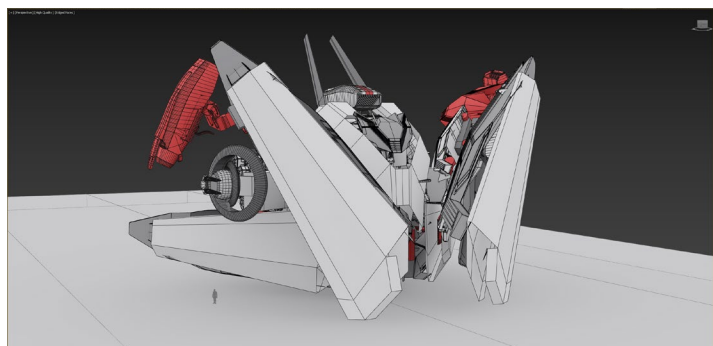
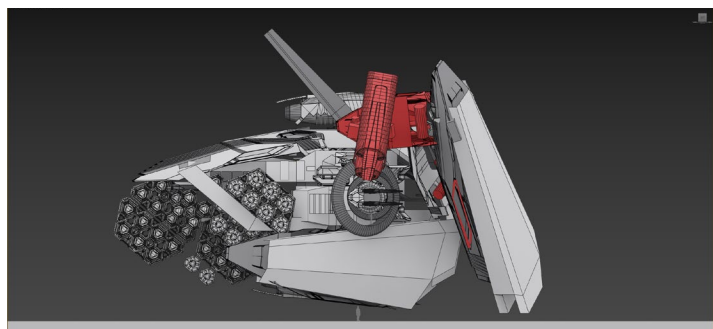
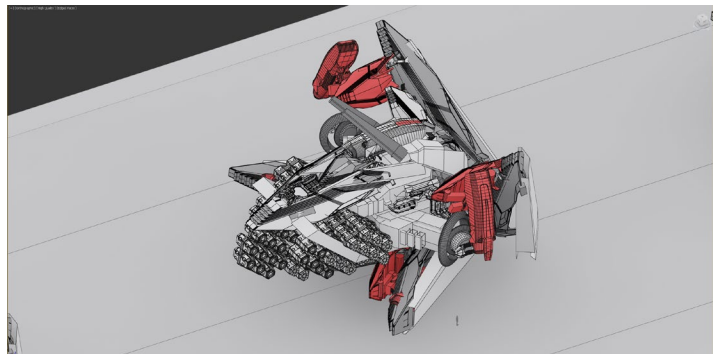


XI'AN BED SKETCHES



Oberschneider continued with the 3D sketch work on the exterior, developing a heavier and almost brutalist shape language. This would soften over time and become "spikier" and more alien. Following additional work on the interior flow, the Railen was prepared for its first pass review.



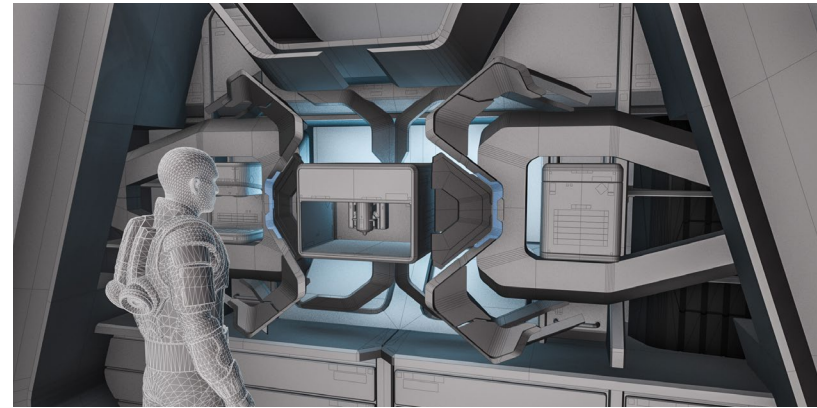
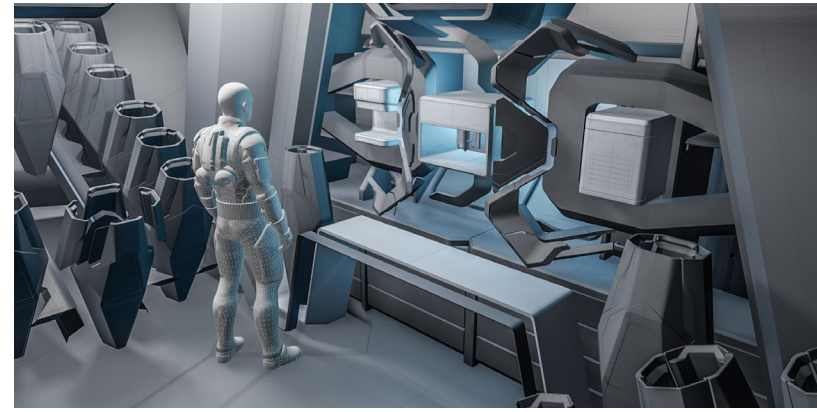
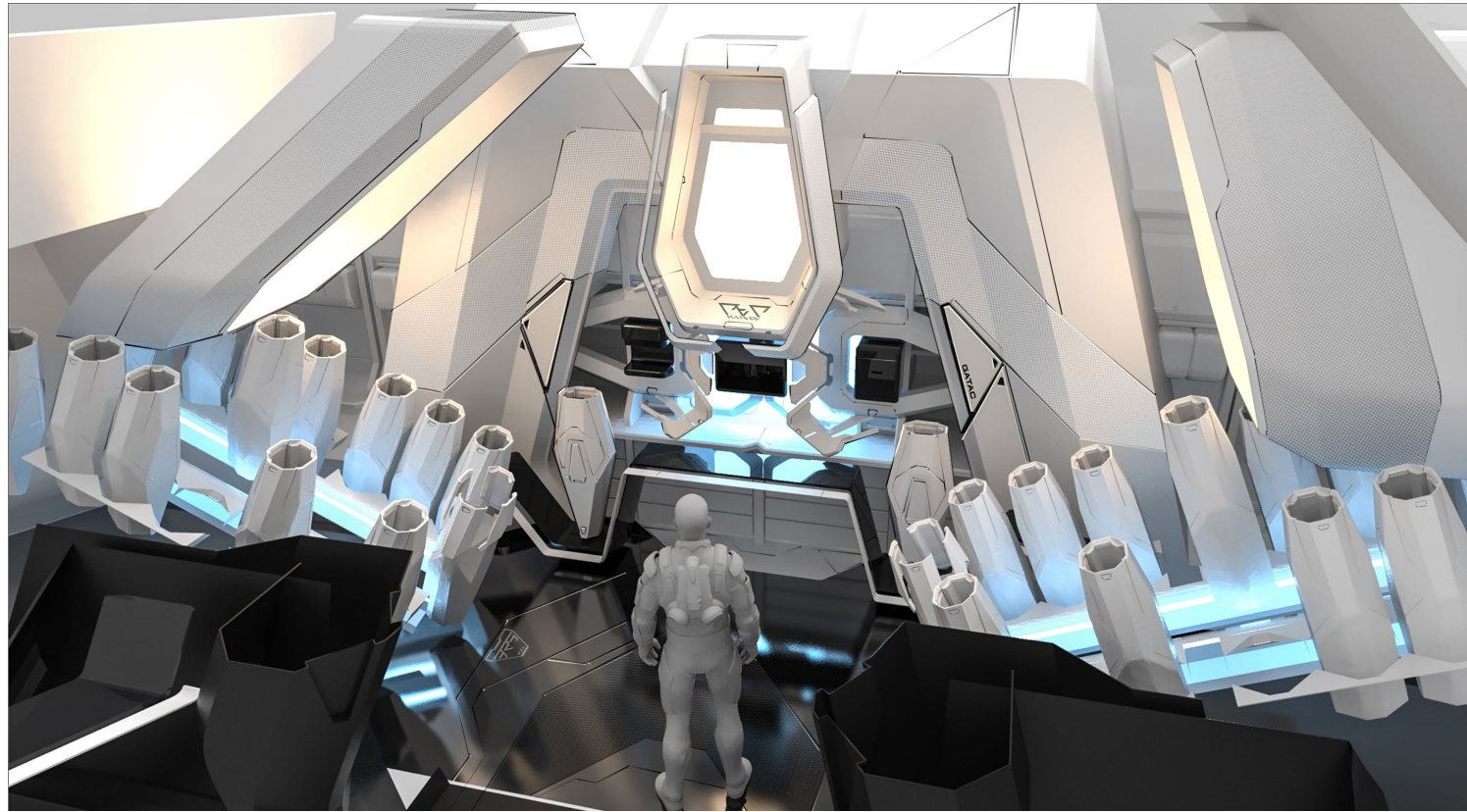


NEXT PASS

The news was good - the ship was at a good stage for readability and functionality and the project was ahead of schedule, giving the artists time to work ahead and develop the first landing animations. They tried several configurations but found the new options were a harder read; Jones preferred the bulkier look to the exterior.

The biggest feedback from the review was that the Concept Team needed to rework the ship's main thruster placement, as there was concern that it wouldn't provide enough thrust given its initial intersection. This work was completed quickly, followed by an additional focus on the wings that moved them from the original pointy look to a more industrial style. From there, the task of asking additional questions about subsystems began: are the VTOLs big enough? Where will the turrets be able to access?

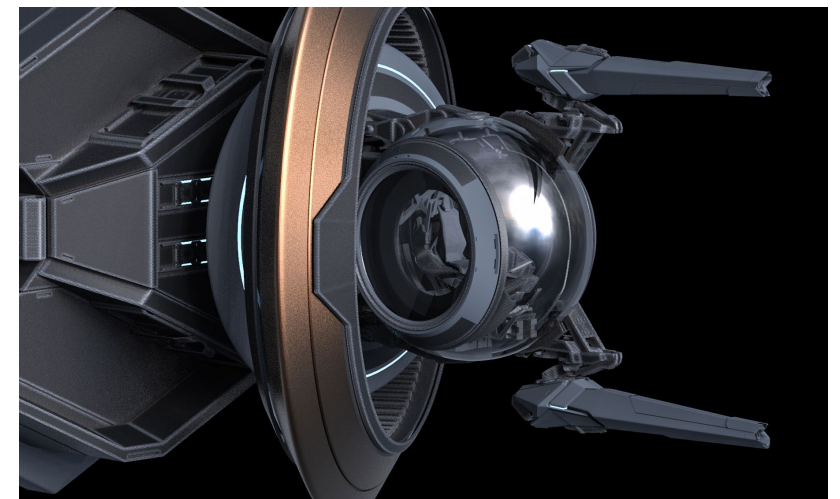
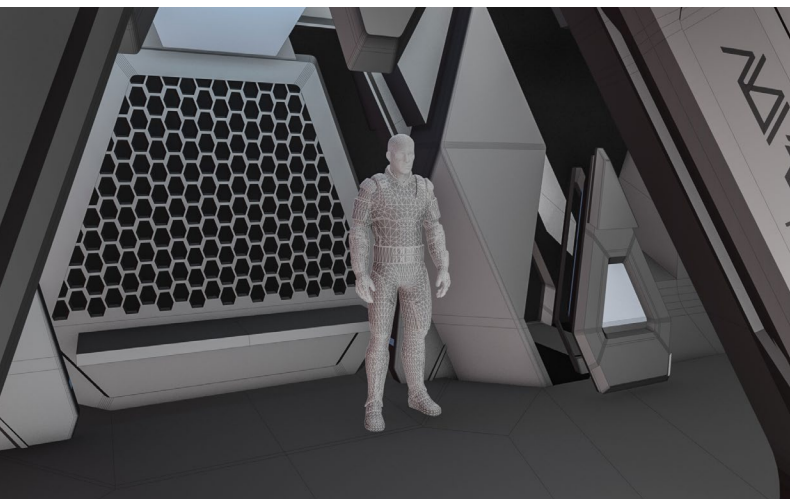
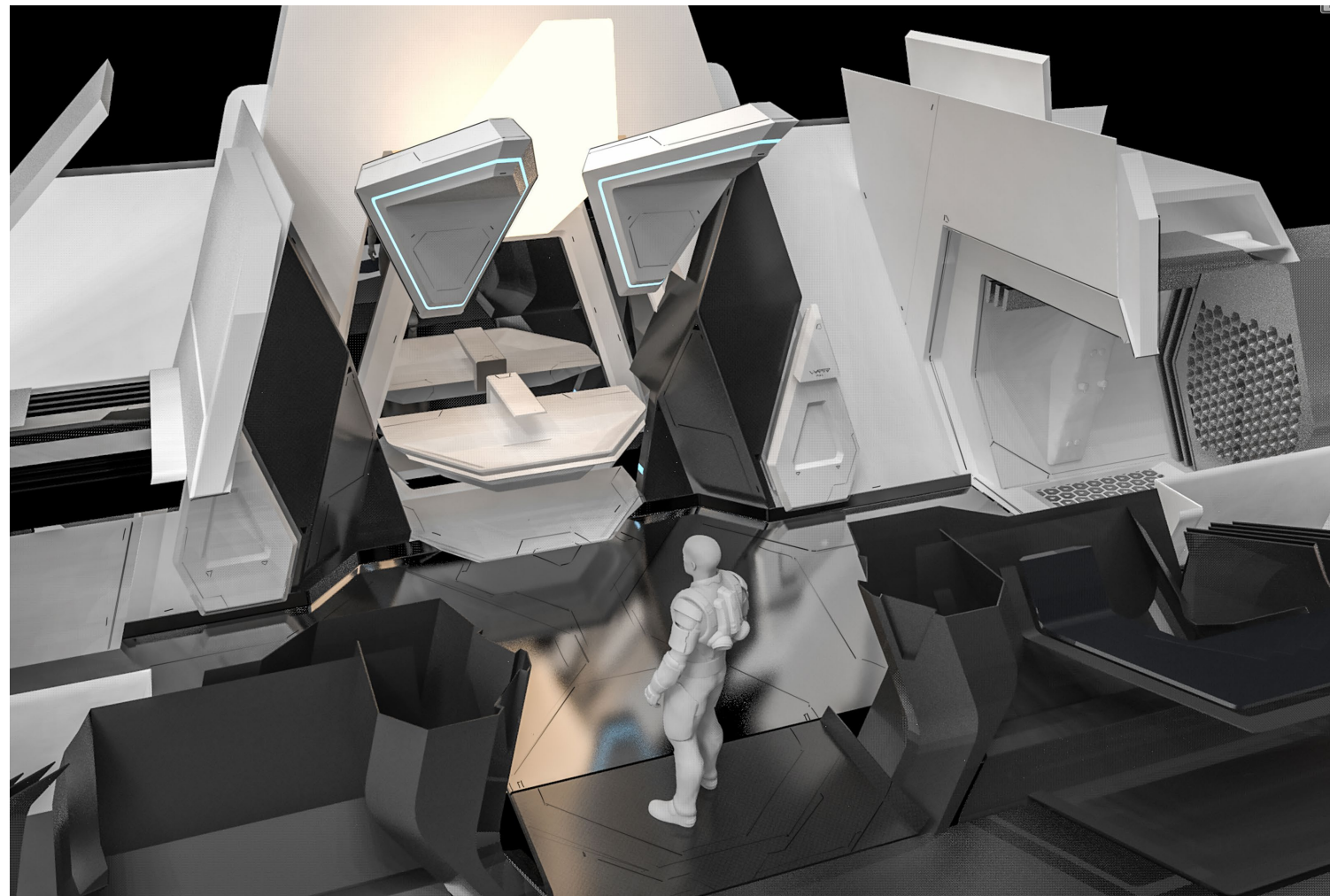
As the pair worked, they developed some initial style pointers for Gatac and then dove into perfecting individual ship systems. Here, Jones says, the job of the art director becomes helping guide the concept artist to the right tasks as it can be very easy to focus on one small part of the ship or to work on something that might not be important to the whole. In this case, he selected the thrusters and the turrets, with a special focus on sketching out options for the ship's very visible ball turrets.



Jones liked the new block-ins and, next, the two looked at ways to further enhance the ship. Of particular concern as they were constructing the final interior was applying thought to how players will navigate it. Concept artists are responsible not only for making a ship that seems real but also one with a flow and visual cues that let players quickly adapt to the environment. This is especially important in an alien ship with an unusual interior style!

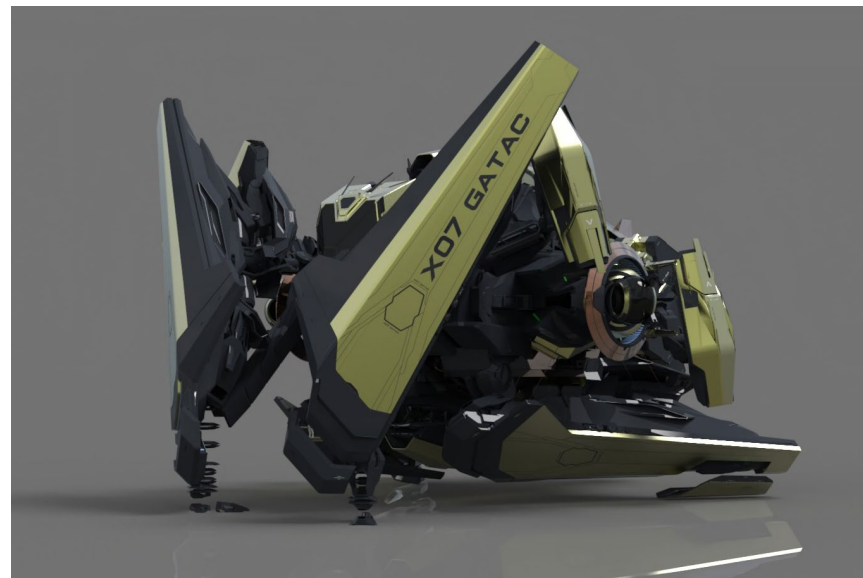
Jones applied the phosphor-bronze material that defines the superstructures of Xi'an ships and he felt the ship was really coming together. He brought in a Xi'an console initially designed for *Squadron 42* and adapted it as a distinct control surface for the Railen. There was also a special focus on the floating chairs, developing something special but not frustrating to use.

This stage of the development also saw the biggest work from the special lore document as the concept artists added details like Xi'an food storage canisters and a shower that includes the ribbed surfaces Xi'an rub themselves on to stay clean. The next period of the second phase saw general refinement to the turret and the bridge. Jones also developed a new system for the ship's components approved by the designers. While large components stay in place for access, smaller ones are brought to the engineer on a special carousel that can be activated via console. There's no guarantee the idea will make the final implementation, though it certainly seems sufficiently alien.



The final portion of the second pass saw Oberschneider conduct the first material pass followed by Jones working on options for the hull colors. He tried a wide variety of options in a number of colors, including gloss, camos, metallics, gradients, and even a sort-of snakeskin texture. On review, however, Chris Roberts asked that he try using the existing Xi'an color wheel. Jones picked three colors he liked and tried a number of two-tone varieties of each with different effects and details, like power flow lines or alien scales. Roberts picked two that he liked and the Railen's final look was locked.

Finally came the job of developing concept images showing the ship in use for the public presentation. Jones prefers to assign promo work to the same concept artist who developed the ship as it is a kind of reward - producing release-quality art of their work that will be shared with the world. Unfortunately, Oberschneider was desperately needed on another (top-secret) ship in production and Jones would have to work up the concept scenes by himself. The result was the usual assortment of incredible still images, which Jones notes was possible only because of Oberschneider's quality work on the initial mesh.



GATAC RAILEN SHIP PAGE

<https://robertsspaceindustries.com/pledge/ships/railen/Railen>

SHIP PRESENTATION

<https://robertsspaceindustries.com/comm-link/transmission/18188-Gatac-Railen>

Q&A

<https://robertsspaceindustries.com/comm-link/engineering/18207-Q-A-GATAC-Railen>

VISUAL GUIDE: CORPORATIONS (Part 3)

Components are the great multiplier for both game designers and starship captains. By enabling players to outfit their spacecraft with a wide variety of components, *Star Citizen* connects the speed and gameplay of space combat with a longer strategic game element that allows players to deeply customize their ships. The end result is that no two ships in the 'verse are ever actually alike, allowing for endless additional gameplay but also making the prospect of planning and testing such a system ever more difficult. The *Star Citizen* team has risen to

the challenge, though, and created a deep system of ship components that offer far more than just the usual missiles, guns, and shields.

As with the ship and weapon companies discussed in previous issues, Chris Roberts was adamant from the start that *Star Citizen's* component system be more complex and more realistic than those that came before. Instead of just offering a variety of upgrades for ships, they would be built into the working of the universe: each component would

have its own manufacturer and resulting reputation. Instead of one type of a particular battery, there might instead be five or ten from different companies with variations in durability, ability to take damage, reputation, and the like. To make this a reality, *Star Citizen's* designers and lore makers set out at the start of development to define both the sorts of ship components that would be needed and the network of fictional companies that would design and manufacture them. (See previous issues for coverage of *Star Citizen's* ship and weapon manufacturers.)

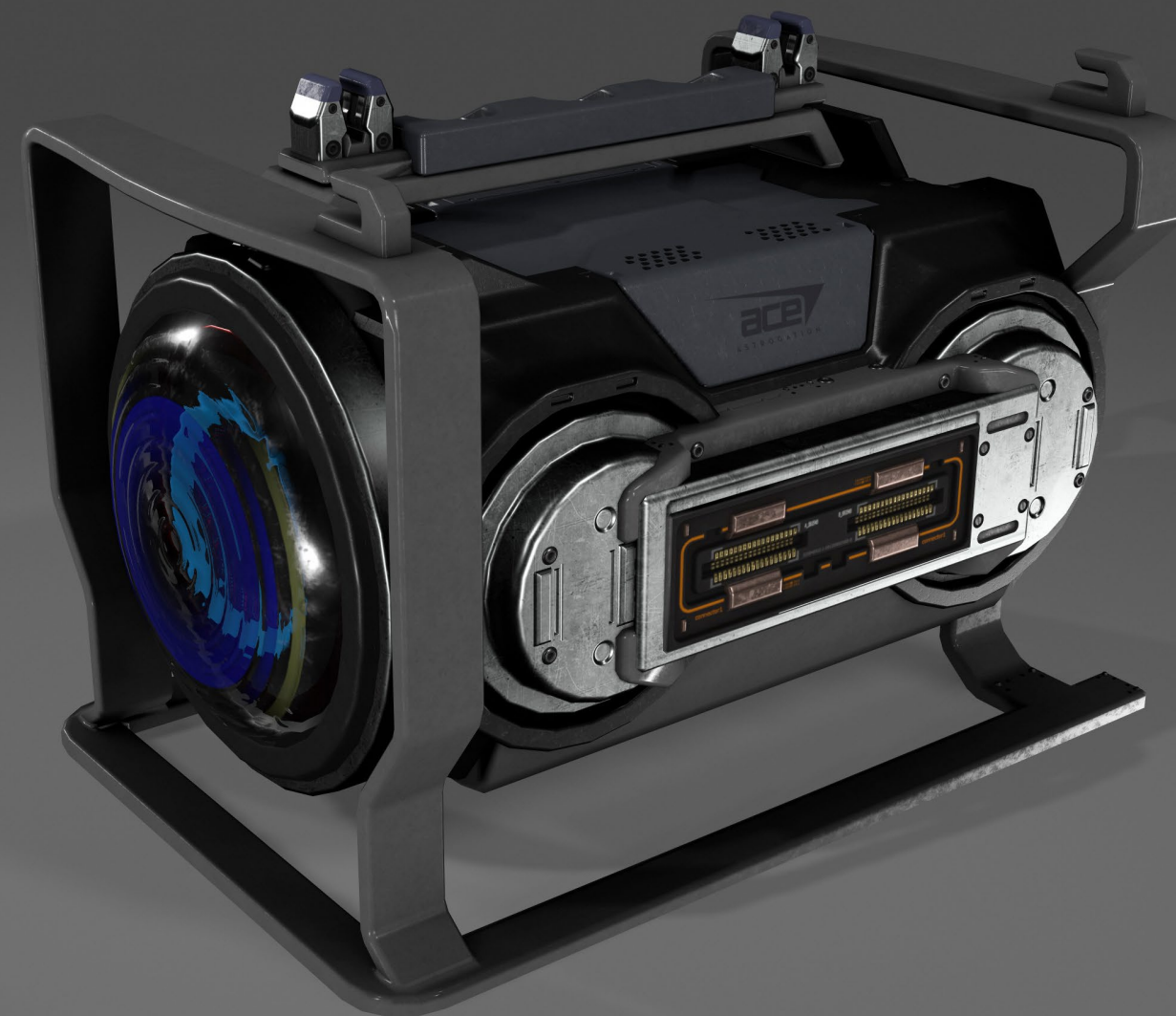


Ace Astrogation is a military-focused propulsion company that is responsible for a variety of different types of jump and quantum drives. The company also produces the Ace Astrogation FusionPro 3H, which was selected via user poll early in *Star Citizen's* campaign and is most notably found as stock equipment on the Anvil Aerospace F7A Hornet.

PRODUCTS

Jump Modules, Power Plants, Quantum Drives

BRAND DESCRIPTION: Corp focusing on the structural (non-combat) aspects of the ship. Builds power plants at medium to mil-spec quality. Sleek, elegant designs but powerful.



ACOM

ACOM is a high-tech company that produces a wide variety of batteries, coolers, and power plants with an emphasis on ship racing. Featuring distinctive orange and black liveries, ACOM's lineup is best recognized for its variety of combined words: HaloLight batteries, QuikCool coolers, StarHeart power plants, and the like.

PRODUCTS

Batteries, Coolers, Power Plants

BRAND DESCRIPTION: In racing circles, the term ACOM has come to have two meanings. The first is an abbreviation of the phrase 'a commanding lead' – meaning to pull so far ahead that the rest of the pack doesn't stand a chance of catching up. The second is a more recent usage in that it refers to the start-up manufacturing company who took the phrase as their epithet. ACOM focuses on creating ship components that handle as much power as possible as quickly as possible in order to give pilots the all-important extra edge during a race. Founded by the children of famed pit crew chief Garrit Bijarani, siblings Jayce and Zan took four generations of racing knowledge and gave it form in ACOM's full line of power plants and coolers.



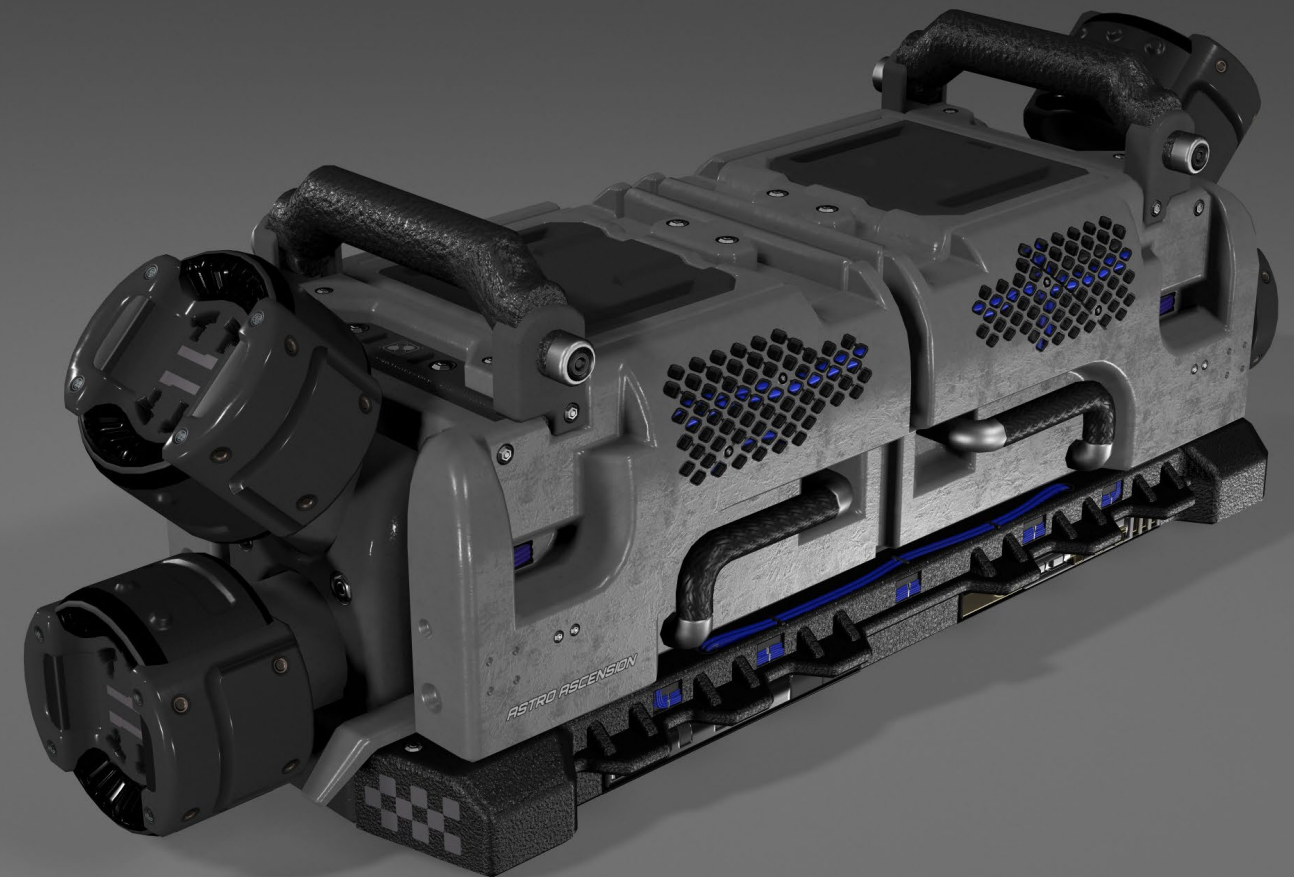
ASCENSIONASTRO

Ascension Astro is one of several shield manufacturers profiled here, the proliferation of which results from *Star Citizen's* plans to have different types of shields that go beyond just increasing strength and power usage. Ascension is intended as a higher-end "luxury" manufacturer. Shield types include the Mirage, Obscura, Shimmer, and Umbra devices.

PRODUCTS

Shield Generators

BRAND DESCRIPTION: Ascension Astro started off as a boutique specialty company; selling high-end, low-IR thrusters to wealthy clients who wanted to fly their luxury ships while avoiding the eyes of greedy pirates. As good as their thrusters were at being low-sig, the effect was often ruined when the engines or shielding made by other manufacturers would be screaming the ship's presence. Slowly, Ascension began expanding their line to include a whole suite of components that, when working in conjunction, would provide an extremely low profile and a safer journey.





Basilisk is an unusual company in that it has diversified in its history and so produces both personal armor and shield generators. On the generator side of the operation, Basilisk is responsible for over a dozen types of shield systems including the Armada, Bulwark, Parapet, and Siege. They're also the designer responsible for the bespoke Glacis shield system used by Origin aboard the 890 Jump.

PRODUCTS

Shield Generators

BRAND DESCRIPTION: In the 26th century, Basilisk managed to secure funding to research new armor composites, and from there, rapidly grew to become one of the leading military suppliers of defensive technology for ships and starfighters. However, when the Xi'an cold war ended and the Messer regime fell, military cuts followed. To maintain their Naval contracts, Basilisk underbid the competition. As profit margins shrank, Basilisk cut costs in their military line to salvage a meager profit margin and shifted focus to their industrial line. Corporations were eager to purchase from a trusted name like Basilisk. As the 30th century approached, Basilisk focused on the private sector, while receiving complaints from military personnel over the streamlined military products. Pilots joked that if you were going to strap Basilisk armor to your ship, you should make sure to order it from their public site.



Sporting a name that seems like it's straight out of the 1970s computer industry, Friskers Semiconductor is responsible for a variety of battery and computer systems for *Star Citizen's* spacecraft. These include the CompuWare and DataVault software systems. Friskers' lore is designed so that the company can expand into other related areas in the future as additional components are needed.

PRODUCTS

Batteries, Computers

BRAND DESCRIPTION: While their batteries and semiconductors can be found powering a wide variety of products across the Empire, their new computer division has been much praised as Friskers looks to expand its operations in the 30th century.



GNP

GROUPE NOUVEAU PARADIGME

Usually referred to by its acronym, GNP, Groupe Nouveau Paradigme is a company focused on spacecraft electronics, including radars and scanners. GNP's equipment typically has a French name (Prevenir) or an alphanumeric designation (V801-11) and can be found across a wide variety of *Star Citizen's* spacecraft. The company has also been said to have begun developing spacecraft engines.

PRODUCTS

Radar, Scanners

BRAND DESCRIPTION: Seeking to stand out in the crowded field of manufacturers and to compete with the more developed "homeworlds," the governments of four outer systems banded together to subsidize the creation of GNP, an entirely new kind of company that specialized in designing everything from full-range sensor suites to ship engines.

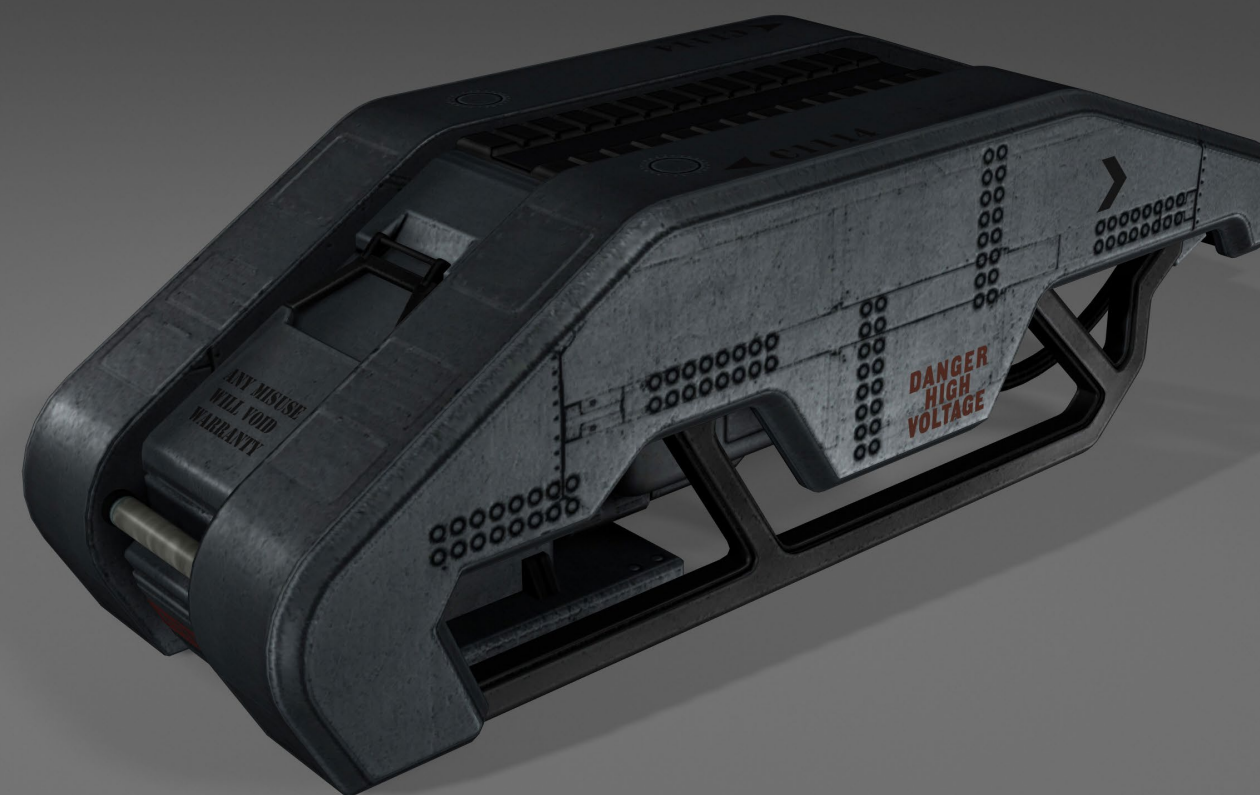


One of the oldest companies in the 'verse, Juno Starwerk produces several lines of devices that have been perfected over its long history of serving UEE citizenry. Juno is especially known for its storied lines of power plants, which include the Diligence, Endurance, Jennet, and Trommel. The company also produces a large number of coolers (including the Snowfall and ThermalCore) and quantum drives (including the Goliath, Kama, and Yaluk).

PRODUCTS

Coolers, Power Plants, Quantum Drives

BRAND DESCRIPTION: Second only to RSI in terms of longevity in the space industry, Juno Starwerk was founded in the 24th century to build long-haul freighters to support the rapid Human expansion into other star systems. Utilitarian above all else, these ships were designed to do one thing: haul as much weight as possible as cheaply as possible. While, over time, as competition increased, their share of the ship market shrank, their components had earned a reputation for dependability and ease of maintenance. Their direct sales of these components soon made up the majority of the company's income and in 2513, ceased ship manufacture entirely to focus on supplying industrial strength components. In parts of the 'verse, there are generations of mechanics who have passed knowledge and techniques for working on Juno power plants like family heirlooms. This long history also means that Juno parts and repairs are easy to come by.



LIGHTNING POWER LTD.

A fierce competitor of Juno Starwerk, Lightning Power is a well-established power plant and cooler company with a similar variety of product lines. Power plants include the FullForce, IonBurst, PowerBolt, and ZapJet. Lightning Power also produces mil-spec equipment for the UEE Navy, hardened versions of the same technology in their civilian lineups.

PRODUCTS

Coolers, Power Plants

BRAND DESCRIPTION: Founded over three centuries ago under the name Energy Provisions, the company manufactured a wide variety of basic power system components under the brand Pearlamak, a combination of the founder's daughter's name and the tokamak style of the first power plant they sold. An industry leader for a short while, they soon began to lose market share to the more modern designs of their competitors. Hoping to shed their 'old fashioned' label, Energy Provisions introduced a new line of sleeker looking parts that took the core tech of the older Pearlamak line but updated the aesthetics and user experience to what consumers had come to expect. The new series of Lightning Power components sold very well and quickly outpaced the rest of the company's offerings. It wasn't long before Energy Provisions switched more of their manufacturing plants to producing Lightning Power parts and in 2905, they completely eliminated their Pearlamak line, officially changing the company's name to Lightning Power LTD. Made out of less expensive materials, Lightning Power continues to introduce new aesthetic changes to their products while relying on tried-and-true technology to run them.



SAGA DATASYSTEMS

Eagle-eyed *Star Citizen* followers will recognize Saga Datasystems' first appearance very early in the project's pledge campaign, where they were established as the manufacturer of the AMX-1 Repair Drone that was awarded to early backers.

Since then, they've become a competitor in both the computer and the repair equipment arenas.

PRODUCTS

Computers, Repair Equipment

BRAND DESCRIPTION: Manufacturers of the AMX-1 Repair Drone and the M3-A Multifunction Space Drone, Saga Datasystems was founded in 2847 by Lavinia Kilo, an industrial engineer. For seventy years, control of the company passed down through the family until 2931 when Nathan Kilo, the last remaining heir, took the company public. Though he still owns a majority share in the company, Nathan has little involvement in the operations and management of the company, leaving that to the Board of Directors.



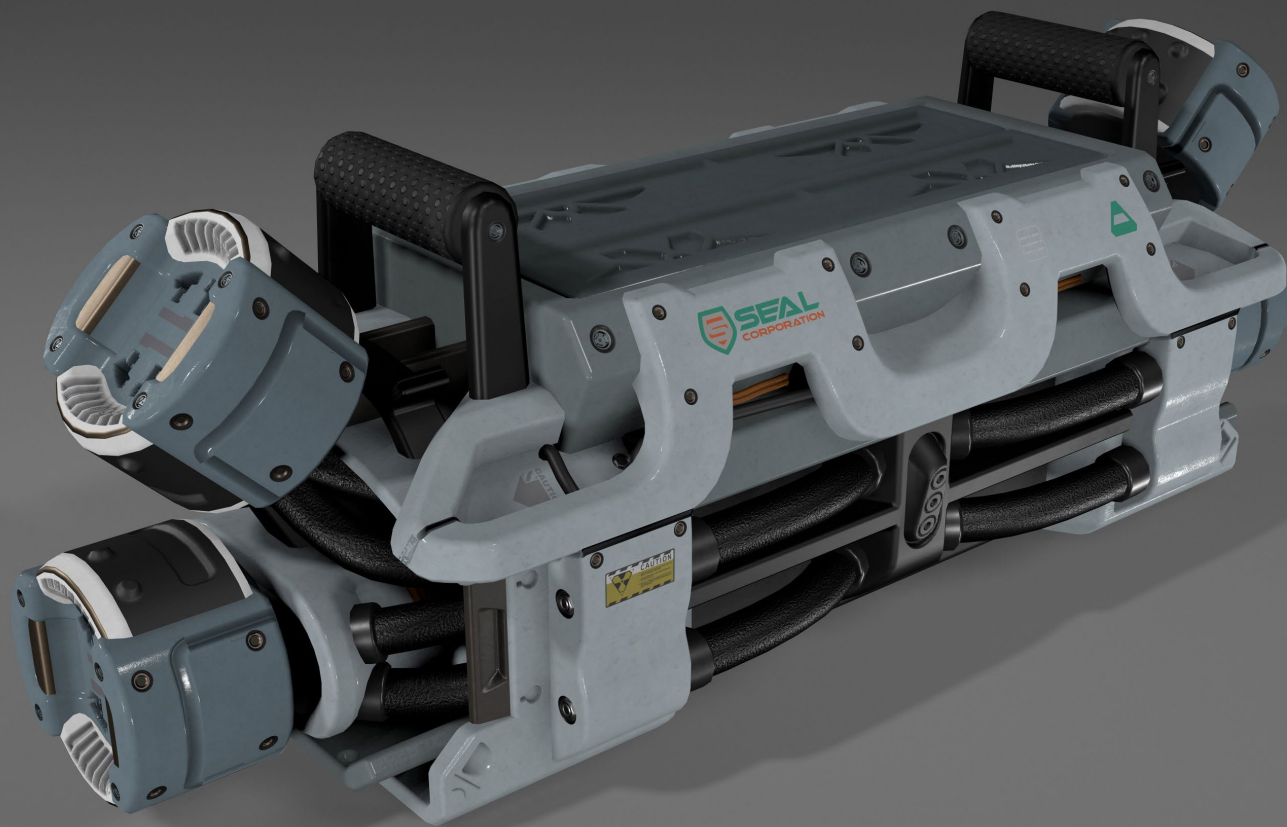


Seal (sometimes stylized SEAL) is the grandfather of *Star Citizen's* many shield companies, one of the original groups responsible for developing modern shielding technology. Seal's shield systems are given short, all-caps names for their branding: HAVEN, HEX, INC, LOC, and more. Like most of *Star Citizen's* shield companies, Seal focuses only on one sort of technology, implying that shield components are likely very different in terms of design or manufacture from other types.

PRODUCTS

Shield Generators

BRAND DESCRIPTION: One of the earliest companies to begin selling energy-based shielding to civilians when the technology was declassified, Seal Corp has been in the industry centuries longer than its current modern day competition. For a while, the term 'seal' was ubiquitous with shield and Sammy the Seal Corp seal is still one of the most recognizable mascots across the 'verse. While they have lost some market share to competitors over the years, they are still the most widely used brand of shields and their products can be bought easily in almost every system.



Tarsus is a major jump drive producer in *Star Citizen's* world, a type of component that hasn't yet been needed in *Star Citizen's* single

system... but as everyone knows, that will change in the coming patches. Tarsus also produces quantum drives (Odyssey, Quest, Wayfare) and scanners (Accord, Insight, Vision). Longtime fans of Chris Roberts' games will recognize the origin of the company's name.

PRODUCTS

Jump Modules, Quantum Drives, Scanners

BRAND DESCRIPTION: Founded by a pair of mechanics who were attempting to make an affordable module that would convert a quantum drive into a jump drive, Tarsus has evolved to become one of the main producers of dependable jump drives in the UEE. Over time they also expanded to build their own quantum drives and scanners as well.





Tyler Design & Tech is best known for their involvement in the subsystems for the original Roberts Space Industries Constellation. Today, Tyler produces a variety of coolers and power plants that

include the Eclipse, Gamma Max, and Slipstream. Tyler's designs are stealth-oriented, trading overall functionality for the ability to better conceal one's spacecraft from heat-based sensors.

PRODUCTS

Batteries, Coolers, Power Plant

BRAND DESCRIPTION: Tyler Design & Tech began its life manufacturing generators, air purifiers, and other necessities for planetary settlers. Tyler focused on making products that, while not as powerful as some other brands, were durable and extremely efficient with little heat byproduct, which led to the development of low-signature power plants. It wasn't long before even the UEE Navy began to outfit some of their own stealth crafts with Tyler parts, and with their new success the company was able to expand their ship component line into what it is today.



Yorm! It's fun to say! Perhaps *Star Citizen's* oddest-named corporation is another competitor in the battle of the shield makers. Yorm is famed for their lighter, racing-focused shields that swap overall protection for a lower energy cost that allows pilots to focus more of their power plant's output on thrusters. Yorm's shield generators include the Falco, Haltur, and Targa lines.

PRODUCTS

Shield Generators

BRAND DESCRIPTION: Gotlieb Yorm was a top racing pilot on the professional circuit, who was known for his willingness to do anything to shave a few more seconds off his lap times. For a short while, before the Safety Commission stepped in, he would race naked, claiming clothes were an unnecessary weight. Another such innovation that was considerably more successful (and modest) was his insistence that the shields being used on his racer were too powerful. He really only needed to be able to fend off a few shots, because after that he would either have maneuvered his ship out of targeting range, or he would have lost the race anyway. Gutting apart an existing shield by hand, Yorm hacked together a lighter shield that would draw less power and only protect him just enough to escape. Soon, many other racers were trying to mimic his efforts, and when Yorm retired, he went on to successfully sell his modified shield design.



GALACTAPEDIA

KAVISCHÉ

The kavisché is a cactus hybrid that originated on Yar (Centauri II) and is now endemic to the planet. After Yar was terraformed in the mid-2800s, numerous plants and cacti were seeded onto the world. A few cycles later, a new hybrid that would come to be known as the kavisché was discovered successfully growing across the Red Desert. Due to its rosy coloration and beautiful night-blooming flowers, the kavisché is popular among succulent and cactus enthusiasts.

DISCOVERY

In the years before it was terraformed, Yar was a desert planet with a very thin hydrogen-oxygen atmosphere; enough to support some forms of life, but not enough to allow Humans to live on the surface without supplemental air. It remained a planet that only attracted botanical and entomological researchers until a vein of titanium was found in the Shunkai Mountains in 2839. Upon receiving this report, the United Empire of Earth (UEE) authorized minimal terraformation of the world to help facilitate and encourage extraction of the planet's resources.

Many plants that had originated on Earth (Sol III) were seeded on Yar as a part of the terraformation process. Cereus cacti were exceptionally suited to the planet, propagating themselves without Human assistance as soon as the atmosphere was deemed breathable. However, instead of reproducing only within the cereus genus as expected, the cacti began to hybridize with local plants. Among these cactus seedlings was a new type of hybrid, dubbed "kvisché cactus" after the plateau upon which it was discovered.

DESCRIPTION AND LIFE CYCLE

The kavisché proved vigorous, even in the inhospitable Red Desert, an arid region so vast it is visible from planetary orbit. It took on the

cylindrical appearance, towering height, and flowering cycle of its cereus parent, and the red coloration and thicker, sharper spines of its Yar parent, the hematic cactus. Over the long term, it outperformed both its ancestors, eventually coming to dominate the landscape.

Upon reaching maturity, a kavisché will put out a large flower that ranges in color from white to orange to red to purple, depending on the region in which it grows and the variety of plant. This heavily-scented flower blooms only for one night. Bats introduced from Earth and giant Yar moths pollinate the blossoms, which then close and transform into a water-rich fruit. Desert birds, rodents, and other animals consume the fallen fruit and spread the seeds over a wide area. The dropped seeds lay dormant until a rare rainfall occurs, at which point they sprout, establish roots, and begin to grow. Fully mature kavisché can reach almost 2.5 meters in height.

IN POPULAR CULTURE

The people of Yar consider the kavisché cactus a symbol of thriving in a harsh environment. Homesteads are sometimes heavily planted with the kavisché, both as a deterrent to would-be trespassers and as a point of Yar pride. Prospectors planning to search the Red Desert for potential resources to mine are known to carry dried pieces of the kavisché with them for good luck. Locals also have been known to create decorative jewelry or embellish their clothing with the spines.

Kavisché cuttings are a common export from Yar to plant collectors. The cuttings take easily to standard cactus or succulent conditions and will root themselves in sandy soil with the application of very little water. Some dwarf varieties of kavisché have been bred outside of Yar and have become popular house plants. Dwarf kavisché that produce showier and more colorful flowers have recently appeared in plant markets thanks to the efforts of hobby growers. The low maintenance and durability of the plant have also made it popular among college students.





Famous for their high quality of care, Brentworth Care Centers frequently rank among the top healthcare providers in the UEE for both patient health, customer happiness, and cost. Many swear by their services, which include standard medical care, cosmetic surgery, and cybernetic replacements, yet some insurance companies have complained of the care center's inflated prices and accused them of artificially raising the cost of service. Some insurers have even recently threatened to refuse claims for the expensive hospital. However, it seems unlikely that there will be a change anytime soon as those steep prices align with Dr. Jaleel Brentworth's vision for the care centers that carry his name. In an interview with the Terra Gazette, Dr. Brentworth defended the premium cost by saying, "My philosophy is that treating the primary medical issue is only part of the process. Rehabilitation is a full-body experience, so I built my Care Centers around exactly that, providing the mind and body the comfort and care it needs to heal itself. And that additional care comes at a cost."

QUALITY OF CARE

Jaleel Brentworth was born on Earth in 2829. He led a happy and

privileged childhood until his older brother, Sajit, was diagnosed with a rare liver disease. Jaleel watched Sajit suffer through several experimental treatments before receiving an artificial liver. The implant restored Sajit to the energetic and intellectually curious older brother that Jaleel adored, but over time Sajit's body slowly rejected the new liver. Doctors attempted to correct Sajit's condition with several courses of suppression therapy and nerve reconstruction but it proved to be too much of a strain for Sajit who died a few weeks later in the hospital. The loss devastated Jaleel but inspired him to study medicine.

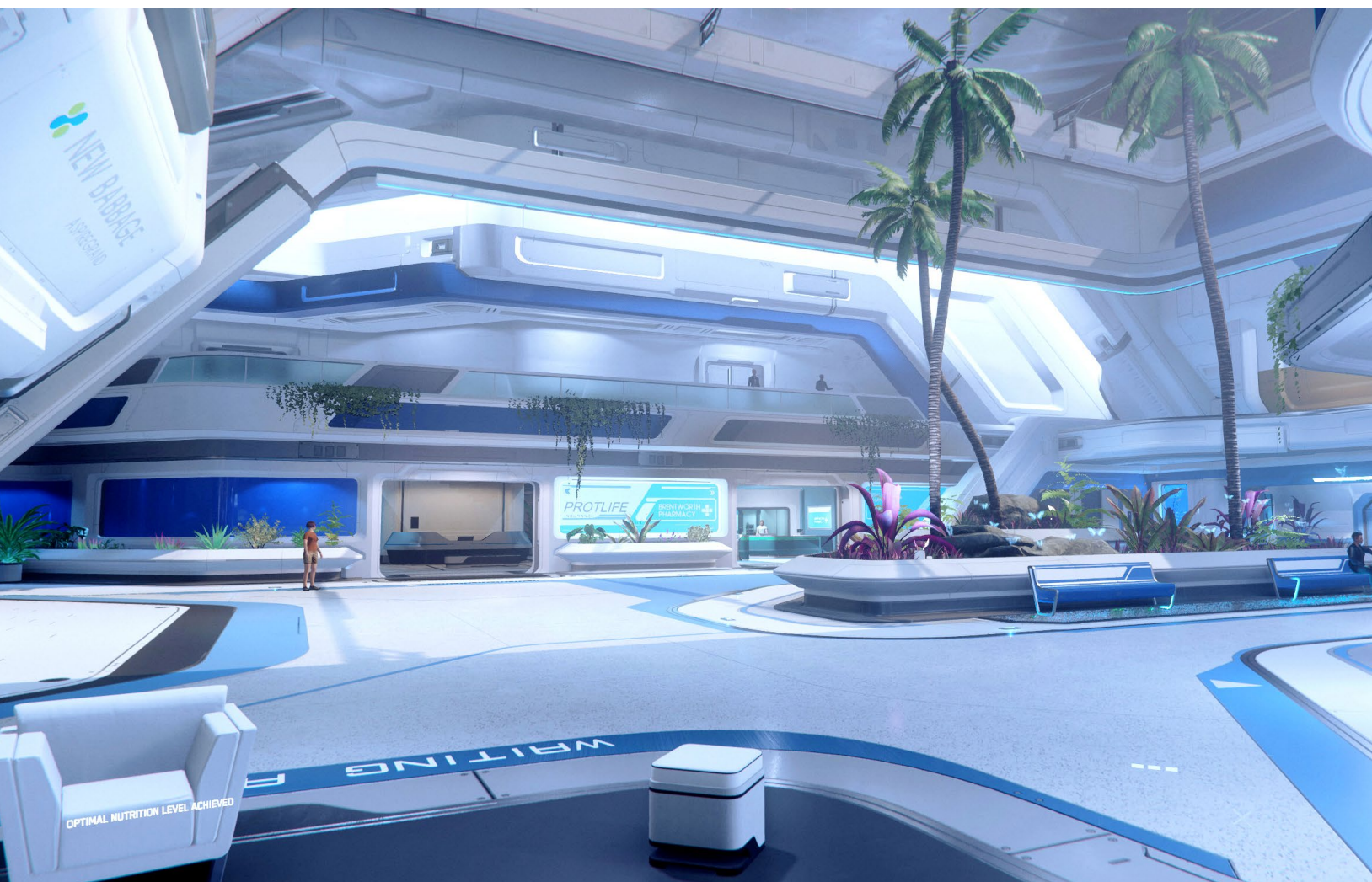
He attended the University of Earth at Australia (UEA) where he developed a keen interest in the nervous system. He became particularly fascinated with axons, nerve fibers that conduct electrical impulses, and wrote several research papers on ways to potentially improve how cybernetic implants and artificial organs connect and communicate with the body. This work drew the attention of UEA researcher, Dr. Ariel Roux, who was studying ways to reverse nerve degeneration, a leading cause of implant failure. The two joined forces and began conducting simulated trials of the new surgery methods Brentworth proposed in his papers.

Their initial experiments showed promise, so after receiving his doctorate, Brentworth decided against opening a medical practice. Instead, he joined the UEA as part of Dr. Roux's research team as a surgical specialist. After years of experimental procedures, Dr. Brentworth became dismayed with their progress. In most cases, there was no measurable difference between the implant performance in their participants compared to current medical standards. The exception being several groups whose surgeries were done aboard a ship stationed in low gravity.

Professor Roux became convinced that low gravity somehow helped the nervous system form a stronger graft to the implants but Dr. Brentworth wasn't convinced. He noted participants' biometric data also showed lower heart rates and blood pressure that indicated they were more relaxed before and after the procedures. A difference he attributed to the participants relaxing in the luxury accommodations aboard the ship while traveling to and from the location. Remembering how stressed his brother had been during his extended time in the hospital, Dr. Brentworth wanted to perform the next set of surgeries in standard gravity conditions with the patients given resort-quality rooms to relax in pre- and post-op, but Professor Roux

rebuffed the proposal to focus on more low-gravity experiments. A rift grew between the two and they amicably separated not long after.

Dr. Brentworth moved to New York City where his partner had landed a job advising a senator. In 2862, he received a substantial investment from his parents to open the first Brentworth Care Center. Built around the core tenet that the level of comfort and care received throughout the treatment was equally as important as the procedure itself, Dr. Brentworth brought in award-winning architect and design firm Lobi-Ross to make the treatment center equal to the finest resort. Business was slow to begin, until his partner, Darren, convinced a Senate security officer to get her malfunctioning cybernetic leg looked at by Dr. Brentworth. Other doctors had told her a new leg was the only fix but Dr. Brentworth was convinced a small procedure could strengthen the current graft. He was right and word quickly spread among the Senate security staffers that not only could Dr. Brentworth perform miracles but that a stay at his facilities was better than some hotels. This notoriety grew and eventually landed him his biggest patient Senator Linda Beckley, who suffered horrific burns on half her body following a freak ship accident. The skin grafts were



so good that only those in her inner circle knew she had them. Still, once word spread to politicians, power brokers, and celebrities that Dr. Brentworth did outstanding work and prioritized privacy, business boomed. Even after the Care Center tripled in size, demand was so strong that appointments were scheduled months in advance. Soon powerful investors were scheduling appointments to get work done just for the opportunity to convince Dr. Brentworth to let them help him grow the brand.

QUALITY CONTROL

Dr. Brentworth initially rejected expansion due to concerns over controlling the quality of care. He'd become a notorious micromanager, and even though he didn't perform all procedures, he could oversee and advise at a moment's notice. After fielding numerous investment offers, Dr. Brentworth saw the potential and decided to do it himself. He started small by opening additional Brentworth Care Centers on Earth. This allowed him to personally pick each location, oversee their design, personally interview and hire staff, and once open, be but a comm call away. These new locations were quickly booked months in advance and a decision was made to expand to more locations in the Sol system.

To expedite the expansion, Dr. Brentworth worked with advisors to establish exacting standards for his Care Centers. No detail was too small. From ensuring the right plants were selected for the lobby to

specifying the color temperature of lighting in recovery rooms, all future Brentworth Care Centers would be built to these high standards. Dr. Brentworth established similarly strict criteria regarding medical procedures, specifically calling out certain biometric benchmarks patients needed to reach prior to a procedure and before being released. Additionally, the center's profits were reinvested into seeking out the latest medical advances and training his staff in how to use them. Notoriously, Dr. Brentworth spent billions upgrading all the medical scanners twice in the same year after a newer, slightly more accurate, model was released. He claimed that nothing relaxed patients more and helped them heal than knowing they were getting the best care.

Before long, there were Brentworth Care Centers in systems across the Empire. By the early 2900s, many other practices tried to replicate the care center's brand of luxury medicine, but none would ever match Brentworth in prestige and popularity. In 2917, Dr. Jaleel Brentworth retired and died shortly thereafter at the relatively young age of 87. His partner revealed posthumously that Jaleel had suffered from chronic kidney disease and had decided against receiving artificial replacements, joking that the only person he'd ever trust the procedure with was himself. While the man may have slowly faded from public consciousness over the years, Brentworth Care Centers will continue to carry his name far into the future, and stand as a testament to the high quality of care and meticulous dedication to detail that makes them some of the best medical facilities around.

THE RYTWAY



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