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JUMP POINT
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FROM THE COCKPIT

GREETINGS, CITIZENS!

Well, what a weekend that was! In case you missed it, last Saturday and Sunday saw the first in-person CitizenCon for four years at the LA Convention Center in California. We went to Pyro, joined the ranks of *Squadron 42*, caught up with the RSI Polaris, saw the future of Human hygiene, met new gangs, glimpsed the lesser-spotted stormwhal, rethought our inner thoughts, jousted and disengaged, and much, much more.

The two-day event saw in-depth presentations on vital upcoming tech, immersive new activities, locations we'll be exploring soon, and a wealth of upcoming content. We're currently adding the presentations to our YouTube channel, so check it out to catch up on some of the most exciting updates we've ever put out.

In the spirit of CitizenCon, we're looking at the next stage of *Star Citizen* in two features collating some of the upcoming changes to the PU's planets and locations, from fire and water tech that will change the way we travel to the settlements and space stations of Pyro.

Of course, the weekend saw surprise ship announcements and unveilings. Starting with the RSI Zeus Mk II, we're going behind the scenes of this all-new concept to see how an eight-century-old shuttle influenced a cutting-edge explorer.

Then, artist Sarah Longley gives us a glimpse into the creative process behind our incredible ship art, which is visible now supporting the Drake Cutter Scout.

Finally, our Narrative team takes us through the in-lore development of Crusader's latest bomber/hauler/VIP transporter with an always-enlightening Whitley's Guide.

On a personal note, it was genuinely touching to see your reactions to CitizenCon and all the news we've been keeping close for what feels like an eternity. Next year's a huge one in the PU and we can't wait to show you more.

Thank you for your continued support, and we'll see you in the 'verse.

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AN EVOLVING UNIVERSE: EARTH, WIND & FIRE

At this point, it's safe to say the universe of *Star Citizen* is one of the biggest game universes ever created. From its millennia-spanning lore to the ever-expanding playable space, *Star Citizen*'s scale is vast.

While expanse is clearly vital to a space sim, the details and specifics of the locations players visit are key to creating a believable world that draws them back in. Our 'verse has teemed with unique detail and quality since the hangar doors first opened and, as the jump points are readied for a flood of travelers to Pyro, a long-term developmental push to add even more is beginning to come to fruition.

The key to this quality is StarEngine, the game engine that powers and enables everything in the 'verse. As a companion to CitizenCon's Shaping the 'Verse presentation, we're looking into some of the key features coming next year and how they'll reshape the space that citizens explore every time they take off into Stanton and beyond.

CLOUDS

Anyone who's visited microTech knows that weather is already a factor to consider when planning an expedition into the 'verse, though current work by the recently formed R&D team is taking things much further.

Alpha 3.15 saw the introduction of volumetric clouds; a huge step up from the preceding tech and one that enabled the fully realized existence of Orison, *Star Citizen*'s very own cloud city. The technology has received constant iteration since, with the addition of ocean shading, cloud shaping, light shafts, and more alongside improvements to the generation method, quality, and cost.

The most recent update showcased at CitizenCon is cloud light shafts, a seemingly minor addition but one that will have a significant impact on the visuals of ground and in-air traversal. Once implemented, true volumetric shadows can be cast that move with the clouds above. And, when they break or players leave their coverage, light will flood the planet, better highlighting the weather and changeable conditions.

Further improvements to cloud shaping are coming too that will result in greater variation, increased resolution, and better visuals when viewed from the ground, air, and orbit.

FOG

Alongside clouds, ground fog will be fully integrated into planetary atmospheres. Following the terrain to preconfigured elevations that differ by location, fog will reduce light scatter and support volumetric shadows from clouds and the surrounding environment. Weather and temperature-dependent, fog will add an extra layer of realism to the locations of the 'verse, particularly in the morning, in colder climes, and at higher altitudes.

FIRE

While the ongoing work on clouds and fog will contribute to the beauty of the 'verse, fire is a core gameplay mechanic that will have a serious impact on players if not handled correctly.

The goal is to introduce a dynamic simulation that allows fire to occur anywhere in the 'verse providing its conditions are met. Whether onboard a ship, in an outpost or station, or exploring a planet, there will be a wide variety of possible ignition sources, whether natural or requiring player intervention.

A key element of this tech is to allow fire to spread naturally and realistically, which requires full integration with various game systems, including oxygen, damage, room, and heat. This will allow comparatively small incidents, such as a spark in an engine room or a weapon explosion, to set off a chain reaction that leads to fire. Of course, part of this involves adding numerous ways to extinguish unwanted fires, such as removing fuel or using an extinguisher. It also means that, once a fire is extinguished, damage will be visible in the immediate and surrounding areas.

Fire will ultimately play an important part in various careers, including cargo haulers moving volatile consignments between systems and engineers keeping battleships moving under heavy fire. Alongside flames and heat, fire will generate smoke, which will have a similar technical makeup to ground fog though much thicker and more localized. Another thing to consider for players managing a blaze, it will be vital to control fires before smoke affects nearby players, be it by visually impairing them or causing damage if they aren't sufficiently protected.

An interesting implication in the addition of fire is persistence. As fire will persist across server shards, the impact of a mismanaged fire could be catastrophic on large ships, outposts, or mission locations. How it evolves will be interesting to see, particularly when players are solely responsible for preventing and managing fires around the 'verse!

WATER

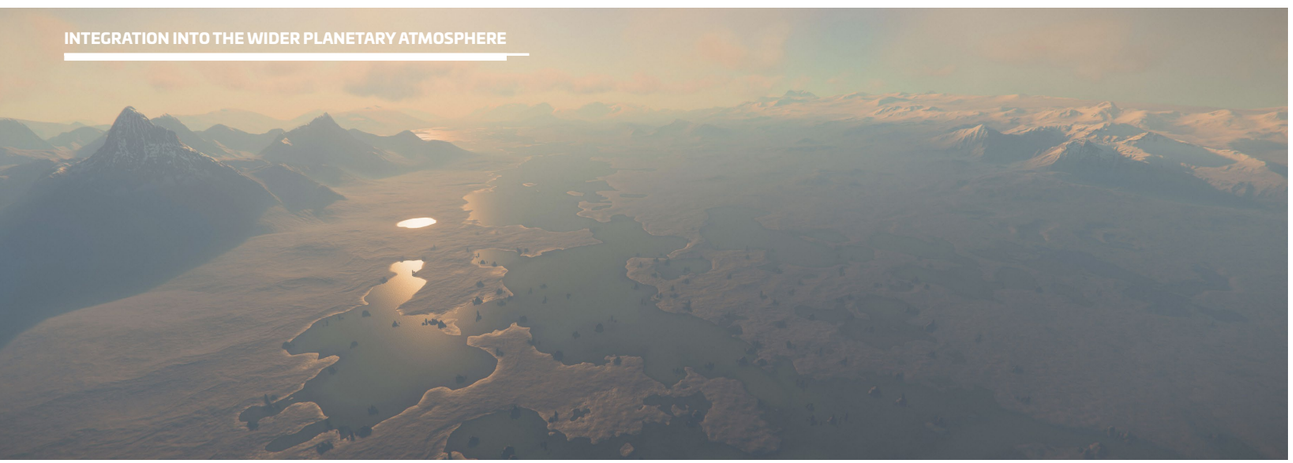
While water is present in various locations in the 'verse (most recently in the rivers cutting their way through microTech), the current implementation is placeholder for technology currently in development by the Engine team.

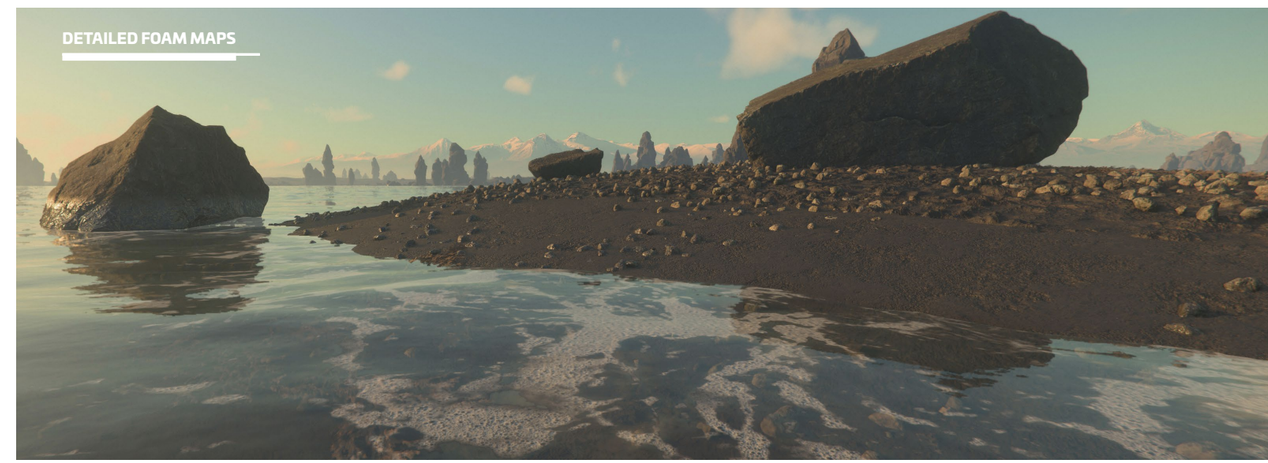
Dubbed 'New Water' internally, the aim is to simply create water that looks as good as feasibly possible. Part of this is ensuring that it's always affected by external forces, like the weather, ship thrusters, bullets, and players walking through it. It's also vital that water simulates accurately across the whole of the universe, from cups and puddles to lakes and oceans. To achieve this, simulation regions are dynamically assigned to the locations affecting water, which leads to multiple effects, inputs, and outputs at once. For example, firing into water behind a ship's thruster or walking through waves combines multiple factors and simulations to achieve a realistic outcome.

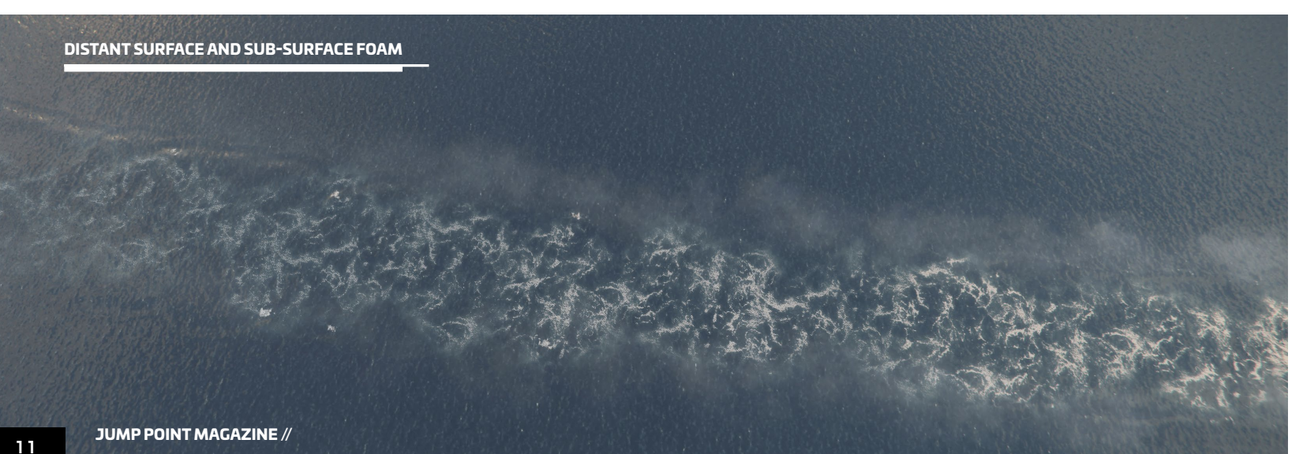
Alongside the physical water simulation, the new water tech includes material displacement and surface-water, river-flow, and wind simulations to ensure water behaves as expected across all areas of the 'verse. Once implemented and iterated on, the water simulation will also be used for other spatially distributed effects, such as snow and sand.


PHYSICS-BASED REFLECTION AND REFRACTION

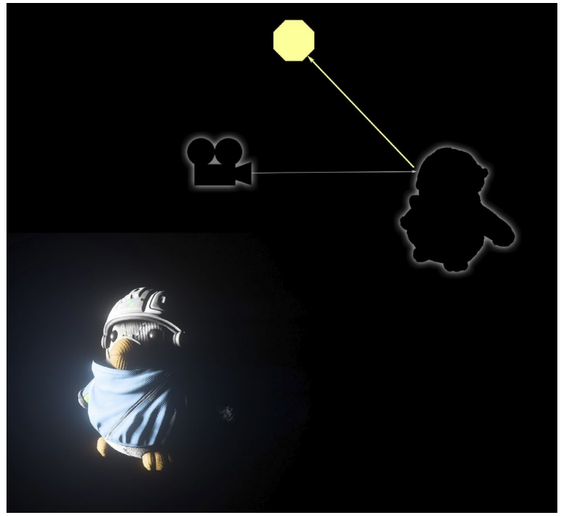

WAVE-CREST LIGHT-SCATTERING

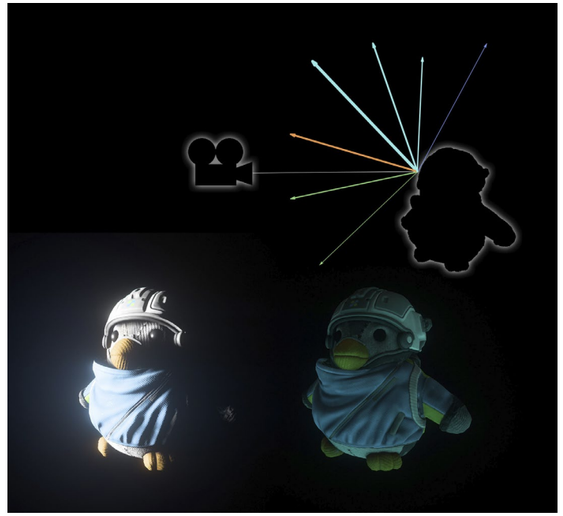

INTEGRATION INTO THE WIDER PLANETARY ATMOSPHERE

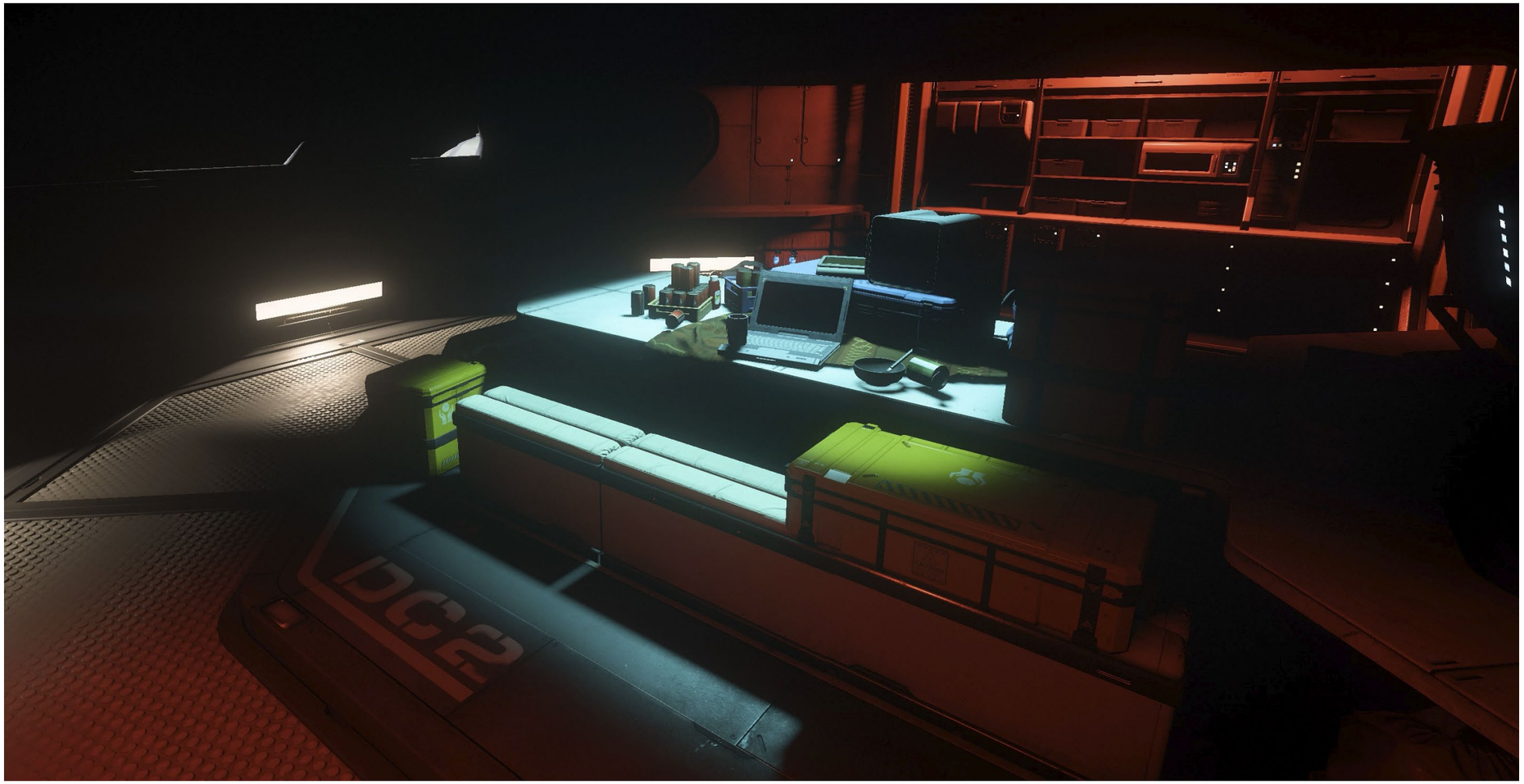

DETAILED FOAM MAPS


DISTANT SURFACE AND SUB-SURFACE FOAM


WATER REACTING ACCURATELY TO NON-NATURAL LIGHTING







LIGHT

Part of *Star Citizen*'s ongoing visual evolution involves implementing 'global illumination', which refers to how indirect light reacts to surfaces and items in-game. For example, light reflecting from a countertop onto a nearby wall. Although not always immediately noticeable as the product of global illumination, locations lit this way are much more realistic and therefore immersive than those without.

Star Citizen's adoption of global illumination deals with three sources of light – direct, diffused, and glossy. Direct is simply light projected from a source. Diffused refers to light reflected from an item, while glossy refers to light that adopts an effect from a reflected source, such as color or texture. The image below represents this well, with the colored boxes reflecting light of varying intensity onto the adjacent surfaces.

Recent work by the Lighting team focuses on glossy reflections, which add significant improvements to all areas of lighting. To achieve this, lighting is generated in real-time, allowing light to bounce around the environment realistically and change as needed.

Global illumination is still very much a work in progress for the Lighting team thanks to *Star Citizen*'s requirement for natural lighting, dramatic highlights, and easily readable user interfaces. However, a key benefit beyond realism is that the Lighting team's approach to global illumination offers much improved visuals for all players, not just those with setups powerful enough to support ray tracing.

PLANETS

What would these huge feature updates be without a way to experience them in-game? As the Persistent Universe expands, the team is looking to make creating planets easier and faster, which is vital to adding more of the vast number of explorable star systems in *Star Citizen*'s lore. However, speed and ease aren't the sole driving factors in the ongoing initiative – the ability to create truly unique planets with believable topography is at the forefront.

One area being considered for planet creation is machine learning, as it allows planets to be generated based on their locations in space while still affording the designers the ability to make granular decisions on layout and features. For example, a planet's temperature can be predetermined via its atmosphere and proximity to its system's star. From there, each of the planet's biomes can be categorized by temperature, moisture, and height. For example, a desert would be hot, low moisture, and low height, while a snowy mountain range would be cold, high moisture, and high. Adjusting these parameters and rules allows a huge range of potential planet types and environments, and it's here that the team is looking into machine learning. By training a machine-learning network to understand real-world biomes of similar makeup, it can replicate the natural details within.

Although certainly promising, this approach is still very early in prototyping. We'll revisit it and all of the tech mentioned above with the teams next year to see how they're getting on.

LIVING IN THE 'VERSE: 2954

Unlike the relative safety of corporate-owned Stanton, the Pyro system is a lawless wasteland governed by the whims and traditions of outlaw groups and gangs. As we get closer to exploring the remains of long-abandoned mining claims, decaying rest stops, and criminal enclaves, we're looking into some of the upcoming locations that the Level Design, Sandbox, and Environment Art teams showcased in their Living on the Edge CitizenCon presentation.

COLONIAL OUTPOSTS

The art style of Pyro's typical outpost is 'colonial', referring to the colonization of the system by outlaws, gangs, and fringe citizens following the withdrawal of Pyrotechnic Amalgamated.

These outposts are built from a vast library of assets to create unique locations, each with their own feel and narrative. These outposts are assigned one of several archetypes to suit the needs of gameplay and the lore of the surrounding area. And, unlike existing outposts that typically consist of a handful of buildings, Pyro's upcoming locations have grown to become full settlements based around specific commerce or trade.

Mining – ex-Pyrotechnic Amalgamated outposts used by hardy deep-space miners and those who want to stay off the radar. These outposts are defined by their refineries and support for commodity and resource trading.

Scrapyard – hubs of black-market commerce and a reliable way to sell illegal salvage or resupply far from civilization. Scrapyards feature a 'landing pit' for refueling ships in a similar, though much less glamorous, way to Stanton's R&R stations.

Tradepost – a place to buy and sell vital items for traveling through the system. Tradeposts also support Pyro's delivery and cargo missions, just don't expect a professional service akin to a Covalex shipping hub.

Farmstead – self-sufficient outposts on the fringes of society. They're one of the few locations in-system to trade harvestables, making them a vital service if trekking into the wilderness isn't a viable option.

Homestead – the closest thing to a social hub, with locals offering jobs for those desperate or foolhardy enough to take them on.

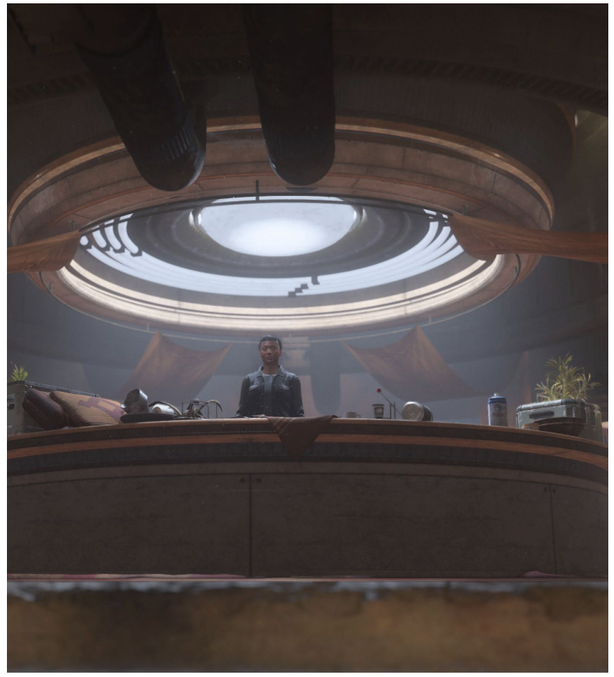
OUTLAWS & INDEPENDENTS

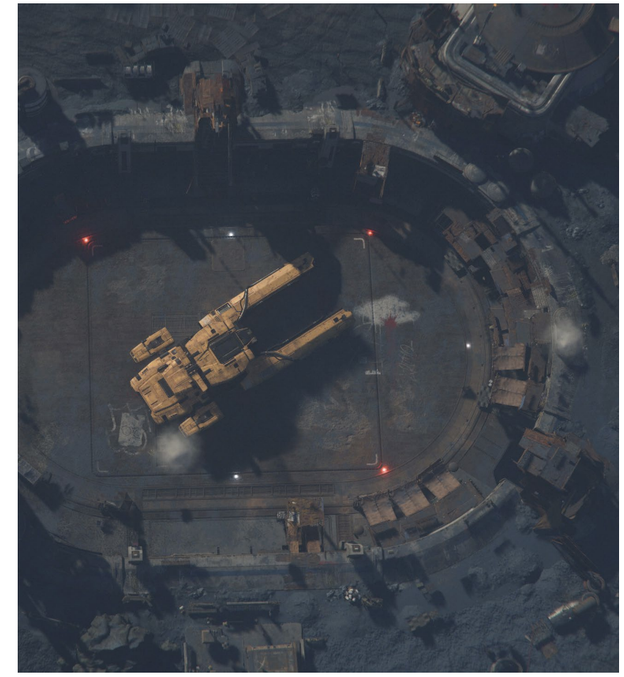
While each of these archetypes determines the fundamental look and architecture of Pyro's planetary locations, a second categorization further affects how they appear and feel.

The 'independent' theme suggests a neutral or friendly resident, with decorative touches like soft furnishings and plants to create a rustic-yet-homely feel.

The 'outlaw' theme represents the opposite – a once-functional but now-decrepit settlement overrun by gangs that use the location for criminal activity.

However, it's not a given that players will be welcomed into independent settlements and hunted down in outlaw spaces. Whether a player is accepted in either of these burgeoning frontier communities depends on their reputation.





THIS IS HOW THE WORLD WORKS

How players have behaved across the 'verse will affect who allows them into their outposts and how they're treated while there. Whether they have a big reputation with the Advocacy or their reputation has never been worse, player standings with the various factions of the 'verse will determine whether they're welcomed, treated with caution, or shot on sight.

However, reputation can be improved, so choosing to work for the Headhunters gang will allow players to visit their outposts, though gang-affiliated players will be less likely to be welcomed at independent farmsteads.

DERELICT OUTPOSTS

New abandoned outposts litter both Stanton and Pyro's planets in various states – some have been built up from rubble into somewhat-functioning settlements, while others are little more than cover from the elements for gang activity.

Abandoned outposts are either hostile or social locations. As its inhabitants are living beyond the reaches of even Pyro's loose society, player reputation has no effect on the experience. As such, hostile locations solely offer combat and looting opportunities, while social outposts support mission content and commerce for players of every persuasion.

The Sandbox team has also focused on the beauty of these locations, making them worth seeking out for the experience alone.

"What makes these locations truly remarkable are the enhanced gameplay opportunities they provide, motivating players to explore our diverse planets and worlds, all while delivering visually stunning experiences." Sandbox Team

PYRO'S STATIONS

Orbiting Pyro's planets are the remains of rest stops that once serviced mining operations around the system. Upon launch, the system will have around 26 stations for players to explore, each with a unique look and layout; some are under the control of the Rough & Ready gang, some are independent, and some are abandoned.

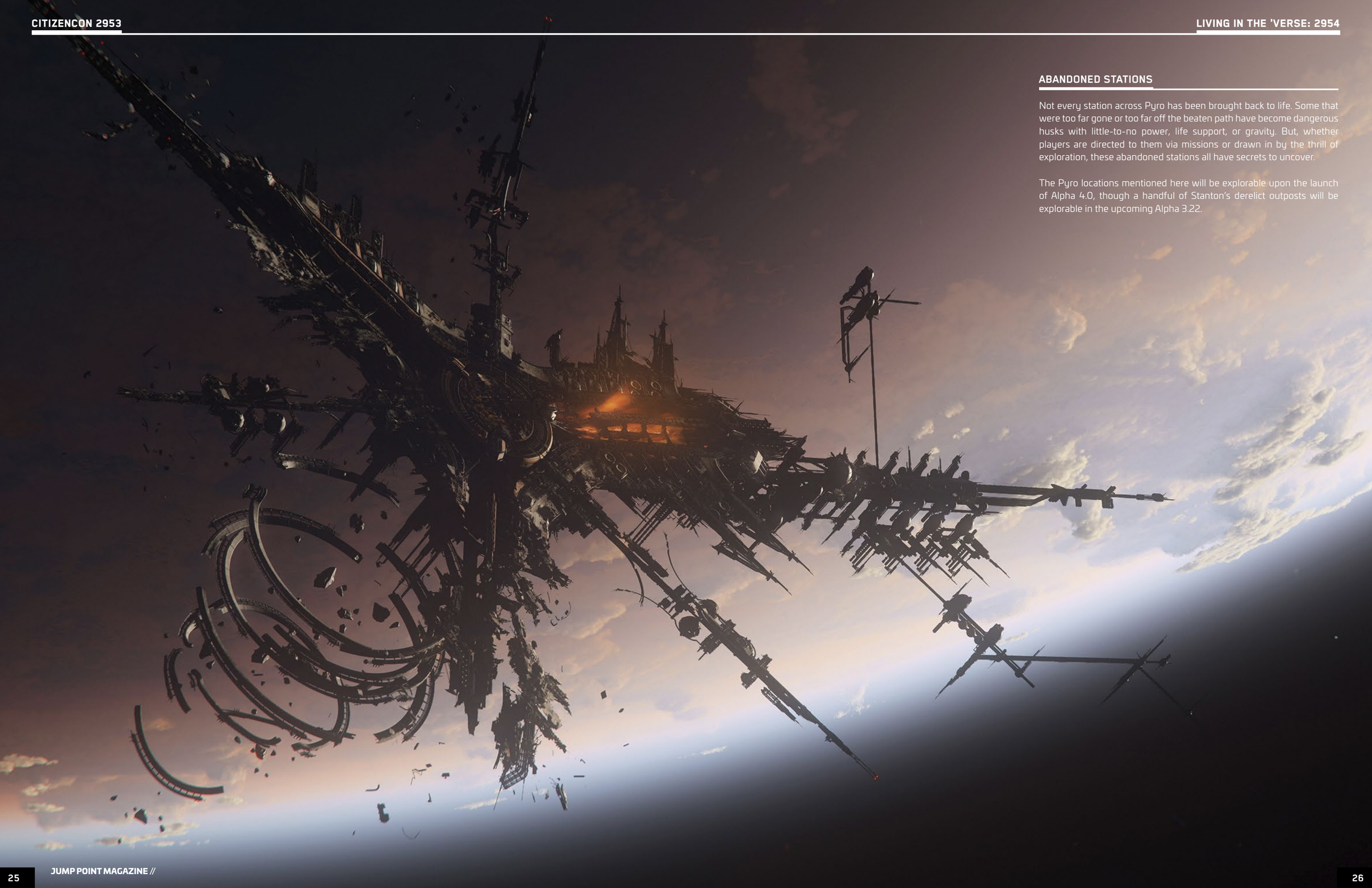
REST STOPS

For the more 'civilized' stations, reputation with the owners plays an even more significant role than at outposts, as each entry deck is gated and patrolled by armed guards.

Good reputation: straight through the entry deck
Neutral reputation: possibly allowed through or expected to pay a bribe
Bad reputation: not permitted entry

However, if you can't make it through the entry deck or need to make a more 'covert' entrance, there are alternate means to access stations, be it through EVA, maintenance shafts, air vents, and more. While not always straightforward, access to the market and mission content within each station is available should players commit to it.

Once inside, the commercial deck (or market) is open for exploration. The main hub within the station, accessing it opens mission content and more for players with the right reputation. A separate exclusive section for gang members houses unique opportunities and specialist shops selling high-end weapons and armor only available to players who have earned the right to use them.



ABANDONED STATIONS

Not every station across Pyro has been brought back to life. Some that were too far gone or too far off the beaten path have become dangerous husks with little-to-no power, life support, or gravity. But, whether players are directed to them via missions or drawn in by the thrill of exploration, these abandoned stations all have secrets to uncover.

The Pyro locations mentioned here will be explorable upon the launch of Alpha 4.0, though a handful of Stanton's derelict outposts will be explorable in the upcoming Alpha 3.22.

TEAM TALK: MARKETING ART

BY SARAH LONGLEY

My job as a marketing artist is to create bespoke images showcasing the awesome work happening at Cloud Imperium Games using the same engine and tools as the developers creating the Persistent Universe. My team and I utilize all the same beautiful art assets created by the ships, props, character, environment, animation, and particle artists that you, the player, see in game.

To kick off a ship or community promotion, we are given a brief by our creative director and brand managers. This tells us what key features we need to showcase, the tone and mood of the images, and any storytelling or narrative they may want us to include.

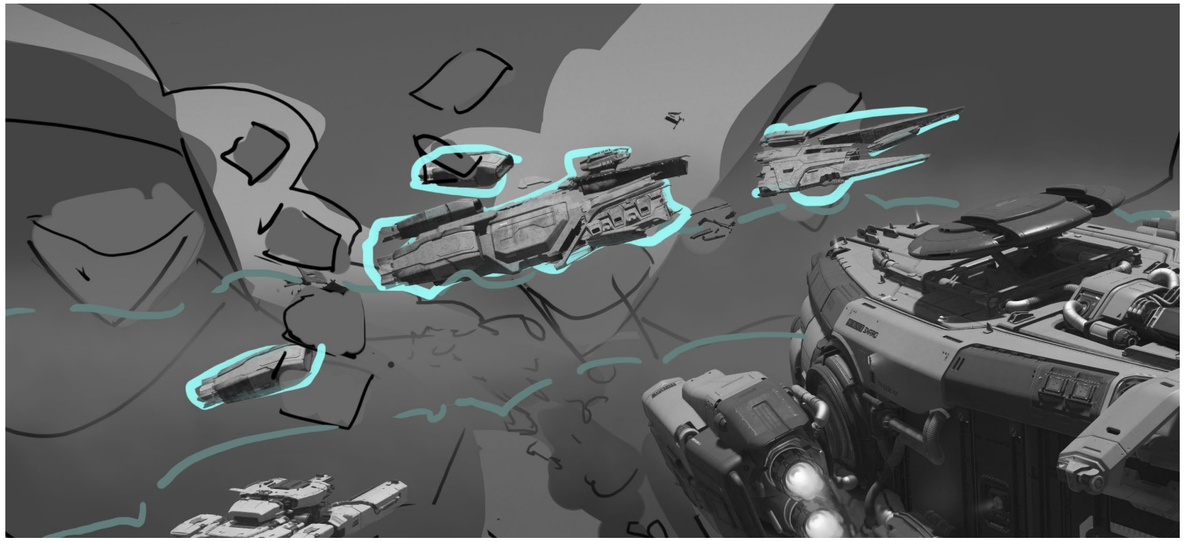
My team and I start by having a play with the ship in the editor. We go into game mode and we fly around. We look at the ship from different angles and check to see what state it is in, as sometimes we start work before the ship has had its final art pass. We find the most flattering angles of the ship and take lots of reference shots of all the of various components and key features. We also take stock of what animations and particle VFX we'll need to apply to the ship in our shots.

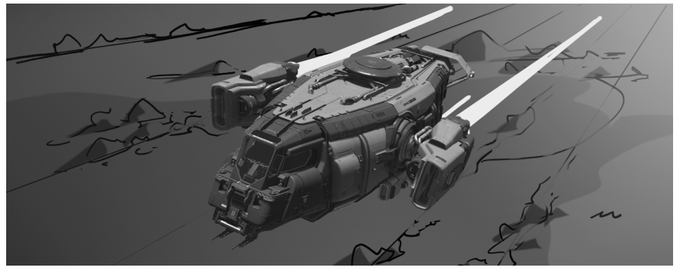
And then, we blockout. Blockouts are quick compositions for how we want the ship and camera to sit in the shot, and a basic impression of an environment. We don't get too attached to any individual shots at this stage as we're trying to generate as many ideas as possible to satisfy the ask in the brief. Outside of constraints of the brief, my team and I have a lot of freedom to explore and have fun with our shots. I try to hide a Finley plushie in a corner whenever I can.

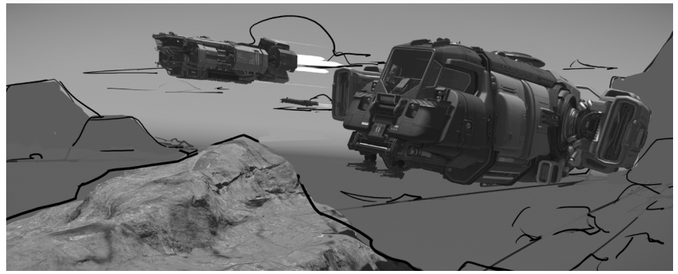
My process is to toss a ship in a blank level, move my camera around, take lots of screen grabs, and then sketch over those in Photoshop. I make sure to save my camera and objects, as I will use those later in my final shot.

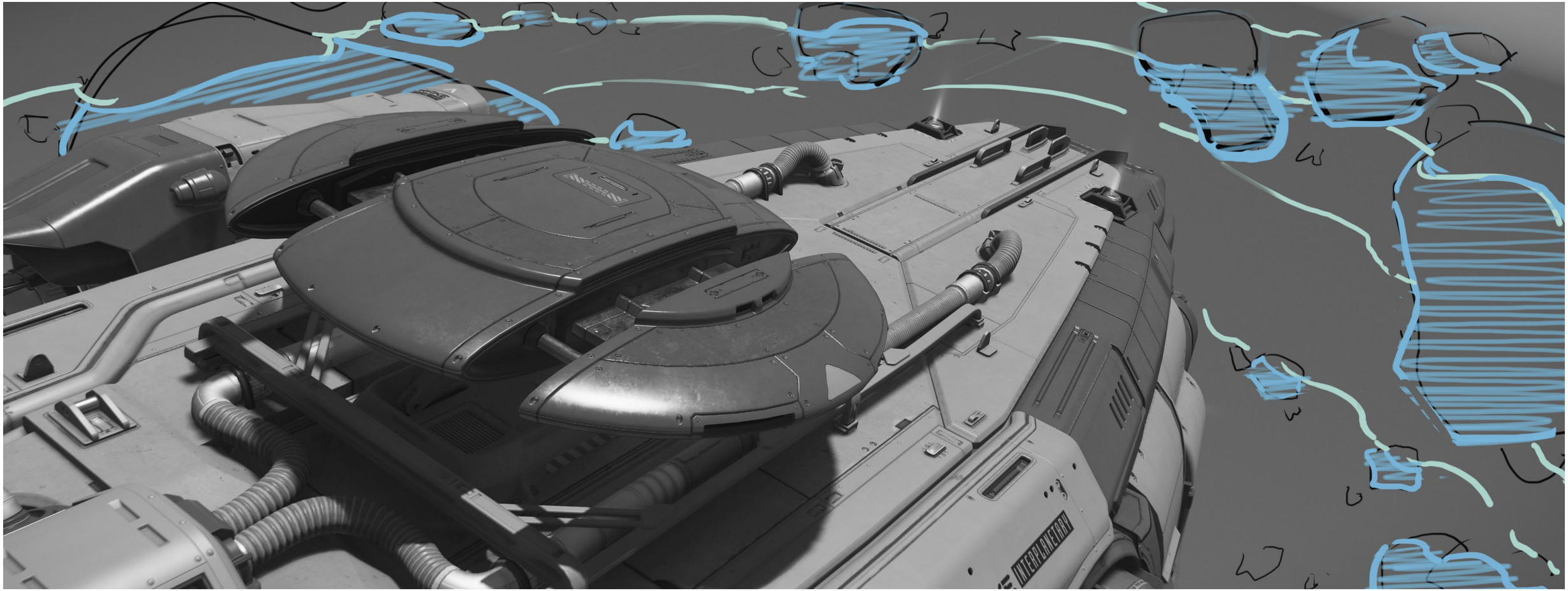
For the Cutter Scout, the main feature is the radar dish and the scanning gameplay. Scanning gameplay looks very different in a first-person cockpit view than it does from a third-person perspective. As a backer myself, I know what the particle VFX look like in-game when I scan from my ship. It happens very fast and doesn't stick around very long, so it's not conducive to a still image by itself. One of the most challenging aspects of my job is to convey a sense of motion and action in a still image, which requires a little bit of artistic license.

For the scanning effect, I want to show the scan wave rippling through space, pinging off objects and returning visual feedback, cutting through important items in little slivers, highlighting them. It took a few iterations, but eventually we nailed down the look we wanted to use across all our shots. The final look is a combination of different material shaders, VFX grabs on clean backplates, and Photoshop.









We run our blockouts past our creative director to make sure that we are keeping to the brief. When I am given the green light to proceed to final, I start to build out my shot. I begin with an existing level that I know already has most of the elements I want.

In the case of my Javelin wreck scanning shot, I picked the level used to populate Yela. This has a colour palette I really like and tons of asteroids. I take the camera and assets from my initial blockout and load those into the level. I find a good location that I can then expand on.

I edit what exists in the level already or pull in more assets to help my narrative - lots of different types of asteroids, more particle effects and gas clouds for the environment; lots of different types of wreckage; and two Vultures and their associated thruster particles. I then use those assets to compose my shot, staying reasonably faithful my sketch but adapting as needed.

I get to make awesome art of spaceships... my job is cool!

I light my shot using the sun as my backlight as I'm personally fond of placing my shadow on the viewer's side of the shot - it creates extra depth. I add fill and additional backlights to help the forms read. I then add in an extra light to highlight the radar dish to make it shiny because it's just cool. It needs to stand out.

As my team and I work through our shots, we have daily morning critiques where we discuss the state of the work. It's useful to get another set of eyes on to confirm if something just isn't working in the image or encouragement to try something different. It is very easy to go blind to what's in front of you as you're working. We also coordinate with the Gameplay Capture and Marketing Cinematics teams to tie our output together, either using the same environment or characters. This helps round out the details and create a cohesive narrative.

When I am mostly happy with what I have in editor, I take lots of screenshots at high resolution. I then composite all those screengrabs in Photoshop, masking and layering different elements from those grabs to compose my final shot. I hand paint in little details like additional clouds, dust, and ship trails. I then do a little bit of colour grading. I also add motion blur and some bloom to take the hard edge off the image.

All in all, a single shot, dependent on complexity, can take upwards from twenty hours from start to finish. We're always working on multiple images at once and sometimes multiple ships. Once the work is approved and signed off, we hand over all the images for use on the website and social media.

It is both my privilege and pleasure to work with such an awesome team at CIG. It is important to me that we showcase the hard work of our artists and that we delight our backers. I am super chuffed whenever I see my shot as a thumbnail on YouTube. That's an awesome feeling.

BEHIND THE SCENES: RSI ZEUS MKII

In 2075, Dr. Scott Childress and his team at Roberts Space Industries (RSI) completed prototype technology that would ultimately extend the reach of Humanity beyond all expectations. Their Quantum Core engine powered early spacecraft that enabled Humans to travel further into space at speeds once thought impossible, giving hope to a species living at critical mass. The following years saw an exponential increase in trips that dived ever deeper into the solar system as Earth's residents looked for a way to alleviate the planet's terminal overpopulation. RSI then again delivered species-defining technology with terraforming machines that enabled Humanity to leave Earth in pursuit of a new home. Mars was the destination.

Though the terraforming process was not without incident (the 2125 Mars Tragedy claimed the lives of 4876 workers), in 2157, Mars was classified as a self-sustaining, oxygen-rich planet and terraforming was deemed a success.

Concurrently, RSI turned to following the dream of its founder to provide space travel to the common man, releasing the Zeus to the public in 2140. Like the terraforming of Mars, this monumental achievement had its share of drawbacks, including an early prototype failing during a public test flight and killing its pilot in front of an expectant world media.

However, with a safe second home for Humanity established on Mars, the need for easier, cheaper, and more accessible space travel for the masses meant the Zeus was a success. An icon of early accessible space flight, the Zeus is known galaxy-wide for its role in helping Humanity start a new chapter in the stars.

Now, eight centuries later, RSI is revisiting its first commercial success with the Zeus Mk II. Updated for the modern era of space travel, it exceeds modern expectations while maintaining the pioneering heart of the original.

CONCEPT BRIEF: RSI ZEUS 2.0

RSI's next-generation version of the venerable Zeus, keeping the classic styling but bringing it up to "modern" standards in terms of safety and components.

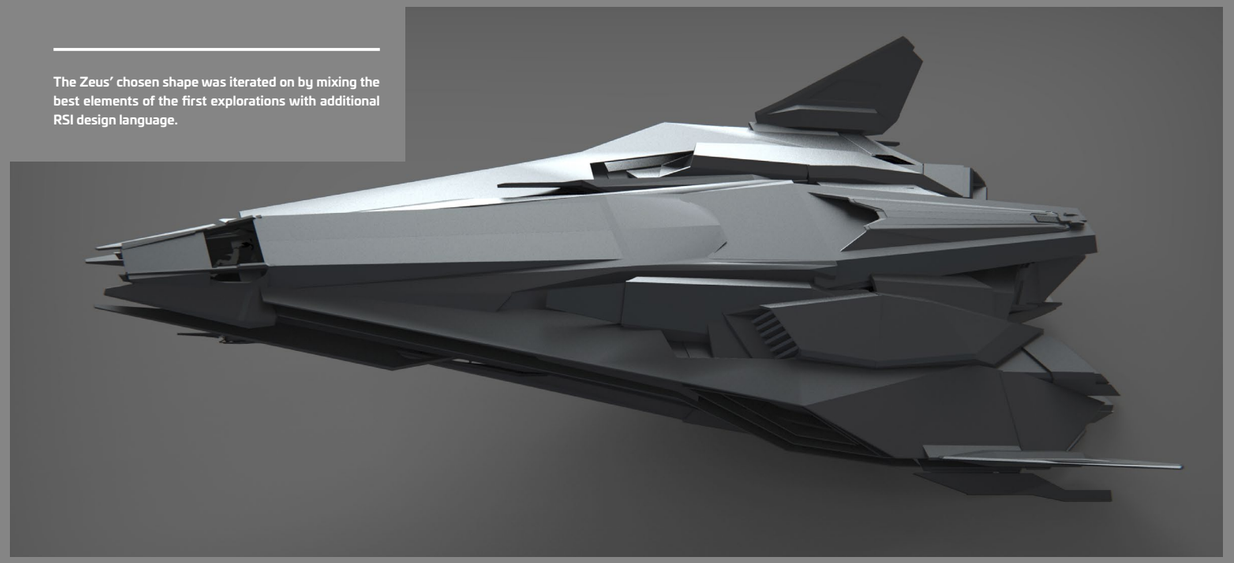
Features a base version for Exploration as well as cargo hauling and bounty hunting variants that swap out the rear section.

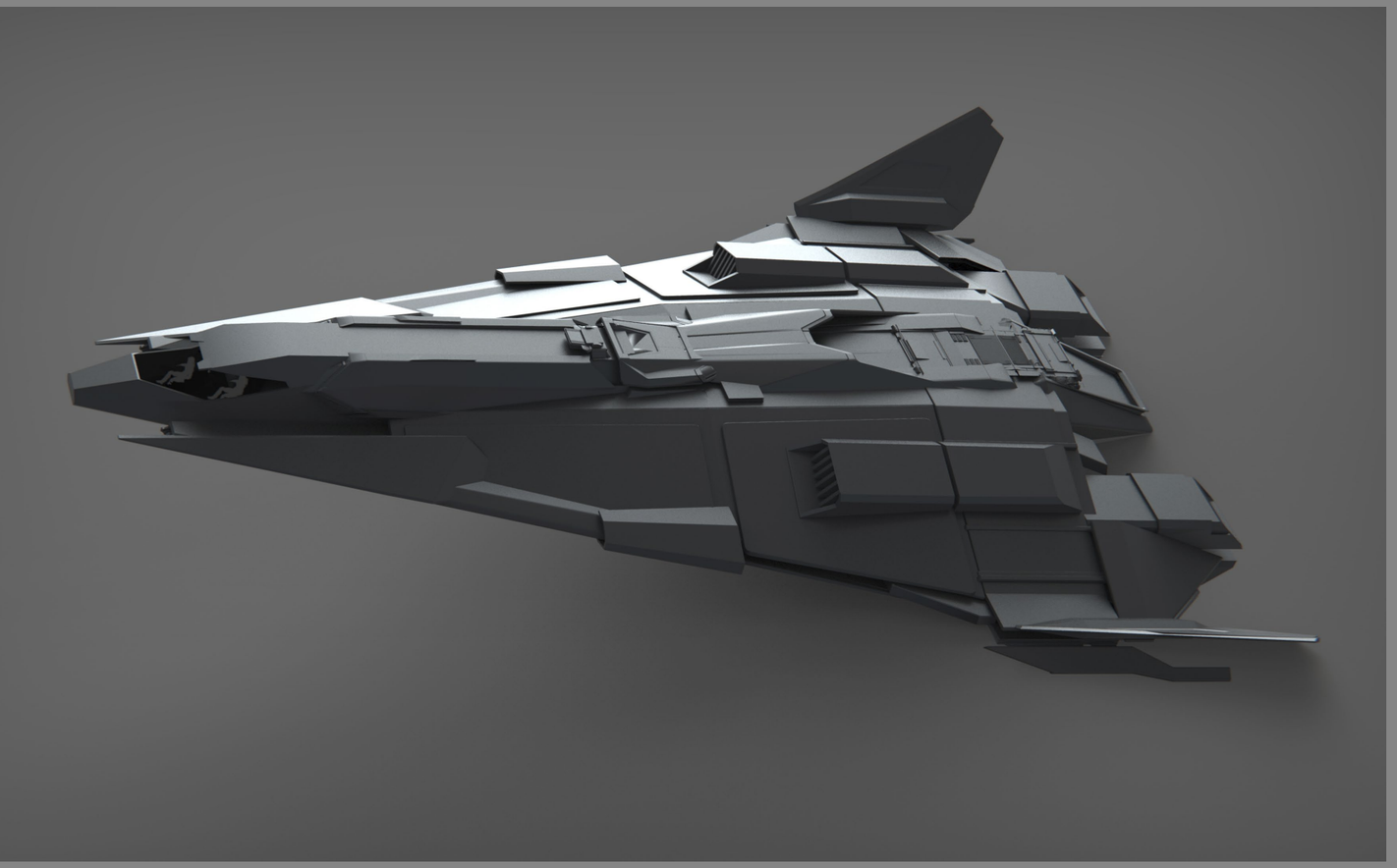
Nose holds the cockpit and some components. Single upfront seat with two stations behind for remote utility turret and gun turret usage (or other systems).

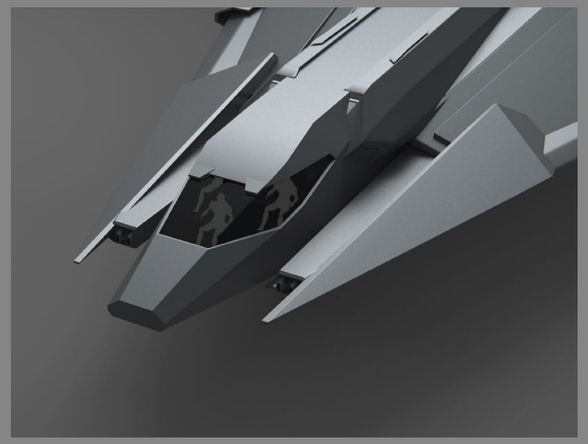
Directly behind the cockpit would be a small airlock and ladder entrance section that holds the small docking collar. Next would be the habitation area for the crew. The rear contains the section which changes for the variants and a rear ramp.

Early in the concept process, five shapes were chosen and explored. Each at least referenced the shape of the original Zeus with touches of contemporary RSI design.

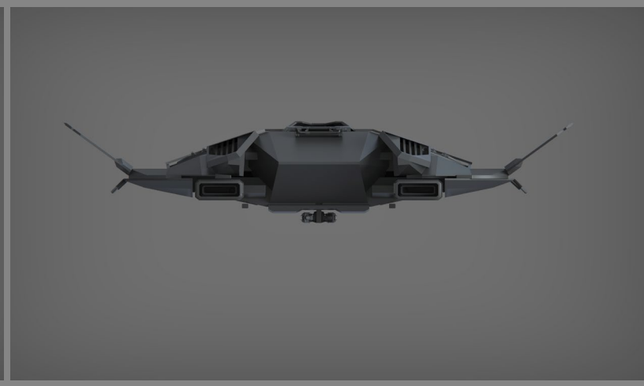
The Zeus' chosen shape was iterated on by mixing the best elements of the first explorations with additional RSI design language.

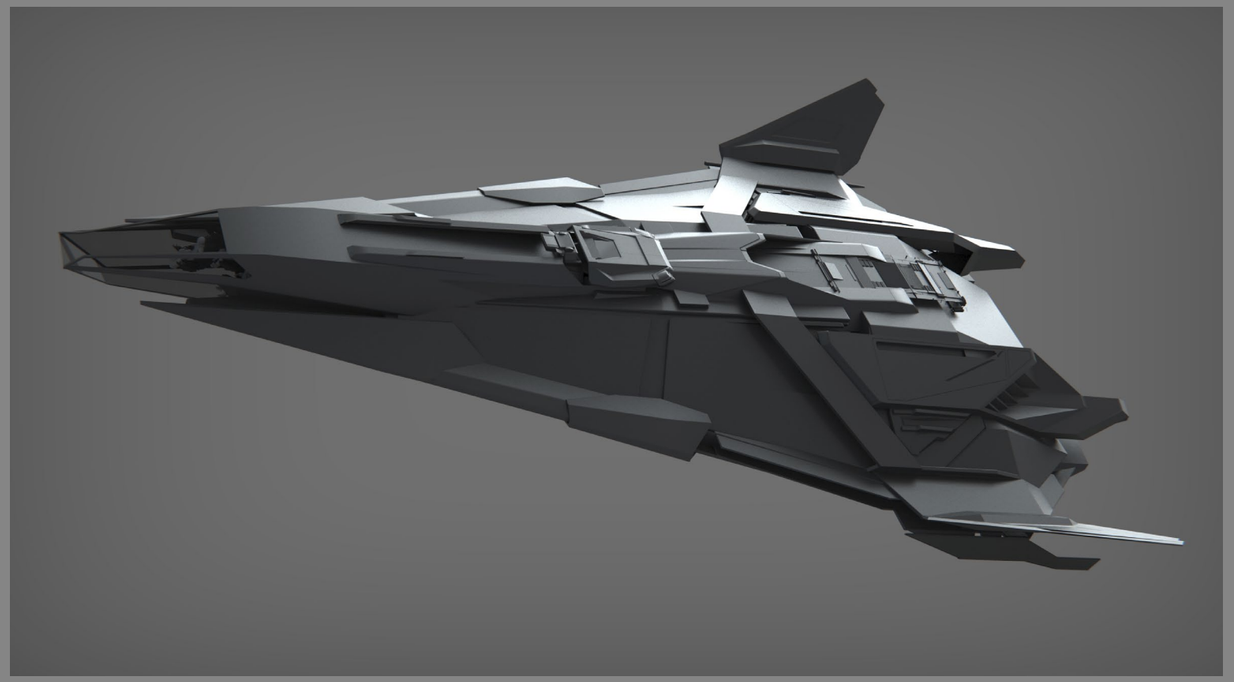


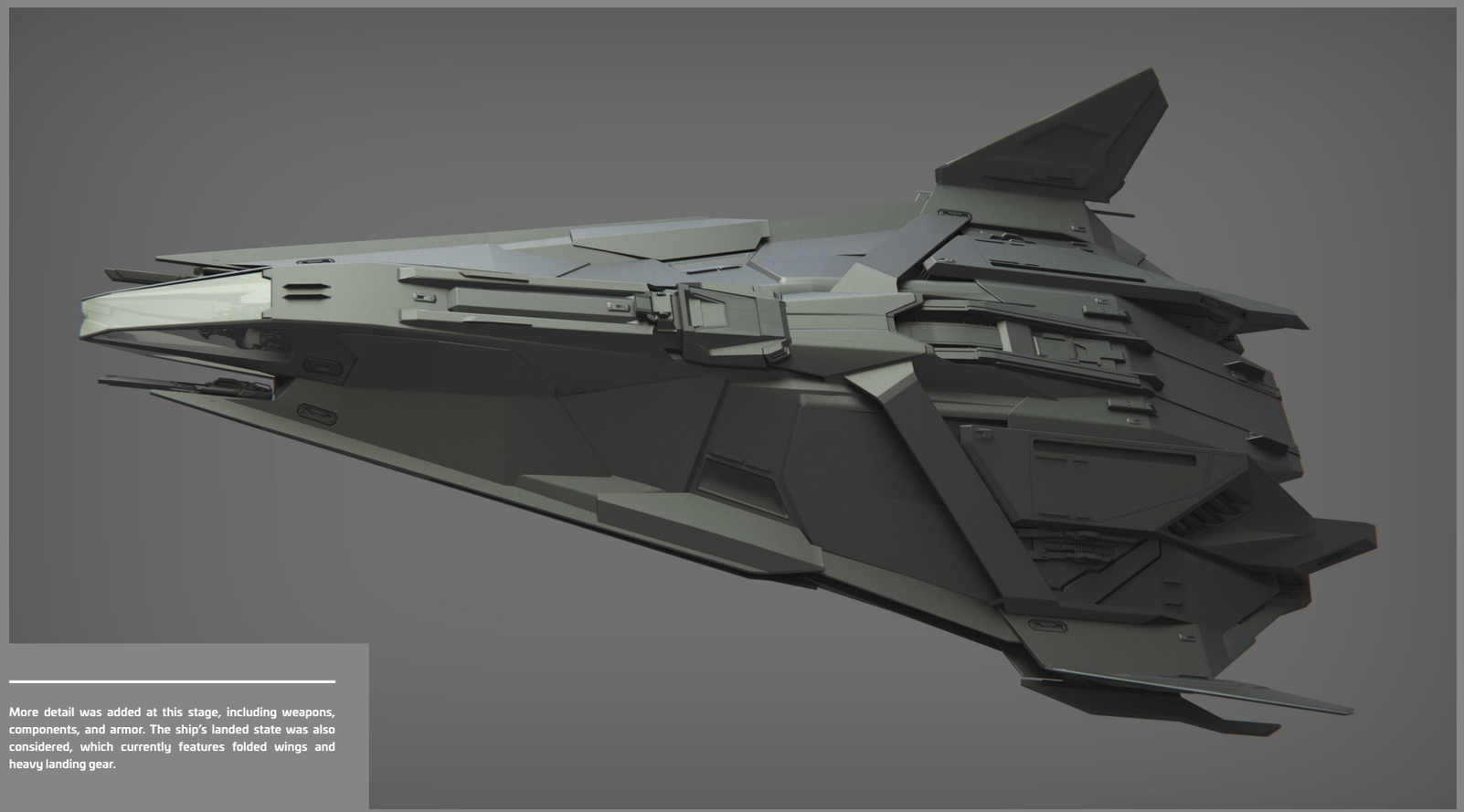




With the wing and cockpit dimensions decided on, various perspectives were explored to further refine the ship's scale and silhouette.

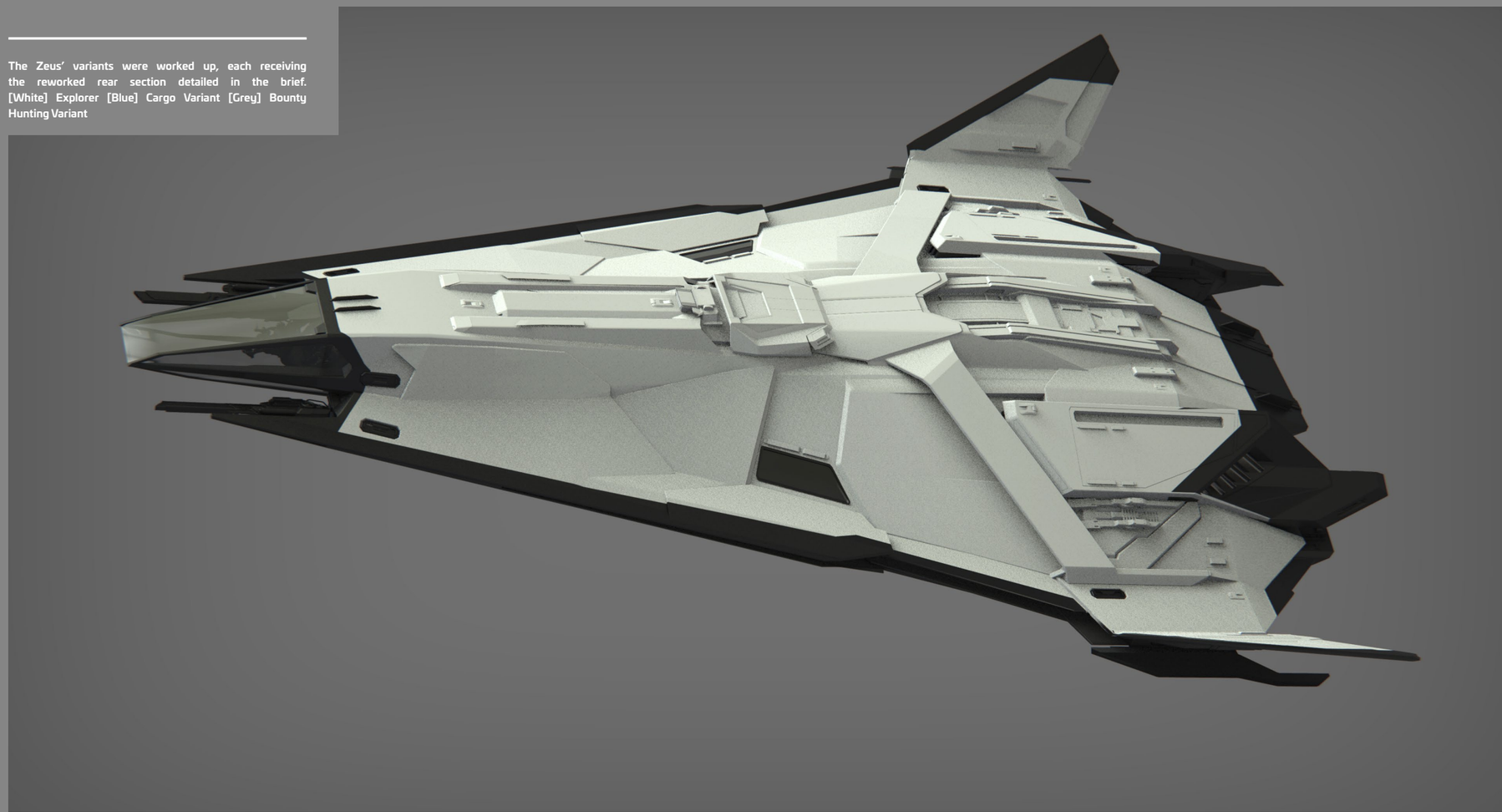


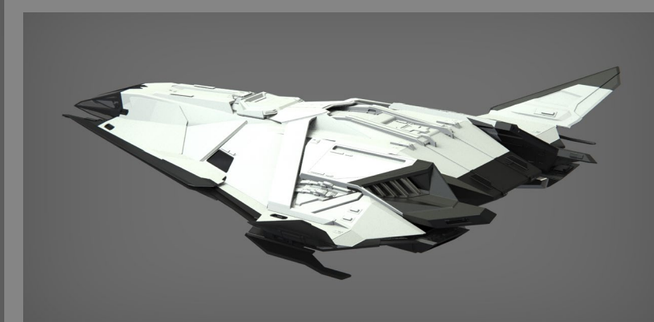


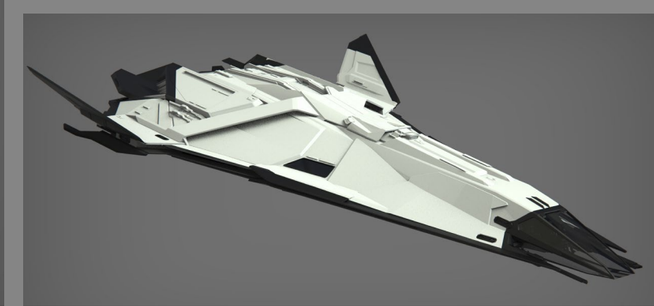


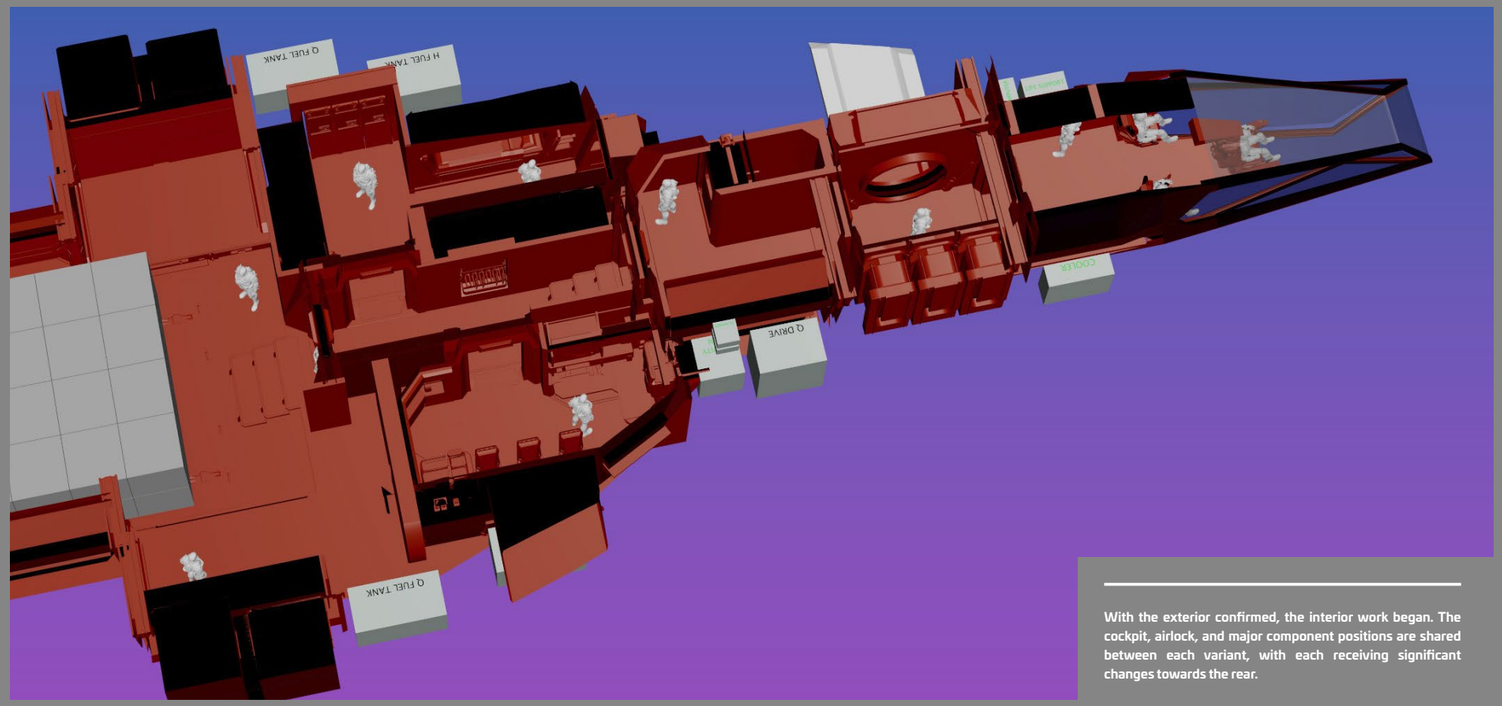
More detail was added at this stage, including weapons, components, and armor. The ship's landed state was also considered, which currently features folded wings and heavy landing gear.

The Zeus' variants were worked up, each receiving the reworked rear section detailed in the brief. [White] Explorer [Blue] Cargo Variant [Grey] Bounty Hunting Variant

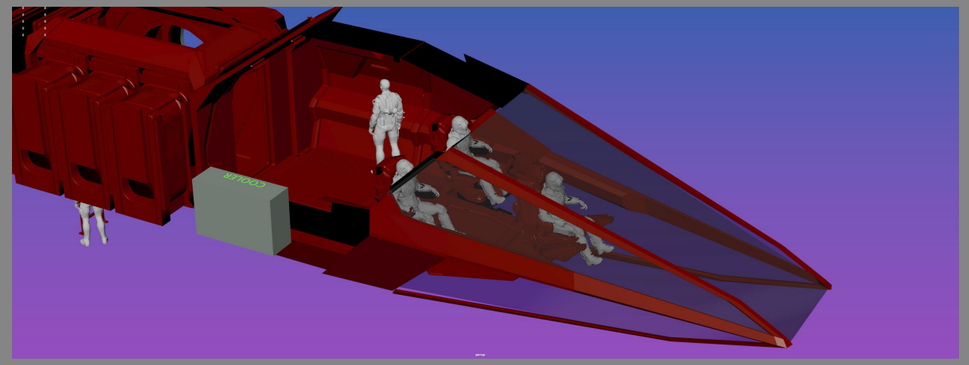


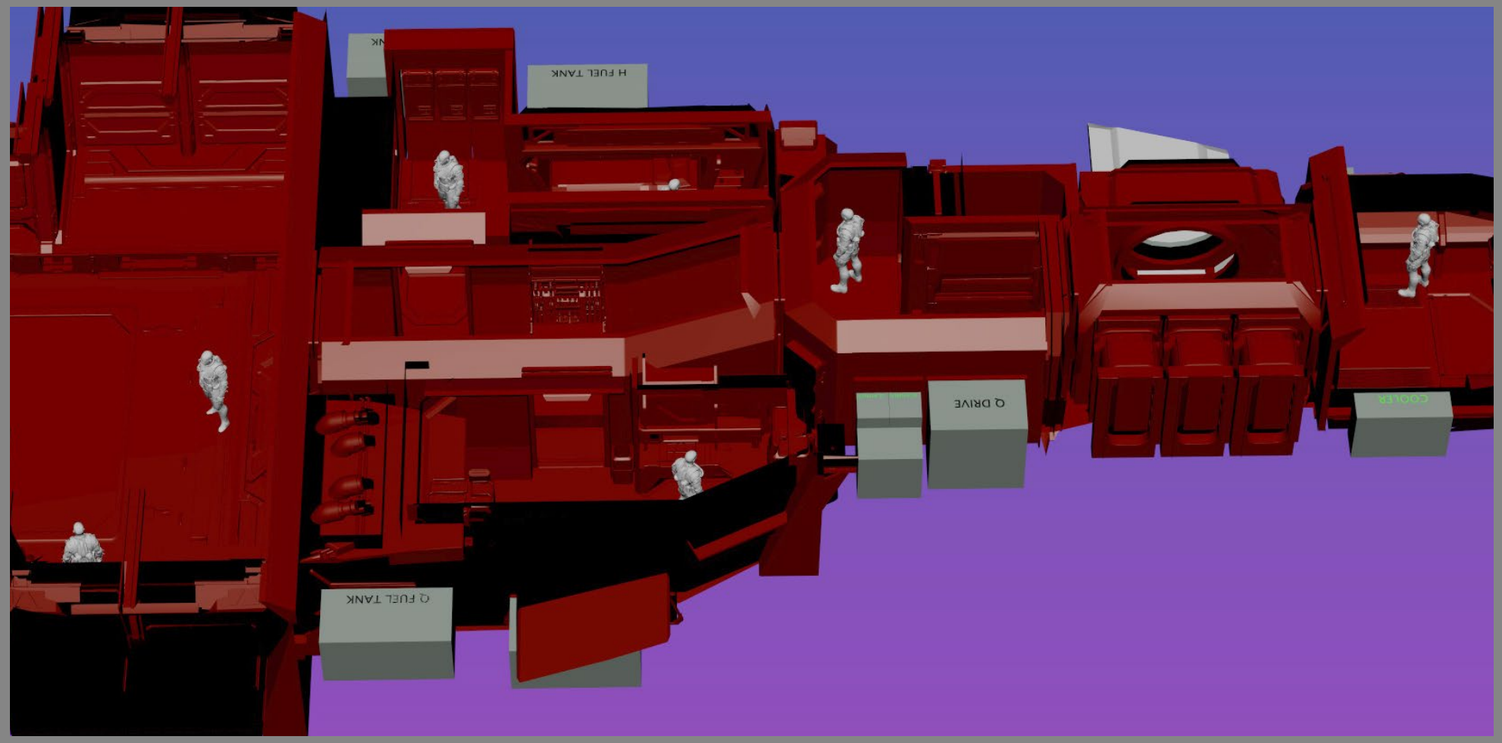


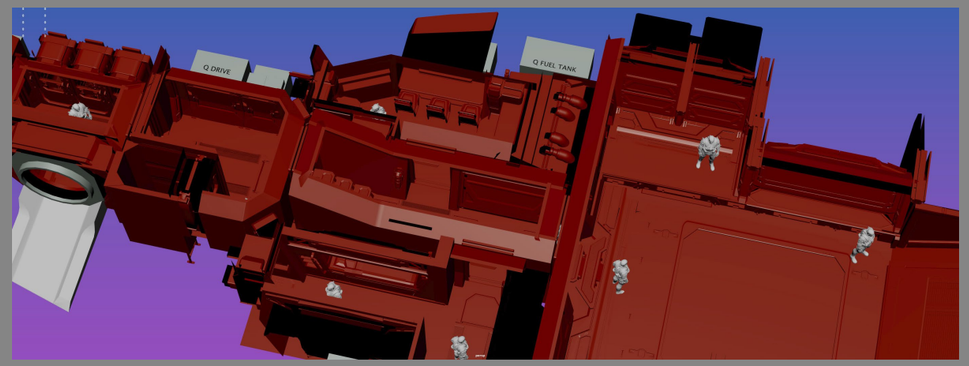


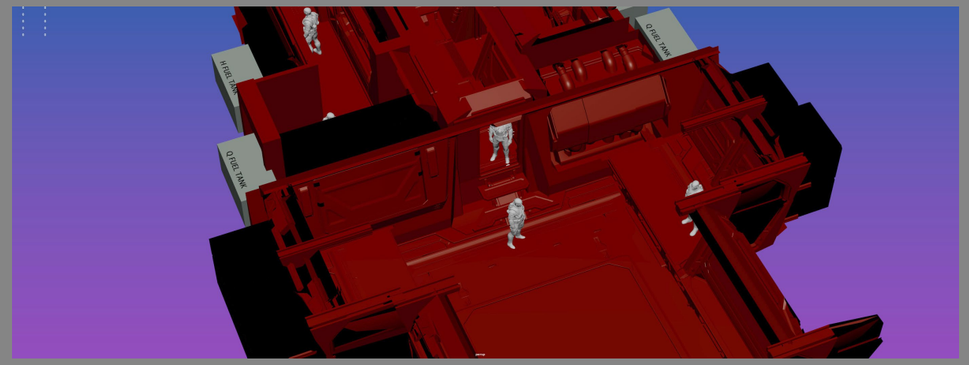


With the exterior confirmed, the interior work began. The cockpit, airlock, and major component positions are shared between each variant, with each receiving significant changes towards the rear.

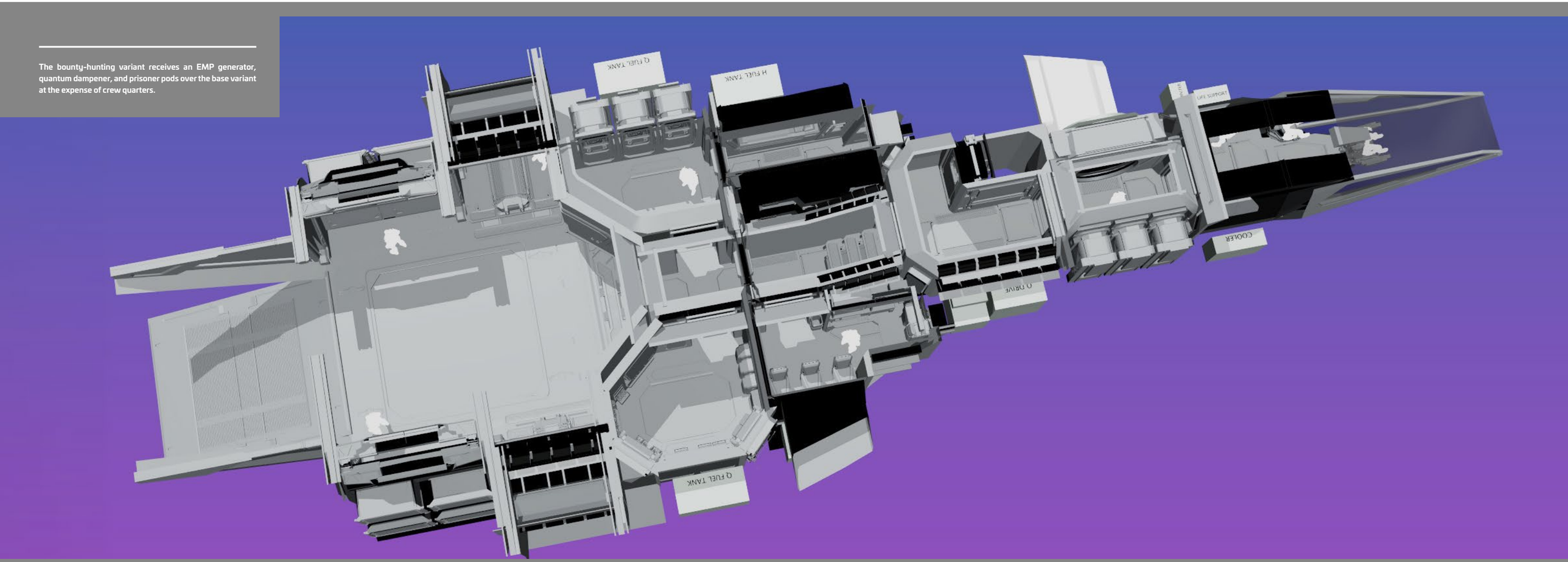


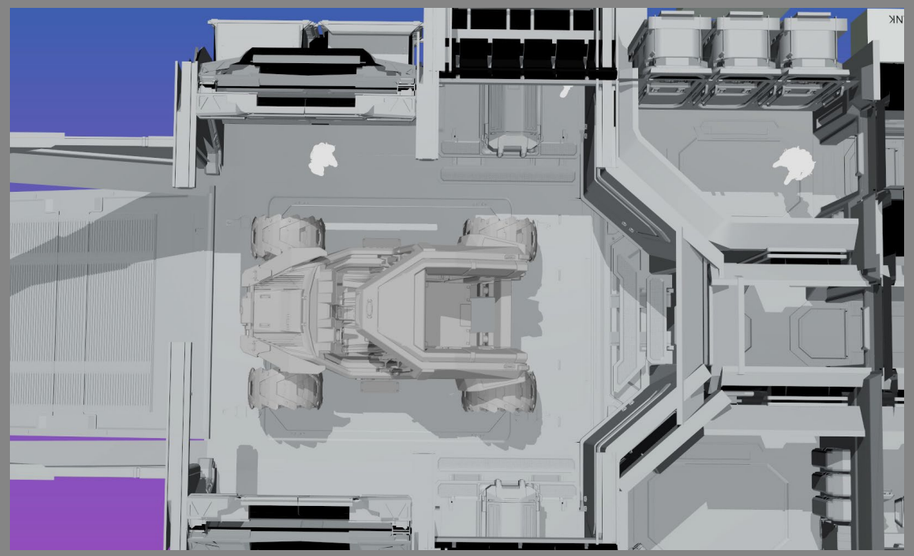


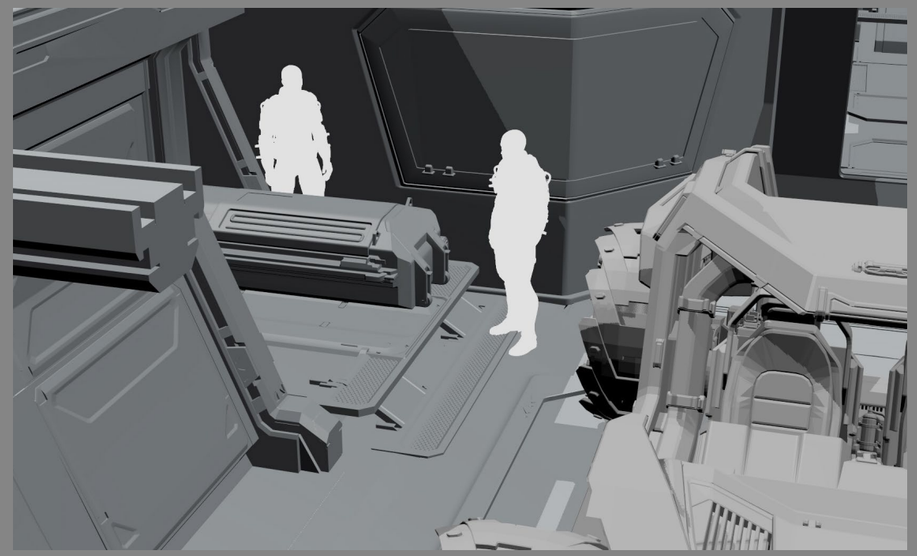


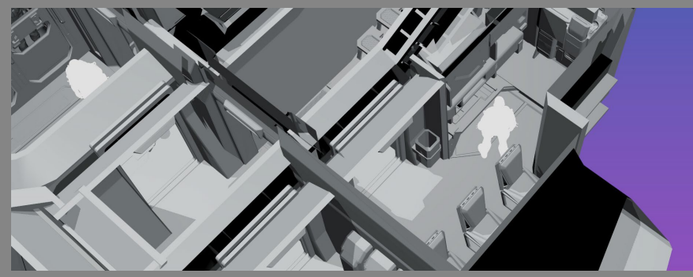


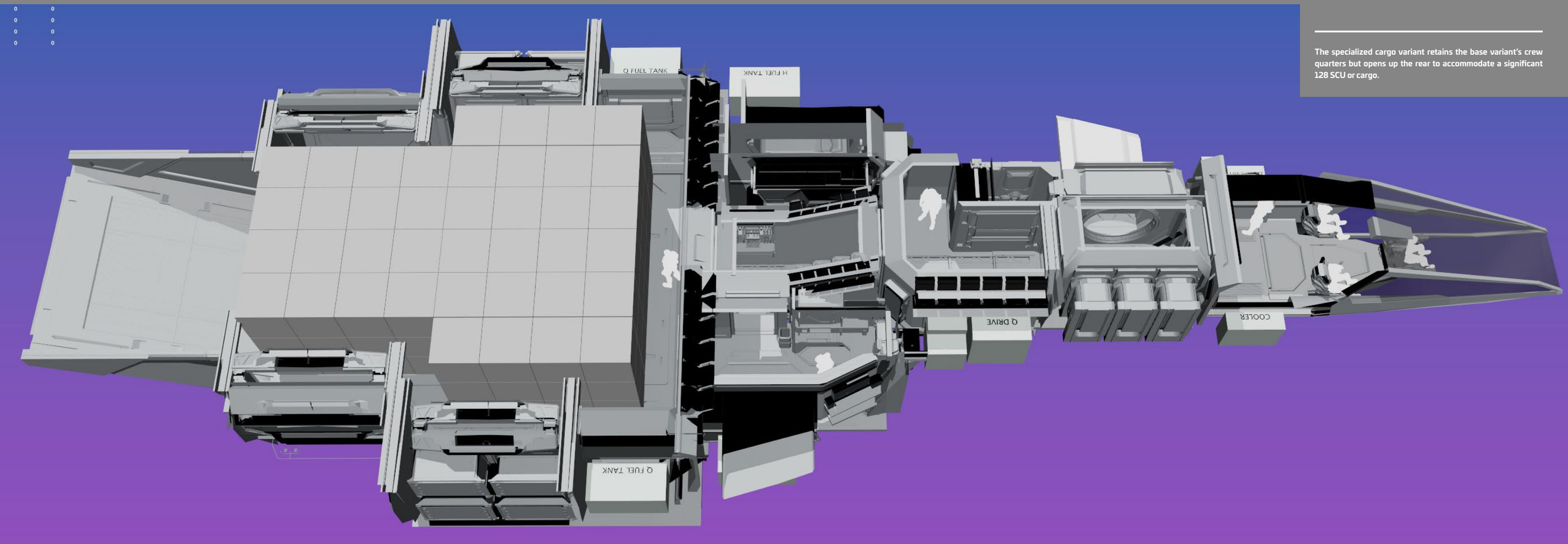
The bounty-hunting variant receives an EMP generator, quantum dampener, and prisoner pods over the base variant at the expense of crew quarters.



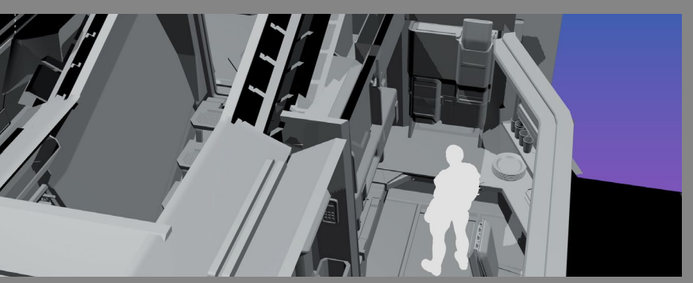


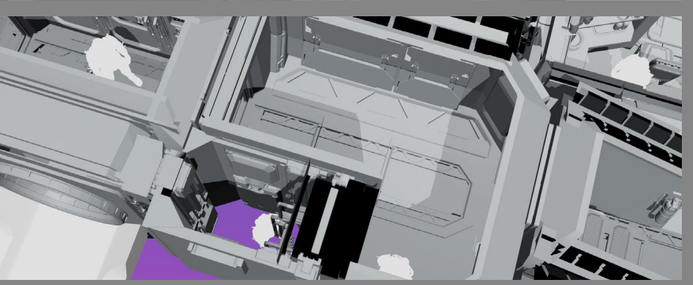


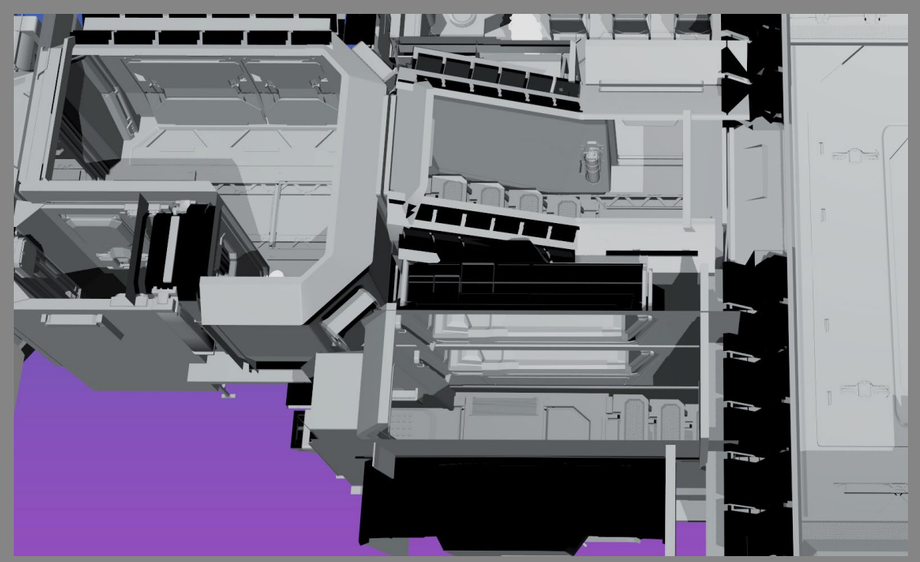


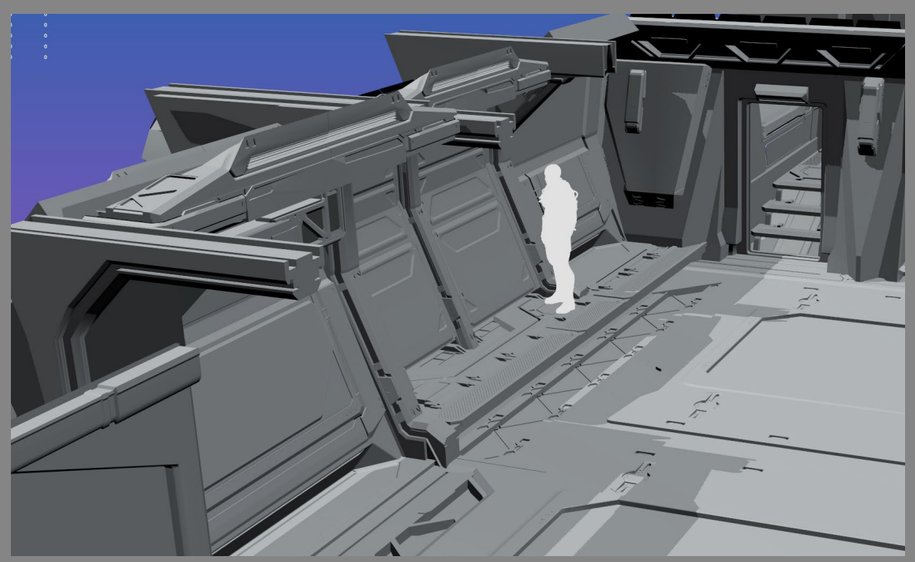


The specialized cargo variant retains the base variant's crew quarters but opens up the rear to accommodate a significant 128 SCU or cargo.









The RSI Zeus Mk II concept was announced at CitizenCon 2953 as part of the Talking Ship presentation. However, it was confirmed by the team that the ES explorer, MR security, and CL cargo variants are in production and currently at the whitebox stage. While there's still a way to go, it means players can look forward to tackling the dangers of Pyro in a modern deep-space pioneer sooner than they may have first thought.

THE CRUSADER INDUSTRIES A1 SPIRIT

DEVELOPMENT HISTORY

For Crusader, the Spirit embodies both the company's long history and its bold new era. This mid-sized, two crew ship first became available to the public in 2953, decades after the first Spirit took flight in 2906. In those intervening years, visitors to Orison would often glimpse the ship weaving through the picturesque floating platforms or sitting on a landing pad. Anyone who asked was told that the ship was Executive 1, but within the company it was referred to as the Spirit. A nod to it carrying the person many considered to be the heart and soul of Crusader Industries, Kelly Caplan, the company's most prominent and longest serving CEO.

Yet Caplan's connection to the Spirit went beyond it simply being her executive transport. Initially a design intern who rose through the ranks to become a major creative force behind many of the innovations in the Genesis-class starliner, Caplan was a surprise pick when she was named Crusader's CEO in 2863, but she thrived in the role. Incredibly, she still holds this position as of the writing of this article in 2953, even though she often admitted to friends and colleagues that her retirement might be on the horizon. According to the biography The True Crusader, she even considered stepping down in the late 2890s, but instead decided to rekindle her passion for the position by returning to her roots. At first, Caplan set aside time each week to personally review ship design documents and make edits and suggestions. This eventually grew to her spending any spare moment while traveling or between conference calls sketching ship designs. Over the years, Caplan found herself returning to one sketch of a ship with a long, angular fuselage and V-shaped wings. There was something about the design she couldn't shake, but also couldn't perfect, so one day in 2899 she called designer Gabija Yeung into her office and asked her to take a pass at it.

Yeung was an interesting choice for the assignment. Crusader engineers secretly called her the "harbinger of doom" as she was often brought in on projects not going well. Her specialty was identifying the strong points of failed projects and flagging them for use in other vehicles as a way to mitigate sunk costs. Yeung's unique view on problem solving stemmed, in part, from her beginning her career at Trent Systems before Crusader bought it in 2885, primarily to incorporate their expert engineers into Project Quicksilver in an effort to hasten the development of the Mercury Star Runner. While most former Trent Systems designers struggled to produce work that met Crusader's style and standards, Yeung quickly proved to be an insightful, out-of-the-box thinker who could also deliver the company's iconic look and design. Caplan grew familiar with Yeung's work while reviewing her assessments and was convinced that Yeung would be the perfect person to tackle turning her sketch into a real ship

worthy of the company; a ship she told Yeung should be "emblematic of Crusader yet with its own unique spirit."

Designated Project Backbone, Caplan gave Yeung free reign to rework the design as she saw fit under one specific condition. The ship needed to be built on a warehoused chassis originally designed for one of the company's retired shuttle craft lines. Caplan knew some members of the company's board believed the ship did not fit with the company's current goals, so she wanted to keep the project within a certain budget after profit margins had tightened due to rising security costs and extremely expensive repairs on several of Orison's floating platforms. Yeung visited the warehouse and carefully inspected the mothballed options. She surprised everyone by choosing one of the oldest chassises, originally made by Seraphim Systems for the Ascension shuttle craft before August Dunlow bought and rebranded the company as Crusader. Yeung preferred the materials used, believing it would create a stronger spaceframe that allowed for more interesting design possibilities.

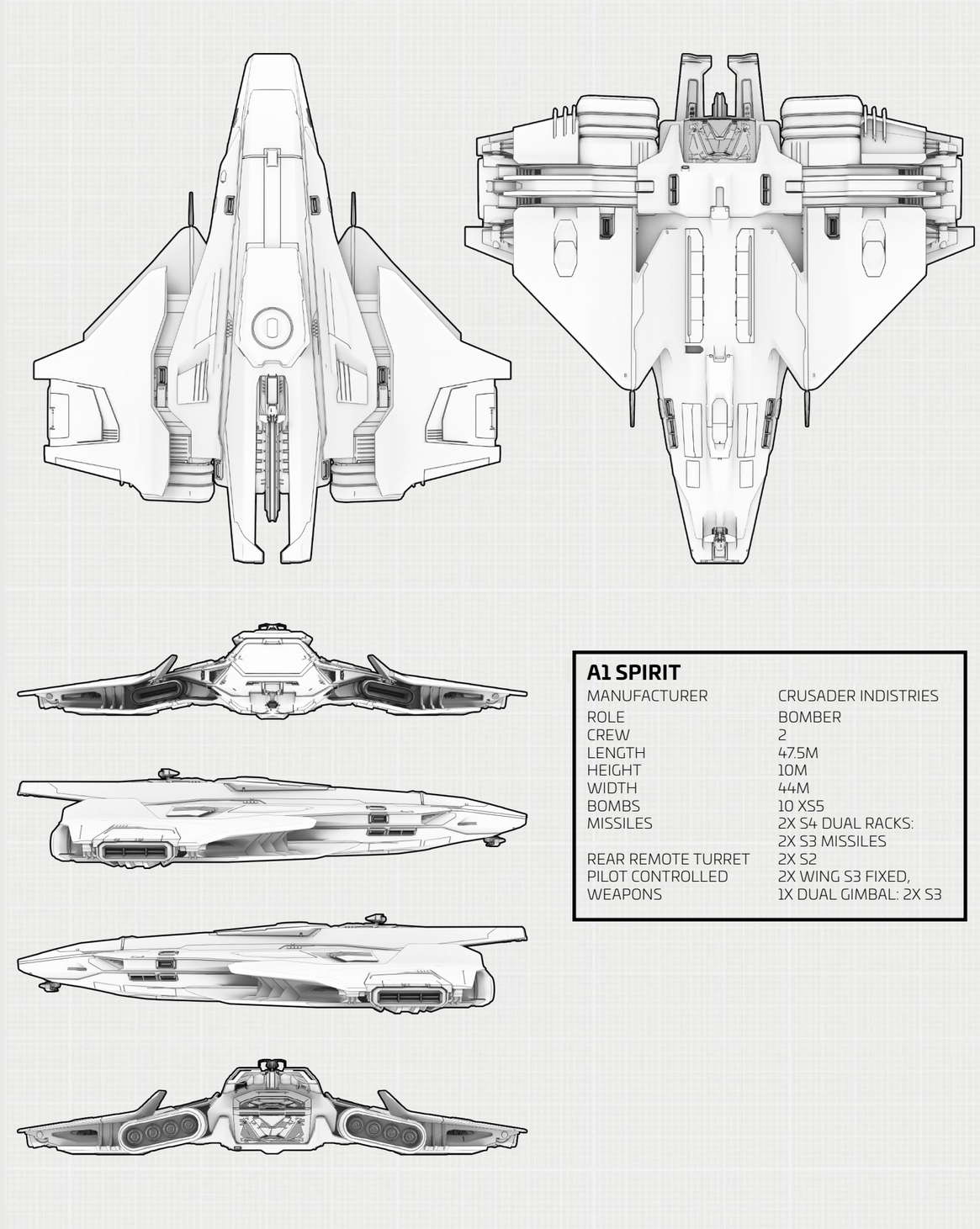
Yeung took the dimensions of the selected spaceframe, and then went to work on a series of sketches that experimented with the ship's shape language while maintaining the long, angular fuselage. Caplan narrowed down the sketches to two options, including one with an asymmetrical wing design, and requested full modeling and unique material selections for each. Despite the request coming from her, Caplan deemed Project Backbone a low priority and made it clear to Yeung that her other work should take precedence. In late 2904, Yeung finally presented Caplan with a highly detailed modeling and materials pass on both versions of the ship. Because of the earlier cost conscious design decisions, Yeung was able to select more expensive, high quality materials while still remaining on budget so that she could deliver to Caplan a high-end executive craft. Caplan selected the design featuring the asymmetrical wings, and authorized Yeung to begin building the prototype.

Yeung personally oversaw most of the build before delegating oversight of the interior to a trusted associate. When the prototype was completed in mid-2905, Yeung had reservations about it, believing the asymmetrical wings made the ship look lopsided. When the ship failed its initial jump tunnel test, Yeung convinced Caplan to scrap the asymmetrical wings. Yeung did several passes at redesigning the wings but failed to find a look that satisfied both Caplan and her. Eventually the two set aside a day to find a solution together. Their answer was chunkier, more angular wings that brought balance and more heft to the ship's fuselage. The updated prototype was finished in early 2906. Thanks to the redesigned wings and a handful of other fixes, the updated prototype passed its

jump tunnel test and all other safety checks with flying colors. Later that year, Caplan flew the ship, which she cheekily called Executive 1, on its maiden voyage around Orison's platforms.

Caplan loved the ship and proposed bringing it to the commercial market. Yet for some conservative members of the board, the cost of materials and setting up a production line to make the Ascension spaceframe was too expensive and out of step with the types of ships Crusader was making at the time. Instead, the ship remained the exclusive and beloved transport of Caplan for decades receiving only routine maintenance and periodic updates to the interior. It seemed destined to remain that way until the late 2930s when falling revenue encouraged Caplan and Crusader's board of directors to expand their ship lineup. A more austere version of Executive 1 landed on the list of potential shuttlecraft, and a design team was assigned to increase passenger space and reduce the overall production cost. Those explorations proved unsuccessful but the team convinced Caplan a cargo and fighter variant would be possible. Initial plans involved recreating the Ascension shuttle craft chassis with updates to make it modular and able to handle both variants. The team struggled to make it work though, as the massive gun planned for the fighter variant complicated the endeavor. Despite the issues, Caplan liked the fighter variant and spun it off into its own ship, which would evolve into the Ares and beat the Spirit to market.

Plans to mass produce the ship seemed dead in the water until Alonso Cline, who'd worked on the cargo design, suggested a bomber variant. Caplan liked the idea and asked the team to design a version of the bomber and cargo variant without modularity in mind. Freed from that constraint, the team delivered successful designs and won approval to take them to the prototype phase. Caplan also asked them to make an updated version of Executive 1 with some subtle changes to the layout of the interior. She loved the new Executive 1 so much that she made it an official third variant of the ship. The decision further delayed the official release of the ship but added an exciting new entry into the Crusader line-up that harkened back to the company's origins as Seraphim Systems. Each variant received Crusader's established letter designation (A1 - Bomber, C1 - Cargo, and E-1 passenger transport) but bucked the trend of assigning a different name for each chassis variant. Instead, the decision was made to call the ship what it'd been known as within the company for decades, the Spirit.



A1 SPIRIT

MANUFACTURER	CRUSADER INDISTRIES
ROLE	BOMBER
CREW	2
LENGTH	47.5M
HEIGHT	10M
WIDTH	44M
BOMBS	10 XS5
MISSILES	2X S4 DUAL RACKS: 2X S3 MISSILES
REAR REMOTE TURRET	2X S2
PILOT CONTROLLED WEAPONS	2X WING S3 FIXED, 1X DUAL GIMBAL: 2X S3

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