

JUMP POINT

ISSUE: 10 04



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FROM THE COCKPIT

GREETINGS, CITIZENS!

As I write this, *Star Citizen* Alpha 3.17 is undergoing its final fixes and modifications with the aim of getting it out to the community very soon... possibly before you read this! We talked a lot about some of the new features in 3.17 last month, including the 'two Rs,' rivers and refueling. It's just the sort of refreshing update that fits perfectly in spring and, hopefully, we'll all be exploring the Stanton system's new niches and mechanics.

But first, let's set our nav computers on course for the **Jump Point!** Last month, I promised we'd return to more ship content in April and I think we've come up with an issue that... can't MISC! (Hold for laughter.) (Keep holding.) (Surely any time now.) But seriously, in honor of the long-awaited release of the flyable MISC Hull A freighter, we're going all in on one of *Star Citizen's* founding ship companies.

Our first feature is, naturally, a look at the work that went into the Hull A itself, including the original concept from back in April 2015, with an interview with the designer who finally brought the transport from imagination into reality. I was lucky enough to be involved with the original Hull pitch and the development of the concept that developed not one but five ships at the same time, so it's pretty exciting to see the first of them finally become real. I remember losing sleep worrying that there wouldn't be interest in the Hulls because they aren't flashy starfighters or powerful battleships... but as usual, the *Star Citizen* community proved my anxiety wrong and everyone understood how important having a system of bulk transporters would be to the final game. And, now that the interstellar commerce

aspects of the game are fitting into place, it's going to be pretty neat to see what everyone does with their Hulls (and of course, A today means B through E aren't so far off!).

Then, we take a look at MISC itself in a mostly in-fiction article that recounts the history of the company with more detail than we've had before. Much like a Whitley's Guide, you know the general story going in but I hope you enjoy all the new details. MISC was a fun company to create way back when because it let us imagine a more utilitarian manufacturer that wasn't as 'cool' as companies like Anvil or RSI. Then, as is par for the course with *Star Citizen*, our artists and animators ended up making the Freelancer look like the neatest thing in the universe. Who can forget that commercial?!

We've also got a new Whitley's Guide covering another early favorite MISC design, the Starfarer. Or is it from Aegis?! You'll find out! Finally, we've got a new Portfolio covering the history of WiDoW, a dangerous 30th-century narcotic you may have already heard rumblings about in the 'verse (just for the record, that one isn't MISC-related).

With that, please enjoy a brand-new **Jump Point!** And please take a moment to let us know if you're interested in more content like the MISC history... I think it might be fun to add some detail to some of our other companies' histories! Until next month, I'll see you... through the next **Jump Point**.

Ben

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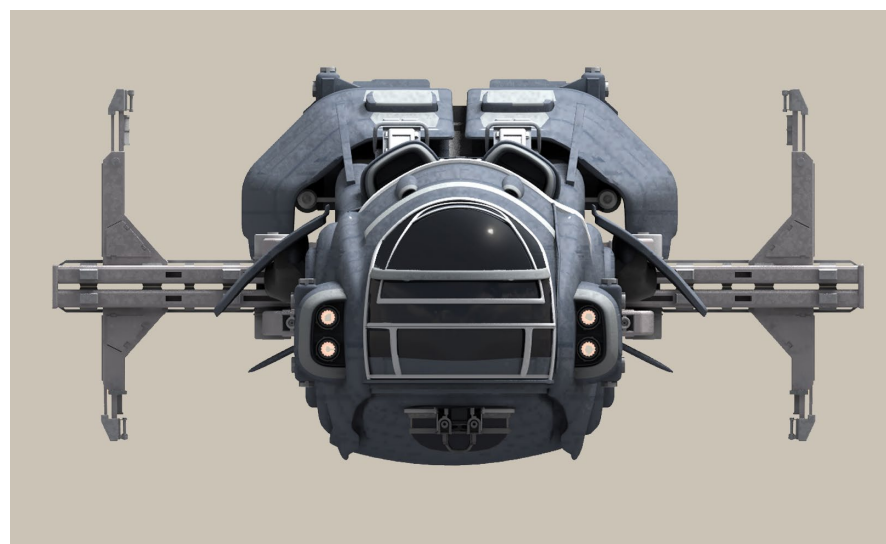
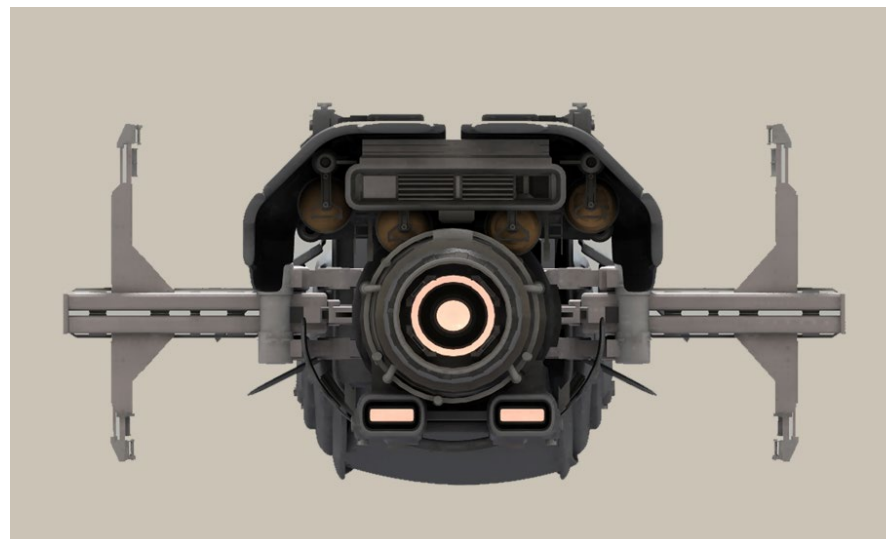
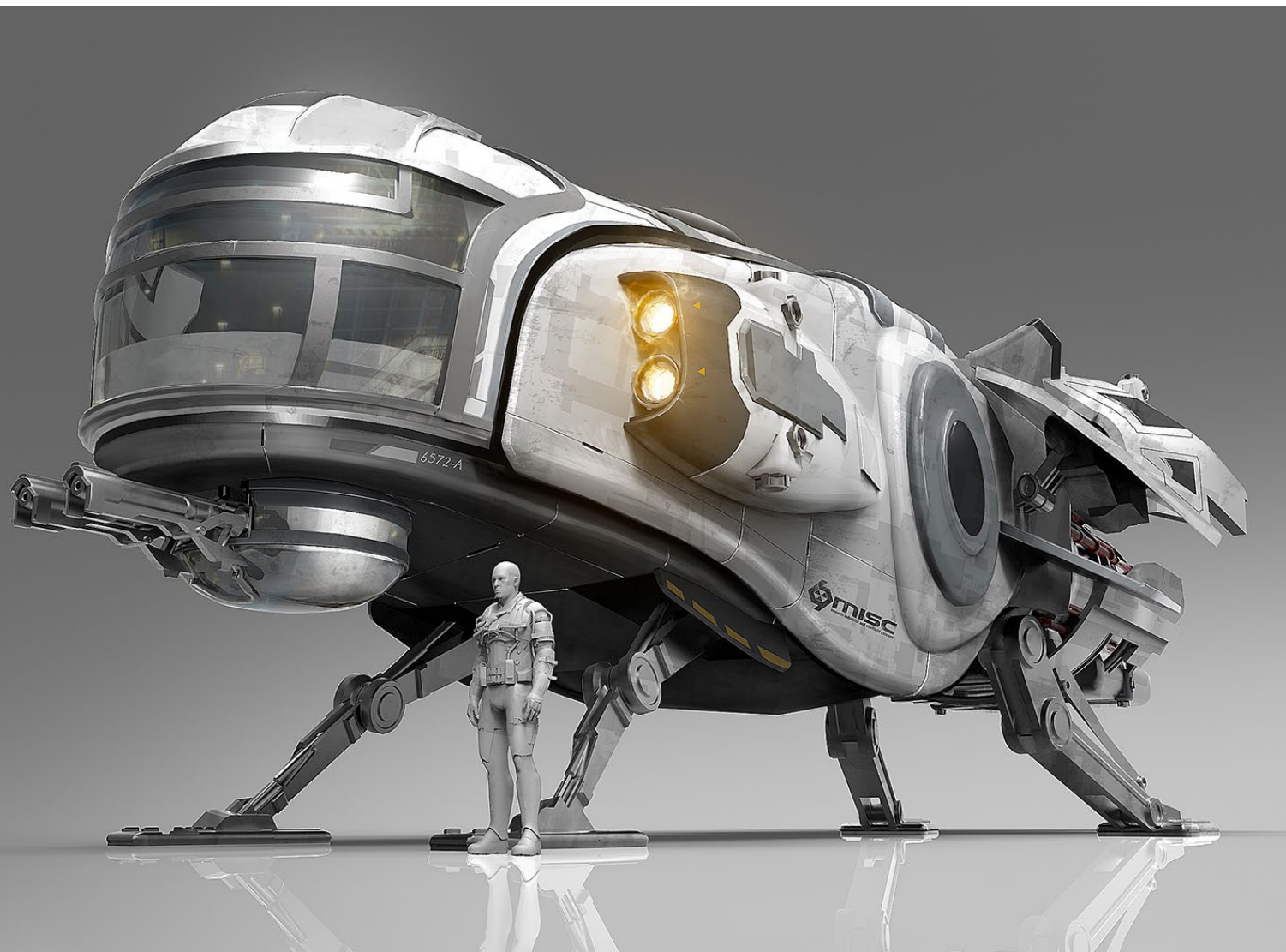
BEHIND THE SCENES MAKING THE MISC HULL A

CONCEPT - 2015

Believe it or not, the MISC Hull series of ships began its life right here on the pages of Jump Point! At the very start of the project, *Star Citizen's* writers had imagined that MISC was a megacorporation that built its success on large, working spacecraft that weren't necessarily as 'cool' as others. The Freelancer, it was said, was MISC's first attempt at building a wide-ranging, multi-purpose ship for a single pilot instead of a large crew. When it came time to develop MISC further in an early 2013 Jump Point Portfolio (see the updated history of MISC later in this issue), the team developed lore about a series of modular ships inspired by real-life cargo carriers: the "MISC-A" through "MISC-D."

(The overarching "Hull" name would come later - a slight nod to Larry Niven's General Product Hulls.)

From the start of the project, it was obvious the game would need large transports. The problem was that large transports weren't especially fun. While every Wing Commander escort mission needed a Drayman or a Clarkson, no one ever dreamed of flying those ships themselves. In 2014, most of *Star Citizen's* early concept ships focused on introducing new careers, like mining asteroids or salvaging wrecked ships, that looked forward to how the game would expand. The thought of developing a series of transports from different manufacturers would take as much effort as a wing of new fighter classes... until the Hull concept was hit upon.



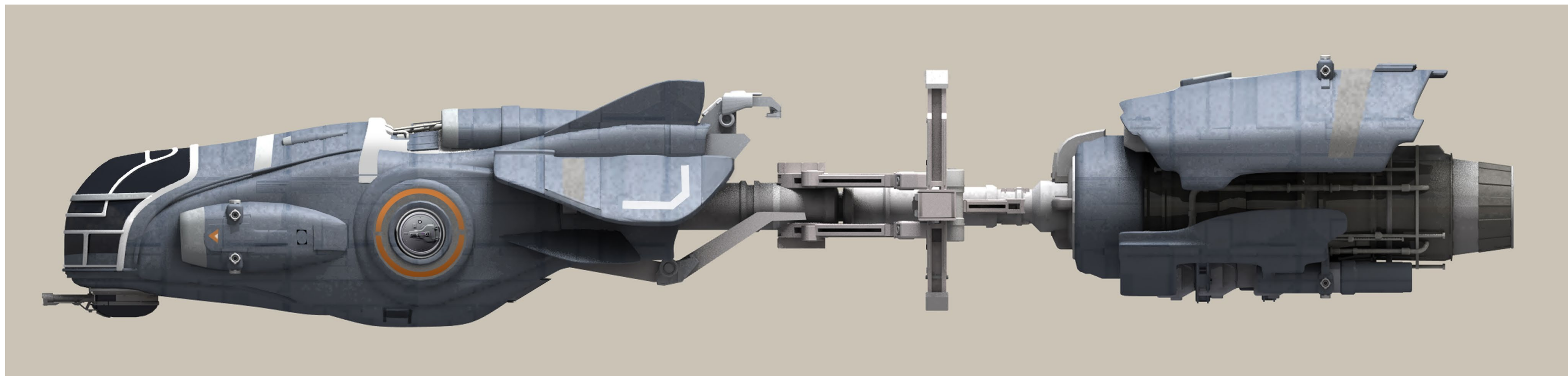
Instead of five completely different bulk freighters from different companies that would offer players a ladder to climb as part of their mercantile career, developers hit on following the real-world example of giant container ships and developing a single series. The MISC Hull series, now with the added Hull E superfreighter, would fill in the working background of *Star Citizen's* world with one basic design that the concept artists would develop in different scales: from the small, single-person Hull A introductory freighter to the aforementioned colossal Hull E.

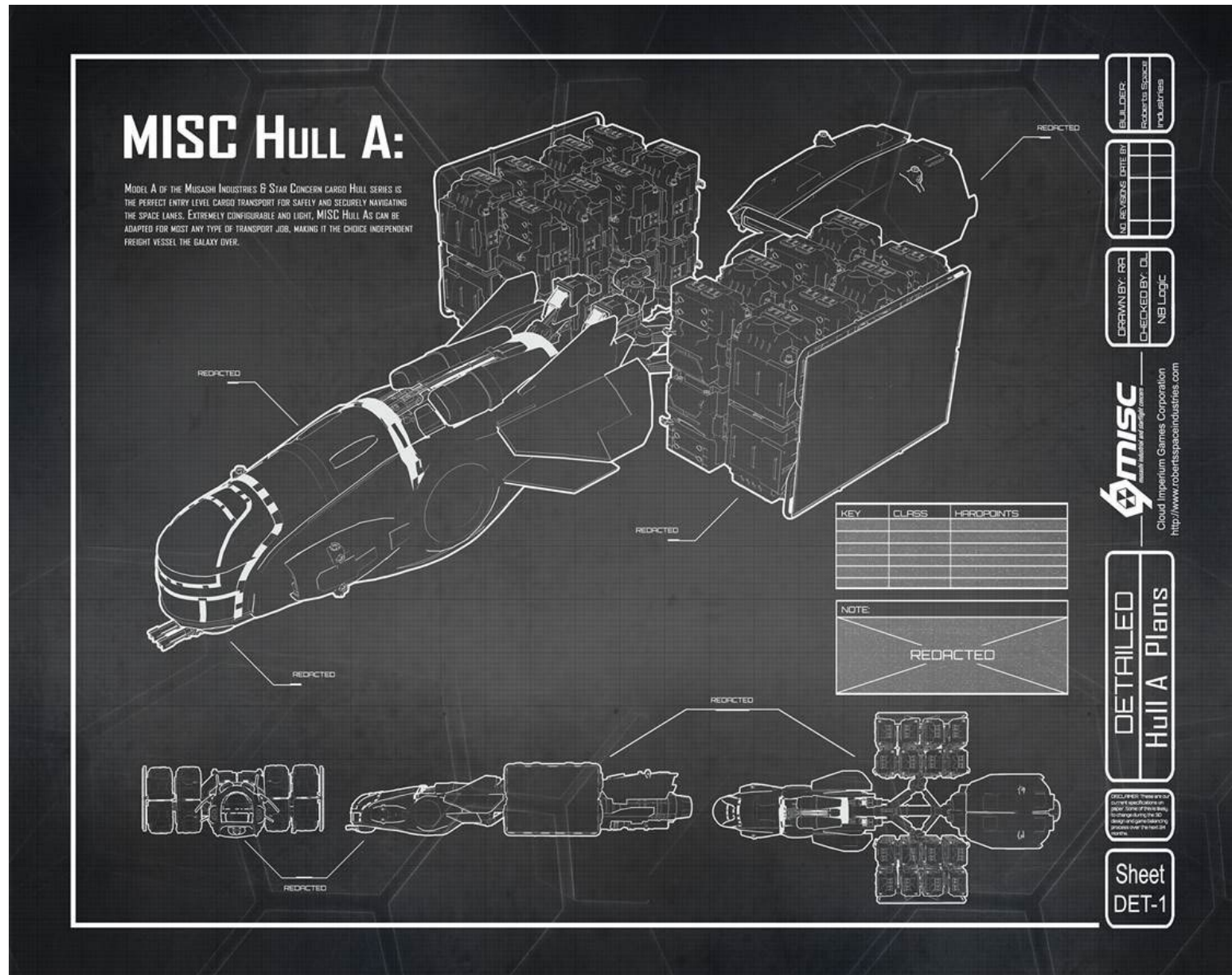
The early design pass described the initial plan for the series:

The Hull B should be our box truck. Designers should go into it imagining it as part of a series of similar utile designs... the Hull A is a station wagon, the B is a box truck, the C a big rig, and the D a supertanker (or some similar progression). So a general design that can scale up massively.

Big impact here is that these MISC Hull ships will be part of the background noise of the SC world. (Try counting moving trucks on your commute - once you're looking, they're everywhere!) The other big piece is that they are radically modular - it's a platform you can visibly take in several directions beyond just shipping goods.

To make this new ship series a reality, Chris Roberts turned to one of *Star Citizen's* most experienced concept artists at the time, Jim Martin, a veteran of everything from *Starship Troopers* to *Deep Space Nine*. Martin immediately imagined what would become the general shape for the Hulls: a Freelancer-inspired cabin (of varying sizes) at the front, an engine module at the rear, and a Christmas-tree-like transformation mechanic that allowed each ship to unfold to attach external cargo containers (a concept design had just begun to standardize cargo into SCUs). The Hull ships would drop off their cargo at orbital locations and then fold up again for landing, as Argo's stevedore ships had not yet been introduced.





In Martin's original formulation, the Hull A featured no 'branches' for cargo and each additional ship added one (ending with four that allowed for a truly enormous amount of cargo on the Hull E). The Hull A and B were classed as smaller single-person ships, while the others were larger-crewed, capital-sized ships. The Hull C was initially intended to act as the flagship of the line, mapping out in concept all the animations and mechanics that would be needed in order for it to fly. Few could have predicted at the time that the Hulls would eventually start from the bottom instead!

Using his traditional, stylized 3D concept models plus paintovers as needed, Martin built a series of elaborate charts showing how the ships compared, how they would unfurl, and especially how they would land. As the size limitations for large ships had not yet been locked down, Martin imagined landed variants of the entire line, prompting a previous Jump Point issue to warn players that the ability to land a Hull C was not necessarily guaranteed.

In the end, the concept phase resulted in a variety of stunningly imagined Hull ships that certainly offer a much earlier glimpse at how it was imagined the Persistent Universe would appear. The Hull series was revealed to the public in April 2015, almost seven years to the day before players would first get their hands on the first finished vehicle! As usual, *Star Citizen's* supporters proved to be much more understanding of how the game would work than any average community: Hull ship concepts proved particularly popular for MISC.

Tiny details, always typical of a Chris Roberts project, helped get across the idea that there'd be more to the Hull than flying from place to place; from attached fighters (still not a guarantee!) to customizable billboards on the sides of the largest ship, the Hulls were more than just piles of boxes. This success demonstrated to the team once and for all just how many people are interested in non-combat careers that focus on building a life in the 'verse.

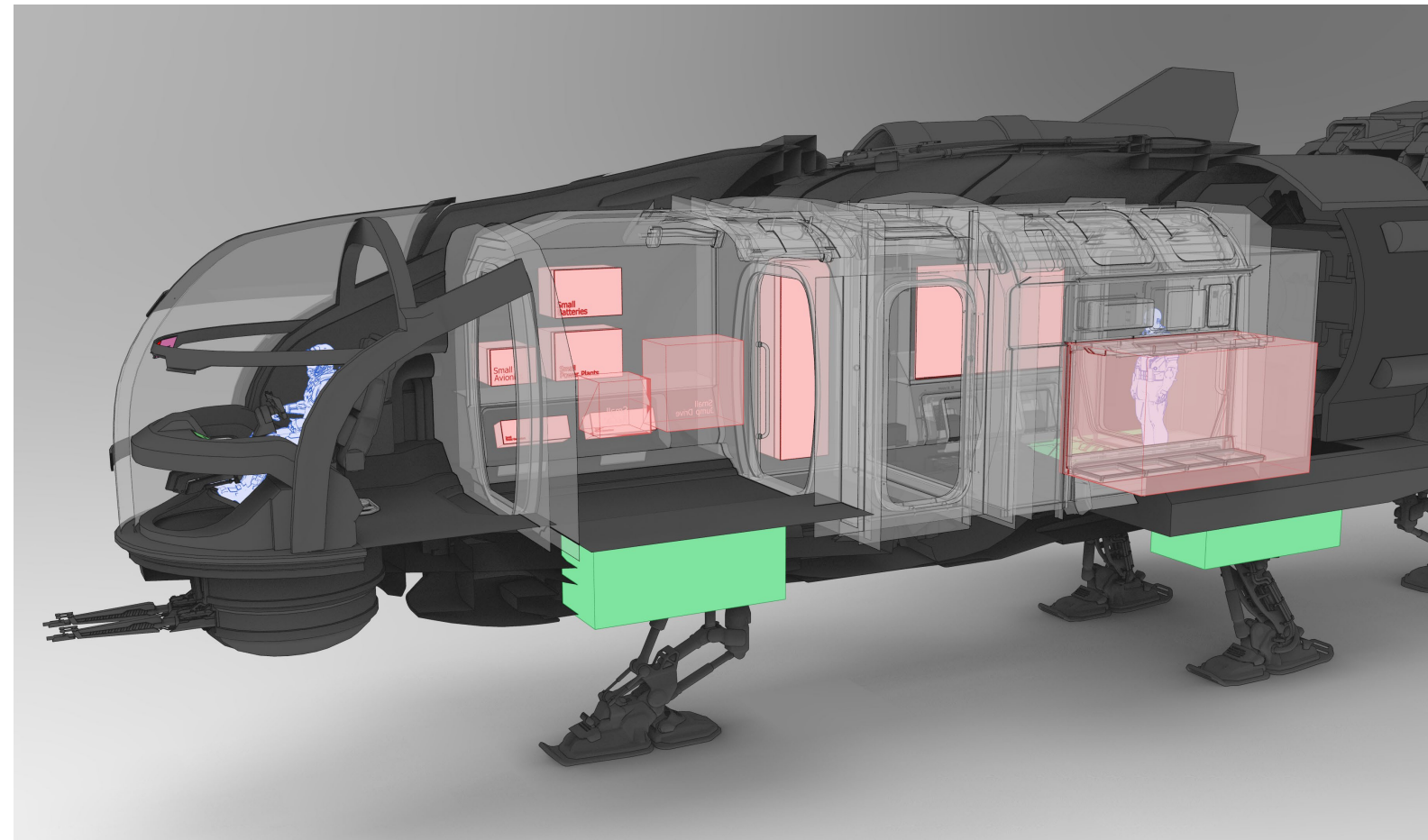
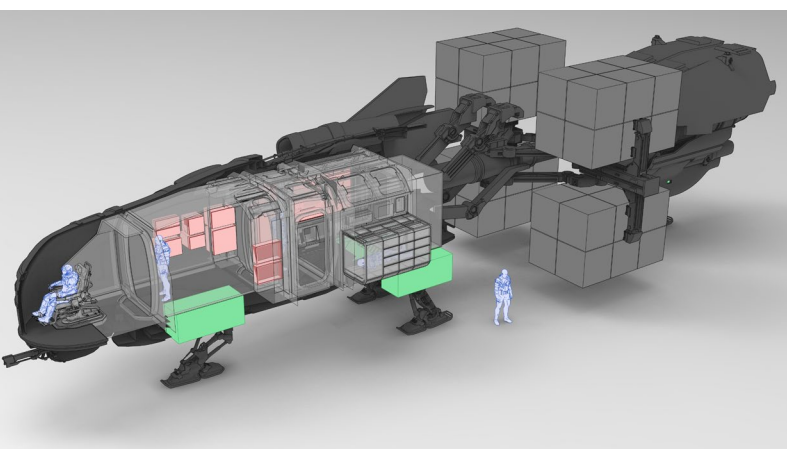
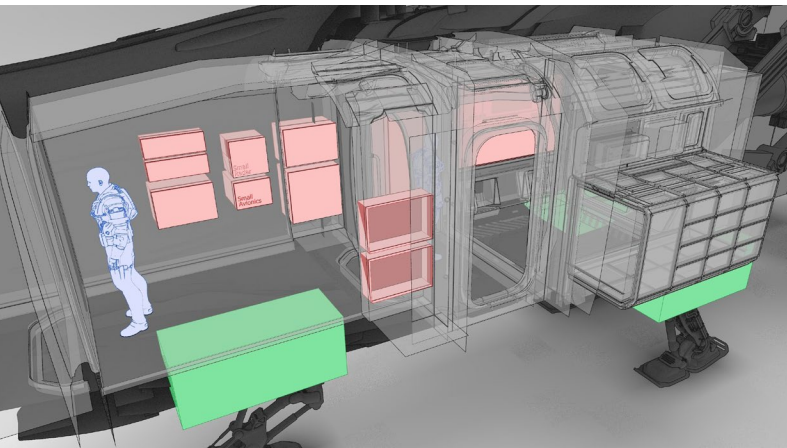
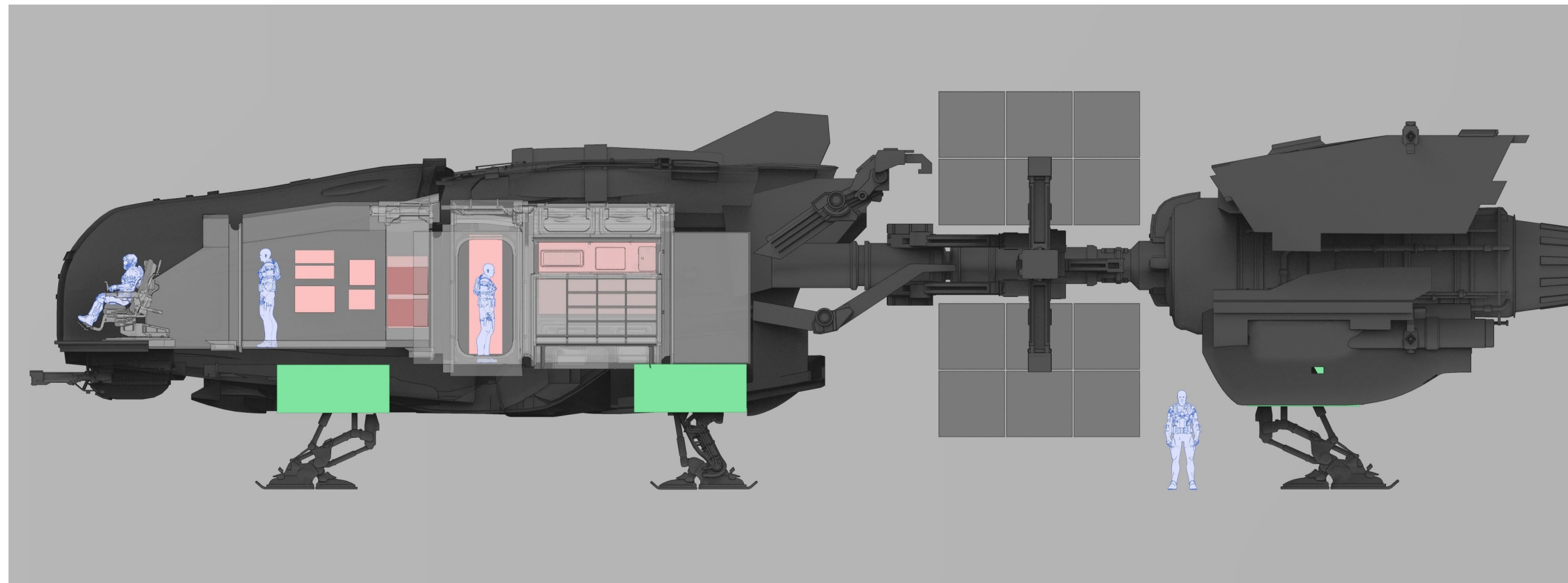
IMPLEMENTATION - 2022

While the Hull series represented the direction all knew *Star Citizen* was heading, the functional game – then only an early iteration of the *Arena Commander* dogfighting module – was not ready for commerce or bulk freight. As a result, the Hulls, A included, went to the back of the line as ships designed to use existing mechanics were implemented. As development continued, *Star Citizen* moved from dogfighting and first-person fighting to more complex systems designed to support other careers, including transports! In mid-2021, work resumed on bringing the Hull A concept into the game engine. We spoke to the vehicle systems designer responsible for bringing the first of the Hulls online in *Star Citizen* Alpha 3.17 to learn how the process works and what it was like bringing to life such a long-awaited ship.

BEGIN TRANSMISSION :

JUMP POINT: Please start by introducing yourself! Give us your name, title and let us know what you've worked on for *Star Citizen*.

ADAM PARKER: I'm Adam Parker, vehicle systems designer. For the past five-ish years now I've been making ships for *Star Citizen*. I got started with finishing the Origin 85x and since then I've done some big and small ships like the Argo MOLE, Aegis Hammerhead, and Origin 890 Jump. My fave is still the Valkyrie though!



JP: What kind of design work goes into implementing a new ship into *Star Citizen*? Could you walk us through the kind of work you did to bring the Hull A from concept to reality?

AP: Our first step is getting the basic needs of the ship from Chris Roberts and other higher-ups (like, “we need a large bomber,” or “we need a multi-crew ship for mining”) and making a concept brief, which has everything we want the eventual ship to do. This includes all of its components, interior rooms, number of crew, and so on. These often change during making the ship because nobody can fully predict the problems it will face as we get making it. Once the brief is sorted, I work with the art teams to build the ship in the engine, from the early whitebox stages where the ship is basically a flying cube, to final art where it looks much like it does in-game.

JP: The MISC Hull series was first conceived back in 2015 before *Star Citizen*'s modern ship pipeline was established. Was it a challenge to work from this material?

AP: Yes, it was a challenge! Those old concept assets were done before we had our current metrics in place, so they had to change quite a lot to work with our current setup. We basically re-did the ship fresh with the original concepts as a guideline.

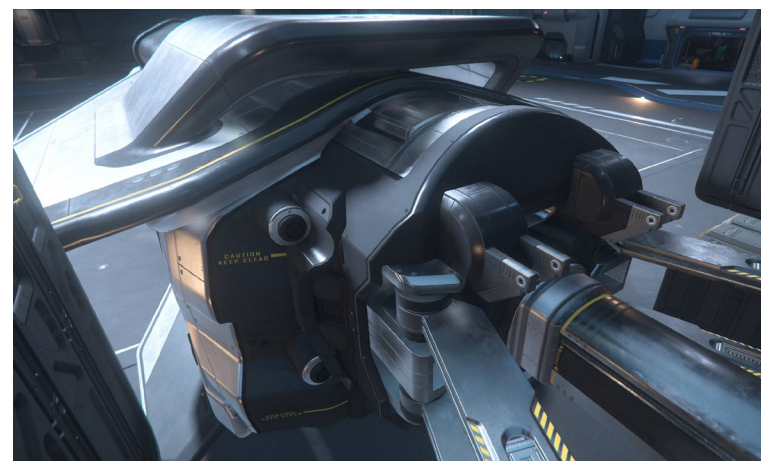
JP: How closely do you work with the artist assigned to implement the ship?

AP: We work very closely with the artists. When they get a piece of art ready, it's my job to implement it into the game by attaching node points for weapons, components, etc., and making sure animations play correctly with the right timing. Given that the Hull A has a prominent animating part, there was a lot of work between us to make sure the mechanism looks like it works correctly. Triggering the animation with a dashboard button required an entirely new setup, and if the animation played too quickly it looked very fake, so getting the timing right was important.

JP: How do you make sure a cargo ship is as appealing to a player as a starfighter or a battleship? Who do you imagine flying a Hull A when all is said and done?

AP: It's odd to think about but when I'm making any kind of ship I don't worry if it will be appealing, since I know somebody is going to enjoy flying it around no matter what it does or what it looks like. *Star Citizen* isn't just a combat sim, there are all kinds of ships for all kinds of players, and I think it's great to have something as simple as a cargo ship that players enjoy using as it really fills out the universe. I know plenty of people who play truck simulator games after all; I imagine the Hull series will appeal to that kind of player.

JP: The Hull series was originally imagined as an increasingly larger set of similar modular cargo ships. How much of the work you've done on the Hull A will carry over to the other ships in the series? Does the Hull A going online mean we're one step closer to Hulls B through E?



AP: The main mechanism to trigger the ship's animation is vital for the Hull series, as it's a collection of objects (the Hull itself, the mechanism pistons, and the unfolding cargo panels) that need to sync up correctly when the pilot hits a button on their dashboard. This whole setup hasn't really been done before in this modular state, so the Hull ships can copy the setup over without having to set it up from scratch, as previous ship animations (VTOL, landing gear) are hard coded to do only those specific things. As well as using this on the Hull, we can use this setup method with other complicated transformations, like the Scorpius' wings, and other little bits that we want to control from in the ship itself, like the Herald's little comms panels.

JP: When the Hull was first conceived, *Star Citizen's* trading mechanics were pretty far off. How did you adapt the design to the current standard? What kind of thought has had to go into the Hull A's cargo (loading, unloading, etc.)?

AP: The current standard is actually changing soon with the cargo refactor, so the Hull A was more designed for the coming changes than the current system. We want players to be able to take individual boxes off the cargo panels with a tractor beam, and for the system to automatically use the biggest cargo boxes the grid can fit, so instead of each cargo panel holding 16 little boxes, they'll hold one big crate (if you put that much cargo on, of course).

JP: The Hull A seems to set a new standard for little touches that make it feel real. Can you talk about what went into some of these? (Like the controllable lighting panels, medicine cabinet, etc.)

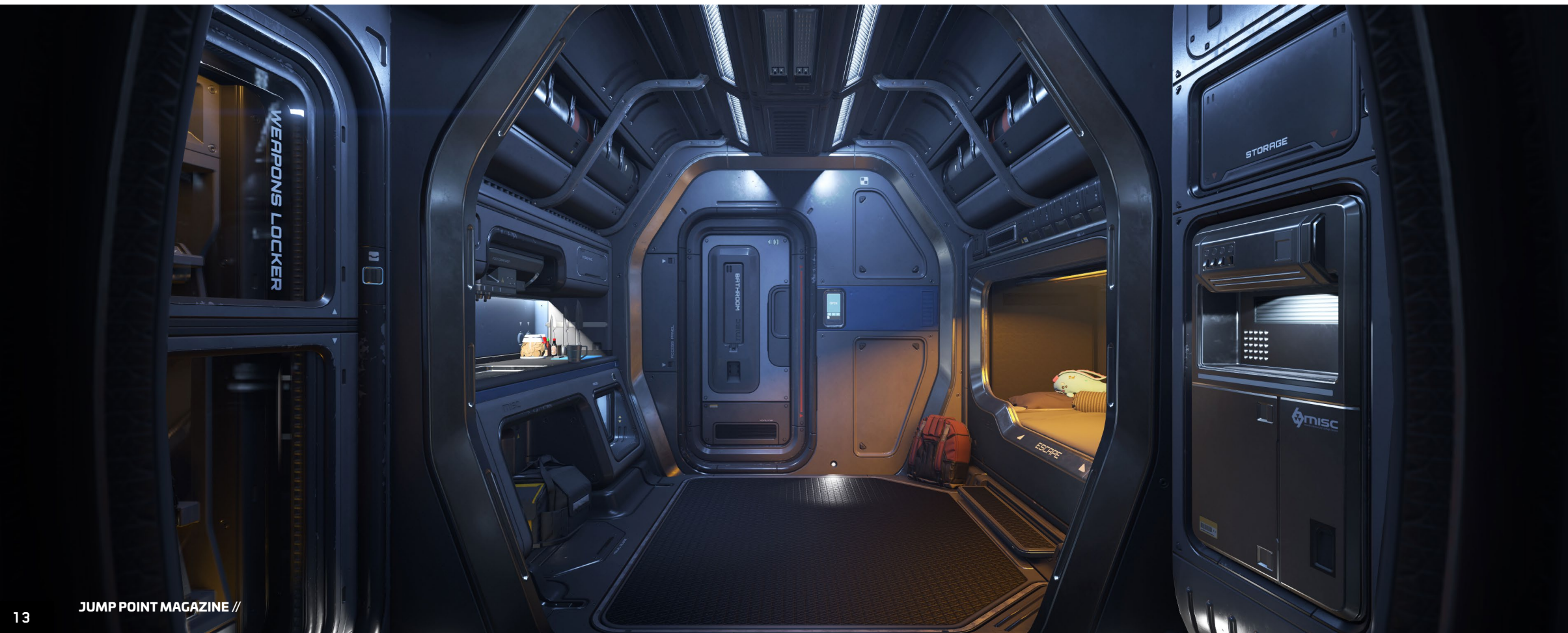
AP: The controllable lights was something we always wanted to get in, which we now can thanks to the UI improvements allowing us to make those little control panels. Ashley Aslett, our interior artist on the ship, was really keen to get those little touches in like the medicine cabinet. I feel they really help make the ship more like an actual place somebody lives in.

JP: Was there anything you were particularly excited to add to the ship? Or anything you wanted to include but weren't able to get right?

AP: The main transformation was the big thing I was excited about adding. It took a while to puzzle it out but I'm glad it all works now.

JP: What's the process of testing a ship design while it's being implemented? Do you test different interactions yourself? Coordinate with QA?

AP: I generally test my own work as it's going. I was in QA before moving to the Ship team, so I know what basic stuff to look out for to fix before it gets into the game. After the final art stage and flight handling/balance is all sorted out, we send the ship off to QA for a big series of tests and fix whatever comes back.



JP: What other disciplines were involved in making the Hull A happen and how do you work together? Did the ship require bespoke animations, audio, etc.?

AP: Animation and Audio took special consideration with the Hull A for the mechanism to look and sound perfect.

JP: Now that the Hull A has sailed into the 'verse, what are you working on?

AP: I'm moving onto the Hull C next (that's right, not the B), but I might be doing the Argo SRV first.

JP: Do you have any messages for the players who are finally getting a chance to fly their Hull As?

AP: Did you know that, based on how the Hull series gets bigger from A to E, if you extrapolate that pattern out to the Hull Z, it would be longer than the real Sun?

JP: Finally, please let us know who else you worked with on the Hull A to include in our credits.

AP: Ashley Aslett on interior art, Lars Laukens on exterior art, and Matthew Intriери for tech art and animation.

END TRANSMISSION



MISC

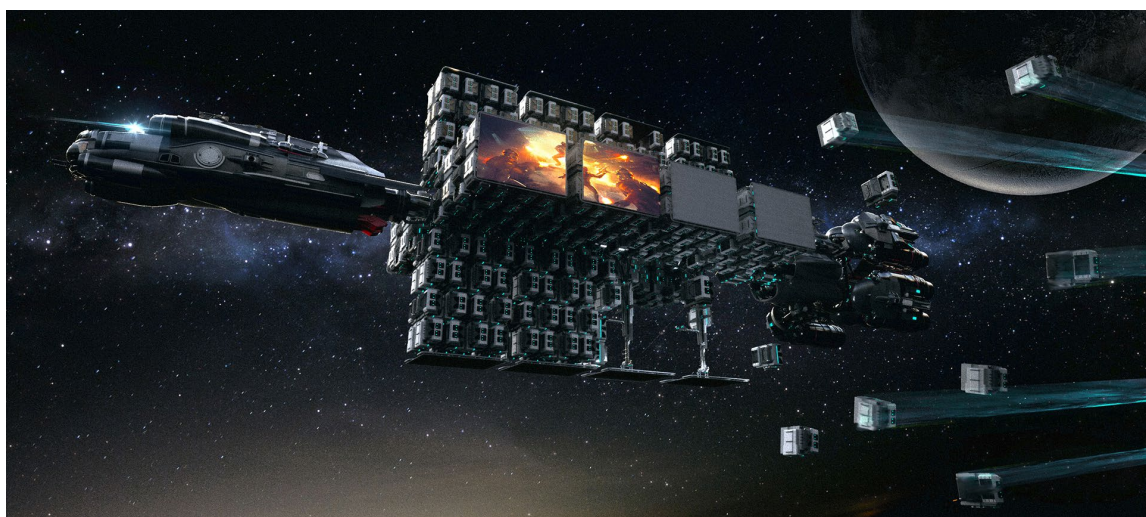
musashi industrial and starflight concern

INTRODUCTION

Way, way back in 2013, Jump Point featured the first portfolios of Star Citizen's various ship companies. These introduced countless details to the game world, some of which went on to become major parts of the living universe, like the Hull series and the Starfarer

Gemini. We've updated the MISC portfolio today in honor of the launch of the Hull A light freighter. This new version includes coverage of the over-a-dozen new designs and variants introduced in the time since we last examined this history!





MISC

Musashi Industrial & Starflight Concern (MISC) was formed in 2805 in an arranged business merger between the failing Hato Electronics Corporation and the Musashi Lifestyle Design Unit spinoff of Acorn Limited. The merger made smart use of Hato's extensive network of large-scale production facilities and Musashi's reputation for design genius. MISC is based on Saisei in the Centauri system. Its corporate offices are located there, as well as an impressive central dealership facility that is fully open to the public. MISC is also known for its especially ergonomic factories, with every spacecraft piece assembled robotically with expert precision. Fully modular, identical production lines have been established on dozens of worlds.

HULLS

For most of the concern's history, the majority of MISC's business has come from the production output of its heavy industrial division. MISC-HI is chiefly responsible for the Hull series range of configurable bulk

transport spacecraft that have become ubiquitous in UEE space. These sturdy, modular hulls are the basis for the majority of Human corporate shipping. Their unexpected popularity among the Xi'an has spawned an unlikely business relationship (and a string of imitators on the other side of the border).

When the line launched in 2802, four standard models ranged in size from the efficient Hull A to the gargantuan Hull D. The Hull series quickly revolutionized interstellar freight, leading to the standardization of dockyards and cargo processes around the UEE. This led to long-ranging knock-on effects, including over a dozen outside companies being founded or significantly shifting focus to support the Hull design, such as Argo Astronautics launching its MPUV line of short-range cargo ferries. In 2820, MISC developed a fifth 'super-freighter', the Hull E, which has since become the de facto interplanetary bulk goods transporter, with docks around the galaxy moving cargo containers back and forth from the huge ships around the clock.



STARFARER

Where the later Freelancer was designed to appeal to a wide variety of small-scale roles, the Starfarer is a niche spacecraft through and through. As such, it has become the galaxy's standard fuel transporter. Seeking to expand its private spacecraft lineup, a MISC analysis board conducted an 18-month survey of space travel that resulted in a 15,000-page study on ship roles and the current shortcomings faced by space pilots. The end result: a decision to focus development efforts on a dual-role fueling craft, capable of both collecting spaceborne fuel and refueling other spacecraft in-flight. Before the first Starfarer launch, both of these roles were performed by wildly different spacecraft, none of which were intent-designed. Refueling was conducted by bulk transports equipped with massive aftermarket tanks, with the process itself being notoriously dangerous, as no ship is more vulnerable than when it is engaging in a refueling operation. (A rule

of thumb for pirates states that a ship caught refueling can typically be captured intact, as no captain would ever risk a firefight breaking out.)

Starfarers carry massive internal fuel tanks welded directly to the ship's core superstructure, making them significantly safer than a modified transport. A system of external probes and dual-pressure access nozzles allows these tanks to be accessed at any time, meaning that a Starfarer can scoop hydrogen from a gas giant as easily as it can offload fuel to a nearby ship. Starfarers can even be upgraded to carry basic refining mechanisms, allowing them to process sufficiently pure fuel themselves without the need for a refinery visit. Another common Starfarer upgrade involves modifying the hydrogen tanking system to carry liquid foodstuff. Yet another MISC-designed upgrade package allows for the replacement of the tanking machinery entirely with an alternate cargo chassis that supports bulk goods transport. However, this has proven unpopular, with

bulk shippers preferring a standard Hull or a Freelancer.

The Starfarer has also seen unexpected success as a military support ship. MISC licensed the design to Aegis Dynamics, which produces the Starfarer Gemini ("Star-G"), a heavily armored tactical variant, under contract for the UEE military.

ENDEAVOR

After a decade of success with the purpose-built Starfarer tanker, MISC decided to invest in a second role-specific ship that would eventually become the Endeavor science platform. Developed by a team of Hull and Starfarer veterans, the Endeavor was plagued with problems from the very start. The engineering teams could not decide on an overall ethos for the hull, opting instead for a mix of highly specialized components

that would need to be produced in bulk, like the Starfarer's intake unit, combined with an extremely modular, multi-decade plan for rolling out massive, role-changing components that could be swapped at the yard level. The designers imagined a three-section ship inspired by the Hull series, divided between a forward command module, a central workshop, and an elaborate rear drive unit capable of supporting the high-energy needs of a research ship. Working again from comprehensive needs research, the group developed three main variants: the Discovery science ship, the Hope hospital, and the Olympic agriculture platform. Adoption of the Endeavor was initially slow, with many split on investing in the large ship during an age of mid-sized, rugged explorers that seemed to be better adapted to traversing the rough edges of unexplored space. Nevertheless, MISC's market-research-intensive planning process proved correct once again as the following decades saw widespread use of the Endeavor in both the medical and research communities.

FREELANCER

In 2915, MISC launched a new line of smaller spacecraft that would redefine both its brand and the kind of access average people had to utility spacecraft. The shift to smaller spacecraft development was the result of a wholly unexpected partnership: MISC is the only Human spacecraft corporation to sign an agreement with the Xi'an, which was finalized in a closed-door conference in 2910. Although the actual specifics of the initial deal have remained a tightly held trade secret, insiders suggest that Xi'an technology has played heavily into Freelancer development, while seemingly Xi'an-produced MISC ships are becoming an increasingly common sight at border outposts. The deal would continue with MISC's next line of haulers, the Reliant series, which was designed from the ground up to incorporate Xi'an thruster technologies adapted for Human use.

The Freelancer follows the MISC-HI concept of extreme modularity on a smaller, more distinctive hull. Initially marketed as an efficient long-haul merchant ship for private enterprises, the Freelancer quickly became the ship of choice for dedicated explorers. With the range of a transporter, plus room to install advanced scanning and jump technology, Freelancers have enabled their captains to chart a number of new jump points in recent years. With a noted engine upgrade capacity and the ability to maneuver better than any other dedicated transport ship, it is no wonder the Freelancer's roles continue to expand.

It can also be said of the Freelancer that it has inspired more debate than any other spacecraft on the market. Detractors claim the hull is unattractive, that the cockpit's field of view is unnecessarily limiting, and, on paper, it is not suited to the roles it has expanded to fill. Freelancer supporters, however, are equally dedicated to the ship.



They argue vehemently that the ship is the secret of their business success: that rare cost-effective ship that fulfills many of the same roles as the RSI Constellation but requires far fewer crew.

In some sense, the Freelancer image has begun to appear at odds with that of MISC itself: dashing space captains charting new frontiers on a wing and a prayer versus heavily organized corporate governance. The truth is the Freelancer project would not exist without that governance. Every aspect that makes the design popular for independent pilots was carefully researched, analyzed, tested, and produced. From the optimal radar package placement to the vacuum-formed cupholders, the components of the Freelancer went through hundreds of thousands of man hours in an effort to produce a design that comes together seamlessly.

PROSPECTOR

Following the success of the Freelancer, MISC launched "Project Cold Boot," the study of a number of potential projects that could develop the original spaceframe into role-specific ships that could be constructed on the same factory lines. Many of these efforts were outright failures but they did lead to another more specialized project that would become the MISC Prospector mining ship. While the Prospector ultimately did not use the Freelancer base hull, it was intended to match the popular space truck in general sizing and operations, allowing any Freelancer pilot to pick up a basic mining rig. The Prospector was promoted as being the first single-person mining ship, armed with a high-tech laser attachment capable of collecting raw ore in deep space and on planetary surfaces. While not capable of the bulk storage or processing of a ship like the Orion, the Prospector proved the perfect beginning mining ship and an ideal tool for anyone seeking the highest possible degree of control over individual mining operations. MISC Prospectors have become a common sight on the frontier and in previously difficult to reach asteroid fields with density too high for older miners to explore. The discovery of the Chessex Lode was attributed to a Prospector captain, causing a flurry of orders that helped establish the ship's ongoing production.





EXPANSE

The initial model of the MISC Expansor was released in 2940 as the result of a research program aimed at further developing MISC's Prospector user base. MISC reached out to thousands of Prospector pilots at their five-year ownership mark to survey how they used the ship and what limitations they were coming up against. It was quickly discovered that, while new miners loved the Prospector for easing them into the field, they were limited by its small cargo hold and the requirement that they refine minerals at a third-party site. Many had found early success with the design but not enough that they could move to another company's dedicated multi-crew miner. Taking this into account, MISC developed the Expansor with the idea that it would affordably pair with the Prospector for successful owners, allowing them to expand their mining operations without risking the massive investment that would come with an Orion. The Expansor's overall design follows MISC's standard layout theory but makes adaptations for the movement and transfer of ores and the removal of unwanted impurities.

RELIANT

The company launched the direct follow up to the Freelancer in 2946, a stunning change from the traditional forward cab/rear engine compartment used in most other MISC designs. The reason for the unique design of the ship, dubbed the Reliant, was that it was the result of a second more encompassing technology deal with the Xi'an. While the Freelancer had adapted limited alien technologies and control surfaces, the Reliant was designed in partnership with the Xi'an and even partially manufactured at a plant in Shorvu. The resulting ship was the first-ever cross between Human spacecraft needs and Xi'an ship design, with a rotating geometry hull similar to designs from Aopoa. The Reliant was launched with four factory variants: the Kore hauler, the Sen research ship, the Tana broadcasting platform, and the Mako skirmisher intended for frontier militias. Adoption was quick, with the relatively low-cost hauler base model being adopted by many individual couriers and corporations needing fleets of small, fast ships with deceptively large cargo holds. MISC largely pitted the ship against the RSI Aurora and the new Consolidated Outland Mustang line, offering consumers a less flashy alternative that was more capable of performing profitable trading runs.



RAZOR

Beginning in 2833 as part of an effort by then-CEO Kori Desmon, MISC began investing marketing credits in the high-profile sport of spacecraft racing. As other spacecraft manufacturers had discovered, sponsoring a company-named racing team was an excellent way to showcase a mastery of advanced technologies, though no one at the time associated MISC with anything particularly fast. For over a century, MISC's sponsored racing team operated a custom-fabricated design called the Daedalus, which was never considered for factory production. The Daedalus performed well in certain races but did not earn eligibility for the Murray Cup until 2898. In 2940, with another forty years of small ship expertise under its belt, MISC decided to invest much more heavily in racing. Instead of sponsoring a team and giving them access to MISC technology, they would design their own racer capable of winning the Murray Cup. The ship, initially simply named Racer before becoming the Razor, was intended to both perform well on the circuit and to be of interest to private ship buyers. The Razor line launched in 2947 to great acclaim (and a Murray Cup berth). MISC went on to produce two variants for broader use, the Razor EX stealth model and the highly tuned Razor LX intended for the highest straightway speeds possible.



ODYSSEY

MISC introduced the Odyssey-class explorer at the 2951 Intergalactic Aerospace Expo. The company focused on building a new explorer ship for two reasons: significantly increased sales of the civilianized version of Anvil's Carrack explorer, which it believed it could exploit by offering a similar role ship with a focus on profitability, and a general desire to 'correct' the launch of the MISC Endeavor that had appeared on the market just as interest in smaller, long-range armored explorers were coming online. As a result, the Odyssey focuses on both better overall defense (natural and military) than the Endeavor and is built around the same 'focused pod' design philosophy as the Starfarer. In this case, the Odyssey features mining and refinery equipment that can be used in tandem with its standard explorer features, allowing a six-person crew to not only chart new stars but to also begin taking advantage of their resources.



By the time development of what would become the Starfarer tanker began in 2870, MISC had been in the large spacecraft arena for over six decades. Owing to the success of the Hull series of modular freighters, the company was the unquestioned leader in transport production, regarded by the public at large as being largely synonymous with mercantile operations. In addition to continual profits for the company, the ongoing development and high demand for Hull ships had required that MISC build up a massive UEE-wide infrastructure of factories, repair yards, showrooms, and associated supply chains. Given this, MISC's board universally voted to fund its first research effort devoted to a single, broad goal: bringing to market an additional kind of spacecraft.

The name came first: the project was designated Starfarer at the outset before any role or specification had been determined. Over the course of 18 months, MISC's analysts conducted an unprecedented review of the entirety of space travel mechanics in the 29th century. Looking forward, researchers tasked themselves with determining where commercial space travel was headed 10, 50, 100, and 250 years out. The result was a 15,000-page study that identified a major blocker in Human space expansion: the limitations of fuel transport. In 2871, fuel was moved from installation to installation in massive supertankers, which were notoriously difficult to operate and prone to (in some cases extremely high-profile) accidents. Because of the dangers surrounding fuel

transport in the era, none were equipped or allowed to land on planets, with safe amounts of fuel being transported aboard smaller dedicated ships when necessary. Additionally, though not yet a direct concern to MISC, the ancient and relatively fragile armored tankers serving with the navy's fleet-support arm were beginning to limit military operations in some areas of the frontier. The situation, the report stated, was ripe for the development of a modern, armored tanker that could both collect raw materials and offload processed fuel together (the former being performed by extremely specialized and expensive drone carriers).

Over the next four years, a well-funded engineering team from MISC-HI set about attempting to solve these problems. The first major surprise was that the Starfarer would follow exactly the opposite method of storage as the Hull series: instead of holding fuel in ejectable, open-to-space canisters, the Starfarer would have an extremely large hull with armored protection for internal fuel tanks that were to be welded to its superstructure to increase safety. The forward cab of the ship would take some design cues from the Hulls, although, again, it was not a one-to-one modular replacement but an entirely new bespoke design. To address the ship's need to onboard and process fuel, the engineers developed a modular component platform that would mount drogues that could safely collect spaceborne hydrogen. While the initial sticker price of this technology equaled that of the ship itself, the move to

mass production at MISC's existing facilities rendered it extremely cost effective.

The initial reaction to the Starfarer's market launch was generally negative. Most reviewers questioned the need for a tanker that could be owned by an individual crew and its appearance was universally mocked as the "ugly frog" or the "MISC turtle." The name itself was also reviled, with its unspecificity roundly derided.

Reviewers who could not understand why anyone would be interested in an enormous tanker instead of the then-growing selection of single-seat, military-inspired personal craft were quickly proven wrong. MISC's internal report had predicted the adoption cycle exactly, with six months of limited sales followed by enough orders to keep the company establishing new Starfarer lines for the next seven years. The "ugly" ship quickly became beloved; a beacon of hope for stranded ship crews and a general symbol of humanity's burgeoning potential for expansion.

In 2878, MISC began offering a variety of internal modifications, including a variant to transport liquid foodstuffs and a bulk cargo conversion. The foodstuff variant continues to see limited production and adoption in very specific cases, while the bulk cargo version has since been withdrawn from the market after low adoption and an overall

lack of competition with anything other than MISC's own Hull C.

The immediate success of the Starfarer also had several major repercussions for MISC's later development. Having proven that its infrastructure and forward projections could be applied to a second type of spacecraft, MISC began funding the ongoing development of more broad ship concepts which, in the 2910s, would culminate in the launch of the Freelancer personal 'truck' line. Analysts also believe that observing MISC's careful development of the Starfarer played a major role in the company's later selection by the Xi'an as their first Human corporate partnership.

In 2895, MISC began studying another potential role for the Starfarer: as a key element of the then-ongoing efforts to modernize the navy's supply chain. Struggling with increased Vanduul attacks, the navy had been recently forced to double back by protecting previously unassailed fuel and munitions routes with escort carriers and destroyer squadrons that were sorely needed on the front lines. A faster, more maneuverable, and better-armored tanker based on the Starfarer, the ensuing report reasoned, would have the potential to not only bring in significant profits for the company but also save Human lives. The company developed an expensive, elaborately researched pitch that was presented as a speculative bid to the UEE for the Q3 2899 budget. However, the



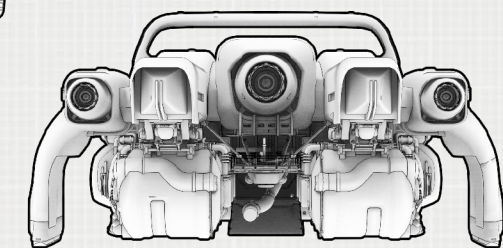
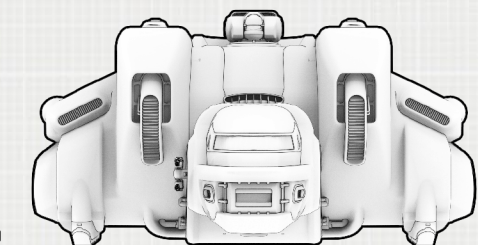
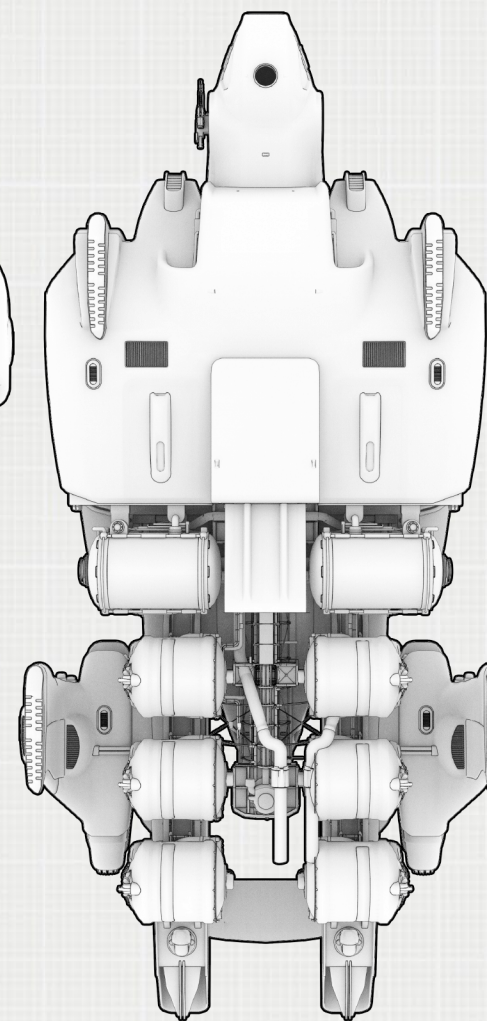
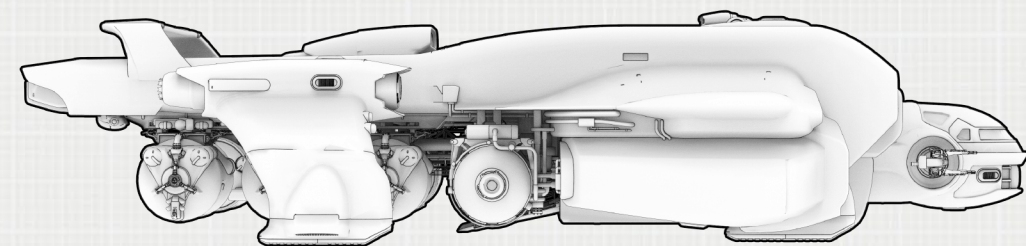
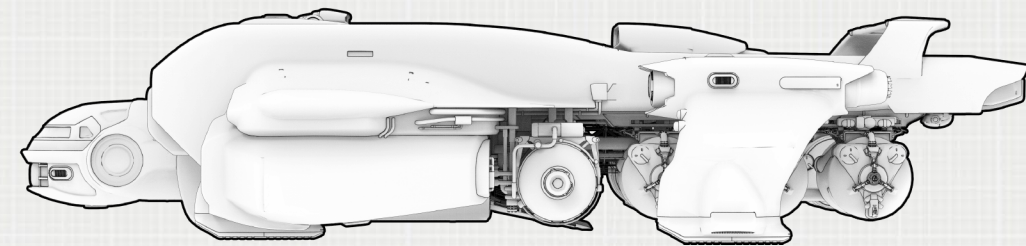
bid was roundly rejected within weeks of the presentation, confusing all who took part. It was clear this was not even a case of a competing spacecraft winning as the military continued to have no replacement in sight for its aging tanker fleet. Why was the MISC offer rejected?

There is no official answer, but MISC management strongly believed that the reputation of their company was the cause for rejection. MISC had provided Hull ships in limited numbers to the military but was otherwise not a navy contractor. The Starfarer and the earlier transports were strongly associated with civilian operations by the general public and the belief was that the review board had not taken the proposal seriously. To get around this, MISC moved to partner with a company that already had a strong relationship with the UEEN: Aegis Dynamics, the Navy's former prime aerospace contractor. The two companies developed a profit-sharing agreement under which Aegis would receive full rights to manufacture and sublicense a new variant of the Starfarer that would be offered to the military.

Whatever the reason for the original refusal, the plan worked. In just 14 months, Aegis had received a formal order and budget approval from the Senate. They were able to immediately begin manufacturing a more heavily armored variant of the Starfarer officially called the Starfarer

Gemini (but more commonly referred to as the "Star-G"). The first Starfarer Gemini was formally accepted by a UEEN training squadron the following year. Deliveries of Starfarer Geminis have increased each year since the design's introduction and it has played a major role in operations since joining the fleet.

By 2915, Starfarer Geminis had largely supplanted all previous tanker models, freeing a variety of capital ships for duty elsewhere and resulting in a significant reworking of the fleet supply chain. Aided by a group of military support command engineers who dedicated themselves to developing new tactics and processes for Starfarer Gemini crews, the ship's military service was an overnight success. The design would ultimately go further than anyone had ever expected, with Starfarer Geminis being adapted not just for delivering fuel to capital ships but for extending the range of fighters and bombers engaged in active combat operations. In 2917, the first 'under fire' combat refueling of fighter spacecraft took place when a Starfarer Gemini refueled an element of Hornets that had engaged a Vanduul raider group towards the end of a leg patrol. While the Hornets had a tactical advantage, they were running extremely low on fuel, prompting the decision to either de-engage or bring forward a nearby Starfarer. The operation was a success and the newly refueled fighters quickly turned the tide of the battle.



STARFARER	
MANUFACTURER	MISC
ROLE	HEAVY REFUELING
MAXIMUM CREW	6
MASS	3,510,025KG
LENGTH	101M
HEIGHT	23.5M
WIDTH	46.5M
CARGO	295 SCU



WiDoW

On a moon in the Stanton system sits a nondescript outpost that few know of and even fewer have visited. At least that was the case until an error caused the automated processing facility inside to sell its product at a drastically deep discount. Those who noticed tried to keep the glitch a secret, but word quickly spread through the system's underworld. Soon the outpost, by then better known as "Jumptown," became a warzone with outlaws fighting for access. These brazen battles garnered enough attention that the issue was even discussed during a Senate hearing focused on rising crime rates within Stanton. So what drastically discounted, high-priced, and always in-demand product drove people to fight over the processing facility? WiDoW, a synthetic opioid that has become one of the most prominent recreational drugs in the UEE. It's also one of the most dangerous. Not only for the devastating and tragic impact it has on those who fall under its spell but for the lengths some will go to profit off it.

WiDoW is a highly processed and highly illegal narcotic that is injected directly into the bloodstream. Its evocative name derives from one of the prominent side effects of extensive use: the drug's viscous, ink-black consistency can stain the user's veins, creating web-like subcutaneous patterns. A Class A substance that is illegal to possess and distribute inside the UEE, WiDoW produces extreme feelings of euphoria alongside providing pain relief and anti-anxiety effects. It's also highly addictive and damaging to the Human body. Repeated use can lead not only to the telltale black markings but eventually collapsed veins, various liver and kidney diseases, heart conditions, and more.

The widespread availability of WiDoW is in part due to it being relatively easy to produce, which allows everyone from multi-system criminal syndicates to individuals to manufacture and sell it. While the production process is easily replicable, potency can vary greatly

depending on several factors including quality of ingredients, cleanliness of equipment, and temperature fluctuations during processing. Some longtime users even claim that not knowing the potency of a dose is part of the thrill for them. While the WiDoW found today is completely synthetic, the substance has organic origins that shaped its initial image as a relatively safe and extremely exclusive designer drug.

FLOWER POWER

WiDoW's rise to prominence is a beguiling mix of fact and fiction. Several details are well-established while others are lost in the haze of history, half-truths, and top secret classification. Its story begins with the discovery of the Oso system in 2861. The breathable atmosphere and lush biosphere of Oso II made the planet the primary target for government survey teams. Yet, upon the discovery of the Osoians, the most advanced developing species ever encountered by the UEE, Oso II was put under the protection of the Fair Chance Act. A strict lockdown was enacted that would prevent its lush and varied biomes from being thoroughly explored. Still, one early survey team that was already exploring the tropical region before the lockdown did manage to collect a handful of unique native plant samples.

Scientists informally named one of those uprooted plants 'nightspiral,' due to the flower's vibrant multi-colored swirls set against its dark petals. Government scientists studied the plant but struggled to propagate it, and with Oso II off limits, a return trip to understand its natural environment was out of the question. Instead, scientists crossbred the plant using a variety of techniques, including grafting and genetic modification, only to discover one variant produced seeds containing alkaloids. Investigations into the seeds' medicinal potency and intoxicating effects were done but still remain highly classified.

Still, at some point in the process, someone saw the potential and seed samples disappeared from a research facility.

Rumors of a new injectable opioid called NightNight first spread in late 2867. It quickly gained a reputation as the fashionable drug du jour, available only to the ultra-elite with underworld connections. NightNight's popularity only grew when rumors spread that the powerful opioid was not addictive. While this rumor would eventually prove tragically false, it's believed that most early users avoided falling under the drug's spell because of its limited and exclusive availability.

As demand skyrocketed, production lagged behind. New plants produced relatively few seeds and processing NightNight became an expensive, time consuming, and extremely meticulous process. It's believed that

underground chemists worked on a completely synthetic version for years before perfecting the process in 2879. If the stories can be believed, the chemist who cracked the formula sold the secretive process for an exorbitant price to several gangs around the same time and then vanished. Whether that story is apocryphal or not, the manufacturing process spread widely around the UEE within a year.

THE DARK WEB

The first synthetic version of NightNight made its way through the circles of the rich and powerful. Now quick and easy to produce, the drug's reach rapidly expanded to those who'd been desperate to try but unable to acquire it. Of course, few knew the version they paid the premium price for was completely synthetic and not quite like the original drug.

As availability rose, so did use rates. What was once a monthly habit for an elite few suddenly became a daily habit for a growing percentage of the population. It wasn't long before the repercussions of overusing the synthetic variant became readily apparent. The seriousness of addiction was publicly highlighted when the plight of socialite Khali O'Brien made headlines in 2880. Friends of O'Brien leaked stories to the press expressing concern for her sudden and dramatic weight loss and the shocking appearance of black veins on her neck. Paparazzi hounded her every move and, after layers of concealer failed to hide the black veins, O'Brien took to wearing black scarves and turtlenecks. This prompted one gossip columnist to label her the "Black Widow," an evocative term that stuck as black, web-like patterns appeared on more users. This condition and the drug's now completely synthetic nature prompted government officials to classify it separately as WiDoW to distinguish between it

and the earlier non-synthetic version, with the unusual capitalization originating from the common spectrum and comms shorthand for the drug: "WDW."

Despite clear adverse effects and skyrocketing addiction rates, many users in the late 29th century still believed WiDoW to be relatively safe when compared to other opioids. This false conviction, alongside the drug being widely available, led the UEE government to declare WiDoW as "one of most significant public health issues of the 30th century" and designate it as a Class A narcotic. While billions of credits have been poured into Empire-wide information campaigns, rehab facilities, addiction counseling, and more, WiDoW remains as popular and profitable as ever; a fate drug experts expect won't change unless something drastic happens culturally, economically, and politically.



GUIDING LIGHT



NV-TAC delivers three new illuminating options to their FieldLite series of underbarrel tactical lights. Each model projects a different color and shape allowing you to tailor the beam to a variety of operations. Whether looking to reduce light falloff or make the beam more discreet from a distance, NV-TAC has a FieldLite fit for the task.

