

June is upon us, which means the beginning of convention season. We've got people going here and there to various shows. I'm scheduled for DragonCon (Labor Day in Atlanta), and I might make it

of July in Indianapolis). I won't be making any presenta-

to GenCon (at the end

tions at GenCon (we didn't get started in time this year), but I might be there to try to locate freelance writers and to scope it out for a more official presence next year.

But I've got this **Jump Paint** and July's before I can go anywhere ... fortunately, this month's is almost done. In fact, I guess by the time you read this, it will be done. At least it usually works that way.

We're introducing a new feature this month at the end of Behind the Scenes. It's called Spotlight (at least until we find a better name for it) and it has one-page updates from various devs throughout the Cloud Imperium world. This month, the spotlight is on:

- Karl Jones, Lead Systems Designer, F42, as he discusses creating multi-seat functionality in ships, and
- Gurmukh Bhasin, Concept Artist, LA, discussing the interior build-out for the Vanguard

If you like it, we'll have more of them, each month.

And I can at last answer the repeated calls for a printed Volume 2 of **Jump Paint**. We'll print it – if you order it. Basically, we need to print 2000 to bring the unit cost down low enough to do it.

The things that are the same as last year: it will be the same page format, a tall (14 inches), thick (375 pages) book, with two JP pages on each printed page. We'll sell it at cost to Imperator subscribers of at least 12 months, and we'll sell it at a discount to Centurion subscribers of at least 12 months.

Things that are different: we won't make separate softcover and hardcover versions. It turns out that hardcover is only slightly more expensive than softcover, so we decided to make it hardcover for everyone, since that's a lot sturdier. And we won't have a special Imperator cover, or list all of the subscriber names in it this time.

One other thing that's different (and working this out is what took most of the time in deciding to do this): we will take orders for a month, but if we don't get enough orders, we will return what everyone paid for it. That's the only way we can figure on making it (which we really want to do) without losing a lot of money on it (which we really don't want to do). We'll be sure and let you know when the order month starts, and I really hope we get enough orders – I'm as eager as any of you to have a printed version in my hands.

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

David

David.Ladyman@cloudimperiumgames.com

EDITOR: DAVID LADYMAN, INCAN MONKEY GOD STUDIOS
ROVING CORRESPONDENT: BEN LESNICK
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COVER: DAVID HOBBINS
PAGE 29: BEHAVIOUR
PAGES 43-47: CHRIS OLIVIA

PAGES 48, 57: KEN FAIRCLOUGH & MEGAN CHEEVER



2 Inpio







David Hobbins, freelance concept artist, had been working on design work elsewhere (on another very exciting project that I'm not allowed to mention in public), and so we're delighted to have him back working on Star Citizen ship designs again. His most recent project has been the Reliant, our third starter ship and the only two-seater among them. As usual, the process began with a design brief and a kickoff meeting.

General notes from first design review meeting

With the success of the Freelancer "Built for Life" campaign, MISC has moved to join RSI and Consolidated in the single-seat introductory starship arena. Their silver bullet? A starter ship with more than one seat ... and their ace in the hole: Xi'An technology. Where the Aurora is a pure utilitarian platform and the Mustang is a delicate, maneuverable personal transport, the Reliant is MISC's most Xi'An tech-heavy ship to date. Featuring impossibly sleek lines, two separate crew seats and a vertical fuselage design, the Reliant's streamlined cockpits glow with some of the finest xenotechnology available!

- 2-Seater, side by side
- Starter Ship

- Gerwalk Mobility
 - * vertical, fast
 - * horizontal, hover mobile
- Small SUV, and transports small cargo
 - * can haul larger cargo (other Hull-related cargo)
 - * think Dodge Typhoon or Cyclone
- Investigate Landing, could be:
 - * vertical
 - * horizontal
 - * hybrid when hauling & landing cargo on a surface
- Has Jump Drive capabilities
- Has Tractor Beam
- Has Best in Class Shields
- Has unmanned turret
- When unloaded, moderately fast (or quick to get to top speed, but top speed is moderate)

As we step through the process, we have both discussion (in white) and commentary from David (in black). Some of the commentary has been seen elsewhere, but it's worth collecting here as part of the process.

Travis Day, Associate Producer: I'm hoping to have you come by for a kickoff on the MISC Reliant ship. Sit down, discuss design, talk about shapes, colors, etc. I've attached the MISC style guide that we've got internally.



"Built For Life"

Who We Are

We mass produce efficient and modular ships. We specialize in armored freighters for maximum cargo protection. We also combine a variety of technologies and have aquired a rare trade agreement with Xi'An engineers.

Primary Target Market

Traders have been in love with MISC because of cargo safety. MISC is also popular among civilians with the Freelance and Starfarer, althought not as popular as RSI.



Key Words

Transport Rounded Modular Efficient

Our System

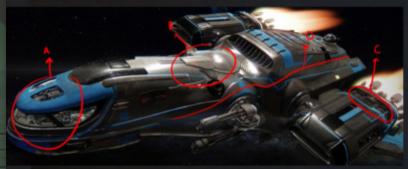
Only human corporation to sign a lease agreement with the Xi'An and share technologies. This in turn makes helped to create there pattend MISC hulls using composite materials combining alien and human technologies.

Freelancer
Freelancer
Freelancer
MAX
Freelancer
Hull C
StarFarer

COLORS

PRODUCT LINE:





- Bubble style nose
 Rounded and soft edged paneling
 Exposed wires and mechanics
 Flowing and streamline form language



FREELANCER MIS



The 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. MISC is the only Human spacecraft corporation to sign a lendlease agreement with the Xi'An, agreed to in a closed-door conference in 2910. In recent years, MISC has funneled profits from their corporate line into the development of two spacecraft that are nominally marked for personal use, the Freelancer and Starfarer.

> **David:** Thanks for pulling together this reference – very helpful. I feel like I have enough info to go on. That said, I am still digesting a lot of it. Especially, with regards to the 'spinning' and other functional aspects.

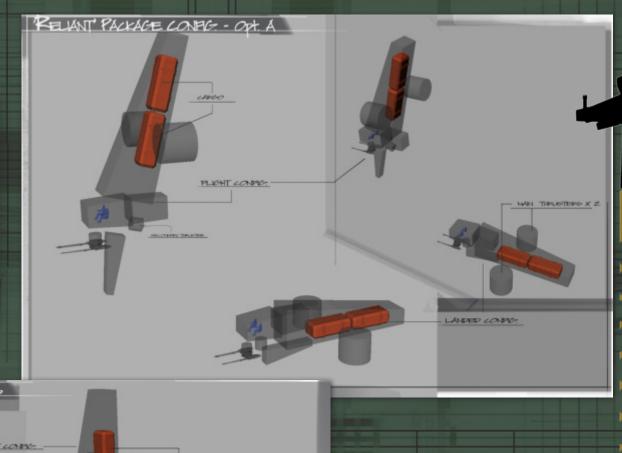
Reliant Design Process: Goals

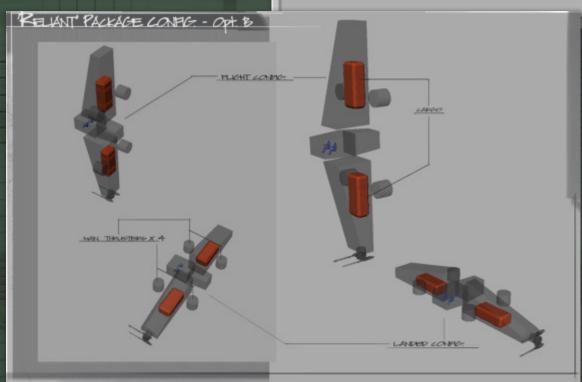
The design notes were for a Japanese aesthetic, which I interpreted by studying forms from both classical and modern Japanese art. I wanted the Reliant to evoke aspects of its Japanese design sensibility, and I looked at objects like the curve of a fan, the Ginkgo leaf, the beveled edge of a

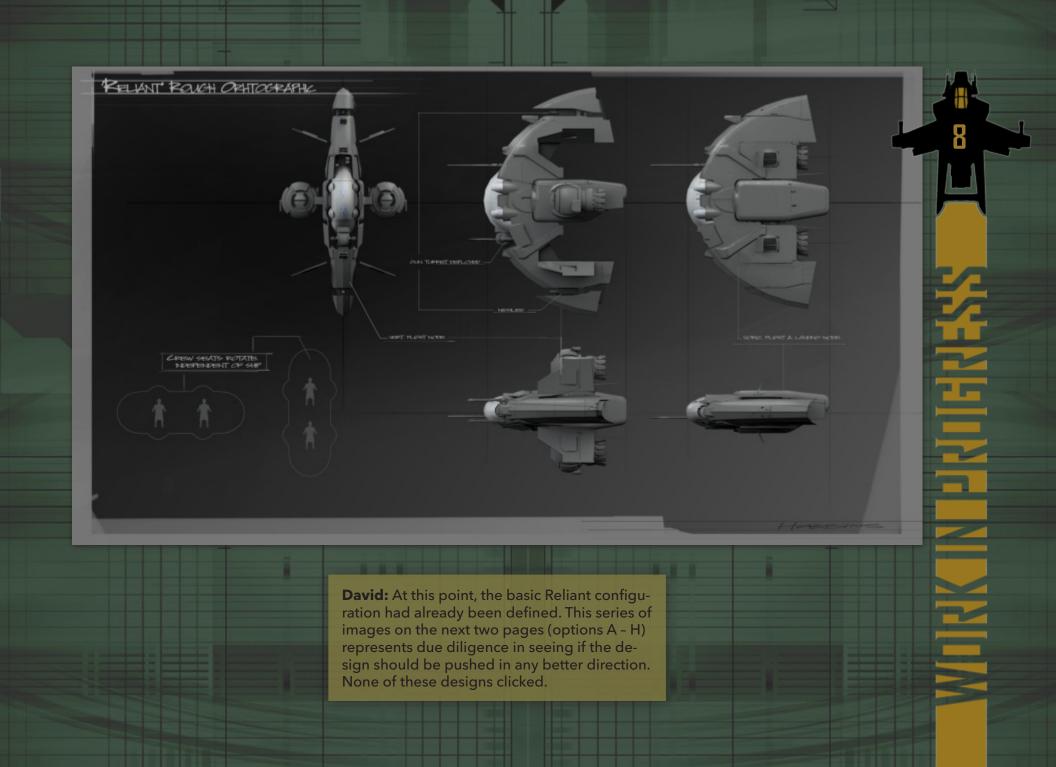
samurai sword, and other sources. The design became less fan-like during the course of the concept process, and that's okay, but I was a necessary step for me to kick off the design process. Another goal for the ship was to incorporate some Xi'An technology which was to be mostly internal but still should inform the ship's exterior.

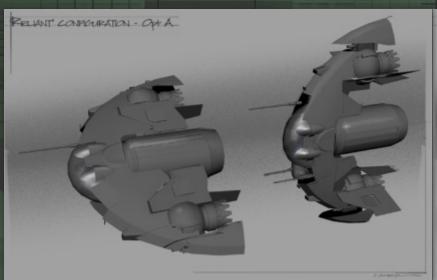


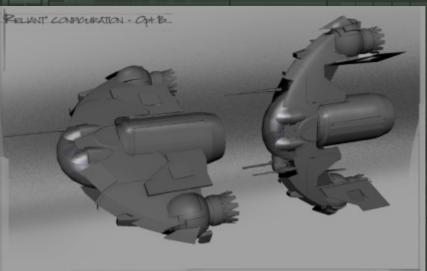


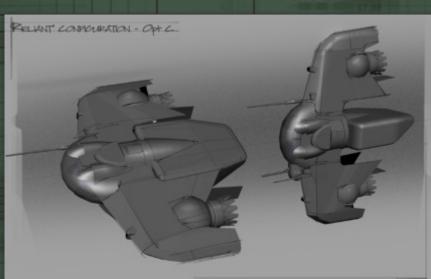


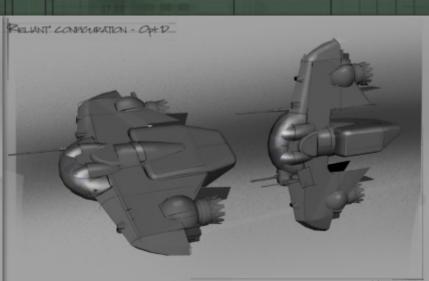


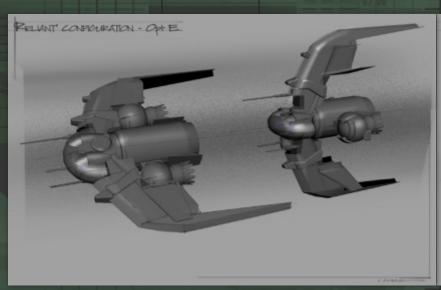


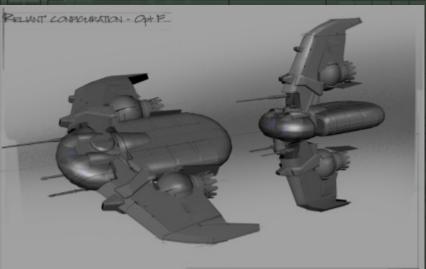


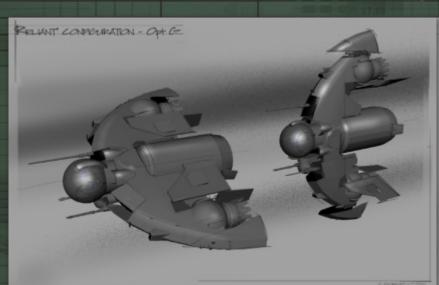


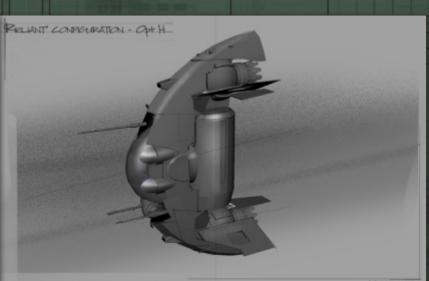


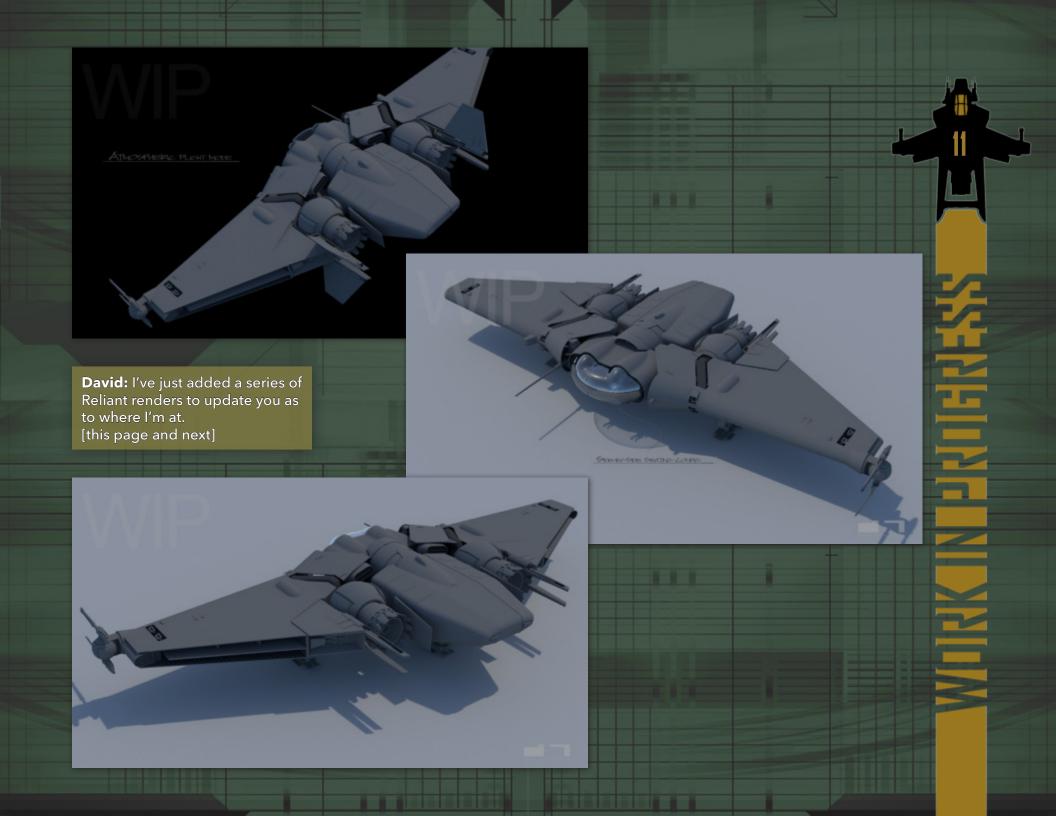


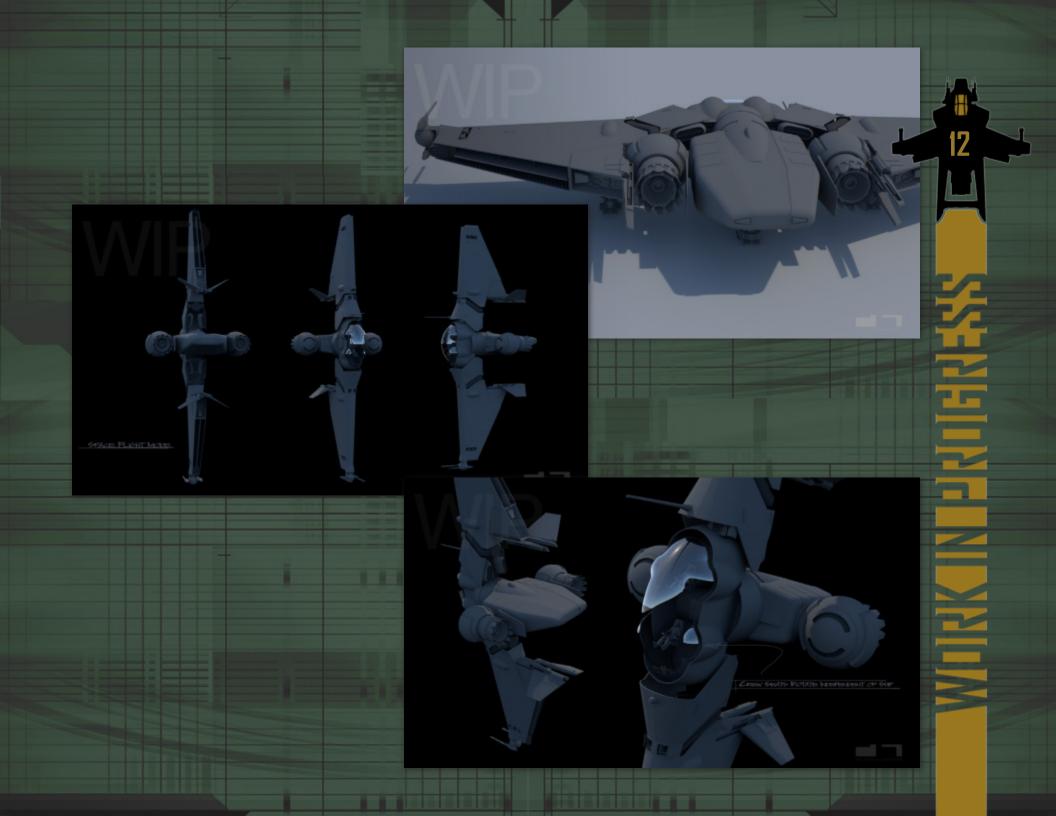


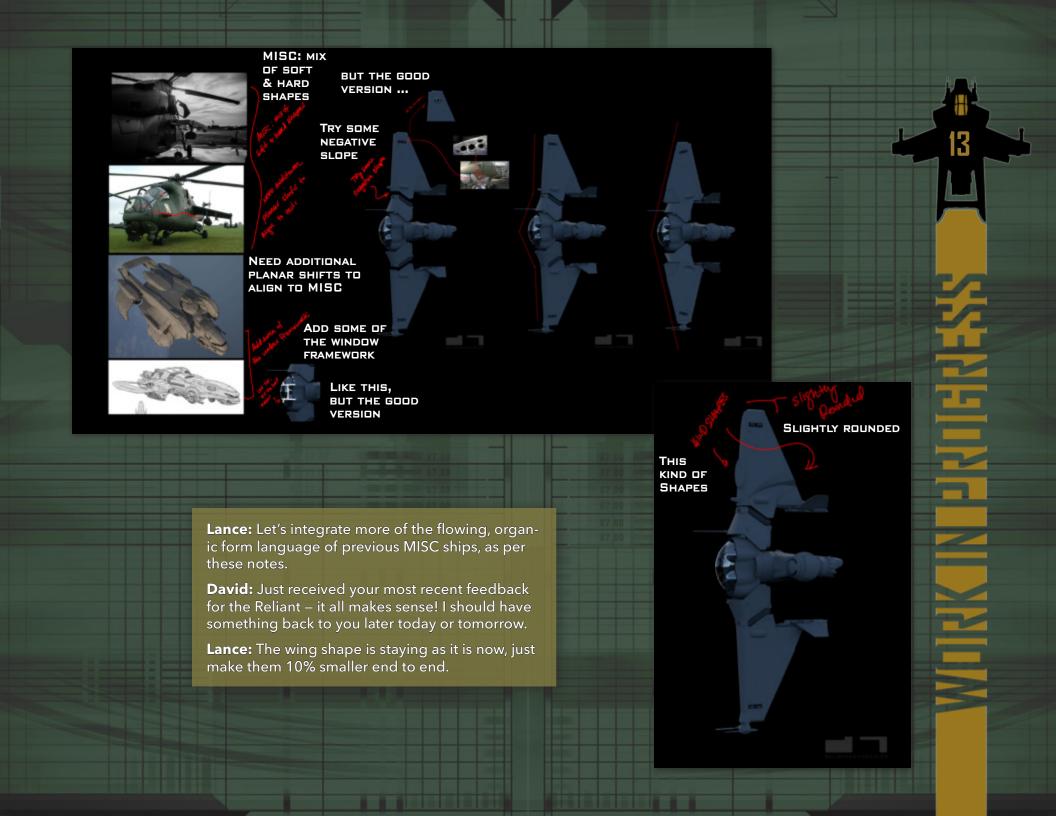














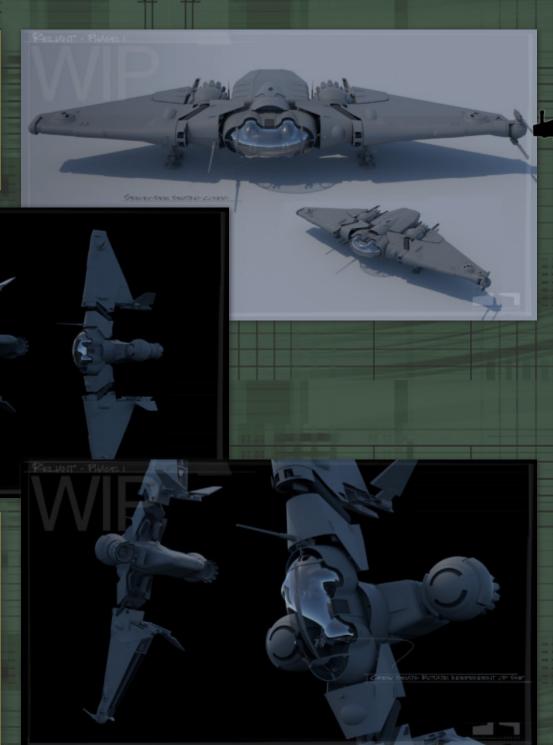


The aspect of the Reliant that was most inspired by Xi'An design and technology was definitely the ship's vertical configuration (when in space flight mode), much like the Xi'An Scout Ship.



Also, the spherical Xi'An power plants helped to inform the exterior surfacing of the Reliant's main thruster units.

As for the Japanese aesthetic inspired sections, this is trickier because I feel most of the cues were lost or softened during the design process. Lance wanted me to pull the ship closer to the MISC Freelancer and other MISC ships, to match what had come from this manufacturer before. That said, my research in Japanese motifs definitely helped.





MISC SHIPS HAVE DISTINCT CANDPY OVER COCKPIT. ADD SUBTLE NOD (TO THAT STYLE).

SMALLER COCKPIT





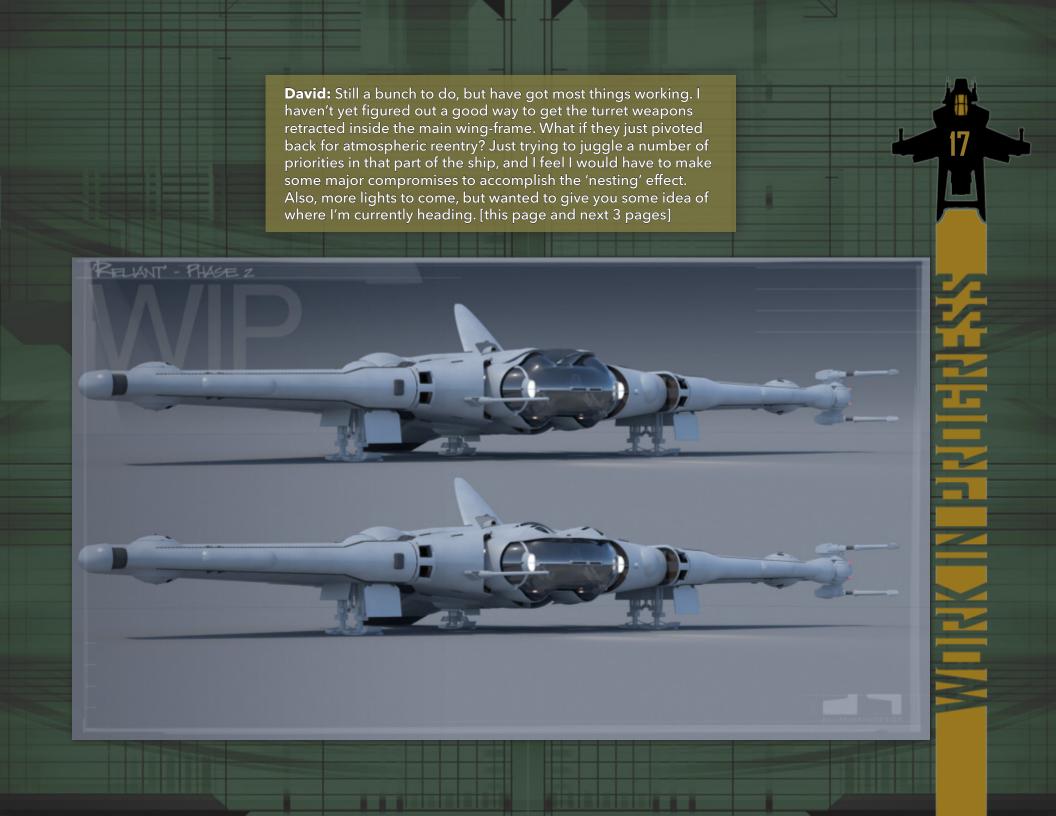




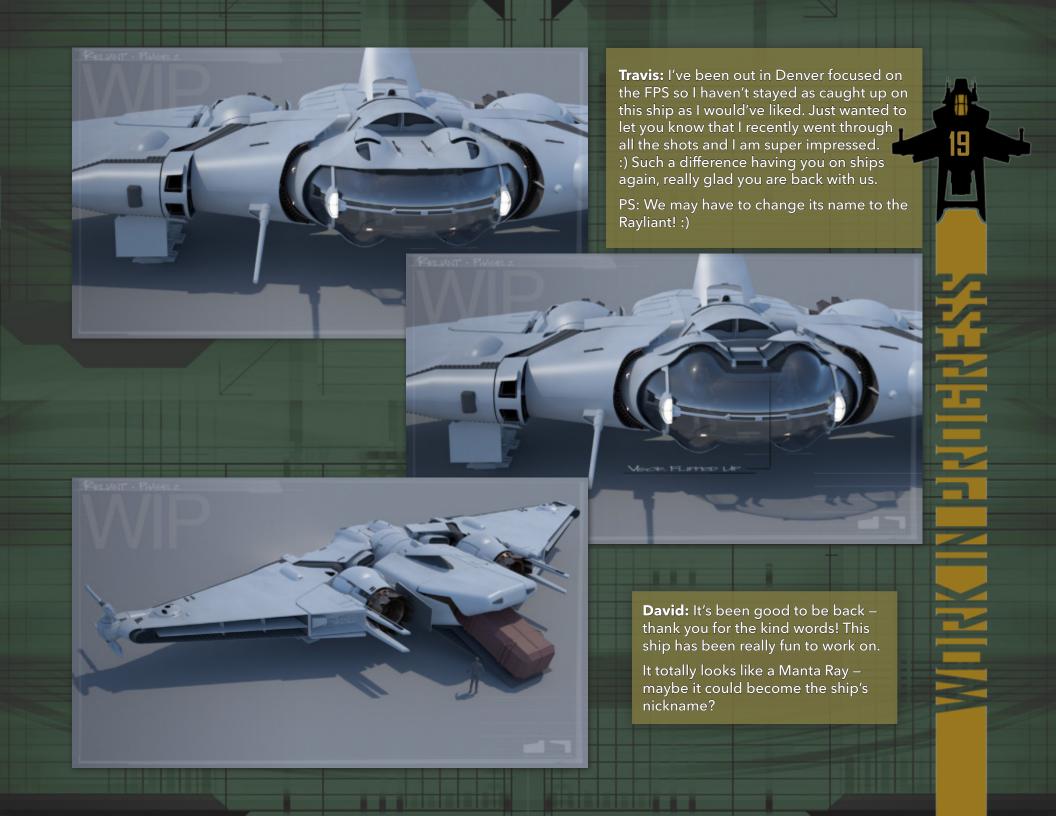
HOME INSIDE WING FOR LASER GUNS ROLL UP AND TUCK?

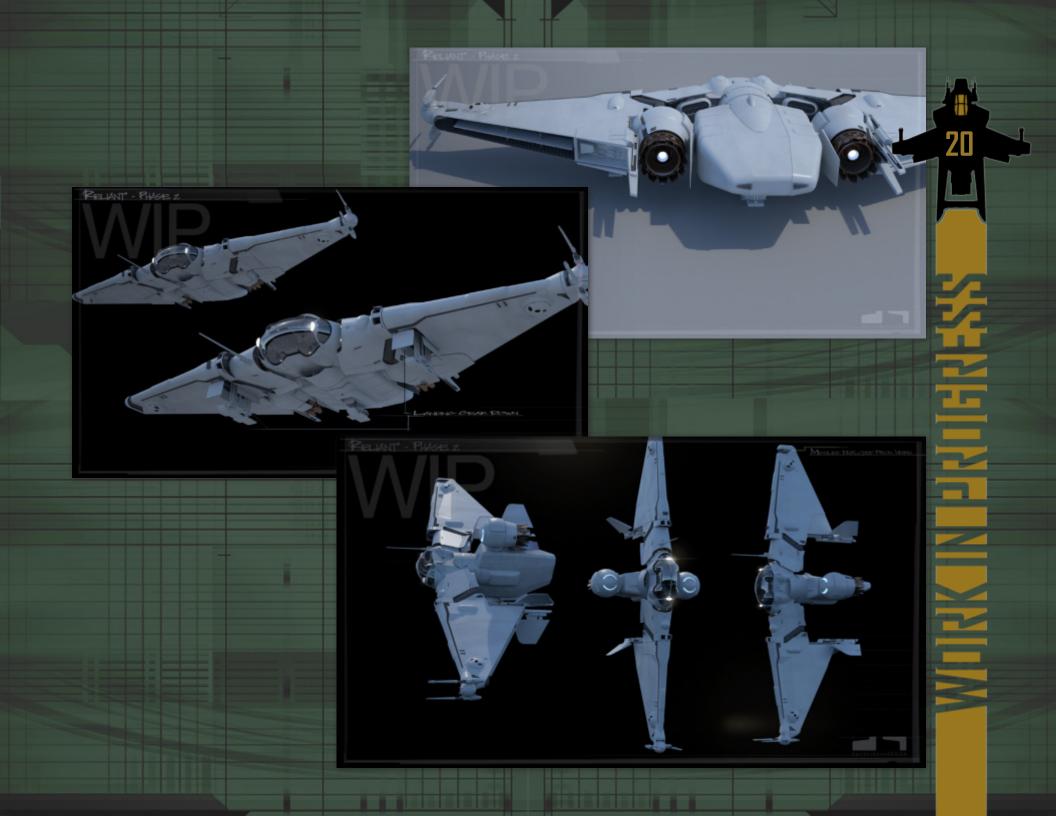
David: Lance and I discussed the wings being able to fold up in two ways; rotating vertically and or rotating back. We ended up going with the vertical solution for the ease of implementation and aesthetics.



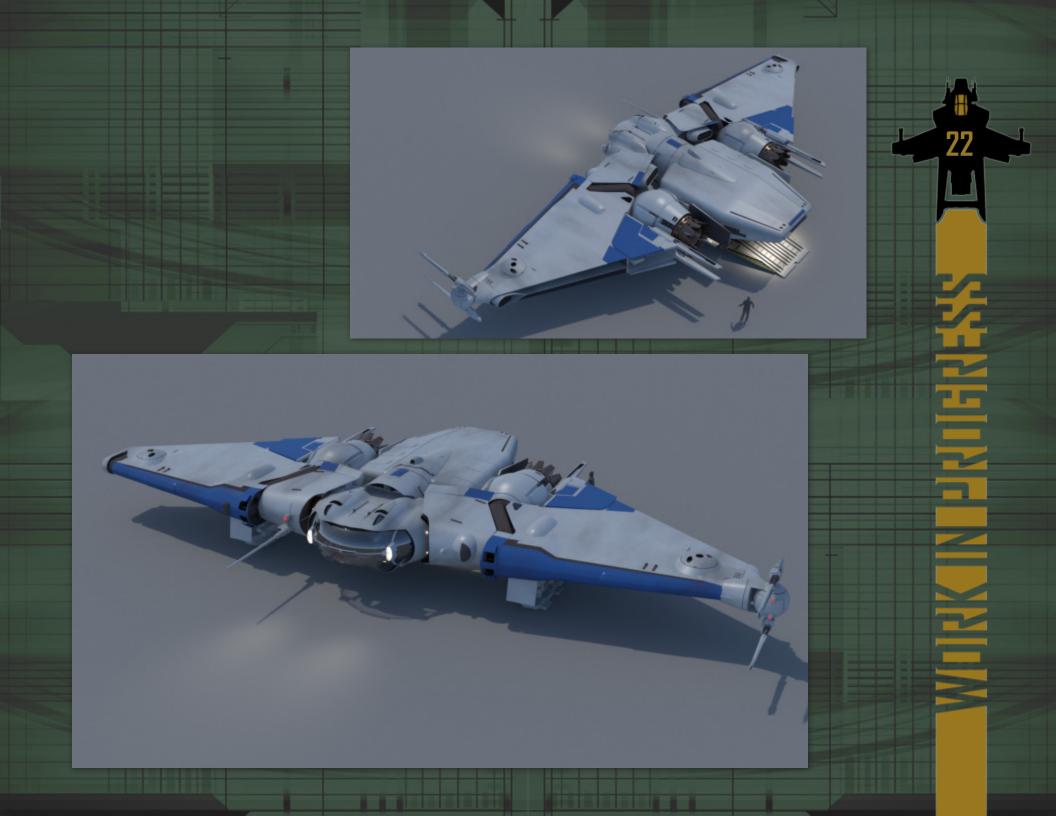


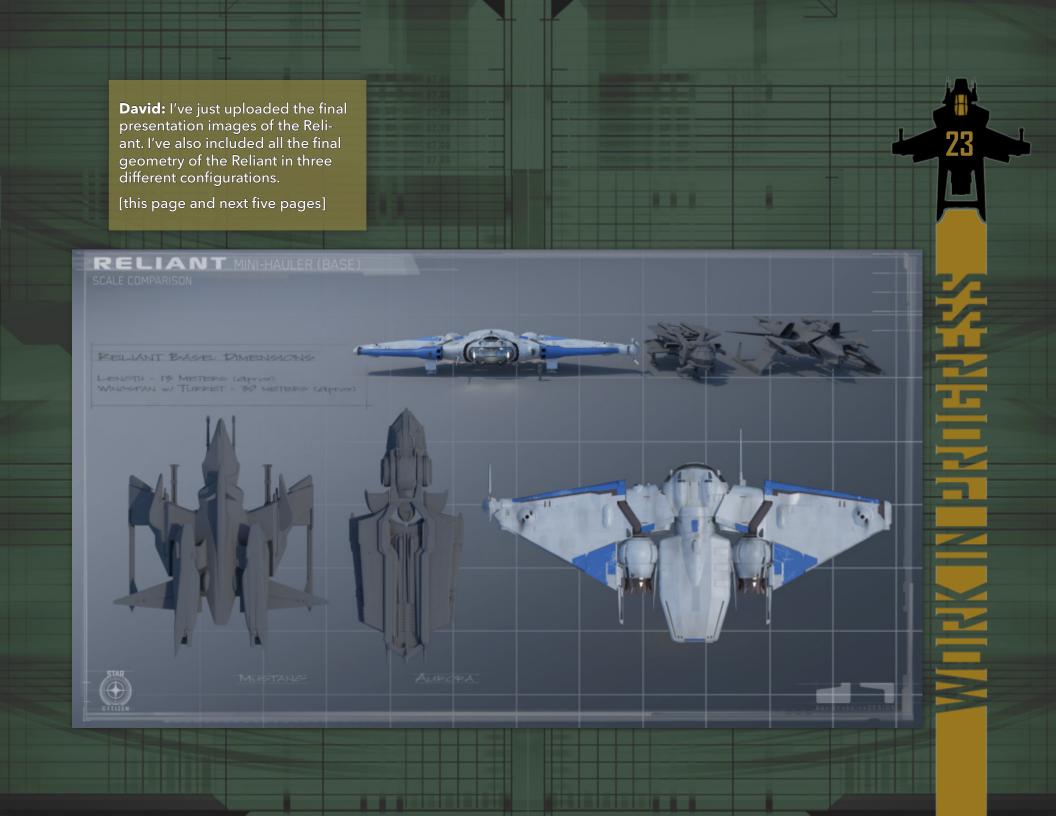


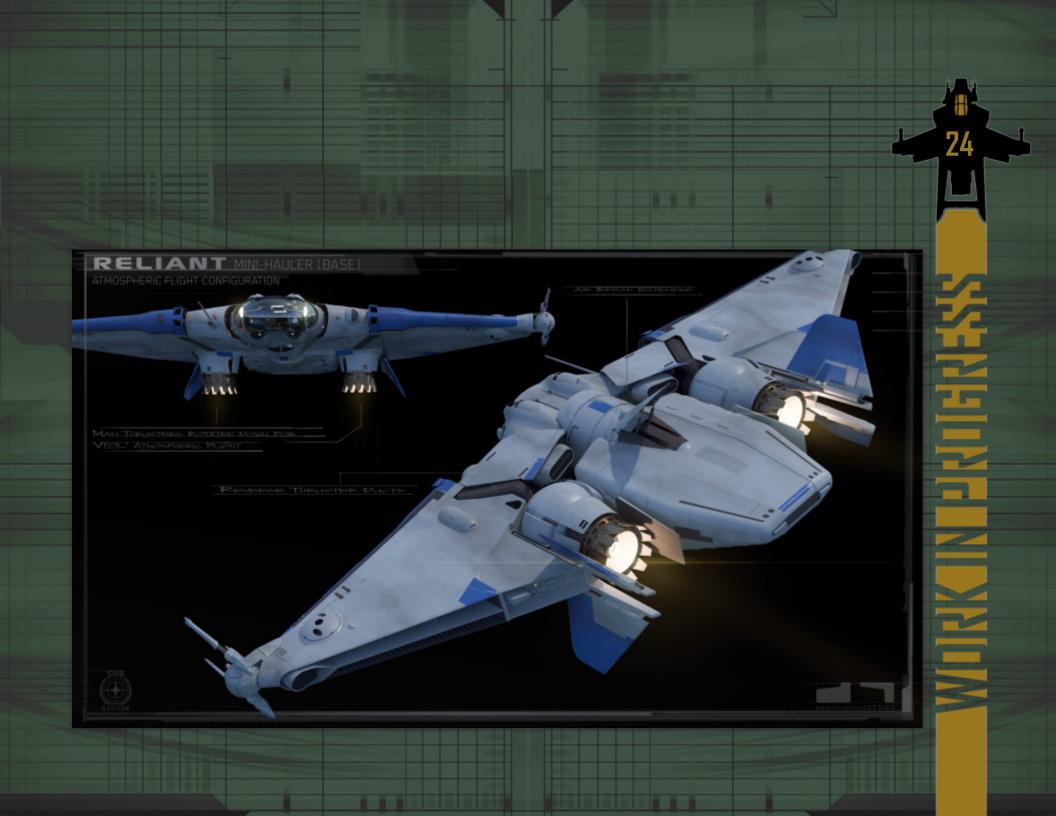


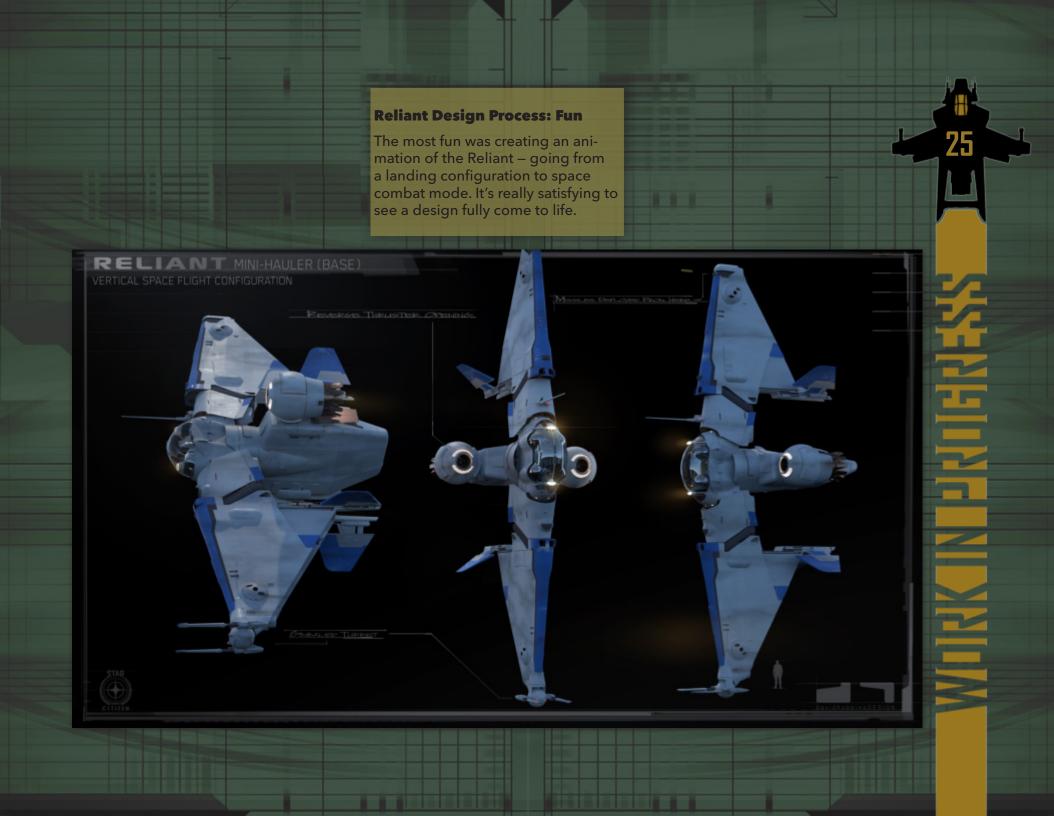




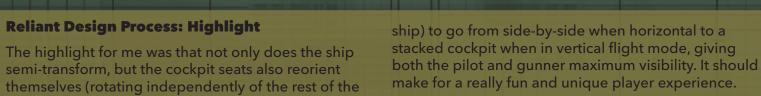


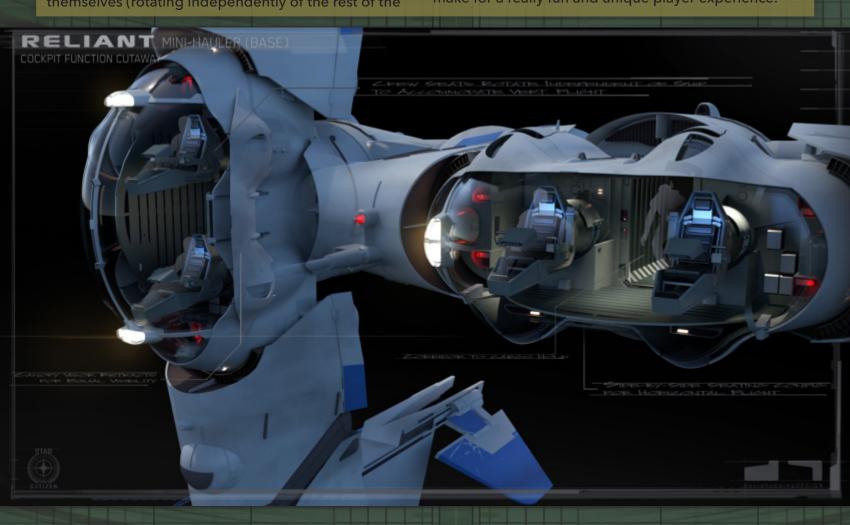












Reliant Design Process: Challenges

The biggest challenge was figuring out how to maximize the cargo payload without compromising the ship's distinctive profile and without making the overall wing frame too large. The Reliant is a mini-hauler, after all, and I needed a way to fit a respectable cargo volume into a relatively narrow wing frame.

Initially I thought I could integrate the cargo into the wing frame itself, but the increased rotational weight would slow spinning maneuvers and would also open

the door to other problems, such as balancing issues. For example, what if one side of the craft is loaded and the opposite isn't? Countering this potential weight disparity would be too much for the maneuvering thrusters.

So my final solution was to place the cargo hold at the very center of mass, maintaining the visual integrity of the narrow wings, as well as minimizing the rotational weight and mismatched cargo configurations.





"Racks of rifles, stacks of shotguns, piles of pistols," excitedly promises the Cubby Blast holo-jingle, and the store delivers, firmly establishing itself as one of Area18's more eccentric locales. While most of the stores on the planet strive to achieve an aura of respectability, Cubby Blast seems to stand in staunch defiance to the corporate culture that surrounds it. Supposedly modeled after a weapons shop on the infamous Spider station in the Cathcart system, this small personal weapons store is pure counterculture. Even the name itself is taken from a Cathcart sales phrase meaning "the weapon fires fine." It's this flavor that makes Cubby Blast a popular destination

for all people traveling through the system, whether they are buying a weapon or not.

At the epicenter of the store is owner/operator Clor Vee. A heavily tattooed man with a thick Cathcart accent, he is generally the loudest thing in the store, constantly regaling customers with stories about the seedy side of life on Spider. Little is known about the man who opened the store in 2932; cursory background checks indicate a few minor arrests for assault and robbery, but to hear the man himself say it, "I din know many crood that was caught. Blips I ran wit, we got ghosted, not caught."

It should come with little surprise that even the origin of Cubby Blast has traces of the scandalous. Clor Vee claims that after decades smuggling weapons and other illegal activities, he began to lose his appreciation for the thrill of living on the edge. As this dissatisfaction grew, he realized that he had established enough contacts within the weapon industry who operated on legitimate fronts that he could build a planetside locale and "let them Creds raze into Vee, ratha then Vee chasin' em." The first iteration of Cubby Blast was out of his Freelancer in his Landing Control hangar, before he moved into a small stall nestled in a back alley of the fourth tier of Area39. There he stayed until the Avasi Scandal of 2931 rocked the foundations of ArcCorp. Allegations of corporate malfeasance and insider trading quickly decayed the land values of storefronts across the planet, allowing Clor the opportunity to not only secure a storefront in Area18, but also negotiate an incredibly favorable long-term lease.

Combining an emphasis on personal sales tactics with a fantastic location conveniently near the primary landing zone, Cubby Blast has become a name that weapon enthusiasts and security professionals throughout the empire have come to rely on. Inside, the shop offers a variety of personal weaponry as well as a diverse catalog of support weapons from combat knives to grenades. Defensive products are also available for purchase, as are an ever-changing catalog of military surplus supplies – from armored flak jackets to even replacement servos for Titan armor. Many customers are drawn to a handsome series of lighted displays that show off the best of what Cubby has to offer (more stock is kept elsewhere, with one or two of each model on display). Thanks to numerous industry connections, limited-edition models of weapons are frequently available fresh from the manufacturer; stocks of these are always extremely limited, and they are never offered via Spectrum.

While the store does not currently have room for a shooting gallery, Vee readily allows prospective buyers to activate and test the sights on their weapons in the store (technically a violation of local ordinances, though all parties involved leave well enough alone). He has also cultivated a reputation as someone who can, for a price, acquire special order rarities, often provided 'no questions asked' with newly produced papers. Plastered around the store are sigils bearing a "Best Prices in the 'Verse!" promise, although further investigation has revealed that there is no specific system of recourse for those who find the same weapons offered cheaper elsewhere. Note that, on the whole, these more questionable business practices are not specific to Cubby Blast, but are common throughout the defensive weapons industry.

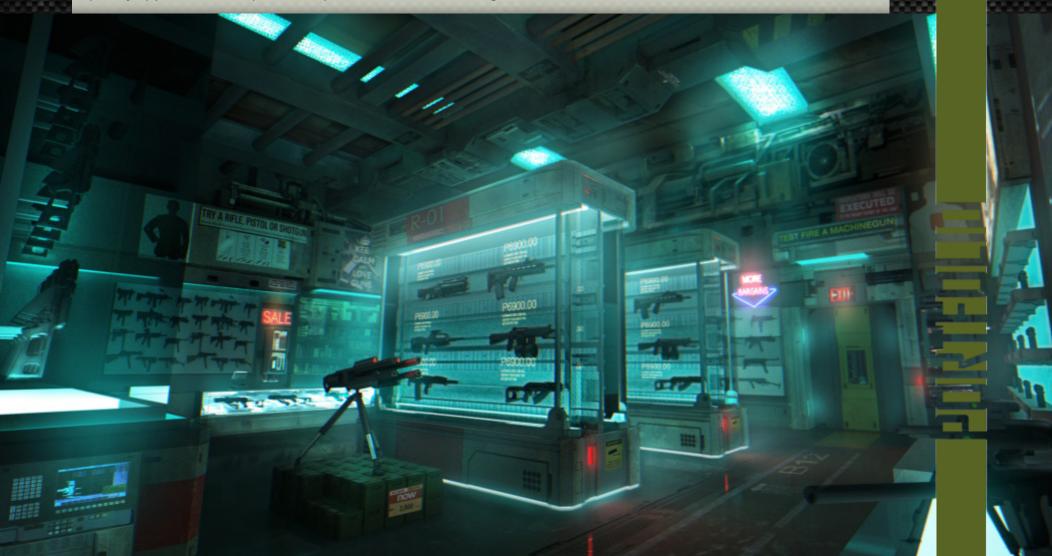
Cubby Blast offers an illuminating experience for the aspiring entrepreneur as well as the eager first-time gun buyer. The look and feel of the store manages to strike a fine balance between embracing its colorful anti-establishment flavor and providing an informative shopping experience: for every disparate piece of cultural bric-a-brac (a shot-up Vanduul body target, the obsequious variations on the classic 'Imperator Who?' stickers and the like) there's also a beautifully lit display offering the latest and greatest in handheld weapon technology. This balance has been so successful that rival companies such as Centermass apparently sent undercover employees to Cubby Blast to study the store's layout in an attempt to replicate the flavor of the place. This led to Centermass's somewhat disastrous Cathcart-themed sales campaign in 2941.

In 2943, a spectrum producer attempted to capitalize on the shop's oddball reputation by creating a series tentatively titled "Blast Off!" A pilot was produced based around showcasing Vee's eccentric personality and his knowledge of rare weapons desired by unusual customers. The production was ultimately not picked up and Vee



blamed the failure on widespread public resistance to security weapons (an opinion he shares, loudly, with anyone who mentions the failed project within his hearing). Those who saw the pilot episode do not agree that it was sunk by politics, saying instead that Vee's antics and the generally guarded nature of most customers just didn't make for a compelling narrative. The end result of the project was an abundance of CUBBY BLAST-branded merchandise, produced by Vee in anticipation of the show's success, which have been sold off at a huge discount and now frequently appear in ArcCorp thrift shops.

As the Cubby Blast name and reputation have spread, so have suggestions of expansion. It is a matter of public record that several fund management groups have made significant approaches, hoping to turn the business into a galaxy-wide themed showcase for arms and armor, but thus far, these have apparently been rebuffed. While Clor Vee has expressed interest in the potential for franchising his brand, he recently appeared on an underground spectrum broadcast and was quoted as saying "Yeah, the bigawans resen with Creds an all, but wa the Cubby Blast gon' be widda the Vee."





This month we travel to Montreal, Canada, for a discussion with Turbulent, the folks responsible for the framework and visual design of RobertsSpaceIndustries.com. Turbulent has been a partner in this enormous enterprise since just after the Kickstarter campaign, almost three years ago, and recently they've been focused on a thorough redesign of all of our websites.

JP: As usual, let's start by introducing everyone. What is your title, and what did you do on the web revamp?

Michel Labelle: I'm the Art Guy.

Olivier Berthé: Front-End guy.

JP: And "front-end" includes ...?

Olivier: Building what people see when they go on the site.

Adrien Bataille: I'm a Front-End developer too.

Benoit Beausejour: I'm the Producer.

JP: Perhaps an example or two of what you do would be useful ... for example, what do you do in a typical day?

SPOTLIGHT!

Look for our new Behind the Scenes Feature:

Page 41: Karl Jones, Lead Systems Designer, F42

Page 42: Gurmukh Bhasin, Concept Artist, LA

Benjamin Fardel: I'm Project Manager, making sure everything is done in its own time, from concept to art to implementation. Making sure that everyone knows what they should be doing at any given time, and trying to answer all questions coming from everyone.:)

Michel: "Art Guy" = Wire frame challenging, the flow of communication with the end user, and of course the tone and the style.

JP: What is wire frame challenging?

Benjamin: It means he's always challenging what our User Experience designers come up with.:)

Michel: I take the wireframes that the designers create as guidance/starting point, but I like to push the purpose and the meaning of things, and when I come up with the art design I suggest changes. It's better to overreach – it's always easier to scope something down in the end than to have to add to it at the last minute.

Félix Courtemanche: I am Lead Developer. I work on complex parts of the platform and supervise its technical aspects. I provide internal support for the team as it works on ongoing projects, and help plan and break down future projects.

Olivier: I build the site with what Michel (art director) gives me.

Benoit: The way the web team is usually divided, you have UX (User Experience) Artists (such as Anderson Bordim) and Visual Artists (Michel, in this case) who work to build mock-ups and visuals for the product. "Front end" usually refers to a developer who takes a visual mock-up and makes it into reality on the web. "Back end" is usually a programmer who creates the data management model and APIs required to make it function.

JP: Is this pretty much the team, or did you have another 30 guys working with you on it?

Benoit: No, this is pretty much the team. :) We have more people occasionally working on the project (about 10 at different times) but for the Home page, this is it! :)

Olivier: Adrien is also a front-end developer who worked on the new Home.

Benoit: As far as what I do, we treat the title of "Producer" differently than in the game dev world. Producer for a video game refers to a manager, handling coordination tasks for the teams and their deliverables ... we call this a PM (Project Manager). For us, the Producer is the higher-level person in charge of defining vision, requirements and needs, and judging the overall quality of the product that's being built.

JP: Benoit, are you the primary point of contact with CIG?

Benoit: Yes. So as far as the daily life of a web producer goes, it's about following-up on each and every piece of the project and making sure that what we are building matches the vision, quality and timeline standards we set, or that are set by CIG's schedule. The responsibility of understanding the initial vision from Chris falls to me.:)

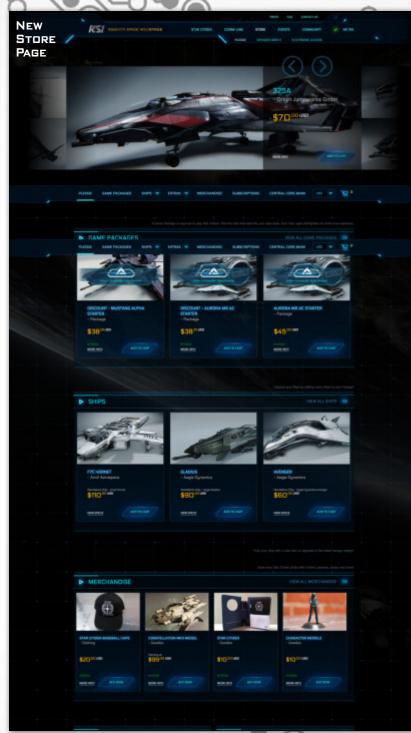
JP: What does Turbulent do besides its work for SC?

Benoit: Turbulent is a web and digital applications company. We're specialized mainly in three sectors, including gaming (obviously!), entertainment (TV & film), as well as digital education. We've done all sorts of projects in the past, including major web platforms, but also second screen applications, mobile games, VR projects and even a full digital distribution network for books in schools all over the province of Quebec.

JP: How did you get where you are today?







Benoit: I own the company, my life before it means nothing! Though I've always been an avid gamer and ran a pretty successful competitive raiding guild in *WoW* for a few years. :)

Benjamin: I've been a PM in IT for about ten years. After going through banking and insurance (woo!), I worked for a web agency in Paris for a while. Turbulent was actually my first job when I came to Montreal, and I had the amazing luck to be part of the *Star Citizen* project after only a few weeks at Turbulent back in 2012. It's been a hell of a ride ever since!

Félix: I've been working as a programmer in the web industry for about 17 years, 3 1/2 at Turbulent. I worked on a variety of smaller projects before *Star Citizen*: websites, Android applications, system administration and other backend tools. I started working on *SC* when the Kickstarter campaign ended. My first task was to review the website and fix severe issues that were causing it to crash daily, followed by importing all Kickstarter pledges into the system.

Michel: From my side, I've worked on big scale websites for recreational outdoor vehicles like Sea-Doo, Ski-Doo, etc. I was also behind the launch campaign of the Spyder. I have been involved in the beauty, retail and corporate industries for awhile, with twenty years of experience in design and communication and producing marketing tools.

Olivier: I've worked for Turbulent for the past four years. The first two years I worked on several projects, but for two years now, I've been dedicated to *SC* full time. I'm a hardcore gamer too, so it's a privilege to be part of this type of adventure.

Adrien: I am from France, like Benjamin. As a computer

science student, I was looking for new challenges and I was eager to travel. So I applied for an internship in Montreal. That's when I joined Turbulent. I graduated and decided to move to Canada to work at Turbulent. I've now been working on the SC team for almost a year.

JP: Why was the website revamped?

Michel: We felt that as the game got bigger and attracted more backers, we needed a smoother, more efficient way to communicate the exciting things *Star Citizen* is doing.

Benoit: A website like *SC* will always need updating and be in flux; as you know, this project is very special and has a very high rate of change. The website we built initially in June 2013 to replace Chris's first site was already a major step forward, but we now publish A LOT more content to the site every day. The site currently catalogs above 2,000 update posts in different categories ... that's A LOT of content! We felt the homepage needed to bring more visibility to the amazing content that is produced by CIG in the making of *Star Citizen*. We wanted to bring forward video elements, but be able to present more of this content in a "premium" format.

We expect this will not be the last revamp; the website for *SC* is the primary platform of communication with the backers, and so it must always match their excitement.

Olivier: Personally, I love what Michel brings to his designs. The old *SC* site had a sci-fi look, but Michel takes it to the next level.

JP: What are some of the specific things that Michel has done?

Benoit: I think Michel has been able to capture the initial art direction that was laid out by Zane back in 2013, and continue in that direction, but also elevate it to a set of



items we can use in the many situations that we have to account for in the site. Our platform has many missions – fan service, marketing, sales, account management – and all of these missions require different approaches. Michel is able to reconcile those needs into a common visual language. We're not done yet putting his stuff everywhere in the site, but we're working on it.:)

Michel: I wanted to capture the sci-fi visions of *SC* and give the website not only an inspiring look, but also make it a useful tool for CIG and the backers. The design of the website is a collaborative effort, involving the whole team, to create this vision.

Benoit: modest :D

JP: So only part of it has been revamped at this point? Which part(s)?

Benoit: Home, Press and Dev Tracker (Home page being the major project of those).

Olivier: And the Store?

Benoit: oh yes! Haha – the Store, of course. :)

Benjamin: Well, the store was actually before everything else. :) It's the revamp's granddad or something.

JP: What is "Press"?

Benjamin: Above the site's top menu, there's a link to the Press section, where CIG displays what other websites have to say about *Star Citizen*. These articles go back to the start of the KS campaign, and even before. Most of the current sections on the site will eventually go through this revamp, one at a time.

JP: And are the changes mainly a new look, or is there more to it? Is there anything different in how it functions? What did each of you have to do with revamping it?

Michel: at this point in the development cycle we wanted to get away from simply telling visitors to the site what the game was about. We instead decided to focus on providing information and updates to the backers, because most of the visitors to the site now are already invested in the development of the game. The goal of the website, laid out by Chris [Roberts], is to get backers more into the development of the game, so that they feel involved in the process. It needed to be more than a game description and a link to the Steam store, like most big game websites are today. The journey is just as important as the destination.:)

Benjamin: Content-wise, a new look to the website meant new visual constraints to what could be displayed on it. So we came up with new visual guidelines for all front-page visuals and videos, and we're enforcing them every day so that what we show reflects *Star Citizen* content in the best way possible.

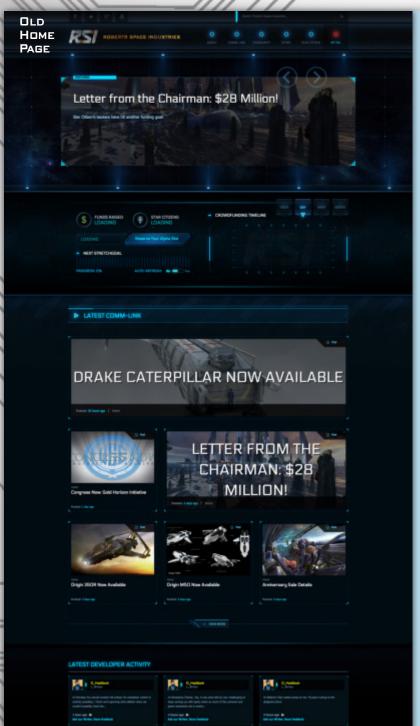
JP: What sort of guidelines?

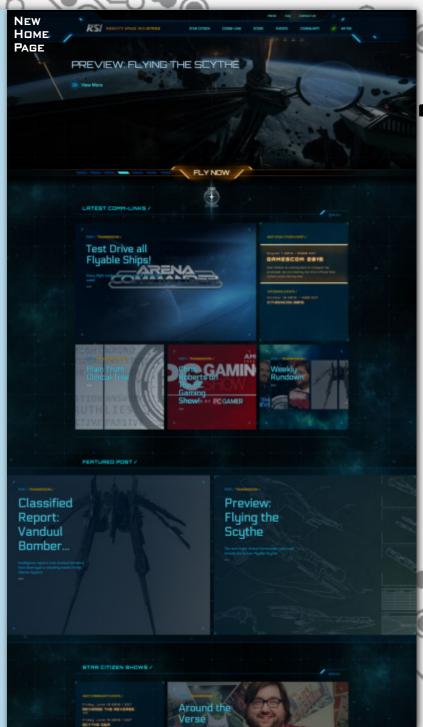
Benjamin: It ranges from basic stuff like, "There shouldn't be text in the visuals or they'll clash with the text the site displays," to more precise stuff like what format, length, size and ratio all the carrousel videos should have.

Félix: There was also a change in which content is brought to the front page. There's more of it (comm-links, community videos, community schedule, *Star Citizen* events) so I had to figure out exactly what we want to display and ensure that it is loaded in a way that can handle sudden bursts of traffic while making sure that new content is immediately available to every visitor.

Benjamin: This new home page has a lot of content to show, and if we're not careful it will either look ungraceful or even blow up people's laptops ...







JP: What's a "carrousel video"?

Benjamin: There's a carrousel of up to about half a dozen videos at the top of the home page. They play in a loop.

Benjamin: These videos include the most striking content that CIG currently has to offer.

Adrien: The first challenge is always the visual part, but the revamp is not just a new look. Michel spent a lot of time in design to create the best experience and something unique. We try every time to push our limits in our work, to bring something new and different. In parallel, we have to compose with various browsers and each have their specific requirements for rendering and performance. This often creates challenges, even for small details like the menu shape or the blue shade on pictures. We also had to change the programming logic to populate the content differently, but that's Félix's part.

Félix: Part of that also involved optimizing certain image formats, ensuring that top videos were as small and fast-loading as possible.

Benjamin: One of our concerns was to make this new home page loadable and legible on mobile devices, which means not only an optimization in size, as Félix says, but actually a separate layout.

Michel: The first step of the revamp was to ensure we could communicate properly to the backers. That's why we push all the news and new content to the front page, ensuring maximum exposure for what CIG is working on.

JP: When you say that you had to figure out exactly what we wanted to display, does that mean that you (or Turbulent) are deciding which content to display, or is CIG doing that?

Benjamin: CIG does it. We just make sure that it looks as good as possible on the website when they do. :)

Benoit: We propose a lot, CIG chooses. :)

Félix: ^^

JP: The sense I'm getting is that the revamp:

- Got a lot more content on the home page.
- Made it a lot more organized.
- Gave it a better graphic feel.

Is that accurate?

Benjamin: I approve of this list. :)

JP: You've mentioned that Star Citizen has more content, more chat posts and more views than normal. How much more, and how does that challenge you?

Benjamin: Well, content in this quantity AND quality is really what sets *SC* apart from all other crowdfunded projects. You gotta give justice to that and present it as best as you can. *SC* is by far the most updated project I've ever worked on. New content every day, read by hundreds of thousands – that's unheard of outside of gaming news sites. To give a sense of the size and dedication we're talking about, I like to give this example: every single time that we've made a mistake (yes, we have) it's been found and pointed out by fans within the first two minutes.

Félix: Because of this constant new content, the website must be flexible enough to adapt to different scenarios. This is a technical challenge, since pretty much every section is dynamic and adapts to the current logged-in user (specific categories of users unlock specific pieces of content, for example). The site now synchronizes updates across multiple systems (website, forums, chat, game) while handling variable, (but usually large) amounts of traffic.



JP: This discussion has mostly been about the Home page. What did you do to other parts of the website? How did the Store change?

Benjamin: Last year we redid the whole *SC* Store to make the pledge front based on *SC*'s vast ship catalog. That work was based on integrating as much ship data as we could in the Store so the fans would know both what they were buying and what would end up in the game. That, and implementing a stimulating visual style that would support them as much as they deserved.

Michel: And a better way to buy, with all the information you need to make the decision.

JP: You also mentioned revamping the Press and Dev Tracker areas. Is that pretty much the same thing you did for the Home page, or are there differences?

Benjamin: These two pages share the Home page's new style, yes. Dev Tracker actually didn't have its own page until now.

JP: What is Dev Tracker?

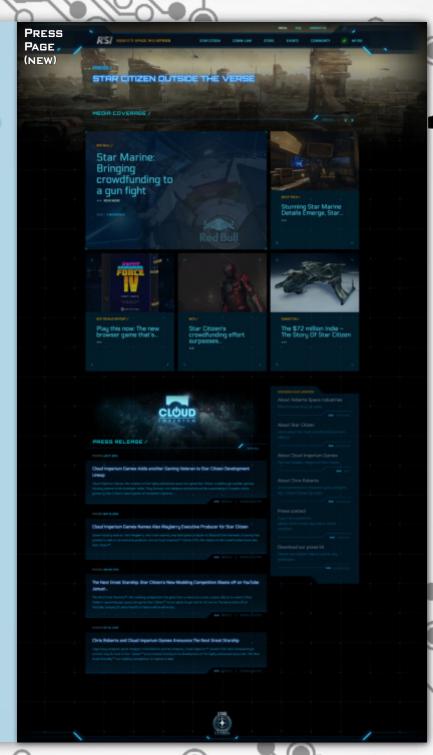
Benjamin: That's where we aggregate what all CIG devs (and all of CIG's staff actually) say on the forums. It's a way for the Community to get information directly from the devs' mouths, and it's proved to be one of the most popular features of the website/forums.

JP: Oh ... perhaps I should be more careful about what I post ...

Benjamin: Yeah we saw that ...;)

Félix: only when you check the "post as staff" box.

Benjamin: Ah, now you've ruined it, Félix ...



JP: What about the Subscribers' Den – does Dev Tracker include posts made there?

Benjamin: No distinction is made: what CIG staff says on the forums is public, wherever it is posted.

JP: But only if it's "post as staff."

Benjamin: Yes. Great powers ... you know the rest.

JP: Duly noted. How has the Chat system changed?

Olivier: First, we changed the underlying technology from Chatroll to Candy Chat. This allowed us to do a redesign of the chat UI so that it fit better with the look of *SC*. But the coolest / most significant thing was to give users the ability to create a room for their own organizations.

JP: What other changes in the website should we be looking forward to? How about the starmap?

Benoit: Starmap is a MAJOR component we are adding to the site. It's obviously a fan favourite (voted by the community) ... and it turns out to be a major endeavour. :) At this point we are very happy about the artistic direction, and user experience ... but much more work remains to be done before we can present it!

Michel: We want to bring the user into the *Star Citizen* universe, by exploring the systems and providing useful information to plan their journey. The rest is classified. :x

Benoit: Other important components coming to the site are the "Community Hub" and the "Issue Council."

JP: What are Community Hub and the Issue Council?

Benjamin: "Issue council" is a new part of the website designed to help players get more involved in the game's development. We'll let users report bugs they find in the game or website, or both. They'll get validation from the

rest of the community and they can then follow as the bug gets resolved in a future release.

Benoit: The Issue Council is an important module because we believe it's what makes *Star Citizen* different: we want to crowdsource bug reporting. It's a chance to gather bug reports from our community members and get them involved in triage, rating and prioritization of reports. This way, CIG producers will always have a community rating for each community issue and that can affect its priority. It effectively brings the community voice into bug tracking and scheduling.

Benjamin: This will effectively replace the parts of the forums where players were already doing that in a much messier and overall confusing way. They just didn't have the tools for it.:)

Benoit: More transparency from CIG with tools for the community = win! The Community Hub will be a new content hub in the website dedicated to user-generated content. Fans produce a lot of stuff themselves. Beautiful screenshots, pictures, fan fiction, rigs, podcasts, livestreams ... and we want to give them the perfect platform to showcase it.

JP: And when might backers expect to see each of these?

Benjamin: The official answer is Soon™.

JP: That's all I have; any final words?

Benjamin: Just thanks, to CIG of course, but most of all to the fans, for making our job so interesting.;)

JP: Thank you very much for all your time!



Spotlight: Karl Jones, Lead Systems Designer, F42

I'm working on the first iteration of the Seat Functions system. This system is being created to manage the functionality available at each seat and station on every ship, from single-seat fighters all the way up to capital ships.

There will be several different displays available to the player when at a station in a ship, the number and type of which will be dependent on the ship type, size, purpose and the role that is to be filled at the current station. These displays may include the usual Radar, HUD and Annunciator Panels, but most of the interaction with a ship's systems will be carried out via MFDs (Multifunction Displays). These are tabbed displays in which the player can select a ship system (such as Shields or Power), and bring up the related options that are available. The complexity of these functions will deepen as ships get bigger and more complex — initially Level 1 for small ships and Level 2 for larger ships, but expect this to expand over time.

Multifunctions will include known elements such as Overview, Power, Shields and Weapons, but will grow as more are introduced, like Target-Relative Multifunctions such as Scanning and Sub-targeting. As well as interacting with the MFDs, players will have visibility of related data via the various Support Screens available at their seat/station.

Support screens will display read-only elements pulled from the Multifunctions themselves. For example, the Weapons Multifunction will display (and allow interaction with) all weapon and ammo information, where-

as a Support Screen may just show the ammo count for a particular weapon.

The MFDs and Support Screens will come together to create a flexible and future-proof system that not only allows us (the developers) to set up bespoke configurations of Multifunctions and Support Screens for every seat, but also allow the end user to delegate responsibility throughout the ship and customise the elements displayed on Support Screens however they see fit.

As well as customising the screens and displays at their station, the player can also choose whether or not to pipe the Multifunctions to the visor on their helmet. This provides instant access to that functionality, but may compromise visibility of the world around them, so the player must decide what is more important at any given time. Bear in mind, if the station is located in part of the ship that is not pressurised, then the player may not be wearing a helmet, so that option will be unavailable to them.

When designing a system such as this, most the hard work is up front as the underlying structure needs to be solid. The work we're doing now will give us a strong yet flexible foundation on which to build and deepen this potentially huge system.

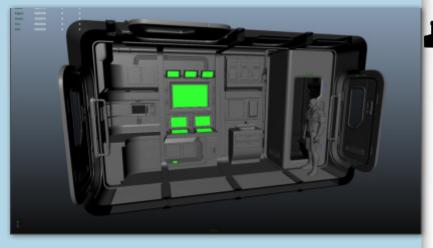
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|---------|------------|--------------------------------------|---------------|----------------|-----------|---|------------------------------|-------------|---|--------------------|----------------------|--------------------|--------------------------|-----------------------|-------|------------------|-------------------|-------------------|---------------------------------|---------------------|---|
| | - | DEFAULT SEAT FUNCTIONS — NOT FINAL! | | | | | | | | | | | | | | | | | | | |
|)-) | SHIP CLASS | | | | FUNCTIONS | | | | | | | | | | | | | | | | |
| | COCKPIT | CLASS | SEAT TYPE | E SEATLOCATION | | | Ship View and Crew Orders | and Q-Drive | Tactical Battle Sphere and Fleet Orders | Weapons Control | Shield Management | Fuel Management | Power/Heat Management | Radar and Scanning | Comms | Ship Security | CPU Management | Over- clocking | Support Screen Management | Hacking and ECMS | |
| is | Cockpit | Single Seat | Heim | Cockpit | | X | × | X | X | X | × | X | X | X | × | | | | × | | |
| | Cockpit | Small | Command | Cockpit | × | X | × | X | X | × | × | X | X | × | × | | | | × | | |
| | | | Standard | Cockpit | | | X | X | | × | × | . X | X. | X | × | X | × | | X | X | |
| | | Multi-Crew | Engineering | Engine Room | | | | | | × | × | X | X | | | | × | X | X | X | |
| | | (no bridge) | Heim | Cockpit | | X | | Х | X | | | | | | | | | | X | | |
| | | | Gunner | Turret | | | | | | | | | | | | | | | X | | X |
| | Bridge | Large Multi-Crew (with bridge) | Command | Bridge | Х | X | X | Х | | X | × | X | X | X | X | | | | X | | |
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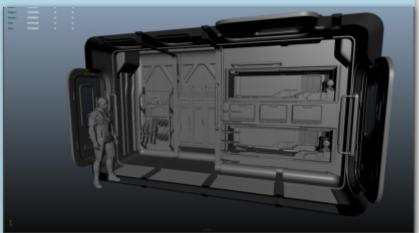
Spotlight: Gurmukh Bhasin, Concept Artist, LA

It has been a lot of fun working on the Vanguard interior for the past couple of weeks. As most of you know, the base model of the Vanguard (the Strike) has a life pod that can eject and essentially act as two-person escape pod. The idea behind this is that when you are using the Vanguard for deep space missions and you come under heavy attack, you use the life pod to escape. Instead of crawling into a small single-person escape pod, the Vanguard has an entire normal living quarters complete with a bathroom, kitchen, workstation, weapons rack, storage and two beds. The whole room ejects out of the ship and has very limited maneuvering capabilities to keep you alive while you wait to be rescued. I wanted to treat it like a lifeboat if you were lost at sea.

I have been taking a lot of design cues from the Retaliator interior since both ships are in the Aegis family. Nathan Dearsley did an amazing job on the Retaliator and it has basically become a 3D style guide for Aegis. It makes a huge difference being able to pull design aesthetics from







the Retaliator and I feel like it is so much easier to keep the Vanguard in the same family with a similar feel while keeping the ship unique at the same time.

I am really excited to finish up the interior and variants for the Vanguard and show you all the finished concept art soon. Up next for me is to work on the cockpit and I can't wait to see how it turns out!





Simply put, the Tal System is the 'verse's largest production supply chain.

Located just beyond the Perry Line, the Xi'An classified Tal to act as a Production System, with each habitable planet designated to fulfill a specific industrial purpose. It is a distinctly Xi'An approach to geoplanning that Humanity has slowly begun to embrace, specifically within the Stanton System. Tal offers another unique distinction; it is one of the few Xi'An-controlled system that openly welcomes Humans. As a major hub for industry and trade, many believe the Xi'An encourage Humans to do business in Tal to keep them out of other parts of Xi'An space.

UEE diplomatic envoy Jameson Wallach was the first known Human to visit the Tal System. Following the Peace Treaty of 2789, the Xi'An government disclosed to the UEE the existence of this system; prior to this revelation, Humans hadn't known it was there. Envoy Wallach's guided tour of the system was considered by many to be a gesture of good will, though critics quickly dismissed it as a ploy of the Xi'An. Visten Bana, one of the most outspoken critics of the treaty, claimed, "the Xi'An are attempting to infiltrate the Empire, not with weapons or with armies, but through Credits. The new battlefield will not be on planets, but targeting our economy."

Visitors to any planet in the Tal System might need a few minutes for their eyes to adjust. The Xi'An have assigned one specific color for each planet to incorporate into all its structures. Most first-time Human visitors find the view to be strange, spectacular and overwhelming all at once. After a number of accidents caused by disorientated Human pilots, the Tal landing zone authority now discourages people from manually landing their ships.

The uniqueness and strict organization of the planets does not end with their color-coding. Although the actual system is far more complex than a simple summary can provide, merchants should familiarize themselves with each planet's focus before visiting to avoid the embarrassment of attempting to make a deal in the wrong part of the system. Tal II makes large-scale space fabrication. Tal III deals with food and textiles. Tal IV processes hydrogen and antimatter. Tal V handles the end-stage manufacturing of weapons.

The system is in constant need of raw materials, particularly hydrogen and antimatter, to keep their supply chain cranking at full capacity. Bargain hunters and small-time haulers should take the time to crunch the numbers before spending the time and resources on a trip to Tal, due to frequently slim profit margins. However, keen traders can bring in raw materials to sell and leave with Xi'An-made merchandise. With Xi'An products growing in popularity around the UEE, merchants and haulers should not have too much trouble selling the unique Xi'An goods found throughout the inhabited worlds of Tal.

As relations with the Xi'An have warmed, tourism to the Tal System has seen a noticeable uptick. Explore It Tal!, a Goss-based travel company, specializes in organizing group trips to the Tal System for those hesitant about going unguided. It is perfect for those who want to experience an alien world without having to navigate the foreign customs alone.

For those brave enough to do it on their own, here are a few tips. Adventure seekers and explorers frequently visit Tal II and Tal V in search of the latest Xi'An ship and weapons tech to give them an advantage over others in UEE space. Foodies and fashionistas flock to Tal III to sample Xi'An food at its source and buy exotic textiles directly from manufacturers. Tal IV is recommended only for business visitors, due to the inherent dangers of its large antimatter production facilities.

TAL

This small planet sits too close to the system's sun to maintain life. It is pockmarked with craters from probes and mining missions that sought resources to be used by the rest of the system. As far as we know, nothing valuable was ever found and the Xi'An left Tal I to bake eternally in the sun. All the heat radiating off the rocky planet makes it appear to shimmer and glow.

TAL II (OLI'SHA)

(oh-LI-sha)

Upon visiting Tal II, famed musician Sindo Guerrero took inspiration from all the buildings being accented in yellow to write his record-breaking, chart-topping hit, "Sun Kissed."

Home to large-scale space fabrications, Tal II is the technology hub of the system. The planet's factories pump out some of the most advanced ship parts in the 'verse. This mixture of industrial fabrication and high-end technology makes Tal II the system's busiest planet. The constant hum of machinery and the non-stop flow of workers hustling in and out of yellow buildings has earned Tall II the nickname "The Hive" among Human visitors.

It is becoming not uncommon to see Humans living on Tal II, though to do so, one must have a valid work permit. Human corporations have also begun to seek out more stable opportunities in the system, with MISC having recently established a small branch office here that facilitates their lend-lease agreement with the Xi'An; it was the central development site of the cutting-edge avionics software used in their new Reliant line.

Finally, do not forget to bring your sunglasses! The sun's reflection off the yellow buildings can be quite powerful to Human eyes. Remember, please remove your sunglasses before interacting with the Xi'An. In their culture, it is considered disrespectful to hide one's eyes when speaking.



TAL III (LUK'SHI)

(lux-SHE)

If you are a first-time visitor to the Tal System, begin your visit on Tal III. Considered the cultural hub of the system, the residents are used to Human visitors and very welcoming of tourists, more so than the typical Xi'An world. In fact, many find the planet to be a perfect metaphor for the Xi'An themselves. With most of the lush landscape covered in neat farms, the cities create a stark contrast to their natural surroundings, with their appointed color-scheme of violet popping brightly upon approach.

As a major manufacturer of food for the system, and possibly their entire empire, Luk'Shi is a must-stop for Xi'An food enthusiasts. For those who have never tried the cuisine, be prepared for a sensation unlike any other. Many Xi'An dishes uses flavorful spices that cause minor muscle spasms in the Human mouth. It is definitely not dangerous, but will just as definitely surprise those who are not expecting it. Some Humans find the sensation weird and off-putting, but many believe it actually enhances the flavor of the food. Most restaurants will adjust the strength of the spices to the Human palette. Do not be afraid to politely inquire about the

spice level of the food if the waiter does not bring it up. Just remember to do so before they begin cooking your dish.

Meanwhile, the beautiful and fragrant countryside of Luk'Shi tempts Humans with a natural visual diversity that does not exists within its cities. Many visitors want to explore the countryside, but few actually do. The area is generally considered off-limits to foreigners unless one is given special permission and guided by a Xi'An. Do not forget the brief diplomatic spat that occurred in 2980 when Prime resident Shinji Shapiro was detained after being found wondering the fields of Tal III alone.

Tal III's textile industry draws many of the UEE's top designers to the planet. Patterns and fabrics discovered here quickly find their way to runways on Terra and Earth before creating trends across the entire Empire. Certain discerning buyers even schedule travel to Tal III while major fashion shows occur in the UEE so that they will be in place once the hot new trend has been determined, to purchase as much of in-vogue fabric or pattern as they can. The qualities of Luk'Shi's garment industry also have the fashionable flocking to the planet for custom-made clothes. Some shops have even begun to offer trained tailors that can modify Xi'An fashion to more flatteringly fit the Human form.



TAL IV (LISHAHVU)

(LEE-sha-voo)

Tal IV is the least visited habitable planet in the system, and for good reason. It is home to major facilities that process hydrogen and antimatter. Unless there is business to be had here, it is probably best to avoid it.

Even though Lishahvu's building are lined in green, this is a blue-collar planet through and through, with haulers and refinery workers making up a majority of the population. While the upscale fare found on Luk'shi often gets the lion's share of the praise from the culinary world, those who seek a more authentic experience say that it can be found in the working-class food stalls thickly stacked outside of almost all of the planet's numerous processing plants. Almost as ubiquitous as the stalls themselves is the warm, thick fermented drink called yahlu that the workers consume before work.

A word of warning: Tal IV's atmosphere does contain traces amounts of acid, but thankfully it is not enough to harm buildings, ships or residents wearing the proper attire. It was the main reason the Xi'An placed the hydrogen and antimatter plants here instead of industries that would draw more traffic. That said, if you find yourself on Tal IV in the midst of a rain storm, it is probably best to seek shelter sooner rather than later and to avoid getting the precipitation on your bare skin.

HEARD IN THE WIND

"Beauty, boldness and bliss. All exist on that world that's sun kissed."

- Sindo Guerrero, "Sun Kissed"

"Your entire mouth feels alive. Almost like something is crawling inside it. At first I was pretty sure I didn't like it, but a few days later, there I was back in the restaurant gulping it down again."

- Chef Alicia Tan, Eating My Way





TAL V (RHIDRR)

(REE-or)

Never say that the Xi'An lack a sense of humor. Tal V, whose buildings prominently feature a burnt orange color, houses a high percentage of industrial complexes dedicated to the end-stage processing of arms and weapons. If the planet is approached in just the right light, the sun's rays reflected off the burnt orange almost look like energy weapon blasts.

Many Humans have made their way to Rhiorr in search of advanced weapons for their personal or ship armament. With the Xi'An still secretive over much of their technology, only certain parts of the planet are open to Human visitors. These areas feature a heavy Xi'An military presence, but do not let that dissuade you from stopping in to buy the latest blaster. Very little violence or crime has been reported by travelers. This is partially due to the prevalence of armed security but also because, in light of the peace treaty, the Xi'An government seems eager to avoid confrontation with Humans as much as possible. Even the soldiers stationed at the Human-approved landing zones have been specially trained in diplomacy.

TAL VI

Deemed uninhabitable upon its discovery, this resource-rich rock was part of the reason the Xi'An based a Production System in Tal. Centuries of mining have reportedly stripped Tal VI of any worthwhile resources, though it may be difficult to check yourself since the Xi'An military keeps a watchful eye over all traffic that nears the planet. This has led people to theorize that there is more going on in Tal VI than meets the eye. Even in the most open Xi'An system to Humans, secrets still abound.

TAL VII

Located in the farthest reaches of the Tal System, Tal VII is a prismatic gas giant that is said to be a reflection of the planets it watches over. This is because its four thick, colored bands of roiling clouds match the colors assigned to the inhabited worlds in the system. A wonderful example of the harmony and symmetry in which Xi'An culture places deep value, Tal VII is a fitting last stop for any visitor's tour of the system.



Part 2

Gavin left Walt on Cassel. There was a time, back in his single days, when an extended stay on a resort world was the perfect sequel to a crappy job. Now he had a better offer waiting at home and two bottles of chilled Arcesean Red riding shotgun in the cockpit beside him. The better offer, of course, was Dell. The wine was his best hope to reboot his homecoming from Oberon.

It wasn't exactly the grand entrance he'd planned on making. He felt his cheeks warm and was glad to be alone. With a sigh, he squeezed his eyes shut and let his head fall back into his seat. His helmet bumped against the cockpit frame. When he opened his eyes again, the HUD had died. He rolled his head to eye the waiting bottles of wine. Perhaps he needed the alcohol more than she did.

Rhedd Alert's hangar was still. The lights were dialed down to a dull, sapphire glow. But while the hangar was quiet, Vista Landing never slowed down. Traffic came and went according to the schedules of a dozen mining companies on Goss I and the timetables of the neighboring systems. The sounds of the complex were a pressure all around him; a constant hum of life that seemed intrusive after a long stint flying solo.

HE WILLIAM

Gavin shed his flight suit and then grabbed the helmet and bottles of wine. The helmet got dumped unceremoniously onto a workbench. The wine went with him to their apartment. It was dark inside — he was too late. Dell was already asleep.

He leaned back against the door while his eyes adjusted to the courtesy lighting in the bedroom. Dell lay on her side with her back to him. Her hair was a dark fan against pale pillows and sheets. There was no trace of the playful bluedyed tips in the low light. He looked instead to the curve of her hip and the long line of her covered legs.

He left the bottles on a table. They would warm there and need to be cooled again before they could be enjoyed, but he didn't want to risk waking her with light from the fridge. He stripped his shirt off on the way to the little closet. She'd left it open, and piles of clothes made odd shapes in the low light.

They smelled like her. He'd forgotten how much he loved that. He leaned forward, his head slipping between her hanging shirts and jackets. They didn't have much, but this was home. They were settled, with no desire for any more living out of cockpits and dirty cargo bays. But if he couldn't make this work, that's exactly what they would be back to.

Gavin stooped and picked up the discarded shirt. There was work to do. Things to fix.

He closed the door as quietly as he could when he left.

He was at a workbench in the hangar when the light pad of Dell's bare feet on the cold hangar deck sounded behind him.

"Hey, Slugger." Her voice was playful, teasing him about the scrap with Walt. The taunting tone was good news, in a way. It meant that she wasn't quite so angry. Regardless, he was still embarrassed about the fight and didn't rise to her bait.

"I thought you were asleep," he said instead.

She rubbed her hand across his shoulders, bumped him aside with her hip and then took a seat next to him on the bench when he moved. "I was asleep, but it sounded like a herd of terradons came tromping through the apartment."

He felt better hearing the smile in her voice. "Huh I guess I'm glad I missed that."

"What are you working on?"

Gavin started running through his list, wondering where to start. He gave up somewhere north of fifteen and simply replied, "Everything."

"Did we get paid?" He nodded and her look of relief was frustrating. Depending on Dell's ex-boyfriend for financial salvation wasn't exactly how he'd envisioned his role as a business owner.

"How's Boomer?" he asked.

"He can't keep doing this. They patched him up, but he's been banged around way too much."

It was true. Dell's dad had been put back together more than any other pilot Gavin had ever met. Maybe a few military pilots had had more rejuvenation treatment, but their facilities had to be far better than anything civies like Boomer had access too.

"You've got to get him to take it easy, Gav. Let him fly support in the Freelancer or something."

"Let him fly support? This is your dad we're talking about. He's at least half as stubborn as you are. And you know how he flies. He's cool as gunmetal in a dogfight, but he flies like a crazy . . . flying . . . kind of . . . person."

"Will you at least try? Please?"

There was no way Boomer was going to listen to him, but Gavin agreed. It wasn't worth fighting with Dell about it. They'd been over that ground before. Plenty of times.

He prodded at the wiring harness of his helmet.

"The heads-up out again?" she asked.

He nodded.

HELLINITE H

"Here, let me do it." She pulled the tools closer and set to work. "So . . . Walt stayed to drink his paycheck away with Barry?"

"Walt worked as hard as anyone in Oberon. Harder than most, actually. He can do what he wants with his cut."

"While we're dumping all of ours into repairs and supplies?"

"I brought you some wine," he offered.

"I saw that." She snuggled into his side and slid her arm around his waist. "Mmmmm . . . thank you." A peck on his cheek. "I put it in the fridge."

"You should have brought a bottle with you."

She unwound herself from him and went back to work on the helmet. "It might work out better for you if we save that for a night when I'm not exhausted."

That killed the mood. Gavin shifted the tools around on the bench. Dell must have sensed his change of mood. She sat up straight, her tone growing somber. "I've been doing some math," she said.

"How bad is it?"

"Not good."

He hoped that the grimace he made was reassuring. It probably wasn't.

"Selling the salvage will keep us out of the red for a couple months," she said. "Good job on that, by the way. I don't know about the Idris, but that 325a is actually quite sellable. Unless you want to keep it, that is."

Gavin thought about it. "Sell it," he said. "We can't afford to upgrade any of our people, and I'm not bringing on any more pilots until we land some steady work."

"On that topic, did Barry have something new for us, or did he come to Goss System just to carouse with your brother?"

He told her about the turret job and she brightened.

"This is good, Gav. You think this could turn into a steady stream of work?"

"Maybe, but we've got a team of combat pilots, babe. They're not going to stick around for this kind of work."

"Then screw them. Let them leave, and I'll fly with you."

"You fly worse than your dad. Besides, you wanted to be here to run the shop."

"I'm here because I want this to work." She put her tools down and entwined her fingers with his. "Believe me, I'd much rather be flying with you and Dad."

"Yeah, well. I don't want you out there. Bringing Boomer back in stasis is one thing, but you . . . "

She extracted her fingers and patted his hand, pulling away. "That's an idea you're going to have to get used to. Dad won't be flying that old Avenger forever. Eventually, she'll be mine. But right now," she leaned in and gave him a quick kiss, "I'm going to bed."

Dell stood, pressed his helmet's wire housing into place with a click and left.

Gavin picked up the helmet and peeked inside. The glow from the reticle display shown within. She'd got it working again.

They had a good thing going, he and Dell. But chronic, nagging financial worry would eventually tear that apart. He just needed work that paid and that his pilots would stay for. Work that would keep Walt from chasing something shiny, interesting and new. What he needed was that Tyrol escort job.

Gavin pushed the helmet and tools aside on the bench. He keyed up the console and placed a call to Barry's mobiGlas. The accountant accepted the call. "Talk to me, sweetheart."

"Barry. Good, you're still in-system."

"Just about to leave Cassel, why?"

"What would a bid need to look like for someone to be competitive on that Tyrol contract?"

"Gavin," Barry's voice grew serious. "You're new to this, but you have to know that I can't give out that kind of information."

Gavin's mobiGlas vibrated against his wrist with an incoming message.

"I'm sorry, Barry. I wasn't trying to cause troub—"

Barry cut him off. "Now, what I can do is point you toward the proper registration and submission forms. How you manage the pricing is your concern. Understand?"

On Gavin's mobiGlas was a message from an unknown contact. The message was simple, containing only a Credit sign and a number.

A big number.

YPS!

"Thanks, Barry. I appreciate it and understand completely."

* * *

It took four days to clear just two turrets from the mouth of the first cave. Walt took out the first within seconds of arriving. He did it with what he swore was a purposeful and carefully aimed shot.

The second turret pulverized Jazza's Cutlass, and they had to tow the wreckage back to Vista Landing for repairs. Jazza herself went home in stasis. She took hits to a shoulder and both of her legs before survival protocols triggered her flight suit and ejected her. Unfortunately, the system didn't account for proximity to the cavern walls.

Jazza did not rejoin them for the moon mine job.

On the fourth day — running low on patience, ammo and foul language — they finally came up with a solution. It was ugly. It was dangerous. But as they worked deeper into the moon, it was the only thing they found that worked.

"All right, Boomer," Gavin said, "hold behind that outcropping."

Boomer's Avenger crept to a halt beside him. Deep inside the warren of caverns, the moon's rotation was enough to give them a sense of up and down. Still, holding a relative position inside a small spinning moon was not as easy as one might think. Stabilizing thrusters fired continuously in short, irregular bursts.

Gavin checked his orientation and distance from the walls. He was in place. The tag team system they'd come up with had been working pretty well, using one ship to draw fire while a second swept in to blast each turret. It was tedious and sphincter-tightening work, but the moon was nearly cleared. Only a small handful of tricky defenses remained intact.

"Okay," Gavin settled his hands on his flight controls. "On my mark."

He left the mic open and triggered a timer on his navsat. He watched Boomer's ship ease slowly into the turret's line of sight to the steady countdown of the timer. Right on cue, Gavin hammered his thrusters and sped into the cave, just as the first blast from the turret struck Boomer's shields.

Gavin yawed to the left, swinging the nose of his ship until he could see both the turret and Boomer's ship. The old man's Avenger bucked under the constant fire. The shields held, but the blast forced the Avenger back out into the tunnel before Gavin could take a shot.

Gavin fired, and the turret's twin barrels swiveled with

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such impeccable precision and speed that they looked like identical empty dots. "Oh, sh—" the barrels erupted in a fusillade of crimson light.

Gavin fired again and had no clue if he was anywhere near the mark. The turret's aim was flawless, however. There was an odd pulling sensation when the cabin lost pressure and his suit pressurized, squeezing around his limbs and chest.

Another barrage hammered into him and he felt the Cutlass crunch ass-backward into the wall of the cavern. The ship rolled, nose pitching wildly to one side. Gavin saw an open blackness of empty space yawn into view. He punched it, hoping he was heading back out into the tunnel and not to his death inside the smugglers' cave.

Relieved, he saw Boomer's Avenger flash by beneath him. But dread gripped him again when the walls of the narrow tunnel loomed to fill his entire view. He reversed thrust, hunched tight around the controls and braced for impact.

It was bad.

He hit hard, and the impact sent him careening down the cavern. He tumbled over and over, willing his ship to hold together. When he finally forced himself to release the flight controls, the ship righted itself.

"Holy hells," Boomer breathed. "Gav? You alive, buddy?"

His chest heaved like he'd been running. "I seem to recall some idiot bitching about this job being boring."

Walt, exploring a tunnel in another part of the moon, answered, "That sounds like it was directed at me. You two okay?"

"No, I'm not okay. I just got blown up!"

"Simmer down, son," Boomer said. "I've been blown up plenty of times. That was nothin'. I, uh . . . I don't think

you're taking another crack at that turret until we get your ship patched up, though."

"Oh, really? Ya think?" Gavin's comms flashed on an incoming line. "Hold on, guys. Call coming in."

Boomer laughed, saying, "They probably heard us planetside and want us to keep the noise down."

"Very funny. Actually, it's Dell. Now shut it." Gavin accepted the incoming line.

"Gav?" He couldn't tell if Dell sounded scared or angry, maybe both. "We got a problem, babe. Jazza's out of here. Says she's taking a ship unless she gets her cut of the turret job before she goes."

"What? What do you mean 'out of here'?"

"She's leaving," Dell said. "Leaving the company, I mean."

Walt cut in on the squad channel. "Hey Gav, I'm all finished in here. You want me to come take a look at tha—"

Gavin juggled channels. "Hold on, Walt." He squinched his eyes closed, sore, frustrated and confused. "Dell. Where's Jazz going? You mean she's quitting?"

Boomer kept the chatter going on the squad channel. "Sounds like he's getting an earful, Walt. Glad she didn't call me."

"Tell her Gavin just got blown up."

"That would improve her day significantly."

They both laughed.

Gavin spread his hands in an open-armed shrug for no one's benefit but his own. "Would you please shut the hell up?"

They did. Dell did not. "What did you just say to me?!"

"Not you, babe. Walt and . . . you know what? Never mind all that. Just tell me again, what's going on with Jazz?"

HELL Y

His mobiGlas vibrated. Gavin swore silently and balled his fists to keep from shooting something. From within his pressure suit, it was difficult to activate the mobiGlas. He managed it while Dell filled him in on Jazza's desertion. She was going to look for work with one of the smuggling outfits hidden in the Olympus Pool. Paying work. Blah. Blah. Deserter.

Gavin finally powered on his mobiGlas display. There was a message from a contact marked "unknown," but Gavin knew exactly who it was from.

"Dell."

"I tried to talk her out of it, Gav," Dell sounded close to tears. "I really did."

"Dell, listen to me."

"What?"

"Get Jazza back. All right? Do whatever it takes."

"I'll try, Gav, but . . . "

"Whatever it takes, okay? We're going to need her. We're going to need everyone and then some."

"What's going on, Gavin?"

He keyed his mic to transmit on both channels, "Everybody, listen up. They only got two bids on the Navy contract. We're the low bid."

"Is low bad?" Boomer asked.

"Dell," Gavin said, "have Jazza join us in Oberon. We're working 'round the clock until we've cleared the last few turrets."

Gavin sat in his damaged Cutlass, cheeks stretched in an unfamiliar grin.

"Guys," he said, "we just won the Navy job."

"Go on in, Miss Brock." A lieutenant held the door open for her. "Major Greely and his guest are already inside."

The major's guest. How wonderful. Morgan Brock smoothed the front of her pleated skirt and then swept through the doorway into Greely's conference room. The major and his "guest" stood near the head of the table. Greely was looking more Marine than Navy in his shirt sleeves. The man had arms as thick as most men's legs.

"Brock. Good of you to come personally. Let me introduce you to Gavin Rhedd, one of the co-owners of Rhedd Alert Security."

Rhedd was younger than she'd guessed, a handsome man with a sturdy frame. He'd made the curious decision to wear a weathered, civilian flight suit to the meeting. Perhaps he needed to convince everyone that he was, in fact, a pilot. Still, the rig fit him well. He looked uncomfortable but not self-conscious standing beside the granite slab that was Major Greely.

"Pleased to meet you, Miss Brock."

She refused his extended hand and put an end to the pleasantries.

"So you're the cherry that low-balled my contract." She made it obvious that it wasn't a question. "Let me be entirely clear. The termination clause stipulates that I participate in a transition meeting. Let's not pretend that I'm pleased by the opportunity."

"Well okay, then," Greely said. "I suppose that will do by way of introductions. Let's get started, shall we?" He took a seat at the head of the table and motioned for each of them to sit. "Now, the award and protest periods are over."

"There will be an appeal filed," she said.

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* * *

"I've invested two years cleaning up the run through Min and Charon," she said. "And we both know the workload is scheduled to increase dramatically. I'm not handing that over without a fight."

She stopped when Greely held a hand up, "The UEE wants us to find ways to enfranchise independents in those systems. You want to argue that point, do it with the politicians. But right now, I need a mission brief, and I think we'd all appreciate this meeting moving along quickly."

Brock let the major win the point. If nothing else, she knew when to pick her battles. There was nothing to be gained from antagonizing him. There were more profitable targets for her ire. Content with the cool tenor of the meeting, she turned her attention to Gavin Rhedd.

"Yes, well," the young man cleared his throat. His fore-head glistened where it met his close-cropped hair. "I've read through the, uh . . . the After Action Reports." Rhedd swiped through several projections on an old clunker of a mobiGlas. "Every ten days we escort a new shift rotation to the Haven research facility on Tyrol V. But what can you tell me about the security requirements for the staff transfer between the transport ships and Haven?"

The kid didn't know his ass from a hole in the ground. Maybe her Tyrol contract wasn't quite the lost cause Major Greely made it out to be. Brock's smile felt genuine as she started describing the ship-to-settlement transfer process.

This job was going to eat Rhedd Alert Security alive.

* * *

Min System was dark. In Goss, the jump points flowed with shimmering cascades of color. They boiled the Olympus Pool's bands of gold, amber and blood-orange in a dazzling display of celestial mystery. Min, on the other hand, was entirely different, and Gavin wondered how many ships and lives Min's jump gates had claimed before they were successfully charted.

The approach was well marked now. Nav beacons lit a ten-kilometer channel leading six Rhedd Alert escorts and their charge, a Constellation Aquila with UEE designations, to the jump gate. The automated beacons broadcast a steady stream of navsat and transit status data in addition to lighting the visual entry vector.

The gate itself loomed large. It was an empty disc, invisible if not for the faint light from the beacons. That light bent, distorting into the maw of interspace that, if entered correctly, would disgorge them out into the Charon System. Stumbling onto an unknown jump point had to be a terrifying experience. He'd seen images of dark gates, like the ones in Min, when the beacons were offline. Even knowing what to look for in those images, it was difficult to distinguish the subtle smudge that represented a portal through time and space.

"Gate Authority Min," Gavin read from a scripted authorization request, "this is Rhedd Alert Security, performing in compliance with Naval Systems Command regulations, approaching VFR and in support of UEE research vessel *Cassiopeia*. Request clearance for transit from Min to Charon and confirmation of the approach."

They didn't need the call and response to make the jump to Charon, but their contract required record of specific communications at all jump gates, as well as of the UEE staff transfers at each end of the run.

HIGH HISTOR

The gods only knew how many times he and Walt had hopped systems unannounced. In reflection, it probably should have felt strange entering a jump gate with legal tags and without local law breathing down his neck. But times change, and if Gavin got his way, they were changing for the better.

He received the expected challenge and responded with ship IDs that matched the tags for each member of the convoy. Gavin had stumbled over the formal exchanges on the first few missions. No one had complained, but he felt better now that he had a degree of comfort with the cadence and timing of the exchange. Hopefully, that degree of comfort inspired confidence in his new pilots and the UEE scientists aboard the *Cassiopeia*.

They got their clearance and Gavin sent the order to enter the jump gate. He took point with Jazza, each of them in place along either side of the Aquila. They slid into the gate with a familiar falling sensation. The cockpit seemed to stretch, elongating out and away from him in a rush of sound and color. It felt like someone had set a hook in his insides and pulled, stretching his gut tighter and tighter. Then something snapped and he was reacquainted with the increasingly familiar constellations of Charon space.

"Gate Authority Charon," he said, "this is Rhedd Alert—"

"Gavin," Jazza's voice was crisp. He was already checking his navsat displays when she continued, "We've got three ships inbound. Three hundred kilometers. Make that two-fifty! Gods, they're moving fast."

"Jazz, take Mei and Rahul to see what our new friends want. Walt, you and Boomer play goalie. If these guys take a run at the *Cassiopeia*, make them reconsider."

A chorus of "copy that" erupted on comms and Gavin switched channels to address the UEE crew aboard the transport. "Cassiopeia, this is Red One. Accelerate in line

with my mark and do not deviate from course."

"Contact," Jazza sounded calm, clinical. "They've got three F7 Hornets in a variety of configurations. They're beat to hell with patchwork armor, but coming in fast."

"They have any markings or insignia? What are their tags?"

"Nothing I can see through the mismatch of weapons and scrap parts."

"Look out, they're firing!" Mei said. "Holy hells, these guys are quick."

"Gav," Walt asked, "do we run?"

The After Action Reports from Brock showed a steady decrease in aggressive actions over time. Letting a new pirate outfit establish a foothold at one of their critical jump points seemed like a very bad idea.

"We fight," he said. "We can't afford to retake this ground every two weeks if we run scared now."

"Whatever you're going to do, do it fast," Jazza said. "It's three-on-three over here, and it seems these guys like to play with their food."

"Walt," Gavin said. "Take point. If they have friends, I don't want to get herded into a trap."

"Copy that."

"All right, Jazz. I'm on my way to you." Gavin pulled up hard, inverted over the *Cassiopeia* and accelerated toward the jumble of fighters.

Gavin had survived dozens of scraps before starting Rhedd Alert, but always as the aggressor. Being on the defensive was something new. It seemed strange that these crazy bastards were hitting six armed escorts.

"Jazza," he was a couple hundred clicks out and had a good look at the scrum, "I'm coming up underneath you. Time to make this an unfair fight." HEINER H

"These guys are good, Gavin." She grunted and her Cutlass rolled in a loose corkscrew, putting her behind one of the marauders. She fired and its shields blazed. It pitched, nose down and thrusters reversing, to push up and above Jazza's ship. The other two marauders swung into position on either side, and the three of them slashed toward Gavin like a knife blade.

He rolled to his port side and tried to accelerate around them. At least they couldn't all fire on him at once that way. Rahul strafed overhead, pouring fire into one of the Hornets, but the marauders held their formation.

"Jazza, form up on me. Let's split these bastards up."

"Got it."

They met and swept around to rush the trio of mismatched Hornets. The marauders found Mei before he and Jazza were in firing range.

"Ah, hell . . . "

A barrage of precise bursts from wing-mounted laser cannons tore into Mei's ship. It ripped entire sections from the hull, and escaping oxygen belched out in a roiling ball of flame.

"Damn it!" Gavin couldn't see if Mei got out. He and Jazza blasted their way through the marauders' formation. The Hornets scattered and reformed again behind them. "We've got a man down. Walt, we might need your help over here."

"That's what you get for staying to fight, Gav. We should have made a run for it."

"We can talk about 'shoulda' later," he said. "Get back here and . . . wait. Belay that."

"They're running," Jazza sounded bemused. "Feels like they had us on the ropes, but they're bugging out."

Gavin watched thruster trails from the retreating ships. In moments, they winked out of Charon space.

"Cassiopeia is secure," Walt said. "Are you guys clear?"

Jazza didn't exactly answer him. "Now what do you think that was all about?"

Gavin's HUD looked clear. Relieved, he found Mei's PRB. Everyone was alive and they appeared to be alone on the Charon side of the gate. Walt and the *Cassiopeia* were nearing the extreme range of his display.

"Walt, hold where you are. Stay sharp and sweep ahead. I can't for the life of me figure out why they attacked three-on-six."

"Maybe," Jazza said, "they knew they'd kick our ass."

"Or maybe this was a feint," Gavin said. "Let's not get caught with our pants down if there are more of them out here. Jazz, you and Rahul watch my back while I get Mei. We're taking the first shots if they come back through."

There was a general clamor of agreement. Gavin was beginning to suspect that military comm-chatter was much more sparse and far less democratic than Rhedd Alert's constant banter. Still, aside from Walt second-guessing his every move, Gavin was proud of the team.

"I wonder if they're waiting on the other side?" Jazza asked.

Walt was quick to respond. "We are *not* going through that gate to check."

"Relax, Walt," Gavin said. "A win is a win. And good rid-dance."

At this point, Walt's objection wasn't a surprise. "Lucky win, you mean. In a fight we didn't need to have."

Gavin ignored him.

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The attack would make this mission a financial loss, but the contract was still the leg-up Rhedd Alert needed. And the attack was probably an aberration, Gavin reflected, reminding himself that Brock's After Action Reports showed a steady decrease in hostilities over the past several years.

Unfortunately, they were about to find out just how little those reports meant.

To be continued

