

# JUMP POINT

A ROBERTS SPACE INDUSTRIES PUBLICATION    ISSUE 04.02

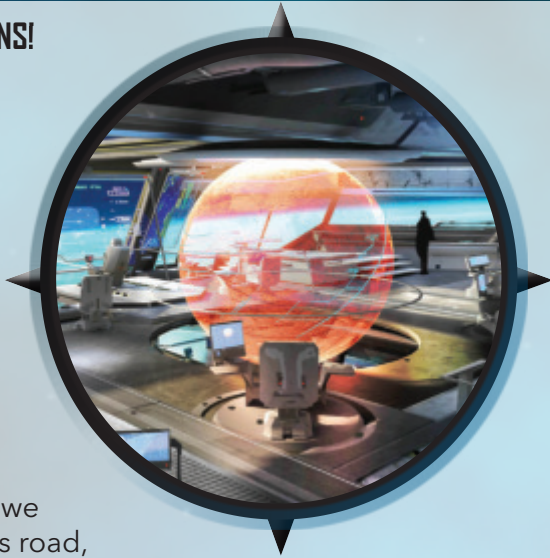


## IN THIS ISSUE

- Work in Progress: Xi'An Scout ..... 3  
*by CIG artists worldwide*
- Portfolio: AopoA..... 34  
*by Will Weissbaum*
- Behind the Scenes: Modular Space Stations ..37  
*an interview with Ian Leyland & Luke Pressley*
- Galactic Guide: Kayfa ..... 45  
*by Adam Wieser*
- Second Run: A Sorri Lyrax Story (Part 2) ..... 48  
*fiction by Thomas K. Carpenter*

## GREETINGS, CITIZENS!

There's been a handful of suggestions about **Jump Point** content in the forums over the last few weeks, and it might be a good time to repeat the "JP mandate" that I was given when we started down this road, three years ago.



**Jump Point** is for our subscribers, of course, those of you who are going the extra mile so that Cloud Imperium Games can provide additional content (like *Around the 'Verse*, *10 for the Chairman*, and **JP** itself). Most of those are available to everyone; only **JP** is restricted to subscribers, and that for only a month or so at a time.

Which means that you get exclusive content, but not breaking-news content. From the beginning, CIG has promised that **JP** would have in-depth material, but nothing new would be shown here that isn't also available to everyone else. Instead, you get in-depth analysis and behind-the-scenes content to an extent far beyond what anyone else in the industry provides.

So (to answer several forum requests at once) we won't be giving you sneak peaks, exclusive reveals, or anything else of that sort. I'm not trying to be strident, and I don't mind you asking (it gives me something to talk about here from time to time), but I am trying to be clear. What we will give you is the complete story on the development of ships and other elements of this great gigantic game we call *Star Citizen*, even when I have to dig three years into the past to get images and discussion. (Can you say "Xi'An Scout"?)

How I have chosen to interpret my mandate is to only give you a "WIP" article when a ship (or other part of the game) has reached a significant milestone. It feels incomplete to give you just part of a ship's development, like an unfinished story, and if I start splitting up the images and discussion, it's hard to remember where we got to in the discussion, for both you and me.

(As an aside, I will acknowledge that on occasion this can be aggravating, as with the *Constellation* upgrade article that appeared in the January **JP**, a month after the upgrade was officially released. We had hoped to get it into the December issue, but it was about three days short of completion when we had to close the issue, and I'll agree that the same information wasn't as fresh or compelling as it would have been a month earlier.)

So what do we have this month? No *Constellation*. The WIP article is on the *Scout*, which has been a long time coming (speaking of another ship that I've been wanting to spotlight for a long time). The illustrations of its maneuverability mechanisms are particularly interesting.

We've also got a behind-the-scenes look at how the new modular building templates are speeding up our work, and profiles of *AopoA* (the Xi'An manufacturer of the *Scout*) and *Kayfa* (home of *Tovaroh*, perhaps the most important Xi'An world). And of course, another installment of the perils of *Sorri*.

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

David

David.Ladyman@cloudimperiumgames.com

**EDITOR: DAVID LADYMAN, INGAN MONKEY GOD STUDIOS**  
**ROVING CORRESPONDENT: BEN LESNICK**  
**© 2016 CLOUD IMPERIUM GAMES CORPORATION & ROBERTS SPACE INDUSTRIES CORP. STAR CITIZEN IS A TRADEMARK OF CLOUD IMPERIUM GAMES CORPORATION.**

**COVER: CHRIS SMITH**  
**PAGE 3: DENNIS CHAN**  
**PAGE 34: CHRIS SMITH & RYAN ARCHER**  
**PAGE 48: RYAN ARCHER**



# FROM THE HICKORY



A CLOUD IMPERIUM GAMES PRODUCTION, A STAR CITIZEN NEWSLETTER.  
PART OF THE STAR CITIZEN/SQUADRON 42 UNIVERSE.

# Khartu-al

## Xi'An Scout



The Xi'An Scout has been in development longer than most ships, in large part because it's the first Xi'An vessel we've created. Several artists have taken lead on it in succession, starting with **Elijah McNeal**, followed by **Eddie Del Rio** and **Gary Sanchez**, with significant input from **Chris Olivia**, **Chris Smith** and others. Let's start with the conceptual stats:

### **Xi'An AopoA 'Khartu-al'**

The Xi'An AopoA corporation manufactures an export model of the Qhire Khartu, the Khartu-al, for sale to Human civilians as a dedicated scout/explorer. The export model features the same Xi'An maneuvering rig, but has control surfaces modified for Human use and a more limited armament.

<b>Key Stats (tentative)</b>	<i>Length</i>	12.5m (in flight) 30.5m (landed)	
<i>Manufacturer</i>	AopoA		
<i>Max Crew</i>	1 (Pilot)	<i>Width</i>	19m (in flight) 13m (landed)
<i>Role</i>	Light Fighter	<i>Height</i>	29.5m (in flight) 8m (landed)
<i>Cargo Cap.</i>	None		

WORK IN PROGRESS

**Elijah McNeal, Concept Artist:** Flat material pass for Xi'An Scout ship.

**Dave Haddock, Lead Writer:** That's kinda trippy. I like how you can't really tell which way is up on it; feels like it adds to the multi-directional aspect from the description.

**Elijah M:** There are some markings on the ship hull and the cockpit that visually point which way is up and which is down. Tertiary thrusters have different vector nozzle variations, etc. But overall, the form is as you said. Semi-Anime, crazy maneuvering, so on, so on.

**Chris Roberts:** I kinda dig this – what's it built in? Would love to look at it in 3D to absorb the various angles ...

**Elijah M:** Yes, Sir. I will repost with a turn-around of the model with a lighter value so it can be more easily discerned. I'll see if I can get a decent turn-around in Zbrush as well. The idea (based on the design notes) is that there are 8 engines on articulated mounts. My concept is that the articulate arms can fold in and hug the hull of the ship. Coupling this with the ideas I've passed to Chris Olivia and Rob Irving, and lightly illustrated in the Xi'An landing pads, this ship can roll into a horizontal format and the pilot can be carried to the ground plane via a cockpit cradle hoist.



WORK IN PROGRESS

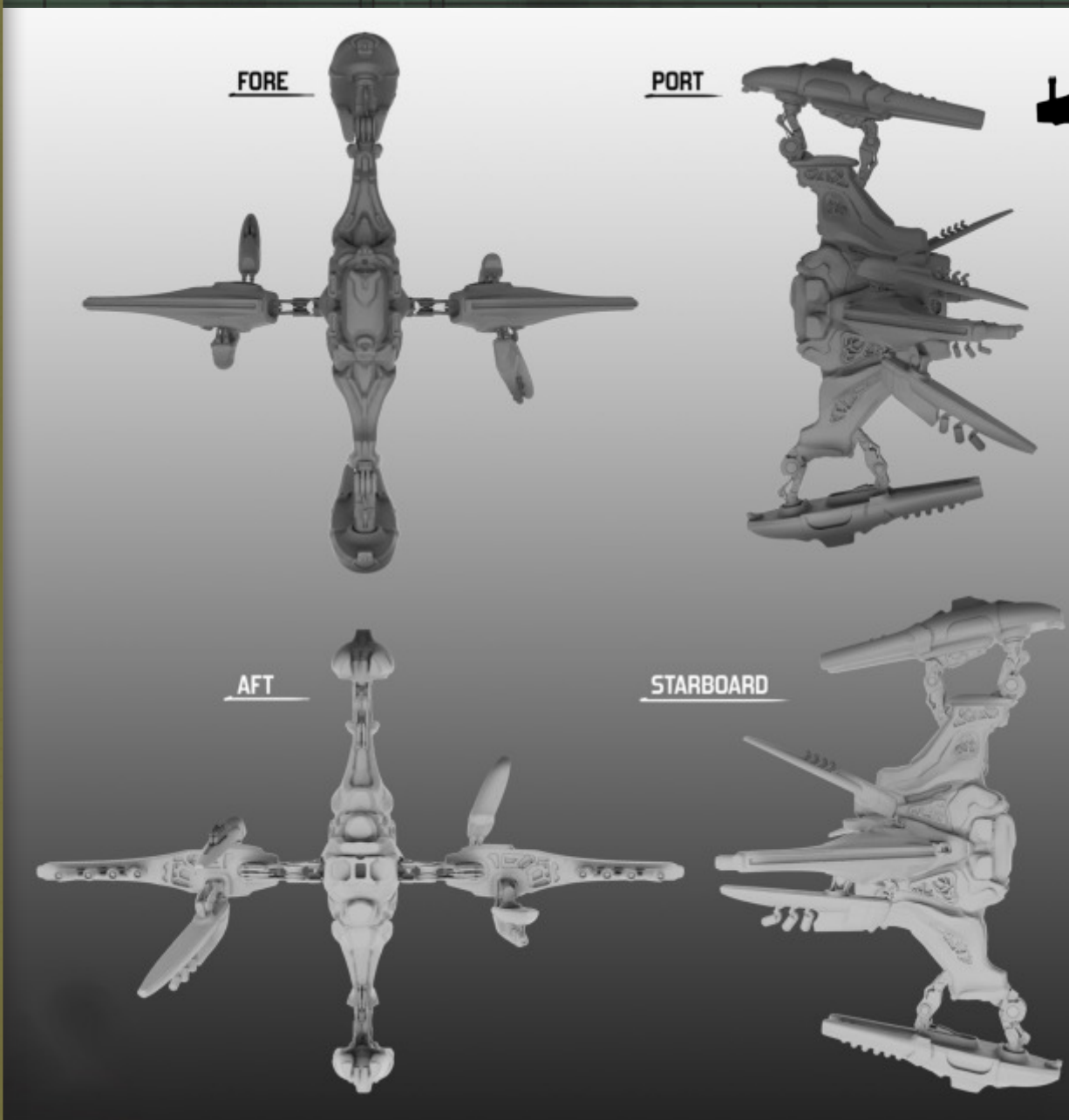


**Elijah M:** More turn-arounds.

The Tertiary engines are currently adjusted in this manner for an illustration idea I had in mind, of the vehicle flying in a “spinning” format. The cockpit is a single seater, as this is adjusted for Human compatibility. My guess is the neural load I had discussed previously with CO and Rob on the link would be too great in a standard Xi’An ship for Humans, thus furthering the depth of the race and enhancing the immersion of the universe we’re developing.

**Dave H:** I dig it. The ship feels fast, nimble, and hard to hit. Perfect for a scout ship.

**Elijah M:** Thanks. From Mil experience, scout vehicles are small, fast. Usually one- or two-seater or more depending on the situation. With this being in the future and focusing on space, we can slightly turn the clock back on scouts and make them single seater. The only weapons I have in mind for this guy are “smart plasma” launchers near the cockpit. My idea is that smart plasma is an intensely dense particulate matter laced with high-temp resistance nanites that guide the energy to target. That way we can increase their difference from Humans. Maybe they have guided energy vs. guided missiles.



WORKING IN PROGRESS

**Chris Olivia, Chief Visual Officer:**

Initial alternate look / dev on Xi'An small ship ... possibly scout, heavy fighter or bomber. More in the line of Stephan's Tal environments. I'll explore call-outs and cockpit placement next. The idea with the Xi'An ships IMO is that they don't need windows at all because their technology will allow for advanced HUD to basically recreate everything they need to see on the outside without using traditional eyesight.

**Chris Smith, Lead Vehicle Artist:**

That's tight. Although it's hard to tell how big they are supposed to be. This one looks like it could be the size of a motor bike perhaps?

**Mark Skelton, Art Director, CIG**

**ATX:** Yep, I agree ... kinda hard to tell.

**Chris R:** I think it's cool (nice art execution), but it doesn't look like a ship to me – feels like some kind of robot armature or small robot drone. I think the problem is a lot of the elements seem like details on something small, rather than a spaceship.

**Chris O:** I'm thinking if we take Eli's original design and incorporate the elements and look and feel of these, we might get something good.

**Chris R:** That sounds like a really good idea – I really like the rendering style / feel here for the Xi'An.



WORKING DRAFTS



**Chris O:** WIP Xi'An scout. Working out cockpit details next.

**Chris R:** Super cool – although it does feel a little “dragonfly”-esque ... Would that be an issue for a turtle race?

**Chris O:** Mmmmm .... nah.

We can explore a few variations of surface, details and shape to see what might work better. :)

[this page and next page]



WORKING IN PROGRESS



XIAN SCOUT SHIP CONCEPT - DEL RIO



XIAN SCOUT SHIP  
CONCEPT - DEL RIO



WORKING IN PROGRESS



**Eddie Del Rio, freelance artist:** Hi guys, trying to convey the elegance of the Xi'An but also make a ship that has the capability of different shapes and configurations in flight. Here are a few more of the configurations the ship can change into in flight, either for defensive or offensive purposes. Some of my favorite ships are ones that can change their configurations – X-wing, Lambda shuttles. I'm trying to bring a little of that into the ships. Neat to see machines moving and changing in flight. Let me know if you see anything that can be used.

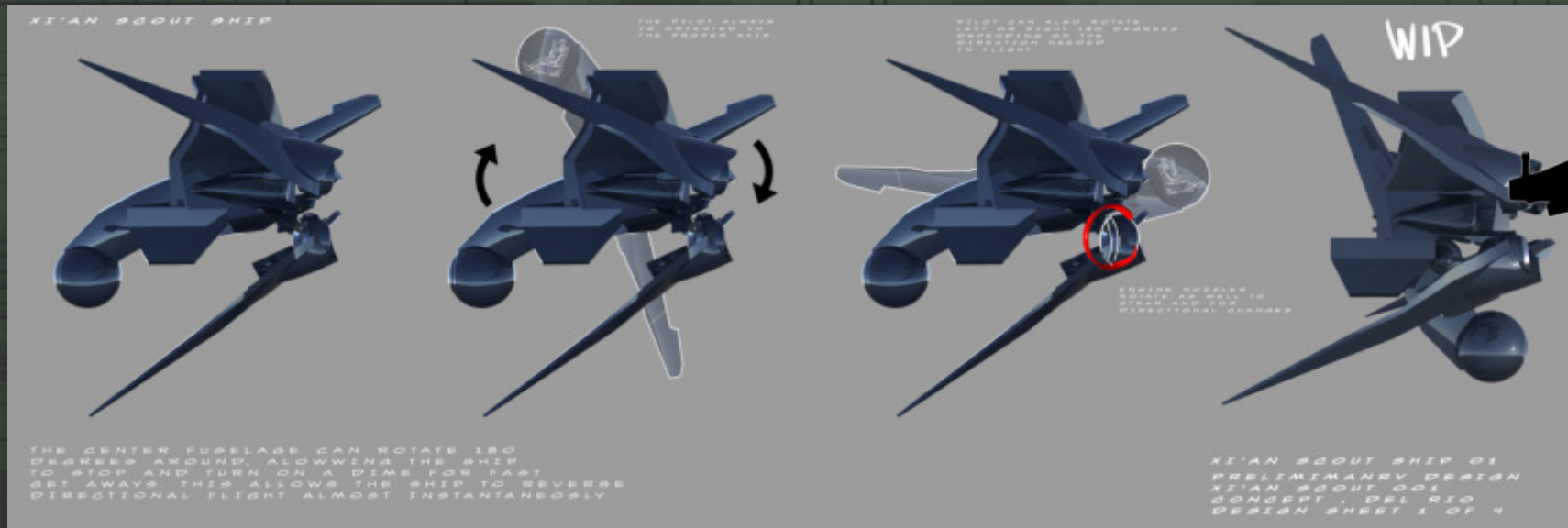


**Chris R:** I really dig the aesthetic (it's got a bit of an *Oblivion* look), especially on the 2 of 4 WIP image. My big issue is that with the cockpit at the bottom it looks like a dragonfly flying down, which I think we want to avoid with the Xi'An – we don't want to think insect.

Perhaps we move the cockpit to the center of mass, make it a sphere (think Hamster bubble) that allows the pilot to change his orientation as the ship changes configuration. This would also create the least amount of Gs on the pilot during radical maneuvering.



WORK IN PROGRESS



**Chris O:** I really don't think it would take much to lose the "head insect" look if there is just a subtle extra piece / fin coming out the other side of the cockpit. That way, it will keep the cool cockpit offset look. Eddie?

**Eddie DR:** Been thinking about this last night and this morning. It's a tough one. Trying to keep all that and the general shape intact while changing it to not make it dragonfly-like is a challenge. I would say the fin coming out of the lower section either laterally or diagonally would be the best bet to try first. I will give that a shot.

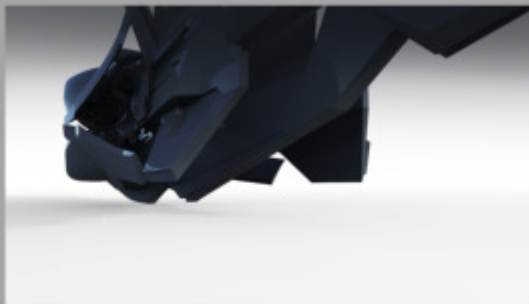
Chris O: New Xi'An scout ship concepts from Eddie Del Rio. [this page and next 4 pages]



WORKING PROGRESS



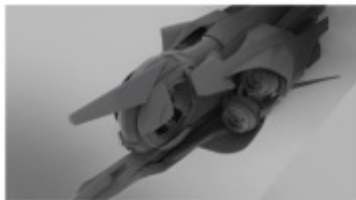
# WORK IN PROGRESS



01 LANDING GEAR



individual engines can rotate in the wing housing  
ENGINES



MAIN HATCH DETAILS

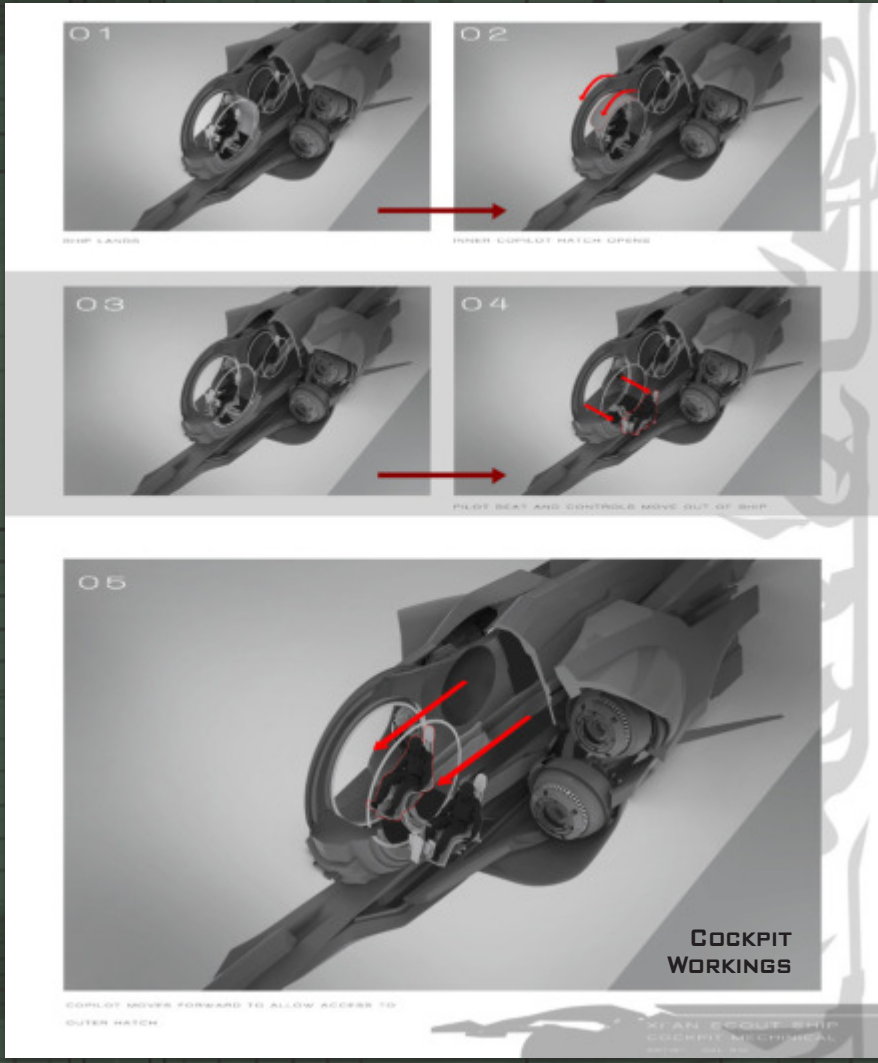
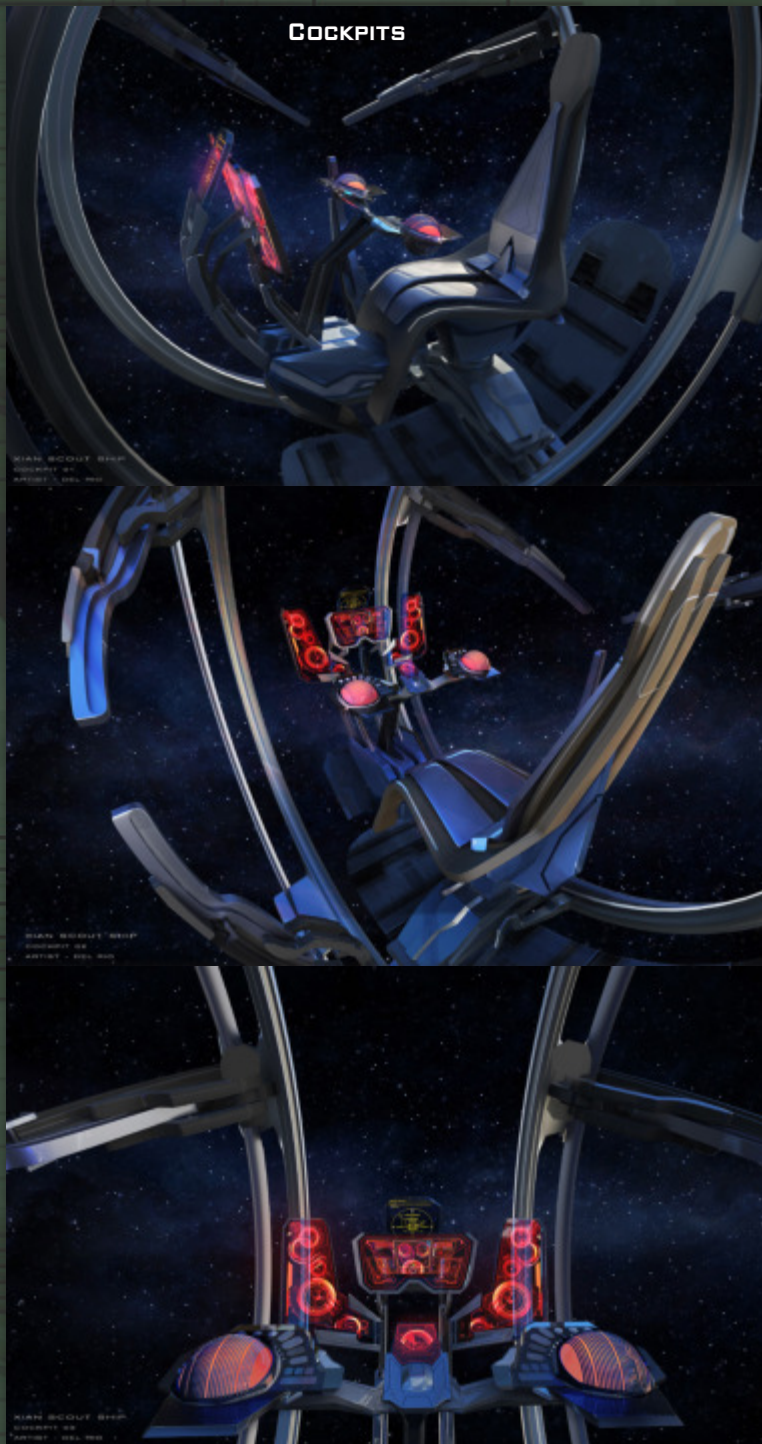


02



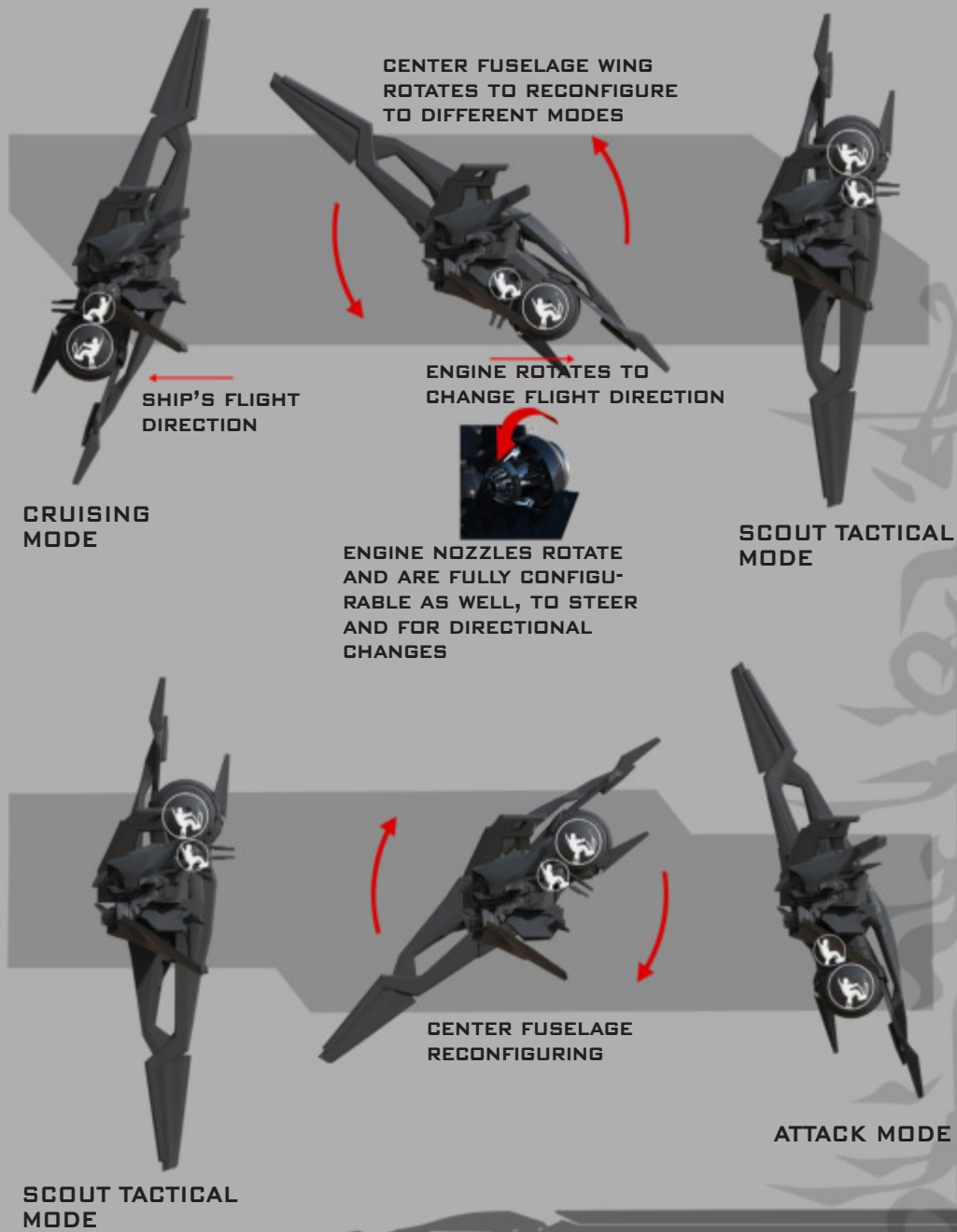
individual engines can rotate in the wing housing

# COCKPITS



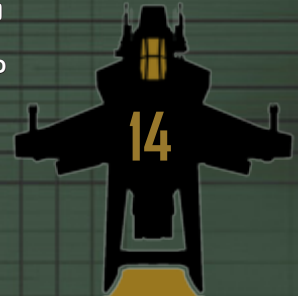
WORKING IN PROGRESS

PILOT AND COPILOT SEATS ALWAYS ORIENT TO THE PROPER AXIS AS THE SHIP RECONFIGURES ITSELF FOR DIFFERENT MODES. [IN SUBSEQUENT DEVELOPMENT THE COPILOT SEAT WAS REMOVED AND THE PILOT SEAT SHIFTED TO A MORE CENTRAL LOCATION IN THE CRAFT.]

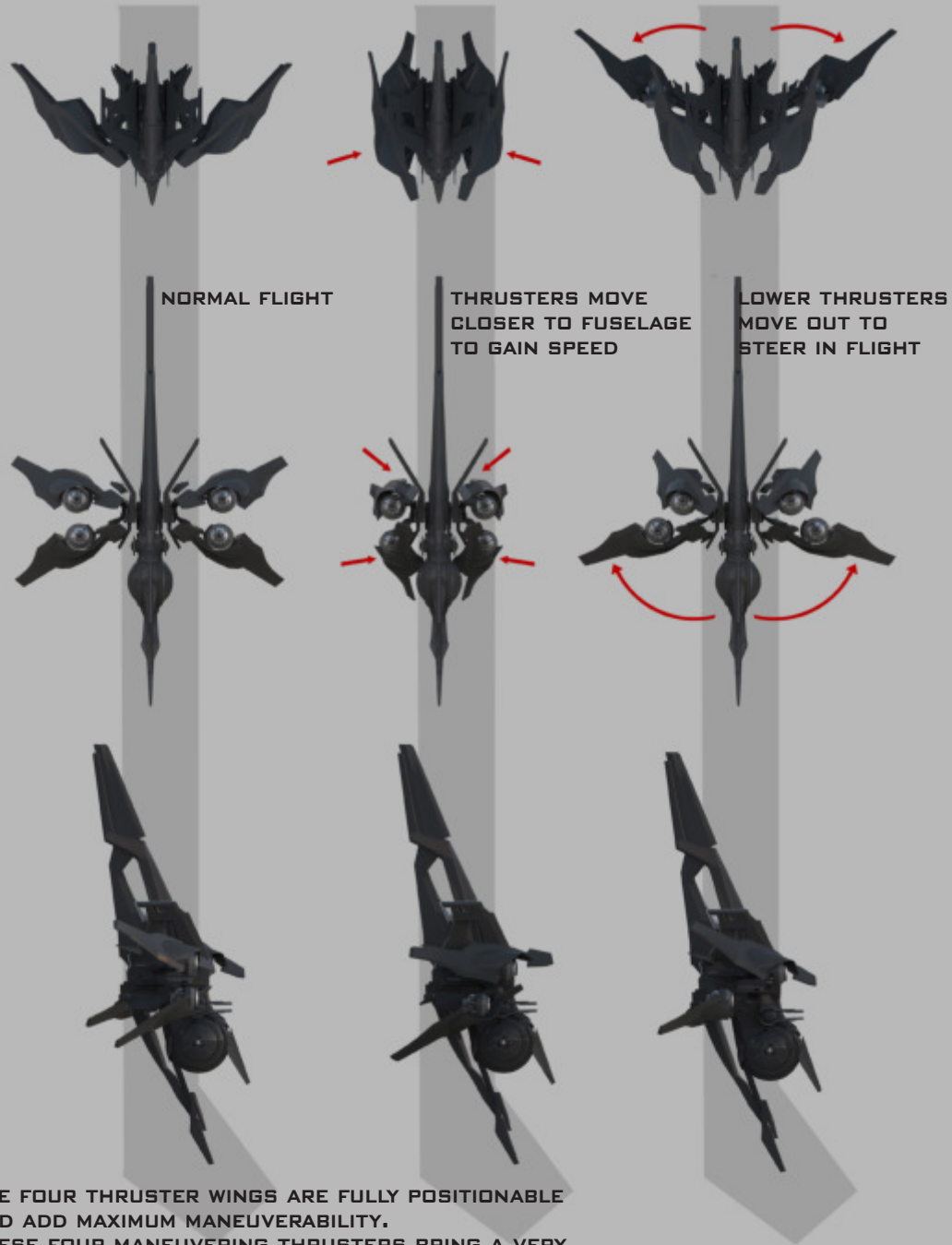


XI'AN SCOUT SHIP  
FUSELAGE CONFIGURATION MECHANICAL  
ARTIST DEL RIO

THE CENTER FUSELAGE CAN ROTATE 180 DEGREES, ALLOWING THE SHIP TO STOP AND TURN ON A DIME, FOR FAST GETAWAYS. THIS ALLOWS THE SHIP TO REVERSE DIRECTIONAL FLIGHT ALMOST INSTANTANEOUSLY.



WORK IN PROGRESS



NORMAL FLIGHT

THRUSTERS MOVE CLOSER TO FUSELAGE TO GAIN SPEED

LOWER THRUSTERS MOVE OUT TO STEER IN FLIGHT

THE FOUR THRUSTER WINGS ARE FULLY POSITIONABLE AND ADD MAXIMUM MANEUVERABILITY. THESE FOUR MANEUVERING THRUSTERS BRING A VERY ORGANIC AND ANIMAL-LIKE FEELING WHILE IN FLIGHT.

X'IAN SCOUT SHIP  
WING THRUSTER CONFIGURATION MECHANICAL  
ARTIST: DEL RIO



WORK IN PROGRESS



**Chris O:** Previz to see latest design in context of flight and to evaluate cockpit visibility (roughly retrofitted slightly from Eddie's design to increase view). Original idea was to completely enclose the cockpit with virtual visual display surrounding the pilot. Game engine tech may prevent this, so we're exploring complete "glass" cockpit.

**Mark S:** This looks amazing! Love these ships.



WORKING PRIORITIES



**A****B****C****D****E****F**

**Chris O:** Rough landing previz.

**Chris R:** Very cool! Love it! Can we get this bad boy in engine?

**Mark S:** We've assigned Patrick to whitebox out the ship with Jay, and they can work out animation concerns and implementations. We will also get Eddie Del Rio to do a few concepts on the landing gear and cockpit area to clear up some design

concerns. Also, we will need to talk to Dan about what kind of systems it will take to make that sucker fly.

**Eddie DR:** Cool, can't wait to see this flying around and maneuvering its thrusters and wings to guide it! I worked out the cockpit and am working on landing gear right now! Stay tuned!

**David Hobbins, concept artist:** Very cool!

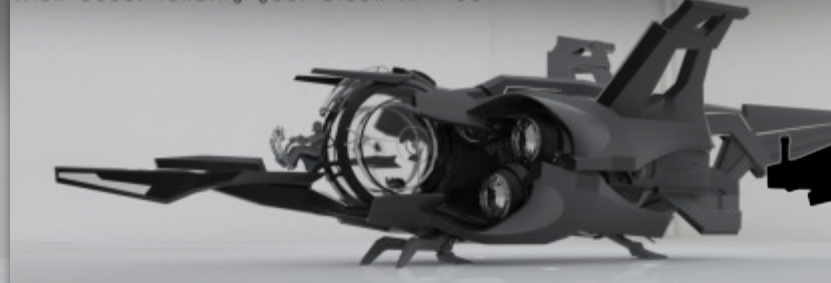


WORKING IN THE SHADOWS

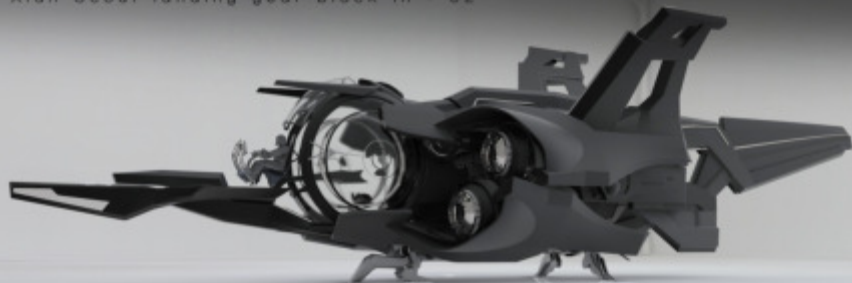
Xian Scout landing gear block in - 01



Xian Scout landing gear block in - 03



Xian Scout landing gear block in - 02



WORKING DRAFTS

**Eddie DR:** Looking for feedback on the landing gear for the Xi'An scout. I blocked out three sets. These are preliminary designs to get a sense of shape and mass for the landing gear. You guys see any that you like? If so, I will go in and take it and make sure it's mechanically proofed and add in smaller details and such. Just let me know!

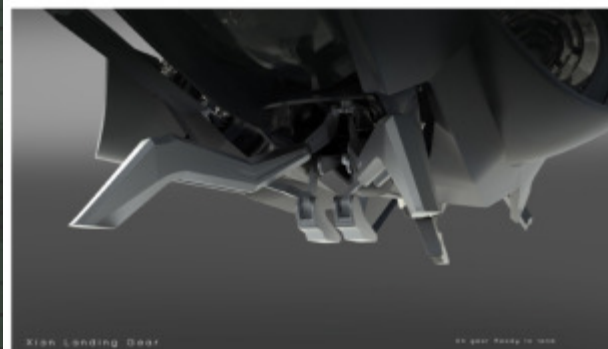
**Chris R:** #3 for me.

**Chris O:** Copy that!

**Eddie DR:** Sounds good!, will get to it!

**Eddie DR:** Here are the mechanics design pages for the landing gear and the new entrance hatch. Will send along my geo as well.

**Chris O:** Thanks! Looks good.



**Chris O:** Cool. I guess that display would fold forward a bit to give him room to step out of the seat ... now we gotta figure out how to get him onto the ground. Probably on Xi'An ships these scouts would dock or land in a place where there is a platform to step out on right from the extended seat area ... but there needs to be a backup way to get to the ground from there .... hmmm.



WORKING ON PROGRESS

**Eddie DR:** Here is my design for the boarding ladder. It's designed to stow away in the lower mandible of the ship when in flight.



WORK IN PROGRESS

ATEY GHAILAN, FREELANCE ARTIST:  
ROUGH OF XI'AN SCOUT BEAUTY SHOT



ATEY G: WIP COLOR ROUGH



ATEY G: COLOR COMP



ATEY G: FINAL



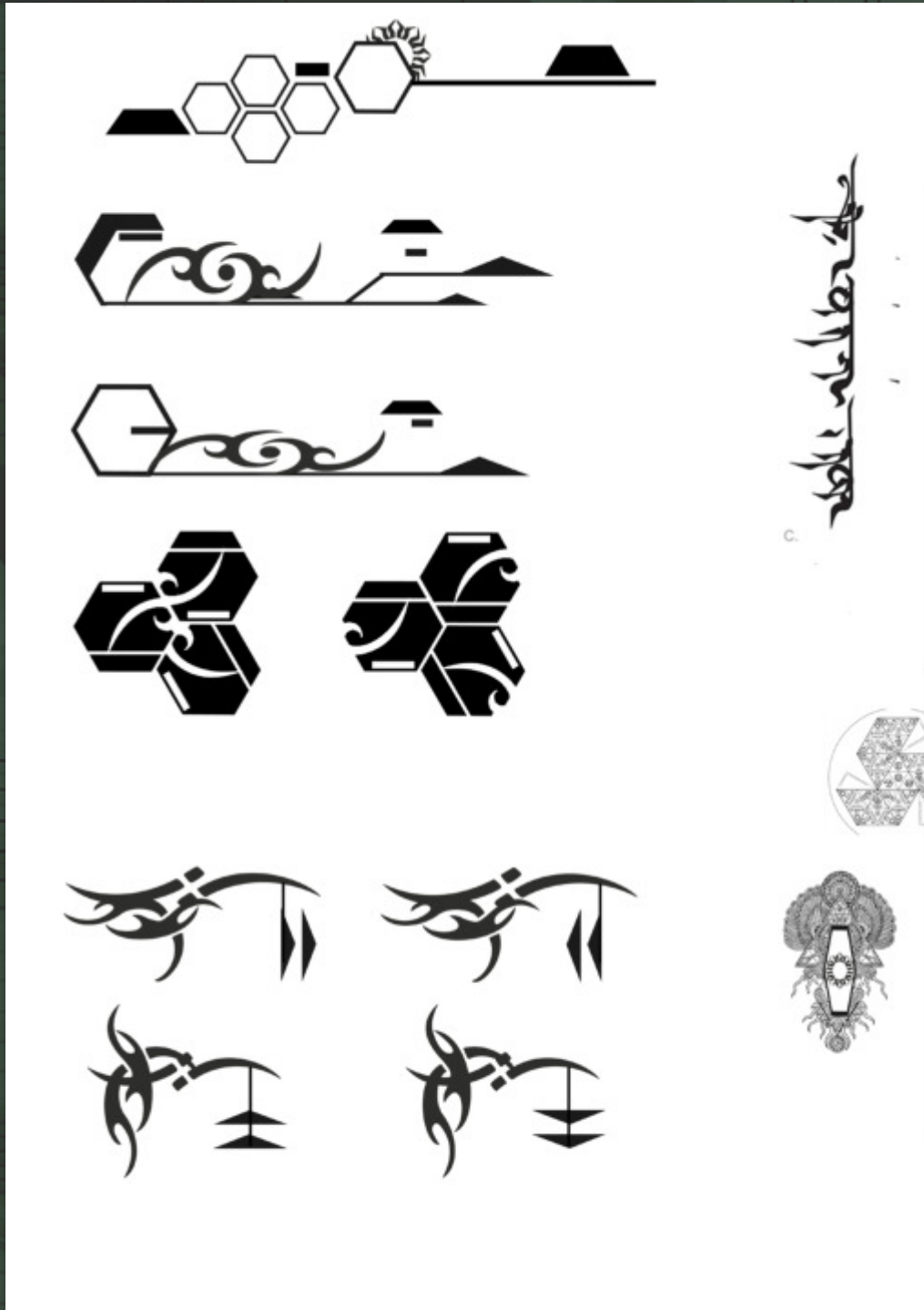
Chris S: That looks sweet!

Chris R: Looks good to me!



WORK IN PROGRESS

## XI'AN LANGUAGE ELEMENTS



**Paul Jones, Art Director, S42:** Chris, we've been looking at the Xi'An scout, doing some further development of its manufacturer before it gets built.

Two red versions and two stealthy ones.

This is Gary's first crack at SC content and personally I'm really digging it. We've been pushing the decorative/cultural aspect with materials and markings, with some inspiration from *Jupiter Ascending* but doing our own take.

The interior has some cultural elements towards the rear to keep the visual noise to a minimum, but you'll see it nicely as you approach the craft. I think the all-black is too much and needs some more metals, but I'm liking the phosphor bronze colouration which is also evident in the Cargo ship – it would be good to get some common themes to tie these Xi'An ships together.

Looking also at an interface idea. It needs Zane's input, but it gets the ideas flowing! Also, investigating a twist on the silver hallmark idea, as maybe discrete buttons or manufacturer tags.

[this page and next 6 pages]



22

WORK IN PROGRESS

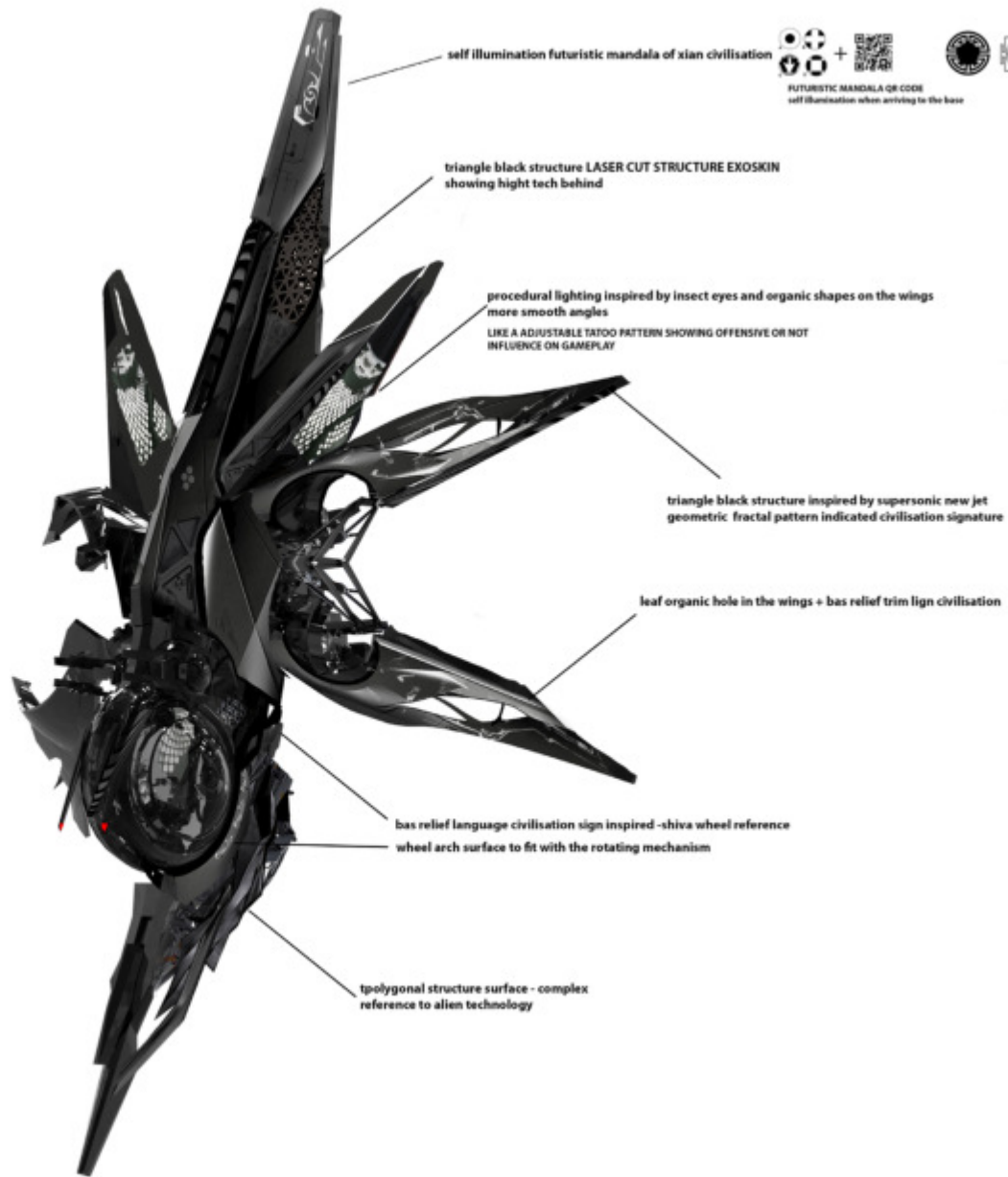
# XI'AN 01 researches



researches futuristic gothic church language shape of xian



CHASSIS STRUCTURE CENTRAL PART



self illumination futuristic mandala of xian civilisation



triangle black structure LASER CUT STRUCTURE EXOSKIN showing high tech behind

procedural lighting inspired by insect eyes and organic shapes on the wings more smooth angles LIKE A ADJUSTABLE TATTOO PATTERN SHOWING OFFENSIVE OR NOT INFLUENCE ON GAMEPLAY

triangle black structure inspired by supersonic new jet geometric fractal pattern indicated civilisation signature

leaf organic hole in the wings + bas relief trim lign civilisation

bas relief language civilisation sign inspired -shiva wheel reference wheel arch surface to fit with the rotating mechanism

tpolygonal structure surface - complex reference to alien technology



WORK IN PROGRESS

# XI'AN 01

researches COCKPIT + UI



LIGHTING TAG UI

FUTURISTIC MANADALA+  
NASA SIGN+ QR CODE  
IDENTIFICATION SYSTEM

CIVILISATION HISTORY

CONTRAST ORGANIC  
PURE AND 3DPRINTED BONES  
SHAPES

FRONT PURE AND MINIMALISTIC  
FOR CLEAR HIGH TECH GAMEPLAY

LIGHT GRAPH UI DISAPPEARING  
GESTURE WITH HANDS  
HIGH TECH UI

REAR TELLING STORY CIVILISATION  
AND SCULPTED 3D PRINTED  
AND FUNCTIONNAL

HALL MARKS BAS RELIEF ON PHOSPFO BRONZE PART



DATE



METAL  
USE  
OF  
PHOSPHORUS  
BRONZE



MAKER'S MARK

PLAYING WITH MATERIALS  
SHINY OR MATTE AND  
NEXIGEN TEXTURES +  
ORGANIC

3D UI SURREALISTIC SHAPE  
+ CELTIC FRACTAL



WORKING IN PROGRESS

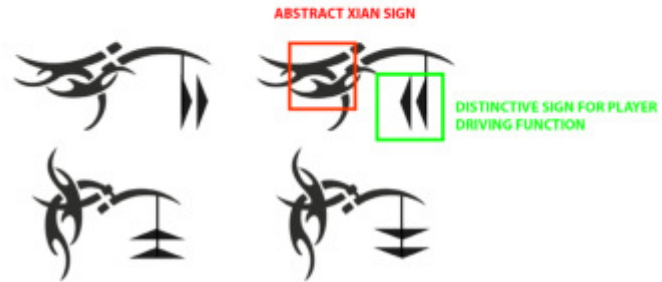


# XI'AN 01

researches graphic language

- GOLD OR PHOSPHO BRONZE : UI AND BAS RELIEF SIGN
- LIGHT GRAPH - GESTURE PILOT LEAP MOTION SYSTEMS
- ELECTRONIC AND DYSYMETRIC GEOMETRIC AND ASIAN REFERENCE
- HISTORIC SIGN - CIVILISATION

## 01 PILOT CONTROL



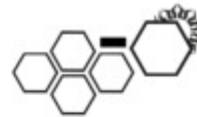
## 02 WRITTING LANGUAGE



## 03 CIVILISATION HISTORY



## 04 NUMBER



## 05 HALLMARKS

- THE SPECIFICITY OF THE METAL USED INFLUENCED ON GAME PLAY
- WHERE THE METAL CAME FROM
- DATE OF CONSTRUCTION



DATE



METAL

PHOSPHO BRONZE  
GRAPHENE



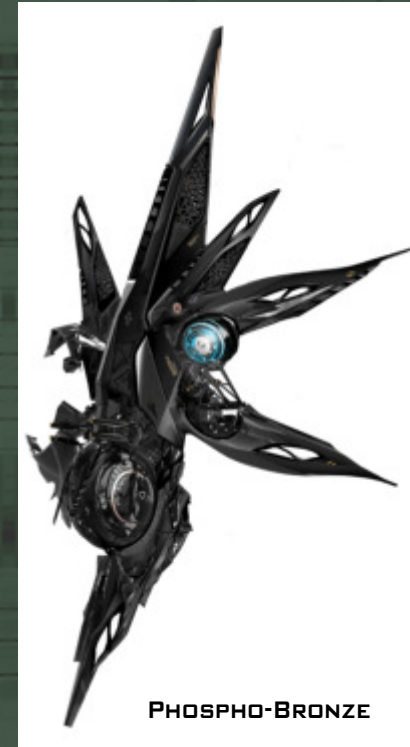
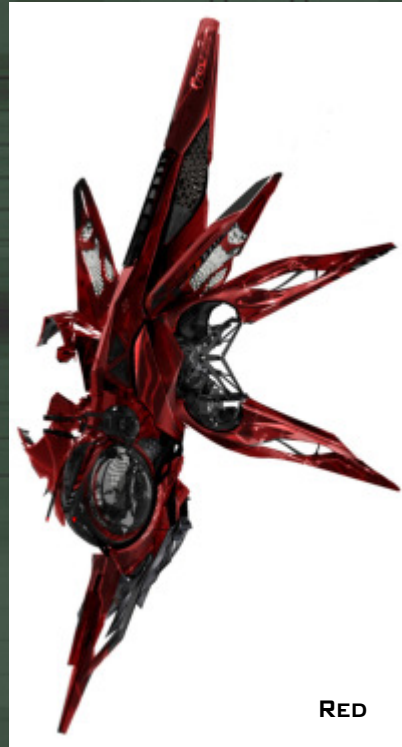
MAKER'S MARK



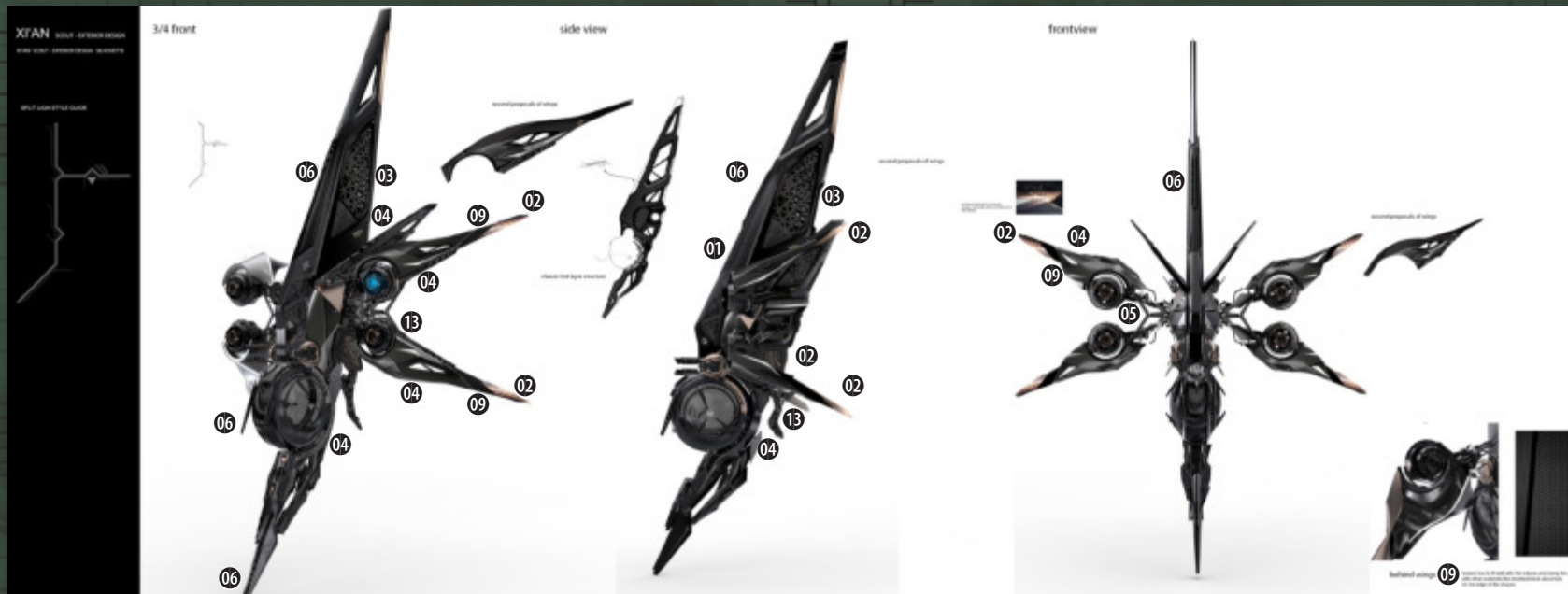
WORK IN PROGRESS

## Exterior Textures:

01. Matte black
02. Xi'An phospho-bronze
03. Laser-cut techno grey plastic
04. Special carbon
05. Aluminium / chrome
06. Matte black pattern
07. Gradient triangular pattern
08. Perforated dark grey metal
09. Kevlar hexagonal pattern
10. Black metal, specular high
11. Brushed dark aluminium
12. Hallmarks – bas relief metal
13. Xi'An hexagonal pattern



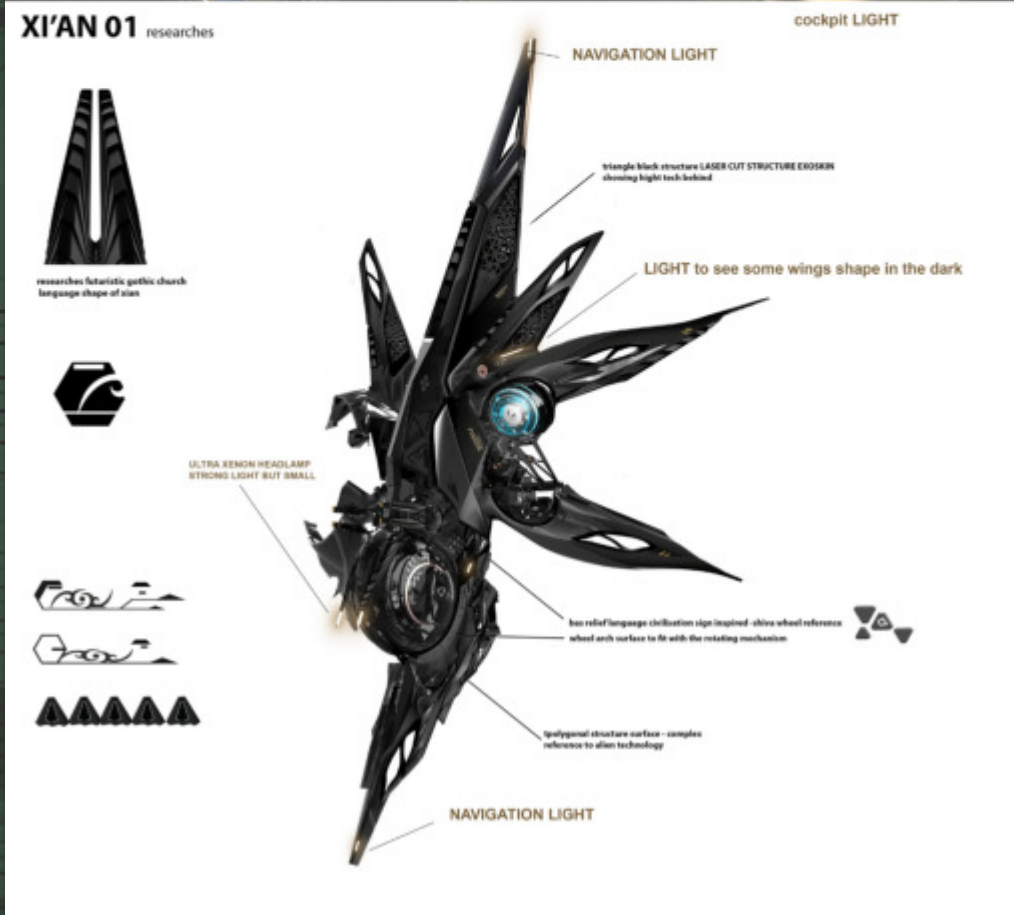
NUMBERS CORRESPOND TO TEXTURES IN THE ABOVE LIST



WORKING PROGRESSES

LIGHTING

**Gary Sanchez, Senior Concept Artist, F42:** Lighting diagram for external Scout ship. Chris/ Josh: for the interior, the location of the lights hasn't been solved and will need further study, but this also shows a direction to investigate. I'm sure it will change as the cockpit comes along and we see more clearly what should be highlighted and what can sit back.



WORK IN PROGRESS



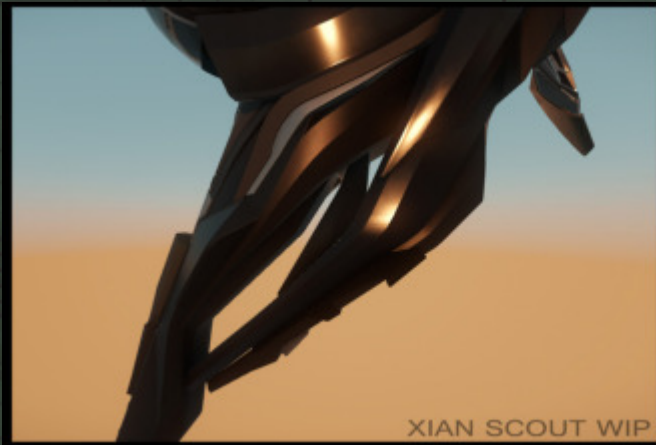
**Chris S:** Here are some Scout WIP shots. The main whitebox modeling/animation support is largely done now. We've done some of the basic color and values breakup and are moving onto high poly modeling (grey box). The animations for landing and cockpit entrance/exit have been created and will be implemented into the load-out soon. Next we will be concentrating on high poly modeling and materials to get it ready for the hangar. I'll post an in-engine update soon.



WORKING IN PROGRESS

**Chris S:** A couple of Scout greybox WIP pics. Most of the geo has been fleshed out and smart normals have been applied. Next is finishing off the UVs and another materials and the textures pass, adding some of the intricate patterns and refining some of the composite and metal textures. Emre has been playing around with some lighting schemes recently as well. The current concept has the thrusters blue, but I think the warm/cold contrast he came up with looks pretty nice in this instance. We've tried switching the colors (warm center and blue thruster glow), but that looked like the engine was on fire or something. ./ I'll post some WIP shots of the interior tomorrow.

**Paul J:** Please stick to the concept and go with the blue/teal thrusters. The Xi'An thruster tech should be consistent. The Freelancer and the Starfarer use Xi'An tech in their thrusters, so copy that colour.



WORK IN PROGRESS



WORK IN PROGRESS

**Chris S:** Some pics of Emre's lighting pass on the Scout.

**Paul J:** Can we get it in a space background so we can see it clearly? This scene isn't doing any favours for showing the work. :(

**Chris S:** Yeah, the next shots will be with different backgrounds. (Emre has been testing out these environments as a possible means to take beauty shots for marketing in the future.)

**Chris S:** A couple of WIP shots of the material/texture pass. Creating alien composite materials and playing around with some gloss/detail maps to achieve something a little unique. I've also started on the color breakup for variance creation, based on the recent conversation we had about paint job/decal setup.

**Chris R:** She's really coming together! It's going to be cool to see her flying around the galaxy as she's so different from the UEE ships!

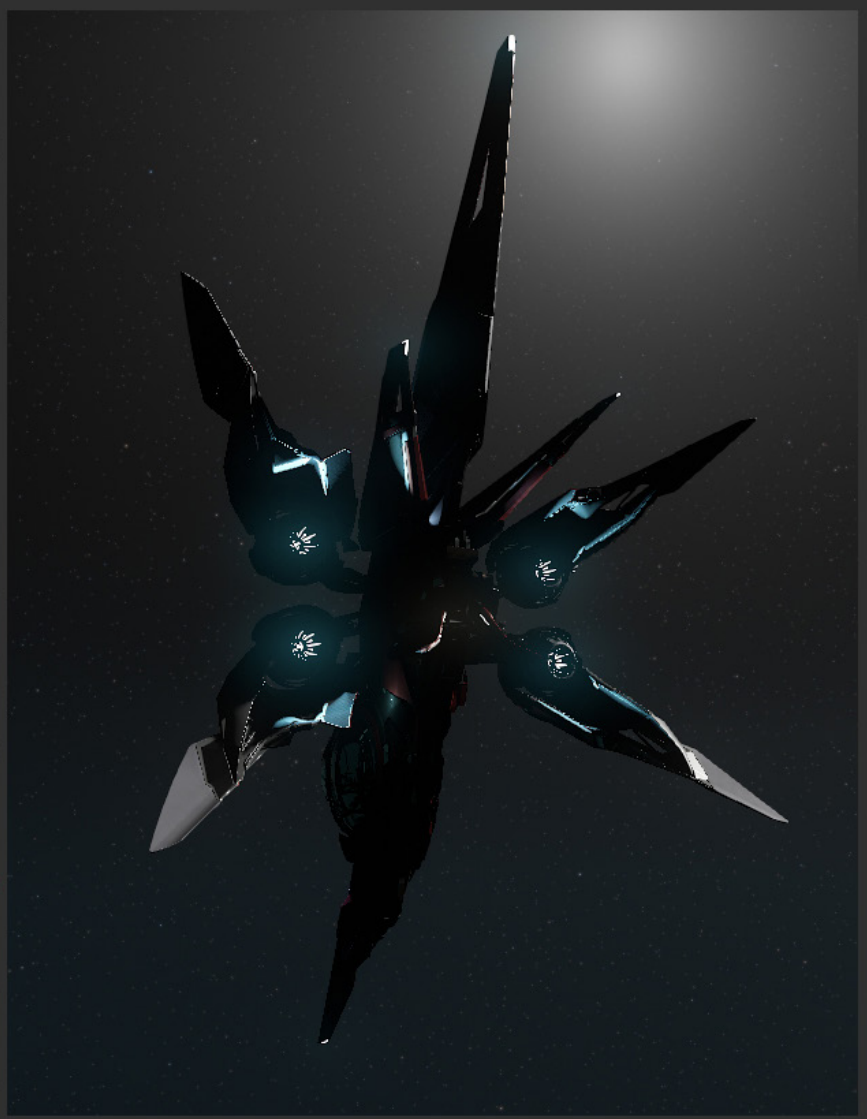


WORKING IN PROGRESS

07:00	07:00
07:00	07:00
07:00	07:00
07:00	07:00
07:00	07:00
07:00	07:00



XIAN SCOUT WIP



WORK IN PROGRESS





XI'AN KHARTU-AL



WORK IN PROGRESS



## AopoA: Launching a Xi'An Invasion

From the unique drone of its dual-vector thrusters to the sharp lines of its distinctive profile, Xi'An ship manufacturer AopoA's (pronounced /uh-POE-uh/) export model of their sleek scout ship, the Khartu-AI, has made a splash amongst spaceship enthusiasts since its debut in the UEE nine short years ago.

Following on the heels of a successful technology-sharing partnership with ship manufacturer MISC, Emperor Kray has slowly been allowing his people to pursue more

interspecies business transactions. The effects of this new policy can be seen coming to fruition in the production of the Khartu-AI, the first completely Xi'An-designed ship approved for sale in the UEE, marking a significant step forward in xeno-economic trade development.

However, it wasn't so long ago that AopoA and its vessels weren't so welcome in Human space.

THE  
MISC  
CORPORATION

## Crossing the Line

At the height of the cold war, the UEE and Xi'An navies maintained a delicate stalemate along the Perry line. While large fleets patrolled the border, daring one another to make the first move, most of the real fighting was done through clandestine operations. Both species would send small scout vessels for recon missions along the line, stockpiling information that, should an active war break out, potentially could prove more valuable than missile stockpiles.

Even after peace was brokered by Senator Akari in 2789 and the Perry Line was formally dissolved, suspicious attitudes remained firmly intact, as both governments worried that the truce would prove to be a temporary one. As we have learned from documents unclassified under Emperor Costigan's Historical Truth Act of 2941, the UEE continued to launch secret missions along the border as they tried to assess the Xi'An's true strength and intentions. It was in these covert forays that UEE pilots first encountered the ship they would come to nickname 'Quark.'

With their inability to get close to the agile craft, it earned

its sobriquet from the distinctive way its maneuvering thrusters lit up like a spark flying through space. Despite several encounters, the Quark would remain elusive until 2896, when a naval recon squadron were fortunate enough to discover one derelict and pilotless. Taken to a classified base for research, military scientists spent years studying the alien vessel. Impressed by its complex articulating wings and dual-vector maneuvering thrusters that could rapidly provide thrust in multiple directions, they dedicated themselves to trying to reverse engineer the advanced technology found on board. It was in this undisclosed bunker where the researchers would spot on the sleek hull a corporation council mark that was already familiar to them. First seen on the wrecks of Xi'An Volper bombers, that distinctive mark confirmed who was behind the manufacture of the mysterious Quark – AopoA.

It was perhaps no coincidence then that while all of this was going on behind highly classified doors, AopoA was making headlines in the UEE for another reason.

---

## Mutually Assured Benefits

Not long after the Quark – or Qhire Khartu to call it by its Xi'An name – was captured, AopoA's leadership council sent a delegation to the MISC corporation with the intent of exploring the possibility of a lend-lease agreement. MISC, chosen because their Hull transport line had begun to gain popularity in the Xi'An border systems, knew that if they could incorporate Xi'An technology into their ship designs it would give them a huge market advantage with both species. In 2910, after a four-month closed-door conference, a deal was struck and MISC became the first (and so far only) Human spacecraft corporation to have such a business alliance with a Xi'An manufacturing council.

Though the details of the deal remain a tightly-held trade secret, many historians are theorizing that Emperor Kray approved AopoA's courting of MISC because the Xi'An had learned of their vessel being taken by the UEE. What some experts suggest is that since they knew it would only be a matter of time before Humans reverse-engineered the technology ourselves, it would be better to share with us directly and be able to profit off the exchange. Of course, for now we can only speculate that this is what prompted them to negotiate the agreement with MISC, as much of the Xi'An business world and Emperor Kray's motivation remain heavily shrouded.



## By the Emperor's Grace

Thanks to the budding openness between our two species, we have slowly begun to better understand Xi'An society, but they continue to be a private people hesitant to fully share the intricacies of their culture. Part of this has to do with their longevity. Many of the Xi'An, including Emperor Kray, were alive to personally witness Humanity's actions of centuries past and remain wary. So while Humans do not yet fully know all the complexities of the Xi'An economy, we do know that AopoA, like all Xi'An corporations, have been granted a monopoly over their unique manufacturing sector. Currently, they are the only manufacturer of light-craft legally allowed in the Xi'An Empire. As such, their leadership council has a government representative who ensures that AopoA always has the best interest of all Xi'An at heart in their corporate decisions.

When asked for comment on their company history, AopoA's official statement claims that they produce advanced spacecraft by the will and grace of Emperor Kray, but unofficially, it seems that they have a reputation amongst Xi'An for their aggressive political maneuvering

a millennium ago when they wrested control away from previous light-craft manufacturing council. Incorporating the iconography of the Emperor's family into their prototype design, AopoA challenged their predecessor to shoot at the sacred symbols during the trial skirmish that would determine control of the governing board. It was a clever move, as the ship could not be fired upon without risking the Emperor's displeasure, and AopoA was able to gain control over the sector. However, the company did not have time to rest on their laurels. Before the dust could settle, numerous rivals emerged, and assuming that they had earned the position through audacity and daring alone, sought to oust the company themselves. Faced with many challengers, AopoA surprised again by revealing the innovative dual-vector thruster technology that has since revolutionized Xi'An ship design. It seemed that their designers had been working on it in secret, but had been unable to finish it until they had acquired the resources that council control brought them. AopoA handily defended their title and cemented their position for the centuries that have followed.

---

## Scouting Ahead

As the Khartu-AI becomes a more common sight across the UEE, it seems that this may just be the beginning for Xi'An trade. With CTR opening new stores in new systems and MISC actually moving manufacturing facilities to Xi'An-controlled space, our two economies may become ever more intricately linked. There are plenty who are eager to see other AopoA ships modified for Human sale, and if the trends we see today continue, it may not be too long before it becomes as normal to see a Human pilot flying an AopoA Volper as it is to see a Xi'An.

Don't expect AopoA's now-familiar 4-Hex mark to survive much longer. Obviously different from AopoA's usual Xi'An mark, the 4-Hex was an attempt by the Xi'An manufacturer to appeal to a new, Human audience. After a swift (for the Xi'An) nine-year trial period, it is rumored that AopoA will be replacing it with a more traditional, Xi'An-based mark.



# MODULAR SPACE STATIONS

SHIP SELECTOR

*Rumor has it that Star Citizen is going to be a pretty big game. Big enough that anything the Devs can do to make the process more efficient is going to pay big benefits when everyone is trying to create hundreds and thousands of homes, stores, cities, space stations and all the other structures that will give you a framework in which to play the game.*

*This month, we sit down with Luke and Ian to discuss one significant efficiency that has been developed over the past few months – modular construction. We know, it seems obvious, but creating it is anything but that.*

**JP:** *Let's start at the beginning. What is your title, and what have you been doing on Port Olisar?*

**Ian Leyland:** Environment Art Director. For Port Olisar, I was responsible for the concepting, prototyping, direction the creation of the interior and exterior building sets, directing the lighting, set dressing, materials, etc.

**JP:** *And who have you had on the art team working on it?*

**Ian L:** Between 12-15 during development: my team of environment artists – Jake, Jack, Calvin, Karl, Hayo, Pete, Ian, Dan,

37

BEHIND THE SCENES

Micheal, Jose, Eddie, Michal, Wai, Andy, Nic, Jan – all are a very talented group of artists who should be congratulated on their work.

And Paul Jones, who was the *Squadron 42* art director overseeing its development.

**Luke Pressley:** I am Lead Designer - Star Citizen Live. My job on Olisar has been figuring out the specifications: how many players can spawn there? How many ships can spawn there? How many small ships, how many large? How will ships such as the Starfarer be spawned?

**JP:** Same question for Luke – who has been working on your team for this?

**Luke P:** Matt Delanty has diligently been maintaining gravity on the station (ensuring the gravity volumes match the walkable spaces). And Danny Reynolds and I have recently been adding AI security to Olisar to chase away those who enjoy nudging other people's ships off the pads.

**Ian L:** And lots of other people besides – it was a great collaboration between the team.

**JP:** So what is Port Olisar? In particular, how is it related (if at all) to the orbital platform used for the FPS demo and created (in the lore) by Gold Horizon?



**Luke P:** In no way related. Olisar is currently a means to an end – spawning players when they can't spawn from their hangars. It's akin to a space motel and sometime in the future will contain shops much like those found in Area18.

It has bedrooms for 64 players. Each player receives a specific bedroom where he always respawns which can only be accessed by him.

**JP:** And where is it? What system?

**Luke P:** It orbits the planet Crusader in Stanton.

**JP:** So it's a temporary home base for up to 64 players; a way station for someone far from his real home base?

**Luke P:** I can't speak for the role these stations will play in the full PU when players have their own hangars in actual universe locations. But I would hope that when a player is far from his hangar that he could land at a port such as Olisar, rent a room and leave the game session safe in the knowledge that he will return to the game in that location, with his ship and its cargo intact.



BEHIND THE SCENES



**JP:** Gotcha. And while I know in Star Citizen just about anything can happen anywhere, it sounds like Olisar isn't primarily a first-person combat zone, correct?

**Luke P:** No, in fact it has an Armistice Zone in effect around it which prohibits the use of weapons.

**JP:** Is the Armistice Zone a UEE thing, a Crusader thing, or a software code thing? Or all three?

**Luke P:** The Armistice Zone is again a means to an end – to prevent griefing in the spawn area until we have other systems in place. The great news is that for a future release we are implementing a system of law to mark as criminals those who commit crimes.

In the future there will be exterior turrets to attack criminal ships and AI police/guards to police the interiors. So I would imagine the notion of an Armistice Zone will either disappear or become extremely rare.

**JP:** I'll ask and answer the obvious follow-up question from some of our players, "But what if I want to blow it up?"

If everything could be blown up, then everything would be blown up, within the first few hours after the game launches. We're modeling a universe as realistic as possible, but

it's got to be fun, and having a home base that is constantly at risk is not fun.

**Luke P:** Blowing up stations? I couldn't comment beyond that I personally feel it would cause too many issues. OWNING the station (either by legal means or otherwise), turning off the gravity, upping the rates, etc. – that would be fun and much more manageable.

**JP:** Then if I want to be a pirate, am I going to be penalized for playing true to my character at Olisar?

**Luke P:** You will be penalised only if you are caught. If you plan well, your crimes will go unnoticed.

**JP:** I like the way you think.

**Luke P:** Chris's intention is to have a pirate base which once you break the law you will spawn in instead of Olisar. One of the stations planned is a prison, so imagine getting arrested for a crime and having to serve your sentence (or be broken out by your clan).

**JP:** A question I should have asked earlier – any idea why it's named Port Olisar?

**Luke P:** The writers originally called it something like Olisar Station I think. We were calling too many things Station



BEHIND THE SCENES

so I suggested Port as it has the feeling of safety which I really wanted to stress.

**JP:** So far, we've been dealing with the purpose of the station; let's talk about how it's made. When Port Olisar first came up, what were you told to create?

**Luke P:** Way before it was Olisar, the spec was for a station you would start in for the 2015 Gamescom demo. As the level took shape, certain views were stunning, so we added the opening of your bedroom shutters and lingering looks through the windows of the lobby. One of the biggest jobs for me was figuring out the logic for the airlock, which turned out to be a much more complex task than I had expected. You really have to take these things as seriously as if you were making one for real, because nothing would break immersion more than having both doors open at once or be more frustrating than getting trapped inside.

So the Gamescom forerunner of Olisar was laid out primarily for capturing epic views.

**JP:** Ian, I'm assuming that you and your team had a lot to do with the stunning views. What was your brief for the demo?

**Ian L:** It was to be used as a springboard to introduce the player into our large world environment. The pitch to CR was to describe something really large, like Large World. We first must start with something small – in this case it was looking at a cup of coffee.

And then the player would open up the shutters and look out into the Large World space.

**JP:** What could you see when you opened the shutters?

**Ian L:** I wanted the view to include a moon in the distance, and it was a perfect opportunity to say let's go fly over there now.



BEHIND THE SCENES





**JP:** So: wake up, cup of coffee, open the shutters. That was pretty popular at Gamescom. Then what? What were the plans after that, and how did it work out?

**Luke P:** Plans for the demo after that bit or plans for Olisar after Gamescom?

**JP:** Starting with plans for the rest of the demo (relative to Olisar; not so much the space mission). Then how the station evolved after that.

**Luke P:** You joined your team in the airlock. A tense moment while it depressurised, then a walk up some stairs from the bowels of the station to a landing pad, with Crusader filling the majority of the sky.

That's something we definitely wanted to maintain when we built the Crusader map.

**Ian L:** The plan for the original was just an opening environment to reveal the Large World environment a bit more formally. CR liked the original concept, which we expanded upon to create the Gamescom demo. It was fairly simple in layout, just a living quarters, atrium, and then out onto the flight deck. This was also our first proof of concept for airlocks creating a transition for the player moving

outside into a vacuum.

**JP:** Yeah, in addition to their obvious use as an environment barrier, I can see that they also help transition players from one location to another.

How much of the station was built at that point? Just the path you took and what you could see in the distance, or did it have more structure than that?

**Luke P:** Just the critical path and the exterior, though the exterior form changed massively for Olisar.

**JP:** It wasn't "Olisar" yet?

**Luke P:** It was only christened that when quite a way through the building of the Crusader map. When building Olisar for Crusader we had a few problems to solve.

A basic one was how do we spawn around 64 players at this station and do so in a way which doesn't allow players to be seen popping in? This was solved by spawning them inside their own personal locked bedroom.

And how do we allow a player to spawn any of his ships? This was solved for the short term with the ship selector, which became a nice focal point for the individual struts



BEHIND THE SCENES



(there are 4 struts each housing 16 bedrooms, and each has its own set of ship spawners and landing pads).

**JP:** A strut is like a wing on a large building?

**Luke P:** Yes, we have struts A through D.

**JP:** So the station's purpose grew from "launching point for mission" to "spawn point for dozens of players"? Plus shopping.

**Luke P:** The port's purpose grows as the game's mechanics grow. Shopping is coming to Star Citizen soon, so it's coming to Olisar soon, too.

**JP:** So Port Olisar is one of our most current large structures. In what ways is it different from previous buildings, particularly from previous stations?

**Luke P:** It's the first with an interior as far as I know. Previously all we had were the Terraformer in Broken Moon and the Spire in Dying Star.

The new modular system we used to build it is a godsend. It allows us to whitebox interiors quickly and in a way that the art department can then quickly improve upon, because we stuck to a ruleset that the modular system enforces.

**JP:** What is the modular system?

**Luke P:** Put simply, it's a set of architectural pieces (walls, floors, doors, stairs) which conform to a set of metrics. They allow Design and Art to snap together pieces like Legos, rapidly creating layouts.

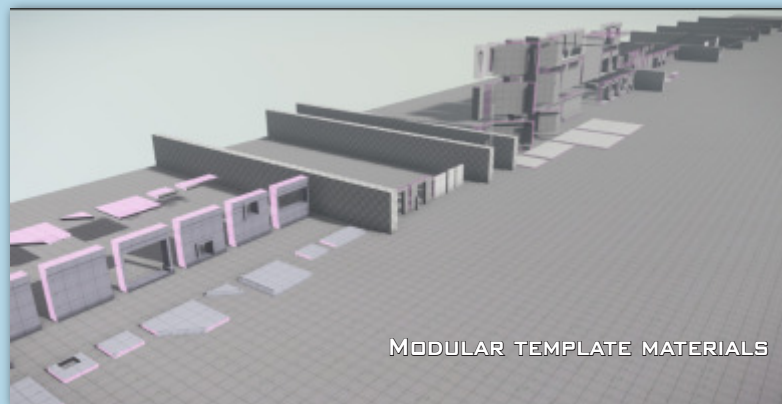
**JP:** That's neat – and it's gotta be handy, especially when the time comes that you'll be cranking out lots of structures. And even more especially when you have multiple designers and you need their buildings to smoothly fit together.

**Luke P:** Exactly – it keeps everyone sticking to the metrics so we aren't constantly demanding unique pieces from art. That's not to say we can't request unique pieces, however. The modular set makes up about 80% of the level, with the final 20% being hero assets and unique dressing to make it feel different. Simply sticking to the modular set would give very samey results.

**JP:** Yeah, I was wondering how pieces that fit together like Legos keep from looking like Legos. What's a "hero asset"?

**Ian L:** Special assets that define a room, like the ship selection terminal for the hub room. It wouldn't be the hub room without the terminal.

About a year ago I pitched an idea to CR about the concept of building sets. We were doing something similar



MODULAR TEMPLATE MATERIALS



## PORT OLISAR TODAY



in the past but this was a more refined solution with the ability to scale.

Originally the building sets were for interiors – like walls, floors, ceilings, etc., but I applied the same concept to creating space stations. Effectively, you have a modular building set for interiors and exteriors, giving total freedom to Design to create anything their want.

**JP:** *Are you saying that the original demo station was modular, as well? I hadn't realized that.*

**Ian L:** It was modular to a certain degree – we pretty much put that demo together in a very short period of time and we had a lot of elements to prove out.

**JP:** *"Prove out"?*

**Ian L:** Meaning figuring out how we can create and render huge distances with space stations, moons, asteroids, spaceships, etc. It was by far the biggest environment we had created so far; the brief from CR was to show the dream.

After the success of the Gamescom demo, I moved the space station from a proof of concept and started development into a proper building set which followed the cor-

rect dimensions and formula. If you look closely at the old Gamescom demo you can see the changes we've made.

The next deadline we had was for the Citizencon demo, which would be the candidate for the 2.0 release. We needed to flesh out the space station from being a single corridor to an expanded facility which could support multiple players, etc.

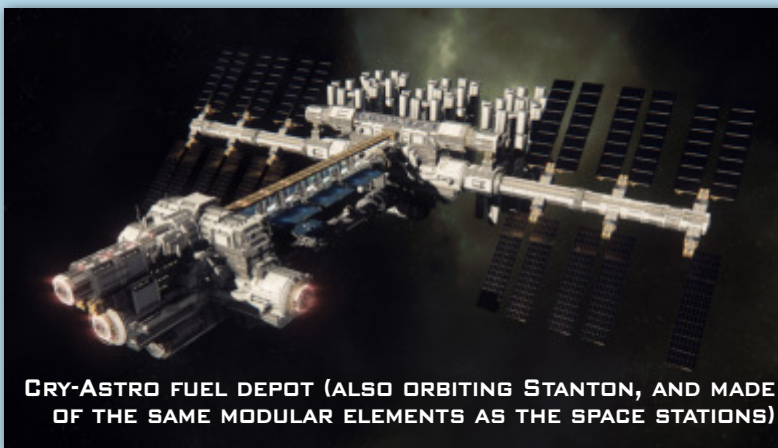
For the 2.0 release it showed how flexible the interior building set and the space station building set was. We were able to create multiple space stations in a very short period of time which were able to accommodate multiple design needs.

**JP:** *So Ian and the art staff were the primary designers of the station at this point?*

**Ian L:** The layouts always come from Design during the designer whitebox stage. But it is very important that art is always involved as they consider ergonomics, spacial form, balancing of architectural elements, vistas, etc.

**JP:** *And there is more than just the one station now? What are the other stations being used for?*

**Ian L:** There are currently three space stations.



**CRY-ASTRO FUEL DEPOT (ALSO ORBITING STANTON, AND MADE OF THE SAME MODULAR ELEMENTS AS THE SPACE STATIONS)**



BEHIND THE SCENES



**Luke P:** One, Covalex, is a destroyed station with no gravity. The focus there is EVA and exploration. The third, Security Post Kareah, is our FPS combat station. It has the level's machine guns and in the upcoming update will allow players to hack a security console and drop their wanted level (the player is now able to commit crimes and gain notoriety).

Kareah is a good example of how a station's function grows with mechanics. We found that though we had placed guns there, people did not stay inside the station to fight – they fought in zero-G outside or took the guns to other locations. The addition of the security console will mean players wanting to lower their wanted level will need to defend the console for a time while the hack is going.

**JP:** *What systems are they each in?*

**Luke P:** They are all in the same system. Kareah orbits Cellin, a moon of Crusader, and Covalex orbits Daymar, another moon of Crusader. The area is policed by Crusader Security, a private security company and a part of Crusader Industries who own and named the planet.

**JP:** *What is the security console?*

**Luke P:** The console allows access to their criminal database and the hack allows you to alter your criminal record.

**JP:** *Ah ... so you're not defending it for the public good. In fact, quite the opposite.*

**Luke P:** Yup.

**JP:** *This is FPS? (not ship-to-ship?)*

**Luke P:** Yes, interior fire fights.

**Ian L:** The space stations which you can see right now in 2.2 show how we are able to create space station environments realtime in CryEngine using modular components. The designer or artist can build an exterior, choose where the landing pads and airlocks go, etc., and then transition seamlessly to the interior building sets. This is just an alpha, so further down the line you will see more variety in architectural styles, but the principle is always the same. It has taught us a lot about how we can make SQ42 efficiently, and of course how we will be able to populate the PU with lots of content. It was a huge collaborative process from all disciplines, so a big thank you to all involved. It is a great testament to what the focus of CIG can achieve.



BEHIND THE SCENES



# KAYFA SYSTEM TOVAROH

*"The greater the thought, the greater the action."*

So states one of the main tenets of the Li'Tova, a moral and spiritual belief system popular among the Xi'An which guides its adherents' view of the universe. In no place is that more apparent than the Kayfa System, which is wholly dedicated to the Li'Tova thanks to the existence of one astronomically special planet, Tovaroh.

Kayfa's role as the focus of Xi'An spirituality was unknown by Humans during the cold war. After Humanity learned of the system's existence in 2617, rumors swirled that Kayfa was the main staging ground for invasion or even the location of the Xi'An homeworld. The true nature of the system was so guarded that for two hundred years, all

Humanity knew about Kayfa was that any UEE ship found in the system would be immediately attacked – a message made abundantly clear to the UEE by way of the two Navy pilots who found the system.

In 2617, UEEN Lieutenants Ahmad Harar and Carl Dyson discovered a gravitational anomaly while patrolling the Horus System. Harar and Dyson should have contacted their commander and reported the coordinates so a military pathfinder could be deployed, but, they later explained, doing so would have thwarted their chance at history. Without a word to anyone, they entered the jump point and became the first Humans to visit the Kayfa System. The decision to keep their excursion a secret was foolish but, in retrospect, might have averted an all-out interspecies war.

Unbeknownst to Harar and Dyson, their arrival in Kayfa triggered long range sensors that mobilized a nearby Xi'An squadron. Meanwhile, Harar and Dyson's return trip was delayed because Dyson's ship sustained damage from navigating the uncharted jump. While Dyson was running a diagnostic check to see if his ship was still jump-capable, an EMP blast neutralized both spacecraft. The Xi'An squadron swarmed and captured Harar and Dyson. For years, official UEE documents listed the two as on "medical leave" during this period. The full truth, however, was exposed after the Historical Truth Act of 2941.

Declassified UEE military records list Harar and Dyson as missing in action for three days. The two claim to have been held on a large Xi'An military vessel where they were interrogated while their ships were studied and stripped of weapons. After three anxious days, the Xi'An began to believe the pilots' story that the rest of the UEE military didn't know about the jump. The two were returned to their ships, escorted to the jump point, and given the message that any further UEE vessels would be attacked on sight.

It was only after the fall of the Messers and the normalizing of relations between the two species, that the Xi'An revealed the secrets of Kayfa. Imperator Toi's first official visit to the Xi'An Empire occurred in the Kayfa System. Emperor Kray led her on a personal tour of Tovaroh and clipped a branch of a Centennial Bloom plant for her to take home.

Emperor Kray also elucidated a core doctrine of Li'Tova; that one small action can affect the entire universe. Harar and Dyson were shown leniency because the Xi'An knew the UEE would eventually rediscover the jump. The Xi'An wanted to avoid a similar situation, and another chance at aggression, when the UEE came through the jump for the

**TRAVEL WARNING** The Xi'An consider Tovaroh sacred – a designation extended to the entire system, so be respectful. No violent activity of any sort will be tolerated; it will be immediately suppressed.

second time. So it was with great thought that the Xi'An determined the right action was compassion because it provided the clearest path to peace.

In a surprise move during the summit, Emperor Kray amended Xi'An law to permit the Kayfa System to remain open to all Human visitors in the hopes that it would promote interest in Xi'An culture, customs and, ultimately, long-lasting peace between the two species.

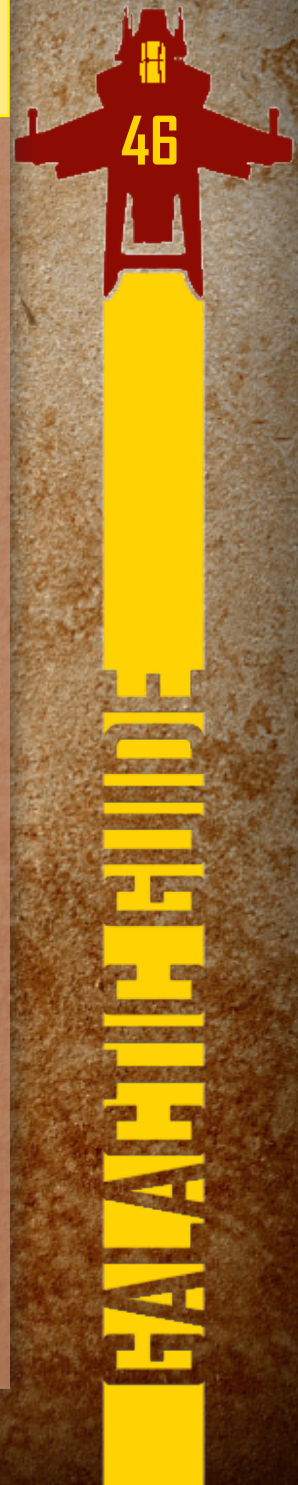
## KAYFA I

Kayfa's first world is a terrestrial planet with an atmosphere composed mainly of carbon. From orbit, the atmosphere is a sooty swirl of black, brown and red hues. Some UEE scientists theorize that the prevalence of carbon and the corresponding atmospheric pressure could have given the planet a diamond substratum. Such theories remain unproven as the Xi'An government strictly forbids mining in the system.

## KAYFA II (TOVAROH)

Kayfa II is the religious heart of the Xi'An Empire, thanks to its unusual astronomical properties. One day on the planet lasts 100 Xi'An years, which roughly equates to 128 Standard Earth Years.

It is the custom in the Xi'An Empire for planets to be assigned a purpose and developed with only that purpose in mind. Kayfa II's spiritual associations mean it was terra-



formed to be a place of peace, tranquility and meditation. Cultivated gardens and fields cover much of the surface with sacred temples built so that there would always be one on the horizon no matter where you look. The temples provide the bare minimum in resources and amenities for Xi'An monks pursuing the ultimate enlightenment in Li'Tova: spending a full day meditating on Kayfa II.

To preserve the planet's tranquility, Kayfa II has only one city, Su'Shora. The city has a small number of permanent residents, mainly government or religious officials and their support staff, who deal with visiting Xi'An tourists and religious pilgrims. Humans are welcomed but expected to adhere to the planet's customs. Unless given special dispensation, Human visitors are also required to stay within the limits of the city.

Kayfa II's religious focus means there is no manufacturing or mining, and only essential economic activity. All other necessary products are shipped into the system by the Xi'An government. Some black market activity exists, but perpetrators caught are severely punished. The planet's solitary, legal export is the Centennial Bloom plant, which is famous for blossoming beautiful bell flowers once every hundred Xi'An years. Originally native to Koli (Eealus III), the Xi'An discovered that these temperamental plants thrive in Tovaroh's gardens. Law grants each Xi'An one complimentary plant on their first visit to the planet. Humans can purchase them, but should not expect a discount. As a way to dissuade Centennial Bloom bulk haulers from clogging the system, the Xi'An tie the plant's price to the going rate in the UEE. So buying a Centennial Bloom on Tovaroh simply guarantees that the plant is authentic and not one of the genetically modified knock-offs commonly found around the UEE.

## KAYFA III

The Xi'An once considered this gas dwarf as a potential candidate for platform-based colonization. The plan was squashed after Emperor Kray expressed concern over how increased traffic in the system might affect Kayfa II.

## KAYFA IV

Kayfa IV is the system's second gas dwarf. Since its rocky core and diffuse atmosphere are similar to Kayfa III, some Human scientists wonder why the two planets are so far apart. Theories abound but remain unproven, including one that suggests a rogue planet slicing through the system pulled Kayfa IV out of its original orbit. A recent request by an assembly of Human and Xi'An scientists to study the planet in greater detail was rejected by the Xi'An government.

### HEARD IN THE WIND

"Footpaths wind through the gardens and fields with no apparent rhythm or reason, sometimes leading to temples well beyond one's original location. It can be disconcerting to those acclimated to the Xi'An's precise and orderly nature, but that's the entire point. In a culture that plans almost everything to the last detail, the disorder of Tovaroh's trails must be mentally liberating for those brave enough to get lost on them."

- Margo Lekman, *Li'Tova: A Beginner's Path*, 2851

"Two things that you should know about visiting Tovaroh: one is that there are a lot of temples. As many as you are picturing now, it's like ten times more. If you love temples this is the place for you. Two, don't wear leather shoes. Didn't quite understand why, but had to buy a pair of expensive flip flops at the gift shop in Su'Shora in order to walk around without monks giving me dirty looks."

- Harry Tenny, *A Complainer's Guide to the 'Verse*, 2939



HEARD IN THE WIND

# Second Run

## A SORRI LYRAX STORY

by Thomas K. Carpenter

### Part 2: Never Stop Thinking

[59:43:11]

The station provided a soothing background noise to my private pity party as I leaned against the cold glass facing the glowing arm of the galaxy. The view was pleasant, but most certainly not helping me figure out how I was going to make a delivery to Tyrol IV in less than sixty hours.

The obvious choice was to find Betrix LaGrange, who was probably lounging in a public place, readily available, waiting for me to come crawling back, begging her to take the delivery. She'd probably only offer at most ten percent and truthfully, I'd be stupid not to take it.

To give myself something to focus on, I started repeating the rules I'd invented for my work.

“Rule one, never travel empty handed. Rule two, nothing illegal. Rule three, official routes are for suckers. Rule four, never get distracted. Yeah, I guess I should have remembered that one. Rule five, never stop thinking . . .never stop thinking . . .”

I raised my mobiGlas to review the ships in the station for the fifth time when I felt a gentle tugging on my arm. It was the woman with her child. Her dark face was streaked with the salt-lines of old tears, but she looked content holding her daughter against her leg.

“Thank you . . .” said Alara Gorane.

“Sorri, which is my name, not the apology,” I said, realizing I was letting myself get distracted by her again.

Her lips creased with an exhausted smile. “I can't thank you



CHRONICLES



enough for what you did for me and Greta. I don't know what I would have done if he'd taken her on that ship."

My face warmed with embarrassment. "Don't worry about it. It was an old trick I used from my father's bar. Nothing confuses a person more than official mumbo-jumbo."

"Oh?" she asked. "You work in a bar?"

"No. I'm a courier. Not a very good one at the moment, but a courier."

Her eyes widened with surprise. "A courier? Really? Actually, could I hire you? I need to file my divorce papers on Sol, so he can't come back and take Greta again."

"I won't be able to get there for a few weeks," I said, fidgeting with my mobiGlas.

"I think that would be okay. He won't be back for a few months. He travels a lot. I was going to use FTL, but I'd rather you earned the delivery fee," said Alara.

I nodded and accepted the datastick from her, tucking it into my backpack.

"Log onto the ICN network, and file it. My name is SILVERKHAN," I said.

"Thank you again, Sorri. I don't know what I would have done if I lost her," said Alara, as she gave me an awkward half-hug, before moving away with her bleary-eyed daughter in tow. Mixed emotions ran through me. I was happy for the woman and her kid, but the distraction had cost me my ride. Still, it wasn't the woman's fault I'd stopped.

Standing in one place wasn't helping, so I started walking, checking the ship list yet again as I walked. The *Eagle's Talon* was heading towards Sol; maybe if I went with them I could hop on one of the more direct transfers back towards Tyrol, but it wasn't scheduled to leave for at least another day since it was waiting for a cargo pick-up. The *Golden Hart* was a fuel pusher contracted with Cry-As-

tro. With the amount of stops it would have to make in the area, it wouldn't even be worth it. The *Vita Perry* was leaving today, but it was headed towards Ferron. The *Dor-nado* was a single seater, so unless I wanted to . . . my eyes drifted back up the list to the previous entry. *Vita Perry*. Something about the ship's reg stuck in my head this time. *Vita Perry*. Where had I heard that name before?

A few steps away, the answer came to me.

I took off at a dead run toward the other side of the station where the *Vita Perry* was getting ready to depart, a plan quickly forming in my head. *Vita Perry* was the name of the founder of the Church of the Journey, a benign religion that believed in journeying for the sake of the travel itself. I could hardly disagree with them since I'd joined the courier service to see the galaxy. I brought up a comm-link as I ran. An older gentleman with laugh wrinkles around his eyes and mouth answered.

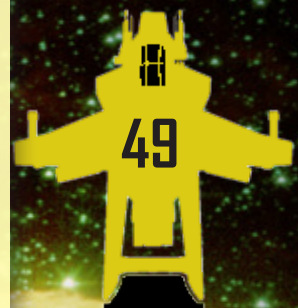
I said, "Greetings, follower Sojourner! Have room for another traveler?"

"Why certainly, we'd love to have you along for the ride. There is a donation required, but it's quite nominal," he said.

I had it transferred over before I reached the airlock. A smiling woman was waiting. She was missing her left arm past the elbow and had a burn scar on her jaw. Somewhere in her past, she'd survived a terrible fire.

"Greetings, Sojourner Sorri Lyrax," she said. "I'm Adeline, first mate on the *Vita Perry*. It's so wonderful you could join us. You have wonderful timing. We were just going to pull away from the station."

The inside of the Aegis Reclaimer was quite different than I expected. The cargo bay had been modified for more passengers, like a commercial transport, but more . . . cultish. Pasted to every wall and ceiling, and even painted on the floor, were maps. Even the cloth seats had maps as their



CHRONICLES

designs, and not generic ones, but real star and planetary maps. It was like a library of atlases had vomited over the interior of the ship.

At least fifteen people were seated, all Human except for one Banu wearing cream colored robes, in back by himself. I found a spot across from the Banu, shoved the silvery case beneath the seat after assuring myself it'd be safe on the ship, and settled in as we moved away from the station. Once we were headed towards the Ferron jump point, I maneuvered through the seats towards the front cabin.

"Permission to enter the cockpit?" I asked.

The door swished open. The first mate, Adeline, slipped past me to join the others in back.

"Greetings, Sorri," said the Captain. "I'm Captain Lemmie. Did you want to watch the approach to the jump point?"

"No, I'm good. Any special reason that you're headed to Ferron?" I asked.

He shrugged. "Not really."

"Any chance that you could change that destination to Kilian?" I asked, trying not to sound too desperate.

"One destination's as good as another," said the captain.

He toggled the comms, "Anyone object to heading to Kilian?"

When no one answered, he said over the comms, "I guess we're headed to Kilian then."

A murmur of excitement passed through the other passengers.

Relief filled my chest. "Thank you, Captain Lemmie."

"Don't mention it. Though I hope you will increase your donation to the Church," he said with a wink.

"Certainly, of course," I said. "I'm going to head back to the seats and catch a nap. It's been a long day."

After making another small donation and watching my dwindling funds dip a little bit lower, I found my seat again. The reclining chair made me think I was lying on a warm marshmallow. The followers of the Church sure knew how to travel comfortably. The Davien-Ferron jump point was relatively near Cestulus, while the Davien-Kilian jump point was way out past the asteroid belt, so it was going to take a few hours to reach it.

\* \* \*

[57:01:05]

I settled into a comfortable position, and eventually fell asleep listening to the other passengers quietly sharing stories. If I hadn't been so exhausted I would have been sharing a few of my own. It was the part of traveling that I loved the most, interacting with people from all corners of the galaxy. It was days like this that made me glad to be a courier.

I don't recall if I dreamt. After I woke, I pulled up my mo-biGlas to study the departure list I'd downloaded before we'd left, for potential routes from Kilian. There were a few candidates that might take me, but I wouldn't know until we reached the system.

Then I realized someone was staring at me. Without moving my head, I glanced out of the corner of my eye to find the Banu was studying me.

"Hi," I said, suddenly painfully aware at my lack of experience dealing with xenos.

"Greetings, fellow sojourner," he said in a deep voice. I understood him clearly, though his accent made it sound like he had a bubble of air in his throat.

"I'm Sorri, which is my name, not an apology," I said, wondering if he'd get the joke.

"My name is difficult for Human tongue. You may call me Silk," he said, in the cadence of rising and falling waves.



CHRONICLES

“Silk?” I blurted out. His appearance was anything but silky.

“Your ‘Silk Road’ reminds me of Banu trading. You have heard of it?” he asked.

“No,” I said, shaking my head.

His forehead ridge shifted back and forth. I had no idea how to interpret the gesture. If he were Human, I would have assumed disappointment, but I’d only had brief interactions with the Banu.

“You are courier,” said Silk, nodding towards the case.

“Uhm, yes,” I said, too shocked to lie, then suddenly growing suspicious. “How did you know?”

“Banu symbols on case. But you not Banu,” he said, then clucked his tongue.

I glanced at the strange lock, feeling like I was being set up.

“Case not matter,” he said, “but why young Human nervous?”

The mention made me stop drumming my fingers on my leg. “Not nervous, just have a lot on my mind. An important delivery.”

“Delivery not matter. You are on journey, and that should be enough,” he said.

“I wish that were true, but if I don’t make this delivery, I’m out major credits. I don’t want to be stuck as a corporate slave for the rest of my life,” I said, not sure why I was baring my soul to this alien.

“Journey within yourself and you will reach your destination,” he said, nodding solemnly.

I had my mouth halfway open to make a pithy reply when a thump sounded through the cabin and the *Vita Perry* lurched to the side momentarily. A second later, the emergency sirens went off. Flashing lights strobed through the cabin while a loud siren screeched in my ears.

The expressions on the faces of the other passengers looked somewhere between confusion and outright panic.

One passenger exclaimed, “This is turning into quite the adventure!”

Somewhere above the distracting noises, I heard a hiss that sounded like air escaping. The sirens ceased and Captain Lemmie’s uneasy voice came over the comms: “We’ve been hit by debris. We’re currently drifting without power and the hull has a leak somewhere on the port side. I’ve sent distress signals, but we’re too far out for anyone to reach us in time. If anyone on this ship has experience with an EVA, please come up to the main cabin.”

\* \* \*

No-one made a move. I was impressed that most passengers had their chins raised, patiently waiting for instructions from the captain, but for a few of the others I could tell panic was beginning to set in. The air temperature was already dropping. I got up and ran to the front and banged on the pilot’s door.

“Can you do ship repair?” asked Captain Lemmie.

“Maybe, but what about your First Mate? Or you?” I asked.

“I can’t. I need to reroute power while you’re out there,” – he dropped his voice to a whisper – “and I won’t put Adeline in that kind of situation again.”

The source of her missing arm and burn scar became clearer.

“I have EVA certification,” I said, leaving out that I’d never actually performed an EVA, much less accomplished work in one. FTL had us sit through a day of lectures and holo-videos about what to do if an EVA suit was required. Most of the other couriers played with their mobiGlas during that lecture.



CHRONICLES

I'd been enthralled by it, not because I actually thought I was ever get to use one. Rather the idea of swinging around on the outside of a speeding spacecraft sounded like being a kid on the galaxy's best jungle gym.

Now that our lives depended on my successfully completing one, it didn't sound so romantic. Mostly terrifying, in fact.

"See that locker behind the door?" he asked, giving me a moment to check.

"Yeah," I said.

"Put on the suit. There's a repair bag to clip on your belt in the bottom. Once you find the hull damage, you'll use the zero-set epoxy to patch it, assuming the hole's not too large," he said, not sounding too confident.

While he was talking, I was already opening the locker. It didn't take me long to figure out the suit was built for a much larger person.

While I was putting on the EVA suit, the Captain told the other passengers to put on their warm clothing and pull out the oxygen canisters in the side panels and wait for his instruction on when to use them.

The first mate, Adeline, was moving up and down the aisle helping the passengers where she could. When I couldn't get the bulky chest section around my head, I called for her to lend me a hand, and was too worried about the EVA to cringe at my poor choice of words.

Using her good arm, Adeline helped me get it over my head while I spread my arms out in a narrow V. As it slipped over my head, nudging my nose painfully, I realized the hard plastic midsection was going to make it hard to maneuver. Once I had my head through, I felt like a child sitting at the adult's table during a family get-together.

With a concerned frown, Adeline asked me, "Are you going to be okay in that thing?"

"Do you have any straps? Tie-downs or anything I can use to take out the slack?" I asked.

Technically, exposed straps were a bad idea on an EVA, but I thought wearing the oversized suit without some modification was worse.

Adeline turned to the other passengers.

"Does anyone have any rope or straps?" she asked, hopefully.

A thin, but chubby-faced middle-aged gentleman snapped, "We wouldn't have been hit if you hadn't made us change routes."

Adeline spoke on my behalf, "You knew the risks when you joined the Church. Traveling in space is never safe, no matter what the precautions. And she's the only one that volunteered to go outside the ship and fix the leak."

I cleared my throat. "Look, I hate to rush, but if I don't get some straps and get out there to fix this ship, there's a hundred percent chance we die."

A younger woman dressed in stylish clothes yelled, "I've got something. Just a moment!"

She buried her head in her bag, then came running up with a handful of black straps and an awkward blush on her face.

"They're, uhm . . ." she stuttered, visibly trying to find the right words.

It didn't take long to figure out what purpose the straps were meant for, and I might have laughed except for the life-threatening circumstances.

"Perfect," I finished for her, as I suppressed a grin and grabbed them.

We used the straps to tie down excess material, especially around the arms and the puffy midsection. Before they put the helmet on, I yelled to the captain.



CHRONICLES

“How much time?”

He paused and my stomach dropped a few feet.

“I’d hurry, please,” he said, keeping his voice as professional as he could muster.

Moving through the cabin in an oversized EVA suit was like trying to swim through molasses. Adeline helped me open the outer airlock. Once I was inside, I gave my suit one last check-over and connected my tether to the hook right inside the outer airlock.

Once the green light appeared on the door, I turned the handle clockwise and went out.

I’ve never been afraid of heights. When I was young and foolish, I’d once climbed up the side of an apartment building using the drainage pipes, so I could prank one of my mates by sneaking in his window and cutting the crotches out of all his underwear.

But swinging onto the hull of the Reclaimer, facing an infinite pit – however beautiful – made my arms retract like levers. I clung to the metal surface, my boots’ soft clanging against the hull only audible through the air of my suit, and tried to convince my body that sliding along the guide rail to the front of the ship was just like climbing those drainage rails.

After a few deep breaths, I managed to unsolder my hand from the rail and extend my arm. Even the act of reaching seemed like certain death, especially without the ship’s artificial gravity holding me down, but once I’d pulled myself along the rail a few times, the fear reduced to a modest nightmare level of fright.

“How’s it coming?” asked Captain Lemmie through the comm in my suit.

“Moving to the front of the ship,” I said in an unsteady voice.

“I’m not trying to hurry you along, but you’re going to return to asphyxiated Human popsicles if you don’t get that patched soon,” he said.

I’d been making little movements along the rail, the equivalent of a four-year-old edging around a pool during her first swim. After the captain spoke, I decided I needed to make huge leaps.

I yanked myself along the rail, using the lack of gravity and my momentum to sail along the curved hull. But I misjudged the amount of force and my fingertips grazed the cold metal as I skipped into space.

Thankfully, I was still connected to the rail through my tether, which snapped me back towards the ship. I hit hard, my face plate slamming against the metal hull in a resounding gong.

I managed to hook my shaking fingers around the rail. For the brief moment that I was flying away from the ship, I’d thought I was lost to space.

With my eyes squeezed shut, I said, “And that’s why we use the tether.”

“You okay, Sorri?” asked the captain.

“Almost there,” I said, not wanting to admit I’d nearly wet my suit with fright.

When my gaze fell upon the damage, my stomach dropped into my boots. A white mist, the atmosphere of the cabin, was jetting into the darkness through a head-sized hole in the hull. Only the inner walls had kept all the oxygen from venting into space within the first thirty seconds of rupture. Bits of insulation were breaking free at the point of escape. If whatever had hit the hull had impacted a little harder, destroying the material beneath the hull, we’d have been dead before I made it to the EVA. I said a small silent thank you to whoever had invented shields.



CHRONICLES

I pulled the spray applicator out of the carryall. There was no way it was going to fill the hole. I might as well be trying to spray paint a planet-killing asteroid with one can.

“Captain. The hole’s too big for me to fix,” I said.

His wheezing voice answered back. “You . . . have to figure it out.”

I stared at the can for a while. The volume of material just wasn’t large enough to plug the leak.

I stared out into the blackness of space. Behind us, the star at the center of the Davien system looked like a tiny burning ball. Past the front the ship, I caught reflections of the jump point structure in the distance. It twinkled as something passed through the aperture.

“Never stop thinking. Never stop thinking,” I repeated to myself.

I needed more material, but I didn’t have enough time to go back into the ship.

The carryall!

I unclipped the bag from my belt and shoved it into the hole. It didn’t want to stay in the wide, flat hole. Parts of it kept trying to float out. With my elbow keeping the bag in place, I popped the top off the can and shook it a few times to activate the epoxy. At this point, I had about a minute before the material hardened, so I pressed the nozzle and squeezed the goop onto the bag.

For a second, the goop didn’t come out and I thought I had a defective can, but then it oozed onto the tan bag material like clear snot. As fast as it came out, I let it flow on top of the bag. About halfway finished, I noticed the first sections of goop starting to harden into a whitish material that almost looked like ice.

I managed to cover the hole with the epoxy. With the remaining material, I checked for leaks by holding my helmet

over the repair looking for misting on the glass. After filling a few minor pinholes, the can was empty.

“Hole’s fixed, Captain,” I said. “You can start pressurizing the cabin, though take it slow. I’m not sure how structural-ly strong this epoxy is.”

When no answer came, I felt a heavy sweat form on my brow. I gave it a few more seconds.

“Captain?” I asked.

Was I too late?

My whole world seemed to condense to a tiny point at the end of my nose, before I realized the comm link was off. I must have tripped it during the repair.

“Captain?” I asked again.

“Yes, I’m here, Sorri. Glad to hear you. I thought we’d lost you,” he said.

“I accidentally switched the comm off. The hole’s fixed, though I wouldn’t fully pressurize. I’m not sure how sound my repair is. I had to improvise. I’ll wait out here while you pump atmosphere back in to make sure it’s not going to pop loose,” I said.

After a few minutes of silently watching for any sign of deformation, the captain announced the cabin was back to minimum pressure and target oxygen levels. Taking my time, I made my way back to the airlock.

Before I went back in, I hung by one hand and stared at the great infinite beyond. Though I was still terrified that the void would somehow suck me away from the ship to drift forever alone, I simultaneously was so awestruck that it brought tears to my eyes.

I’d never really decided if I believed in a higher power or not, but looking at the vastness made me wonder if anything could conceivably create the universe. It seemed too grand, too infinite, for a single being to manufacture.



STARLINE  
54

Somehow that made me feel better to think that the universe had always been here, rather than the arbitrary creation of a higher being who might change his or her mind based on a whim I couldn't possibly understand. Then again, we'd gotten damn unlucky to be hit by a piece of debris out here in the middle of all this nothing.

I went back inside the ship through the airlock. The other passengers greeted me with exhausted applause, as if their relief was so deep they had little energy left to expend.

The other passengers touched me as I went up to the pilot's cabin with the helmet under my arm. A few thanked me for the story. Only the Banu seemed unfazed by the experience.

"Everything still okay, Captain?" I asked.

"The good news is that we're holding pressure. It looks like your repair worked," he said.

"This is one of those good news, bad news things, right?" I asked.

"I'm afraid so. The bad news is I can't risk moving again. So we're stuck here until the rescue ships arrive," he said.

"Crite!" I said.

"You're not going to make your delivery?" he asked.

I blanched. "You knew I was a courier?"

He tilted his head. "Well, of course. I saw your profile and I saw the case you're carrying."

"And you just changed destinations for me?" I asked, perplexed.

"It's not the destination, but the journey. And now we've all had an experience we might not have had otherwise," he said with a wry smile. "That's kinda the point."

"Is there anything closer than the rescue vehicles? Some-

one that might take a passenger?" I asked.

"For our fearless repairwoman, I'll make a scan," he said, flipping a few knobs beneath a screen. After a moment, a little blip appeared on the screen. "Looks like there's a Caterpillar headed towards the jump point. Let me check the records . . . ship name is the *Dodecahedron* and it's registered under the name . . . Senet Mehen? I don't know. It doesn't sound promising."

"Could you hail it?" I asked.

Captain Lemmie typed a standard hailing message on his keyboard and sent it to the *Dodecahedron* requesting communications. We stared at the display and each other for a minute. No response.

"The owner could be asleep and on autopilot," said the Captain with a shrug.

"Try again, please," I said.

We stared for a while longer.

"I'm sorry," he said, his lips curling with disappointment.

"*Dodecahedron*. That's a strange name. Try sending the message: 'Greetings, Senet Mehen. Sorri Lyrax requests the pleasure of your communications to inquire about an audacious offer.'"

"That sounds like spam," said the Captain.

"Well, sometimes spam works. Send it," I said.

The Captain had an incredulous look as he typed in the message, shaking his head the whole time.

While we waited, he had a smirk on his lips as if he knew what was going to happen. To both our surprise, a message returned on the display.

[Greetings, Sorri Lyrax, what offer awaits?]

"It's like you two are speaking a foreign language," said the Captain. "What's the reply?"



CHRONICLES

“A dodecahedron is a twenty-side die. It’s used for playing games. He must like games. Probably uses the downtime during space travel to play them. I would guess he has an extensive VR set, or custom Glas wall. Please respond: ‘*Vita Perry* stranded. Rescue ships approach, but Sorri Lyrax needs ride. Will pay,’” I said.

After the Captain typed it, we waited a while but got no response.

“Crite,” I said, pulling up my mobiGlas and searching it for gamer terms. I’d seen kids my age playing games with dice when I was growing up, but my father always had me working in the bar. Games are for infants, he would tell me in his gruff, I-am-all-wise voice if I inquired about visiting one of those shops.

“Try this: ‘Sorri Lyrax in dire need. Will you accept quest?’” I said.

The answer came back so fast I thought it was an error. He was going to let me ride with him for free. The blip started moving towards the *Vita Perry*.

“I can’t believe that actually worked. You’re going to need to do another EVA to reach the *Dodecahedron*,” he said. “Can’t risk anything else with the hull damaged. I’ll pick up a new suit when we get back to port, but you’re going to have to pay for the one you’ve got on since we’ll have no way to get it back.”

“I’ll do that right now,” I said, accessing my mobi while simultaneously trying not to scowl. “Thank you.”

He gave me a wink, the kind I would expect from a wizened old farmer leaning over the back of his tractor. “My pleasure.”

The rest of the passengers had overheard the exchange since we’d kept the cabin door open, so I was greeted with a mixture of appreciation and relief. I think some of them thought I was bad luck.

The Banu in the cream robes appeared asleep, which made the departure less awkward. I put the helmet back on, hooked the case to a strap, and moved to the airlock.

At first, I was worried the *Dodecahedron*’s approach would create a dangerous impact, but the ship’s pilot did a deft maneuver, swinging the ship around and using thrusters to slow to a stop. I’d never seen a prettier parallel park in deep space.

The only problem was the gap between the two airlocks. I had about ten feet that I had to traverse untethered. I felt like I was standing over a bottomless crevasse. Eventually I talked my feet into pushing away. The flight between ships was brief, and I thudded against the *Dodecahedron* before I took a second breath.

After passing through the airlock, I stepped inside the ship and thought I’d been teleported into an antique shop on Sol. I pulled my helmet off, inhaling the unfamiliar scents of old wood and rubbing oils.

I’d been completely wrong about Senet Mehen. He didn’t pass the time playing VR games or using a wall-sized Glas. He passed the time playing ancient games and puzzles so intricately designed they looked like artwork.

Hand-carved shelves were fashioned of wood as smooth as glass. Packed from floor to ceiling, the shelves contained what seemed like every possible game ever made that didn’t contain electronics. These weren’t mass manufactured games and puzzles, but made by craftsman who labored for love, some of whom were clearly not Human.

An octagonal table at the center of the main cabin displayed the pièce-de-résistance of the collection. I’d seen an old drawing on *Castra II* involving impossible staircases that seem to go nowhere and everywhere all at once. The wooden puzzle structure reminded me of that staircase painting, except that it’d been made three-dimensional. Dozens of interlocking pieces were strewn about the table.



CHRONICLES



The center section held the puzzle in progress, which appeared to be a half-formed tower. Even at a glance I could tell it was being assembled incorrectly.

“I sense your disappointment in my assembly of the puzzle. I’m afraid I share your assessment,” said a voice from the doorway. “The designer claimed the puzzle was of moderate difficulty, but I have been at it for half a year without progress.”

Senet Mehen was nothing like I expected. He was a thin, proper man in a vest and tweed jacket. His mustache and beard were kept neat. He could have been a professor of antiquities living in a musty University library, or a germaphobe who lived sequestered in an ancient Sol highrise.

“Uhm, hello. I’m Sorri,” I said, reflexively.

“Yes. We are already acquainted. The odd but slightly interesting message,” he said while steepling his fingers. “You enjoy games.”

“Sure. Yes. That’s what I enjoy,” I said.

“Which ones?” he asked.

I wrinkled my forehead. “Uh . . . I guess ones that involve maximizing deliveries for the shortest cost. I’m a courier. The *Vita Perry* was stranded and I’m trying to get to Tyrol IV, by way of Kilian.”

“A courier?” he said, a twinge of disgust in his voice.

“This ship is a research vessel, a space-faring museum! I travel the galaxy in search of antique games made by all cultures. At my last visit, I acquired a Xi’An interrogation puzzle cube, a sublime piece of history. The Xi’An would place the box over their captives’ hands and if they could

solve the series of levers and slides inside the box, it would free them. Otherwise, the captives would lose their hands. There’s still old blood on the blade inside.”

Senet Mehen’s enthusiasm for a twisted piece of war contraband gave me a sick feeling in my stomach.

“Well, I, uhm . . .”

The words trickled out of my mouth. It was a rare moment that I was at a loss for something to say.

Senet Mehen stiffened before he announced, “Since you have not been completely honest with me, nor do you share my values, I cannot abide by our agreement. I had plans on leaving you in the Kilian system as requested, but I do not have the patience for charity work, and plan to forge on to Stanton system where I seek to acquire a glasswork Matryoshka nesting puzzle. You may indulge your need for commerce at that station; until then, you can rest in this location, but keep your fingerprints from my valuables or I will jettison you from the airlock.”

My response was cut off when Senet Mehen returned through the cabin door, leaving me in the room stuffed with puzzles. I slumped against the leg of the table and let out a deep breath before I tried to put a fist into the wall.

Rule number five, never stop thinking. But what happens when you’re stuck with a puzzle-worshiping lunatic who won’t let you off his ship?

[54:11:20]

*To be continued*



CHRONICLES