JUMP POINT

A ROBERTS SPACE INDUSTRIES PUBLICATION ISSUE 04.05

IN THIS ISSUE

GREETINGS, CITIZENS!

I suppose, in theory, that I will get tired of doing this at some point, but I still really enjoy the power that you, the subscribers, give me.

What power is this, you ask? Consider this: I can walk into a room or send an email or punch up a chat channel and whoever it is on the other end makes time in his or her schedule. Some people I ask to sit down and talk with me, describing what they're doing and how they're contributing to the game. Some people I commission art from – I tell them what I want them to create, and they draw the scene that I ask for, just because I want it. And occasionally I ask someone to run special code, to check out a feature –and they do it!

And these aren't your average guys and gals. They're in the middle of creating the absolute biggest crowd-funded, player-funded game ... ever. They're coding, drawing, composing, writing, testing, producing, designing, assembling, and tying it all together into a great big bundle of space sim entertainment that millions of people all over the world will enjoy for years to come. And I get to sit right here in the center of it and peer over any shoulder I like, just because I decide that's the next thing I want to explore. (Which reminds me – I really ~~want~~ need to get together with the composers, the sound engineers, and all the other music and noise makers to talk to them about what they're doing for *Star Citizen*.)

That, boys and girls, is power. And I have it only because you, our subscribers, have given it to me. Which leads to two important points.

1) Have I told you "thank you" recently? Thank you!

2) The power I have is because I'm your representative as we explore the 'verse. If I'm not asking the questions you want me to ask, if I'm not talking to the people you want me to talk to, let me know. Some times, it's not the right time, or the questions you want answered are (for whatever reason) not on point. But sometimes I'm not going where you would be going because I don't realize what I'm overlooking. Please feel free to drop me a suggestion, and I'll see what I can find out.

Meanwhile, we've got another month of **Jump Point** for you – the development story of the Prospector, MISC's entry-level mining vessel (as you could deduce from the cover), but also a profile of Shubin Interstellar, the terraforming and mining giant, and a guide to Banshee, one of the systems in which Shubin has made the greatest impact. We sit down with DevOps to find out what "DevOps" means, and we begin the story of Hickory and his ride into history – a look back at the end of the Tevarin Wars, courtesy of our very own writer, Adam Wieser. So, as always ...

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

David

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FROM THE HICKPIT

A Cloud Imperium Games production. A Star Citizen newsletter.
Part of the Star Citizen/Squadron 42 universe.

Prospector

WORK IN PROGRESS

Initial Specs

AIMS

- A true industrial MISC ship for entry-level miners
- A blend between modern and industrial design

AESTHETIC

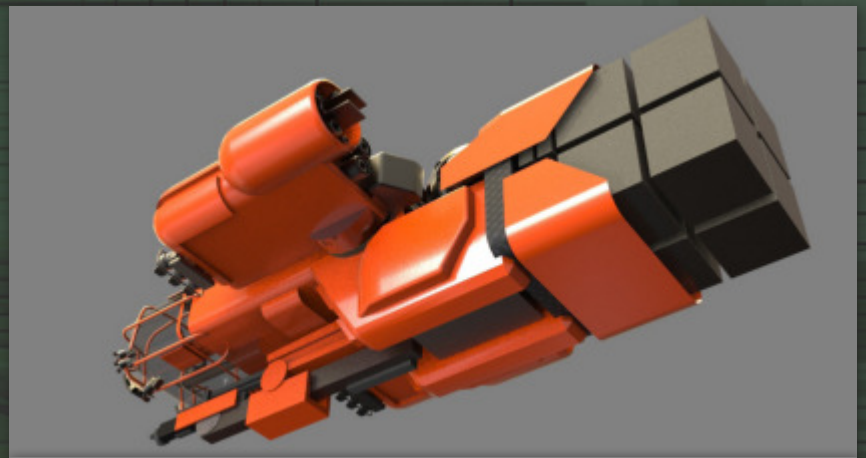
- The goal for the new MISC miner is to keep MISC's high-tech/alien influenced aesthetic but infuse it with Human industrial design

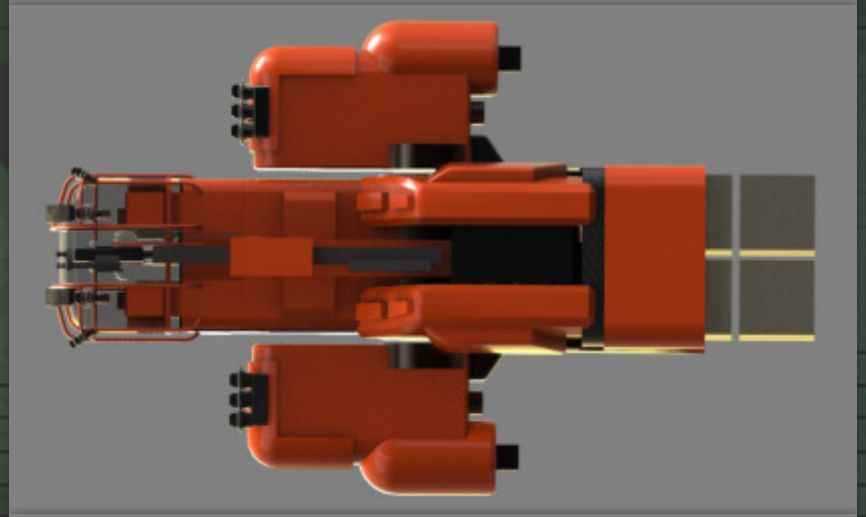
Cargo Capacity	*32 (+64)*
Cargo Storage	*External Pods*
Max Crew	*1*
Entry Method	*Side ladder*
Ejection Seat	*No*
Landing Gear	*Skids*
Take Off Method	*VTOL*
Role	*Prospecting & Mining*
Length	*24m*
Width	*15m*
Height	*7m*

Gavin Rothery concepted the Gladius and had a hand in the Starfarer design, among other work he has done on Star Citizen. *He was assigned the original design of this MISC entry-level mining craft. We begin with his first drafts and comments [this page and next two pages]:*

Gavin Rothery, Freelance Concept Artist: Here's where I currently am with the MISC mining vehicle. I'm trying to keep things looking somewhat "entry level" so future designs have some space to go with adding stuff that looks cool. There's quite a bit of stuff in this early design that moves – the podded engines rotate and can be used to hold position when mining close to a surface with gravity, so the ship can mine at random spots on uneven ground without deploying the landing gear. I haven't gotten into the landing system yet, but I'm imagining something akin to the Starfarer where the ship has a pair of hefty flat "feet" that deploy from the underside. It could balance on these two supports and possibly use a reinforced part of the stowed mining laser equipment to balance out the front. Entry/exit to the ship would be via an airlock door on either side of the ship between the rear edge of the cockpit glass and the front edge of the engine pod. Is there a favoured side the entrance should be on? It seems from many of the hanger videos I've watched that they tend to be on the port side – shall I work it in like this?

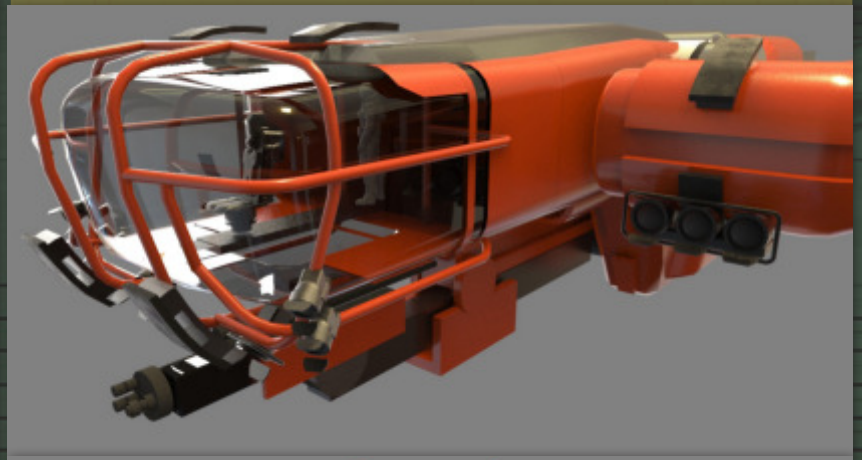
There are floodlight arrays on the ends of the engine pods which can be used to illuminate an area from a high angle whilst in VTOL configuration, that should look cool when drilling in the dark. The ship is currently scaled to 25m in length from front to back with the current full complement of cargo containers visible. In this form, there are 8 fully loaded and 8 collapsed. I've worked in some rough tech just in front of the crates similar to the equipment carried by the Starfarer to suggest some onboard process/machinery that preps the ore for freight. The mining laser deploys on a boom from underneath the craft and extends out in front of the cockpit. It's partially visible at all times, even when retracted. There's tons of visibility from the cab and the pilot's seat extends out on a rail into the middle of the blister.

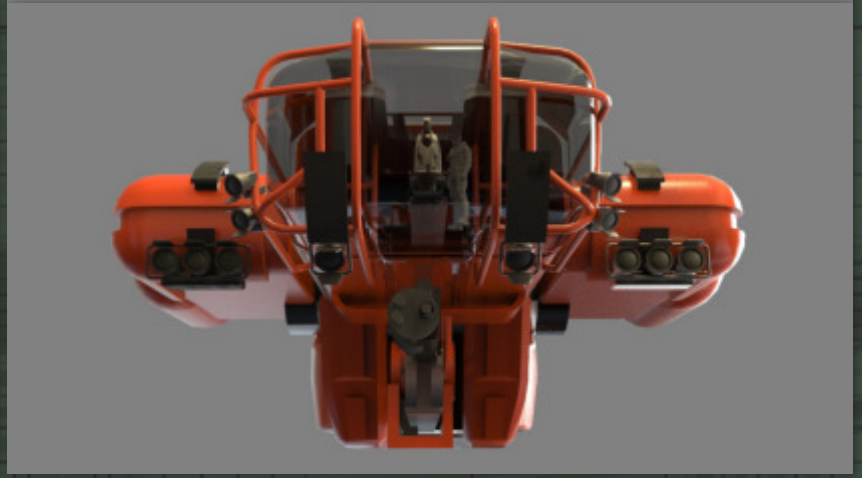


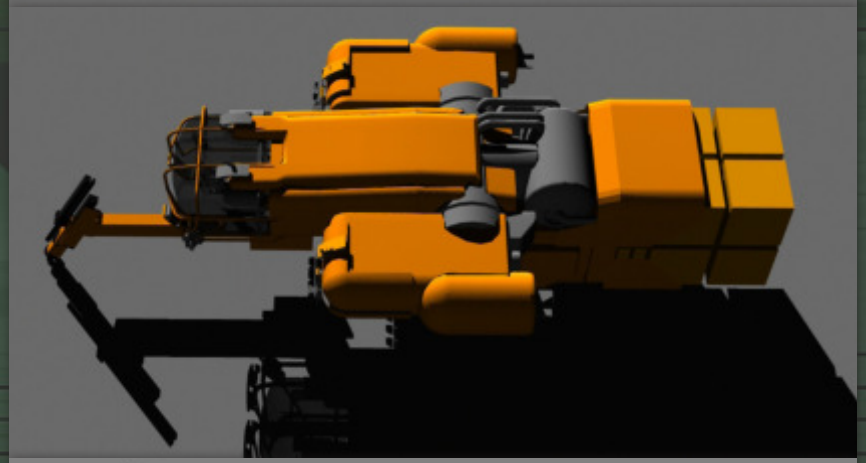


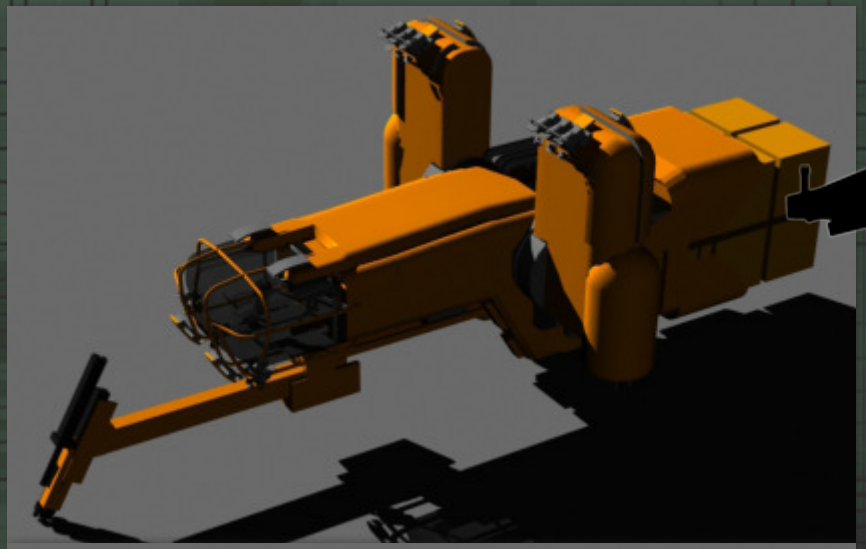
Gavin R: A couple of things came up that I just need to check on:

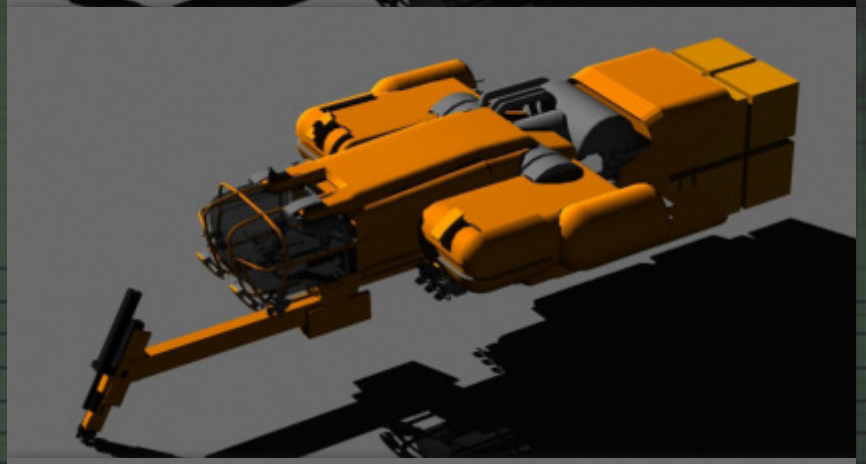
1. Component meshes. The design spec mentions ship components that need to be visible from the inside. This is going to influence the layout and design of the interior quite a bit – if you could send the component meshes over so I can plan the interior layout around them, that would be great. I'm working to scaled placeholders at the moment.
2. Weapon points. Are there any specific meshes you'd like me to use for the weapons? The design doc mentions fixed, so should they just be attached/integrated into the hull and pointing forwards? Do they need any degrees of movement at all?











Paul Jones, Art Director, S42: Hey Gav, cracking start, much improved on the normal low-poly mesh we get. :D The ship has a good feel overall for this early stage! Feedback:

Entry: Port side.

Entry Height: [A] The height from floor to door is 2.375m – see if you can make this work (this is the Freelancer door height).

Component meshes: On their way to you.

Weapons: use a box that is 2.31m x 0.5m x 0.5m – we'll get you a weapon mesh to use.

Mining arm: [B] What you have is too big. This is (1) a multi use laser which rotates, and which then (2) tractors the loose ore via tractor beam. The example is super big – it'll need to be a smaller unit.

Also, arm needs to be able to go up and down.

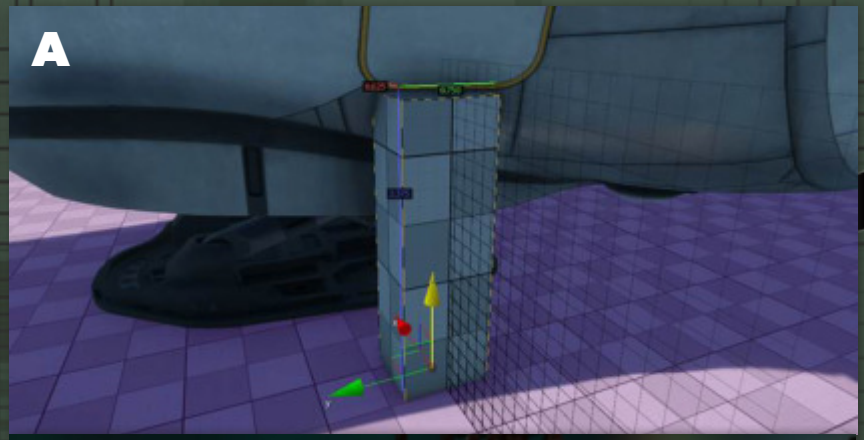
Shape language: I like the general direction of the ship - it will need so be softened out like the other MISC hulls. Attached are various elements – some interior, kit bash from existing meshes. Important parts are doorway widths, bulkheads.

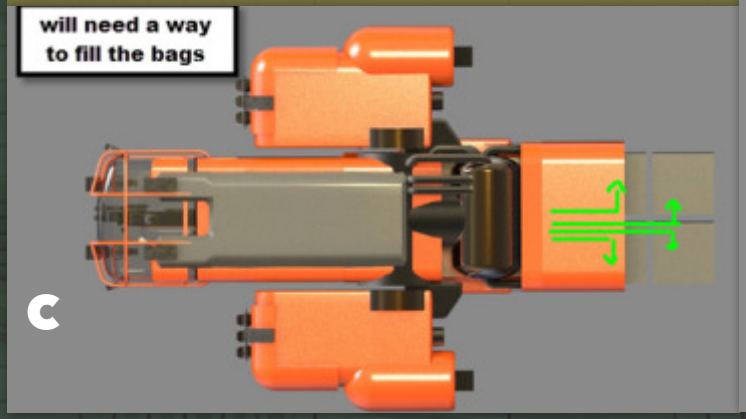
Engines: Often MISC ships have partly exposed engines.

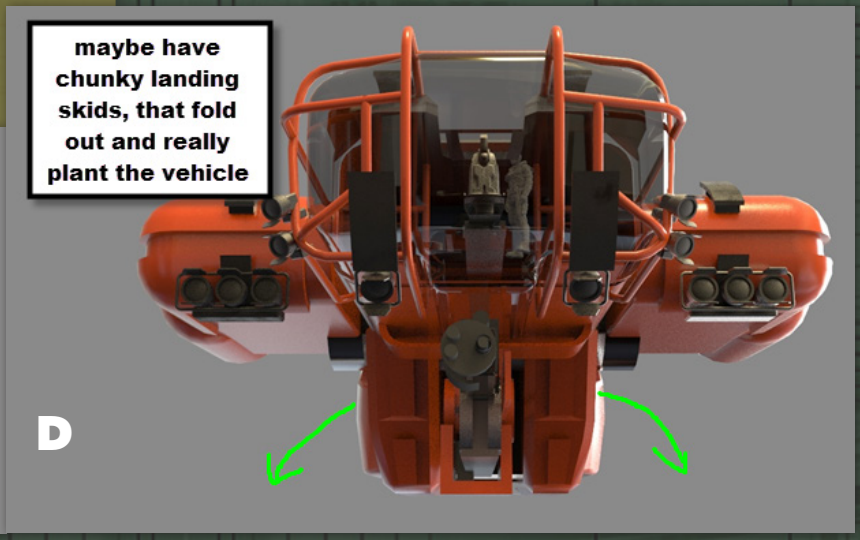
Cab: Floor is taking up too much visibility – pilot needs to be able to easily see all around. Canopy is good, but don't want to go full bubble like the MISC Reliant.

Lights: Add some to the top bars

Cargo: [C, D] Here are two diagrams



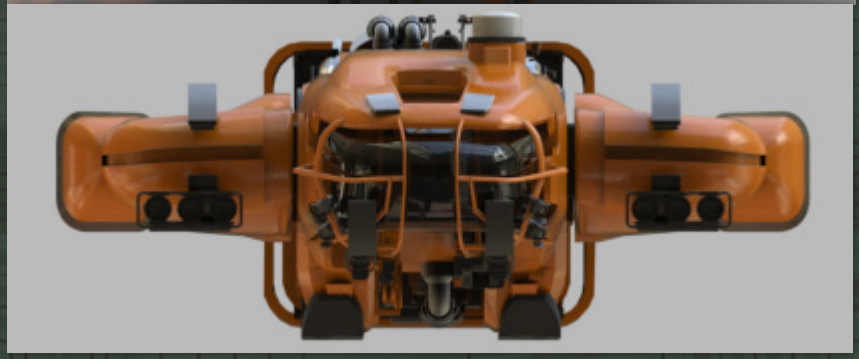




Gavin R: Here's where I'm currently at with the MISC mining ship. I've not had time to address everything from the comments yesterday, but I wanted to fire over where I am so you can keep up to speed with developments. *[this page and next]*

I've worked in quite a bit of new stuff, including a radar blister on the roof – the idea being that the component reaches through into the inside of the ship and can be accessed from there. I've looked at working in design/style elements from other MISC ships and I've put some sturdy feet in there similar to those found on the Starfarer. There's the beginnings of an onboard processing plant to ready the cargo for shipping and pump it into the containers. I've also tweaked the entry height to match the 2.375 metres of the Freelancer, and done some renders in a more traditional shiny dark grey of the other MISC ships for comparison.

Next up is the underside, mining arm, weapons points and working into the back end more.



Gavin R: I have a couple of quick questions:

1. We've spoken about the ship possibly having a different landing configuration for mining, such as higher up with more ground clearance. I just wanted to check to see if players can enter/exit the craft whilst mining is in progress, as a higher ground clearance will affect the ladder. So if we're having the ship raise itself up to mine, simultaneous use of the ladder will be a consideration. Shall I not worry about this for now and presume the player is busy in the front seat mining with the door locked?

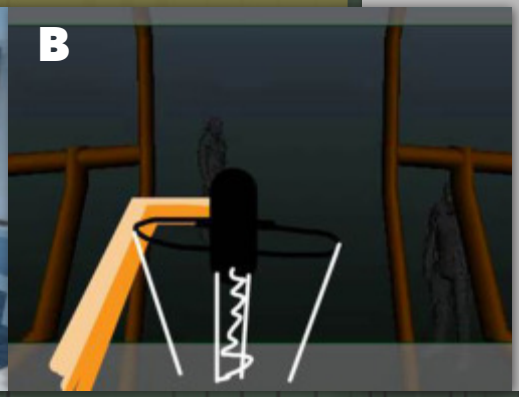
Phil Meller, Lead Designer, S42: Could you give us a quick mockup of a resized drill in its below-cockpit position and another in a landed mining position (arm extended, drill rotated), so we can get an idea of what it looks like with the current ground clearance?

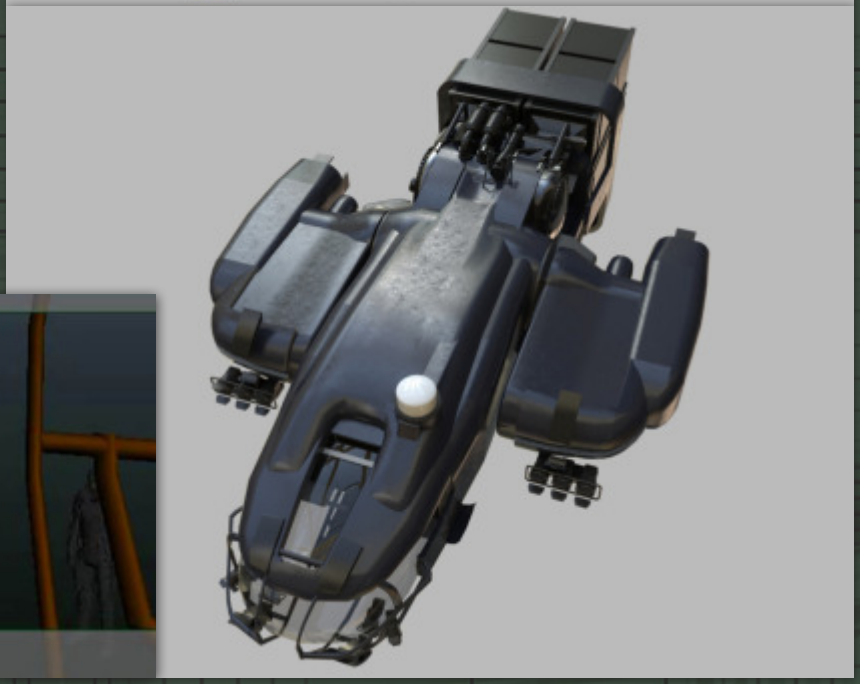
Gavin R: 2. Articulation of the mining arm. Just checking in on this – does it need to sweep across a 180 degree arc side-to-side in front of the ship? Also, do you have any idea how far forwards of the ship it should be able to reach? I can go for a best guess if you like and we can dial it in from there, just let me know.

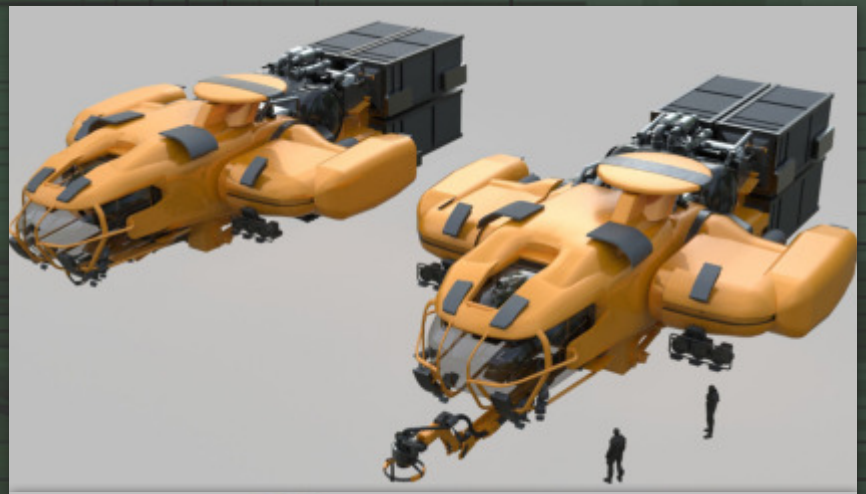
Phil M: Yeah, sweeping across 180° was the plan, and the chair and specific external lights could rotate with it.

As for its reach, this image [A] should give you an idea.

Paul J: When you are working on the laser arm, we'll need to work out a way that we can actually see the unit and the laser easily – see horrible sketch [B], I'm sure you can think of something when you get to it. :D







Gavin R: Here's this morning's update on the MISC mining ship *[this page and next]*. As you can see, I've been mostly concentrating on the mining arm and underside to make sure everything works properly and has the kind of visibility and function you're after in-game. The arm that extends out from underneath the ship has a rotating joint underneath the pi chair, so they can both rotate together, keeping the player's forward view focused on the head of the mining laser. I've also adjusted the hull and engines to feel like the image you sent over yesterday and added the beginnings of an AWAC type radar. Let me know if I'm off base or mis-reading anything. Next up is the topside rear and cargo handling – unless you'd like me to focus on anything else today. ;)

Paul J: Notes:

- Make laser to floor height 2 meters
- Door height, keep to Freelancer height if possible, if ship goes up, we could add in some internal steps
- Reduce side 'cheeks'
- Cab – reduce length, this should be the runt of the MISC family!
- Landing gear look to solve center of gravity issues and add some height
- Landing gear – look at adding some sort of stability (extra landing gear? Gav to investigate)
- Add some additional bars for bashability
- Move door over to Port side
- Reduce upper canopy coverage from the cockpit, its occluding too much
- Keep current colours

WORK IN PROGRESS

Gavin R: Here's the current progress on the MISC mining ship *[this page and next two]*. There's a lot of little tweaks and some big ones, but the broad strokes of the changes run as follows:

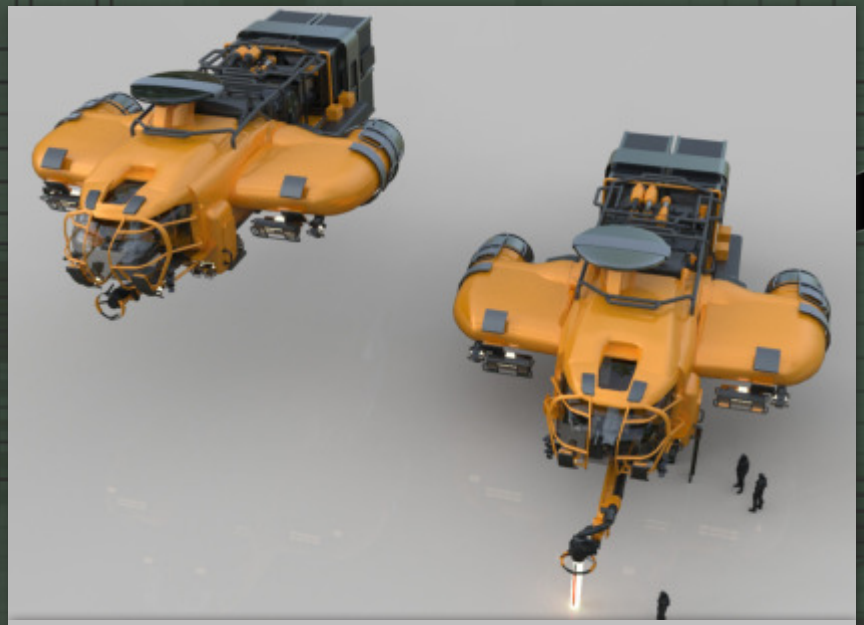
- Brought the cab in and raised the height of the cockpit roof
- Added bull-bar protection to the midship refinery/packaging machinery
- Rebuilt the wings and engine pods
- Reworked alternate placeholder options for lights
- Added a side pod for the entry/exit hatch and moved to port side of hull
- Continued working up the rear end and added some simple shapes to suggest placement of further tech
- Worked up main landing gear
- Added front underside off-center landing gear to balance the ship without interfering with movement of the mining laser
- Raised landing profile by just over a meter so that there is now two meter clearance directly underneath the drilling head
- Added placeholder lasers to demonstrate drilling

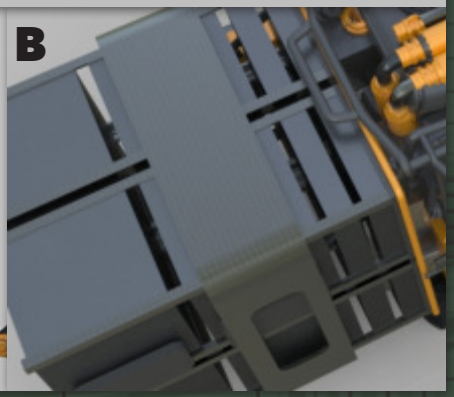
Things I haven't had time to work up yesterday but I'll get onto today:

- Refinement to radar equipment
- Work in "retractability" to main landing gear when in flight so they integrate with the hull better

Paul J: Great progress. While I'm gathering feedback, I'd say concentrate on these two areas. We'll have some more solid points for you to work from soon.

- Straighten out the cab; mesh is starting to look wonky in places [A]
- Start resolving the rear crate packing section [B]



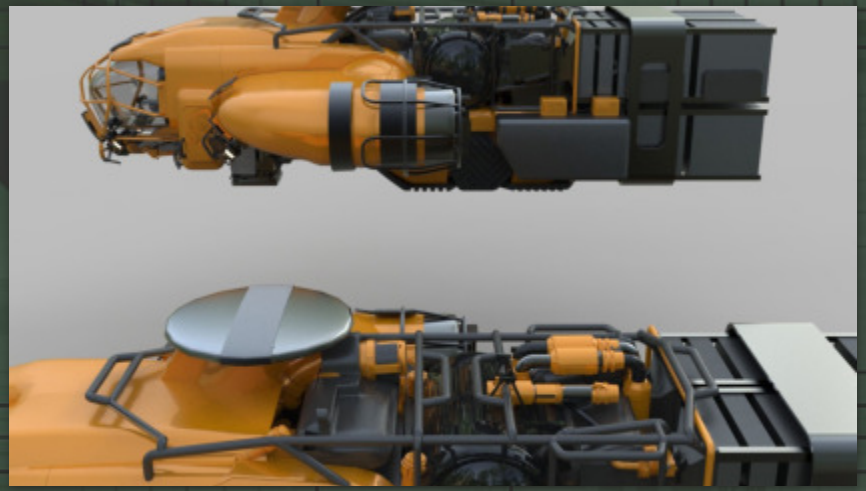


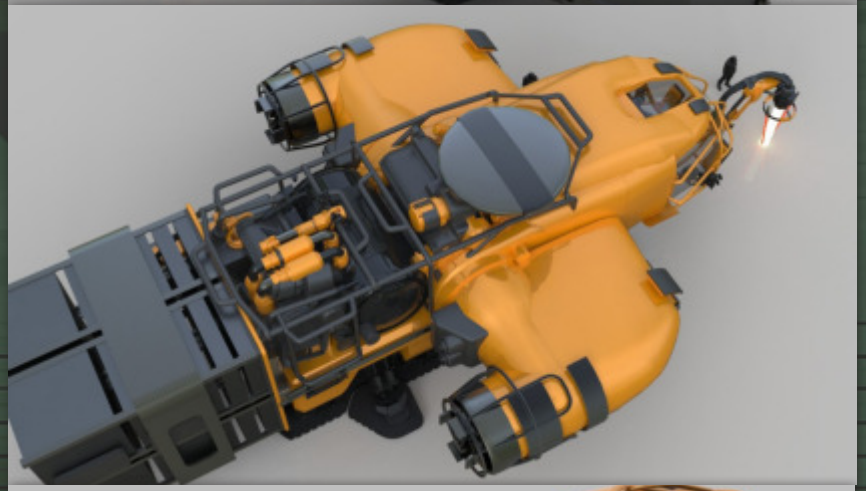
Paul J: MISC small mining ship (Prospector) – Gavin's gotten it this far; this is at a good point for you to get eyes on it, Chris. Still lots of obvious stuff to fix.

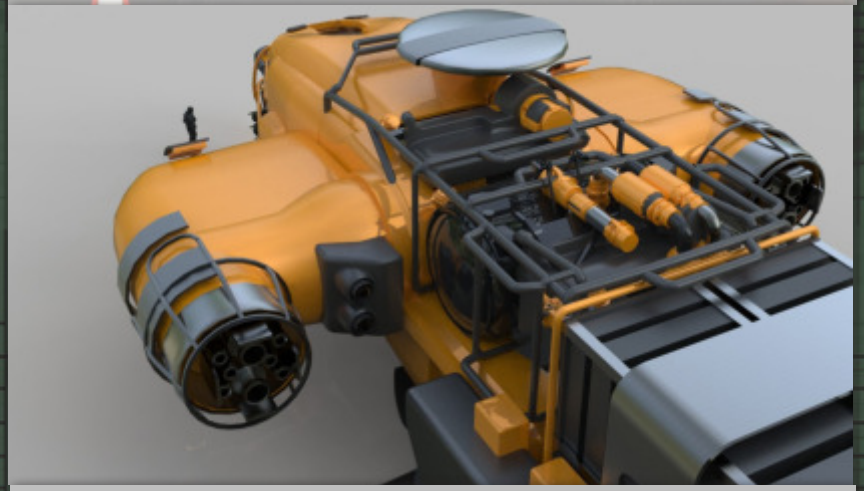
Chris Roberts: I am sure we can get a little more MISC in here. Right now it doesn't feel MISC; it feels low tech industrial – more like a Drake mining ship.

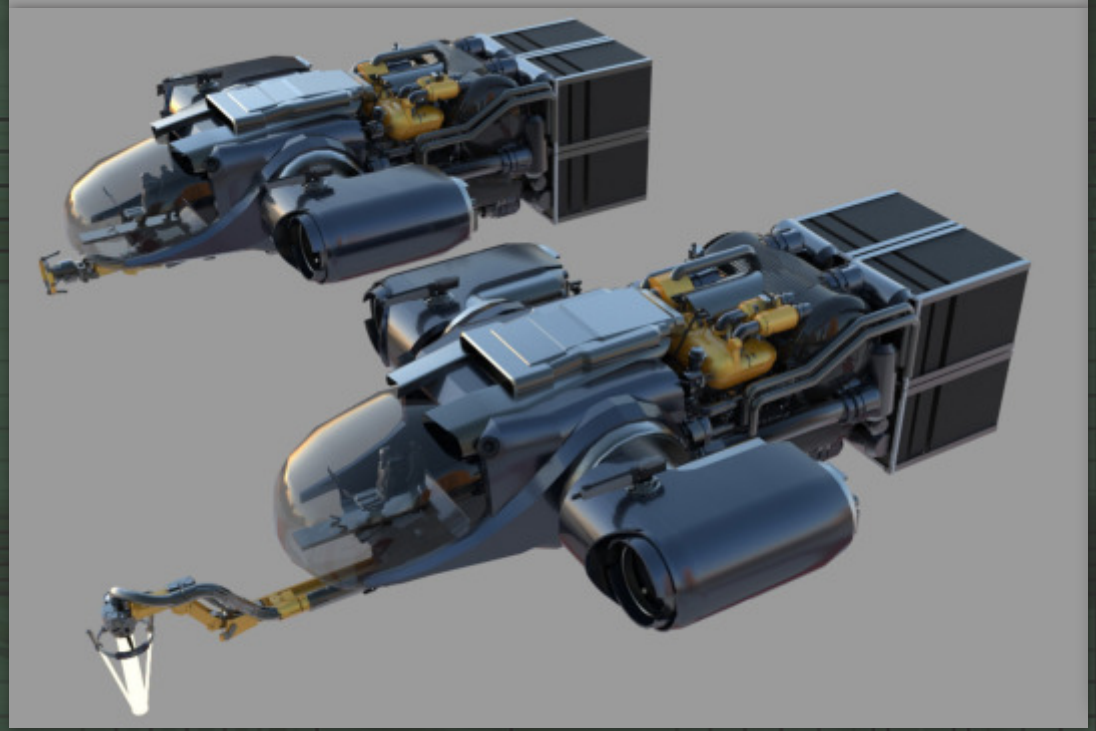
Phil M: The rear half has had no real love. We'll crack on, tone down the low tech vibe, and give it that MISC look.

Paul J: We were pushing a more industrial look – more akin to companies like Mitsubishi who make cars and cranes; regardless, I've asked Gav to remove all the junk and go back to resolving the first read shapes and integrating the rear some more.









Paul J: Some options for you, Chris. One is a bit like a mini-Starfarer, but to me is looking a bit mid-level rather than entry level. The other is styled closer to MISC; it's worth noting that the rear end still hasn't been worked on, it's just blockout. I've also done a quick paintover to push it along a little further. There's quite a bit of "processing equipment" – is that something we are happy to keep? It could be some sort of space trommel [a spinning sieve that sorts ore by size]. Some of the lines still need softening, but overall there are a lot more similarities. The guns are in an odd place too.

Chris R: Paintover is furthest along.

Here's my feedback:

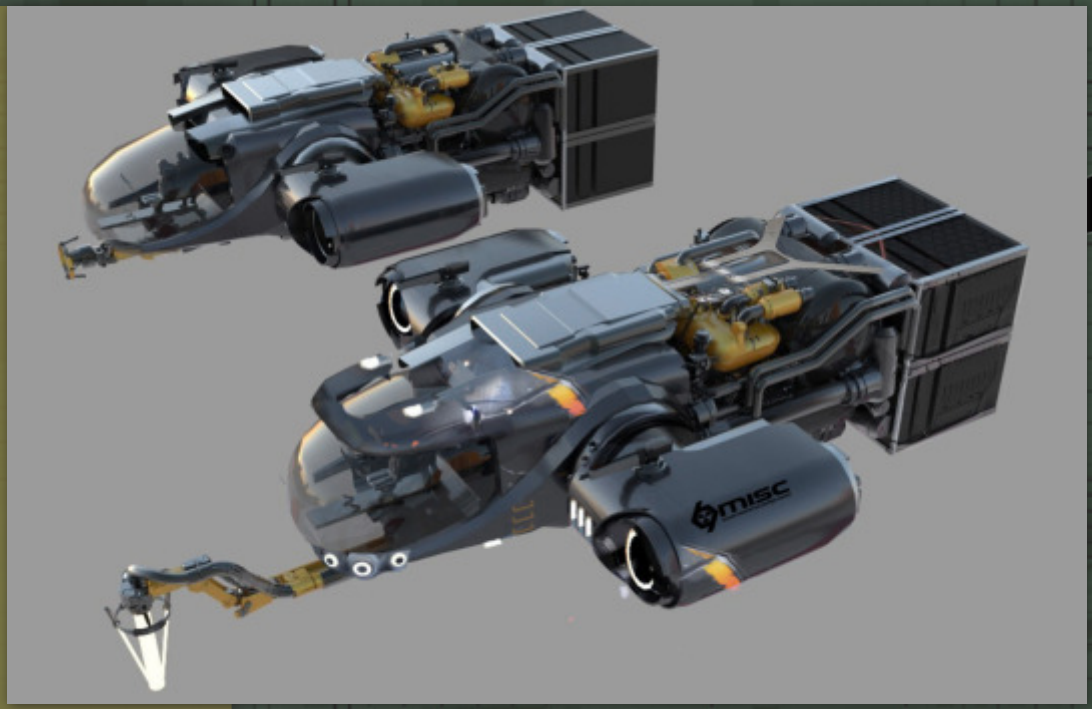
- I wouldn't make the cockpit be such a glass bubble. We want forward and downwards visibility, but if you look at all MISC ships outside the Reliant, they have a roof on the cockpit. So perhaps an opaque roof that covers at least 50% of the top of the canopy (towards the back).
- I feel like the engines should be further back. They look too far forward and the center of mass would be off. They basically should be in line with the processing equipment.
- The back section with the container should have a frame to hold the Mined Material Container. I also think this container, while following the metrics, can have a bit of a MISC touch. Maybe rounded edges as opposed to 90 degree ones.

- Perhaps we allow enough for two containers.
- We also will want to consider the ship and its mass when the containers are dropped off and when the containers are full. Basically perhaps the side engines can move forwards and back (like the Crucible) to adjust to the center-of-mass [COM] change on the ship when full or when empty.
- One other option would be to have the containers for the processed minerals be in the center of the ship, with the cockpit and processing unit / engines on the front and back. That way the COM will be balanced irrelevant of the mining load (as that is just adding to the COM and not at one extremity). This is how the Orion works.
- Have we called out the maneuvering thruster positions?
- I would think the mining arm should be able to fold in and be flush to the underside of the ship when not mining. (It still seems to be out a bit in retracted mode.)
- Do we have a small living area / bed inside? I see this kind of like an 18 wheeler cab – not big or luxurious, but a hardy miner can live here for a few days while mining.

Paul J: Roger that. Small living section, etc. is still accounted for; thrusters not in place but we know where they need to go; the rest we'll work on.

Phil M: Chris, when you said "Perhaps we allow enough for two containers" do you mean reduce the cargo count down from 8 (16 if you include the 8 compressed pods) to 2 (current pod size being 1.25 by 1.25) or drop down to 2 bigger pods?

Chris R: I mean two containers of the size in the concept (which just has one). Also we should make sure these containers are the ones that attach to a HULL C. They look a little short to me, so if the HULL C container is twice as long then I would mean one container but HULL C size.



Paul J: MISC style sheet we've been pulling from.

Paul J: Latest update. We are at a decision point with this design now. We have two options: continue to refine this ship in its current config or try the centralised mass version.

This version still has plenty of areas that need resolving or bumps/tech adding/landing gear solving but it's doable (still have the cockpit and interior to do, also).

Animation: We were trying to use the Freelancer entry and exit method, but because of the mining arm, the ladder is 1/3 taller – can this be accommodated?

Chris R: Can Gavin give us a version with the centralized mineral container configuration? I am really worried that this will be a nightmare to fly and we will have to have all sorts of extra hacks / cheats or a complicated system like a dynamically moving engine (like the Crucible) to adjust for the center of mass shifting due to the variable mass of the mineral containers.

We also need to figure out how the mineral containers attach / detach – how we would transfer our mined mineral containers to another ship (say, a HULL C).

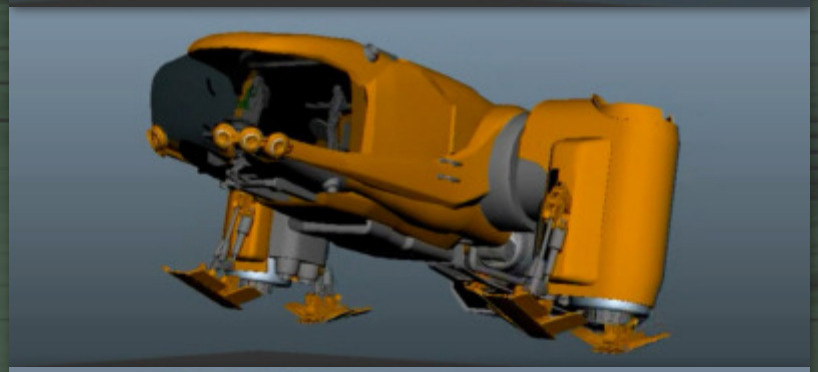
Paul J: On it. Will chat with Design about the whole transferring cargo business.

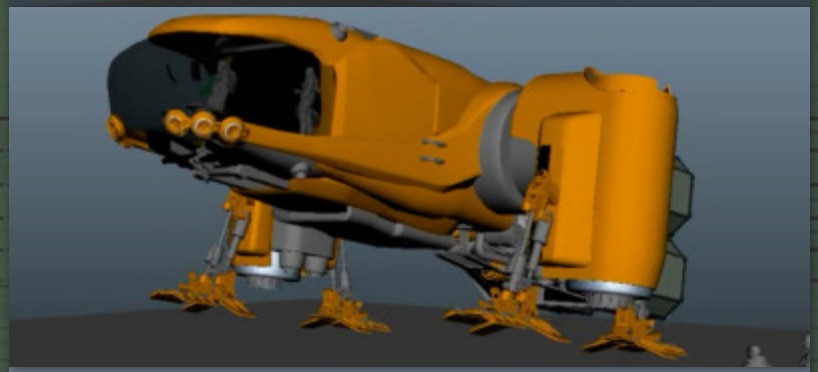
Phil M: Concerning "in space cargo transfer," the plan was for the Hull variants' tractor beams to transfer cargo. Mining vehicle disengages its full cargo pods and the Hull variant tractor beams them to an empty slot.

<< John Crewe, Senior Technical Designer: We need to account for maneuvering thrusters at the rear of the ship.

Paul J: Rough landing anim from Gav R.






Paul J: I took the opportunity to get some variants done. I picked a few blockouts from the line-up for Gav to work from. I'm liking 1 and 2 (they would look super cool :D maybe there's a variant we can knock out?). #3 is missing the smooth lines at the moment, but you can also see its potential.

Phil M: Option 1A for me. Saying that, Option 2A does look sweet.

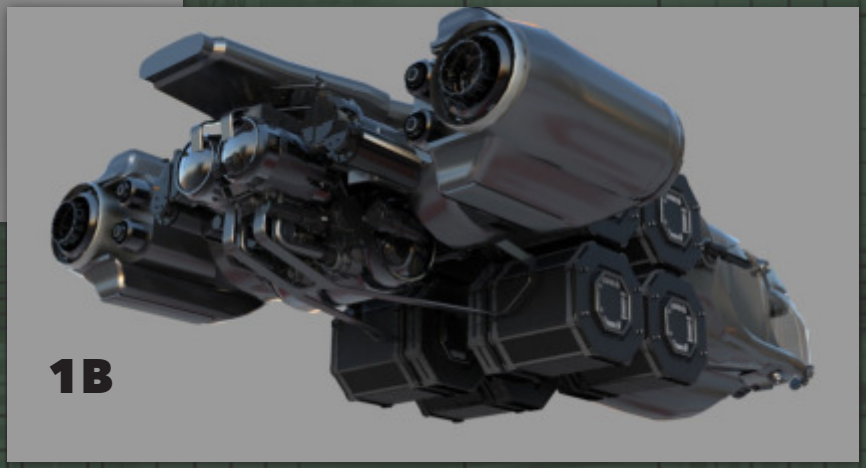
Chris R: Option 1 is my pick – it looks the best & most balanced of all designs so far.

2 is kind of cool, but feels more like a cargo variant than the mining ship.

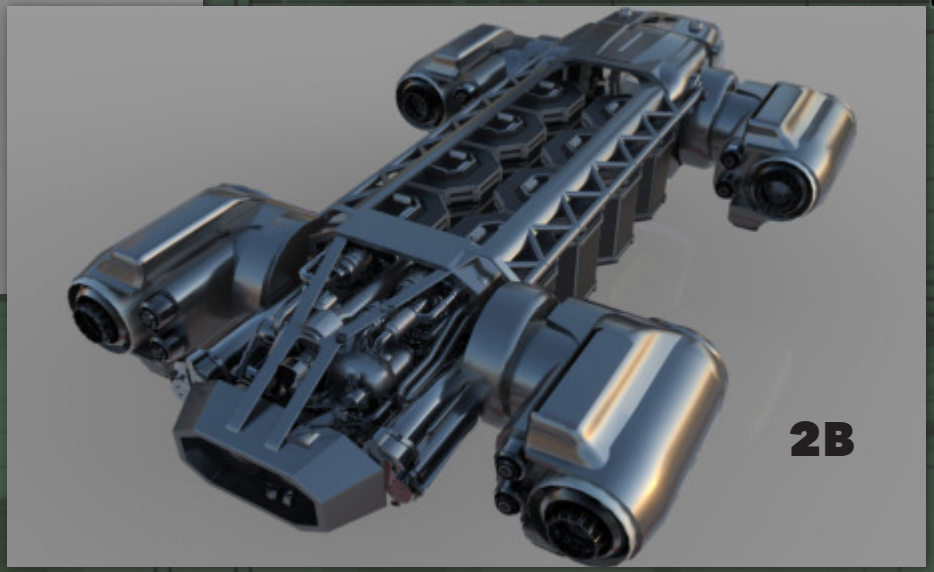
Be good to explore the mining operation functionality and landed state of 1 ...

Paul J: Ok, No.1 it is, I'll get Gav on it.

MISC mining ship - configuration exploration




2A


2B


3B


3A

Paul J: Small mining ship update *[this page and next]*

Currently missing any mining arm images, but it will be like previous versions.

We have been working on lines and silhouette. Still not there yet but getting closer (you can see Gav's improvements on lines compared to the last version).

Door height still an unanswered question from Animation; will continue to chase up with Luke.

The back 'chute' (the long top piece at the rear) – maybe it could be a place where the tailings and dust are ejected from after processing?

Chris R: How about making the mineral containers / drums be attached vertically (instead of horizontally) and on the left side / right side of the outer body? The body could then connect from front to back and the drums attached to the side and be easy to detach / attach.

Paul J: Ok, I've passed your ideas on to Gav, will get an update and see how it sits.

Jonathan Jacevicius, Tech Designer: We're looking at placing the thrusters at the moment. We can go with the rear engines swiveled (Freelancer style) for VTOL, or just have it handled by additional thrusters underneath.

ALTERATIONS

CURRENT

NOTES:
Body lines need to flow more
Added hump suggestion to back
Cargo needs some more structure to hold them in (we had something cool in the previous version)
Altered canopy shape
Flipped rear Landing gear
Rear manoevering thrusters need adding

Paul J: Chris, is this what you were thinking?

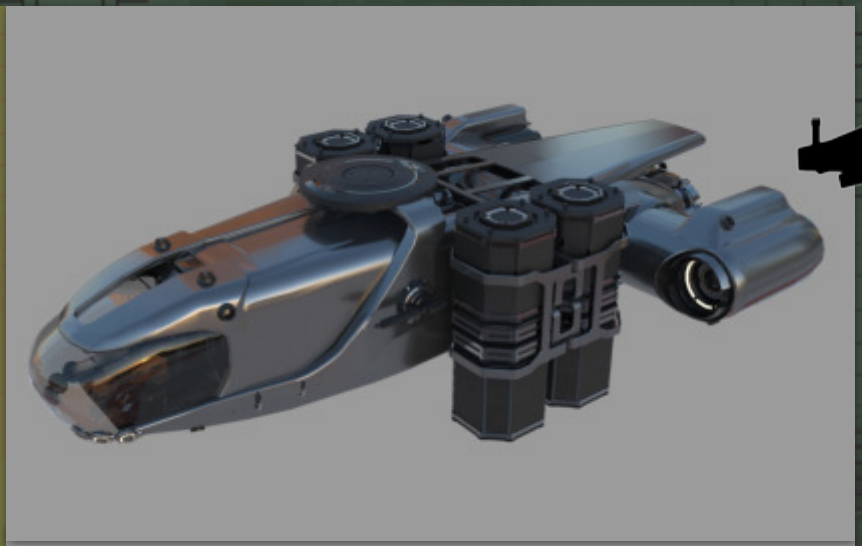
Chris R: Yeah, but I would like to see more of the processing equipment – I kind of dug the more industrial feel of that part previously. Also, I am not sure about double stacking the mineral hoppers / containers vertically. Maybe two or three to a side, but one hopper / container tall?

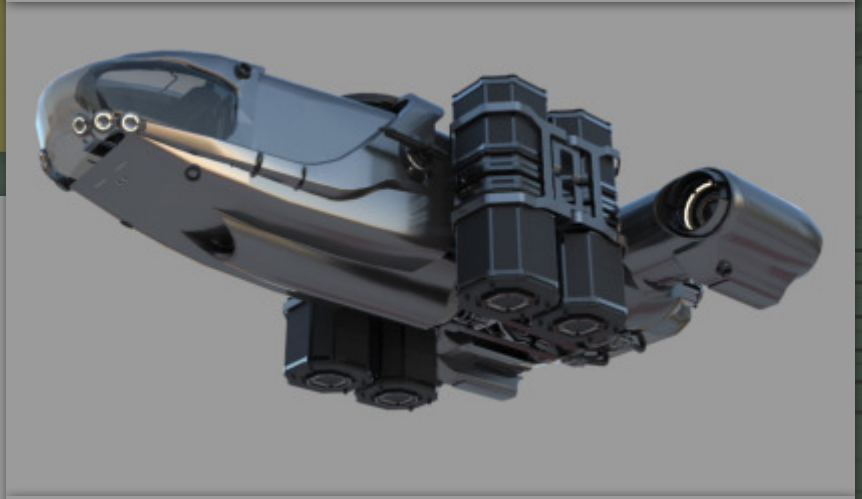
What's the disc on top for? Seems weird to have a big radar on the top of a mining ship.

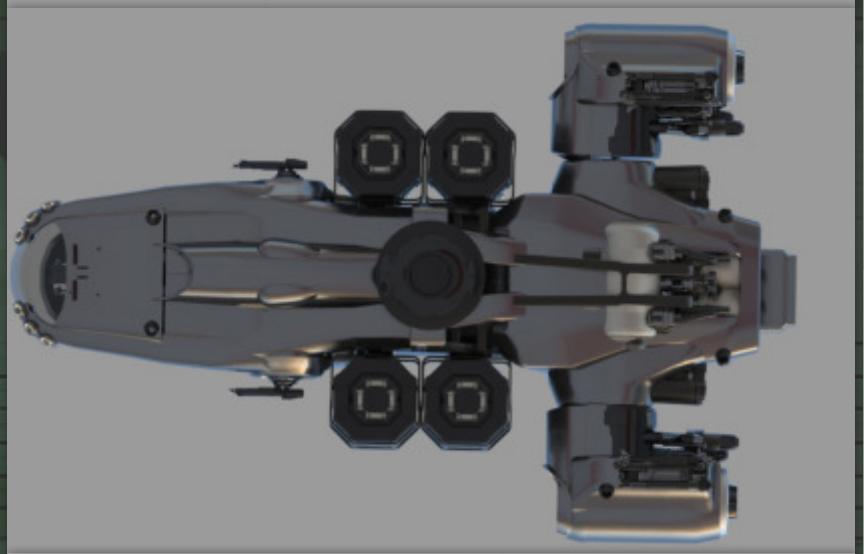
Paul J: Containers: what do you think, Phil? Top disc: we needed something to balance the ship; had thought it could be a scanner for minerals.

Chris R: Yeah, but the scanner would likely be on the bottom not the top, as your mining equipment is on the bottom side of the ship and you are likely scanning rock below you.

Phil M: Single containers are fine by me. I'm thinking we have 12 in all ... 8 collapsed and 4 opened up and ready for action.





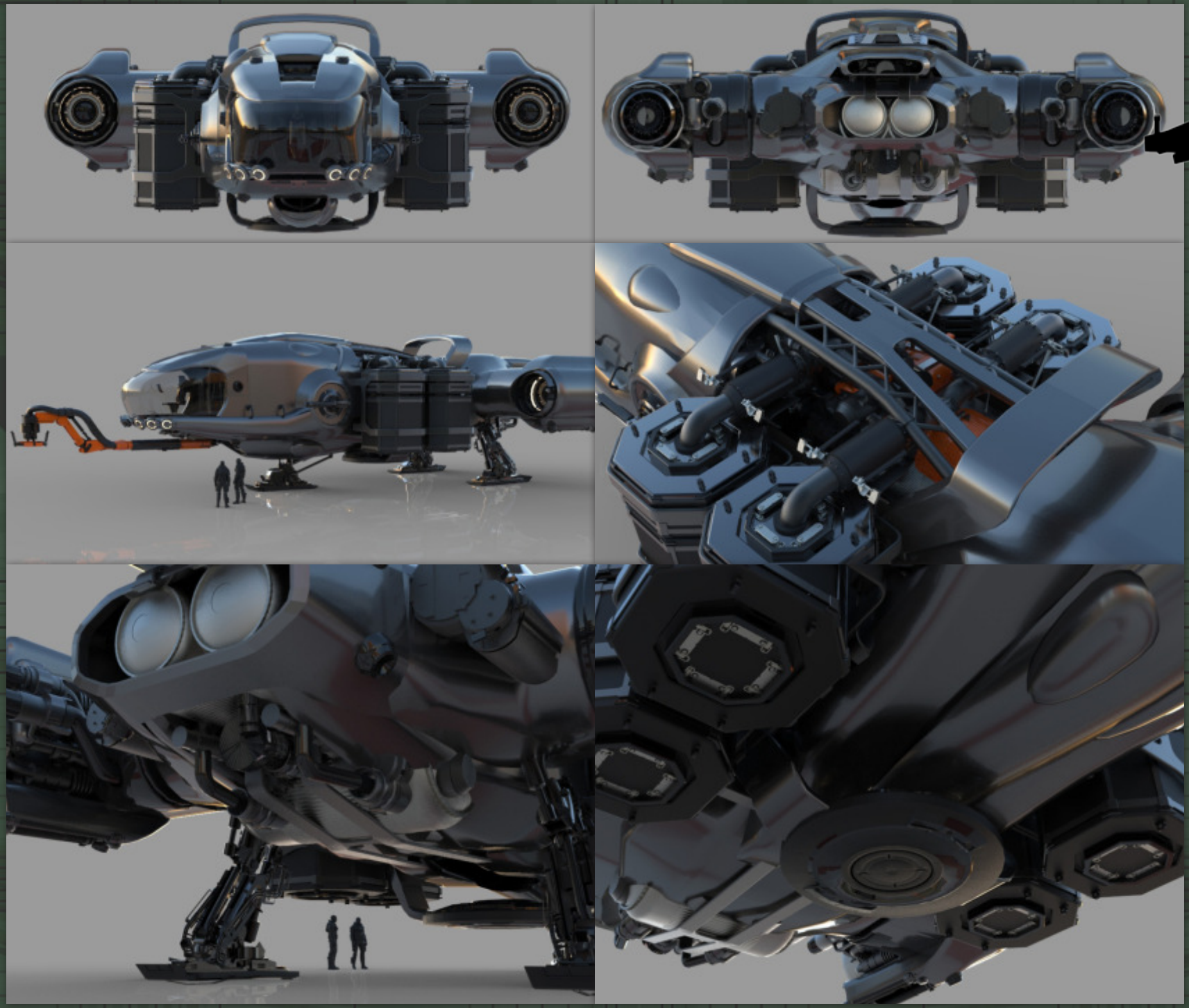


Paul J: Most recent feedback implemented *[this page and next]*

- Carry pods reduced (4 expanded; 8 in reserve, collapsed)
- Scanner placed on underside
- More techy gubbins added

To be resolved:

- Front landing gear / retracting mining arm share same space
- Some areas of shape language



Paul J: Updated Prospector exterior. Added retro thrusters, front VTOL thrusters (like Starfarer), addressed some body line work (bottom dish appears to be hanging a bit low now), landing gear fully recessed, top rear aerofoil given more definition, bodywork now more balanced from front to back. *[this page and next]*

Chris R: Maybe I am missing it, but where are the retro thrusters? Or the VTOL ones that we discussed to keep the ship hovering above the planetoid surface (if it has gravity)?

I was thinking that we would have two front engines that would rotate between horizontal and vertical to perform retro thrust and help with the hover (when vertical).

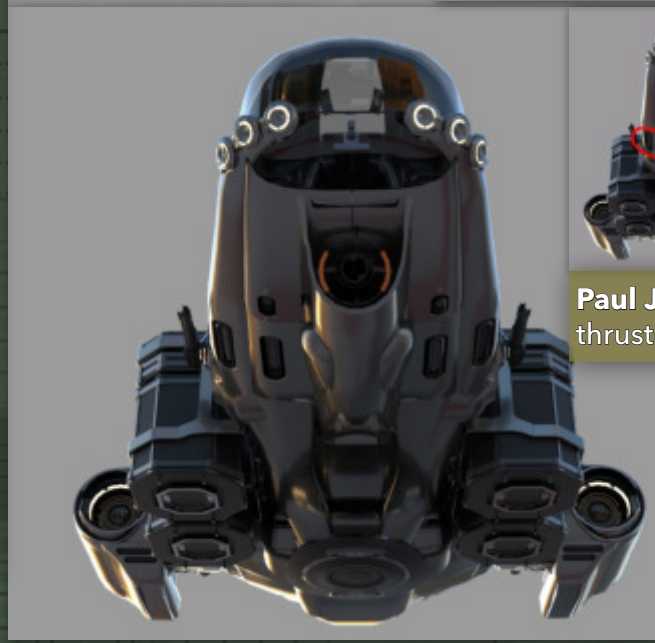
It seems the main / rear engines have lost their ability to rotate like the Freelancer's engines, which also could be problematic as I was assuming the rear engines would rotate down to provide enough thrust to hover above a surface when paired with the front ones.

Paul J: Rear thrusters can still rotate. I spoke to Tech Design and Nate after talking to you about getting extra VTOL thrust; we went with this solution as it was the most elegant and following on with other MISC ships (Freelancer and Starfarer). We might make larger exit ports for vertical thrust on the front underside.

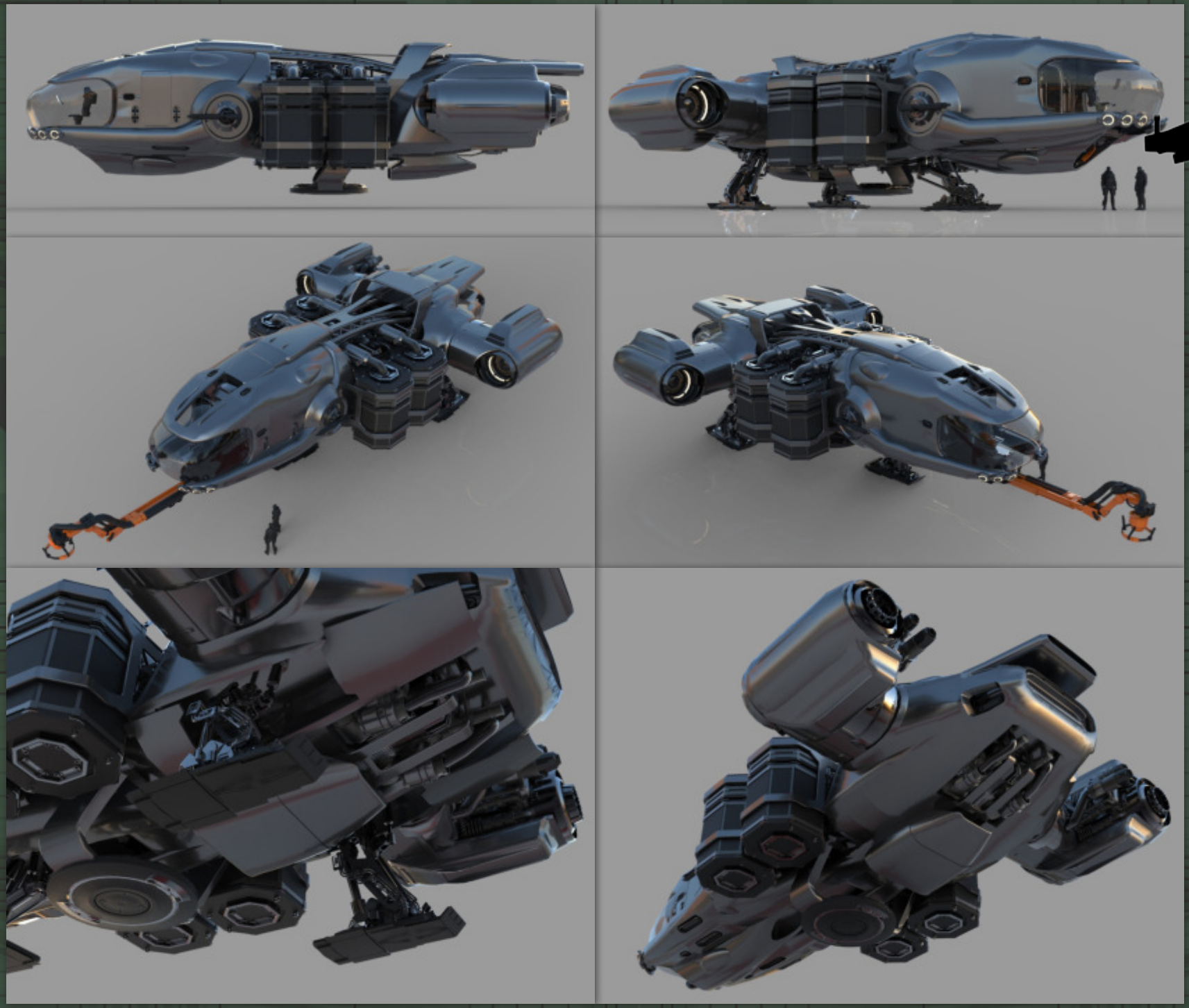
Chris R: I feel that the ship feels back-heavy and I wanted the front rotating thrusters to balance it. Otherwise, it's feeling a little too much like the Freelancer with some side-saddle containers. It doesn't feel like a massive task to work in a thruster housing (smaller but having the same vibe as the rear engines – think of the Cutlass secondary thruster) on the front left and right that can rotate to be retro or VTOL.

Paul J: I think I might have a solution that wont unbalance the ship visually, I'll ask Gav to implement.

Paul J: Reverse thrusters; they do look underpowered.



Paul J: Retro thruster ports here.



Paul J: Gav's first drop of the VTOL at the front. Needs some shape work and would need also to not rotate backwards and burn the cargo. Tech Design say it could be set up as VTOL/Retro – would that work for you?

Chris R: Yeah, that works for me. One note is that I would assume their default position would be 180 degrees the other way (for retro thrust), then they would swivel 90 degrees for vertical thrust.

Be nice to see a render with the back and front thrusters in VTOL position.

Paul J: Ok, cool.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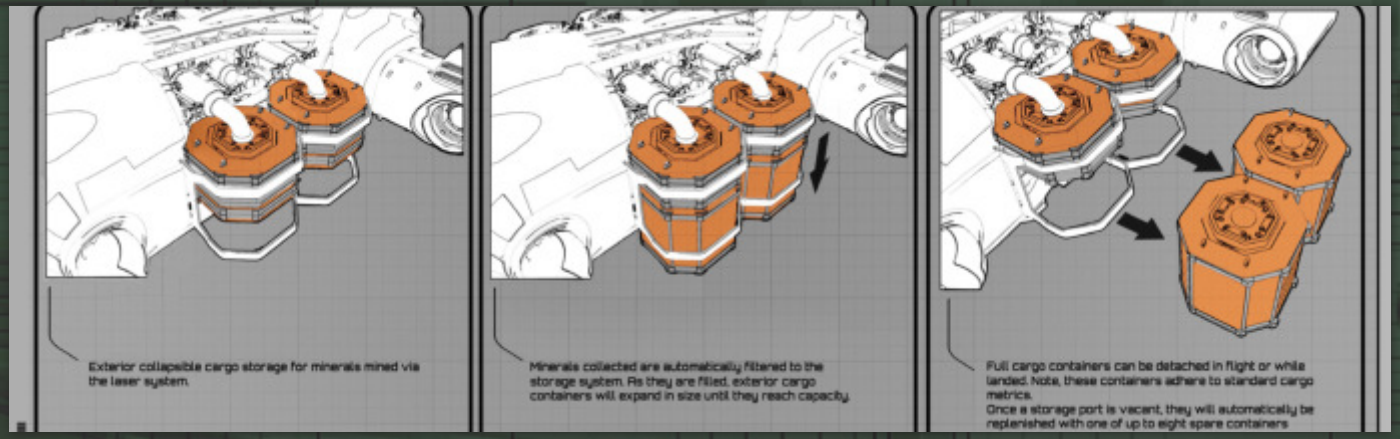
NC774-71
CAUTION

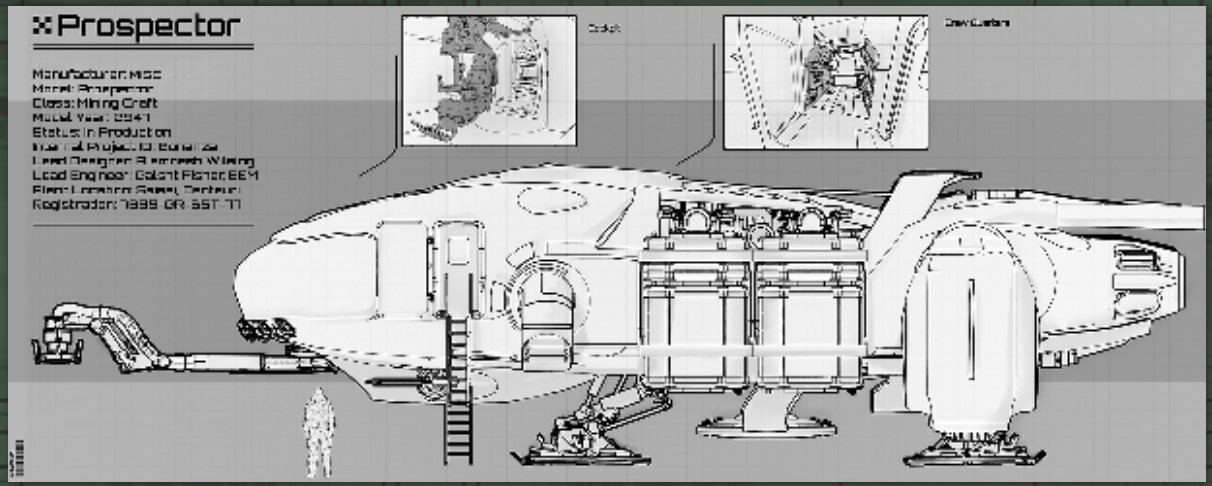
WORK IN PROGRESS

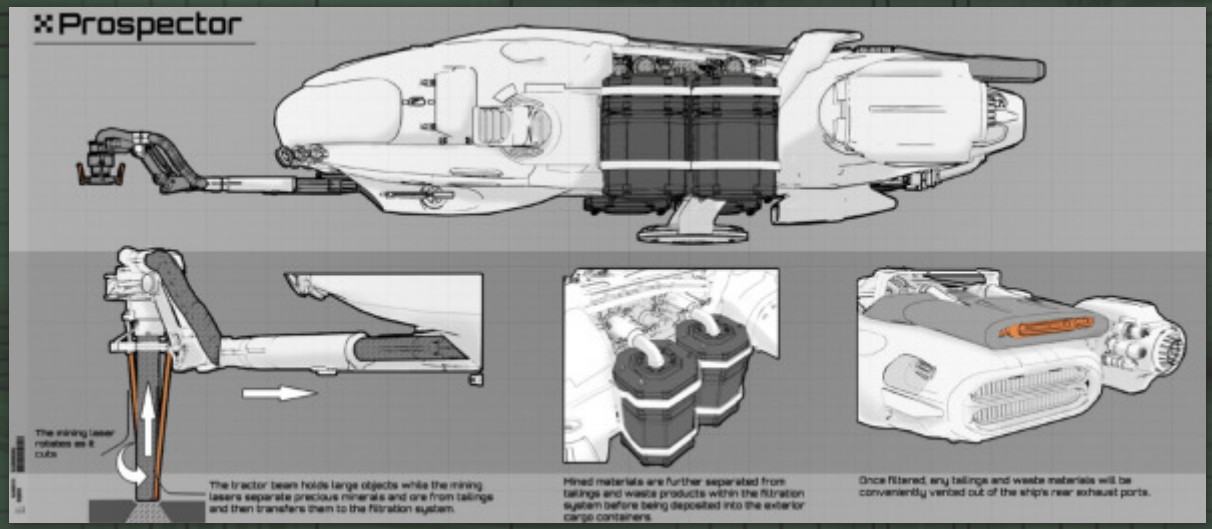
WORK IN PROGRESS

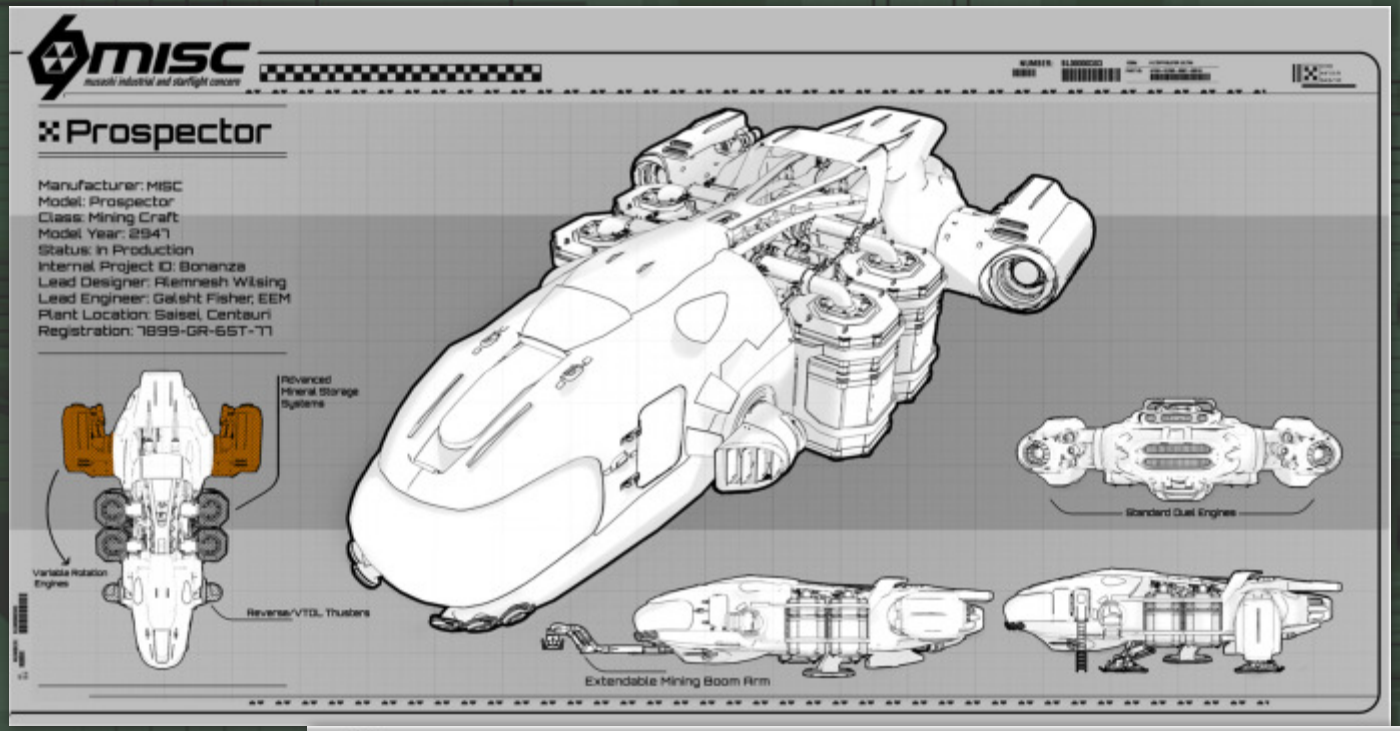


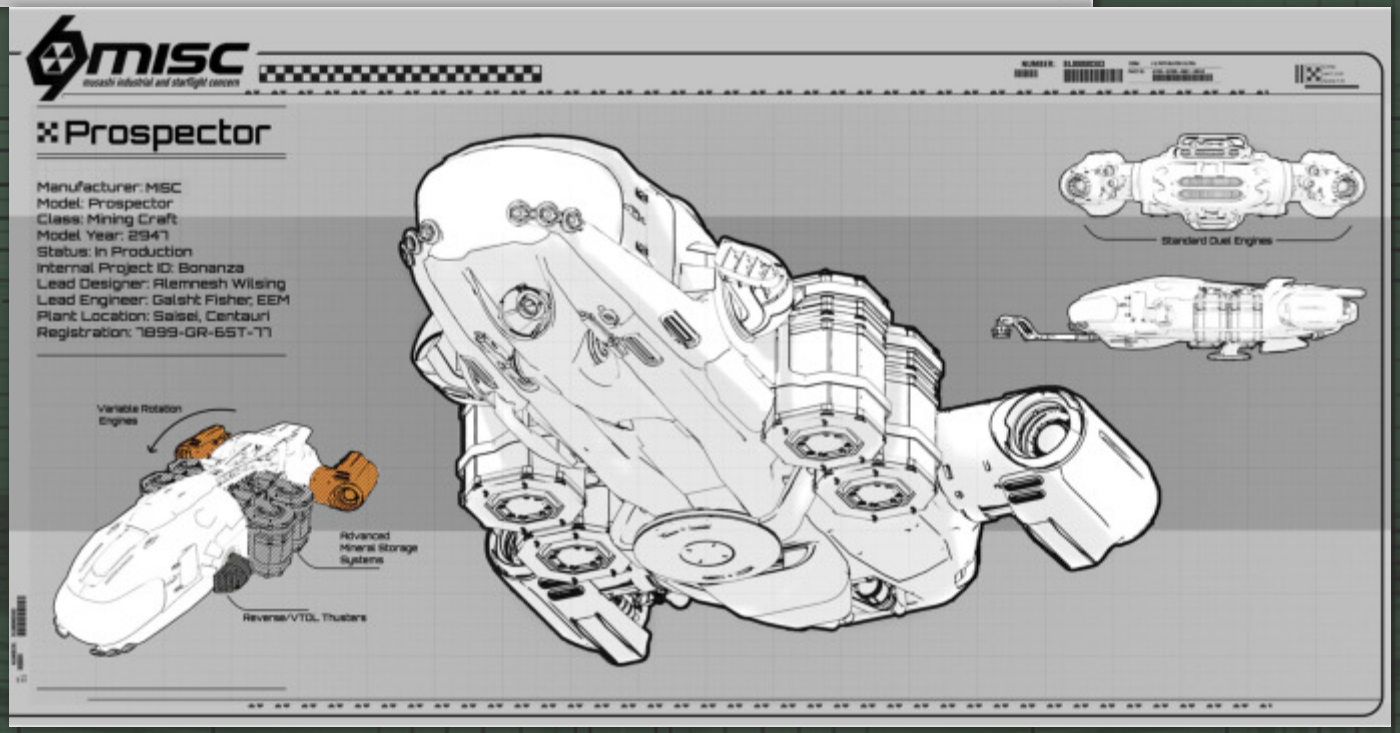
Bonus Material: Schematics

Sarah McCulloch
Junior Concept Artist






MISC
musashi industrial and starflight concern
Prospector
Manufacturer: MISC
Model: Prospector
Class: Mining Craft
Model Year: 2947
Status: In Production
Internal Project ID: Bonanza
Lead Designer: Alemnesh Wilsing
Lead Engineer: Galsht Fisher, EEM
Plant Location: Saisei, Centauri
Registration: "1899-GR-6ST-77
Advanced Mineral Storage Systems
Variable Rotation Engines
Reverse/VTOL Thusters
Standard Duel Engines
Extendable Mining Boom Arm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SHUBIN INTERSTELLAR

The Hidden Empire

Dubbed the Hidden Empire by economic historian Dr. Edward Nogel, Shubin Interstellar has become one of the most expansive companies in UEE history, with profits to rival any solar system's and an employee base large enough to fill one. And while most people are familiar with the company by name, because a large portion of their business happens in the most remote parts of space, few are aware of how massive a corporate entity Shubin really is. Yet from its very inception, Shubin was created with big plans in mind.

Founded in 2410, Shubin Interstellar began life as an investment group headed by Sol construction magnate Martha Shubin to take advantage of the nascent terraforming boom. As Humanity's exploration of the stars continued and more worlds were discovered, Martha was calculating that a large bet on terraforming would pay off. The group began by providing capital to various terraforming firms, but after a series of mergers and acquisitions, Shubin Interstellar found itself with controlling interest in the third largest terraforming conglomerate in the UNE.

The business continued to grow as Humanity did, but the executives at Shubin found themselves with an overhead cost problem once the terraforming was done in any given system. The equipment and expertise that they had built up in the system during the lengthy planetary engineering process was being sold off or liquidated once the work was done, at a considerable loss. Those concerns were compounded as the rapid expansion of the 25th and 26th century began to slow, meaning that there were fewer systems to terraform. The solution presented itself when Fulcrum Mining Associates offered a massive buyout of Shubin's assets in Centauri system. Instead, Shubin made a counter offer to purchase Fulcrum outright – the plan being that by acquiring their mining expertise, Shubin would be able to seamlessly retrofit their terraforming holdings directly into mining ones.

It ended up being a highly profitable decision, and Shubin's already impressive portfolio expanded rapidly. Soon pure mining facilities were being constructed in systems without terraforming needs. By the 27th century, mining made up 60% of Shubin Interstellar's net worth, which prompted the company to segment terraforming into a separate planetary engineering subsidiary and heavily shift focus to ore acquisition. Shubin had successfully transitioned from a company that helped create worlds to one that focused primarily on ripping them apart.

Fast forward to today and Shubin has mining operations in close to every system in the UEE and many more beyond. Their influence on politics and government is unmatched and public records show that Shubin contributed more than any other company to lobbying efforts in the 2945 fiscal year. While these days, referring to a senator as having "rocks in his pocket" is typically used to describe a politician who holds up proceedings, the phrase originally was used for anyone in the Senate who accepted large donations from Shubin. Yet despite their size, history and political sway, their brand new shining headquarters on microTech demonstrates clearly their dedication to remaining on the cutting edge and their commitment to continue to evolve and grow. Many attribute this company's continued success to their current CEO Gavin Arlington.

Wunderkind

Born on Earth, Gavin Arlington was immersed into the world of business and finance from a young age when he got his first job as a runner at the Mumbai Commodity Exchange. According to his 2941 autobiography *Collecting Dust*, it was his time on the exchange floor, watching fortunes made and lost in fractions of seconds, that inspired the development of his business philosophy known as Evolutionary Management.

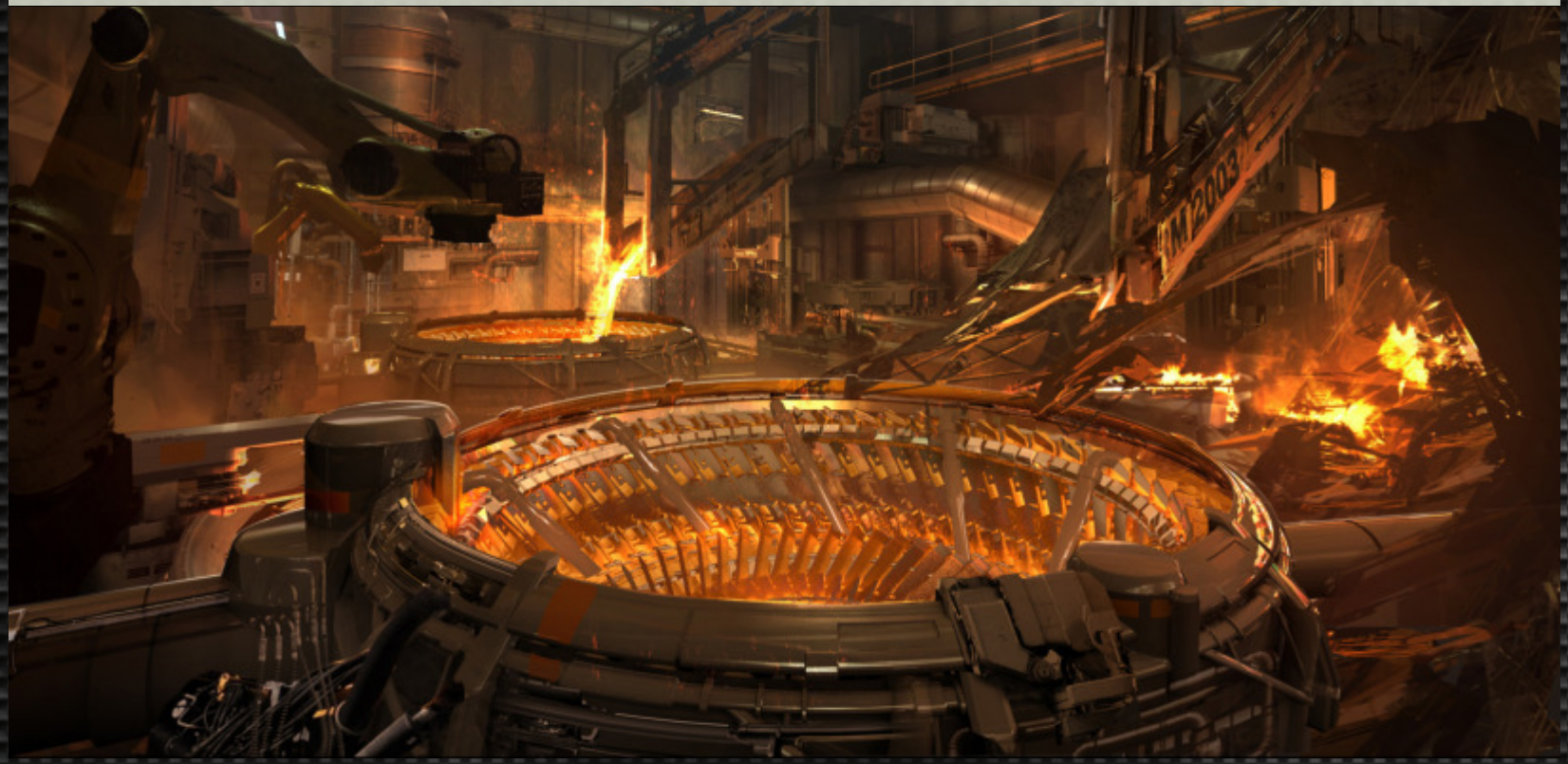
According to this theory, only by creating a corporate environment where the ambitious and hardworking get rewarded and those not performing above expectations get quickly culled can a company remain agile and not get mired in stagnation. Even though Shubin has seen a high level of turnover in the past few years, the strategy seems to be working. Since Arlington has taken over Shubin, the company has recorded increases in profit and expansion across the board. Under his leadership dozens of new initiatives have been started, including the company's move to Stanton, tech overhauls of their mining fleet, their historical conservation program, employee health awareness, massive charitable contributions and a strong dedication to hiring military veterans. However, despite this proven track record, one of his more recent directives has been met with some controversy.

Sharing the Wealth

Recently, Shubin Interstellar has begun another interesting transition and has gone from predominantly hiring internal personnel to heavily engaging external contractors. Arlington has come out in written statements explaining that this strategy means the company can remain more flexible in the face of changing mining conditions and allows its core workers to focus on high priority operations.

However, mining rights groups have pointed out that, as contractors, many of the miners working for Shubin are no longer entitled to the same benefits and protections that full employees receive. Since Shubin has been forced to forge deeper into more and more hazardous areas, there are those who think that Shubin's switch to hiring contractors is an attempt to avoid the expense and risk associated with having their own employees working these difficult sites. Yet there's no denying that independent miners across the 'verse have been bidding on these jobs en masse, welcoming the influx of credits in what can sometimes be a volatile industry.

Whatever the future holds for the company, there is no denying that they have made their mark on Humanity's history. With hundreds of tons of ores and minerals being harvested every second, Shubin Interstellar and their CEO Gavin Arlington are still changing the face of our Empire, not only physically with their large scale operations, but also behind the scenes with their wide reaching influence and financial strength.



DevOps

(L-R) Gerard Manzanares
Keegan Standifer
Mike Jones
Nathan Howard
Andy Anderson
Miles Lee
Ahmed Shaker

Developers develop the game, players play the game … but how does it get from Point A to Point B? (Or rather, from Point A to Point G or N … we're discovering there are several more steps in the process.) Read on to find out!

* * *

JP: *To begin, could each of you give me your title, and 5-10 words describing what you do? We'll go into what you do in more depth; this is just to get us started.*

Mike Jones, Director of IT & Publishing: I'm in charge around here – everyone reports to me.

Miles Lee, Associate DevOps Engineer: Responsible for the Build System and associated build tools.

Will Leverett, Game Support Manager: In-game support and overseeing the new Evocati volunteer test group.

Andy Anderson, DevOps Engineer: I just started, but I run some of the infrastructure and tools that keep the 'verse going.

Gerard Manzanares, Associate Producer: I'm responsible for tasking the team and assisting them with anything that they need help with. If you've ever watched the show *Silicon Valley*, I'm basically Jared. :)

Ahmed Shaker, DevOps Engineer: I'm responsible for the cloud infrastructure running all three main environments

– staging, PTU & Live – with all their related supporting services, in addition to the related automation work. But that won't last for too much longer, as we now have Andy and Nate (new members on our team) who will soon be sharing parts of those responsibilities with me.

JP: *Ahmed, in 10 words that would be ...?*

Andy A: Ahmed runs the universe.

Ahmed S: Responsible for Game cloud infrastructure, servers and their automation.

Keegan Standifer, DevOps Engineer: Launcher, Game Client Deployment, Analytics, Internal Tools.

Nathan Howard, DevOps Engineer: Learning about the infrastructure and cloud environment.

JP: *So, what teams am I interviewing today?*

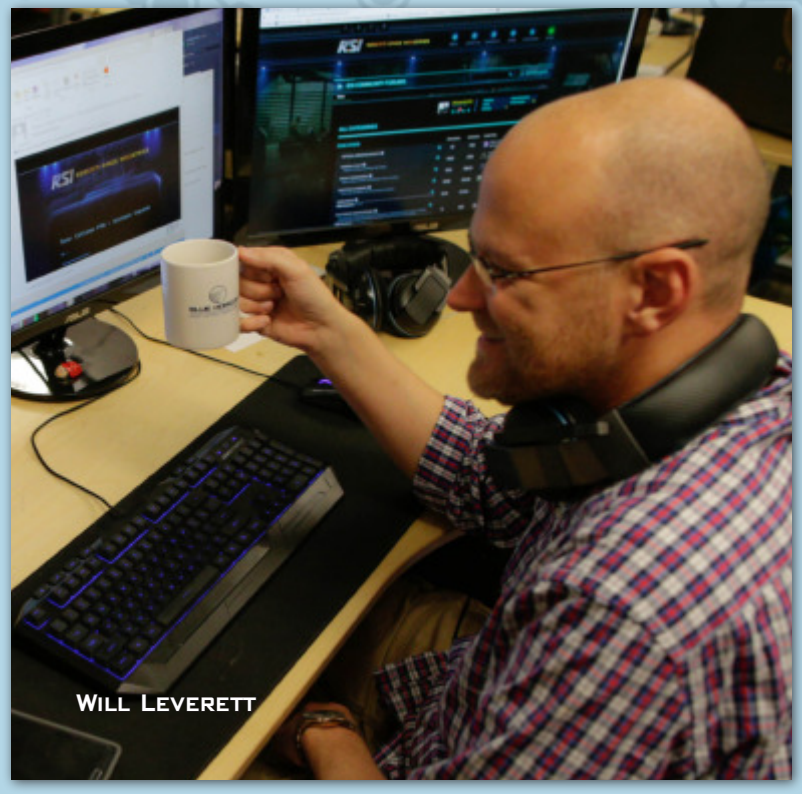
Will L: Game Support!

Mike J: DevOps, Publishing, Game Support – that's pretty much it. We have had some other names thrown around like LiveOps, Deployment Team, Devil's something or another, etc. But we're all part of Operations, which keeps the back end services running for *Star Citizen*.

JP: *What does DevOps do?*

Andy A: DevOps is kind of a funky term to define. It's two words – development and operations – stuck together, representing the idea that it's a mix of people with software engineering and systems administration backgrounds.

Reflective of that, people on the team will at one moment be writing code and at the next moment be orchestrating the servers to push a new version of the game.



JP: *I think I'm going to need to ask for the basics here. For our readers, that is. I'm sure I fully understand everything that you'll be describing ... for example, what's software engineering? What's systems administration? Or perhaps you just answered my question.*

Andy A: I think that's a decent short definition. Software engineering is writing code that makes up the game, systems administration is the work that goes into that code running on our servers and your computers.

Ahmed S: We also work on eliminating the fence between developers and operations. We embrace the collective ownership culture in CIG and try to get involved in product management in different phases, not just at the final phase when it hits our servers.

Keegan S: We also augment developers, by developing tools, used both by our department and others. These tools have a wide variety of use, from distributing our builds internally, to restricting assets, to preventing broken publishes and other problems.

Andy A: To build on what Keegan said, part of our responsibility is seeing that a piece of software needs to be made in order for the game to get shipped – and just doing it ourselves, without adding to the workload of the game development team.

JP: *Developers design the game. What does (do?) operations do?*

Andy A: ("Operations" is the collective noun, a specific noun would be something like "operations engineers.")

Ahmed S: In DevOps there is not a clear separation between where Dev work ends and Operations work starts.

Miles L: From a build perspective we take what a developer has completed or updated, package it up and prep it for live servers and distribution both internally and externally.

Andy A: I think a trivial example might be helpful. The game development team might write a program that transmits chat messages from Citizen to Citizen. They would hand that code over to operations, who "build" the program, send it to a server, connect it to our universe, and watch to make sure nothing goes down.

Ahmed S: Traditionally, operations responsibility starts where dev work ends … Devs hand over their compiled code and assets to Operations and Operations takes it from there to distribute it, manage it and maintain it. If errors are found in Operations that don't relate to their work, they take the error messages and throw it over the fence to developers.

Mike J: This is why we get name confusion actually – the whole idea of defining what we do leads to terms like Publishing, and Live Operations, even Systems Support and Back End Services. People like to use the terms that fit with how they perceive it but the whole thing to me is the translation from our awesome development team to something that gets published to servers and patched out to clients so people can see it.

JP: *So a major part of your job is taking pieces of code from Dev and slotting them in where they fit?*

Ahmed S: What I described is the traditional process; we don't do any of what I mentioned above. That's why we are "DevOps" – we participate in the process from the beginning and share our areas of work and concern with devel-

opers as well. It's a continuous and shared effort between developers and operations folks to avoid design issues and delayed feedback channels.

Andy A: David, I understand where you'd get that impression, but it's more like we make sure everything is connected and running appropriately.

Keegan S: Developers deliver the source code for various applications to our build system. The build system compiles the code into applications, and we deploy those applications to their final destination, and point them at each other so they can communicate.

Mike J: I think putting pieces together makes sense. We also provide the hardware and infrastructure that the game runs on.

Ahmed S: And aid and support at the design phase.

Andy A: The lines between us and Dev (and what a traditional Ops department looks like) are blurry, and that's a good thing.

Ahmed S: So if developers wanna design a new distributed feature that will work across different systems, we get to be part of the design meetings, to provide them with insight on how their code would communicate on servers and provide suggestions about areas of concern in their implementation that might act differently under load.

JP: *"... that might act differently under load"? Is that the same as " ... that might act differently when lots of people are using it at once, rather than just one or two"?*

Ahmed S: Yes, the developer's code has a functionality that needs to be delivered, while I could help him have a better understanding of what additional features he needs to consider so we can have a better quality of service in production. So it's not just how many people are connect-

ed, but there are also other areas of consideration. In the cloud you design for failure, which means that your design has to be resilient to unexpected and uncontrolled issues that could happen at your cloud provider infrastructure.

Ahmed S: This is one of the important values our team offers – we are the gate guards that see where problems could appear and try to raise flags and provide suggestions of how to address these issues.

JP: *Ok, I think I have a better handle on it.*

That's DevOps. Why are you sometimes called LiveOps?

Ahmed S: It was a trial to separate responsibility inside our large DevOps team into two different areas: build support and servers support. However, I don't think this is the case anymore. Mike, please correct me if I'm wrong.

Mike J: LiveOps was a term that was created recently in an attempt to better describe the work of DevOps to people who didn't understand what we do. Live Operations, was supposed to mean Publishing, which ended up sticking more than the term LiveOps did.

JP: *So LiveOps is dead.*

Andy A: DeadOps.

JP: *And what's the difference between DevOps and Publishing?*

Mike J: I think what happened was growth. We went from a small team called DevOps which grew to have more responsibility, including lots of things like Publishing, Live Operations, Tools Development and Support, the Build System, and so much more. This naming stuff will likely continue to come up as we continue to grow the team with the needs of the project.

Keegan S: Publishing pushes builds (client and server) for deployments, Operations maintains those services, Tools makes tools, Build Systems builds the game from code into application.

Ahmed S: We also provide insights to the whole company, not just engineers – server logs, analytics, player trends, resources usages, monitoring charts, performance profiles – all of that comes out of DevOps.

JP: *Game Support sounds like it's more related to players than to DevOps. What does it have to do with all this that we've been discussing so far?*

Ahmed S: Game Support is very important for us. They provide us with all sorts of technical feedback from our backers, they help us manage stress test sessions, and they also provide a lot of insight about how what we do affects the backers.


MIKE

Mike J: Game Support is super important to us and we couldn't do our jobs without it, but I think DevOps/Publishing is crucial as well. Without it, there would be nothing to play.

Gerard M: Game Support is very important to us as we leverage that team to help with gathering valuable player feedback or stress test the services that we've set up.

Will L: It all has to do with the players' experiences! I'm fortunate to sit in our DevOps pit, which is incredibly helpful when we push out updates to players. What I provide is a conduit to DevOps, communicating the experiences of players in realtime. This is important when troubleshooting any issues that may come up, which can happens from time to time given the Pre-Alpha state of *Star Citizen*.

Ahmed S: Here's an example of what Game Support could do for both of DevOps and backers: if we have a player facing an issue downloading the game or joining the servers, Game Support with their technical knowledge and customer services skills can help the backer collect more information of his local setup to provide us with better understanding of what's going on, and then communicate our feedback to the player.

JP: *I've heard about something called Evocati. What's that?*

Will L: The Evocati is a new initiative that we've rolled out, completely composed of our best volunteer testers. Each of these volunteers has signed an NDA with us, and they've been selected based on previous Issue Council contributions and PTU participation.

Ahmed S: We always provide Game Support with information on how our infrastructure works, and they can utilize this knowledge in educating our backers about what's going on behind the curtains.

Ahmed S: Evocati are awesome .. that's the most concise definition of what they do.

Will L: I'm personally thrilled that the group has been so successful in our very first run on 2.4.0. We've had 96% of the testers volunteer their time on 2.4.0, they've found several dozen critical bugs that we are resolving even at this very moment, and they are now an instrumental tool to help making the game experience better before we publish to Live.

Ahmed S: They do an amazing job for DevOps specifically and CIG in general. For example, we have an open channel with Evocati members through which we can start sophisticated test cases that can address certain bugs that are hard to reproduce with our own QA teams.

JP: *"Evocati" sounds Latin. What does it mean?*


NATHAN

Mike J: Evocati = CIG for Team Avocado (their term, not mine - though I like it).

JP: *The player team picked the name?*

Will L: Evocati is indeed a Latin term! The meaning has its origins in the Roman army, where members who had served so gloriously in combat were invited to serve the Emperor again. We felt this was perfect, as all of the volunteers have been chosen based on previous contributions.

JP: *And now I have two explanations, which don't relate to each other at all. I suspect I know which one is correct.*

Will L: I picked the name trying to conform to some of our Roman nomenclature that we have used, such as Imperator and Centurion.

Andy A: "The summoned."

Mike J: If there is any doubt about any of these great answers, lean to Will; he is the authority on this topic.

JP: *Yeah, sorta figured.*

Although I was buying the Avocado explanation.

Andy A: You see, they're both true. We derived our term from the Roman military rank, who in term derived it from the fact that high-ranking Roman soldiers were paid in bushels of avocado.

JP: *How large is Evocati? And how do I get on it now?*

Will L: Our current Evocati team runs almost 450 members, and we will be growing it somewhat over the summer.

Anyone that wants to get into Evocati can do so by engaging on the Issue Council! The group is largely selected based on a score that I developed using Issue Council bug reports and contributions.

JP: *Okay, I think I know all about the Evocati that I need to know ...*

New question: is this the only DevOps team in CIG?

Ahmed S: Yes. DevOps and game operations responsibilities all take place in Austin.

Mike J: That is correct, Austin is the Operations HQ for *Star Citizen*. Austin, TX is centrally located so it makes good sense for our company to run Ops from this location. We're also the middle of our company time zones as well.

JP: *How are you able to maintain tight communications with Europe, 6+ hours ahead of you?*

Ahmed S: Coffee. :)

We are all on call for other team members' needs in the other offices, whether before us in EU or after us in LA

Gerard M: Our mornings are usually filled with meetings as the Frankfurt studio is 7 hours ahead of us and UK is 6. Basically, from 10 until noon almost every day we have meetings. I also leave my phone signed into Skype in case anything urgent arises. I have received calls at 6 in the morning from across the pond. :)

Ahmed S: We always have our devices near to us. Miles and I are usually the ones that get paged a lot and we usually either stay up late or wake up early to catch enough time with the EU teams.

JP: *Does someone take the midnight shift, ready to handle things that come up between midnight and dawn?*

Mike J: We used to take shifts but it nearly killed us. Now, as we grow, we're training others within our company to help resolve any issues that might arise during their time zones and our nights. We already have fantastic support from our team in Germany and the UK. Now our operations are on demand.

Ahmed S: Our servers and services also don't sleep, so it is not just that we have offices in different location – the 24/7 thing is part of the operations game.

Miles L: I tend to stay up until all builds are green every night [midnight - 1:00 am] to guarantee that Europe always has builds ready when they get in. If things are failing, they usually know that I'm still around.

Ahmed S: We also utilize automation in different areas so we can go to sleep knowing that our code and scripts work for us. Adding to that, we get a lot of support from our QA staff in EU. We trained them on how to interpret errors to tell if they can just re-run a failed process or if they have to call one of us – and if they have to call someone, who to call.

JP: *We touched on this earlier, but then diverted to other topics. What is Publishing (or Pub)? Does it have anything to do with Builds?*

Miles L: Builds is where the publishing process starts. Our release builds usually run for 90 minutes. This is much improved from the 3-4 hour builds we had just a year ago. Once a build is completed, the build system then uploads the build via scripts written by Ahmed. After that things get handed off to the server side of our team.

Ahmed S: Publishing is a kind of an older term that comes both from the web industry (where they used the term


MILES

"publishing the website," borrowing the word from journalism and such) and also from deep roots in the game industry (where you publish and distribute your game to your customers).

And that also relates to the term "Publisher," where you go to one of the big game distributors to publish your product for you.

Keegan S: Publishing our game has two big components, the Client and the Server. I developed the client side deployment pipeline, which we use to upload the game client to our cloud storage. Ahmed created the server pipeline, which he uses to upload the server applications to different server machines so the players can connect and play.

JP: *What is a "build"? I would have thought there might be one a night (or not), but Miles mentions multiple builds in a single night.*

Ahmed S: Like Miles said, in CIG the process starts with the build system. Once all developers have committed their code, production makes the call for a publish. A request is made in the build system to build this release candidate. Once the build comes out from the build system, it takes two routes.

Andy A: When developers work on the game, it's represented as a bunch of text files full of code. Translating those to a form that a computer can use – "building" – takes a long time, and we have a whole system set up to support that.

Ahmed S: One route is to the CDN (content delivery network), where players' launcher/patcher can pull the newest build. The second route is to the servers. We take the server build and build a complete new environment that we keep hidden from the public and only accessible by our QA staff. QA tests the build using the release checklist, and once we are all ready we hit the button releasing the new build on the CDN and switching to the new staged servers.

Andy A: An individual build is made when the developers have a particular version of the game code that they want to release, or put on the PTU, or even just send to QA.

Miles L: A build is a distribution of the game at a particular version. This could be from a development branch or a release branch. Publishes come from our release branches, while development branches are distributed internally to verify daily work from the devs. We cut around 2-4 development builds a day as well as 2-4 release builds a day.

Ahmed S: This whole process provides a better user experience for the players and better Time To Market for the whole company.

Mike J: All of those builds get transferred to all studios for testing too, by the way.

Ahmed S: That's correct, and this is one of the many areas where we lean on IT. IT is the DevOps for DevOps. They help us in a similar fashion to the way we help developers.

Miles L: We also can cut what we call code builds. These are a version of the game that only updates the binaries but none of the Assets. These builds only take 20-30 minutes to complete and allow us to do rapid iterations on code for testing or to sneak in a few more fixes in the final hour.

JP: *"Binaries"? "Assets"?*

Miles L: Assets are the things you see and hear in the game: audio data, ships, textures, planets.

Keegan S: Binaries are the application files. It's what all the code turns into.

JP: *What might a build contain? Does each build contain the entire game, or might it include just one part of it?*

Ahmed S: The build might include:

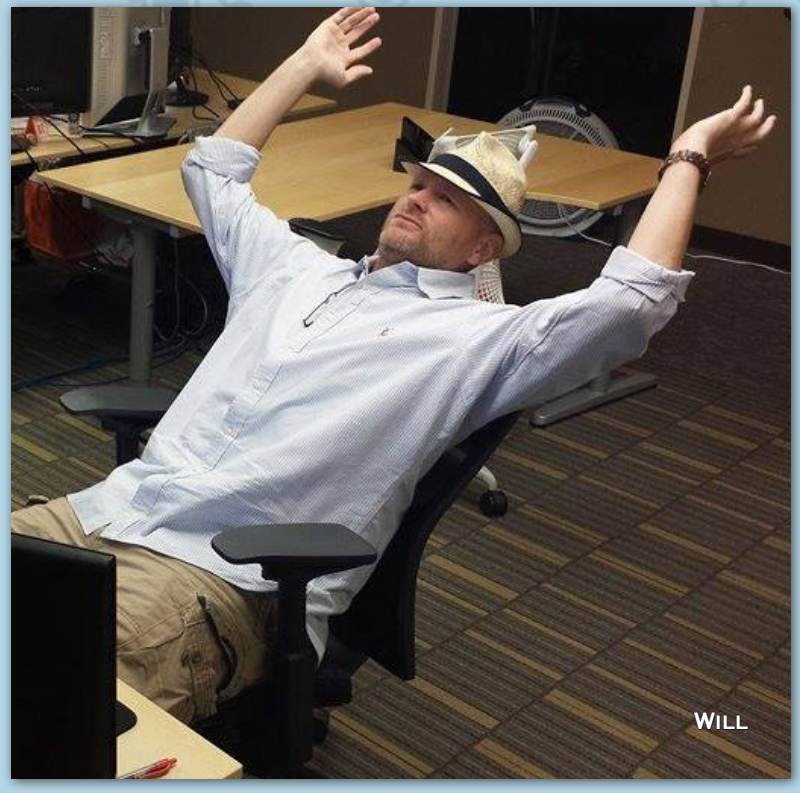
- A full client build, which is what the players download;
- Back-end services, which get deployed on the servers that take care of all services needed for the players to get in the game server (match-making, friends, party system, etc.);
- A build for the dedicated game servers, which host players.

The build process is quite complicated; it includes lots of dependence and checks. Technically the build system builds lots of modular components that get added all together according to a dependency model to provide the three types of products I mentioned above.

It also includes replicating these products to CIG and contractors' offices, in addition to our different cloud services vendors. And by the end of every build, the build system makes sure that this build has been deployed everywhere it is needed, whether on a QA environment, PTU or Live.

JP: *So there are three different types of builds (plus code builds), and you're never publishing more than one build of a type at a time?*

Ahmed S: We can build more than one build at the same time, and we can deploy more than one build to our QA



environments at the same time.

Miles L: We can run multiple builds at any given time, but we tend to only be publishing one ... most the time.

Ahmed S: For Live and PTU there is no need to deploy more than one build at the same time.

JP: *Ah, there might be multiples for QA, but QA knows what to do with multiple builds?*

Ahmed S: If you were QA, you can pick which build to connect to. For players there is only one build on Live/Public and one build on PTU, if any. PTU is not always on.

JP: *I've got lots more questions, but I've kept you guys way late already. A couple more questions: do you have any Weird Tales that have occurred in DevOps?*

Ahmed S: We have nothing but weird tales. The scale we work at provokes a lot of strange cases that we have to deal with and that's the beauty of our jobs – we work with different components that conflict often and it's our job to put them back in order.

And most of these components we are not in full control of.

But one of my favorite stories: one night after midnight I decided to stress test a certain theory we had against a whole new platform. At the time, there weren't enough players on PTU that would provide the stress level needed, so I went to Discord to see if there were any players hanging around chatting that could join the test for me. To my surprise, once I told the backers that I need more players than what were already online, they started calling others, waking some people up, and in no time I had double the amount I needed. And this wasn't the only time our backers did so.

Gerard M: I wouldn't say weird tales per se, but I have seen the majority of the team "drunk from lack of sleep" and it can be pretty hilarious. Ahmed, especially! He can stay up for very, very long periods of time, but after so long, he starts getting loopy. Ha!

JP: *Any final words?*

Keegan S: While we do what we do for all the players, we're all fans ourselves too. We want this to be the best game it can, so that we can be out there in space with all the other players, destroying their ships and taking all of their cargo for ourselves!

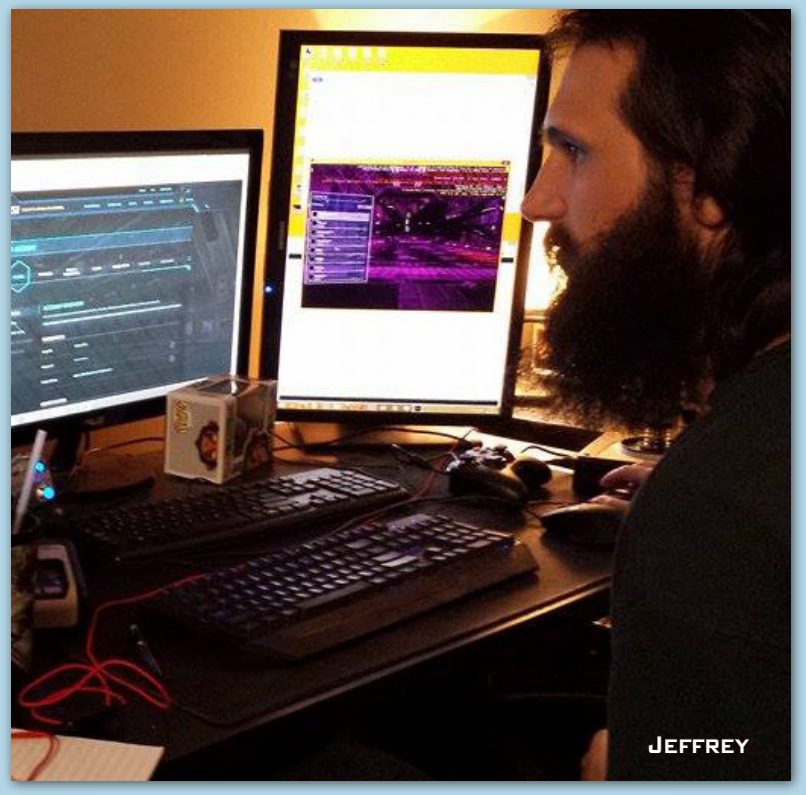
Ahmed S: I wanna say that I'm always amazed by how awesome our backers community is. They provide us with lots of their valuable time, effort and ideas ... we get very valuable suggestions from players every single day.

Will L: I'd like to especially thank our Evocati Test Flight volunteer testers, who are in no way compelled to give their time the way they do. Their efforts are absolutely crucial to finding bugs that we need to resolve before pushing out to a wider audience, and their dedication to *Star Citizen* is truly helping us make the BDSSE. :)

JP: *Thank you all very much!*

* * *

Sir Not-Appearing-In-This-Interview: *Jeffrey Pease, DevOps Technician, was on vacation and not available for the interview. At least that's what Gerard said, but he kept sneaking nervous peeks at the trunk in the corner. Gerard also said:*



Pease is our documentation master. He prepares and designs stability reports, executes deployments, and delivers other back-end services. He also bugs, troubleshoots and supports servers/server issues.

BANSHEE SYSTEM

LORONA

Human history is a story of exploration and expansion, written by brave individuals willing to set sail across an uncharted sea or enter an unknown jump point, each driven by the curiosity of what exists just over the horizon. Not asking if they should go there, but only if they could.

The Banshee System exemplifies Humanity's ability to overcome nature's obstacles. At its center sits a pulsar, spewing enough radiation to make the system's green zone planetary surfaces inhospitable. Many commonplace activities, like EVAing outside of a ship to perform repairs, can be deadly. Yet Humanity has found a way to call the system home. Maybe not because it should, but because it could.

Banshee's pulsar is a rapidly rotating blue-white neutron star. Though there are many pulsars in the universe, Banshee's is the only one discovered so far with jump points connected to it. This fact has led some scientists to hypothesize that the jump points' proximity to a pulsar could eventually lead to their collapse and cut off the system from the wider universe. This fear permeates popular culture, despite the fact that the 2943 discovery of the Banshee-Tamsa jump has made the system one of the most connected in the UEE; only Terra and Hadrian are currently linked to more systems.

Still, danger and the Banshee System have been synonymous since its discovery in 2317. At the time, the Fora System was crawling with contractors brought in to terraform

Hyperion. Spearheaded by Adaliz Dayan, a number of adventurous individuals decided to spend their free time exploring the system. The group dubbed themselves the Immram Association and exploration became a popular way for workers to enjoy their free time between shifts. One day, Dayan's scans picked up a mysterious pocket of radiation in the middle of space. She sent a comm to her fellow IA members to investigate the anomaly. By the time others arrived, Dayan was gone.

IA members assumed Dayan had found a new jump point, but were unable to locate it themselves; when she didn't re-emerge, they soon grew concerned and contacted the government. Eventually, a military pathfinder unit was dispatched to her coordinates to begin a search. When they finally discovered the jump point, what would come to be known as the Banshee System and its radiation spewing pulsar waited on the other side.

Sadly, Adaliz Dayan and her ship were never found. It is assumed she perished due to a pulsar flare and that her ship still drifts through space. Conscious of her sacrifice, Dayan was credited with discovering the system, and the Immram Association allowed to name it. They settled on the nickname Dayan earned during her college Sataball days and the system formally became Banshee – a doubly fitting title as the association with the ancient creature of myth served well to warn people of the system's inherent dangers.

Wary of the hazards the Banshee System and its pulsar posed to the public, the government didn't herald its discovery. They even passed a bill making it illegal for unauthorized ships to enter the system. Tensions came to a head in the early 26th century as Earth's overcrowding reached cataclysmic levels. A legal argument erupted over whether the government had the right to ban people from a system. Many worried a future government could abuse this power to hide valuable land and/or minerals.

TRAVEL WARNING Refuel and run a complete system diagnosis on your ship prior to entering the Banshee System. Due to the extremely harsh conditions and pulsar fluctuations, rescue and repair operations can be exceedingly risky.

This led to the landmark Minto vs UPE court case that nullified the government's permanent ban. The decision opened the Banshee System to all, and is also the reason the UEE cannot legally keep people from venturing into Vanduul space.

Curious members of the public, and numerous private interests, entered the system and quickly saw they weren't missing much. Though massive deposits of raw materials existed on Lorona (Banshee III) no one could figure out how to safely extract them. Until, as has been the case numerous times in Human history, war catapulted technology to a new frontier.

During the First Tevarin War, Persei-based UPARQ developed massive magnetic coils designed to weaponize solar electromagnetic radiation. Though the project failed, UPARQ realized the coils could be an ideal method to collect power in the Banshee System. It wasn't long before autonomous drilling rigs, powered by panels of these connected coils, bored into Lorona's surface and allowed Humanity a place to hide from the pulsar's effects. Today Lorona's landing zones are lined with these iconic coils that power the vast settlements and mining operations beneath the planet's surface.

Heard in the Wind

"Haulers take heed or the death for which this Banshee keens will be your own."

– Old Folk Saying

Banshee I

This small dwarf planet contains small pockets of mineral resources. However, its proximity to the pulsar makes extracting them a deadly proposition.

Banshee II

A terrestrial planet with an iron core. Documents released during the Historical Truth Act of 2941 revealed that a secret Messer era operation removed a number of specific swaths of the planet's heavily irradiated surface. The intention of the operation, or what was done with the extracted sections, was not found within the documentation and remains unknown to this day.

Banshee III (Lorona)

Were it not for the vast resources of Lorona, many say the UEE would never have claimed the Banshee System. Today, it's an essential and irreplaceable part of the universal supply chain. Extensive mining operations extract everything from precious metals to short carbon for the diamond laminate in cockpit glass.

The planet's riches and inhospitable surface have driven Humanity to create a vast system of underground settlements connected by tunnels, a network that continues to expand to this day. When mining operations begin drilling and excavating new areas, the previous dig sites frequently become home to settlements of workers and their families. Some of these encampments want to trade with outsiders, while others prefer to be left alone. To avoid any confusion, we recommend not venturing into the tunnel system without a local guide.

Once deep enough underground to not have to wear radiation suits, or "Below the Line" in local slang, visitors spend most of their time in Kesseli, the capital and one of the largest subterranean cities in the universe. Though still a mining settlement at its core, the amount a valuable resources moving through the city have brought a measure of wealth to the inhabitants.

Under a ubiquitous layer of dust, numerous Empire-wide franchises have a presence here to supply locals, traders and visitors alike. One can even find high-end restaurants servicing well-paid mining executives. Lorona's local culinary treasure is undoubtedly the Beutrempe, a sweet or savory puff pastry that uses a yeast strain native to the world to give a uniquely tangy taste. These delicious delicacies are on the menus of most restaurants, but can more easily be found baked in stalls set up near the most trafficked tunnels.

Banshee IV

In the 27th century, the Cenote Concern undertook an ambitious business plan to turn this distantly orbiting ice giant into an industrial source of heavy water. The plan famously failed and subsequently drove the company out of business.

Heard in the Wind

"Take the worst, most awful place in the 'verse, and you can be damn sure there's not only someone who wants to live there, but who will think you're crazy for wanting to live anywhere else. These are my people."

– Senator Junger Ries, Lorona, address to constituent dinner, 2943

INSTRUMENT OF SURRENDER

BY ADAM WIESER

Part 1

[June 24, 2610 – Elysium System]

At the end of the jump tunnel, space shimmered, rippled, then revealed the Kaleeth'ala System. Corath'Thal stared into the dark void from the bridge of his ship. His view of the expanse that lay before his fleet danced slightly as the shield that enrobed the full length of the massive craft readjusted and settled into place almost with a life of its own.

From the edge of his vision he could sense the shieldmaster making her practiced adjustments, but he could also tell that under her calm exterior, she thrummed with excitement. This was more than the rush that always followed a battle. This was something new. Something that none of them had dared allow themselves to feel before now.

Even though the distant drift spread before him looked similar to other systems, he knew it was so much more. After everything they had been through over the past seven years, he had finally brought his people home.

The remnants of Corath'Thal's main fleet poured from the Centauri-Elysium jump point. He didn't have much time to lead the survivors to their homeworld of Kaleeth. The UEE forces that ambushed them on the Centauri side of the jump would not be far behind, and Corath'Thal had made up his mind. This war would end on his terms, whether in victory or defeat.

Corath'Thal signaled Rados to carry his voice to his depleted fleet.

"When we started down this path, we had no home. Only a world once ours that was ripped away. I vowed that if you fought with me, I would bring you home. That the Rijora would provide us a path to victory . . ."

Corath'Thal paused while the words in his throat quivered.

"After the events of today, I know that either the Rijora has failed us, or we have failed the Rijora. I'm not sure if there's a difference anymore. But what I am sure of is that I will fulfill the first promise I made myself and all of you. I am going home."

Before he could continue, the clear resonance of the warning chime vibrated through the hull and echoed through the halls of the capital ship. Corath'Thal checked the scans. Human ships burned to their position en masse.

"Those who wish to commit themselves to the lands of our ancestors, follow me. Those who don't, use my advance as your chance to escape. May you live to fight another day. Goth'raj doah!"

Corath'Thal scanned the faces of those who served on the bridge; none meet his gaze but instead stared towards where their home lay ahead in the far distance. Each accepted their fate in their own way. Sensors screamed as the ship's shield absorbed the first wave of attacks from the approaching UEE forces.

"Goth'raj doah!" Rados bellowed, barely able to keep emotion from overwhelming his voice.

In unison, the crew responded, "Goth'raj doah!"

As the Tevarin fleet blazed across Elysium towards their homeworld of Kaleeth, UEE soldiers raced to battle stations in anticipation of an all-out assault on the world they had renamed Jalan. In the sky above, UEE Navy ships scrambled to form a semblance of a blockade.

But the Tevarin fleet did not fall into their traditional phalanx formation. They did not even return fire when attacked. They either fell to the barrage of shots that perforated their hulls or shrugged them off and went faster. As the Tevarin ships approached Kaleeth's atmosphere, they lowered their powerful shields.

Corath'Thal watched the Tevarin ships before him pierce the atmosphere, then rip apart. Sadness swelled as he grasped the terrible fate that awaited his people. Would he be one of the last Tevarin to see their homeworld?

The ship shook violently as it pushed into the upper atmosphere. On the horizon he noticed something breaking through the bed of clouds. Could it be the peak of Mount Supteek? Corath'Thal staggered to the front of the bridge and laid his hand on the glass.

He last saw Mount Supteek as a child fleeing Kaleeth with his parents. Its peak was one of the only memories he still had of his home.

The glass grew hot, but Corath'Thal kept his hand in place. The beauty of Kaleeth, even from above, overwhelmed every ounce of his being. The clouds parted; now he could see the cities the Human invaders had built around their temples of old. It sickened him. He was suddenly consumed with regret for not killing them all as the ship disintegrated around him.

The Second Tevarin War was finally over.

* * *

[June 25, 2610 – Caliban System]

Clarice seemed angrier than usual today. She sometimes got that way after cannibalizing smaller storms. Hickory adjusted course to give her a wider berth. Hickory named the massive storm that lived in Caliban IV's upper atmosphere Clarice after his mother. Both were bad news for pilots who got too close, but good to Hickory, who salvaged parts and cargo from the ships the storm wrecked for resale on Crion.

Most avoided Clarice and her ship-crippling lightning strikes. Still many didn't give her a wide enough birth. Some were too lazy to chart her precise location, while others intentionally traveled close by to hide their ship's signature. Hickory didn't care about their motives, only that he could salvage valuables from them to pay for his trip to the Banu Protectorate.

Suddenly *Dolos*'s scanners sang the sweet song of discovery. Hickory set out to see what today's catch would be.

It was an RSI Nova, a souped-up courier ship outfitted with serious armaments. Hickory salivated. This wasn't a civilian vessel; it was military grade and potentially filled with wartime information and supplies.

But to be fair, most civilian ships were pretty well stocked these days, too. Seven years of Tevarin hit-and-run tactics meant no Human ship was safe flying unless armed to the teeth and chock full of supplies. That wasn't always the case. Ship weapons were once considered a luxury for the rich or dangerous. Now they were everywhere. All of this made Hickory's job a little trickier and pay a little bit better. War always has unintended consequences, thought Hickory.

Lightning from Clarice had killed the Nova, setting it drifting slowly through space. Hickory quickly determined its speed and trajectory to calculate where it would be in a couple of hours. He flew to that point in its projected route and powered down his ship. He set an alarm to ring in two hours so he didn't lose track of time. Then he finally exited *Dolos* and EVAed back towards the Nova.

As he EVAed, Hickory watched Clarice violently swirl below. Her surface seemed to bubble from the electrical activity. This one vista encapsulated Hickory's understanding of the universe: achingly beautiful and unapologetically evil.

Hickory reached the drifting derelict and quickly cut through the hull. Inside, he found the pilot at the helm. The lightning strike that fried the Nova must have been massive. The pilot's hands were seared to the flight stick. Hickory checked the area for personal trinkets then turned to the flight instruments.

It would be a waste of time to salvage components. Everything was charred to a crisp. So Hickory systematically checked every crevice of the craft, getting more annoyed as he went. How could there not be a single piece of cargo? The more he explored the ship the less it made sense. How had he even picked up the ship's sig if all the components were scorched? Something around here had to be working.

Hickory's flashlight scanned the info-terminal to find its faceplate melted. If this ship had one component with a top of the line surge suppressor, this would be it. So he pulled out his multi-tool and carefully cracked it open.

As he ogled its innards, his eyes grew wide. It was an XL-250i. This best-quality, military-grade component was in much better condition than the cockpit console. There was a chance this thing might still work. If it did, the components alone could net significant creds, plus whatever data it carried. Hickory connected his custom-made hacking tool to the power supply then steadily gave it juice.

The system sprung to life. Hickory resisted the urged to do a quick, high-level assessment of the data, and began the download. Probably better to review the information elsewhere. The sooner the system was powered down, the better. Even though its sig was small, he wasn't the only one who scavenged Clarice for shipwrecks.

Hickory glanced at the hacking tool in his hand to see the download almost complete. That was disappointingly swift. Must not be a lot of data on here. Once the status bar hit 100%, he unplugged his hacking tool and powered down the system. Then he quickly removed the system's most vital components. He dreamed of using them to upgrade his ship, but he really needed creds. Who knows? Maybe the data he recovered would be worth more than he expected.

Confident he'd found all the Nova had to offer, Hickory checked the time. It was a little short of the two hours he had given himself, but *Dolos* should be close enough. The hole he cut in the hull was above him. He took a deep breath, activated his EVA thrusters, aimed at that spot, and propelled himself into space.

He kept his trajectory straight until clear of the ship. He got lost in thought wondering what information he had pulled from the ship and what price it could fetch. Then he realized he had drifted further than expected. He accessed his ship locater when, suddenly, space behind him glowed like a furnace.

Hickory killed his suit's thrusters, and rotated to see the scene. The Nova he had exited minutes before had now become a debris field, the flames from the explosion quickly dying in vacuum. His heart caught in his throat as he saw the Jackal move in to inspect the wreckage it had just created.

Hickory's pulse raced. He had to get to his ship and fast. Best to be gone before the Tevarin scout ship started looking for its next target.

* * *

"Drahk . . . you shouldn't have attacked without warning me." The exhaustion in Tajhbind's voice was obvious. Drahk could feel Tajhbind's glare through his helmet.

"Deepest apologies, but my scans picked up a sentient signature exiting the craft."

"Then why didn't you attack that?"

It was a cutting question but one Drahk knew he wasn't expected to answer. Drahk and Tajhbind had been copilots for most of the war. Drahk's itchy trigger finger and other offensive deficiencies were tolerated because he was a master of the phalanx shield. Drahk's strengths happened to complement Tajhbind's weaknesses and vice versa, so they made a lethal duo. Drahk absorbed and deflected fire from all angles, which allowed Tajhbind to focus on fighting.

"It's ok, but I need you in line with me. Who knows if there was anything on that ship that could —"

"What's that?"

An unidentified ship appeared on Drahk's radar. It was close, and its sig growing stronger by the second. Drahk knew what that meant.

"It's a Human ship!"

The ship's quantum drive finished spooling as Tajhbind fired from both barrels. His shots pierced the hull as the quantum drive engaged. The ship stuttered and spun in a new direction then, suddenly, accelerated into the dark expanse.

How had Drahk not noticed another ship hiding nearby? His failure could jeopardize *Ekoraapt*'s crew and mission. According to the Rijora, the only course of action was to confess immediately.

"I have failed in my duty to you, Tajhbind. My irresponsible and overeager attack kept me from properly executing my scanning duties. I pledge to the holy Rijora, Goth'raj doah, that I will do everything to right this wrong, or suffer whatever fate is deemed appropriate by —."

"If Humans find out we're in system, our lives, not our honor, will be on the line. We must focus on preserving the first before repairing the second."

Tajhbind contacted *Ekoraapt* and explained the situation. They were ordered to return. Thanks to this disappointing encounter, battle plans had to be accelerated.

Before signing off, Tajhbind asked if there was news about Corath'Thal's attack in Centauri. The entire crew had been on edge waiting for an update, but there was still no news. Drahk wasn't disheartened by the lack of information. The distance between Caliban on the front meant information delay was inevitable.

Drahk remained supremely confident Corath'Thal's plan would work. *Ekoraqpt*'s attack on Crion would divert UEE resources to Caliban and keep reinforcements from joining the main battle. Eventually, the Rijora would guide the Tevarin to victory over the Humans, and they would reclaim Kaleeth for their own.

* * *

Hickory was lucky to be alive and knew it. That Tevarin was a hell of a shot. The rounds hit his ship just as the quantum drive engaged, changing his trajectory. Luckily, *Dolos* course corrected before the G-forces became fatal. Even though he survived, his head hurt like hell.

Moments later, *Dolos* sputtered and fell out of quantum drive. While checking the damage to his systems, he realized how far off course he was. Hickory fired the thrusters and swung back toward Crion.

Hickory had put some distance between himself and the Tevarin, but he feared not enough. Caliban IV still glowed faintly in the distance. That was only one of his problems. Not only was he out of quantum fuel, the drive was damaged. Those weren't the worst parts though. Hickory calculated the distance to Crion, and confirmed that even with his conventional thrusters on full burn, he would run out of oxygen well before reaching anywhere with an atmosphere.

Hickory considered broadcasting a distress signal, but knew who responded to those in this part of space: people like himself, with no sympathy for anyone's plight but their own. Plus, the signal might only attract the attention of the Tevarin he had fled. Most likely, no one would come until it was too late. That would be best-case scenario.

Hickory stared into space. It was just his luck. The XL-250i components and whatever data was on that drive probably were more than enough to execute his plan. Now, instead of setting out for Kins, he was marooned in Caliban.

Hickory set the autopilot and climbed out of the pilot's seat to one of the ship's storage compartments. Inside, a threadbare flatcat stuffed animal sat atop a case of Angeli aged whiskey. Hickory delicately moved the flatcat, cracked the whiskey case and grabbed a bottle. He poured himself a healthy glass of whiskey then sat on his bunk in silent contemplation.

The whiskey burned going down, then pulsed right to his aching head. He stared at the terminal across from him. Then crossed to it and plugged in his hacking tool. What else was there to do but drink and see what information was worth all this?

It wasn't long before Hickory's head spun from something other than the drink. The data file contained one thing — a signed Tevarin Instrument of Surrender.

Mouth suddenly dry, Hickory downed the remaining contents of his glass. He read the message again for the millionth time. The war was over. He almost couldn't believe it.

The Second Tevarin War was over.

Next he checked the Nova's communications logs to see one failed transmission to the UEES *Crescent*. The courier ship must have had been rushing the news of the war's end to the *Crescent* when it got zapped. There was the chance *Crescent* knew none of this. That meant he was probably the first person in the whole of Caliban to know. Second if you counted the unlucky pilot.

Hickory suddenly had a thought. It was a precarious proposition considering his past, but, as far as he could see, there was no better option. If he played this right, maybe he could spin this information into leniency on his past transgressions?

Hickory grabbed the bottle and took another pull, allowing the warmth to wash over him. Then climbed into the cockpit and adjusted course once again. Moments later, he activated a distress signal.

For the first time in his life, Hickory hoped the UEE military would find him.

* * *

Commander Wallace studied the bruised and scuffed starmen before her. If their injuries were any indication, it was a fair fight.

"The mess turned into a real ruckus 'cause of these two," said XO Coburn as he glared at the battered pair with his trademark scowl. His face, hardened and scarred from years of active duty, left no doubt that he knew only one life — the military.

The two starmen hung their heads and took in the rug laid before her desk. As far as she knew, it was the only one aboard *Crescent*; a bit of warmth amidst the ship's metal.

"It appears you two need another way to keep your hands busy. XO Coburn, assign these two starmen brooms and make sure they sweep the floor before them everywhere they go."

"With pleasure." A mischievous smile stretched across Coburn's face.

"For the next week, those brooms will not leave your hands unless ordered so by a superior. Understood?"

The starmen replied affirmatively, saluted, then were dismissed. Once the door closed behind them, Commander Wallace turned back to her computer to see if the simulation she was running of *Crescent*'s intended route past Caliban IV had finished. She wanted to ensure the ship gave its raging storm ample room.

"That Mitchell's a real piece of work. How does a guy with known anger issues get assigned to a cruiser? He never would have made it this far if the Navy wasn't so desperate to staff their ships."

"The same could be said for me," returned Commander Wallace.

The XO's anger abated in a wave of embarrassment. Wallace didn't know the grizzled soldier had it in him.

"Any update on that dropped transmission from earlier?"

XO Coburn visibly relaxed, thankful for the conversation returning to safer territory.

"No, sir. The signal was lost almost immediately. Since there's been no attempted re-transmission, Comms Officer Fitzpatrick believes it might have been electrical interference from the storm, but the scouts are still looking, sir."

"That's all for now, Coburn. You're dismissed."

Coburn turned to leave, then thought better of it. He doubled back to the desk, stopping just before his feet reached the rug.

"Actually, Commander, there is something I believe you should be made aware of. I don't think these fights are going to stop. People are putting other allegiances above the one to this ship. That fight in the mess — no one was talking about it. In my experience, gossip is a good thing to hear in the halls. At least it means people are communicating. This place is quieter than a damn ghost ship."

Commander Wallace rubbed her temple. She didn't need Coburn's constant updates to inform her of the crew's discontent. She could sense it while walking the halls.

"Any recommendations on how to resolve the situation?"

Coburn hesitated for a moment, before:

"No, sir."

"You can speak freely."

Coburn thought for a moment, then looked her square in the eye.

"They're fighting because they lack a leader. That's supposed to be you."

Silence hung in the room for a few tense moments. His communicator pinged. Coburn checked it.

"Sir, scouts patrolling Sector 4 just responded to a distress signal. They stopped the ship and are bringing its pilot in for questioning. They say there's something odd about him."

"Odd how . . . ?" Wallace replied, collecting herself.

The photo of a man with a gaunt face, high cheek bones and wild blue eyes appeared on a nearby wallscreen. "They ran his name. He should be dead."

* * *

Commander Wallace entered the interrogation room and did a double take. Hickory sat across the table, but his face bore little resemblance to the picture. The high, angular cheek bones were gone. Clearly, he had facial reconstruction surgery, maybe even multiple times. There were more differences than similarities, but something in the eyes rang true. Commander Wallace averted her eyes and took a seat.

"It's OK, Captain . . ."

"Commander Wallace."

"Ah . . . Commander, sorry. Don't feel bad. I'm used to the stares by now. What's the expression, again? 'A face made for a space helmet.' Only took a few surgeries from a series of disreputable doctors to get it."

An uneven smiled stretch from ear to ear.

Commander Wallace remained expressionless. "What should I call you?"

"Well, for the looks you're giving me, I'd guess you already have my name."

"I have a name. One Andrew Lime, born 2542 on Cestulus. Died in Jata, during the commission of a crime in 2567. From the looks of you, I'd say you're not quite dead yet, so I'm still left wondering who exactly you are."

"Andrew Lime and I are one and the same, Commander. It's an interesting story, but it's not the information you need to hear right now."

"How do you know what I need to hear?"

"Let's say I came across some data that you would find vital to your ship and crew."

Silence sat between them. Commander Wallace could smell whiskey on his breath. She debated ending the interview right then, but despite herself she eventually said, "Whenever you're ready . . ."

"See it's not that easy. Like you were kind enough to point out, I'm supposed to be dead. And, let's just say, the UEE won't be the only ones surprised to know I'm alive."

"If your information is solid, I'll put in a good word with the Advocacy. There are plenty of prisons in out-of-the-way systems where you'll be safe."

"That won't work for me."

"No syndicate has ties to every prison. The Advocacy can keep you alive if you're honest about who's after you."

"It's not the syndicate I'm concerned about . . ." Hickory's face softened for the first time.

Commander Wallace exhaled and sat back in her chair, weary of his cryptic and evasive answers. "Well, then . . . what do you want?"

"Safe passage to the Banu Protectorate."

Commander Wallace chuckled and rolled her eyes. She was secretly hoping he would ask for something more interesting. "So anything else besides immunity for your crimes?"

"That's not why I need to go there."

"No, merely a helpful byproduct." Commander Wallace stood. A worried look washed over Hickory's face. "No information is valuable enough to expunge a criminal record this extensive."

"This is."

Commander Wallace turned towards the door.

"The war's over," Hickory called after her. She stopped and turned back. "I recovered some kind of Instrument of Surrender from the Tevarin off a destroyed military courier ship."

"Uh huh. And where exactly was this ship?"

"Coordinates won't help. Some Tevarin destroyed it."

"Tevarin? In Caliban?"

"Who do you think tagged my ship? And if there's one Jackal out there, you can bet they've got friends close by."

Commander Wallace sat back down. "So this Instrument of Surrender is where?"

"I need assurances, Commander, before handing over something like that."

"So it's not here."

"It's on my ship, which, I might add, your scouts insisted on leaving somewhere in space instead of it being brought here."

"Landing an unauthorized ship aboard a carrier is forbidden during wartime."

"Well, technically you're not at war anymore."

Commander Wallace rubbed her temples and thought things through. Finally, she stood and headed for the door. Hickory watched her leave.

"Do we have a deal?"

The door clicked shut.

* * *

Drahk rushed through the halls of the ship. He expertly wove through traffic as Tajhbind tried to keep up. Orphaned on Olympus, Drahk had grown up in the husk of the destroyed UEE capital ship. He survived by hiding and hurrying through its corridors, until one day a Tevarin vendor caught him stealing from his stall. Instead of punishing Drahk, the vendor showed mercy. Drahk could get food from his stall if he took the time to memorize the Rijora and learn the history of his great race.

The Rijora became Drahk's lifeline, and he dedicated himself to it. When the Second Tevarin War began, Drahk left Olympus to enlist in the fight to retake Kaleeth. His commitment to the cause was unquestionable, and even though he had significantly less flight time than most, Drahk's ascended through the ranks to become a pilot.

Exasperated, Tajhbind finally called out, "Where are you going that requires such haste?"

Drahk rounded a corner and went up a flight of stairs two steps at a time. Tajhbind suddenly realized where he was headed and quickly broke into a run, hoping to catch Drahk before he got there.

Ekoraapt's highest ranking pilots streamed into the operations room for the assignment ceremony. A Rijorian chant convened the meeting. Tajhbind grabbed Drahk's arm steps before the doorway.

"Volunteering for the initial attack force won't restore your honor. Recognize your limitations, Drahk. Remember, it is a strength for one to know one's weaknesses."

Drahk smiled. He was rubbing off on Tajhbind. This was the first time he had ever lectured Drahk on the Rijora. A chant reverberated through the operations room, requesting volunteers for the first wave of attacks on Crion's largest hive of Humanity, the city called Boro.

Drahk repeated the words to Tajhbind, "*Go forth with head held high, but honor the ground and respect the sky. One must keep those goals in mind if we are to survive.* Were you ever taught what that chant means?"

"A warrior must be true to oneself to stay alive."

"That is a modern misinterpretation. It originated in the 16th epoch. A time when only the bravest left the caves of Kaleeth, and never alone. They walked, side-by-side, chanting those words to stay in formation. That chant was never about the survival of the individual. It's a reminder that we fight for the survival of our species."

"We don't live in caves anymore, Drahk. Let alone on Kaleeth. If we don't adapt, if our ways don't change with the time, we have no hope."

Suddenly, Flightmaster Suldrath's voice carried through the ship's halls. "Defenders of Rijora, Human military ships have appeared nearby. Report to your positions and await further instructions."

Tajhbind started toward the hangar. Drahk stayed in place and eyed the operations room. He knew he could still receive an assignment if he volunteered. No one would question his desire to do what was needed.

"Drahk, come on, let's go."

Drahk turned to Tajhbind, whose eyes beckoned him to follow. Drahk couldn't remember the last time he flew without him. The thought of entering the fray without Tajhbind by his side finally set in.

The Rijora had brought him to *Ekoraapt* and had him befriend Tajhbind for a reason. Now was not the time to deny that. Moments later, Drahk was hustling down the hall and past Tajhbind. As always, Drahk led the way to the flight deck.

* * *

Hickory noted the time. Why was this taking so long? They should have been able to tow *Dolos* back to *Crescent* by now.

Hickory was having difficulty figuring out how his last interaction with Wallace had panned out. She definitely seemed interested in the news about the surrender, but hadn't quite committed to his demands.

Of course, it all hinged on him showing Wallace that he was telling the truth. The interrogation door opened and two Marines entered.

"Finally . . . so is Commander Wallace joining us at my ship?"

As one Marine stood guard, the other pulled Hickory's arms behind his back and cuffed his wrists.

"Come on, guys. You'll just need to undo them so I can access my terminal."

The Marine behind Hickory nudged him forward. "There aren't any terminals in the brig."

Hickory stopped in his tracks, "Commander Wallace and I have a deal."

The Marine before him shrugged. "That's right, she says you get the best cell."

The door slid back and Hickory instantly noted the change in the ship from when he was first brought aboard. Starmen rushed past in quick purposeful steps, no one bothering to even cast him a second glance. Crap. He had been in enough skirmishes to recognize that he was suddenly in one.

The barrel of a gun shoved Hickory forward. He had half a mind to make this hard on them, but thought better of it. If Wallace was really about to go head to head with the Tevarin, it probably would be smart to leave as many angry Marines between him and them as possible.

* * *

Commander Wallace sat at the terminal in her quarters. She uploaded the coordinates of *Crescent* and then the last known location of the Tevarin ships into the simulations program. As it began to process, XO Coburn entered.

"I just sent you the scout's estimates on the size of the Tevarin forces, sir. If they're true, we're outmatched. We won't have enough firepower or resources to overcome their phalanx."

Commander Wallace entered the new data and ran the simulation. Coburn's eyes drifted to the wallscreen to watch it play. Based on the Tevarin forces' current trajectory, their destination became clear: the civilian population of Crion. A position *Crescent* was moving away from. Unless she acted immediately, they would have no chance to defend it.

A sinking feeling hit the pit of her stomach, overwhelming her senses and clouding her mind. Her head spun from a responsibility that hadn't felt real until right now — *this was all on her*.

"Sir, another update from the scouts. They've been spotted."

"So it'd be safe to assume their plans have accelerated."

"Yes, sir."

Commander Wallace's hands shook as she adjusted the simulation to account for the new timeline. She drew a deep breath to calm her nerves then stopped typing. This was a time for action, not projections.

"We need to get to the bridge."

Commander Wallace rushed out of quarters with Coburn on her heels.

"Any word from the scouts sent to retrieve Lime's ship?"

"They were last to launch, sir. My estimates won't have them arriving there for another 10 minutes. But I might suggest calling them back. We're going to need every last ship if we stand a chance of stopping the Tevarin before they reach Crion."

Commander Wallace chewed on the suggestion, "But if the Instrument of Surrender is valid, this could all be over before it even starts."

"If he's telling the truth. That's before even considering whether the Tevarin forces would believe that the war was over. In my experience, good commanders leave as little to chance as possible."

The two rounded a corner and approached the bridge. "Commander . . ." Coburn slowed his pace and fell a step behind, "if I may have a moment with you before we enter the bridge?"

Commander Wallace stopped and faced Coburn. His eyes scanned the hall to find it empty, then his stern face softened. "There's going to be no good way to handle this situation. We'll be chasing down an enemy hell bent on bringing death and destruction to innocent civilians who have no business being involved in this war. As a force, we're overmatched and already out of position. We know this, but that's our burden to carry, not the crew's. They only need two things; to do their jobs and to have faith in their commander. Understand?"

Commander Wallace nodded.

"Are you ready, sir?"

"Always in service of the Empire."

"Always in service of the Empire, sir."

Commander Wallace clenched her fists, hoping to squeeze out every ounce of nervous energy. Then she stepped away from XO Coburn and onto the bridge.

The crew snapped to attention, anxious to hear what orders awaited them. Commander Wallace reached for the comms but paused. A moment of doubt and indecision gripped her, then passed. She drew a deep breath and then hit the button.

"This is Commander Wallace. All crew to battle stations. This is not a drill. I repeat, this is not a drill. Prepare for battle."

To be continued