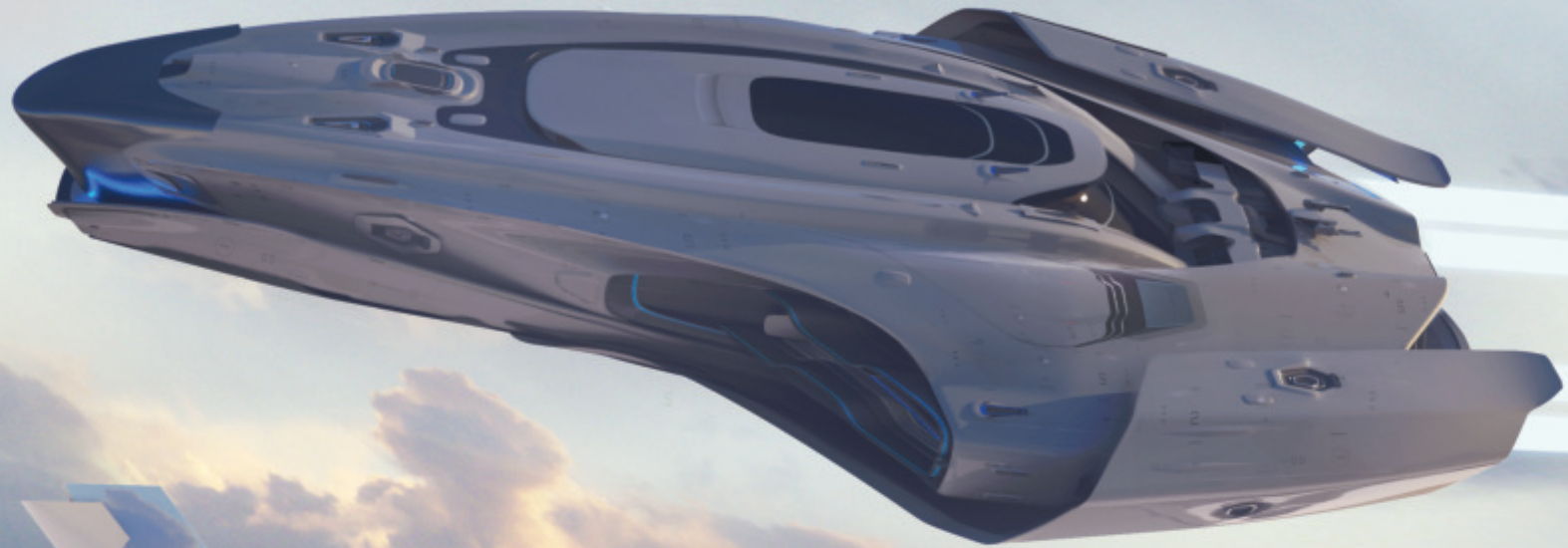


JUMP POINT

A ROBERTS SPACE INDUSTRIES PUBLICATION ISSUE 05.10

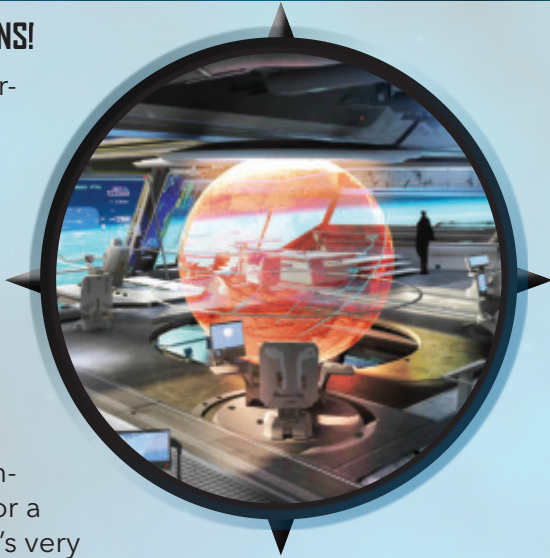


IN THIS ISSUE

- Work in Progress: 600i 3
by Dan Joustra & others
- Portfolio: Yorm 24
by Adam Wieser
- Behind the Scenes: The State of Stats 27
by designers across the company
- Galactic Guide: Branaugh 39
by Dave Haddock
- A Gift for Baba (Part 3) 43
fiction by Will Weissbaum

GREETINGS, CITIZENS!

Even though Germany is a long way from Austin, CitizenCon is still in the air this October. I don't know if it's the fragrance of sweat or excitement. Probably both – we've been pushing toward 3.0 for a long time, and it's very close now. There are going to be some interesting demos in Germany – if you can't be there live, then be sure to catch the stream.



Speaking of catching the stream, one way to do it in the Austin area is with a couple hundred of your closest friends at 'VerseCon 2017. Totally fan sponsored, fan organized and fan run (although expect to see a few local staffers as guests), it's a cross between a Bar Citizen and a convention. It'll feature the livestream and Captain's Table on Friday, and then games (including a little *Star Marine* and *Arena Commander*), panels, cosplay and more on Saturday. Both days start at noon (that's my kind of day!) and run till past your bedtime; for more info, check out versecon.com.

Also fast approaching, but not quite here: printed **JP Volume 3**. I've done my bit and files for the entire book have been turned over to the printer. Now it will take a little more patience and you'll soon be able to curl up with your favorite magazine.

This issue is "New Beginnings," and we've got several. Most obviously, Origin Jumpworks has a new ship that we follow through development this month – the 600i. (Origin ... Beginnings: I promise you there's a connec-

tion.) In addition, we go Behind the Scenes to discuss the all new, all fresh Item 2.0, with devs John Crewe, Andy Nicholson, Will Maiden and Pete Mackay, plus fellow travellers Kaitlyn Lovatt and Victor Bonnet-Millé, who have been working at Turbulent on displaying the new stat system that will soon be available. As mentioned in the discussion, having actual, believable in-game prices for all the ships and the other stuff you want to buy is a major step forward on this epic/long journey we're taking together. And Brannaugh provides a new beginning for those who seek its desolate refuge.

We also take a look at Yorm, one of the unlikeliest companies in our Portfolio, and conclude our current short story in the Chronicles, "A Gift for Baba." While I've enjoyed reading the adventures of Yela, Daymar and Cellin, I have added another fictional character to my list of people I would desperately avoid if they were real. Not older sister and brother Yela and Daymar, but eight (?) year old Cellin, who sent a shiver through me with her triumphant (and truthful) cry last month: "Mutiny! The ship is ours!"

Kids like that, it's healthier to steer clear of.

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

David

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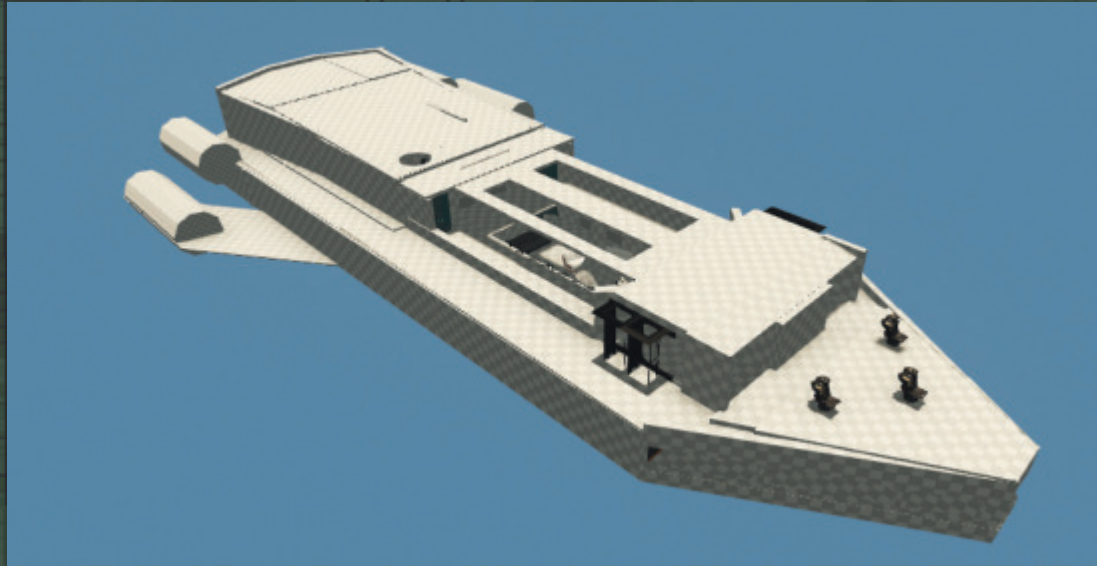
PAGE 24:	CLINT SCHULTZ
PAGE 29:	SIAN CREWE
PAGE 34:	TYLER WITKIN
PAGE 36:	PAIGE SAUNDERS
PAGE 39:	SARAH MCCULLOCH
PAGES 43, 54:	SEAN ANDREW MURRAY



FROM THE HICKORY

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Origin 600i



WORK IN PROGRESS

Initial Design Brief (starting point for the evolution of a concept)

AIMS

- Origin's versatile Multi-Role Ship, designed to take on the corner of the market dominated by the RSI Constellation.
- Targeted at the affluent space-farer, traveling the stars in luxury and style.
- Single model with interchangeable 'cores,' the 600i can swap out its interior modules to suit any role. While RSI will sell you 4 Constellations, a single 600i does it all.
 - *Exploration Module.* Suitable for Exploration, survey and surveillance.
 - *Touring Module.* Suitable for traveling the galaxy in comfort.

AESTHETIC

The 600i visually fills the gap between the 300 series and the 890 Jump, using Origin's sleek, smooth lines to really show off its luxury positioning. Inside and out, no expense is spared to make sure the Origin customers feel they are travelling the stars with the very best possible.

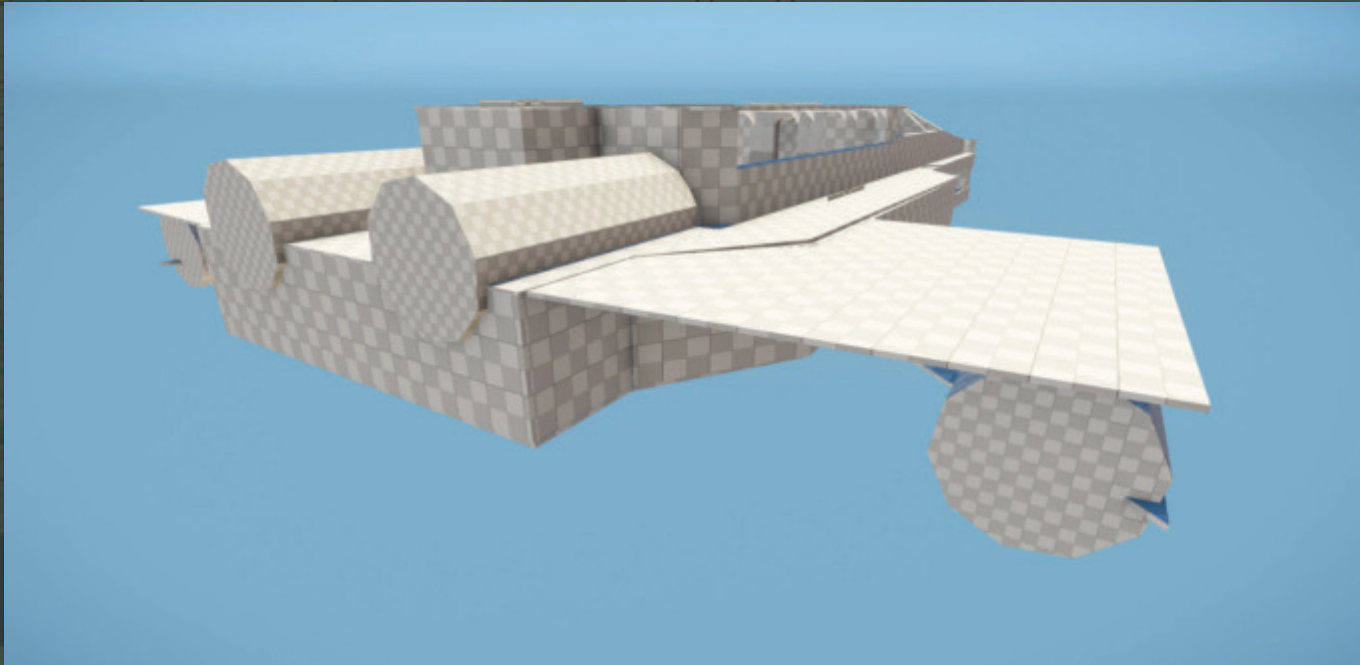
- There are two parts to the 600: the base framework of cockpit, engines, entrance, etc. and the operations modules, which can be easily accessed and swapped out.

They should join together seamlessly for operations, but the join should be visible. The swap will happen offscreen the same way the player swaps ship, so physically swapping out the modules will not need to be seen in this design.

- The operations modules should be tailored to their purpose:
 - *Exploration modules* should have additional utility mounts for scanning arrays and radar dishes.
 - *Touring modules* should have skylights to provide unrestricted views of the galaxy.
- These ships are the top of the line and cost more than their competitors. Every dollar should be on display.

STYLE

Luxury cabins upholstered to exquisite detail for comfort. Sleek, sweeping lines typical of Origin ships.



APPROXIMATE STATISTICS

Length. ~91 meters

Width. ~52 meters

Height. ~17 meters

The 600i is similar in size to the Constellation. As a Large ship, it has room to fit a basic frame around the operational module.

Mass. ~85,000 kg

With core frame and operational module, the 600i weighs slightly more than the Constellation, due to its interchangeable modules.

Crew. ~3

The crew will vary depending on the operational role, but there are 3 seats on the bridge that manage flight and support, while the operations module may use more.

Engines. 4x Medium

Shifting such a large mass, the ship features a set of 4 engines with greater capacity than the Constellation, meaning it can outpace the RSI ship. The engine is one of the major parts of the 600's frame.

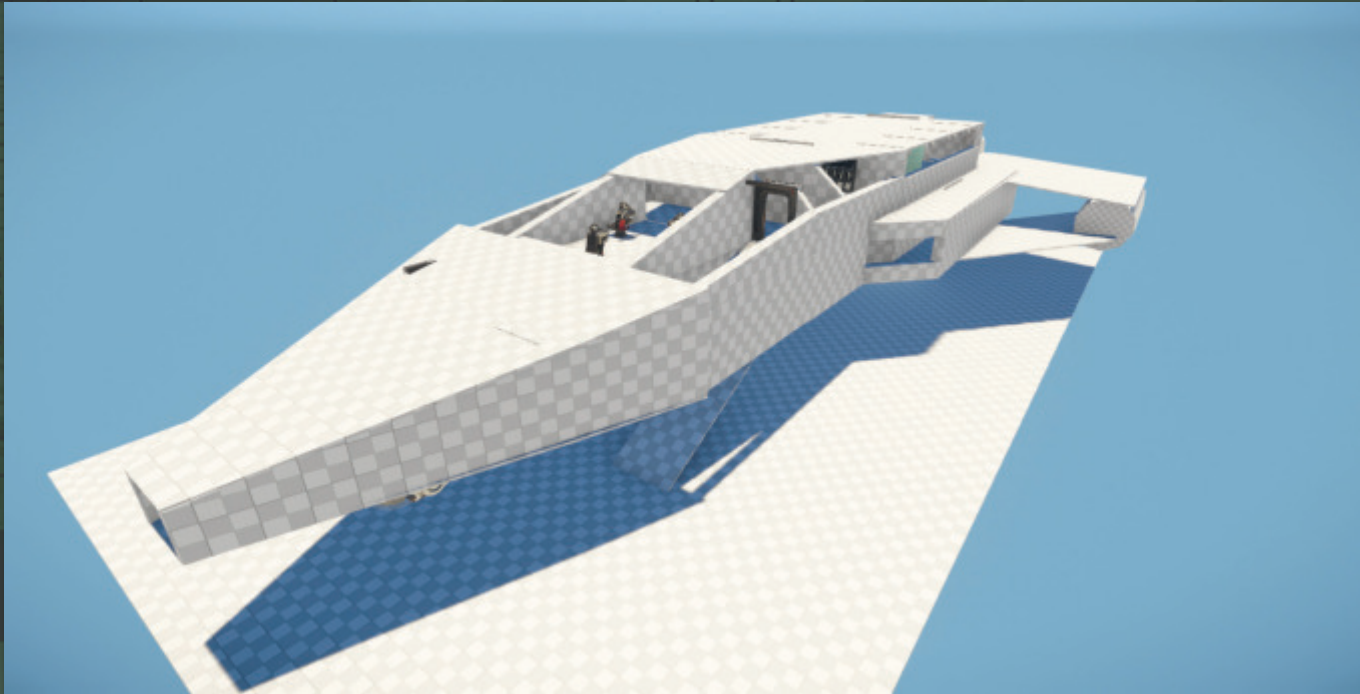
Thrusters. 12x Fixed

The 600i is more agile than the Constellation, valuing maneuverability over defence. The fixed thrusters are designed as part of the bodywork and are smoothly embedded into the line-work of the body. The fixed thrusters provide higher responsiveness and complement its higher speed.

Power Plant. 1x Large

The 600i's large power plant is designed to power its arsenal of energy weapons and its vital shields. Due to the modular nature of the operations core, the power plant must be adaptable to supply whatever gets loaded and be able to anticipate future needs.

WORK IN PROGRESS



WORKING IN PROGRESS

Weapon Hardpoints

2x Remote Turrets (Nose Lower, Rear Top)

- 2x S2 Laser Repeaters per Turret
- 3x Fixed S5 Laser Cannons (2x Wings, 1x Centre)
- 4x S5 Missile Racks
- 4x S3 Missiles per Rack

The 600i puts its weight into energy weapons, featuring two remote turrets sporting dual Laser Repeaters, and three fixed Laser Cannons as part of the basic frame.

Generally speaking, the 600i has a smaller total number of weapons than the Constellation, but all of them are more powerful.

Shield. 2x Medium

The 600i's shields do the heavy lifting of the ship's defence, making up for its lighter armour shortfall.

Armour. Light

The 600i's armour is a lot lighter than the Constellation. Its elegant form has compromised any opportunity to reinforce the hull. As such, defensively it has a weaker hull, something Origin has made up for with stronger dual shields.

Utility Hardpoints – Exploration Module: 2

The 600i doesn't come with any built-in utility hardpoints. Instead, the exploration module will feature them for better performing support operations.

Docking Ring

Built into each module

METRICS & TEMPLATES

Animation Templates

- 300 Series Pilot Seat Enter/Exit (cockpit)

Base Ship Frame

Items that need to be accessible are behind floor and wall panels. Space is at a premium, so look at placing most under floor panels or within the two rear engineering rooms.

(All component sizes: *Depth x Width x Height*)

- *Power Plant.* 1x Large (2.0m x 3.0m x 2.0m)
- *Shield Generators.* 2x Medium (0.5m x 1.5m x 0.5m)
- *Computers (Avionics).* 2x Medium (0.75m x 0.5m x 2.0m)
- *Coolers.* 2x Medium (1.0m x 1.5m x 0.5m)
- *Gravity Generator.* 1x Medium (1.0m x 1.0m x 1.0m)
- *Jump Drive.* 1x Medium (1.0m x 1.5m x 1.5m)
(Jump Module sits atop Quantum Drive)
- *Life Support.* 1x Medium (1.0m x 1.0m x 0.5m)
- *Radar.* 1x Medium (1.0m x 1.0m x 0.5m)
- *Scanner.* 1x Medium (1.0m x 1.0m x 0.5m)

Some of the Operational Modules will come with their own internal items to complement the base ship because of the tasks they need to perform.

Items that don't need to be accessed but are somewhere on/inside the ship:

- *2x Fuel Tanks.* 2x Medium (1m x 2m x 1m)

Interior Spaces

The base ship features everything needed to get into space and fly:

- Bridge and bridge crew sleeping quarters and wash rooms
- Dual Engineering rooms housing most of the ship's internal items
- Access doors to the operations module. Should have at least one door, preferably two, but should be designed to suit all configurations.
- Exit ramp/lift

- Access corridor routes that connect the bridge, exit ramp, engine room and operations module.
- A high visibility Observation area at the front of the ship, giving spectacular views of the 'verse for both luxury and exploration purposes.
- Escape pods capable of holding 4 passengers, accessible adjacent to bridge

Doors separate the main rooms, and a solution is needed for the joining door to the operations module when separated and re-joined.

The cockpit features three seats (pilot, and 2 multipurpose stations) that can be approached from behind, which turn and slide into place, just like in the 300 series.

Cargo

The base frame 600i is not a cargo ship per se, but the owner will have a capacity of 16 SCU (8 in each engineering/storage area), and the Exploration module adds an additional 20 SCU unloading space for bringing materials back.

Exploration Module

The Exploration module will be a single room, with chest-high partitions separating it off.

- System map desk
- Crew seats
- Radar/Scanning station (like on the Terrapin) plugged into the utility mounts
- Large weapon and equipment lockers for planetary exploration missions
- *Avionics Computer.* 1x Medium (0.75m x 0.5m x 2.0m)
- *Utility hardpoints.* 2x

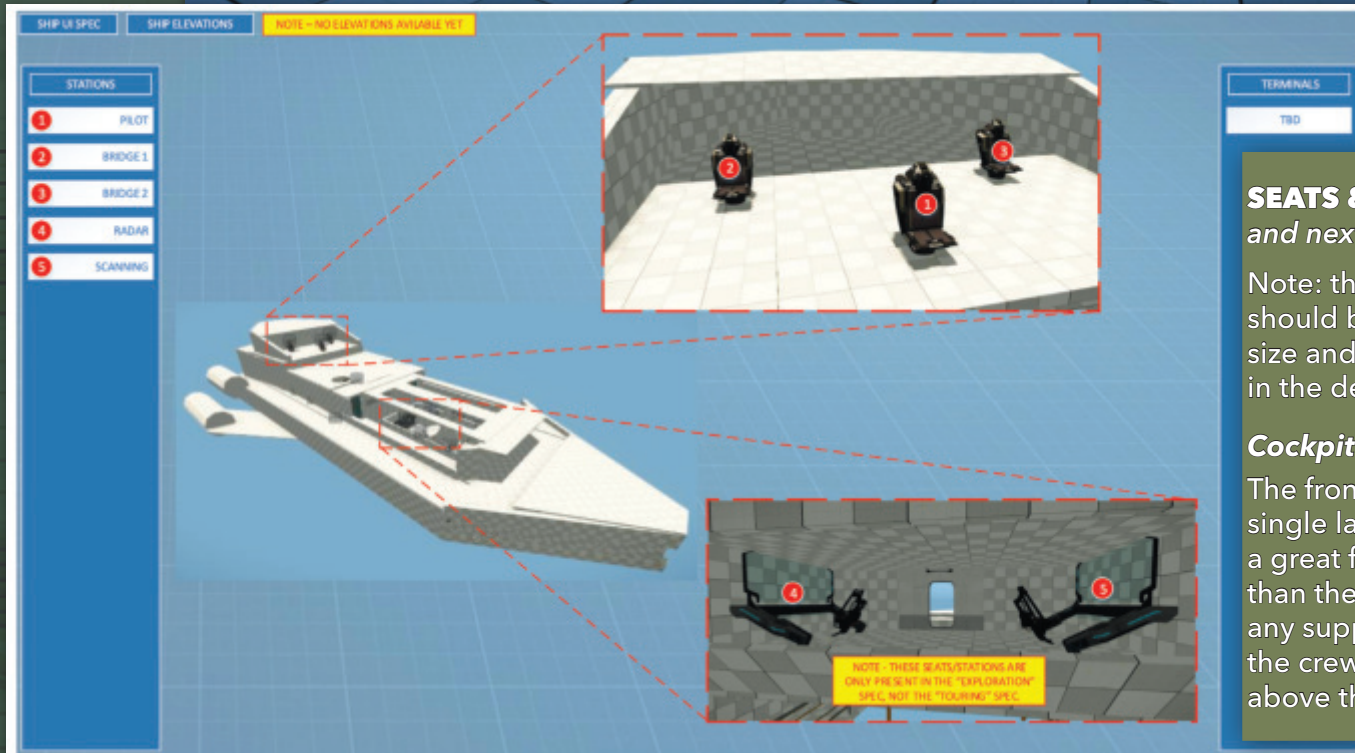
Touring Module

The Luxurious Touring Module serves as a showpiece for the owner, and essentially functions as a lounge area with facilities such as a bar, huge TV display and a multipurpose holographic fire-pit/radar sphere. The main purpose of the space is to give the feeling of luxury and space.





WORKING PROGRESS

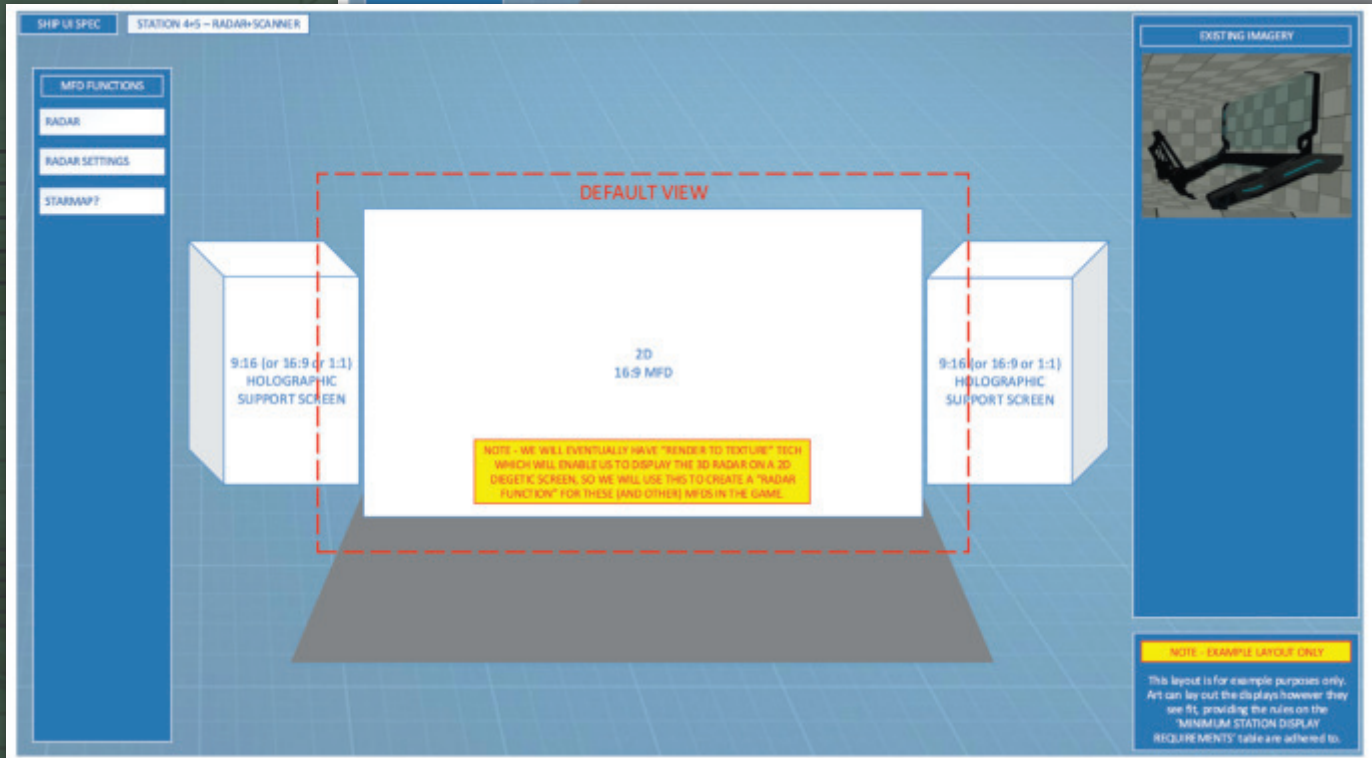
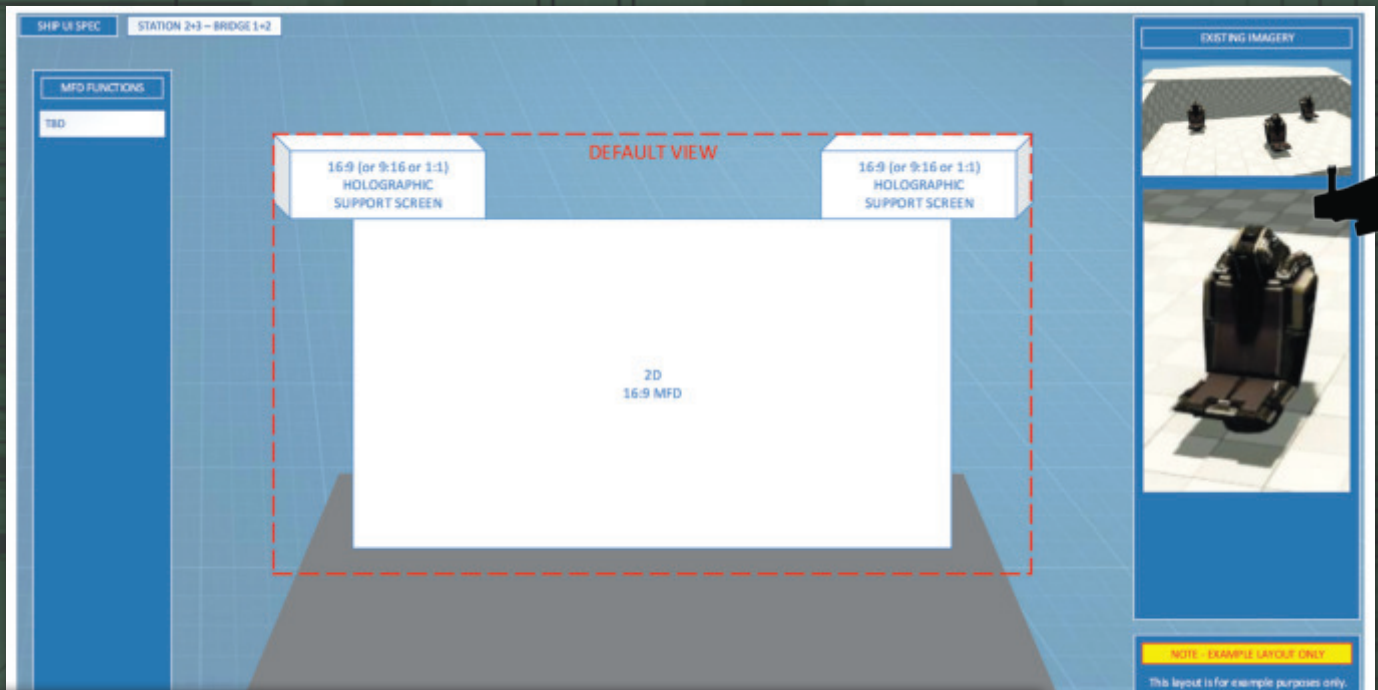


SEATS & DISPLAYS *[this page and next two pages]*

Note: these mockup images should be used as a guide to the size and position of the screens in the default view.

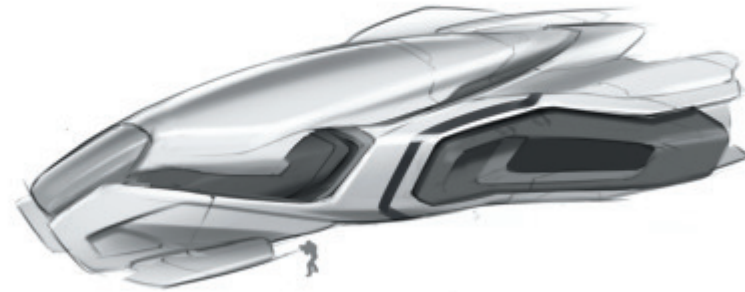
Cockpit Visibility

The front window should be a single large piece of glass with a great field of view. Much taller than the MISC letterbox without any supporting beams, allowing the crew a great view around and above them.



WORK IN PROGRESS

1



2



3



Daniel Joustra, Senior Concept

Artist: Origin 600i initial sketches, investigating overall folding / soft forms for the larger Origin ships. Bridge to the front. All sketches made with the internal design / layout in mind. CR, it would be great if we could get some initial thoughts from you on this, which you'd possibly like to investigate further and start tuning into a final concept. *[this page and next page]*

Nathan Dearsley, Vehicle Art

Director: From a personal perspective, I'm liking number 5 the most right now, but possibly taking the wing design (and how it folds into the body) from 4 or 2.



4



5

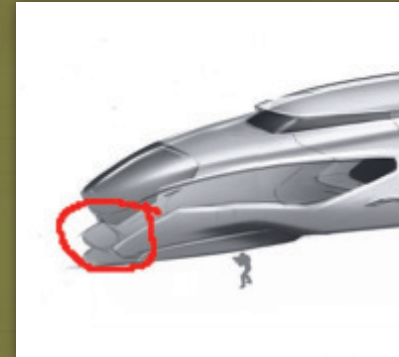


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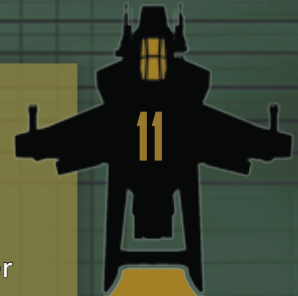


Chris Roberts: I think 5 with 2, although I am not entirely sold on the second level – is that the bridge or an observation deck? And then what is the much larger front area? Cockpit?

All designs suffer from being too busy at the bottom of the nose – feels like that should be cleaned up.



Nathan D: Understood. The second level we were thinking as an observation deck (this could possibly look towards the rear too, think boat / cruise liner), the front glass section is the bridge, as requested to be moved to the front by Design. We'll play with the front for sure; Dan is trying to get some geometry at the front to lead/ fold into the main body mass.



WORK IN PROGRESS

Dan J: Further loose iterations. I feel 4 strikes a good balance of overall form; the slightly sharper shapes push it just the right side of have an aggressive edge without being OTT.

1



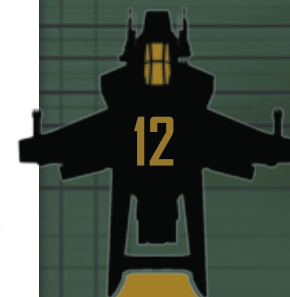
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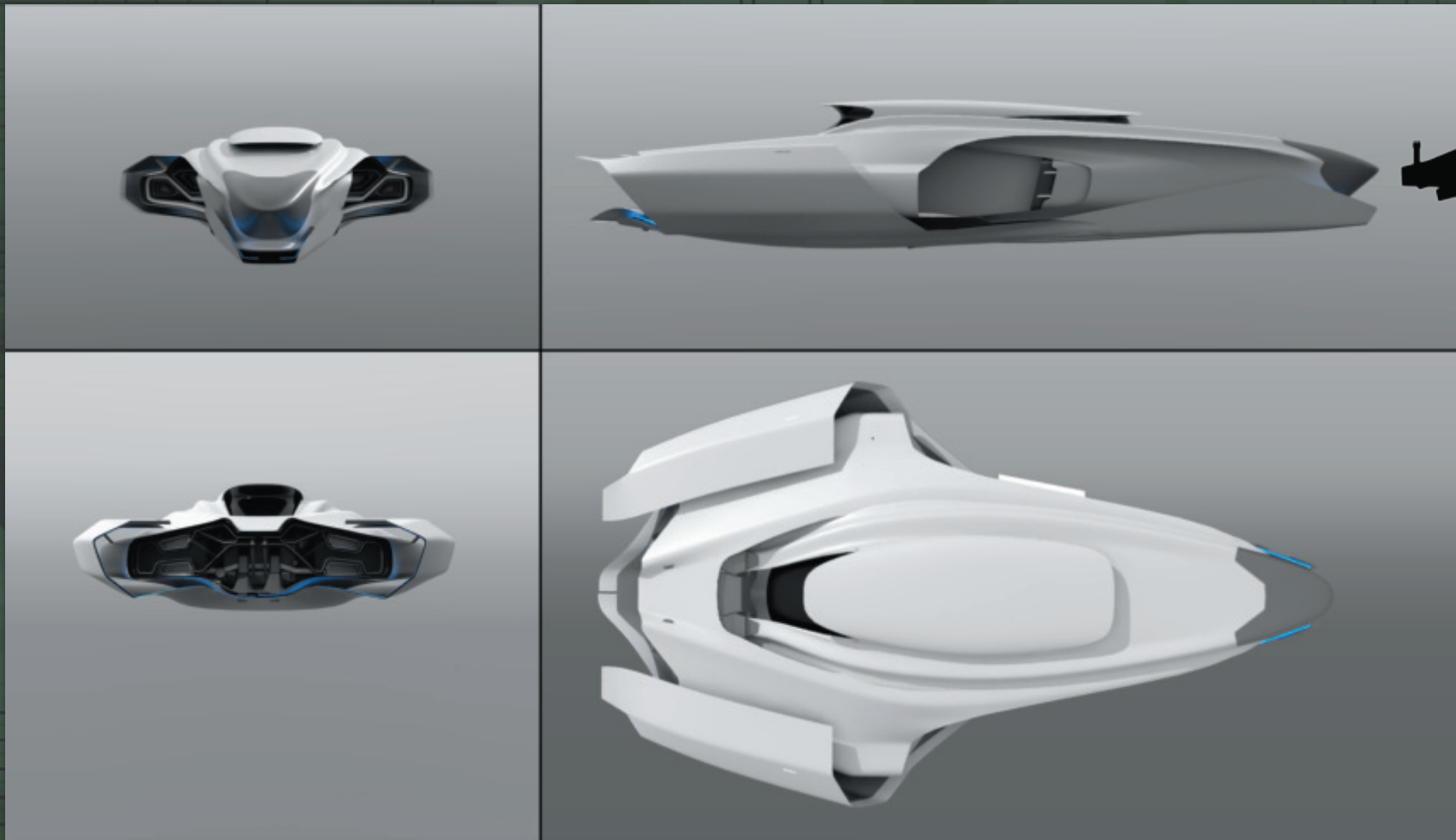
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WORK IN PROGRESS



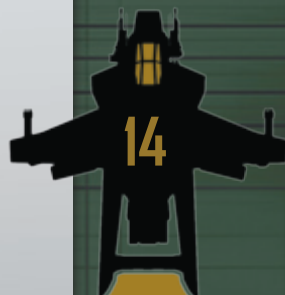
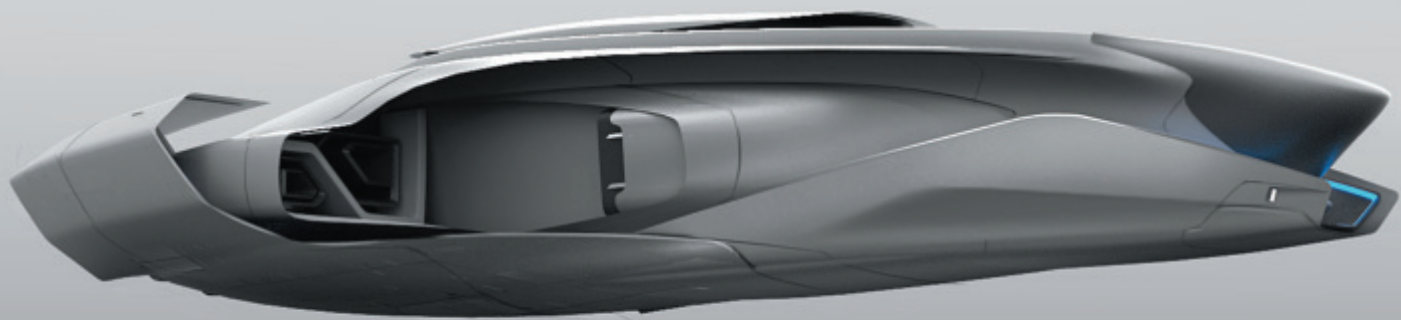
WORK IN PROGRESS

Dan J: Further investigations in 3d. Hopefully these are along the right track and highlight some of the cool features we are trying to achieve. In particular, with complementary floating curved forms encasing the main hull, creating depth and layers to play with on what is a simplistic style. Be great to get your thoughts, Chris. *[this page and next page]*

Chris R: I wonder if we slide back the front "collar" wing/spoiler so the cockpit is more out in front?

On the whole, moving in a very nice direction. I really like the overall shape form and back engine/wing detail. Still not fully sold on the "collar" wings on the front. I like the top down shape, back view and even front view. Side profile feels slightly weird with the front wing "collar."





WORK IN PROGRESS

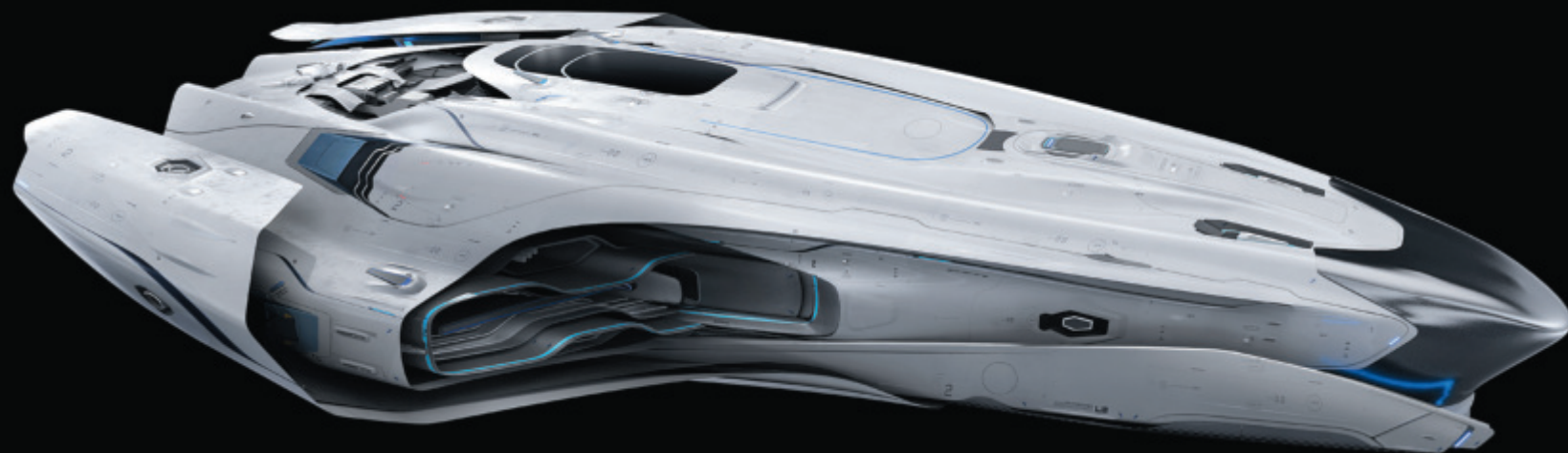


Dan J: Some new updates following on from what we last chatted about, with the addition of a pass with some smaller details so we can start getting a greater sense of scale to overall presentations. I've moved onto fleshing out some interior profiles and general surfacing styles for the overall internal aesthetic, which is already looking promising, which I'll share once things get a bit more understandable. Hope you like her so far. *[this page and next page]*

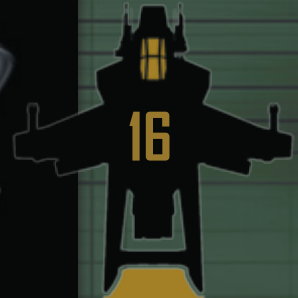
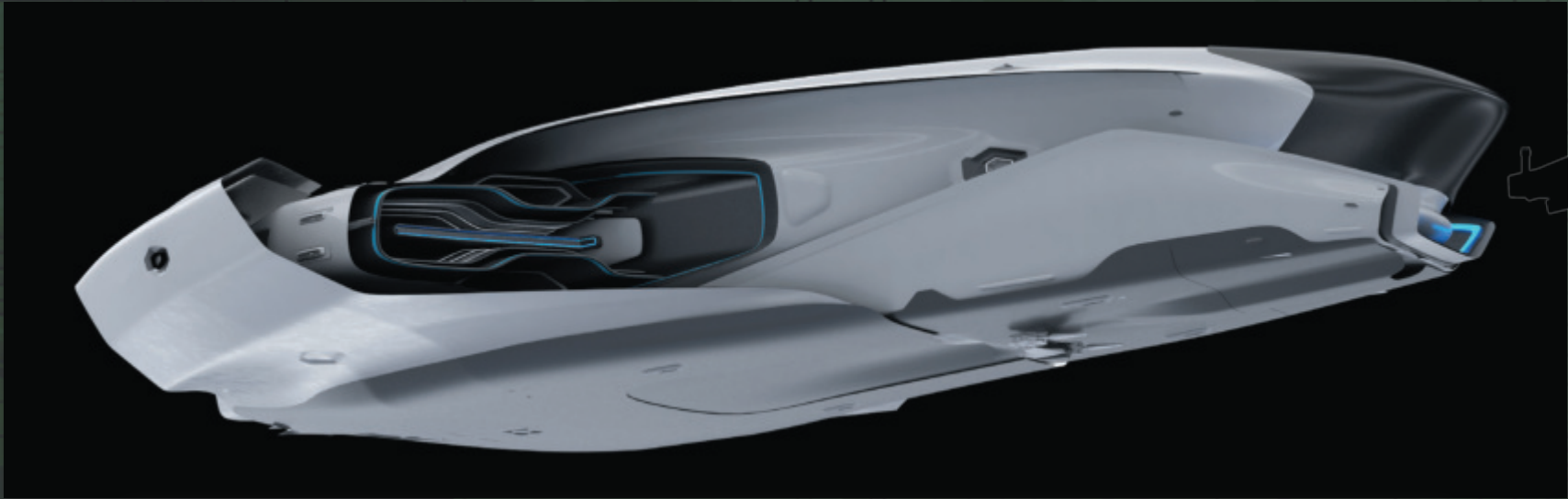
Chris R: Really like this shot *[below]* and the back 3/4 shot *[bottom of next page]*. Very sleek / very Origin.

Still not 100% sold on the cockpit "chin." Also would like to see more detail on the bridge / cockpit. And we should consider some windows in the hull. I guess the detail at the back is a spacelight?

Nathan D: Thanks for the feedback! Dan and I will work on it and get you some call-outs of the bridge / glass / canopy area. We'll focus on a parametric-like approach to the weight-retaining structure that should mould perfectly with the overall shape at the nose and into the bridge. That should give the viewer from outside a pleasing smooth aesthetic of thick glass with moulded struts underneath, subtle cuts in the glass to complement this and hint at overall construction. Hopefully, that will make the whole approach completely tangible.



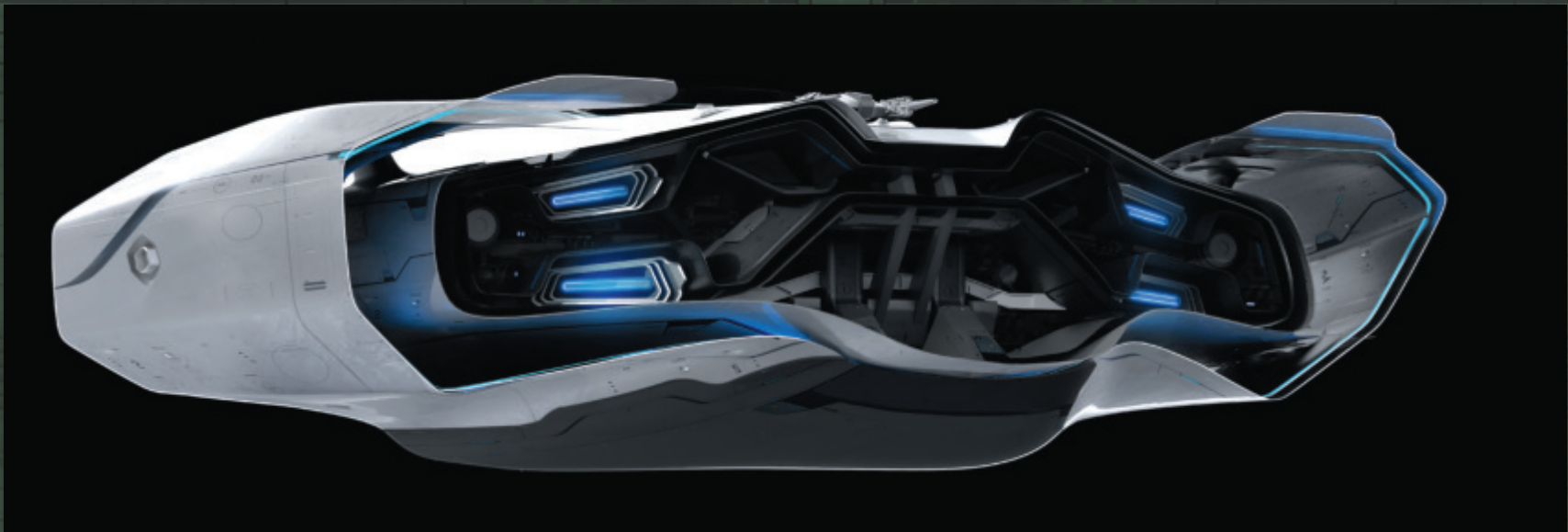
WORKING PROGRESS



Nathan D: When you mention spacelight, what are you getting at exactly?

Chris R: The sun roof / moon roof, which I am assuming is the back section in the center of the top of the hull towards the back. I was just calling it a spacelight, but maybe should have said moon or star roof?

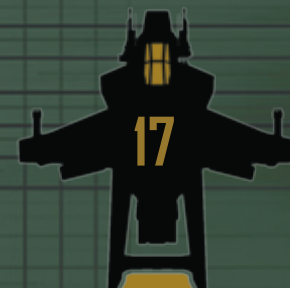
Nathan D: Ahh yes, I understand. Yes, this would all be glass (black sections around the rear), with the interior being quite possibly sleek / simple in design. We need to push as much natural light in as possible. Should the realtime cubemaps and higher res light diffuse grids come on board, this should all start to work harmoniously together and look as unforced / natural as possible.



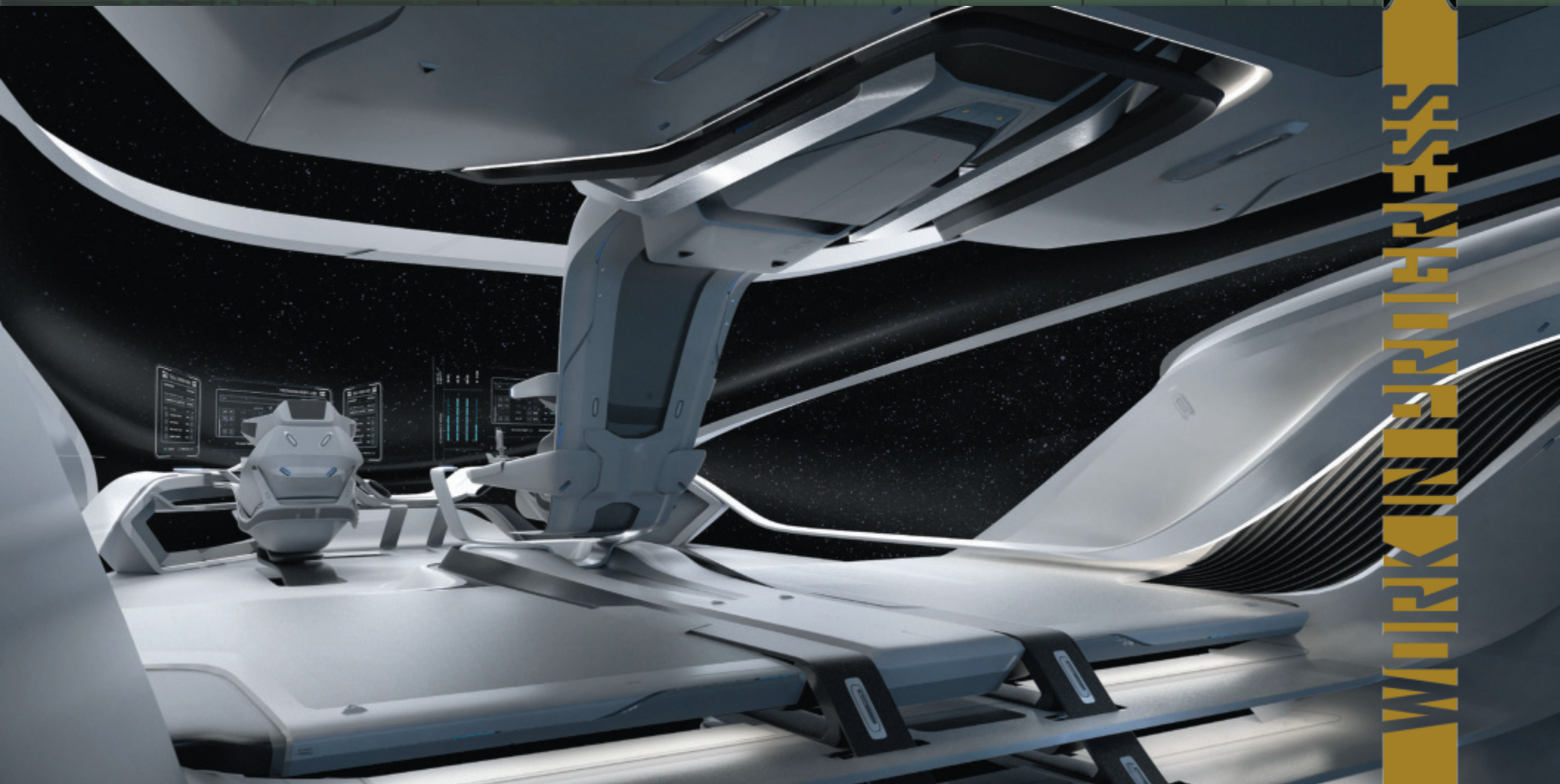
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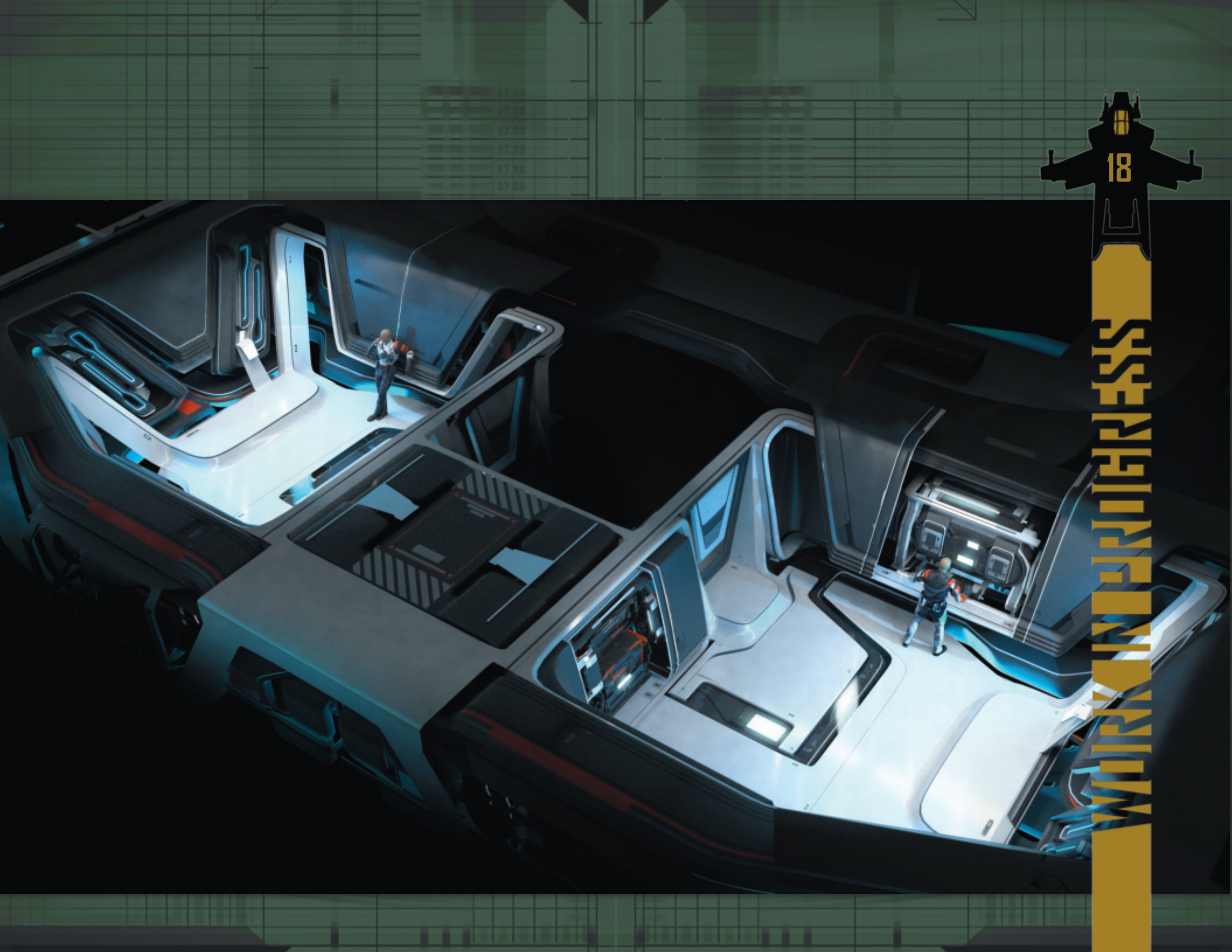
Dan J: 600i concept updates highlighting more polish around the cockpit area both interior and exterior. Overall interior aesthetic look and feel across two archetypes.
[this page and next four pages]

Chris R: That's a GREAT view! *[below]*



WORKING DRAFTS





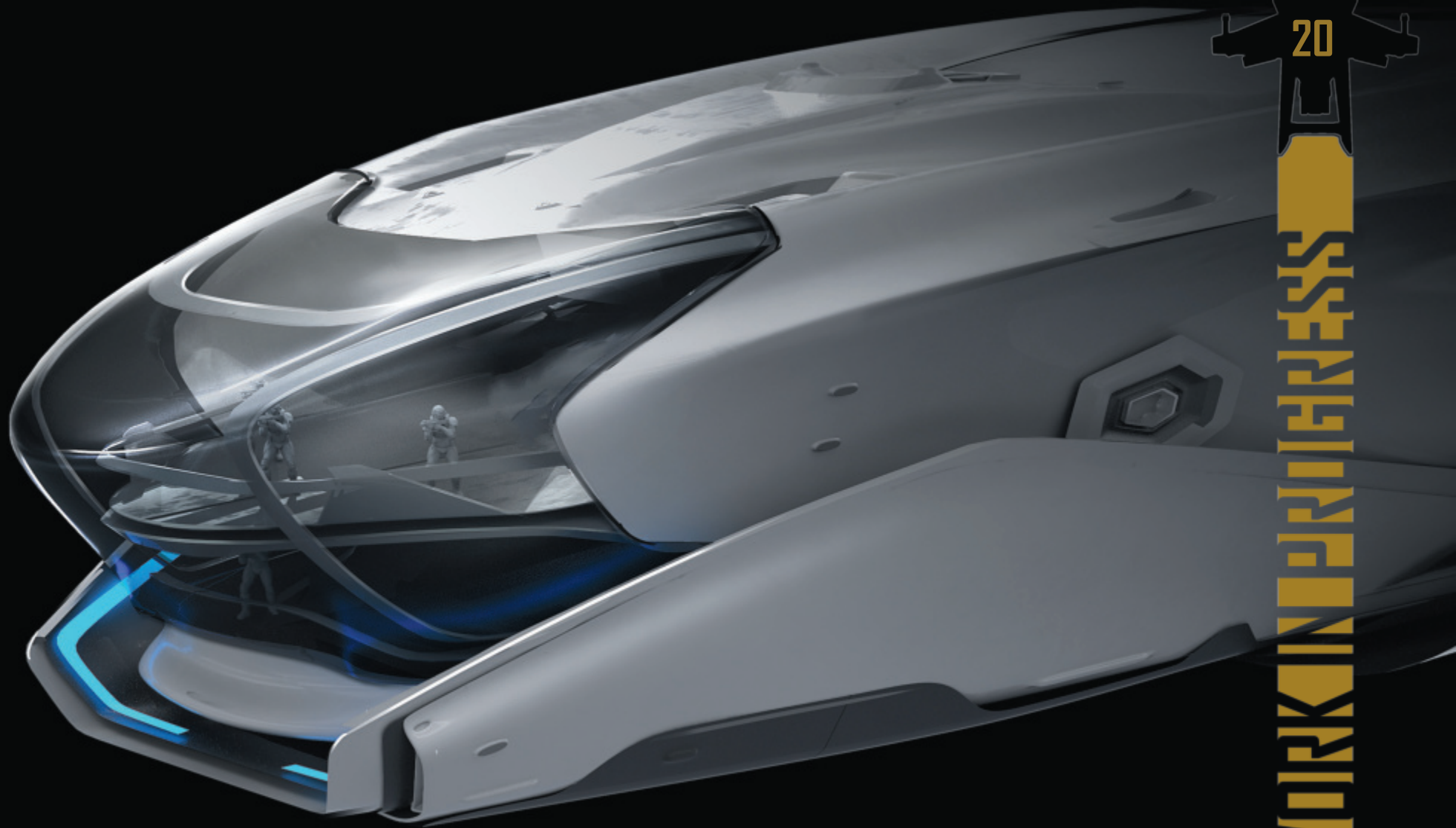
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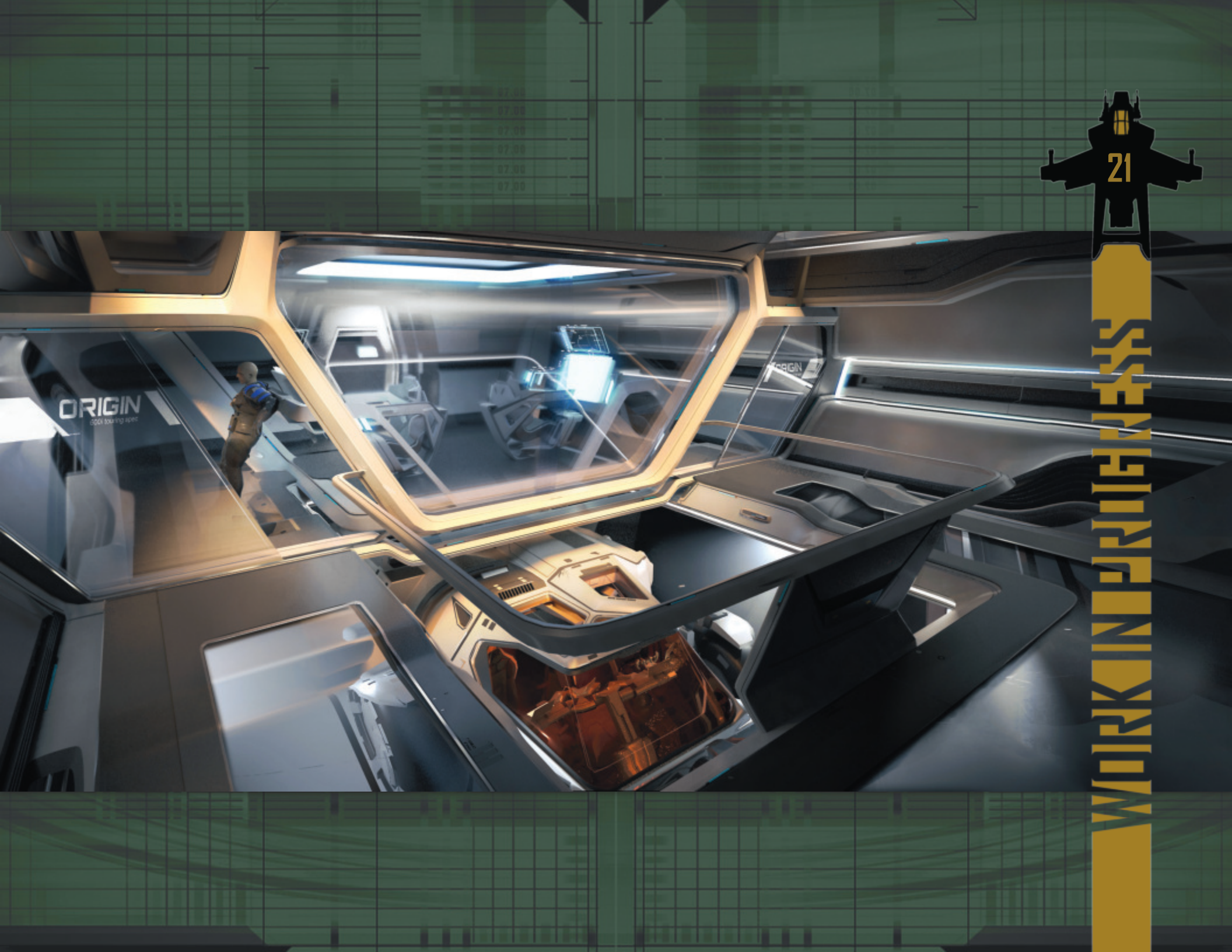


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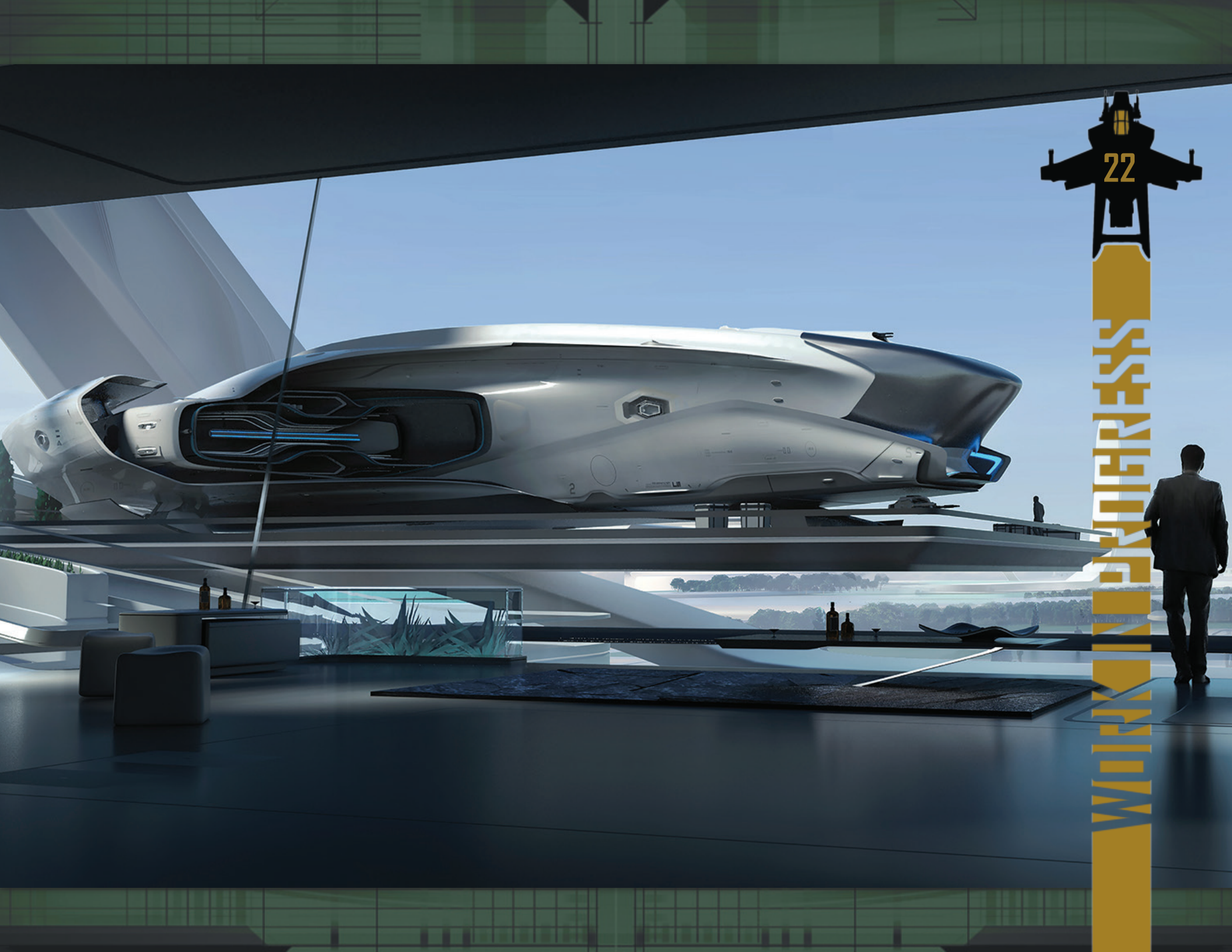


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WORK IN PROGRESS



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WORKING



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WORK IN PROGRESS

YORM



Few component manufacturers have a more colorful back-story than Yorm. Named for the famed racing pilot Gotlieb Yorm, the company brought his revolutionary shield design to the masses in 2822 and successfully spun it into a manufacturing empire. Today, Yorm remains one of the best-known manufacturers of competition-grade components in the UEE. At least part of this fame is because it embodies the colorful, eccentric and outlandish personality that made the pilot famous.

The Iconoclast

No one knows where Gotlieb Yorm was born or raised. As surprising as this may be in our day and age, biographers, investigative journalists and fanatical fans have all tried to

uncover his origins, but failed. This lack of hard evidence led to the popular theory that he was raised as an indentured servant in a Banu ship souli. For many, that theory would explain his unique skill set, deep understanding of ship design and complete disregard for anything that came before. Gotlieb refused to comment on his past, preferring to remind people that, "my ship doesn't have a rearview mirror, so why should I?"

Gotlieb first made a name for himself in 2796 on the underground racing circuit in Baker. Piloting an old Aurora, he won his first race in commanding fashion and immediately garnered attention from racing enthusiasts for his eccentric and outgoing personality. Whenever asked what he hoped to achieve, his answer always remained the same – to win the Murray Cup.

THE MURRAY CUP

Adel Fansekar only needed to watch Gotlieb race once to know that he was the real deal. Famous for her eye for talent as well as a massive bankroll, Adel had backed successful racing teams for decades, yet none had achieved the ultimate goal of winning the Murray Cup. Gotlieb turned down her initial offer to finance a racing team, claiming that he was doing just fine on his own. His blunt dismissal shocked Adel, who was convinced it was a negotiating tactic and returned with an even larger incentives package. When Gotlieb rejected the second offer, Adel asked him point blank what it would take to work with him. The answer was simple: autonomy. Gotlieb supposedly said, "I'll always take your money, but never your advice," and with those words their partnership was sealed.

Properly financed and in full control of his team, Gotlieb quickly earned a reputation as a racer who would do anything to shave a few seconds off his lap time. Race aficionados reveled at his unusual ship modifications and flair for dramatic finishes. Yet for years, a Murray Cup championship stayed elusively out of reach.

Gotlieb's popularity, however, grew. He became a household name in 2814 when he began racing completely nude, claiming that clothes were nothing more than unnecessary weight. It wasn't long before the Safety Commission intervened and required all racers to wear flight suits. In search of another advantage, Gotlieb focused on his ship's shield, since his strongest Murray Cup race was Blitz, which allows combat up to the point where an opponent's ship becomes disabled but not destroyed. After losing the 2816 Murray Cup Blitz title by less than a second, he famously ripped off anything he deemed unnecessary from the shield generator. When his chief designer noted that the shield could now only fend off a few shots, Gotlieb replied that's all it needed to do. If he couldn't navigate out of targeting range within a few

shots, then he'd lose the race anyways.

Little did Gotlieb know that this decision would not only revolutionize racing, but pave the way to achieving his dream.

Less is More

Racing with his new streamlined shield, Gotlieb Yorm finally won the 2817 Murray Cup Blitz. Meanwhile, Adel was both ecstatic and observant of the pilot's popularity. She recognized the desire of other racers and ship enthusiasts to embrace Gotlieb's "Less is More" philosophy. She approached Gotlieb about mass marketing his shield. He agreed under three conditions. First, that Adel manufacture the component herself and not license it to another company that probably wouldn't do it justice. Second, that the shield not reach the market for five years, so he'd maintain his competitive edge and have a chance to develop newer designs for his ship. Finally, that all he'd have to do was lift a pen to sign the agreement, then sit back to collect the royalties.

Adel agreed again to Gotlieb's terms. She later claimed that this five-year grace period was a blessing in disguise. She'd financed and run multiple racing teams, but never delved into component manufacturing. For years, Adel kept her plans quiet while undertaking copious research on the industry. Slowly, she poached respected managers and consultants to execute her vision and made them sign an NDA that stayed in effect until the product launched.

Adel's meticulous planning led to Yorm's first shield coming off the production line a little over four years after her deal with Gotlieb. Though the pilot had insisted that he didn't want to be involved past providing the initial shield design, she wanted to give him the chance to weigh in on a product that would bear his name.



THE MURRAY CUP

To Adel's surprise, Gotlieb became engaged in the process. He made a handful of valuable suggestions based on his experience, including advocating for the use of more expensive, but lighter, materials for the piping system. When asked what he thought about various aspects of the component, Gotlieb would always respond the same when he was ultimately satisfied: drawing a giant happy face. Adel liked his response so much that she asked him if they could use it. It's been the company's iconic logo ever since.

Don't Worry

Yorm's first shield generators became commercially available in 2822. Propelled by the cult of personality around Gotlieb and the fact that the shield was his exact, approved design, demand for the shield was astronomical. A lot of other companies might've been overwhelmed with such a popular debut product, but Adel's careful planning meant that they were ready. Yorm shield generators had been coming off production lines for close to six months and could be hauled wherever needed.

Adel carefully scaled Yorm over the following decades to manufacture a wide range of competition-grade components. Though Gotlieb never personally designed or even consulted on any of their subsequent products, all were built following his "Less is More" philosophy. Adel's hard work and vision turned Yorm into the successful company it is today.

Yet, the journey was not without its mistakes. For a brief period in the early 30th century, the company, under the leadership of Silvio Halbrook, attempted to expand its reach into hull plating, but a series of bad design decisions, mismanagement and manufacturing issues almost sank the company. After Silvio's ouster, Bao Ingram took the reins and returned Yorm to its roots, competition-grade components.

Yorm has returned to its previous glory under Bao's control. It remains popular today among racers and those who prioritize performance over all else. Those that love the company claim its logo perfectly represents how they feel when flying with Yorm components.



MEMORIAL



Equipment Manager

LOADOUTS

INVENTORY

Civilian Loadout 1

Onboarding Undersuit Undersuit

ARMOR

Port Olisar Commemorative Helmet Head

Torso

Initiate Bracers Armor

Snipers Ankle Supports Legs

TECHNOLOGY

Power Source

Life Support

Emissions Support

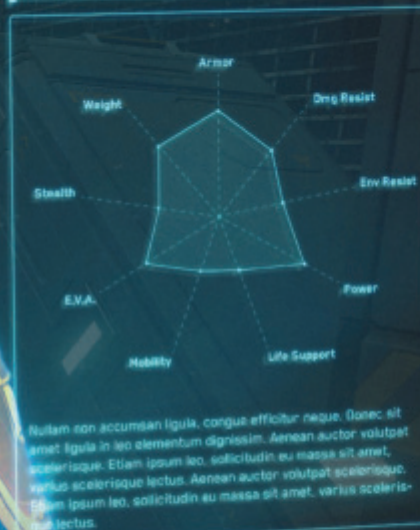


MOBIGLAS NETWORK 2.5

THE STATE OF STATS



Initiate Bracers Arms



BEHIND THE SCENES

Those who have been paying attention have noticed a new series of articles appearing in the Engineering Comm-Link on the website. They began this past Tuesday, titled **The Shipyard**, and deal with the new ship matrix. As we release this issue of **JUMP POINT**, we've reached Part 4, the Thruster article. Those articles go into much more detail about the actual updates; the three discussions here are more focused on why we're making these changes, and how we got to where we are today.

- Part 1 - Ship Career/Roles
- Part 2 - Ship Mass

- Part 3 - Ship Technical Overview (Speeds/Accel)
- Part 4 - Thruster Items
- Part 5 - Weapon Hardpoints
- Part 6 - Turret Hardpoints
- Part 7 - Ordnance (Missiles & Rockets)
- Part 8 - Utility + Other item info
- Part 9 - SCU & Cargo
- Part 10 - Full site reveal

John Crewe, Andy Nicholson & Will Maiden

JP: *Let's get started with the usual. Could you please give a brief summary of what you did before Cloud Imperium, and how long you've been with CIG?*

John Crewe, Lead Technical Designer: I previously worked at Crytek for 5 years on the *Crysis* and *Homefront* franchises and I've been here just over 3 years.

Andy Nicholson, Technical Designer: I was formally QA tester with *Traveller's Tales*. I've been with CIG for about 3 years and 5 months, where I've progressed from QA to the Tech Design team.

Will Maiden, Senior Systems Designer: I've been at CIG for just shy of 2 years. Before CIG I was at Sony for 8 years, working on racing games, and a spot of teaching.

Andy N: We're practically veterans in CIG history, I guess.

JP: *I understand you've all been crunching on stats, particularly ship stats, for the last few months.*

John C: Yes, for 3.0 pretty much every ship has had some form of stat changes, especially with the introduction of Item 2.0 to all the ships and the subsequent setup of all new items such as power plants, coolers and shield generators on them. In addition to that, there have been ongoing flight model changes which require updates there.

But "stats" is probably too generic. We've been working on balance, which isn't necessarily the same thing.

JP: *So balance, not stats. What's the difference?*

John C: Stats can mean a few things including balance, but often it refers to the forward facing aspect of the balance changes, as we don't always show the raw data to the end user but instead convert it into a friendly value to interpret.

For example, a powerplant could output 12500 units of power a second, but compared to another one doing 10000 units, there's no tangible difference between the two without knowing the upper and lower limits. However, giving one an A Grade Stat and the other B immediately puts them into more obvious brackets.

JP: *Meaning that 12500 and 10000 are close enough that there's going to be overlap between their low and high output?*

Andy N: I think John's more getting at the fact that numbers can be meaningless without a context.

John C: Exactly. Just throwing raw numbers out is meaningless.

JP: *Will the same thrusters on two different ships have the identical mass thrust?*

Andy N: Well, that context can also be uninteresting to the majority of players! So imagine stats as the cleaned-up public facing output of the balancing we're doing.

When I say uninteresting, I suppose I really mean bewildering, as I know there are people out there in our fan base who love the raw numbers.

JP: *It sounds like you've been more focused on providing a context for stats than on defining the specific stats for each ship.*

Andy N: I think we actually cover both.

John C: I think there's also some confusion here, as we're not directly involved in determining some stats – that's on Pete Mackay for some items, as well as Systems Design as a whole determining how to make the raw data into com-



BEHIND THE SCENES

parable stats. It's a huge system covering lots of people and we're a small part.

Andy N: It's a large team effort to get all of these moving parts in and balanced – and then also make them public facing.

JP: *We'll also be talking with Pete, so we'll get his input as well.*

Andy N: John's been working on cleaning up a lot of the terminology we use on the website, but that is built upon a lot of work over months to get things more understandable for development purposes.

JP: *As with most things Star Citizen, it does sound like an overwhelming task.*

John C: And Will has been doing a lot of work for the Personal Manager App getting the raw values into condensed stats to display.

JP: *Does the Personal Manager cover your ship's stats or just an individual character's stats?*

John C: Personal Manager can cover both.

I've been working with Kirk Tome in LA on a complete overhaul for the stats matrix on the website, which changes how we format the information. A lot of it was raw information that wasn't particularly useful in the format it was presented, so we've condensed it down, removed sections, and added other bits to make what's presented more informative.

Will M: To start with, I was looking at the Personal Manager App, which players will be using to manage their equipment, and we needed a way for players to make informed decisions about what kit they want to take into the field with them. Obviously, we'd do that with the stats each item



ANDY NICHOLSON, WILL MAIDEN & JOHN CREWE

has, but, broadly speaking, the 'efficiency' of an item can be determined by 10 or so different points of information. I wanted to condense and combine all that information down into a player-readable number or rating that the player could use to say "this item is better" ... at least in that field.

JP: *Can you give an example of 10 different points of information for, say, a laser cannon?*

Will M: Raw points? That's one for Andy.

JP: *Not specific numbers, but the categories.*

Andy N: A laser cannon is actually one of the easier weapons when it comes to lots of different information or parameters. It only deals with rate of fire, damage (and therefore DPS), spread (the attack and decay) heat



BEHIND THE SCENES

and power. Heat is how long a weapon takes to overheat and then cool down again; Power is the same in terms of how much power is taken from the ship powerplant, and whether the weapon can max out.

JP: *How is that list different today from what it would have been a year ago? Or is the list pretty much the same, but the numbers have changed?*

Andy N: The ship weapons haven't changed at all for 3.0.0 as yet. We've been working on ship flight handling (mainly atmospheric), Quantum Drives, fuel consumption and afterburner / cruise.

Will M: Consider a shield generator on a ship. It would have values for Shield Health, Regeneration Rate, Acceleration Time, Delay before it regenerates, how much of each type of damage it can absorb, how much each hit from that ammo type removes from the shield, how it prioritises each face etc., etc.

JP: *Understood.*

Will M: But a shield generator also has stats that figure out how much heat it produces because of this, how much wear and tear it can sustain, how much damage the actual physical object can sustain, and so on, so there becomes an overwhelming amount of numbers that the item would have going for it.

JP: *Some players love that detail, and some players have no use for it.*

Will M: The difference between two shield generators could be that one is better at protecting against energy weapons and one is better at defending against ballistic weapons, so it came down to whether we wanted to present all that raw information to all players in order for them to make a judgement call about which item to apply to

their armor or their ship.

JP: *In the case of a shield, the primary difference was what type of damage each of them could best resist, but that stat also involved nearly all the other stats to a certain degree?*

Will M: Right. And we're trying to decide what's the most valuable information for that item's purpose.

So we looked at summarising each part of the item (weapon or ship item) and presenting it in a way that the player can immediately see "this shield generator is stronger than that one, but draws more power."

Will M: We summarised the shield generator parameters as Health, Absorption, Regen, Power Draw, Heat, Distortion, Durability, and Mass.

JP: *That's still plenty of stats, but not an overwhelming amount.*

Will M: That's the hope.

JP: *And how are you currently expressing those stats – High/Medium/Low, or a scale of 1 to 10, or something else?*

Will M: We're looking at doing it numerically. By summarising, it allows us to also standardise the numbers. The difference between a 3m-range and a 20m-range weapon is huge for combat. But the difference between a 3 and a 20 for a shield absorption rate is negligible, so we instead give it a rating-esque number that says where it sits compared to the others.

JP: *And I imagine that the numbers have to have a context, because I'm figuring a 3-absorption shield on a cap ship is going to be significantly different than a 3 shield on a bike. Or will the numbers be unified, so that a bike has (grabbing a number out of the air) a 3 shield, while an Idris has a 300-absorption shield?*





AN EARLY DRAFT OF THE EQUIPMENT MANAGER.
THE DIAGRAM ON THE RIGHT WILL GRAPHICALLY DISPLAY YOUR CURRENT WEAPON'S KEY STATS.

Or is it too early to ask that question?

Will M: It might be a bit too early for that, but the first part stands.

Andy N: Will, I would have thought that the different sizes would cover that.

Will M: You're right, the other thing it allows us to do is talk to the player who doesn't know if "15" is good for a cooler or not. You present a raw stat without context and players don't know how to deal with it, but if you present it as a rating, they know 1 is low and 10 is best. So they can compare the coolers and know that the bigger the number, the better.

JP: So ideally, nearly all the ratings numbers will have the same scale, so that I don't have to remember that shield ratings are 1-10 while damage ratings are 1-20 and power ratings are 3-17? (Again pulling numbers out of the air.)

Will M: Yeah, exactly. Players will be able to compare 'behavior' rather than numbers, and see where one is stronger than the other in a much more straightforward manner, than if they had to do hard maths and know how each stat affected each other. For making those judgement calls, we want players to encounter the new gear, decide right away if that's what they want, and move on. Salvage and looting will be using this a lot, and we don't want players to have to get out a spreadsheet to make that call.



BEHIND THE SCENES

JP: So, to broadly sum up, Will, you've been working on distilling a whole lot of stats down to the most useful set for each type of equipment, and on standardizing stats for easy use?

Will M: Yeah.

JP: What's been the most difficult part of that task? And the most frustrating? (They might be the same thing.)

Will M: Agreeing on what those stats are. And even if that's the right direction we should be taking. We had a lot of hand-wringing about both the workload that would place on the team, to take numbers away from the player and replace them with a summary. We looked at all sorts of maths that would standardise but also be data driven, but it would need to be a unique formula for each item. And it would be a LOT of development time on the other side for code.

JP: I can see that there's no clear dividing line between useful and not-so-useful stats.

Will M: Just having Andy explain all the stats to me is confusing, and I used to work on them. So the worry that this would alienate the player is very real when that's not the game they signed on for.

Andy N: There was a time where I naively thought that we should use the real data at all times to show information to players, as I'd expect that to be exactly what they wanted – and we'd have to do this work under the hood anyway, as part of balancing.

JP: I'm thinking, "that shouldn't be so difficult; just convert the Power number to a 1-10 scale," but then I realized that that assumes we have a ready Power number, and distilling that is going to require the calculations you're talking about.

Andy N: Exactly – we might be able to show all the raw data that we've worked on and balanced, but displaying it

would be a nightmare.

JP: But it seems like Andy isn't completely wrong – we are going to have to have some way to compare Power between two similar units anyway, so while it's a lot of work, it isn't going to just be used to derive stats for players.

So I think I have a handle on how Will spent his summer. And Andy has been working with him to select and quantify pertinent stats. Meanwhile, back to Andy and John. It seems like you're a step removed from Will, looking at the bigger picture and getting it into shape. Is that a fair assessment?

Andy N: From a ship's point of view that's a fair assessment. On the balance side we only have control over ship items, but we have been involved in the overarching stats discussion.

JP: Running back to what we were discussing earlier, you've been focused on ship and ship equipment balance. What has been your primary objective in that regard?

Andy N: In terms of ship items, it's been a lot of getting to grips with new features and the effects they have on them. Quantum drives are probably a good example of this.

JP: What do quantum drives affect? Especially, what do they affect in unexpected ways?

Andy N: As the QT design has been iterated on – in a back and forth between design and engineering – I've needed to keep these items up to date with the requirements needed to make them work, as well as create interesting variations in the items. At times this means working with other designers to find and maintain what makes these items interesting.

For example, different drives have different cooldown times. I've needed to look into whether we feel these cooldowns actually add anything to the game.



BEHIND THE SCENES

JP: *Cooldown times between jumps?*

Andy N: Yeah, to prevent overuse.

JP: *What's your current conclusion regarding QT drives and the usefulness of cooldown?*

Andy N: I'd say that so far feedback has been positive – it's proved to be another layer that makes players consider their actions when travelling around the Stanton system. I don't feel like it's overly intrusive either, as it should only be affecting the long distance jumps.

JP: *And if you have a larger power plant, I'm guessing the cooldown time is shorter, giving players one more way to customize their ship's equipment?*

Andy N: Well these things vary based on grade, class and size. Part of the job I had was to determine what variation should be present based on these parameters. I actually went with the larger the item, the longer the cooldown, as these larger items are capable of larger velocities – so there's a trade-off there.

JP: *In general, it sounds like you're more involved in "what are useful stats for this type of item?" and "what is the most useful way to present this item's stats to the players?" than on "what are the specific stats for this item?"*

Andy N: I've been the one inputting the numbers too!

JP: *Which of those – "what are useful stats for this type of item?" and "what are the specific stats for this item?" – is the greater task?*

John C: We're definitely more involved in the "what are useful stats" side, as we know what the interesting numbers behind the scenes are and the ones we're involved in on a daily basis.

Figuring out what's useful to display is generally pretty quick and often a gut reaction, as we all play games and know what it's like to be on the other side. Figuring out what specifically to display from those is definitely the bigger task.

JP: *When you input numbers, where do the numbers come from? I know you have a solid perception of what we want each ship, and each item of equipment, to do. When you input a number, is it mostly coming from that perception, from a calculation, or what?*

Andy N: The baseline we use is largely that perception. But to create variations based on size, grade and class, there's scaling and multiplying calculations done. What we aim to do is find what feels right for one base ship, then scale from there. But each ship's role and career are what determine how I look to alter the baseline.

That baseline ship tends to be a combat fighter, then those numbers are altered around that.

JP: *If I'm correctly reading the new web articles on stats, we aren't trying to fit each item into a specific category (TR3, TR6, etc.), but rather defining each item individually – all in the context of the other items of the same type. Is that correct?*

John C: So, for thrusters specifically we have removed TR values from the site, as they don't provide a particularly useful bit of information about the thrusters themselves in the current game. If you read the web article on this then it should explain a lot more about our reasoning.

JP: *Any last words?*

John C: Just remember, all stats subject to change™!



Pete Mackay

JP: So, usual first question: could you please give a brief summary of what you did before *Cloud Imperium*, and how long you've been with CIG?

Pete Mackay, Senior Designer: I've been on the project since December 2012. Prior to that I was an Associate Producer at LightBox Interactive.

JP: The topic of the day is pricing, especially pricing ships and ship items. I think you've been involved with that for quite awhile?

Pete M: Yeah, I've been working on pricing since March of 2016.

JP: What have you been doing in that time, and (in particular), what have you been doing the last few months?



PETE MACKAY

Pete M: Most of that time was spent building pricing models of individual ship parts based on feedback from CR. After that I'd get the loadout information from Tech Design – that is, all of the items and parts that make up a ship – and then I'd work out the estimated value of that ship. From there the Marketing team would use the data to sanity check the prices of new ships. If a ship came in too high or too low tech design

would occasionally use the data to make adjustments to the design.

JP: What's an example of a ship that changed price or design based on your analyses?

Pete M: The changes are usually minor – for example, someone put the wrong size thrusters on the ship. It's never resulted in a major revision, so far.

JP: Are you still doing that now? Has the stat/balance update changed what you're doing or how you're doing it?

Pete M: It's an interesting time right now. The original Price Fixer was started last year when there were still a lot of unanswered questions (one of the challenges of the Pricing guy being on a different continent from the Balance guy), so we had to make a lot of assumptions as to how valuable certain things would be to the gameplay experience. That involved a lot of conversation at the director level, along with the Tech Design leads Kirk Tome and John Crewe, as well as me.

Today we're taking another approach that tries to sidestep all of the unknowns while still delivering prices that work, from both the gameplay side and the side that keeps the lights on. Right now that means it's less stats focused, but it won't be for long. The Tech Design team has recently come up with a much easier method of determining equipment stats for the shop kiosks and I'm going to be leveraging that information in the pricing formulas as it becomes available.

JP: We touched on this earlier, but I didn't ask a more specific question: Before all this, how exactly did you determine the price for an item? Take us through the steps.



BEHIND THE SCENES

Pete M: It went something like this. I'd have a conversation with the Tech guys and they would work out a relative value of each part. Then I'd tackle the sizing question – for example, how much more powerful is an S2 power plant than an S1 power plant? Then I'd do something similar for the grade and class parameters. This way I could make sure that the prices scaled along with effectiveness. From this data I'd know the relative power and power progressions of every item. I'd plug that into a set of weights and at the end of all the math a price would pop out.

JP: *So the end result was a formula, but you built the formula based on the design experience of yourself and others who are close to the ship design process?*

Pete M: Exactly. Mainly my role was to first understand how all of the parts that make up the game relate to each other, then write the formulas that describe that relationship as simply as possible. Then finally, with the guidance of Tony Zurovec, Todd Papy and CR, the balancing knobs would be turned. The mental image I've had is something like an audio mixer.

JP: *One of the key things Andy talked about is distilling each item's stats down to five or ten key parameters (Power, Heat, etc.), depending on what the item is. Are those the parameters on which you will be basing prices, moving forward?*

Pete M: Yes, those are the parameters that will be driving both the shopping display (to help players make decisions about what they want to buy) and pricing, as we move forward.

JP: *I'm figuring that will give you a more precise and consistent way to determine prices, but you're still going to have to make some base decisions, aren't you? For example, which is more valuable, a gun that can inflict a certain*

amount of damage, or a shield that can absorb a certain amount of damage?

Pete M: Well, I try to avoid directly asking that question. Instead I try to ask a lot of smaller questions, and then let the relative value of the two disparate items emerge. So for instance I never directly ask 'what is more valuable, 1 point of damage, or 1 point of shielding?' The value comparison naturally emerges from many factors: some gameplay related, some player behavior related and some economic.

JP: *Have you started using the new algorithms on any pricing so far, or are you still working them out?*

Pete M: I actually use both models right now. The earlier model is still used by the Marketing team to get a sense for the relative value of the ships. This is so the relative pricing remains consistent. However, all of the prices going into the game for 3.0 – mainly personal weapons and armor, plus a very few non-weapon ship items – are based on the first version of the new pricing model. Once that is approved by the directors, the ships will then get a pass with the new model, and at that point the original Price Fixer will be retired.

JP: *I can see that this process is still a work in progress; I think we'll need to check back with you in a few months to see how it's working for ships. I'm interested in seeing if there are any significant price changes, but I don't anticipate any – I have the impression that the original Price Fixer, while somewhat intuitive, has been pretty accurate.*

Pete M: Thanks, David. These prices are one of the many pieces required to let players buy ships in-game, something I've been looking forward to for a long time!

JP: *Any last words?*



Pete M: Big thanks to Kirk Tome, John Crewe and Andy Nicholson, whom I'm sure are all sick of being asked unanswerable questions!

JP: And thank you for taking time to fill our subscribers in on the current status!

Kaitlyn Lovatt & Victor Bonnet-Millé

JP: As a quick introduction, how long have you been with Turbulent and how long have you been working on the RSI website?

Victor Bonnet-Millé, aka Fulgrim on Spectrum, Quality Assurance Analyst for Turbulent: I've been working for both Turbulent and the RSI platform since March 2017.

Kaitlyn Lovatt, Producer: Working at Turbulent and on RSI since January 2017.

Paige Saunders, Full Stack Developer, isn't with us this morning, but he's been a significant part of the team on this.

JP: I've been talking with John, Andy and Will about the new format for stats in the game; what should I be expecting to see on the website in that regard?

Kaitlyn L: You can expect to see an update on every ship, reflecting the game design intentions.

Victor B-M: We reworked the design of the ship specifications pages, as well.

Kaitlyn L: Making it simpler to read and more in line with the Ship Design team intentions.

JP: Is there a sample ship we can look at? I know this is all still Work-In-Progress drafts, but it might give a better idea of what we're talking about.

Kaitlyn L: Sure, let's have a look at the F7C Hornet.

JP: Talk me through what the changes are.

Kaitlyn L: Starting with specifications, we've added ma-

neuvering stat details.

Victor B-M: Compared to the "old stats," we added a lot more information, such as ship components like Power Plants and Shields, and more details on Thrusters (like the type of thruster).

Plus a lot of stats, like SCM speed, Cruise Speed, the pitch, yaw, roll rates of all (flyable) ships, acceleration ...

Kaitlyn L: As Victor says, we have added avionics and systems categories and expanded the propulsion category.

JP: Our draft image just shows 0 for Pitch, Yaw and Roll, but



VICTOR BONNET-MILLÉ & KAITLYN LOVATT



BEHIND THE SCENES

▶ TECHNICAL OVERVIEW

F7C HORNET

MODEL	MEASUREMENT	STRUCTURAL	MANEUVERING
Focus Medium Fighter	Length 22.5m	Cargo Capacity 6	Pitch Max □□ deg/s
Description To the enemy, it is a weapon never to be underestimated. To allies, it's a savior. The F7C Hornet is the same dependable and resilient multi-purpose fighter that has become the face of the UEE Navy. The F7C is the foundation to build on and meet whatever requirements you have in mind.	Breadth 21.5m	SCM Speed 185 m/s	Yaw Max □□ deg/s
	Height 6.5m	Afterburner Speed 555 m/s	Roll Max □□ deg/s
	Size Small	Min Crew 1	X-Axis Acceleration □□ m/s ²
	Mass 73,535kg	Max Crew 0	Y-Axis Acceleration □□ m/s ²
			Z-Axis Acceleration □□ m/s ²

SPECIFICATIONS HOLD VIEWER HARDPOINTS

THE NEW SPECIFICATIONS PANEL INCLUDES ACCELERATION AND OTHER MANEUVERING DETAILS IN THE RIGHT-HAND COLUMN. THIS IMAGE IS WORK IN PROGRESS, WITH THE ACTUAL NUMBERS STILL TO BE FILLED IN.

I'm assuming that's what makes it a draft –those numbers will be filled in before launch?

Victor B-M: Yes, absolutely, they will be filled when the design team is happy with the 3.0 flight model. :)

And then, we just basically run a script and everything is updated.

Kaitlyn L: On Propulsion, we no longer have the TR ratings, as the ship design team no longer uses it to classify thrusters.

Victor B-M: And the components we added reflect the design intentions on ships for 3.0 and beyond, for pricing, performance, etc.

Kaitlyn L: Thrusters now have a category: VTOL, MAIN, RETRO, GIMBAL and FIXED.

JP: *We won't be listing Thruster class anymore; thrust will be expressed through the acceleration figures?*

Victor B-M: Absolutely. Huge ships had huge thrusters in the "old" stats, which don't really give a lot of info regarding performance. Now, the acceleration rate and the max speed are exactly the info the backers were looking for, not thruster sizes. :)

JP: *The acceleration stats are on the Specifications pane. Where do I find MAIN, RETRO and so forth?*

Kaitlyn L: Those are detailed in the "hard points" under Thruster. Each hard point when you select it will give a detailed view of the category, and quantity.

JP: *Ah ... neat! I hadn't been looking for a pop-up.*

Victor B-M: Some big ships (hello, Idris!) have Main thrusters, VTOL thrusters and Retro thrusters, which are reflected in their stats.

JP: *So there's a really big update for thrusters. What else is changing?*

Victor B-M: We are now showing the missile racks that the ships have.

JP: *That's under Hardpoints, I assume?*

Victor B-M: Hardpoints > Weapons. A missile rack can be changed to another one, more fitted for a certain type of missile.

JP: *I've learned my lesson – another pop-up?*

Kaitlyn L: Yes, the pop-up will give you details about Manufacturer and Model. Recently we've separated missile and missile racks – as the rack manufacturer and model have become available it made sense to provide the additional information.



JP: *That's gonna be pretty useful, as well.*

Kaitlyn L: On this current version of the F7C stats, there is also an available slot. It looks a little different than the other hard point icons and this is reflected in the legend.

JP: *I see, the Turret slot is empty on this standard F7C.*

Kaitlyn L: Correct; the empty slot leaves space for upgrades.

JP: *Looking around this panel, I am finding pop-ups for just about every component category.*

Kaitlyn L: Yes, you should, the new design means that every component pop-up has the capability to display manufacturing, model, size and quantity.

JP: *What other design changes have you made? All the new icons are neat.*

Kaitlyn L: Something the backer won't see is the work on the backend DB that went into this update. Victor mentioned a script that allows us to update all of the measurement, structure and maneuvering stats.

Victor B-M: So as the development of the game continues, we will be able to add the models and manufacturers to every component of the ship, from the nose gun to the fuel tanks.

Kaitlyn L: We've worked hard to keep consistency on the data collected, meaning these pages will truly become a tool for comparing ships

Victor B-M: And with the holoviewer

we can show where the components are on the ship model.

JP: *I know your time is short, so we'll wrap this up. Any last words?*

Victor B-M: Thank you, David! And thank you to the ship designers for replying to all my questions when I was entering the stats!

Kaitlyn L: Thanks to John Crewe and his team for working closely with us on this project, and to Victor BM, who has had the tedious job of entering and reviewing the components on each ship.

JP: *And thanks to y'all. I'm looking forward to seeing the final incarnation of the new specs panels.*

TECHNICAL OVERVIEW

F7C HORNET

AVIONICS

- Radar: 5
- Computers: 5

SYSTEMS

- Power Plants: 5
- Coolers: 5
- Shield Generators: 5

PROPULSION

- Fuel Intakes: 5
- Fuel Tanks: 5
- Maneuvering Thrusters: 2

WEAPONS

- Weapons: 3
- Turrets: 1
- Missile Racks: 3
- Missiles: 2
- Utility Items: 2

LEGEND

- Category: [Icon]
- Total Mounts: [Icon]
- Slot taken: [Icon]
- Slot available: [Icon]
- Per mount: [Icon]
- Size: [Icon]

Maneuvering Thrusters

Model: Gimbal Maneuvering Thruster

Quantity: 1 PER MOUNT | 8 TOTAL MOUNTS

THRUSTER

- Main Thrusters: 5
- Maneuvering Thrusters: 2

SPECIFICATIONS **HOLD VIEWER** **HARDPOINTS**

THE NEW HARDPOINTS PANEL WILL INCLUDE POP-UPS PROVIDING DETAILS ABOUT EVERY COMPONENT ON YOUR SHIP. AGAIN, THIS SCREEN IS A WIP DRAFT, NOT THE FINAL VERSION.



BEHIND THE SCENES

BRANAUGH SYSTEM



Most people have been to a place where something just felt 'off.' You can't put your finger on it, but there's something unsettling. It could be a darkly lit street in Prime or the winding canyons of Reis, but either way, it's the type of place where your flight instincts kick in and tell you to get out. For many, that sensation encapsulates the Branaugh system. While the system has been the subject of many political discussions over the past year, that disturbing, dangerous quality has haunted the system since its discovery in 2877 ... and for one explorer, even before that.

BORN OF BLOOD

Desmond Fell always dreamed of charting the stars. Even as a child, growing up near the shipping pads on Lo in Corel system, he not only daydreamed about searching the cosmos to unlock its secrets, but also about getting to experience the varied cultures within the UEE. His ultimate goal, however, was to discover a new solar system.

From geology coursework to weekend survival excursions to Castor, Fell dedicated every waking moment to absorbing everything that could potentially help him in his

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chosen vocation. He graduated from ULON with a shared degree in political discourse and geotechnology, and immediately began working as a surveyor for a mining company, while saving money for his own ship.

Desmond toiled for years, never losing sight of his ultimate goal until, in 2872, he stepped aboard the scrappy Aurora that would be his first ship. This newly minted explorer now had a ship, a scanning array, and a dream. The final piece of the puzzle fell into place in 2877. After heading out to the Chronos system to finally have a look at the government's audacious Synthworld project, he decided to test out some new scanning mods he'd recently acquired.

The first ping didn't register with him. Convinced the anomaly was just bound to the newly installed parts, he ran the sweep again.

It pinged again.

"Suddenly, my stomach sank to my ankles," Fell recounted in an interview on Showdown from 2879. "I started to get that rush of excitement, but, for some reason, I didn't want to move. I was seized with this fear that I was dreaming and moving would wake me up."

But he did. Fell began to isolate the spacial anomaly to hone in on the exact position and angle needed to access the jump point.

"I won't even comment on how terrifying it was, navigating uncharted interspace," Fell continued from that same interview. "But when I came out the other side, and my scanners said it was a fresh, untouched system ... that feeling'll stay with me the rest of my life."

After quickly returning to Chronos to stock up on supplies and quantum fuel, he set about charting his discovery. Sailing through the empty system, Fell noted three planets orbiting a K-type main sequence star. Positioned on the edge of the system's green zone, only the second

planet seemed potentially habitable. Fell quantumed towards the planet while prepping his scanners for a full planetary assessment.

Pushing through the turbulent atmosphere, he navigated along the rocky terrain. The planet seemed devoid of life, unsurprising considering the storms and heavy winds that continually hammered his small craft.

"I'll admit, I was a little conflicted when I was surveying the planet. Part of me didn't want to leave. I mean, this would probably be the only time I'd get to experience a planet on my own, so there was definitely excitement, but there was another part that wanted to get the hell out of there. Everything about the place, the weather, the landscape, it just seemed violent."

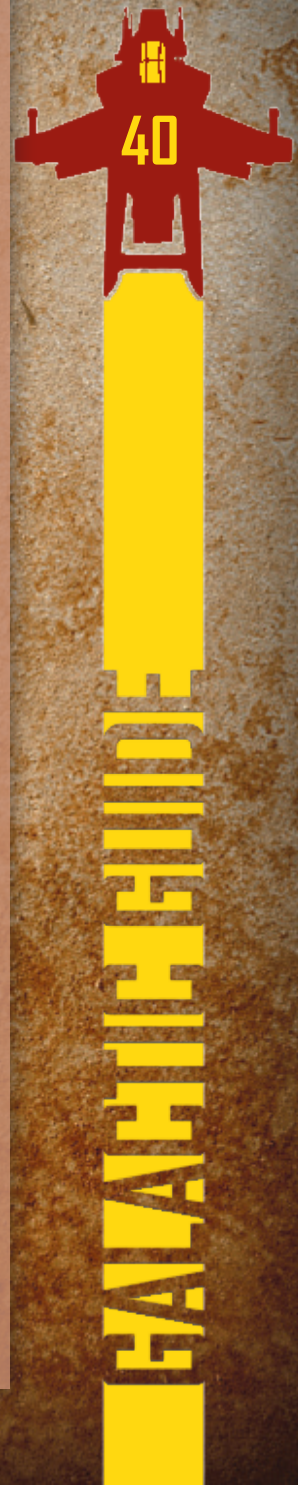
As he was finishing his sweep, Fell found something that would reinforce the latter instinct.

Another ship. Sitting at the top of a massive overlook, it was almost indistinguishable against the swirling particulates in the air. Fell set down nearby and investigated. Although the ship was half buried, it didn't appear to have crashed; it looked like it had exploded. Closer investigation revealed scorch marks that had the unmistakable look of laser fire. Fell searched the surrounding area and found a small cave.

Inside, there was a corpse.

AN INAUSPICIOUS BEGINNING

In a single hour, Desmond Fell submitted a jump point discovery form to the Department of Transportation and Navigation and a report to the Advocacy. While Imperial surveyors were assessing the system, a joint task force of Naval Investigative Division and Advocacy agents from



to spend their days drinking and fighting. They had been conquered by the UEE, twice. That fact was grudgingly accepted, but it didn't mean they had to like it.

After the UEE officially abandoned Branaugh system, Tevarin began to drift into the system over the course of years. By all accounts, this didn't seem to be any kind of concerted or organized effort. Branaugh just seemed to represent something that these Tevarin were searching for: an unused, ignored corner of the universe where they could simply be left alone. Despite the completely hostile environment and unbreathable atmosphere, Tevarin and other expatriates have continued to drift to Branaugh II and the nearby asteroid field and make them their home.

BRANAUGH I

This small rocky planet is mostly known for its rapid orbit around the system's star.

BRANAUGH II

To all who see it, the most immediate striking aspect of Branaugh II is the stunning set of rings around the planet; to most, that's where the beauty ends. The surface is an unforgiving landscape of jagged rocks, high winds and churning storm systems. Planetary surveyors were unconvinced that the terraforming needed to make the atmosphere breathable would also be able to stabilize the tumultuous weather patterns.

When Tevarin began to migrate to the planet, they initially took over the outposts and structures originally used by the UEE Pathfinders to study the planet and subsequently abandoned. As more settlers arrived, most claimed their own isolated corner of the planet as their own, but some built around this initial cluster of outposts to create the closest thing Branaugh II has to a town. Named Ne'er (a mispronunciation of the Cathcart slang term 'now'er' for 'nowhere'), this sprawling frontier town has become the main trading hub for the planet, exchanging goods and

services with those travelling through, as well as providing a place for locals to pick up supplies.

BRANAUGH BELT ALPHA

This staggered belt of asteroids provides the bulk of the system's income. Residents and smaller mining operations set up digs on the various asteroids to mine and trade out-of-system. Again, thanks to the restricted nature of the jump point, none of the larger mining companies can get their larger machines in here, keeping it open for independent operators. Pilots should be careful though; several of the more reclusive Tevarin settlers who find Branaugh II 'too populated' live in the belt. Most locals will even avoid travelling through this belt if necessary, as a handful of ships reportedly vanish here every year.

BRANAUGH III

Nicknamed "Tempest" for its continual planetwide storms, this sprawling gas giant offers the other source of income for the system. Settlers on Branaugh II have set up harvesting facilities to refine the planet's gases.

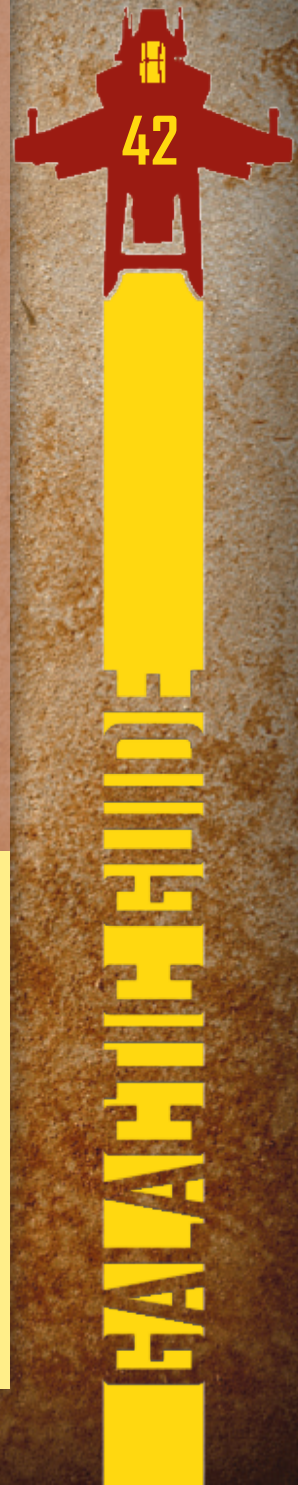
HEARD IN THE WIND

"After all this time, I can't believe it. All those people who told me I should just stop. That I'm wasting my time ... It's weird though. Standing where I am right now, I don't want to rub their faces in this. Tell them 'I told you so.' They just didn't know what I was chasing. This feeling right here, right now, this made all the lows worth it, but for me. Not them. I'm happy to be me."

- Last journal entry of Theresa Branaugh

"It's wretched. I couldn't think of anyone who would possibly want to live there."

- Excerpt from Dr. Ellis Vonat's summary of findings to Senate Subcommittee on Expansion



A Gift for Baba



Part 3

Daymar, by far the best with knots, had been put in charge of tying the unconscious smuggler to one of the rear utility seats on the bridge. It had taken all three of them working together to move the rather large and limp Rose into position. Yela had sympathetically cringed every time they had bumped the woman's head or limbs as they dragged her along, but there was no time to be overly careful and as Cellin pointed out, the woman had held them hostage aboard her ship, so a few bumps and bruises seemed only fair.

"I think this mutiny is going really well," said Daymar as he finished securing Rose's hands.

"Now all we have to do is comm someone to rescue us," said Yela, striding towards the control terminal.

"You're supposed to ask my permission," said Cellin. "It was my mutiny, so I'm the captain now."

Cellin had been quite brave and daring during their escape, though Yela. Maybe she deserved to be called captain for a little bit. "Permission to use the comms, Captain?"

"Permission granted."

"Actually, I don't think it is," said Yela. She tapped repeatedly on the terminal, but it remained dark. "The comms, flight controls. None of the external control terminals are responding."

Daymar and Cellin rushed to the console and tried to activate it themselves, but nothing worked.

"Did leaking the air break it?" asked Daymar.

"I don't think so," said Yela. "Otherwise Cellin wouldn't have been able to use the security controls to free us from the cargo hold. Plus, you can see the processing lights on the side activate when I press on the surface. No, I think the main screens must be locked."

"What a dirty trick," said Cellin, pounding her small fist angrily against the terminal.

"Careful! You might break —" Yela paused mid-sentence as she noticed a small hatch shake loose on the side of the main terminal. "What's that?"

Cellin lifted the cover on the hatch. Inside was a number pad.

"That's just like on the crates down in the cargo bay," said Daymar. "You think the computer leads to a secret treasure too?" He looked down to the furry sniblet perched on the shoulder of his pressure suit. "Hear that, Rodin? Maybe there's another sculpture for you to eat!"

"Try using code 2380 again," instructed Yela.

Cellin carefully entered the digits, but all that happened was that the little light on the pad flashed red.

"I don't understand. Why didn't it work this time?"

"Because a good smuggler is a paranoid smuggler," a deep, raspy voice informed them.

The children turned to see that Rose had awoken. The woman glared at the children with a pained expression on her face. "I'll give you the atmosphere thing. It was a good trick. Gave me one beast of a headache." The large woman pulled on her restraints, testing their strength. Thankfully, Daymar's knots held. "But fun times are over. There's no way you're gonna figure out how to unlock the main ship controls, and even if you did, it wouldn't do you any good. Do you even know where we are? Look out there," she said gesturing with her head to the cockpit-glass.

Outside was darkness and a spattering of twinkling stars, but little else.

"You know why I chose this spot? Because it's thousands of clicks from the closest anything in Croshaw. No one's going to find you out here. Trust me. My specialty is flying under the radar. Plus, since you all decided it would be such a good idea to completely vent the atmosphere, I'd say we only have a few more hours of breathing left. Think you can find help by then?"



CHRONICLES

Yela crossed over to the life support monitor. Rose was telling the truth; their oxygen supply was severely depleted. So much for her brilliant plan to free her siblings.

“See? Your best bet is to untie me right now. You do that and I promise I’ll take you back to Sol. How about it? We have an accord?”

“Maybe we should,” said Daymar. “I don’t want to run out of oxygen.”

“Ah, the sniblet,” said Rose, noticing the small creature on Daymar’s shoulder. “I was wondering how you got out of the hold. Smart. I definitely underestimated you three. Now untie me before I lose my patience.”

“You’re underestimating us again if you think we’re going to untie you just like that,” said Yela, stepping protectively in front of Daymar. “Tell us the code first, then we can discuss the terms of your release.”

“See. That’s what I’m talking about. Smart,” said Rose. “But I’m smart, too. I know my negotiation history. The Helberg Treaty. The Ealing-Lester Moot. All the same. I tell you the code and then you have no reason to let me go. So, why would I do that?”

Cellin stepped over to the alcove in the back of the bridge and pulled out the formidable rifle Rose kept stored there. Though it was almost as long as she was tall, she managed to hoist the end of the barrel up so it was aimed squarely at their captive. “Because I’m the captain now and you have to do what I say.”

Yela almost couldn’t believe what she was seeing. Cellin was always quick to take action, but this? Daymar summed up Yela’s feelings succinctly when he said, “Woah.”

“Tell us the code.”

Rose’s response was not what Cellin was expecting. The smuggler grinned down at the little girl and the massive gun. “Nice try, little girl, but that rifle’s nothing but a family an-

tique. My great-grandfather brought it home from the Unification Wars. Hasn’t worked in centuries. I just keep it around to scare people like you. Don’t believe me, give it a squeeze.”

Cellin had thought to just scare the smuggler with the gun, but now the woman was taunting her. Rose had kidnapped them, threatened their lives, and even though she was tied to a chair, was still acting like they were just some kids she could boss around. Cellin hated when adults thought they could do whatever they wanted just because they were bigger and older. If she had to follow the rules and be nice, why didn’t they?

Whether the gun was broken or not broken – Cellin didn’t really care. One way or another she was going to make Rose listen.

“Fine! I will!” Cellin aimed the gun at Rose’s left boot and reached for the trigger. But before she could attempt to fire, Yela put a hand on her sister’s shoulder.

“Cellin, wait.”

Cellin didn’t want to wait. Her brother and sister’s lives depended on getting that code. She had to protect her family. “We have to get the code. It’s the only way.”

For what seemed like a very long moment, Yela thought about stepping back and letting Cellin do things her way. With the atmosphere running out, the stakes were dire. Shouldn’t they do anything in their power to get the code? But then she thought about what would happen afterwards. What would her brave and bold sister be like then? She thought about the time they were visiting Baba and had found a credit-chit on the floor of the market.

After they found the money, they had wanted to keep it at first, but Baba asked them, “Do you know who TipTop Tupper is?” The children hadn’t, so Baba explained that TipTop Tupper was the best, most kind, most brave, most clever Human that ever lived or ever would. “Whenever I’m not sure what to do, I try to guess how TipTop would do



CHRONICLES

it. Figure if it's good enough for the best Human, it's good enough for me."

"We can get out of this, and we can do it the right way," said Yela. She turned to her brother. "Daymar, what do you think TipTop would do if they were trapped in a ship losing air?"

Daymar thought for a second before answering, "Well, I'm not sure. TipTop probably wouldn't hurt someone. Definitely not someone tied to a chair."

"What do you think, Cellin? What would TipTop do?"

Cellin hesitated. It had been years since they first learned about TipTop and returned that nice woman's lost money. For the most part, they had outgrown the game, but the hours they spent guessing and arguing about how the best Human in the universe would tackle life's problems came back to her. With a sigh, Cellin lowered the gun. "TipTop would figure out the code using smarts."

"That's what I think, too. Want to help me?"

"We're not untying her, though."

"Agreed. Not even TipTop would trust her."

"Hey!" protested Rose, but the children ignored her as they left the bridge and headed into the adjoining crew quarters. "Who the heck is TipTop?"

* * *

"We're looking for four numbers that would be important to her. Something like her birthday or the last four digits in her registration," instructed Yela as she and her two siblings began searching through Rose's quarters. "See if you can find anything that stands out."

"How do we do that in this mess?" asked Daymar, lifting up a discarded bag and peering at the small piles of coins scattered underneath. "There's numbers everywhere." Daymar picked up a hexagonal coin with a hollow center, and inspected it. Seeing that the only number on it

was a five, he fed it to Rodin. The small creature hungrily munched on the metal; clearly it was starting to get its appetite back.

"You're wasting your time," shouted Rose from the bridge, "and oxygen. Four-digit codes have thousands of possible combinations. You'll never guess the right one."

"Nine thousand nine hundred and ninety-nine!" returned Daymar. "We already tried one."

"And anyway, we don't need to guess. We're going to figure it out."

"Look for stuff that's out in the open," suggested Cellin. "I know at home, the things I care about usually wind up on top of all the other garbage. Like this." She held up a small glass sphere that had a holo-image frozen inside. "It looks like Rose standing in a hole."

Cellin handed it to Yela so she could take a look. "She's at a dig site. The label says 'Graduate Thesis, Kolkata.' No number, but if she graduated from school, that year could be the code. See if there's a diploma or something around."

"You're way off track!" shouted Rose from the other room. "It's just four random digits. Impossible to guess. Very secure."

"Not likely," said Yela as she sorted through the contents on the desk. "Our father taught a series of classes on xeno-cryptology and I know that most passwords are inspired by personal significance. Truly random passwords are almost non-existent. In fact, almost 73% of four digit codes are years. Your other code, 2380? Probably a meaningful year."

"Wrong!"

"Oh yeah? Then why is there a 2380 on that book?" asked Daymar, pointing to the shelf.

Yela grabbed the volume in question. *October 20th, 2380: A Step Too Far*. "It's about the Stanley Mutiny. 2380 was the year that the Unification War began."



“You said she had a lot of books about that, right?”

“Yeah, more than any other. Seems like it’s one of her favorite periods in history.”

“Coincidence!” yelled Rose.

“She said that the rifle was from the Unification War, too,” said Cellin.

“You’re right! Her great-something brought the gun home when the war was over.”

All three children’s eyes went wide with realization at the same time. “When the war was over!”

Yela quickly flipped open the book and scanned for the date she was looking for.

Rushing back to the console, past a protesting Rose, Yela keyed 2-3-8-4 into the number pad, the year the Unification War ended.

Almost as if by magic, the main terminal sprang back to life as readouts and ship status alerts flooded the screen.

“It worked!”

“We did it!”

The three siblings embraced, celebrating the moment and feeling a sense of relief for the first time in what seemed like a very long time. Yela laughed as her cheek accidentally brushed against Rodin’s furry body, and Cellin grinned widely at the sight of Rose’s displeasure.

“But we’re not in the clear yet. Let’s send out that distress comm and get rescued.”

Yela brought up the comm screen and began to scan for open channels in the area. Almost immediately, a ship popped up on the notifications. “I’ve got a contact! There’s a ship flying right towards our coordinates.”

“Of course it is,” said Rose. “I’m the one who told them to meet us here.”

* * *

Yela, Daymar and Cellin stared through the cockpit-glass at the small speck of light in the distance that marked the ship rapidly approaching their location. Yela’s head swam. To go from being so happy one moment, to being so full of dread, was a lot for her heart to take.

“Hope you three are ready to spend the rest of your lives aboard a Banu ship shoveling reactor fuel or whatever it is they do with their Human servants,” crowed Rose with obvious delight.

“She’s lying again,” said Cellin. “That could be any ship.”

Daymar checked the scan info for the approaching vessel. “It’s a Triptaker. That’s a Banu model.”

“You should have heard how excited they were when I told them I had three little kiddies for sale. Who knows, maybe I’ll sell them that gift you were so worked up about since you won’t be seeing your ‘Baba’ ever again. ‘Course, it’s so nice, maybe I’ll go ahead and keep it myself.”

Suddenly, the comms lit up. A hail was coming in. It was the Banu ship.

“Answer it,” encouraged Rose. “I want to say hi to my old friends.”

The comms chimed again. By now, the speck in the distance had begun to take on the rough form of a ship. They were getting closer.

“We still have the rifle,” said Cellin. “We could fight if they try to board.”

“But Rose said the gun didn’t work,” pointed out Daymar.

“She probably just wanted us to think that, and even if it is broken, the Banu don’t know that.”

“What if I fly us out of here?” suggested Daymar. “I’ve always wanted to be a pilot and I’m pretty sure I could learn how to



do jump points. Maybe there's a manual Yela can read."

The terminal rang once more as the Banu continued to hail their ship.

"I think we should answer the comm," said Yela with a surprising confidence.

"What?"

"Why?"

"Because it won't matter to them that Rose is tied up. All they'll want to know is who is in charge now, and that's us." Yela paused before admitting, "Plus, I've always really, really wanted to meet a Banu."

"It would be pretty fun to meet a real alien," agreed Daymar.

"And I guess if they take us prisoner, we could always do another mutiny," mullered Cellin.

"We are really good at them."

"Okay, let's do it."

"Yeah, I trust you."

With a deep breath, Yela pressed the controls on the terminal and answered the hail.

On the screen, a Banu appeared. Leaning in too close to the camera, the alien's elongated and deeply ridged face filled the image. Dark eyes twinkling, mouth spread into a wide grimace, the Banu said, "Hello!"

Before Yela could respond, Rose strained forward against her bindings and shouted to get the Banu's attention, "Draffa, these little monsters kidnapped me! You have to help. I'll give you anything you want!"

Draffa noticed the smuggler in the background, "Oh, hello, Rose! Much sorry for your kidnap. Much luck to you." The Banu turned their attention back to the children. "You are little monsters? Owners of ship now?"

"Yes," said Yela.

"Excellent! I will tell Partu to have three *doniyo* ready for our negotiations."

"Wait! Draffa, you can't be serious?" demanded Rose.

"Oh, yes, servant Rose. Very serious. Every negotiation needs *doniyo*."

* * *

Helmets locked in place, and Rodin safely stored inside Daymar's suit, the three children waited for the docking tube to pressurize. With a hiss, the hatch slipped open and Yela crawled forward onto the ladder inside. Soon, she was less crawling and more pulling herself along as they left the gravity of the hauling ship behind. Daymar, who had entered the tube second, gently bumped into her, after using a bit too much force to propel himself. "Sorry!"

Past the halfway mark, the pulling turned to climbing as they aligned with the ship above. A few seconds later, Yela knocked on the hatch overhead. The bottom of the tube sealed, the pressure changed again, and the top dilated open. A grinning Banu face leaned over the hole and reaching down with a longer fingered hand, assisted Yela in pulling herself up and out into the grand main chamber of the Triptaker. Her heart raced as she touched an alien for the first time. Even through a pressure suit, it was exciting.

Yela immediately noticed the intricate, detailed work of Banu craftsmanship glowing in the room's warm lighting. Different materials and patterns combined in a patchwork along the curving, sweeping walls which met in a high pointed arch.

"Yela, you're in the way," said Daymar, waiting for his turn to climb out of the hatch.

Nearby, Draffa, so tall that the crest on their head nearly touched the ceiling, stood proudly in intricately woven robes waiting to greet the children. "Welcome to my ship. I am Es-sosouli Draffa. That is apprentice Partu," said Draffa, pointing to the other Banu who had helped them. "It is an honor of fortune and luck to have you. May we all be rich today."



CHRONICLES

Taking off her helmet and stepping forward, Yela swept outward from her chest with an open hand and carefully pronounced, "Thank you. I am Yela. This is Daymar. And Cellin. *Ged-anu mas-sama.*"

Draffa repeated the motion and responded, "*Mas-sama.* You speak Banu very well, yes?"

"Only the little bit my father taught me," said Yela.

"A little bit is always good place to start. Partu only speaks a little Human, but that is why apprentice. Partu will learn."

Partu murmured something to Draffa in Banu. It was too fast for Yela to pick out any of the words.

"Oh, yes. *Sloma* is nearly ready. Follow, we will drink and talk." Turning from the docking port, the two Banu led the way towards the narrow end of the chamber, where a lavish table surrounded by thick cushions waited.

"What's *sloma*?" whispered Daymar once the Banu were a few steps ahead.

"It's a tea that Banu drink when making trades," answered Yela.

"I don't have to drink it, do I?"

Before Yela could respond, Draffa paused and brought their attention to a display of dozens of objects of varying shapes and sizes. "Behold. These are the treasures of my souli. Each a rare and useful item. We have made much wealth and are very good at trading. It is lucky fortunate for you to be trading with a souli like ours."

Yela leaned in to take a closer look. Some sparkled and some bristled with spikes, but what most of the items were was beyond her knowledge. Daymar pointed to a small machine on one of the lower shelves, "Woah. That's a GX-MicroComp. They stopped making those years ago."

"Yes. That is the first trade Partu made. Very good apprentice. Bad at talking Human, but Partu is excellent at

appraising. Won't be apprentice long."

Cellin ignored the display and looked around the rest of the room. "Where do you keep the slaves?" she asked, still thinking about what Rose had said.

"Oh, little one, we do not have any."

"Is that why you were so eager to buy us?"

"Cellin!" Yela scolded, but Draffa just shrugged.

"The truth of it is slaves are not our market, but Smuggler Rose had talked of having Humans to trade, and there is a slave souli in possession of a shield generator that I would very much like have. I considered making a deal to trade with them, but no terms had been finalized."

"You good trade," said Partu with a big smile.

"What?" demanded Cellin.

"Partu is appraising you. Thinks that we would be smart to have traded for you."

"Thank you," said Yela.

Cellin roughly yanked her older sister aside, "Thank you?! They're talking about owning us!"

"Don't worry. You heard Draffa. They're not slave traders. Partu was just complimenting us by saying that we're valuable people."

Before Cellin could utter the snarky response that came to mind, Daymar excitedly asked, "What is that?"

The sisters looked over to see that their brother was pointing at a small transparent cage with what looked like a purple crab with tentacles instead of claws perched inside a silvery nest.

"Ah. That is *nalagerd*. Very rare. Very useful. See its web. Stronger than diamonds."

Daymar took Rodin out and held the sniblet up so it could see. "Look Rodin, a new friend for you."



Partu grew very excited upon seeing the creature in Daymar's hand. Ridge-nostrils flared, the Banu leaned in to look more closely.

"It's a sniblet. They are also very rare and useful," said Daymar, gently stroking Rodin's fur. "This one's called Rodin. He saved our lives."

Partu gave a wide grin and said, "Very good."

* * *

Seated on a thick comfortable cushion, Yela inspected the small cup that Draffa had given her. Intricately carved and decorated with inlaid shell pieces, she had been excited to learn that it was called a doniyo.

Cellin sat next to her kicking her legs against the cushion, the formalities and pleasantries of negotiating with the Banu burning quickly through her short supply of patience. Though she did appreciate how nice it was to finally be out of that pressure suit.

Partu placed a burbling, meter-tall, shiny metal urn in front of them. Steam slowly rose from the spigots that adorned each side, releasing a woody fragrance into the air.

"Ah, the *slomaddon*. Wonderful. In honor of your first time on my Triptaker, I have something special to brew." Draffa pulled out a little embroidered bag from their waist binding and withdrew a bundle of dark petals bound into a little sachet. "This is the flower of a black rose. I have tied it into a little bundle. Appropriate, yes? I think you will like very much."

Partu twisted open the *slomaddon*'s hinged top and Draffa carefully lowered in the leaves.

"Do you have anything you would like to brew?"

Yela couldn't believe she hadn't planned ahead. She knew that Banu liked to drink tea and that it was customary for guests to bring something, but with all the excitement it had slipped her mind.

"Here," said Daymar holding out a can of bitter melon drink that he had saved just in case. "I wasn't going to drink it anyway."

It struck Yela in that moment just how much she depended on her siblings. *I don't think I could have gotten through any of this without them . . . Then again, I probably wouldn't have gotten **into** this much trouble in the first place, but still . . .*

"This bitter melon drink represents that difficult path we took to get here, and our happiness at meeting you." Standing on her toes, she poured the contents of the drink into the *slomaddon*.

"Good," said Draffa as Partu closed the lid. "Now, raise your doniyo."

Following the Banu's lead, Yela, Daymar and Cellin held their cups beneath the spigots. Partu pushed down on the top, and piping hot tea poured out, filling all their drinking vessels at once.

"*Grasyo asan-sloma thunad*," Draffa toasted. "Drink deep of me as I drink of you," and then tilted the cup back, tasting the mixture.

"*Graysa*," replied Yela, and then did the same. She nearly spit the *sloma* out, but managed to swallow the mouthful. "Zesty," she managed to sputter.

"This is an interesting brew," reflected Draffa. "I do not like, but I am very glad to know the taste."

"It kinda tastes like that medicine Baba gave us when we all had shrivens," said Cellin, taking another sip.

Daymar scrunched his nose unhappily as the smell wafted towards him. "It smells like our cleaning bucket."

Yela whispered to him, "You don't have to drink all of it, but you have to try it. Do you want to tell Baba that you were aboard an actual, real live Banu ship, but didn't try their alien drink?"



Daymar stared down at the doniyo, before closing his eyes and taking a tentative sip. "Huh. It's sorta like that dang-shen soup Dad gets us during the winter." Drinking more he added, "But sort of sweeter. I like it!"

"We have shared sloma, now share with me what it is you want," said Draffa.

"We need a ride back to Sol," responded Cellin.

"You have a ship. Why do you not take this?"

"We don't know how to fly it," explained Daymar.

"Ah, I see. Then Rose, your servant, can take you, yes?"

"She couldn't be trusted if we untied her," said Yela.

"Ah, yes. Yes. That is a problem," considered Draffa, stroking a long finger along their ridge. "You really want to go to Sol, you do not have any way of going there. You know, I could get to Sol with my Triptaker. Very good ship."

"We were hoping you would take us."

"This is good. Trade us the sniblet and we trade you transport to Sol."

"You can't have Rodin!" protested Daymar, grabbing the sniblet from his shoulder perch and holding him tight.

"But it is the sniblet that we have come all this way for. Very rare. Very useful."

"Daymar, I'm sure they would take very good care of Rodin."

"Oh, yes. I take very excellent care. Look at ship. Look at clothing. Look at Partu. This is a good souli."

"No. Rodin isn't something you can just trade."

"But we could get back to Baba," said Yela.

"He's part of our family now. If we go to back, he's coming with."

"There's got to be something else we can trade," said Cellin.

"Yes. Yes. It is bad you do not want to trade sniblet. It was a fair trade. See, you want us to fly to Sol. Trip to Sol is very risky for my souli. See, not everything on the Triptaker allowed in Sol by Humans. We would have to be very careful. It is a very expensive thing you want."

"You could have Rose's ship," suggested Yela.

"Yes. If I was a ship trader, that would be good trade. But I am not a ship trader. I only have one pilot. No one to fly that ship. Plus, much work to sell the ship. It is old ship too. Parts not worth much. No, ship is bad trade for my souli."

"What about the other treasures?" asked Daymar.

"Treasure?" repeated Partu with a grin.

* * *

The very tall Banu could barely fit inside the cramped secret smuggling room beneath the hauling ship's cargo bay. Partu held the pair of ancient goggles and inspected them closely, holding them in front of one eye and then the other. "No work."

"How is it that there's a room full of rare items and you don't want a single one?" asked Cellin.

"Yes, maybe rare items. But they are not useful. What good to me are goggles that don't work? What good is painting of man with one ear? This map could be useful, but Partu says the city doesn't exist anymore. Why would my souli want any of these things?"

"There's got to be something on this ship we can trade," said Yela.

Together they walked through the ship as Partu carefully appraised and evaluated. The cargo in the hold was worth enough, but the Triptaker did not have enough room to carry it. The engine, the jump drive, the gravity generator, all could be removed and sold, but Draffa's souli did not have a mechanic who could remove the parts carefully. Finally, they ended up back in Rose's quarters, but none



CHRONICLES

of the historical artifacts held appeal for the Banu. “What good are books that talk about dead Humans?”

“Because if you don’t study history,” said Rose as she stepped into the room holding the rifle, “you are doomed to repeat it. Now all of you put your hands up.”

“You said that gun didn’t work,” Cellin pointed out.

Rose revved the charging plate and the gun let out a high-pitched whine as the tip began to glow red. “I lied. Last warning. Get your hands up.”

“How did you untie my knots?” asked Daymar as he raised his arms.

“I didn’t. My ship just happens to be old and rusty. Wasn’t too long before enough pushing and pulling broke the chair.”

“Bad trade,” nodded Partu.

“You’re not kidding bad trade. Still can’t believe you double-crossed me like that, Draffa. Guess there’s no such thing as thief’s honor with you cragheads.”

“You are wrong. My souli has most honor. Every trade we have done has been fair and I have always kept my word. It is you who disgrace yourself. Do you not see that we are in the middle of negotiations? If you wish to free yourself, do so on your own time.”

Rose shook her head in disbelief. “Oh, that is it. I want all of you off my ship right now. First things first, though.” She swung the gun at Daymar. “You. Give me back my sniblet.”

Daymar looked down at his furry friend before looking up to meet Rose’s gaze. “You want him. Here, you can have him.” Daymar held the sniblet out.

Rose reached down to grab him, but before she could, Daymar stepped forward and put Rodin onto the barrel of the rifle. Before Rose even had a chance to realize what had happened, the gun sparked and released a cloud of dark smoke. The sniblet had chewed through the metal!

The smuggler squeezed the trigger, but nothing happened.

“Guess you weren’t lying about the gun not working after all,” happily taunted Cellin.

“Why you little —” Rose threatened as she menacingly stepped forward, but before she could do anything, Partu interposed and drove the palm of their hand up into her jaw. Just like that, Rose collapsed into a pile on the floor, unconscious for the second time that day.

Daymar dropped to all fours and quickly found where the sniblet was still happily munching away on the rifle. “You saved us again, Rodin!”

“That was quick thinking, Daymar,” said Yela. “You were right that we could never trade Rodin away.”

Cellin looked up at Partu in awe, “Can you teach me to fight like that?”

The Banu grinned down at her. “Trade? Help teach Partu Human?” asked Partu.

“Deal!” replied Cellin.

“I am happy that one trade has been made. I think I see another. If you give us the smuggler Rose, we shall take you to Sol. She knows much about finding rare items and would be a good addition to my souli.”

“You mean make her a slave?” asked Yela.

“Yes, until she can earn her freedom. She is good at treasures so it will not take her long.”

“That’d be awesome,” said Cellin, “but we can’t. Humans aren’t for trading. Even ones like Rose. It’s not the TipTop way.”

“Then I am afraid the negotiations are almost over,” said Draffa sadly. “It is bad that the weapon was destroyed. That would have been worth a trip to Sol. Rare and useful. Except against sniblets apparently. But there does not seem to be anything left on your ship to trade.”



“There is one thing,” said Yela. Quietly she strode over to her sister. “But I will only trade it if you and Daymar say it’s okay, Cellin.”

Yela had been bracing herself for an argument, but to her surprise, Cellin simply opened up her backpack, removed the gift for Baba, and handed it over.

“Daymar?”

“I think Baba would want us to come home more than she’d want a gift, no matter how perfect it is. And I’m pretty ready to go home.”

Yela held the gift out to Partu, who leaned in to inspect it. “Oh, this very good trade.”

“May I see it?” asked Draffa, taking the gift from Yela. “Oh, yes. Very rare. Very useful. We take this, we take you to Sol. Fair trade?”

* * *

The ride back to Sol felt much quicker than the jump to Croshaw. For one thing, now that they had jumped once before, they didn’t feel as sick this time when they went through. Though what really helped is that there was plenty to keep them busy aboard the Triptaker.

Cellin stuck to her deal and gave Partu Human lessons, teaching the different words for the body parts that the Banu was teaching her to hit.

Yela spent the entire trip back with Draffa, going over each and every item in the Banu’s collection. She learned quickly that the Essosouli couldn’t answer who made something or when it was made, but that Draffa could describe in minute detail how each of the rare and useful items worked. Yela could not wait to tell her dad everything she learned.

Daymar tried his best to get Rodin and the nalagerd to be friends, but in the end, since the two kept hissing and spitting at each other, decided his efforts would be better spent trying different sloma brews.

Before they knew it, they were back at Transfer Station Banaru where their adventure had started. It was strange for Yela to see the station again. She remembered when their transport had approached Banaru and it had seemed so impressive, but now, as the Triptaker pulled into the approach vector, it seemed so different. Yela thought about how in the third book of *House of Ashen Grey*, Lord Falton returns home after the Battle of Hammerforge, surprised to find that life has continued on just the same while he was away.

When they requested docking permission, they got stopped and scanned by the local authorities. Draffa was worried that some of their more illicit items would be discovered, but as soon as Yela mentioned her name, they were granted priority clearance.

It turned out that Baba had everyone on high alert looking for her missing grandchildren.

* * *

They didn’t take two steps into the station before they were scooped up in a big hug. Baba squeezed each one of them so hard that they couldn’t breathe, and then she did it again. Tears ran down her weathered cheeks and soon all four of them were crying together, so happy to be reunited.

But after wiping away their tears with the soft sleeve of her thick sweater, the smile melted from her face. She stood up to her full height, which though it was only a little bit taller than Yela, seem a lot taller thanks to the stern expression etched into her face. “You all had me worried something pretty terrible. The security cameras clocked you going onto that ship, but it turned out the registration had been faked. No one had any idea where you could have wound up. And everyone seemed to think that space is too big to go running all over it looking for three lost young ones. I was about to buy my own ship and start hunting for you myself when you turned back up with those Banu.”



CHRONICLES

"We're sorry," said the siblings.

"Save the sorries 'till after you tell me what the 'verse happened to you three."

And so they did. They told her about the mean man on the shuttle, and losing the chocolates, and sneaking off to find a new gift, and almost solving the lockbox, and about getting lost, and then getting kidnapped, and then finding the treasure and the sniblet, and then launching the mutiny, and cracking the computer code, and then negotiating with the Banu, and then Rose escaping, and then how they eventually traded the gift, and finally flying back home to Sol. All in all, it took them almost two hours and a very large ice cream sundae to get through the full tale.

Through all of it, Baba just sat there, watching each one of the children take over part of the story from their perspective, a slight smile on her face, until they were done.

"Baba?"

"I won't lie and say that I'm not mad at you for sneaking off in the first place, but you three acquitted yourself quite well when things got tough. You were clever, brave, loyal, and I couldn't be more proud of you."

"We're sorry we had to trade away your gift," Yela replied.

"But don't you want the other gift we got you, Baba?" Daymar reached under his shirt and pulled out Rodin from

where he had been staying warm.

"You're giving me your sniblet?"

"Well, he's part of the family now, and you're always saying about how you wished family visited more. Plus, I figure he could help you at work by eating scrap metal and stuff."

"That's a great idea, Daymar!" said Yela. "Rodin would be very happy living with Baba."

Baba squeezed each one of them so hard that they couldn't breathe, and then she did it again.



"And we can visit Rodin when we come see Baba," said Cellin.

Daymar reached out and the little furry creature eagerly crawled from his hand to Baba's.

"I don't know what to say, he's perfect. Thank you!" Baba stroked Rodin's back. "But you know, you didn't need to get me anything. Getting you back safe and hearing all about your adventure is just about the best gift I could've asked for."

She hugged her three clever, brave and loyal grandchildren.

"Now, what say you three to us getting out of here and heading home to Europa?"

"Actually, there's one more thing I have to do before we can go," replied Yela, her mind once more thinking about the Banu lockbox waiting at Vasko's stall and all the new tips Draffa taught her.

The End



CHRONICLES