

JUMP POINT

ISSUE: 08 09

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FROM THE COCKPIT

GREETINGS, CITIZENS!

Happy September! I hope you're all doing well and surviving 2020 as best you can. I'm pleased to report we have an exciting issue of **Jump Point** for you this month, with a brand-new interview, a big ship feature, and more lore than you can shake a stick at.

Our interview this time is with the Vehicle Experience Team. They're a group of developers deep at work on *Star Citizen* with a very important job: continuing to improve the existing gameplay experience. As the game continues to expand and we add new systems, the developers recognize the importance of going back to make sure what has already been done continues to work as intended and make improvements where necessary. You've already experienced their work in Alpha 3.10, which improved turret gameplay and several elements of flight itself. I was lucky to get to talk to them about their process and how they made these changes to improve the game in general.

Then we've got a new visual guide covering *Star Citizen*'s working ships. One of the great things about *Star Citizen* is that, from the very start, Chris Roberts wanted it to be more than a combat game; he wanted trading, mining, salvage, exploration and as many other roles for spaceship crews as made sense. That was part of our original challenge, building a 'verse that could not just support these ships (which in earlier games would simply be NPCs) but also make them fun for human players. And I know that is what has attracted a lot of you to the game over the year

- the chance to live out your unique outer space fantasies. So, we put together a list of some of our special beyond-combat ships!

Another very exciting thing I happened to notice while putting together this feature was how many of these once-dreamed-of ships are flight-ready today. Progress is a funny thing; you can feel like you're standing still when the reality is things are coming together around you and you don't even notice. So, it's a nice blast of fresh air to sit back and realize that so many of the ships that came out of our heads back in 2013 and 2014 are available for everyone to access today.

And before I forget, I had better warn you... this issue of **Jump Point** features crabs! That's right, this month's Galactapedia entry takes a much closer look at everyone's favorite intergalactic crustacean, the torshu grey. If it's wrong for a space sim to have a definitive favorite kind of pretend crab then, folks, I don't want to be right. Plus, we've got another in-lore story from the 'verse, Dispatches from the Dark: Neville Lott's Clearing. I'll just say it's a good one to kick off spooky season. Check it out.

That's it for this month, but as always, we'll see you next time... through the next **Jump Point!**

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DEVELOPER INTERVIEW: VEHICLE EXPERIENCE TEAM

Star Citizen Alpha 3.10 introduced a number of important changes from a very special group, the Vehicle Experience Team (VET). While other teams are introducing new gameplay and new spacecraft, Vehicle Experience has been charged with improving specific aspects of the flight and fight models that have already been introduced, often with the help of your feedback and experience! We sat down with two members to talk about some of the changes that were introduced in Alpha 3.10 to get a closer look at what exactly goes into this kind of game design.

BEGIN TRANSMISSION →

JUMP POINT: *What is your name and title and what have you worked on prior to the vehicle experience?*

RICHARD TOWLER: I'm a senior system designer here at CIG. Prior

to working on vehicle experience I was on the System Design Team, helping to build ships. Before CIG I was responsible for vehicles across a wide range of Ubisoft titles and racing games.

YOGI KLATT: I am a senior gameplay programmer. Before I joined the VET I was a senior audio programmer. I think the most prominent feature I worked on during my time with Audio was the complete rewrite of the ship audio system that went live with the IFCS changes in Alpha 3.5.

JP: *What exactly is the Vehicle Experience Team? How do you work and what do you do?*

RT: We're a team with, I'd say, two main responsibilities: One is to balance the ships and the systems that they use, from power plants to weapon systems. The other is to improve the core vehicle experience,

which can range from working on the camera systems to developing new combat systems.

YK: It's safe to say the combat and flight experience over the last few years declined in certain areas. That was, of course, not intentional but the result of the complexity that is *Star Citizen*. Developers had to move on to other sub-projects and the combat experience could not be maintained to the standard that was needed. The VET is the answer to that lack of focus - we're a specialist team dealing with the main flight and combat aspects of the game. This includes the primary combat systems (gunnery, missiles, etc.), flight model tuning, and a couple of side things like camera controls and input systems. The general focus is to improve existing systems and bring them up to a high standard, though occasionally we create entirely new features.

The team itself is composed of volunteers that have an extensive interest or background in vehicle gameplay. For example, Rich was a very successful eSport racing driver (and had the chance to fly a real helicopter, which I'm still envious about!). I was an avid simmer and recently took up glider flight lessons to get some real-world experience... you'll find similar stories for the other members. There is always a vehicle-related core interest that they want to get absolutely right for the experience; there is a lot of passion and love in that team.

JP: How does the team approach tasks and decide what needs to be worked on?

RT: Our development strategies are somewhat unique at CIG. Most of the other gameplay teams work by creating detailed design specs before moving on to implementing them. Since we're mostly focusing on improving existing features, we only create very rough design goals in accordance with Chris Robert's vision. We then go into our "iteration loop". This means putting some code or data changes into a prototype, playtesting it, evaluating the results, tweaking it, and repeating the process. It's not really about number crunching but getting the feeling right. For our small specialist team, that way of working is very transparent, time-effective, and gives us the creative freedom we need to push things forward while being aligned on the overall goal.

We also heavily cooperate with Michael Smith's Player Experience Team. They're included in all major design decisions to keep us in check and find potential problems early. We meet at least twice a week and they also run specific test sessions to uncover problems that QA wouldn't always be able to find. Our friends in the Community Team also let us know about the mood in certain states of ETF or PTU phases to give us an idea of how successful we are with our work.



TURRET IMPROVEMENTS

JP: Why did the turret system need to be reworked?

RT: Turrets are such an important part of the combat balance and multi-crew experience. So, they have to deliver the experience at the level we want. Plus, many changes have been made across the game since turrets were last worked on, so we felt it was a good time to tackle them.

YK: The intention for turrets was always to give players a good alternative to flying and be the first stab at meaningful multi-crew gameplay. The reason that this was not achieved before comes down to the lack of developer resources at the time. Essentially, that means the developers just could not afford to spend time finishing it to the standard they wanted. The main bulk of the work (turret movement, animations, etc.) was actually working quite well, but the last 20% of the gameplay experience could not be finished up in time and just dragged on for ages.

When we took ownership over, we first checked the main gameplay issues. By far the biggest offender was the inability to continuously track a moving target. The main method of moving the turrets for mouse-and-keyboard players (which most turret players are) was an FPS-style interaction scheme. That meant the turret only moved while the mouse is moved. That, however, did not sit well in a game where you have to be able to track targets circling around you. You'd always need to lift the mouse when you reached the edge of your mousepad and move it back to keep rotating the turret. This really put



a lot of strain on the wrist. Also, in order to make that turret movement somewhat controllable, the rotation velocities had to be exaggerated to an astonishing 270-degrees-per-second, which is extremely fast and looks very cartoonish. That just doesn't fit into the goal of *Star Citizen* being an immersive, believable experience.

The second problem concerned the ability to hit targets. In *Star Citizen*, ships can accelerate very fast out of the way. Besides convergence, turrets didn't have a way to help the player aim and hit things. Unlike pilots, the gunners are unable to help their aiming process by compensating the relative motion for steady PIPs, which makes hitting even harder.

So these were the main problems we had to address, target tracking and hitting, as both are vital for turret gameplay.

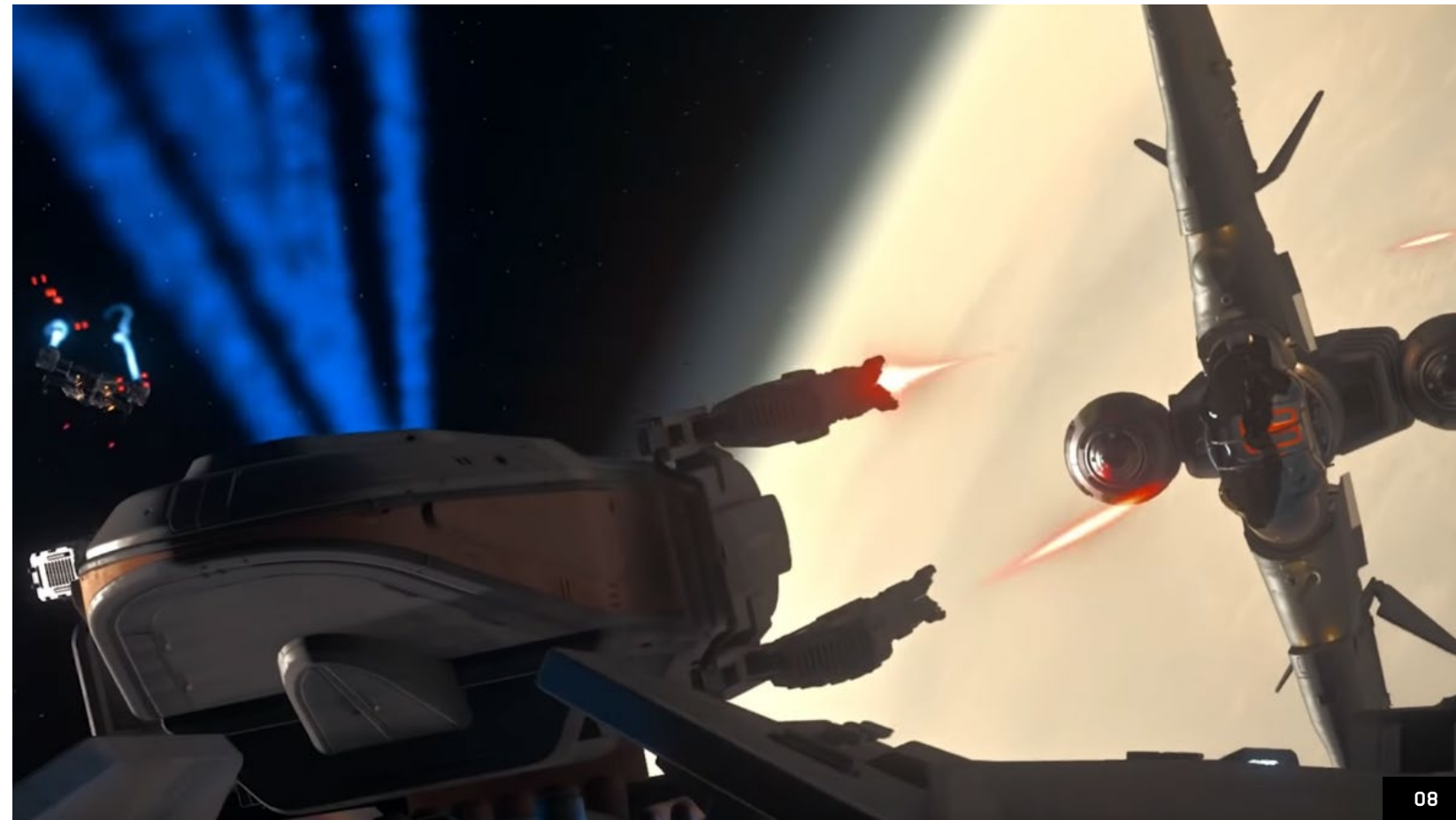
JP: What did you do to upgrade the system?

RT: We tackled them from two main areas: the way that turrets are controlled and the way that the weapons aim. The two aspects are interconnected and it was vital to make sure that players can control the movement while still being able to successfully hit a target.

YK: To resolve the problem of continuously tracking targets, we added

the same vJoy control scheme that pilots use in their ships (it is the same code being run). That allows players to continuously rotate their turrets with minimal mouse input. If players still prefer the FPS style controls (also known as relative mouse control) they can now easily switch back. It makes sense to use the vJoy mode to acquire and track a target and then switch to the relative mouse mode to fine-tune the aim. At the same time, we also resolved a couple of binding issues with turret axes and added a couple of more keybinds, like the velocity limiter. This made the turret controls not just easier to use but also allows HOTAS players to be very effective in turret gunnery. Additionally, we significantly reduced the allowed-velocity of each turret to look more realistic. We do not want turrets to feel like an FPS in space as you are still controlling a big, dangerous machine. We want players to learn how a turret moves and plan ahead with its motion just like when they are flying. A nice side effect of slowing down the turret velocities was that the auto-gimbal performance was massively reduced, which we wanted to do anyway. Because gimbals are technically just small turrets, they benefited from the code changes as well.

To address the problem of hitting a target, we applied the so-called "fixed assist system," which we had developed with Chris Roberts as part of combat work earlier in 2020. Some people still wrongly frame





it as auto-aim, but it only augments a good fire solution. Based on the angular offset between your aim and the target PIP, we use the convergence freedom of each gun to nudge the bullets towards the target. It's not very visible but does a great job of aiding fixed weapons on their target. Furthermore, getting "on target" with turrets is aided by the same ESP system that IFCS uses.

JP: *There have been several passes over the years. Were there any special challenges to figuring turrets out?*

RT: One of the key challenges with turrets is communication, although on the surface the movement may seem simple, add a ship and targets moving in space it becomes really important to know what the turret is doing under your control and to be aware of the limitations that you have so you can prepare to move differently.

YK: I think we had a pretty good instinct in getting the basics streamlined in the turrets first. The turrets are now in line with what was laid down in the older design specs, so we just finished them up really.

Technically speaking, there were a couple of odd edge-cases with the Greycat ROC gimbals and "inverted" turrets (like the lower one on the 890), but thankfully the mighty bug-smasher Mark Abent gave us a lot of support. He single-handedly rewrote large portions of the turret movement code to account for all of these edge cases.

An interesting "perceptual" problem we came across was confusing turret controls when a visual frame of references was missing. As turrets cannot "roll" themselves, the left/right movement on higher pitch angles does less movement than it does on low pitch angles. That feels okay if you have a visual frame of reference. For example, think about the remote turret in the Super Hornet. From the turret

you can see the rest of your ship. However, without seeing the ship frame you would not be able to judge your turret attitude and thus have trouble projecting in your head where your turret might go when you rotate it left or right. The solution to that problem was to add the compass rose that bends with pitch movement to effectively draw a path that subconsciously tells the player where the turret will go if rotated at that moment. The UI Team really went above and beyond to get that implemented. We only had a quick debug sketch done for it and then two days later Zane appeared with the proper building blocks implementation. That was way more than we had hoped for.

JP: *Is there anything further you'd like to see changed about turrets?*

RT: We still have some work to do to make turrets move with the feeling that we want. Outside of this, the balance of ships with turrets is now something we can play with. We want players to be able to get

together in a Hammerhead and feel the firepower that the ship has, but not be so overpowered that other players can't fight it with a group of medium fighters.

YK: There are a couple of things. While turrets are naturally quite aim-centric, we do not want to encourage players to simply aim and shoot. We also want them to strategize and wait for the best attack window to employ their weapons. It follows the same goal we want to achieve in dogfights. We want players to make conscious choices and commit to their actions knowing the pros and cons, because that is where interesting combat gameplay awaits us. The gun capacitor gameplay will aid us a bit in that regard. We are also thinking of equipping different kinds of weapons on them. For example, long-range vs short-range weaponry, weapon groups, and other types of turrets as well. However, it is a bit too early to speak about these things yet. For the time being, we are quite satisfied with what we shipped in Alpha 3.10.



AERODYNAMIC CHANGES

JP: *What prompted the addition of aerodynamics in planetary atmospheres?*

RT: We had always planned to have what we'd consider an atmospheric flight model, the level of detail in our game almost demands it on its own. And with the various planets and moons, we wanted the flight experience to match those expectations as you fly into the atmospheres of the different planets.

JP: *What does this mean for... chunkier, less airplane-y ships?*

RT: It means that they have more drag, not as much lift, and are slower to respond, meaning you have to predict their movements ahead of time rather than react to the environment as you would in a light fighter.

JP: *Please describe the new system you've created.*

RT: In its current form, the ships come with surfaces that we apply to the shape of not only the wings but the ship itself. These can be surfaces that generate lift, drag, or both. We use these surfaces to make the ships perform as we want them to in-atmosphere. The lift and drag are affected by the type of atmosphere and its properties, which is a huge challenge when it comes to tuning.

JP: *What do these changes add to the broader gameplay?*

RT: They allow us to really push the differences between ships. In space, ships are a lot more simple in terms of their performance as it's just the amount of thrust and mass that really defines their performance. But in-atmosphere, you have the ability to create real performance differences based upon the unique shape of each ship.

JP: *Do you foresee any future aerodynamics changes?*

RT: In the future, our goal is to have features like control surfaces that allow us to get closer to a plane-like flight experience. At the moment, ships move in-atmosphere with thrusters, but we want to move more towards aerodynamics driving the performance, with thrusters adding support and the ability to pull more extreme moves than you'd see a current fighter jet perform here on earth.

JP: *Did you discover anything unusual in the process of applying real atmospheric physics to existing ships?*

RT: I wouldn't say unusual in terms of strange results, just discovering the impacts of atmospheric properties and gravity on the various planets. Getting any ship to work across all of these parameters was a huge challenge.

HIGH SPEED COMBAT CHANGES

JP: *What was the goal in reworking the effectiveness of high-speed combat?*

RT: We have a long-term vision of where combat should be, and it was more a case of applying some of the things we had learned that would push this experience in the right direction. We want combat to be mostly done at close range and lower speeds.



aerodynamic changes as we completely reworked the way targeting works and developed new UI to communicate it. We are definitely excited about where the new targeting takes us, not only from a single-player experience but multi-crew too.

JP: How important is community feedback?

RT: It's vital; we are always reading the forums even if we are not replying to each thread. We discuss several times a week what the community is saying and making sure that the experience we set out to deliver is what the players are experiencing.

YK: I cannot overstate how important community feedback is for us. Especially during the ETF/PTU phases, the eyes of all VET members are glued to the Spectrum threads. When time allows it, we try to actively engage and communicate with our players directly, which helps us to understand their worries and feedback. There are countless examples where early feedback led to quick fixes. Especially targeting or turrets, which would have taken much longer to finish if it weren't for community feedback.

Early in 2020, we conducted a combat summit together with Chris Roberts to lay out the future plans for the flight and space combat experience. The changes we were able to submit to Alpha 3.10 represent quite a big chunk of executing that plan. There is, of course, still a lot of work to do (flight model balance, capacitor gameplay, missile gameplay, etc.), but the ultimate goal of a great flight and combat experience feels very achievable. We will get there step by step over the course of the next quarters.

END TRANSMISSION

JP: Please give us some details about your updated system and especially how you are balancing combat now.

RT: The first step we made was just factoring in some of the shooting mechanics that we wanted, from both the guns and missiles. It's fair to say that the step we made in Alpha 3.10 is just a small part of this.

JP: How did you test these changes before putting them into place?

RT: We do a lot of internal testing ourselves, but we also used the Evocati to experiment with some of these changes.

JP: How do these changes impact different play types?

RT: At the moment, these changes have a minimal impact on the overall combat experience. As we bring in changes, we want to make sure we don't create more problems than we fix, so we are carefully introducing new features when we feel they are supported by other changes.

GENERAL

JP: Were there any other notable changes in Alpha 3.10?

RT: The VET also worked on thruster efficiency and the new targeting system. It was really important to align the thruster changes with the



VISUAL DICTIONARY: TRADE & INDUSTRIAL SHIPS

One of the greatest promises of *Star Citizen* is that, from the very beginning, the 'verse was always intended to be more than just an arena for space combat. Beginning with the MISC Freelancer in 2012 and running all the way through to the mining and salvage ships

being developed today, Chris Roberts envisioned a game where you succeed not by besting other players but by making your own way in the galaxy. This month, we profile thirteen different trade and industrial ships that make the 'verse a more interesting place to live.

MISC RELIANT

The MISC Reliant was developed as an 'advanced starter' that would introduce players to cargo hauling while still allowing some modularity beyond what was envisioned for the smaller Hull-series ships. The Reliant follows MISC's larger Freelancer line by doubling down on the use of Xi'an technology, a key piece of background lore first developed for the former. Like the Khartu-al, the Reliant has alternate landed and in-flight modes, allowing it to change from horizontal to vertical mode situationally. First

introduced in 2016, the Reliant has been dubbed a "mini-hauler;" it's not large enough to take on bulk goods, but it is a great platform for introducing yourself to the trade lanes. Weapon mounts and a protective outer hull also mean it has better protection than some other cargo ships that leave their crates exposed to space. The Reliant platform has been adapted into several different variants with differing career aspirations, including the Tana fighter, Sen researcher, and Mako broadcaster.



PERFORMANCE

Model:	Kore
Length:	14.5 meters
Speed:	220 m/s
Mass:	38,566 kg
Seats:	2
Cargo Capacity:	6 SCU

MISC FREELANCER

The MISC Freelancer is one of the original five *Star Citizen* ships introduced in 2012 when the game was announced. The Freelancer was initially intended to be the civilian counterpart to the Hornet and the team was very interested to see which was more popular: the dedicated military fighter or the civilian cargo ship. Those early metrics went on to help influence early game design decisions, although no one predicted that many players would simply choose to add both ships to their fleets! With its

characteristic brushed-metal hull and sleek, organic lines, the Freelancer looks like nothing else in space. With a great deal of optional modularity, the Freelancer is *Star Citizen's* pickup truck: a rugged platform that can work towards performing any goal you can imagine. The Freelancer was one of the first ships to receive its own in-universe commercial, and was also one of the very first to receive variants, which include the MIS missile boat, DUR explorer, and the MAX extra-large cargo ship.



PERFORMANCE

Model:	Base
Length:	38.0 meters
Speed:	205 m/s
Mass:	209,230 kg
Seats:	4
Cargo Capacity:	66 SCU



DRAKE INTERPLANETARY CATERPILLAR

The Drake Interplanetary Caterpillar was once called the Freelancer's "evil twin", although further development (and an incredible design conceived by Jim Martin) resulted in a much larger, more modular freighter capable of carrying almost ten times as much as the base model Freelancer. That's quite an upgrade and an introduction to bulk shipping at its finest. It's distinct, off-set cab and exposed hull surfaces make the Caterpillar the perfect industrial ship and an ideal welcome to the less dogfight-oriented aspects of *Star Citizen*. Of course,

the Caterpillar is also the flagship-in-concept for job-dedicated ships: it was introduced in November 2012 as part of the second wave of pledge ships imagined for the game once it was clear there was support for Chris Roberts' vision of a living, breathing universe that would include more than just combat. Of course, rumors persist that the Caterpillar is a favorite among pirates who raid the shipping lanes and use it to collect stolen cargo... but Drake assures us that's just the competition trying to besmirch its good name.



PERFORMANCE

Model:	Base
Length:	11.50 meters
Speed:	130 m/s
Mass:	1,608,205 kg
Seats:	4
Cargo Capacity:	576 SCU



MISC HULL SERIES

The MISC Hull series answers a very important question: why design just one ship when you can design five? Intended to form the backbone of *Star Citizen*'s galaxy-spanning economy, the Hull series of ships is a group of increasingly large, totally dedicated haulers that range from the tiny Hull-A capable of carrying a few pallets to the massive Hull-E super-freighter. Unlike the Reliant and the Freelancer, the Hulls have only one job that they devote themselves to entirely: moving freight. No one is arming a Hull-A

for bounty hunting missions or battling it out with an Idris in a Hull-D... but those that opt for the career path of a freighter captain will find no more efficient solution to their job. Like the original Freelancer, the Hull series was conceived by Jim Martin. While the Hulls vary massively in size, they share the same lines and systems for storing and uploading cargo, which allowed for all five to be developed and presented to the community at once in 2015.



PERFORMANCE

Model:	Hull C
Length:	125.0 meters
Mass:	886,930 kg
Seats:	4
Cargo Capacity:	4608 SCU



DRAKE INTERPLANETARY HERALD

Help the Herald! The Drake Herald was first introduced in 2013 as part of a set of crowd-funding goal ships that each introduced the basic design of a new career. The career in question was something no one was really expecting: information running, a newly developed concept in which special, high-tech spacecraft would physically transport especially important data from place to place where it couldn't be trusted with standard encryption and broadcast. Described as a cockpit strapped to a giant engine, the Herald was intended to be small and extremely fast on the

straightaways, allowing it to run from combat rather than engage like a dogfighter. To store its precious data, the designers imagined a large arrayed computer system sitting below the pilot that could be easily self-destructed should the need arise. Due to its unusual nature, the Herald also makes an excellent racing ship and even fast interceptor, though it lacks the armament to take on more powerful spacecraft. The Herald also features a sophisticated communications array for intercepting messages, giving it a sinister sense that aligns it with the rest of Drake's output...



CRUSADER INDUSTRIES MERCURY

The Mercury star runner is a recent addition to Crusader Industries' lineup, one of *Star Citizen's* civil aerospace firms previously best known for its starliners and military transports. Sometimes called a blockade runner, the Mercury follows in the footsteps of the Drake Herald by emphasizing speed over fighting, protecting its payload at all costs by moving as quickly as possible from point A to point B without becoming embroiled in direct combat. Where it differs from the Herald is its payload: in addition to the Herald's

sophisticated computers, the Mercury adds the option to protect a small amount of cargo or even a high-value individual. Imagine the thrill of rocketing past a planetary blockade with an important briefcase or VIP stored in your hold, your speedy Mercury dodging lasers and rocketing forward to escape the opposition. The Mercury's distinct, off-centered design makes for a unique flying experience and set the tone for Crusader's next weapon of war, the Ares fighter.



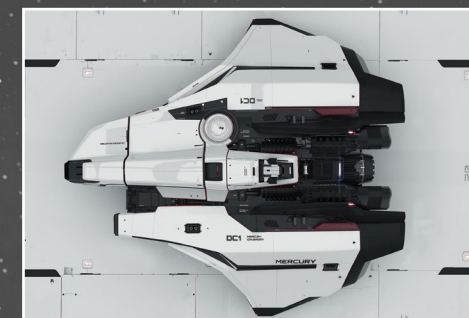
PERFORMANCE

Model:	Base
Length:	23.5 meters
Mass:	66,031 kg
Seats:	1
Cargo Capacity:	Data Only



PERFORMANCE

Model:	Base
Length:	40.0 meters
Speed:	215 m/s
Seats:	3
Cargo Capacity:	96 SCU



MISC PROSPECTOR

From its appearance alone you might recognize the MISC Prospector as a distant cousin of the famed Freelancer platform. But while the Freelancer is a freighter that can be adapted for other jobs, the Prospector has a single task: small-scale mining. *Star Citizen's* designers first began conceiving mining gameplay with the largest possible ship, the RSI Orion, in mind. Once the system itself was developed, it was time to build smaller ships that would allow new players to get in on the action without needing to

raise the capital and crew needed for such a large ship. The MISC Prospector was the answer; a sort-of-starter ship introduced in 2017 that was capable of a totally different scale of mining. Where the Orion's giant maw might rake in whole planetoids, the Prospector was content to land on an asteroid or planetary site and extract precious minerals using its small forward-facing mining tool. The result was a specialized ship that would begin the ladder to mining mastery!



PERFORMANCE

Model:	Base
Length:	24.0 meters
Speed:	200 m/s
Mass:	116,477 kg
Seats:	1
Cargo Capacity:	0 SCU



RSI ORION

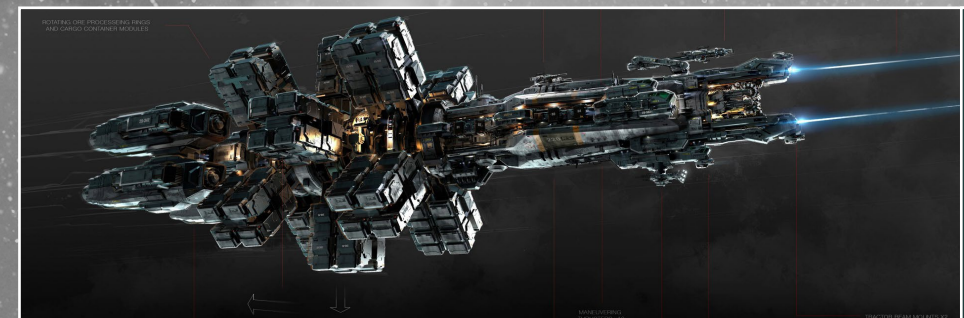
The Roberts Space Industries Orion is the king of mining ships, a giant capital-sized spacecraft capable of running an entire mining operation on its lonesome. The Orion features an enormous mining laser, a series of tractor beams, a shipboard refinery complex, and a large dedicated cargo area for transporting mined minerals back home for sale. It's a fully crewed ship that requires multiple miners to work effectively but it's also outfitted for such, with living quarters and accommodations (however spartan) that can keep a crew alive and happy through lengthy

deep space voyages. Unlike smaller mining ships or ground vehicles, the Orion isn't particularly picky about its targets: its high powered laser can crush whole asteroids into pieces and then refine anything of value from the remains. The catch is that it's a spatial miner only, working within asteroid or debris fields rather than within the atmosphere of a planet. But if you've worked your way up to the top of the mining game then you're already asking yourself, "do I want to buy an Orion?" Of course you do!



PERFORMANCE

Model:	Base
Length:	170.0 meters
Mass:	26,496,000 kg
Seats:	7
Cargo Capacity:	384 SCU



DRAKE INTERPLANETARY VULTURE

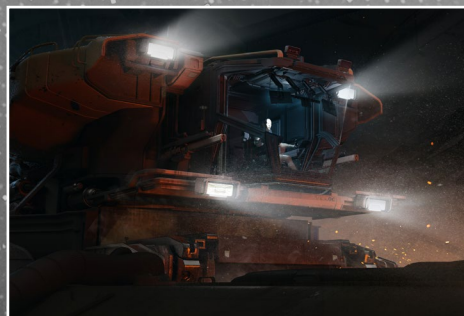
The Drake Interplanetary Vulture is to the Aegis Dynamics Reclaimer what the MISC Prospector is to the RSI Orion; try and remember that one when it's time for the space SAT! The Vulture is a single-seat salvage ship designed to target particularly valuable components in precisely the way the Reclaimer simply chews up wrecks. With an industrial-styled cab mounted atop a pair of

remote arms, the Vulture is a ship built to do a single job very, very well... and more importantly, it's built to introduce that job to players who might be wondering if a salvage career is best for them. With Drake's rugged durability and form-over-function, the Vulture feels more like an armored insect or crab than it does a futuristic take on a jet fighter. Just don't get caught between its claws!



PERFORMANCE

Model:	Base
Length:	33 meters
Speed:	165 m/s
Mass:	114,591 kg
Seats:	1
Cargo Capacity:	12 SCU



AEGIS DYNAMICS RECLAIMER

Don't challenge this one to an arm-wrestling match, it has you beat. The Aegis Dynamics Reclaimer is an enormous salvage platform that aims to do for the salvage career path what the RSI Orion did for mining. Like the Orion and the Herald, the Reclaimer was introduced in 2013 as part of a series of career-defining ships that helped to explain the larger vision for *Star Citizen's* gameplay. The Reclaimer is industrial through and through,

dotted with functional turrets and armored ridges and featuring internal storage and equipment for processing recovered salvage. Giant exterior engines that double as landing gear for planetary docking give the Reclaimer the look of a spaceborne factory. But its most distinct feature is the famed manipulator arm docked just below the ship, an enormous multi-tool capable of grabbing and maneuvering nearby space wrecks.



PERFORMANCE

Model:	Base
Length:	155.0 meters
Speed:	100 m/s
Mass:	9,500,158 kg
Seats:	5
Cargo Capacity:	180 SCU



GALACTAPEDIA

THORSHU GREY

The thorshu grey is an omnivorous, six-eyed crustacean indigenous to the cold southern oceans of Terra (Terra III) in the United Empire of Earth (UEE). Considered a delicacy for its tender, sweet meat, it is also a popular aquarium pet, and is one of the more commonly seen animals on shipboard aquatic enclosures.

DESCRIPTION

Thorshu have long, bright orange-red colored carapaces that cover their soft inner bodies, curved upwards into a narrow crescent. They have two dactyls and six walking legs, tipped in sky blue with mottled cream accents. The dark, barnacle-like lumps that grow on their carapaces and front claws may be eyespots, evolved to trick potential predators away from the thorshu's most vulnerable spots. Thorshu that have more eyespots than others have more success in mating. On average, they grow to between 10 and 20 cm long, and live for around 20 years.

BEHAVIOR AND ECOLOGY

Though they are largely solitary, thorshu demonstrate complex social behavior in the wild. Upon meeting one another for the first time they engage in ritualized fighting, and ignore one another upon subsequent meetings. They are highly intelligent, able to recognize individual thorshu by scent and color, even if they have not re-encountered each other for several years. Captive thorshu have been known to escape their containers if not provided with stimulating enough environments.

In their lifetime, they can breed as many as 30 times.

Eggs are laid in burrows dug under seabed rocks. The offspring spend the first few months of their life as microscopic organisms. They molt into their adult form at roughly four months, molting again multiple times until reaching their final size in their third year.

COMMERCIAL FOOD

On Terra (Terra III), thorshu grey are commercially bred and raised for their meat. Thousands of tons of whole flash-frozen thorshu are shipped across the UEE every year and sold to high-end restaurants. The leg meat is especially prized for its complex flavor. It is often served hot and dipped in a drawn butter and oza sauce. On Terra, where the thorshu is a conventional catch for local fishers, breaded and fried thorshu claws are a relatively common street food, especially in Quasi.

POPULAR CULTURE

Thanks to its color, size, and tendency to stay in the open, the thorshu is a favorite denizen of cold saltwater aquariums. It became a fashionable pet in the 27th century after being used as the model for the sidekick character Waka Grey in the children's show *Clawsome*. However, its tendency to break out of insecure enclosures and attack brightly colored objects such as decorative glassware put an end to the trend shortly after the show's final season. It is recommended only for experienced hobbyists.

The United Empire of Earth Navy 78th Bomb Squadron, known for its part in Operation Unilateral Force, is nicknamed the "Thundering Thorshu."



DISPATCHES FROM THE DARK: NEVILLE LOTT'S CLEARING

It's dusk when the small group I'm hiking with enters a clearing. Our tour leader, who asked to be identified only as Ronove, stops and announces we've arrived. I set down my backpack, exhausted yet exhilarated, and soak in the view. I've promised to keep the coordinates and route secret, but I can say we're deep within Vastac's Tecuya Mountains with an incredible view of the sun setting over a riparian canyon. A sense of peace and tranquility washes over me before being replaced by the thought that my blood-curdling screams could echo through the canyon and no one would ever hear. Makes sense why Neville Lott chose this spot for his grisly deeds.

Ronove announces that the ceremony will begin once the sun is set. Others in the group prepare by changing out of sensible hiking gear and into elaborate costumes that are common at Day of the Vara celebrations but slightly unsettlingly in this setting. A few people briefly

disappear into the dusk only to return with intensely focused, bloodshot eyes. I sheepishly pull out an old Neville Lott mask and slip it over my head. It's basically a crudely stitched gunny sack with an integrated respirator. Lott wore such a sack to hide his horrific scars but kept the respirator hidden underneath. (The respirator being integrated in the mask was actually popularized by pop culture representations of Lott rather than the real thing.)

I avoid disdainful stares from more committed participants for going with an easy and obvious choice for the ceremony. Instead, I watch Ronove strategically place candles around the clearing. That's when I first sense that something's wrong. I count Ronove's steps while crossing from one side of the clearing to the other and my heart drops. It's smaller than the crime scene described in police reports. There's no way Neville Lott committed his horrific murders here.

I'm certain of this because I've read every book I could find on Neville Lott and poured over the police reports multiple times. My obsession with Terra's most famous murderer began as a young child huddled around a campfire in these very mountains, as my father and uncle recalled the summer their family camping trip was cancelled. They proceeded to tell me the story of how seven hikers went missing over the course of that year, only to be found having suffered unspeakable horrors at the hands of the deformed and deranged Neville Lott. They avoided grisly specifics but my young, imaginative mind couldn't keep from wondering exactly what happened.

Then, one night when my parents went out, I secretly watched the 2902 slasher classic inspired by Lott's killing spree, *The Hill Horror*. The explicit imagery of Lott dissecting and dismembering his victims remains burned into my mind, but what stuck with me most were the flashbacks

to Lott's normal life in Caliban before the Vanduul invasion. It wasn't the graphic depiction of him burning off his own tongue that kept me up that night. It was the scene of Lott buried beneath the rubble of his home, unable to do anything but watch through a crack in the wreckage as Vanduul massacred his family. Somehow Neville Lott embodied true evil and still earned my pity. These conflicting emotions confused me at first. How could I pity someone who did such unspeakable actions? Can extreme trauma truly change someone that much? Where exactly did history end and the myth begin? These questions inspired me to learn as much as possible about the real Neville Lott.

My obsession with the Lott case blossomed into a general fascination with the macabre and gruesome true-crime tales. Between creative writing and journalism courses at university, I also took forensic science and criminal psychology classes, hoping to gain additional insight into



why or how someone would commit such heinous acts. I've spent much of my professional career chasing stories dealing with the same issues that fascinated me as a kid. So, when I was approached about writing a Dispatches from the Dark series on the UEE's most haunted locations, Neville Lott's clearing immediately came to mind. Finally, I could justify why I wanted to find a spot law enforcement had kept a secret since its initial discovery.

Very little is publicly known about the scene of Lott's crimes. The clearing is somewhere in the Tecuya Mountains in the Terran state of Vastac and under enough cover to not be spotted by surveying ships. It's secluded enough so it could only be reached on foot, but still close enough to hiking trails and campgrounds so Lott could hunt for victims. Most of the people who processed the scene have now passed, but even in the wake of renewed interest in the case following the release of The Hill Horror, those that had been there swore never to disclose its location. When interviewed for Unspeakable Evil, what I consider the definitive book on Lott, lead investigator Gaston Nazari flatly rejected author Paula Qi's request to take her to the scene. Nazari bluntly told her, "No good can come from going there. In all honesty, I hope a rockslide has destroyed the site forever."

I'll admit that being told I can't do something often only motivates me more. I re-read all I could about the Lott case and combed through every detail in the police reports for any morsel that might hint at its location. I even compared hiking guides of the era to current ones to see if any trails had been rerouted or abandoned. When my research yielded no new insights, a friend put me in touch with someone in the Terran occult community who claimed to have participated in a secretive ceremony at the sight. Through this connection I met Ronove. We met for coffee in Prime and felt each other out. I guaranteed their anonymity and promised to keep the location and aspects of the ceremony secret. Ronove proved to be knowledgeable about both Lott

and his crimes. Now, as I take a seat on a cold rock before the ceremony begins, I regret not asking more specific questions.

Still, I willingly participate in a ceremony best described as blending occult pageantry with true crime spectacle. Ronove lights candles, leads chants, and freely blends facts with fictional flourishes popularized by The Hill Horror. Honestly, it's frightfully good fun, even if it's not the dark adventure to Terra's most notorious crime scene as I was promised.

Following the ceremony, we all change back into hiking gear and strap on headlamps for the trek out. We walk mostly in silence during the long journey down the mountain. I'm exhausted and a bit deflated. Others are still coming down from their pre-ceremony indulgences. Trees rustle above and around us. A sudden twig snap in the dark startles the woman in front of me enough to make her stop dead in her tracks. At one point, a stiff breeze howls through the canyon sounding like a distant, mournful scream. The hair on the back of my neck stands up, and a wave of sadness washes over me.

For the rest of the hike, I'm haunted by that moment of fear. Although brief and ultimately harmless, it made me think of Neville Lott's victims in the last moments of their lives. Poor souls who ventured into these mountains to find peace and solitude only to suffer terrible fates. Before coming here, I was convinced that visiting Neville Lott's clearing might provide additional insight into a killer that has fascinated me for decades. Yet as I leave, I feel guilty and think about how disrespectful it is to the victims to turn that clearing into a tourist destination for someone fascinated by their killer.

By the time I'm out of the forest, I have no desire to continue my search for the elusive spot. This trip has convinced me that some places deserve to be lost to time. And though I may not have reached Neville Lott's clearing, I still remain haunted by it.

EMBODY HISTORY



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