

# SAGITTARIUS EYE

ISSUE **17**  
January 3305

## THE DARK WHEEL

### Featuring:

Unpicking GalNet • What's in a Name?

Engineering for Speed • Xeno Combat Guide

Guardian Technology • Monsters of the Deep



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Photo: Sebastian Wehmeyer

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# EDITORIAL

Will you look at that – more wordsy, picture-littered goodness from *Sagittarius Eye*. Hello, 3305!

It's January. On those worlds celebrating Christmas, this month typically finds most people hard up and riddled with self-loathing due to overindulgence and the many resolutions already broken.

Don't be too hard on yourself. Nothing has changed from three weeks ago beyond a quirk of temporal accounting; if you didn't spend an hour a day learning to perfect your flight assist off manoeuvres last year, you're unlikely to now. And that is perfectly fine!

One thing that becomes more and more noticeable over the months is how broad our seemingly narrow audience is. We write squarely for members of the Pilots Federation – intrepid souls, like us, of no fixed abode, who eschew the wind in our hair and the pleasures of life planetside for the tedium of a ship's manifest or the uncertainty of a trading run in an anarchic star system. You'd think that was a niche audience, wouldn't you? But you are a more disparate crowd than you realise.

This editor likes to ask readers which articles they enjoy the most, and the results are surprising. Ship types will happily read about improbable feats of engineering for pages and pages, but skip past dusty historical pieces. Serious power players enjoy biopics of politically-active groups and current affairs, but see limited value in a whimsical discourse on exploration. More casual pilots, who perhaps have more distractions out of the cockpit, might simply enjoy seeing what pets other pilots take with them to the stars.

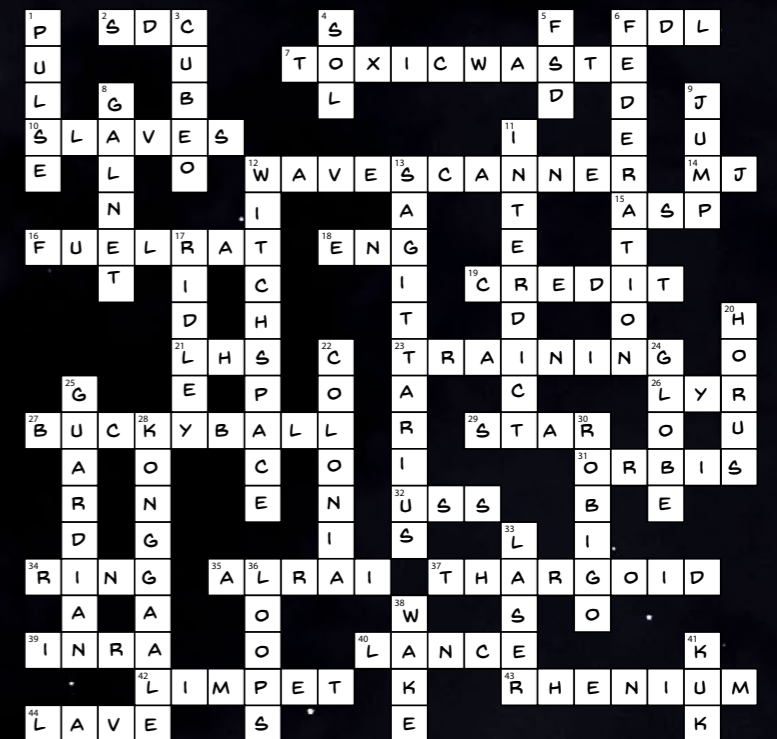
We don't care – we write for all of you. We have stat-spouting grease monkeys, starry-eyed explorers, spreadsheet-dazzled politicians and everything in between on our team, and thrive on the variety this mix creates. That said, if there's something particular you would want to see, do write in and let us know [[editor@sagittarius-eye.com](mailto:editor@sagittarius-eye.com)]. We love hearing from you.

Opposite, you will find the solution to last month's crossword. Congratulations to Chris Ashworth – you win a rare Frontier paintjob for the Krait MKII!



Souvarine

## SAGi TEASERS



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Photo: StarFox

# CHALLENGE

## YOUR PERCEPTIONS



### ALLY POWER AND STRENGTH

Alliance Challenger available from 30,472,265 cr, 1 large, 3 medium, 3 small

CURRENT AFFAIRS

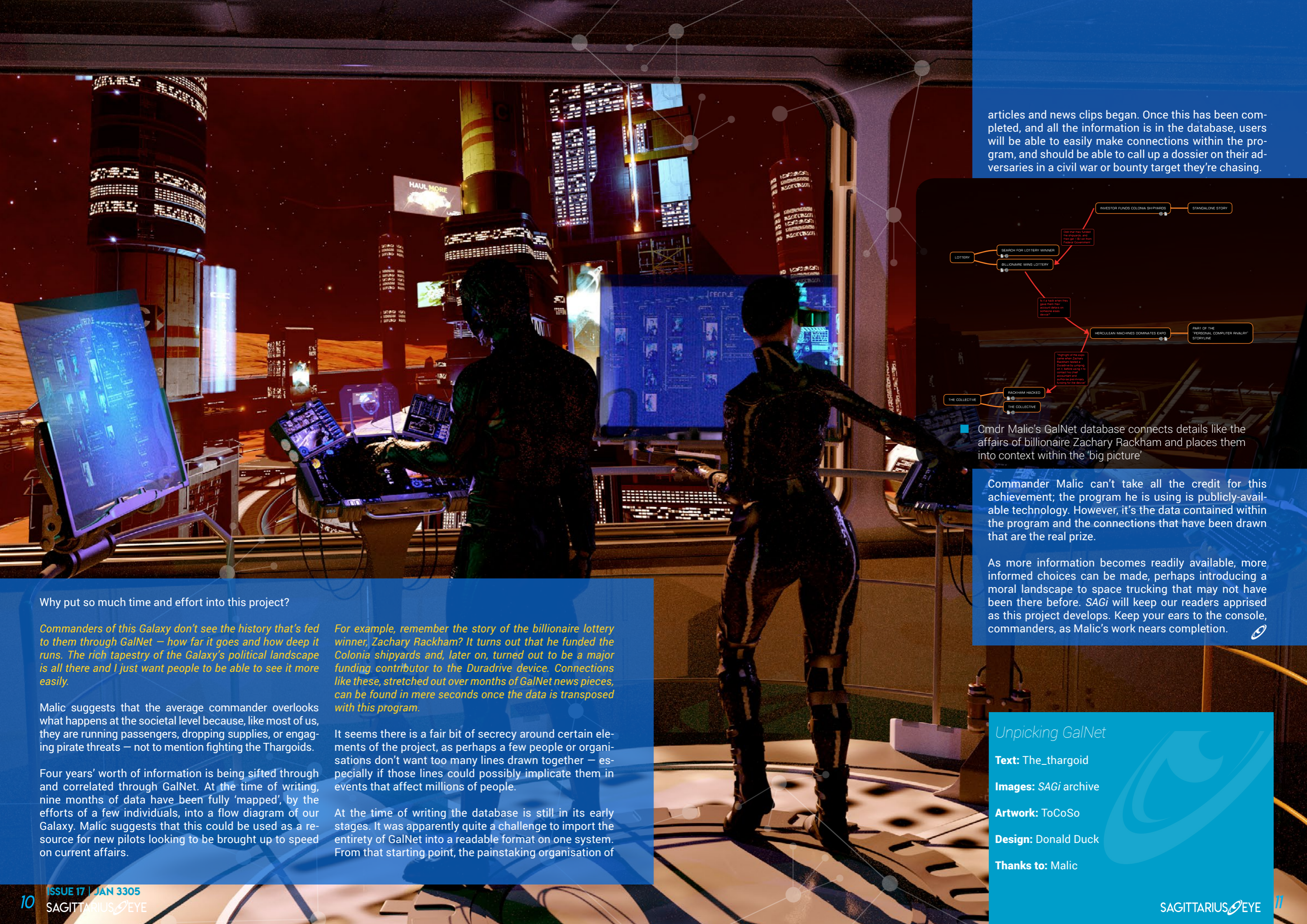
Unpicking  
GALNET

**S**agittarius Eye has been investigating a construct by a commander which attempts to mine the glut of information that is GalNet, so that a casual user can make sense of the valuable data that are buried in the information stream.

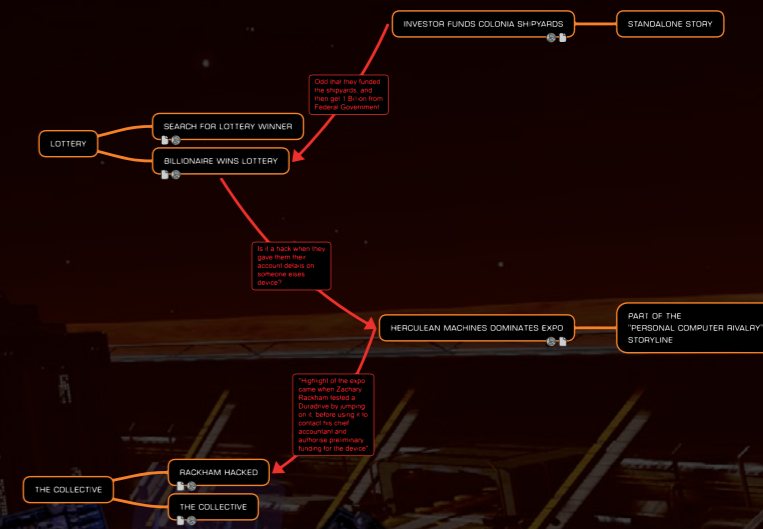
Commander Malic has gathered together the beginnings of a flow diagram connecting all the relevant people in the Galaxy via their mentions in GalNet.

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articles and news clips began. Once this has been completed, and all the information is in the database, users will be able to easily make connections within the program, and should be able to call up a dossier on their adversaries in a civil war or bounty target they're chasing.



■ Cmdr Malic's GalNet database connects details like the affairs of billionaire Zachary Rackham and places them into context within the 'big picture'

Commander Malic can't take all the credit for this achievement; the program he is using is publicly-available technology. However, it's the data contained within the program and the connections that have been drawn that are the real prize.

As more information becomes readily available, more informed choices can be made, perhaps introducing a moral landscape to space trucking that may not have been there before. SAGi will keep our readers apprised as this project develops. Keep your ears to the console, commanders, as Malic's work nears completion.

### Why put so much time and effort into this project?

*Commanders of this Galaxy don't see the history that's fed to them through GalNet – how far it goes and how deep it runs. The rich tapestry of the Galaxy's political landscape is all there and I just want people to be able to see it more easily.*

Malic suggests that the average commander overlooks what happens at the societal level because, like most of us, they are running passengers, dropping supplies, or engaging pirate threats – not to mention fighting the Thargoids.

Four years' worth of information is being sifted through and correlated through GalNet. At the time of writing, nine months of data have been fully 'mapped', by the efforts of a few individuals, into a flow diagram of our Galaxy. Malic suggests that this could be used as a resource for new pilots looking to be brought up to speed on current affairs.

*For example, remember the story of the billionaire lottery winner, Zachary Rackham? It turns out that he funded the Colonia shipyards and, later on, turned out to be a major funding contributor to the Duradrive device. Connections like these, stretched out over months of GalNet news pieces, can be found in mere seconds once the data is transposed with this program.*

It seems there is a fair bit of secrecy around certain elements of the project, as perhaps a few people or organisations don't want too many lines drawn together – especially if those lines could possibly implicate them in events that affect millions of people.

At the time of writing the database is still in its early stages. It was apparently quite a challenge to import the entirety of GalNet into a readable format on one system. From that starting point, the painstaking organisation of

### Unpicking GalNet

- Text:** The\_thargoid
- Images:** SAGi archive
- Artwork:** ToCoSo
- Design:** Donald Duck
- Thanks to:** Malic

# WHAT'S IN A NAME?

THE HARDEST PART OF BUYING A NEW SHIP

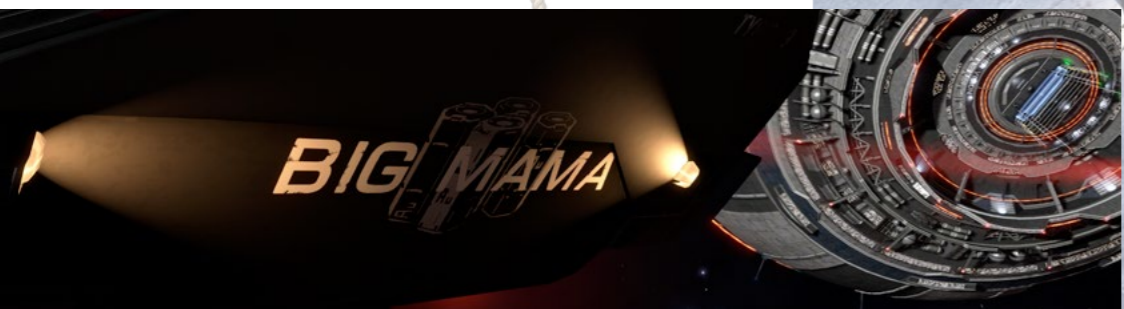


Let's be honest: it is either noise or absolute silence in our minds at the moment we must pick a name for a new ship. It often finds us staring blankly at our livery interface, outwardly resembling an unpowered Guardian monolith. To help those in this plight, the SAGi team share our secrets to ship naming!

There we were in the *Sagittarius Eye* offices, one newly-hired reporter trying to familiarize himself with the workflow, department heads, personalities, article submission process and such. While sitting in the press room drinking Tauri Coffee, Commander Mini\_Watto shared with us an illustration of the livery interface with the caption 'The real difficulty of buying a new ship'. This correspondent immediately thought: 'That's it! My first article proposal!'

Our Editor-in-Chief, Souvarine, happened to see it. "Good suggestion! Put your name on the card," he cried, which in office code means only one thing: 'Thou Shalt Write The Piece'. Clearly, the article required more than a single person's perspective, but it wasn't until someone mentioned asking around the office that the epiphany finally hit.

It occurred to this writer that one can learn a lot about pilots just from the names of their ships, as this not-so scientific study shows.



For some, music has always been a great source of inspiration. "It was a couple of years ago now, with one of my Anacondas," Mini\_Watto told us. "I'd gone out exploring on a roughly 250,000 ly expedition (this was before my current combat career), but I couldn't think of a fitting name."

"After about two months out in the black, and around 150,000 ly on the clock, I was starting to get a small case of space insanity. In my travels, I had listened to hundreds of albums of music, and at this point, the song *Sound of Madness* came on from an old Earth band called Shinedown. I immediately realised how fitting the phrase was. With the silence of distant, empty space being what I considered the 'Sound of Madness', the music, ironically, became the only break from it."

Literature and classic Earth science fiction also play a part in ship naming. Cmdr Ian Baristan told us that his Anaconda's name is *Endymion*: his favourite novel.

Cmdr McNicholl, too, shared his list of ships and their names, each a brilliant reference.



"My Asp Scout is *Touch the Void* – a reference to Joe Simpson's book. My Asp X is *Windward*, whilst my FDL's name is *Hostile Intent*. The Krait has the *Mark of Caine* and the Vulture is proficient in the *Use of Weapons*. My Dolphin, as she departs, calls out *So Long and Thanks*. Then there are the *Farthest Shore* and *Ad Astra*. Some of those are pretty obvious references, while others are a bit more obscure."

## He also has a friend who called his Cutter *The Kompensator*.

Cmdr LexMoloch uses a tool for ship naming, which has a tendency to produce, in his words, "awesome stuff such as *The Disappointment Executioner* or *The Lone Radiation*".

And indeed, fun is a powerful inspirational tool. Cmdr Souvarine tends "to stick with adjective plus rodent. So my first ship was the *Salty Weasel*, then the *Greased Ferret*, then the *Lonesome Stoat*. Then I ran out of good rodents." Of course, this revelation in the Press Room fueled a series of adjectivized rodent name suggestions, with such gems as *Stainless Steel Rat* and *Funky Marmot*.

OrangePheonix couldn't hold back any longer. "Due to the way I fly, my passenger Orca is called *Titan Uranus*." He also has a friend who called his Cutter *The Kompensator*. No one was entirely sure what the 'friend' meant by that.



Sometimes we end up finding a name due to 'technical difficulties'. Cmdr Ky Vatta mentioned that the twenty character limit for ship names can be frustrating. "I was very fond of the name *Harmless Unless Agitated* for my Python, but when the nameplates came in I had to settle for *Usually Harmless*."

Alec Turner chipped in by telling us about his wedding anniversary. "My Asp is called *The Wedding Anniversary* because I did the Sag A\* Buckyball Run in it on that day, and my wife bought me a luxury food hamper to see me through the fifteen-hour flight."



"My Krait, because of all the terrible and obvious puns, is called *Paronomasia* – as it literally means 'a pun'. The Python (my main ship and the one I started Fuel Ratting in) is called *The Call-out Charge*, because there isn't one."

## You can learn a lot about pilots just from the names of their ships

"I have an Imperial Courier called *The Sans Serif* (pretty obvious, one that), a Clipper used for mining called *Miner Threat* (after a pre-expansion Earth band), a Type-6 setup for exploration dubbed *The Pug That Snored* after Codger's dog (and also a play on 'The Mouse That Roared'). Lastly, my Fer-de-Lance which is NOT used for piracy or griefing is called *Judge Not* after the Bob Marley song."

This writer mentioned that he tries to come up with original names without external influence. "Usually, only the people in my inner circle understand the names. For instance, my deep-exploration Asp's name is *Zephram* after a particularly drunk but bright engine engineer. My multi-purpose Python is *Cachorra* after an old Argentine female comic book character from the early 20th century. My Space Cow T9 is named *Carne 1*, in reference to the Spanish translation of the first Tom Sharpe novel I read, *Wilt*."

Language integration and puns are an important aspect of ship naming for Michael Darkmoor. "Many of my ships names are derived from Japanese or English wordplay. The interesting thing, for me, is in coming up with a good pun and then translating it one way or the other."

"My Asp Explorer was named *Star Or-phan*. In Japanese the kanji translate as 'the orphan of a Big-Time Media Star'."



"Some require no translation at all. There's this hardened T7 I like to run against pirates whose name is *Denial of Prophets*. There is also a T10 of mine who likes getting stuck in the toaster rack by the name of *Dread Locks at Times*. Noticing that the Anaconda has that Imperial Destroyer look from the old Star Wars movies, I went with that idea for two of the three I own: *Captive Vader* (for the one stuck in Colonia), and *Free Moto Vader* (my max range exploration/rescue ship). Number three is a Heavy Trader/Smuggler in the Bubble, and is registered as having *Optional Integrity*."

"In the case of my Python, its Japanese name translates into *Cold Emptiness*... which is where most people who mess with it end up going! An *Icy Nothing* was the name I used for all the frozen bodies out there that weren't worth a damn. It took quite a while before I finally connected the two. It was fortunate to have also made a pretty decent pun in English... but in the beginning... I literally saw nothing there!"



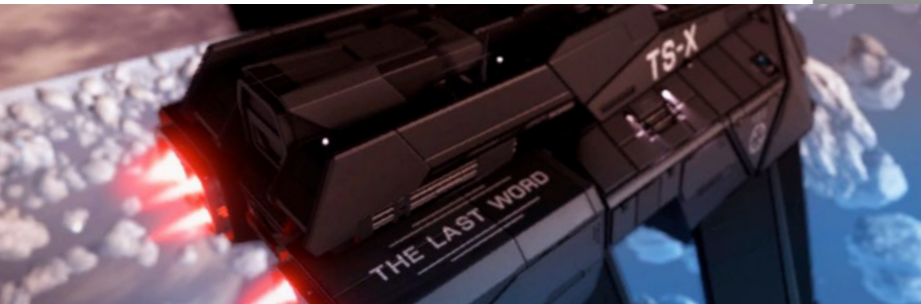
Sometimes there are deeper motivations required to find the proper name. In the case of Cmdr Orange Spark of the Galactic Academy, it was respect for a colleague. He named his Federal Corvette the *KLNS Sears* (Kuun-Lan Navy Ship), honouring a comrade who had been a huge fan of the Federation and their ships. The name was chosen in remembrance of the commander, who sadly passed away."

Do you have a good story about naming one of your ships? Please [send it in!](#)

WHAT'S IN A NAME?



What's in a Name?  
The Hardest Part of Buying a New Ship  
Text: Buanzox  
Images: Orange Phoenix, TwoSpoons77, nickweb85, Sirruf, Ky Vatta, Alec Turner, Ziggy GG, Donald Duck, Michael Darkmoor, Sebastian Wehmeyer  
Artwork: ToCoSo  
Design: Donald Duck



# PUSHING THE LIMITS: ENGINEERING FOR SPEED



We all know that feeling: the ‘new ship’ smell, the moment of silence as you first step foot into the bridge, seat yourself and take it all in. From the rustic well-worn feel of the Krait Mk II to running your finger along the immaculate, polished white surfaces of that Imperial Clipper. You’re home.

This time, sit yourself into an Imperial Eagle. The Gutamaya revision of the Core Dynamics Eagle Mk II, and a ship many already know quite well. You appreciate the mirror-clean look of the chassis contrasting with its jet black accents and framework. Likewise, you’re enamoured with the angular yet tidy aesthetic of your new cockpit. The blue tint gives it a premium feel. You know that this is an experience to be savoured.

Modules all A-rated and ready to test those afterburners, you hit launch, retract your landing gear and ascend to the center of the Coriolis. Lining up the nose of your ship with the letterbox and – after assessing your sensors to be sure there are no obstructions – you take a deep breath, preparing yourself for the surge of adrenaline that is about to hit you.

**Boost.**

G-forces pin you to the seat as velocity hits almost 450 m/s, and, for a split second, you embrace the feeling of flying one of the fastest ships money can buy. Then comes that hit of dopamine, that moment in which all you can hear is the rattle of your engines at full throttle, flinging the ship outward, through the station aperture.

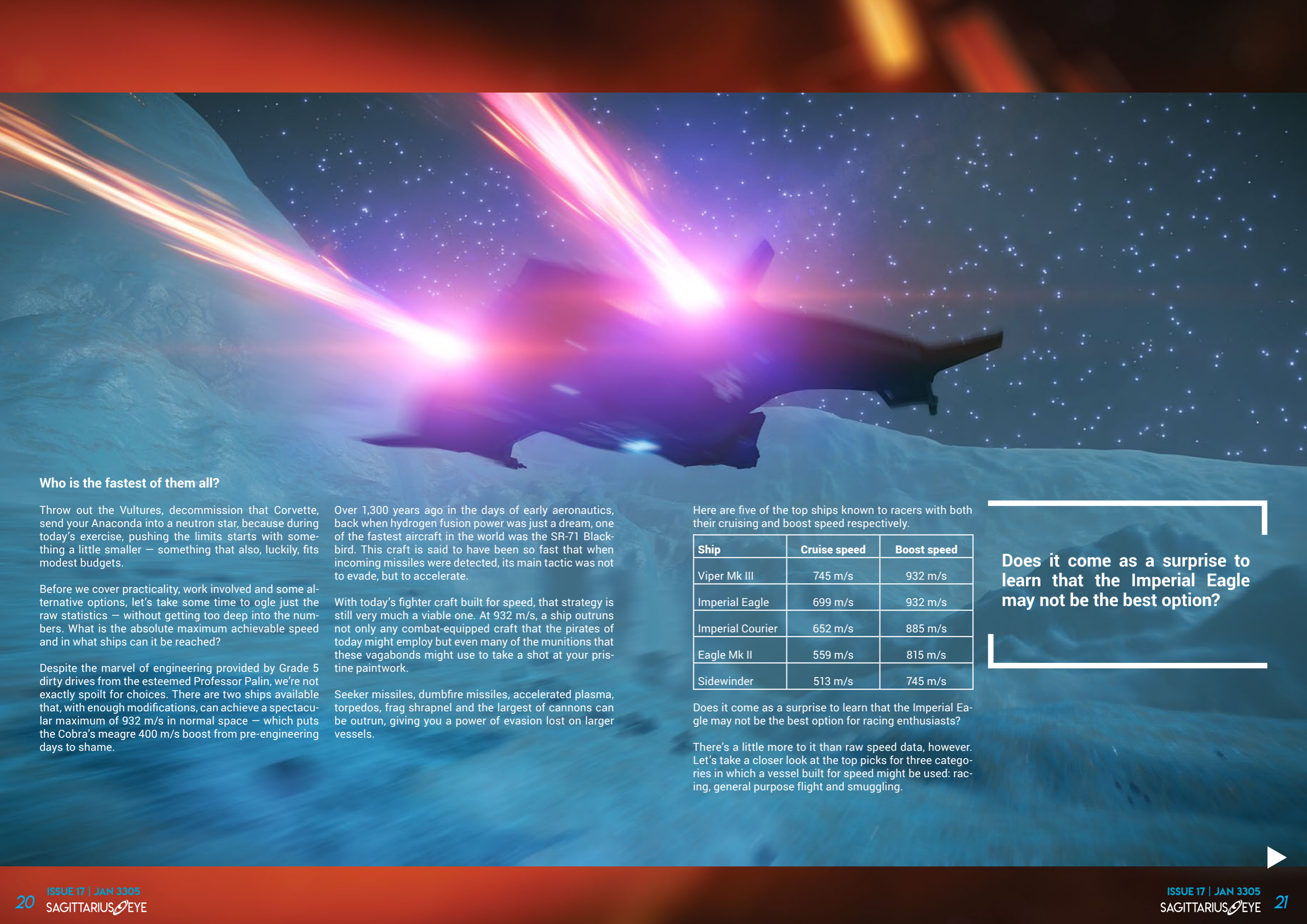
In an instant, that glorious rush is gone. There’s a glint of light just to your left as someone else passes by so quickly, it was as if you weren’t moving at all. What was that? Some kind of experimental new vessel? A ship-launched fighter? A missile?

‘No!’ you scream – you’re furious! Scanning the vessel leaves you almost speechless.

**It’s... a Hauler!**

A Hauler. That dirty rustbucket is travelling at 699 m/s in an affront to any ship that calls itself a racer. This ultimate personification of a middle finger leaves you in the dust and steals every shred of joy from the moment.

You see, the commander piloting that old tug-boat is doing something you’re not. They are squeezing every drop of performance out of that Hauler they can, modifying every last morsel of machinery mass within to shatter the spec sheet, break records and leave every other pilot in the dust. That commander is *pushing the limits of engineering*.



### Who is the fastest of them all?

Throw out the Vultures, decommission that Corvette, send your Anaconda into a neutron star, because during today's exercise, pushing the limits starts with something a little smaller – something that also, luckily, fits modest budgets.

Before we cover practicality, work involved and some alternative options, let's take some time to ogle just the raw statistics – without getting too deep into the numbers. What is the absolute maximum achievable speed and in what ships can it be reached?

Despite the marvel of engineering provided by Grade 5 dirty drives from the esteemed Professor Palin, we're not exactly spoiled for choices. There are two ships available that, with enough modifications, can achieve a spectacular maximum of 932 m/s in normal space – which puts the Cobra's meagre 400 m/s boost from pre-engineering days to shame.

Over 1,300 years ago in the days of early aeronautics, back when hydrogen fusion power was just a dream, one of the fastest aircraft in the world was the SR-71 Blackbird. This craft is said to have been so fast that when incoming missiles were detected, its main tactic was not to evade, but to accelerate.

With today's fighter craft built for speed, that strategy is still very much a viable one. At 932 m/s, a ship outruns not only any combat-equipped craft that the pirates of today might employ but even many of the munitions that these vagabonds might use to take a shot at your pristine paintwork.

Seeker missiles, dumbfire missiles, accelerated plasma, torpedos, frag shrapnel and the largest of cannons can be outrun, giving you a power of evasion lost on larger vessels.

Here are five of the top ships known to racers with both their cruising and boost speed respectively.

Ship	Cruise speed	Boost speed
Viper Mk III	745 m/s	932 m/s
Imperial Eagle	699 m/s	932 m/s
Imperial Courier	652 m/s	885 m/s
Eagle Mk II	559 m/s	815 m/s
Sidewinder	513 m/s	745 m/s

Does it come as a surprise to learn that the Imperial Eagle may not be the best option for racing enthusiasts?

There's a little more to it than raw speed data, however. Let's take a closer look at the top picks for three categories in which a vessel built for speed might be used: racing, general purpose flight and smuggling.

**Does it come as a surprise to learn that the Imperial Eagle may not be the best option?**

# Best in Class



## Best 'Daily Driver': Gutamaya Imperial Courier

A truly multi-purpose ship, in that what we sacrifice in velocity here is more than made up for in every department. When building a ship for this broad a range of activities, the racing philosophy of 'lightweight everything' is too narrow. A long-range frame shift drive (FSD), a fuel scoop, and a Guardian FSD booster are a given for explorers; whilst both a shield and SRV are essential for most other everyday tasks.

With these modules, when engineered for speed, this is still a ship you can do almost anything in: wake scanning, engineer material-gathering, minor combat encounters, data delivery, exploration and surface prospecting.

To demonstrate the utility of the Courier, compare it to a Viper Mk III with the same loadout. Before leaving the hangar, the spec sheet already presents a problem.

The shield cannot fit in the Viper with an SRV, fuel scoop and Guardian FSD booster installed. It certainly cannot be placed in the vacant Class 3 military compartment, reserved for shield cells, or module or hull reinforcement. Right away the Imperial Courier has a clear lead.

A 46 ly jump range handily beats the Viper's 39. And, would you believe it? The Courier is now the faster ship!

Despite being encumbered by the addition of a shield, our Gutamaya vessel has the same cruising speed as the Viper, and is 50 m/s faster when boosting. The technically faster racing ship is pipped by our top pick for daily use in both speed and maneuverability with the very same internal modules. The Courier even has the same charge time per boost of 6.9 seconds, giving the Viper Mk III no advantages whatsoever as a multi-purpose craft.

This is where the numbers that aren't advertised come into play. Among our top five speedsters, the Courier handles mass better than all others, meaning it can hold the most tonnage with the least impact on its final values. This is what puts it far and away ahead of every other racer.



## Best Racer: Falcon deLacy Viper Mk III

It goes without saying that if you want a ship built for speed, you get the fastest ship.

While the Imperial Eagle does have the same maximum boost (and, many say, is the better-looking ship), the Viper Mk III when fully engineered excels in more ways than one. It has a 46 m/s cruising speed advantage over the Imperial version, meaning less time on boost to maintain a higher average velocity.

If we dig into the numbers further we find that our deLacy racer not only wins out in average velocity but, when equipped with a stripped-down, engine-focused distributor, can muster an additional boost approximately 34% more frequently than the Imperial Eagle. This is an advantage of a 27% increase in capacity. This translates into the Viper Mk III beating the Imperial Eagle from the very instant the race begins. Speed demons will also be glad to know that pitch, roll and yaw speeds differ so minimally between the ships that not even the most skilled of pilots could tell them apart.

However, there are some disadvantages. As with many combat-oriented ships, Vipers have a low power budget. It is not recommend to outfit one as a fighter when built in this manner, unless low-draw weapons such as multicannons and fragment cannons are used.



## Best Smuggler: Zorgon Peterson Mamba

A surprise entry here from a medium ship — but it would be foolish to think that only small ships can compete in matters of speed.

Getting from A to B means nothing if you can't survive the trip. When it comes to high risk/high value passenger or delivery contracts, there's nothing more important than safe travel. Racers have a near-paperthin hull, whilst the mighty Mamba has speed and firepower. If all you end up using that speed for is getting into the Coriolis before any scanner-happy security forces can clock you, it is worth the cost.

A fully-engineered Mamba has a maximum cruise speed of 524 m/s, boosts at 642 m/s and has a distributor charge time of less than 5 seconds. It doesn't leave the small ships listed above in the dust, but these speeds are still lightning fast among the larger ships. Most useful of all, these larger fast ships have incredible mass management. An almost entirely A-rated build barely takes the edge off the Mamba's top speed.

An A-rated throughout, fully-engineered combat vessel, full of passenger cabins, can still achieve speeds of 619 m/s. This means that a furtive pilot can get in and out of a station unhindered, whilst still retaining the option to flee any engagement.

## The bad news

There are only twenty four people in the Galaxy with the technological know-how and means to modify modules to the extent described above. While servicing members of the Pilots Federation is their bread and butter, they won't just work for any old pilot. They specialise in specific areas, and each has their own service requirements. Some won't even talk to you if you haven't built up a reputation with affiliated engineers in other locations.

Professor Palin, based in the Maia research facility in the Pleiades, is the only engineer in the Galaxy right now with the means to engineer a Grade 5 'dirty' tuning modification. It is not as simple as rocking up and asking nicely, however. Buckle up pilot: here's what you need and who you need to talk to to break that 900 m/s barrier in your next canyon rush event.

### Step One

Travel more than 300 ly from your starting system. It's worth checking your systems panel (on the right) to check whether you have already done this. If so, head to Cheranovsky City in the Ngurii system and pick up three Soontill Relics. Deliver these to the engineer Elvira Martuuk at Long Sight Base in the Khun system. Engineer any module of any kind to between Grades 3 and 4 to proceed.

### Step Two

Head to a system in which the Sirius Corporation has a presence, such as Procyon, and complete tasks for them until you become allied and are given a permit to enter Sirius. Upon arrival you will need twenty five modular terminals to give to Marco Qwent at Qwent Research Base. These are commonly given as mission rewards, particularly in high tech systems. Be patient as gathering these may take some time.

After fulfilling this requirement, engineer any module of any kind to between Grades 3 and 4 with Qwent to proceed.

### Step Three

If you haven't already, travel more than 5,000 ly from your start system. The Trifid Nebula is about the right distance away and makes an agreeable weekend trip. Be sure to check your 'Furthest travelled from start' counter in your systems panel once you get there to ensure you've reached 5,000.

Next, you need twenty-five sensor fragments. Unlike previous items, these don't require cargo space. A foolproof way to gather these is to head to HIP 17403 A4 A and land at coordinates -34.98 / -141.41. This is a Thargoid crash site. Scoop up any sensor fragments you find in your SRV and shoot any Thargoid sensors, which will break apart into sensor fragments. Each fragment you pick up counts as three units, so this won't take long.

Once you have twenty five, deliver them to Professor Palin at the Palin Research Centre in Maia.

### Step Four

You're 70% of the way there! To reach a Grade 5 dirty drive modification, starting from Grade 1, requires no fewer than the following components:

- 6x Specialised Legacy Firmware
- 4x Selenium
- 2x Mechanical Equipment
- 4x Configurable Components
- 3x Chromium
- 5x Cracked Industrial Firmware
- 3x Mechanical Components
- 5x Cadmium
- 4x Modified Consumer Firmware
- 5x Pharmaceutical Isolators

None of these can be purchased, so the only option is to gather them. This is beyond the scope of the guide, but Professor Palin will be able to point you in the right direction.

At this point we approach the point of diminishing returns. It's possible to achieve slightly higher speeds, with the same amount of work as above. This is done by approaching other engineers to modify your ships' modules for lower mass (stock sensors in particular). However, while necessary for hitting that glorious 932 m/s, the gains are less dramatic than those already achieved.

Even the casual racer is now well-equipped to try their hand at canyon racing, and can also sport that 'lightning bolt' paint job\* with pride.

\*lightning bolt paint job is not guaranteed to increase individual racing performance.

## Unlocking G5 drive modifications

This process also unlocks the following grades of light-weight modifications:

- G3 FSD
- G4 power plant
- G3 power distributor

*Pushing the Limits: Engineering for Speed*

**Text:** Evelyn Orwell

**Images:** McNicholl, OrangePheonix, Zer0axis

**Design:** McNicholl



# MASTER YOUR GRRV

Whether it's gathering engineering materials for an upgrade or trying to play rocketman in a geyser jet, nearly everyone has to use their piloting skills down on the surface at some point. This month, we asked respected low gravity driving expert Alec Turner to share his knowledge.



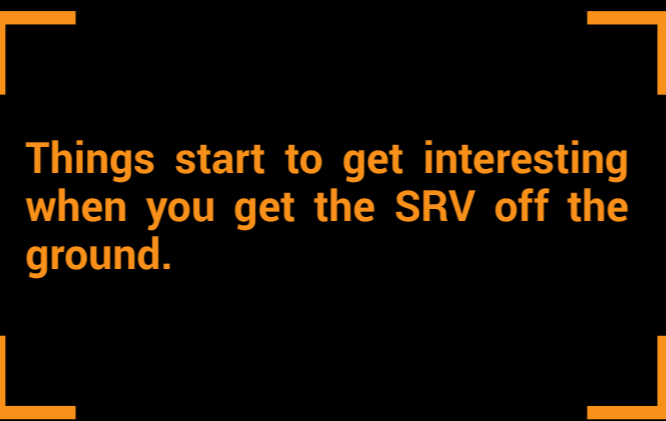
## The Basics

Firstly, it should be noted that the Surface Reconnaissance Vehicle (SRV) described in this article is the Vodel Scarab. At the time of writing this is the only SRV available to members of the Pilots Federation, but we live in hope of one day seeing more!

The Scarab is an eight-wheeled vehicle (two pairs at the front, two in the middle and two at the back) with additional axle-mounted thrusters providing pitch and roll attitude correction, supplemented by two powerful boost thrusters mounted on arms which deploy with the turret when sufficiently far from a landed ship.

On the ground you have a basic steering mechanism that turns the front and rear wheels (the latter in opposition to the front for a tighter turn radius at low speed), a throttle that controls forward and reverse speed through an all-wheel drive system, and a handbrake.

The throttle can operate in two modes. With 'Drive Assist' turned on it's much like a traditional 'cruise control' computer, with the input setting the desired speed. With 'Drive Assist' turned off it provides direct input to wheel speed. The latter provides a slightly higher top speed and is probably better suited to analog steering inputs while the former may help inexperienced drivers maintain control of their vehicle, especially when using digital steering inputs.



**Things start to get interesting when you get the SRV off the ground.**

Lastly there are the power distributor pips. Since the SRV's shields provide zero resistance to terrain impacts, outside of combat situations it's usually advisable to keep four pips to engines. Some aficionados, like the Rock Rats, even advise turning the shield and all unnecessary modules off altogether when driving long distances in order to save fuel and extend driving time.

Along flat ground there isn't much to say about driving the SRV. With four pips in ENG the top speed is just over 30 m/s with Drive Assist on and just under 40 m/s with it turned off. That's equivalent to around 144 km/h. The faster you go, the more prone the Scarab is to 'spin out'. This is partly due to the exaggerated effects of rear wheel steering at speed, but mostly because icy or low gravity surface conditions will amplify the effect of any small errors made while driving. It's possible to apply opposite steering to counteract a skid but more often than not this will result in 'fishtailing' unless done with care.

## Tips and tricks

- ☹ Although the boost thrusters normally fire down past the wheels, this is actually reversed when you're upside down, which means that applying boost will nearly always push you away from the ground.
- ☹ There's a truism that applies to any form of driving but which is especially pertinent to avoiding rocks in the path of the SRV: focus on where you want the vehicle to go and not on where you don't want it to go!
- ☹ If you tumble when approaching your ship and end up on your back with no thrusters (because they've automatically retracted), simply dismiss your ship to reactivate them.
- ☹ When out material gathering you may find it easier on high-g worlds. After destroying a rock, the materials will fall into a neat pile so that you can simply park on top of them all and then select each one in turn from the contacts panel in order to scoop them up.
- ☹ If you can keep the 'tilt boosting' technique going smoothly over many kilometres it's possible, on a low-g world, to eventually bounce so fast and high that you can launch the SRV into orbit!





## Getting off the ground

Things start to get interesting when you get the SRV off the ground, either with a low-g bounce or by using the thrusters. Once in the air the roll and pitch controls come into play.

The first thing to note is that the Scarab behaves more like a ship flying with Flight Assist off. In other words, any pitch or roll motion that you initiate must be countered in the opposite direction.

The second thing is that you can use the thrusters to gain altitude, to feather your landings and, most interesting of all, to propel the SRV forwards. Picture the SRV a bit like a helicopter with the thrusters exerting a downward force. Tilt the SRV's nose down while you're in the air and that force will start to propel you forwards — this is called 'tilt boosting'. When done right, and over distance, this can get the SRV up to speeds well in excess of 100 m/s!

It's travelling like this (sometimes called 'flying') where the SRV really starts to shine. Keep the throttle wide open, boost to get off the ground, tilt forwards and boost again to start building up speed, making sure to keep some ENG pips in reserve. Choose your next landing spot carefully — the leading edges of rounded mounds or the far sides of small craters act as perfect 'kickers'. Hit the ground level and square, never back wheels first, and bounce straight back up into another tilt boost. Don't

**It's possible to eventually bounce so fast and high that you can launch the SRV into orbit!**

be afraid to bounce hard! The SRV is a tough piece of machinery which can take a surprising amount of punishment and your goal now is to spend as little time on the ground as possible — because, at speed, prolonged contact with the ground will almost invariably result in a spinout.

Yaw, or rather the lack of it, will now be your single biggest challenge. As you bound across the landscape you'll inevitably get twisted sideways and you need to correct that before the next bounce. To do this you have to perform a rolling motion in the air, which is key to mastering the SRV.

To illustrate this, hold your hand out flat in front of you. Now roll your hand slightly to the right, then pitch it up a bit at the wrist, then roll it left again and lastly pitch back down. Voila! You have successfully yawed to the right.

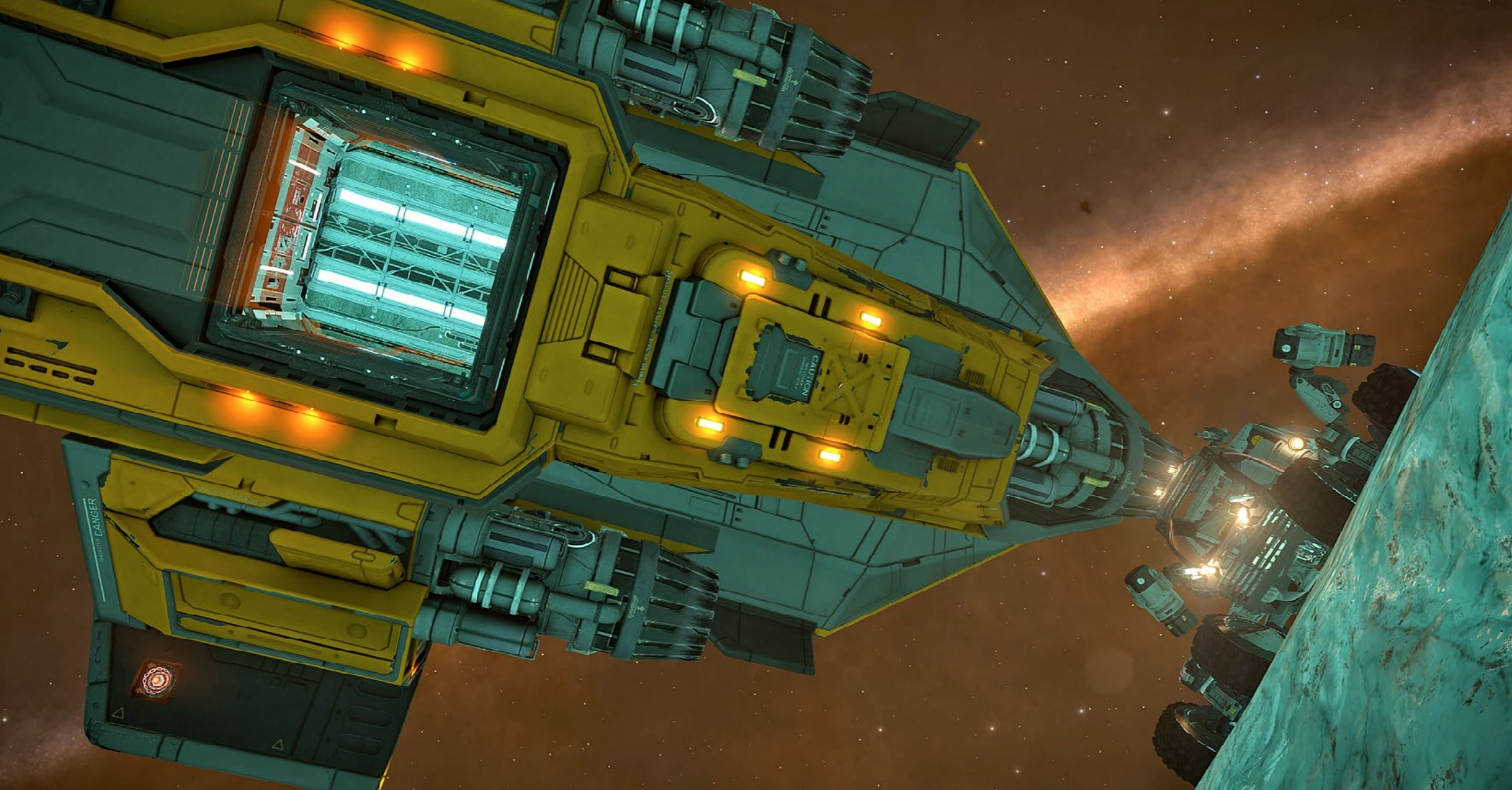
You can perform this action in a variety of different ways (e.g. pitch down, roll right, pitch up and roll left) and, with practice, can use it to twist the SRV back through any angle in order to correct particularly bad bounces (or simply to show off by landing backwards). More subtly, you should be using this technique all the time to make micro adjustments to your attitude in order to hit each bounce as square as possible to the direction of travel.

While we're in the air there are two other things to note. Firstly, if you're trying to stick to a particular heading or follow a course (for racing or planetary circumnavigation perhaps) then you'll need to steer. Wheel steering is next to useless since you're on the ground so little, so steer in the air by banking right over onto your side and then using boost to gradually push yourself across to a new heading.

Secondly there's the matter of repair synthesis. You can perform repair synthesis at any time to repair the hull of the SRV back up to 100%, and you should probably do this whenever the hull integrity drops much below 50%. Before you even set off, make sure you have sufficient supplies of the iron and nickel required by the basic blueprint and pre-select synthesis in the right hand panel so that it's right there when you need it.







## Hill climbing

The Scarab SRV is an incredibly versatile vehicle that is capable of driving up extremely steep slopes. However, there comes a point (somewhere around a 60-65° incline) where it simply runs out of traction and/or torque and will stop, or worse, start to slide back down. There are some techniques that can be used to counter this.

**The SRV is a tough piece of machinery which can take a surprising amount of punishment.**

The minute you start to slip, use the handbrake and come to a complete stop before deciding what to do next. If you continue to slide even when the brake is on then use steering to try and turn side-on to the slope.

The first technique you can employ when climbing a steep slope is to traverse across it rather than driving straight up, doubling back on yourself each time you reach the edge of the slope you're on (picture the way a mountain road zigzags its way to the top).

The other technique you can use is an extreme version of 'tilt boosting', best employed when you already have some forward momentum. Basically, get some air, then tilt the SRV nearly perpendicular to the ground and use all your boost to push yourself further up the slope, tilting back level just before contacting the slope again in order to land flat and then bounce and tilt back into the next uphill boost. Remember, the steeper the slope, the closer 'up' will be to travelling straight along the ground and the stronger your boost will have to be to counteract the gravity that will be trying to drag you back down the slope as soon as you leave the ground.

## Getting out of tight spots

Sometimes you can find yourself stuck in seemingly inescapable areas of very rugged terrain. Don't give up just yet; there are still several things to try.

The 'tilt boosting' technique can also be performed sideways and it's often possible to bunny hop across from one bit of slope to another in order to get out of pits and crevasses.

The other thing you can do is try recalling your ship. When you're on flatter ground the ship will look for a nearby (or not so nearby!) place to land, but in rough terrain it will often come down right on top of your current location and then hover. If you're very lucky you may be able to get yourself under it and board the hovering ship from there (the ship has a weak mag-lift that can pull the SRV up into the bay from a short distance).

However, if it doesn't, then try to get the SRV up on to the back of your ship. Dismissing the ship will cause it to give you a huge push upwards before the SRV slips off and you can often use this to fly the SRV to a better location, repeating the process as necessary to finally escape.

## Putting your skills to the test

Once you start to master these techniques you will open up a whole new world of exciting things to try in the SRV. Here are a few suggestions:

### SRV Racing

Long distance SRV races are a terrific way to test your skills and pit them against other drivers. Various groups such as the Buckyball Racing Club, the Hutton Truckers and the Elite Racers run these from time to time, so keep an eye out on the usual sources of community information.

### Base Jumping

Find a mountain with a plateau flat enough to land on, fling your SRV off the top and ride the slopes back down to the bottom! One excellent place to try this is on the mountain next to Smith Base in the Beta Sculptoris system, but there are many other suggestions in the *Guide to good base jumping locations* which can be found on the Pilots Federation forum.

### Ridge Running

Specific to worlds such as Pomeche 2C and Synuefe VM-D c15-10 2A, whose surfaces are criss-crossed by long, steep-sided ridges, 'ridge running' involves driving along these narrow ridges at speed, using all the above skills to follow the path as far and as fast as you can without falling off. The Buckyball Racing Club has a standing time trial challenge called 'The Pomeche Ridge Challenge' for those interested in doing this competitively.

### Planetary Circumnavigation

Perhaps the ultimate challenge for the SRV aficionado, planetary circumnavigation involves driving all the way around the entire circumference of a planet or moon. See the *Conquerors of Worlds* article in issue 9 of this publication for more details.

## Master Your SRV

**Text:** Alec Turner

**Images:** OrangePheonix

**Design:** McNicholl



# XENON

COMBAT  
GUIDE

## SHIELDS & MODULES

In Part 1 of this guide, our experts covered the weapons, shields and hull configurations best suited for winning an alien combat encounter. For Part 2, we discuss many of the module tweaks and tips used with their favourite ships.



### Power plant & thrusters

It is well known that Thargoids can have their aim disrupted by a low heat signature. In fact, there is an entire subculture devoted to low heat ship builds for fighting them. For most, a highly efficient power plant is the centrepiece. Aside from the thermal spikes produced by weapon fire, most internal heat is generated by installed modules, with the greater portion of this produced by the thrusters during boost.

It is the power plant efficiency multiplier that determines the specific thermal radiation percentage. Having an efficiency multiplier of 0.4, the Class A power plant possesses the lowest of any unmodified module available and is the standard for combat builds of all types. This is especially true for xeno fighters.

To significantly increase thermal efficiency, our panel suggests power plants that use a low emissions modification with the experimental thermal spread effect. While the low-emissions mod can increase the module mass by 20%, stripping down the power plant instead of adding the thermal spread can partially compensate for any hits to flight performance. Some builds take full advantage of this very high efficiency by engineering their thrusters to run 'clean', thus lowering their mass whilst still increasing speed and manoeuvrability in an effort to keep heat generation at a minimum.

While overcharged power plants are less efficient and should be avoided for low heat builds, some ships do not have options in this regard due to their tight power requirements. According to Cmdr Painbeaver, decreasing the ship's overall mass and using dirty drag drives maximises speed and agility to outmanoeuvre the target or, if necessary, quickly get out of range. This helps in setting up for the next attack run or in temporarily withdrawing to recharge shields and repair critical damage.

### Hull & module reinforcement

Although it has been done successfully in low heat builds, strict hull tanking is best avoided by the novice due to the tremendous amount of direct armour and module damage inflicted by an Interceptor's weapons. That being said, hull reinforcement is the simplest way to add durability to any build.

**Use as many hull reinforcement packages as possible and at least one module reinforcement package.**

*It is recommended to use regular human hull reinforcement package (HRP) engineered with heavy-duty [engineering] deep plated experimental [modification] as they give more health than their Guardian counterparts. Caustic resistance is useless overall because all bleedthrough damage is considered absolute. For the time being it is recommended to only use one Guardian HRP of the lowest class as they [only] give you 5% resistance for all modules... Important for when your shields drop. – Painbeaver*

Pilots should use as many hull reinforcement packages as possible and at least one module reinforcement package (MRP) or Guardian MRP as greater overall ship integrity improves survivability. Suggested armour values differ for each ship, fighting style, and Interceptor type, but in short, equip as much as possible without sacrificing crucial modules or capabilities.

### Ship-launched fighters

Ship-launched fighters (SLFs) are best used to keep the Thargon swarm busy while dealing with the mothership or as a distraction when repairing your vessel or recharging shields during combat.

*The best SLF for distraction, from my experience, is the AX Taipan. It draws aggression really fast and does not tend to overshoot when boosting. – Painbeaver*

An SLF can also be used to counter Thargons in full kamikaze mode as they try to crash into oncoming vessels. Having multiple fighter bays can help to keep the pressure on whilst acting as a defensive screen.

### Decontamination limpets & AFMU

If pilots feel they need a repair module, they can choose between regular repair or decontamination limpet controllers. Decontamination limpets repair more for the same amount of time, but require additional limpets in the hold to do so. It should also be noted that creating limpets expends large amounts of material that can also be used to synthesize flak cannon ammo.

*As for its caustic removing feature – you shouldn't ever get caustic in solos anyway, it's very easy to avoid. So it's up to a pilot what suits him best. – Painbeaver*

An auto field-maintenance unit (AFMU) is only suggested for very specific builds, such as a loadout that does not use heavy shields to protect against canopy breach or, for very long fights (such as those against Hydras), as a failsafe for mistakes.



### AX scanner and field neutraliser

The AX scanner and field neutraliser are somewhat useful for newer combat pilots so they can see the damage being dealt and avoid the Thargoid EMP shut down pulse. Though, once a pilot gains more confidence, both can be removed and replaced with something more useful.

*Thargoid about to EMP you? Deploy a heat sink, boost, flight assist off, and kite away. If you can get to a distance of 3km before the heat sink wears off, the Interceptor will not deploy its EMP. If you are unlucky and the Thargoid EMP hits you, your momentum will keep you moving and by the time the alien catches up, your systems will be back online. – Painbeaver*

### Silent running & heatsinks

Whilst heat sinks have a definite use and are considered by many to be essential for an anti-xeno build, Cmdr Shwinky does not recommend using silent running at all. When in use, it shuts down the shields and dramatically amplifies heat generation whilst the weapons are firing, and so can produce enough heat to cook a ship to death from the inside. He suggests an alternative tactic:

*Whilst starting an attack run, continuously deploy heat sinks to keep your heat as low as possible. As long as your heat is around 25% (this number depends on your distance from the Thargoid) and you're moving vertically fast enough, the Thargoid will have to constantly rotate to keep up with you. Because of this, it will consistently place its shots where you were instead of where you will be. This [helps] you to avoid damage entirely and it's why shieldless [builds] have been gaining popularity.*

### Best large ships

The Cutter is without a doubt the strongest ship to use against the Thargoid menace. However, it is no longer the only ship that can perform solo kills on the tougher Interceptors. The Cutter's many strengths lie in its speed, durability of its hull and shields, its firepower, and the size and quantity of its internal compartments which allows for a great amount of flexibility.

With the introduction of small gauss cannons, the Federal Corvette has the best convergence of all ships with two small and two medium hardpoint anti-xeno setups. The damage from this configuration is enough to kill a Medusa without having to synthesize premium gauss cannon ammo. This arrangement also allows the pilot to hit an exerted Interceptor heart with all four gauss cannons at the same time, with the exception of the larger Hydra class which can still be hit with at least three of the four weapons.

For a long time, the Faulcon deLacy Anaconda was the best ship to use. As it was the only commercially-available ship that could mount four C3 weapons, it was critical when only human AX weapons were available. Now, with the Guardian weapon technologies' improved metrics over their AX counterparts, this older configuration has been superseded. However, the versatility of the design still makes it one of the best ships to have in any arsenal.

*It is the ultimate shard cannon carrier because of its weapon convergence, and [its] ability to take 4 large weapons makes its AX [damage per second] the absolute highest attainable. – Synoxys*

### Best medium ships

Cmdr Synoxys believes that "the Krait [Mk II] is currently the best medium-sized ship for AX duties." It has enough hardpoints to equip four medium gauss cannons and a remote flak launcher. A very large internal core module capability and the power distributor in particular allows high hull reinforcement and for the constant firing of all four gauss cannons. The hardpoint placement is excellent, allowing for shots to converge at all ranges. Having enough speed to outrun the quarry, it is the perfect ship in which to employ bi-weave shields and kiting tactics.

**Thargoids can have their aim disrupted by a low heat signature.**

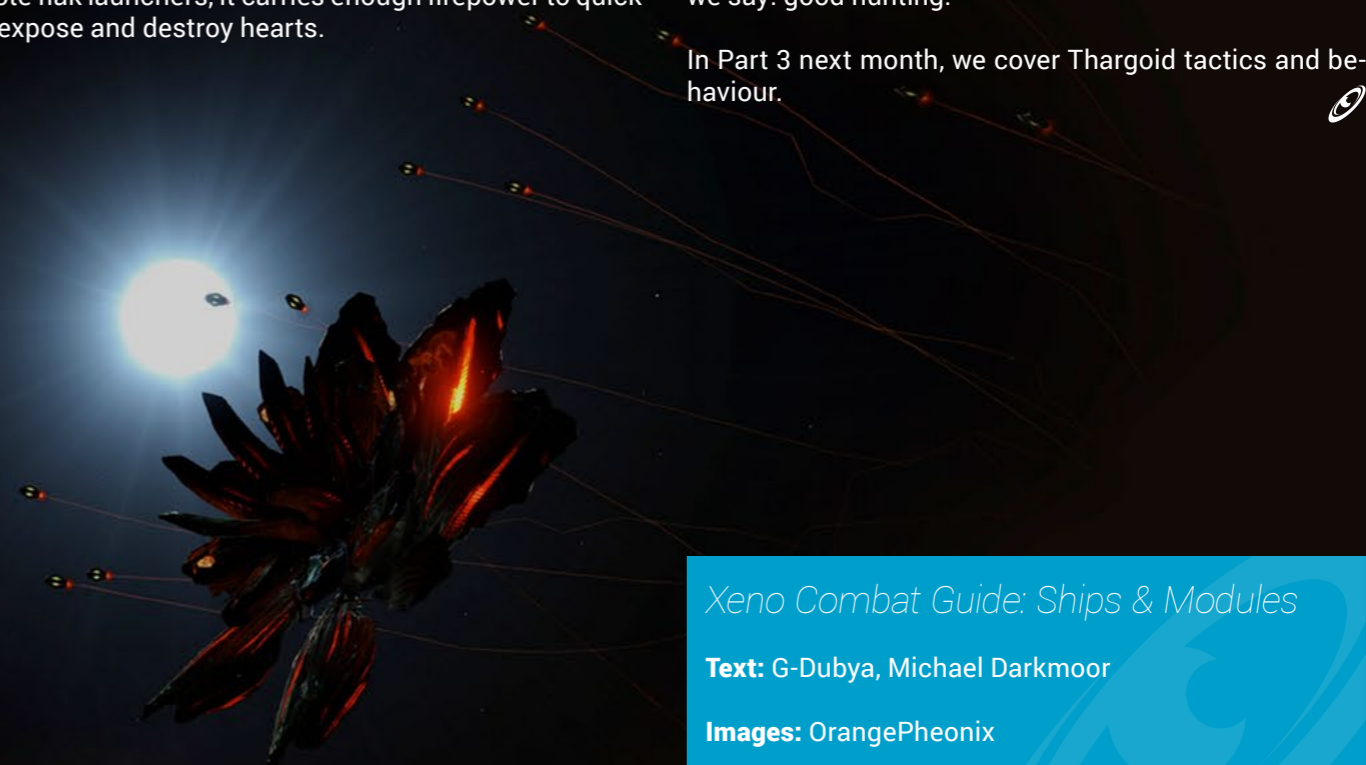
Another excellent all-around ship, the Fer-de-Lance is used by both solo and winged commanders. With a recommended loadout of three gauss cannons and two remote flak launchers, it carries enough firepower to quickly expose and destroy hearts.

The Alliance Chieftain is almost a carbon copy of the Federal Assault Ship (FAS) in terms of AX combat. Adding two small gauss cannons to compliment the two medium ones gives the Chieftain a slight edge in firepower over the FAS. It is just as manoeuvrable as the FAS, too, with the exception of the yaw rate. Where the Chieftain lacks speed, it makes up for in hull integrity. Lightweight hull armour with heavy duty deep-plated engineering is recommended.

An excellent vessel for pilots wishing to employ a low heat flight assist (FA)-off fighting style, the FAS has enough hardpoints to allow for three gauss cannons and one flak launcher. With the arrival of the Guardian shield reinforcement package, the FAS can hit over 700 MJ on a bi-weave shield with only two shield boosters. 700 MJ is considered to be the minimum threshold a bi-weave shield should reach in order to perform advanced AX operations.

Xeno combat, while an inherently dangerous activity, is very much an emerging career in these uncertain times. It is important for every pilot who follows this path to be well-armed, knowledgeable of their chosen ship's capabilities and prepared to get the most out of them tactically. With Thargoid encounters on the rise, the profession certainly has room for a few more brave souls. To these, we say: good hunting!

In Part 3 next month, we cover Thargoid tactics and behaviour.



### Xeno Combat Guide: Ships & Modules

**Text:** G-Dubya, Michael Darkmoor

**Images:** OrangePheonix

**Design:** McNicholl

**Thanks to:** Aranionros Stormrage, GluttonyFang, Painbeaver, Shwinky, Synoxys



THEY DON'T MAKE THEM LIKE THEY USED TO:

# GUARDIAN TECHNOLOGY

IN HUMAN HANDS

Guardian technology: ancient wonders combined with new innovation and, quite possibly, the next leap forward in spacefaring. Despite this, concerns remain: What is it? How exactly have human and alien technology been so effectively grafted together?

To answer these questions, *Sagittarius Eye* was granted unprecedented access to renowned engineer Ram Tah's Phoenix Base in the Meene system.



Ram Tah himself was far too busy to conduct the tour, but an assistant was on hand to facilitate an in-depth look at the process, from concept to hardpoint. Dr Nerine Schulte, who has been at Ram Tah's side since before the first barnacle sighting, was invaluable in lifting the veil and helping us understand these exotic modules. Her contribution has helped not only Ram Tah and his work, but all of humanity.

## A new paradigm

As the conflict against the Thargoids unfolds, new technologies seem to emerge daily from Phoenix Base. Not all of these are for military use: new lines of reactors, power distributors, and even frame shift drive enhancers have been made available to independent pilots who have the materials to trade for them.

"To understand Guardian technology, one must first understand Guardian culture", Dr Schulte explains. We are on an observation deck — a seemingly endless line of power plants being assembled before our eyes, glowing in their signature cyan. Our eyes are not on each other, but upon the mass production before us: a vast line of components from Phoenix Base, many to behold, but barely sufficient to meet demand.

"The race that we call the Guardians was based on cooperation and harmony," Schulte continues. "Though competition and war were not unknown to them, emphasis was placed on the communal, rather than the individual. These cultural values influenced their very technology.

"Their systems are very much designed to complement each other, increasing the effectiveness of the whole. This is only conjecture, but I am convinced that the Guardians would have regarded, say, a power plant and power distributor not as separate modules, but as different aspects of a single, holistic device. In this regard, they might have been quite similar to their Thargoid nemeses, whose biomechanical engineering resembles organic architecture more than conventional machines."

**“ The gear that emerges from Phoenix Base remains less effective than the most skillfully modified human components. ”**

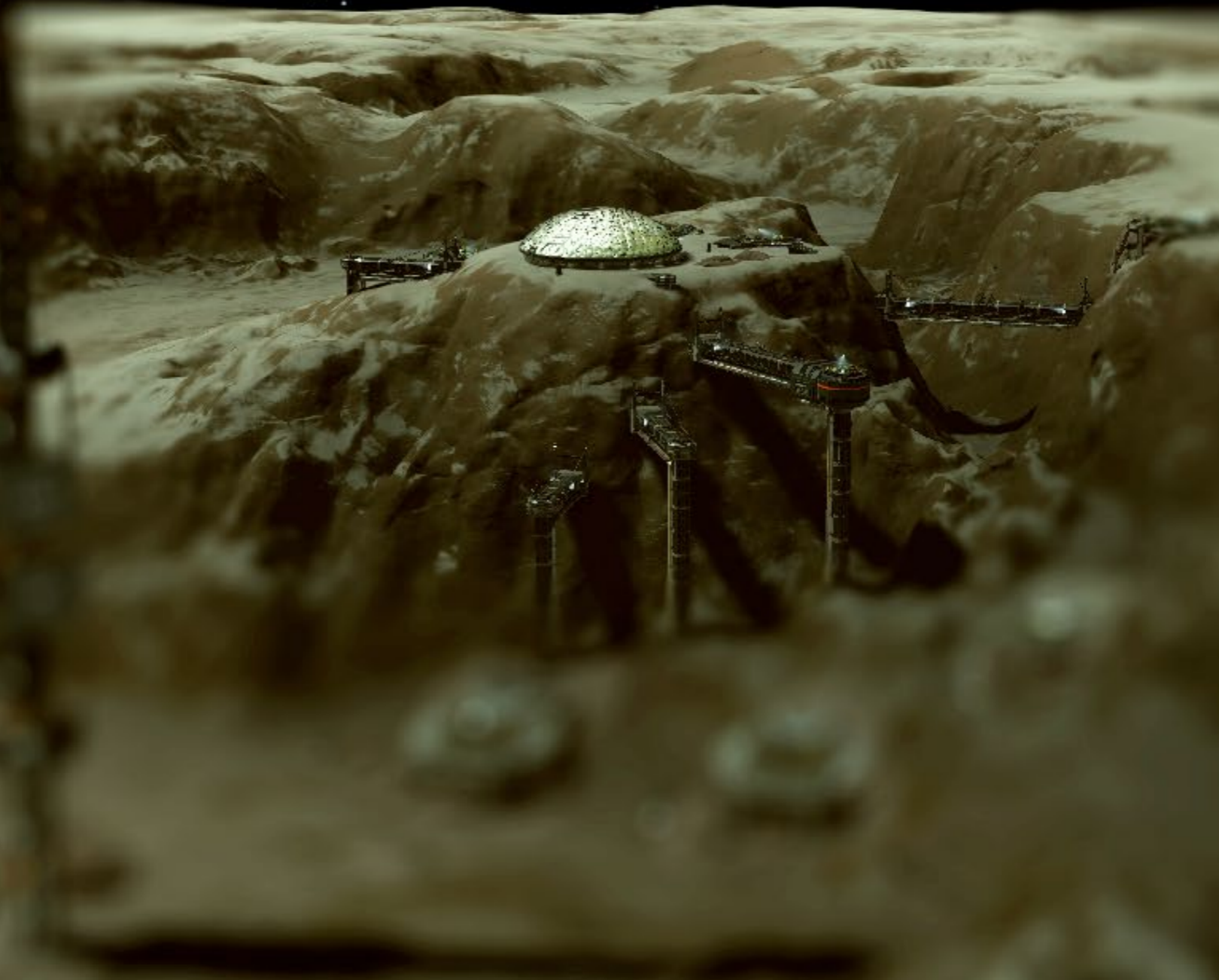
The results seem to bear out Dr Schulte's observations. It is well known, for example, that power distributors based on Guardian technology have a positive effect on a power plant's energy output once installed. Human modules laced with Guardian technology are conditioned to resist the disruptive effects of Thargoid interference, regardless of their purpose. Indeed, Guardian technology has saved many lives, even if the reasons for their effects aren't fully understood.

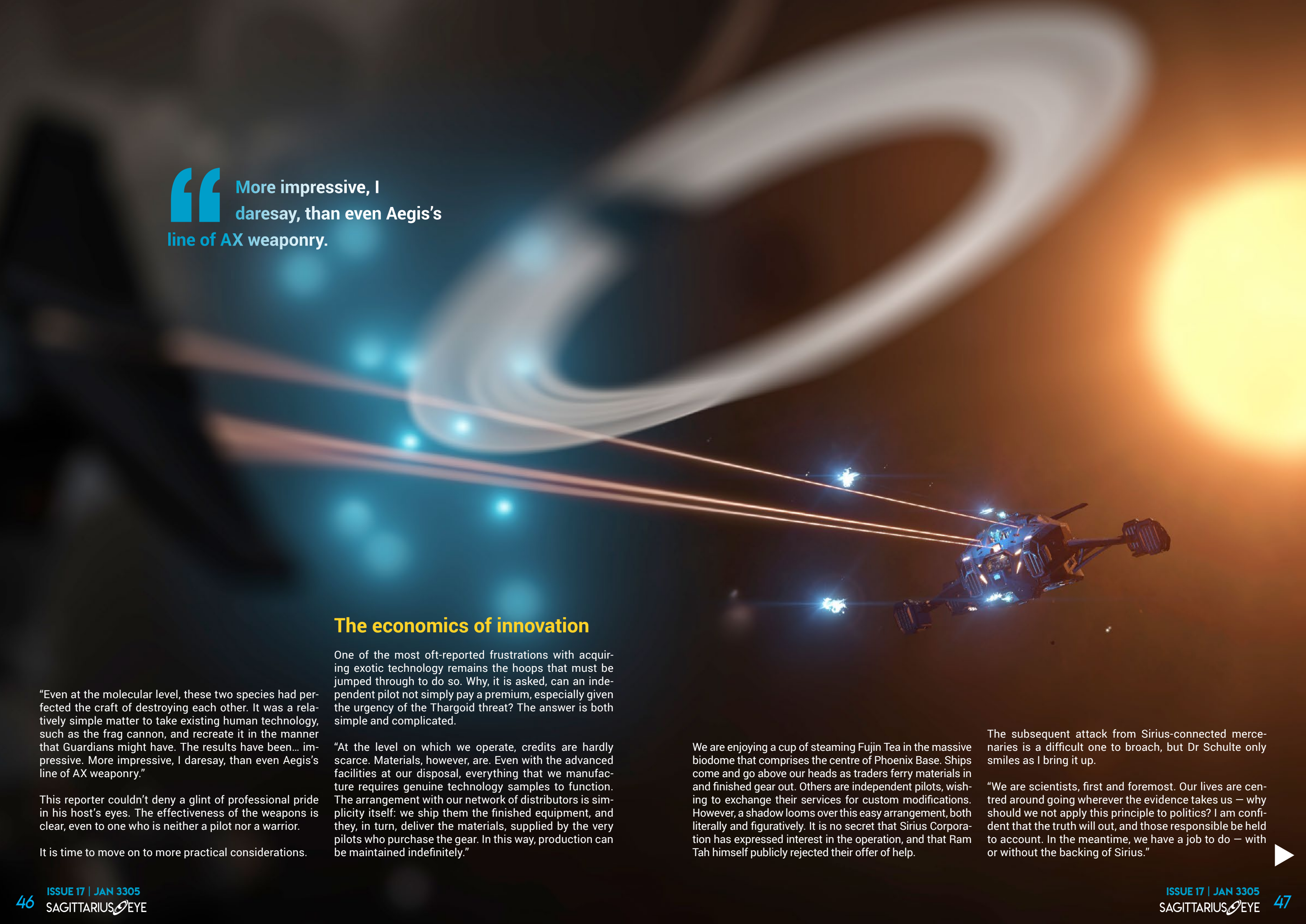
## Conflict great and small

"To watch Guardian and Thargoid technology interact even under a microscope is fascinating. There is a macabre beauty to it: the end result being two fundamentally different intelligences bent upon destroying each other. And indeed, everything about their technological efforts became channelled towards doing exactly that."

We are now overlooking a cavernous demonstration chamber. Below us hangs a captured Thargoid Scout held in place with massive industrial pincers. Its propulsion systems are disabled, and a cruel-looking shard cannon is pointed at it. With little fanfare, Schulte triggers the weapon. The Scout shatters, its hull perforated from a thousand impact points. As its organic hull falls apart, the sickly green illumination of its interior fades away. A low, haunting moan is heard throughout the subterranean level, utterly inhuman yet unmistakably one of suffering. The saucer-shaped vessel is irreparably damaged. It is difficult not to think of it as mortally wounded. A row of holo-screens light up, analyzing the effects of the weapon in real time.

Dr Schulte points to one screen, showing the interactions of Guardian shards against the evolved organics of the Thargoid carapace. A slowed holo-vid shows the fragments slicing through the alien hull, the latter attempting to micro-regenerate and the former slowing that process, leaving the insectoid vessels vulnerable to damage like molecularly stagnant human ships. Yet even the intruding shards themselves are enveloped and neutralized in flowing Thargoid resin, reminiscent of tree sap thwarting the progress of a hapless burrowing insect.





“ More impressive, I daresay, than even Aegis’s line of AX weaponry.”

## The economics of innovation

One of the most oft-reported frustrations with acquiring exotic technology remains the hoops that must be jumped through to do so. Why, it is asked, can an independent pilot not simply pay a premium, especially given the urgency of the Thargoid threat? The answer is both simple and complicated.

“At the level on which we operate, credits are hardly scarce. Materials, however, are. Even with the advanced facilities at our disposal, everything that we manufacture requires genuine technology samples to function. The arrangement with our network of distributors is simplicity itself: we ship them the finished equipment, and they, in turn, deliver the materials, supplied by the very pilots who purchase the gear. In this way, production can be maintained indefinitely.”

“Even at the molecular level, these two species had perfected the craft of destroying each other. It was a relatively simple matter to take existing human technology, such as the frag cannon, and recreate it in the manner that Guardians might have. The results have been... impressive. More impressive, I daresay, than even Aegis’s line of AX weaponry.”

This reporter couldn’t deny a glint of professional pride in his host’s eyes. The effectiveness of the weapons is clear, even to one who is neither a pilot nor a warrior.

It is time to move on to more practical considerations.

We are enjoying a cup of steaming Fujin Tea in the massive biodome that comprises the centre of Phoenix Base. Ships come and go above our heads as traders ferry materials in and finished gear out. Others are independent pilots, wishing to exchange their services for custom modifications. However, a shadow looms over this easy arrangement, both literally and figuratively. It is no secret that Sirius Corporation has expressed interest in the operation, and that Ram Tah himself publicly rejected their offer of help.

The subsequent attack from Sirius-connected mercenaries is a difficult one to broach, but Dr Schulte only smiles as I bring it up.

“We are scientists, first and foremost. Our lives are centred around going wherever the evidence takes us — why should we not apply this principle to politics? I am confident that the truth will out, and those responsible be held to account. In the meantime, we have a job to do — with or without the backing of Sirius.”



## Questioned relevance

For all the genius that must surely be incorporated into the integration of human and Guardian technologies, an awkward fact remains. While superior to stock human modules, some of the gear produced by Phoenix Base is less effective than the most skillfully modified human components. As before, Dr Schulte acknowledges this problem.

“Those who criticize the results of our work fail to see the larger picture. True, the select few pilots who are well-connected enough to acquire those modifications might enjoy a few advantages, but that’s hardly the norm. The first generation of hybrid technology has every potential of elevating the baseline itself. This is the beginning of our great work, not the end.”

## A path forward, with an eye to the past

We are in another sector of the facility. Gauss ammunition parades before us on a massive conveyer belt, each exotic rail slug capable of piercing the heart of the most deadly Thargoid Interceptor. It might be the late hour, or the endless implements of war, but the scientist’s tone is sombre.

“The Guardians were ahead of us in so many ways. It takes only one look at the majesty of a Beacon, or to machines that still function even after untold millennia, to see as much. Yet we have already eclipsed them in our own way and against a foe far more dangerous than Thargoids: hubris.”

This reporter presses Schulte to explain what she means, walking side by side back to the docking bays. Our time is short, and my automated press pass will soon expire. The shuttle waiting to take me back to Schlitberger’s Progress idles in the dock, but she gives a final morsel of insight:

“It was not the Thargoids that led to the Guardians’ final doom. It was their pride — pride in their prodigal child, the artificial intelligence that grew beyond its constraints. Humanity faced that test once, too — and succeeded where they failed. This is the most valuable thing we can learn from the Guardians: not their weapons or a further-jumping ship, but to always remember who we are, and the dire cost of forgetting.”

The door to the shuttle snaps shut, and this journalist takes his seat, everything that had been seen and heard remains fresh and remarkable.

Beneath the surface of Phoenix Base the work continues, weapons and modules produced non-stop for the heroic pilots who safeguard humanity. I am haunted by a singular line of Dr Nerine Schulte — no doubt already back at work, our time together forgotten:

“This is the beginning of our great work, not the end.” 

“ Even at the molecular level, these two species had perfected the craft of destroying each other.”

*Guardian Technology in Human Hands*

**Text:** M. Lehman

**Images:** TwoSpoons77, Sebastian Wehmeyer, Sirruf

**Design:** Donald Duck

# PHYSICS OF ENERGY WEAPONS

Modern spaceship weaponry is a part of everyday life for many Pilots Federation commanders. Whether employed as a last line of defence for precious cargo, or as a day-to-day tool in conflict zones and resource extraction sites, our ability to destroy is unparalleled compared to any other period of human existence. Here, we take a look at those that fall under the umbrella of 'energy weapons'.

**Just under two thirds of the resultant energy sent downrange cannot be resisted by current shielding or armour technology.**

## Destruction: evolved

For many millennia, humanity had only one very broad way of using tools for offensive purposes: kinetic energy. Kinetic energy is simply the mechanical energy possessed by an object when it is in some form of motion. Rocks became clubs, clubs became spears and so on, until personal ballistic firearms were developed and perfected in the 20th century.

Beyond this point, little further development could be made, aside from efficiencies in firing speed, weapon mass, and other ergonomic factors. This is mainly due to the kinetic energy equation, which relates the energy possessed by a moving object (and from this, its potential damage), to the object's mass and velocity:  $E = \frac{1}{2} \cdot mv^2$ . The key factor is velocity: doubling a projectile's speed will increase its energy fourfold.

Humanity's discovery of explosives first enabled the development of firearms and then advanced in parallel with it. Explosives typically rely on chemically stored energy released all at once at a concentrated location, via an exothermic reaction that proceeds at an exponential rate.

While the smallest explosives, such as hand grenades, were wieldable by individuals, most were deployed on much larger scales by vehicles or large missile facilities.

'Exothermic' means that the reaction generates heat, which in turn causes expansion. An 'exponential' growth rate is one that doubles per a given unit of time: also found in a "population explosion". Put together, these terms denote an immensely potent and destructive expansive force that emanates from a single point.

Explosive technology, much like that of firearms, started to plateau in the 20th and 21st centuries. With the development of the nuclear fission bomb during World War 2 and the Cold War on Earth, dense energy storage methods were developed. There was little room for the technology to evolve further, aside from packing more material in one place. Indeed, many explosive and kinetic weapons of today are similar to weapons wielded before humanity left Earth for the stars.

## Enter energy weapons

While the term 'energy weapons' is misleading (all weapons rely on energy, after all), it conjures a very particular image in the mind: exotic weaponry, relying on light, plasma, electricity, and assorted other colourful methods of destruction, ascending far beyond primitive detonations or flinging of projectiles. A truly advanced and 'civilised' toolkit of war.

Around the time that kinetic and explosive weapons technology began to plateau, the very first energy weapons were being developed. This began with the staple of thermal weapons today, widely manufactured and familiar to all pilots: the laser.

**The key factor is velocity: doubling a projectile's speed will increase its energy fourfold.**



## Lasers

The theoretical foundations for the laser came from the work of the famous German physicist Albert Einstein. His paper On the Quantum Theory of Radiation presented a re-derivation of already established physical laws of radiation. From this, a phenomenon known as 'stimulated emission' was predicted, and eventually confirmed. This theory describes the physics of light amplified by the transition of electrons between energy levels in their host atoms. A few decades and much fine engineering later, the predecessor to the laser was born: the MASER – Microwave Amplification by the Stimulated Emission of Radiation.

From this, the laser – originally an acronym itself, with 'light' replacing 'microwave' – was created. When first invented, a purpose for the laser was unclear; while they were fantastic devices, nobody was quite sure of the need. However, they quickly proved useful in many fields, notably medicine, communication, consumer technology and law enforcement. It would not be long before humanity's destructive nature repurposed them for war.

Half a century later, the very first laser weapon system was officially deployed by the navy of the United States of America – the Federation's predecessor. A simple defence system, the laser (known as LaWS) was flawless in its ability to destroy small enemy vehicles, such as boats or unmanned air vehicles. It was also capable of causing significant damage to the exterior of larger aircraft, such as helicopters.

The rest is, as they say, history, and lasers have firmly cemented themselves as the staple energy weapon of the modern era. As any good combat pilot will tell you, lasers inflict thermal damage on enemy ships, which has proven to be an extremely effective method of countering many modern shielding technologies. But what exactly do they do, and how?

When a laser is fired, the resulting beam is more than just a simple column of light. Light is emitted coherently by the weapon, being both spatially coherent and temporally coherent. Spatial coherence means that all of the components of the beam have the same phase. Since light has wave-like properties, a phenomenon called interference can occur, much like when two water waves meet. Since laser light is all in the same phase, it will always experience interference in such a way that the energy delivered is maximised: all components will 'peak' and 'trough' in the same place.

Temporal coherence refers to the laser's colour – every part of the laser is of the same colour, therefore the same wavelength. This ensures that, over the length of the laser's beam, the laser's components do not get out of phase, thus experiencing negative effects such as reduced power from interference.

## Pulse, burst, and beam lasers

While there are many operating principles for lasers, the three categories of laser weapons available on the consumer market — pulse, burst, and beam — only differ slightly, concerning the balance between damage output and energy consumption.

Pulse lasers are designed with efficiency in mind. By being 'off' most of the time, they consume less power and require less cooling. They are also highly efficient in converting energy into effective damage due to their low power use.

Burst lasers retain much of this efficiency, simply firing more often, producing a little more heat and causing more damage per second.

Beam lasers, on the other hand, require significant cooling to counteract the heat produced by a constant beam. Larger variants even have multiple barrels to switch between, in order to stop extreme thermal overload. For these costs, a damage per second increase of about 25% is gained over burst lasers, at a heavy cost to efficiency.

Lasers cause damage thermally, causing localised heating of the target. Standard shielding technologies struggle to repel such energy, requiring 20% more power than that of the weapon in order to repel the attack. While engineering can overcome this weakness, the vast majority of targets do not have that luxury. This gives lasers a significant advantage over more traditional weapons for stripping enemy shields. Not only this, but the lack of any ammunition limit or travel time make the laser the weapon of choice for many combat pilots.

## Laser limitations

While they boast many strengths, laser weapons also have limitations. One of the most noticeable drawbacks is the comparatively high power draw of the weapon. The problem derives from the fact that the energy used to damage the enemy is drawn directly from the ship's power plant. Many kinetic weapons such as multi-cannons store this energy in the ammunition, with each round being propelled by explosive powder within it.

Lasers also experience significant damage drop-off over distance, which is caused by multiple factors. While lasers are, as stated earlier, temporally coherent, they are not perfectly so. Different components of the laser will have very slight differences in wavelengths, resulting in loss of beam coherence as over great distances.

The other factor affecting the weapon is called beam divergence. While lasers can be expertly engineered and well-focused, they all experience divergence due to the fundamental laws of physics. The divergence of a laser can be calculated as a function of the wavelength of the light, and what is known as the 'beam waist', where the beam is narrowest. Eventually, the beam disperses into uselessness.

A combination of these factors limits the effective range of most lasers to around 3km. Careful engineering can bring this up to 6km (with a significant increase in power draw), but effective damage output beyond such ranges is impossible with current ship-mounted laser technology. Much larger ground-based lasers can already achieve longer ranges, so improvement in this field is feasible.

The final major drawback of lasers is their relative ineffectiveness against bulkheads. While they're capable of destroying armour, more traditional projectile-based weapons have a much easier time getting through.

To aid in sustained attack against armour, most lasers actually pulse on a very short time scale, far shorter than is noticeable to humans. This prevents the formation of blobs of plasma on the surface of enemy armour, which would absorb further incident energy from the laser's beam. Despite these extra measures, lasers are still inadvisable for a primary means of damage against a well-armoured target.

In the complex world of combat, variety is the spice of death. On that note, we move on to our next energy weapon: the railgun.



## Railguns

Our more scientifically-versed readers may wonder why railguns come under the energy weapons umbrella. After all, they launch a projectile, to transfer kinetic energy to the target. This is true, and we'll get to the technicalities shortly. First, let's look into what railguns are.

A railgun relies on the interaction between electrical and magnetic fields. The principle is very simple: a voltage is put across parallel metal rails, with the power supply at one end (the rear). When a conductive projectile is loaded onto the rails, the electrical circuit is completed, a current flows, and an electromagnet is created. The resulting magnetic field interacts with the current passing through the projectile, accelerating it along the rails and out of the weapon.

So simple is the principle of railguns that they were first made — though very crudely — in the 19th century. They would not see military deployment until the early 21st century. Early military railguns fired projectiles at speeds of Mach 7 — over 2 km/s. At the time, these speeds were overwhelming for any enemy in the projectile's path.

Nowadays, greater efficiencies, larger weapons, and more advanced projectiles mean that railguns fire at truly unbelievable speeds. Many in fact do not realise that a projectile is being launched, believing that the weapon is some sort of beam. So fast are the projectiles that their travel time is assumed to be instant. While this is not true, the projectiles are known to be extremely fast. Manufacturers do not release exact specifications (only the energy delivered, no muzzle velocity), but we can do some ad hoc calculations.

Headcam footage at 144 frames per second shows that a railgun projectile will reach a target 6km away (if engineered) in less than a single frame of video. Dividing 6,000 metres by 1/144 of a second provides a lower

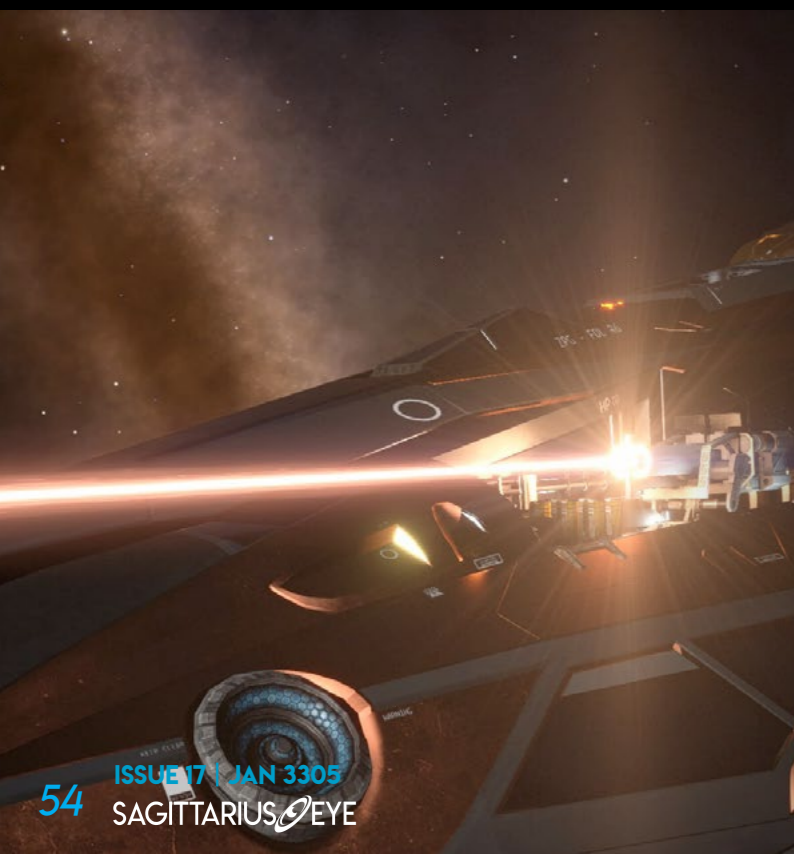
bound of a railgun velocity of 864,000 m/s. Measured in 'Mach' speed, this clocks in at Mach 2,600. This is equivalent to just under 0.3% the speed of light, and is in fact around thirty times faster than a ship idling in supercruise! Remember: this is a lower bound, the absolute minimum velocity of these projectiles.

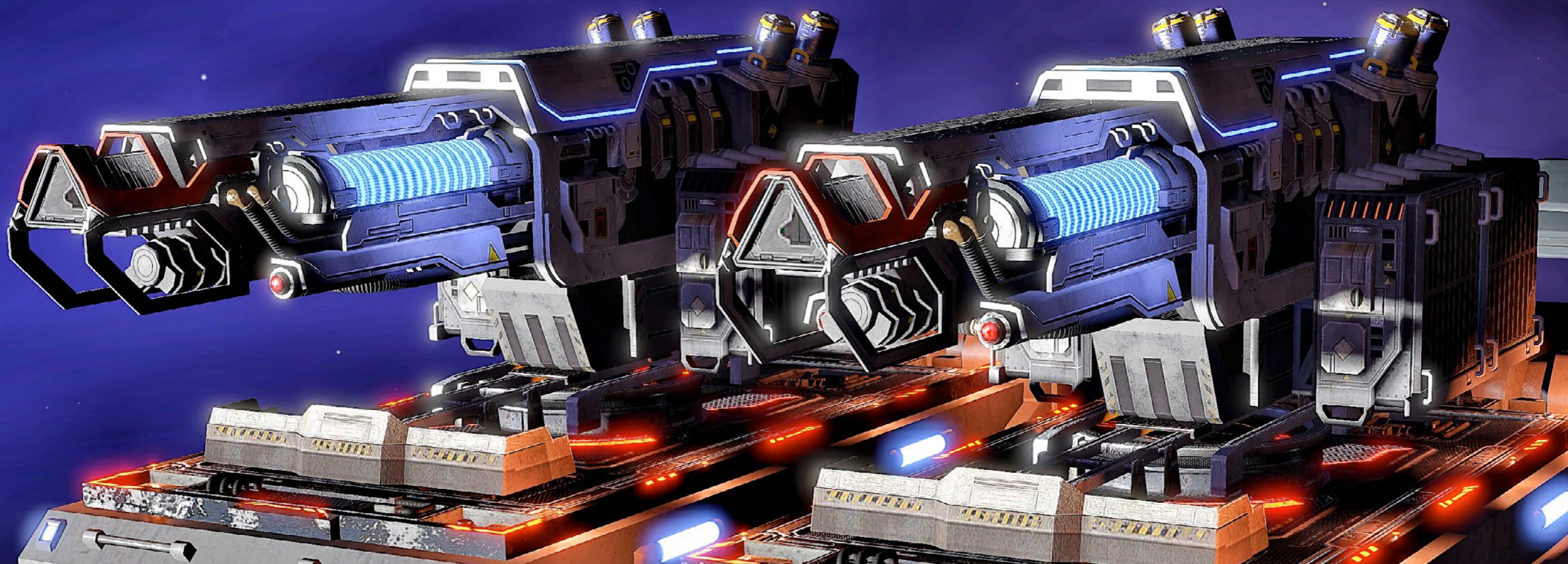
These near-relativistic projectile velocities are the reason that about two thirds of the energy of a railgun projectile inflicts thermal damage, thus classing it as an energy weapon. So much heat is generated in addition to the kinetic energy imparted on impact that the weapon causes significant internal damage to the target.

As a result, railguns prove to be versatile weapons for pilots with a steady hand. Their armour piercing ability is almost unmatched, and they can gut a ship in just a few shots. The price paid for such power is heavy, though. The weapon produces extreme levels of heat, and rapid firing is ill-advised. On top of this, high power draw and distributor draw often make the weapon difficult to manage.

These drawbacks are minor inconveniences to the battle-hardened combat veteran, with the railgun serving utility purposes as well as just inflicting damage. Armour piercing rounds are capable of devastating a ship's reactor bays and stories of continuous holes through an entire hull are told from station to station. Specialist ammunition can also, at the cost of damage inflicted, interfere with the operation of enemy shield cells.

Railguns prove themselves then to be at the cutting edge of modern weapons technology. This though, is a territory they share with the final weapon we shall discuss.





## Plasma Accelerators

Of all weapons encountered by navy pilots, few are as feared as the plasma accelerator. By catapulting globs of superheated gas at their opponent, a pilot will likely inflict as much psychological damage as physical damage. But why are these exotic weapons so feared, and how do they even work?

The history of plasma weapons development is shrouded in mystery. It is known that the United States of America experimented with plasma weapons technology prior to World War 3, but the extent of development and deployment of these top-secret weapons is knowledge lost. It can be safely assumed however that their technology operated on the same principles of physics as do modern plasma accelerators.

When the trigger is pulled, gas is injected into the weapon. This gas is then heated to such a temperature that its constituent atoms break down into a hot blob of ions and electrons. While the exact technology used to create this

heating is a secret known only to the manufacturers (and those engineers who tamper with them), it is presumably similar to the working principle of a nuclear fusion reactor.

Heating is achieved by using an extreme magnetic field to induce a current. As this current passes through the plasma, the electrical resistance causes collisions within it that cause heating. These magnetic fields are also used to contain the plasma just before it is fired. By rapidly changing this magnetic field, a force can be produced to accelerate the plasma out of the weapon, similarly to the railgun discussed earlier. This entire process occurs in a fraction of a second.

While the projectile is slow moving, travelling below 1 km/s, it possesses a unique advantage. Just under two thirds of the resultant energy sent downrange cannot be resisted by current shielding or armour technology. While thermal damage can be countered and minimised,

and kinetic energy can be deflected, this 'absolute damage' is unavoidable, because of how the superheated plasma impacts and penetrates the surface of anything it collides with.

The plasma projectiles also possess significant amounts of electrical energy, due to the extreme number of fast-moving charged particles. While this energy does not directly cause damage to the target, careful manipulation of it through engineering can be used to interfere with the target's electronics. Possible results include targeting system interference and the disruption of gimbal and turret tracking.

The shots also possess about one-fifth ratio of the total damage each of kinetic and thermal damage. This gives the weapon an excellent balance between attacking armour, shielding, and resistance-engineered targets. Very little is safe from the fearsome plasma accelerator.

## An expanded arsenal

While humanity may never truly sate its hunger for destruction, energy weapon technologies have certainly allowed such desires to be indulged with levels of efficiency unseen before recent times. While energy weapons have never managed to replace conventional explosives and projectiles as many predicted, they have certainly proven their worth beyond the realms of the science fiction in which they were conceived.

### *Physics of Energy Weapons*

**Text:** Mini\_Watto


**Images:** OrangePheonix, TwoSpoons77, SebastianWehmeyer

**Design:** McNicholl

# THE DARK WHEEL

FACT OR FICTION?

*Bereft of the sun, in the dark and cold, the wheel turns. There is no light where it lives and so its people learn to be shadows, to see in the night.*  
– Anon



With the introduction of the Codex, the shared repository of knowledge for Pilots Federation members, spacefarers everywhere are now privy to an 'official' standpoint on the mysterious group known as the Dark Wheel. Whilst mostly an aggregation of different rumours, there are some threads which are, perhaps, verifiable. To find the truth behind this enigmatic organisation, this reporter started an investigation in the most obvious place.

Shinrarta Dezhra, home of the Pilots Federation, also supports several political factions. One is an organisation known as the Dark Wheel. An open meeting with a faction representative, Abbetan Laing, elicits an interview that feels much like a duel with a pool of water:

**SAGi:** Do you represent The Dark Wheel?

**Laing:** Yes.

**SAGi:** Is that the same organisation of legend, from the 32nd century?

**Laing:** What other Dark Wheel would there be?

**SAGi:** So you work for the same group? The same people?

**Laing:** Who else would call themselves by our name?

**SAGi:** Can I meet them?

**Laing:** Who?

**SAGi:** The Ryder family. Rafe Zetter? The others?

**Laing:** I can certainly forward your request.

Six weeks later, a follow-up enquiry finds Abbetan Laing no longer available. His apparent replacement, one Helien Branck, offers similar answers to the questions. Again, several weeks later, she too is reassigned. After the fact, all attempts to track down either of these individuals in the system or elsewhere end fruitlessly.

## What's in a name?

Humanity's curiosity about what lies beyond the boundaries of knowledge remains unquenched and undimmed. The Dark Wheel was a product of that quest: a legendary cabal of early space explorers, seeking truths behind the myths and legends, perhaps looking to eventually become one themselves. At the beginning, they called themselves 'Star-Riders', but the pretentious moniker has not aged well. Now, most people simply refer to the group as the Dark Wheel.

The name Dark Wheel has been floating around the space lanes for centuries. According to severalfold conspiracy theorist and sensationalist reporter Lyta Crane, the group's name derives from their base: an abandoned starport orbiting the eighth moon of a gas giant in an as yet unknown system. This station – toroid, hence 'wheel' – is said to be totally unilluminated for concealment. Its coordinates are supposedly given only to those whom the organisation discreetly approach that can swear (and be trusted) to keep them secret. Ms Crane believes the station is still used by the group, but no one has been able to substantiate her claims or attest to the veracity of her research. That has not stopped pilots in their thousands from scouring the Galaxy for this mysterious 'eighth moon'.

A hidden, rotating space station on the edge of explored human space would certainly make for a good staging point of deep space explorers. They would be able to journey there, refuel and resupply before heading out, deeper into the void. Could there be at least that bit of the truth here?

If it were so, rapid colonisation and expansion of the frontier through the centuries would have quickly made such a station's purpose redundant, unless it was mobile.

Spending a few weeks at Jameson Memorial conversing with the many commanders who come and go from the station reveals more detailed information. The Dark Wheel does occasionally recruit pilots for missions, but these mostly revolve around the occasional passenger and local sector cargo deliveries. Apparently, members of the organisation have been heard to mention 'the great mystery' in passing, but never fully elaborate. Could they be referring to the mysterious Raxxla, said to be the ancient alien world once associated with the organisation back in the 32nd century?

Whatever the situation in Shinrarta Dezhra, the modern Dark Wheel does not appear to know where to find the fabled Raxxla. Whether they are a new iteration of the older group having lost contact with their ancestors, or imposters looking to exploit a famous and legendary name for their own nefarious purposes – no one has given the game away.

**An abandoned starport orbiting the eighth moon of a gas giant.**

## Enquiries elsewhere

The Eurybia Blue Mafia is a well-known criminal fraternity operating out of the Eurybia system. They are an independent anarchy with a dangerous reputation. After a few weeks earning their trust, a precious asset from amongst their ranks agrees to meet this reporter at an undisclosed location: Liz Ryder.

Our communication is ship to ship. Typed questions and answers only.

**SAGi:** Am I speaking with Liz Ryder? The explosives expert who worked with Devastator and Sons?

**Ryder:** That was a long time ago. What modifications are you looking to purchase?

**SAGi:** Apologies, but I don't want any ship upgrades, I wanted to ask you some questions about your past.

**Ryder:** I'm not here to satisfy your curiosity, I'm here to trade.

**SAGi:** Okay, can I trade you for information then?

**Ryder:** It depends what you ask.

**SAGi:** Are you related to the famous Alex and Jason Ryder?

**Ryder:** ...

**SAGi:** What do you know about the Dark Wheel?

**Ryder:** This conversation is over. Keep your landmines. I have plenty of other customers who aren't going to waste my time.

At that point, the interview was terminated.



## Where do I send my CV?

Whilst no one knows how to go about joining the Dark Wheel, there are still some consistencies among the many stories revolving around them.

One is that the group is made up of the most Elite pilots in the Galaxy, picked from the uppermost echelons of the Pilots Federation. This is commonly understood to be separate from the Elite Federation of Pilots, but the latter likely know more than they publicly let on.

**Humanity's curiosity about what lies beyond the boundaries of knowledge remains unquenched and undimmed.**

The other constant in the stories is that you cannot 'apply'. Seeking them out always proves unsuccessful. Some rumours state that a pilot, upon reaching Elite in several disciplines, might be approached by some anonymous individual with a difficult task. Should the test of skill and courage be completed, that individual might extend an invitation to the group. Other tales suggest that membership is hereditary, with their associates trained from birth for the role. Unwilling collaborators might even go to astronomical lengths in an effort to prevent their offspring from knowing the truth of their heritage.

## Conclusions

Does the Dark Wheel exist? Yes, it certainly exists in Shinrarta Dezhra. Whether that Dark Wheel is the same as that of legend, only the puppet masters of people like Abbetan Laing and Helien Branck can ever really know. However, the limited evidence available seems to point to some kind of divergence. If the ancient Dark Wheel explorers were in contact with their modern counterparts, why would the Shinrarta Dezhra operatives still be trying to find Raxsla?

The relevance of the Dark Wheel and its quest remains open to debate, but in difficult times, it is common for people to look for magical solutions. With Thargoid incursions into human-controlled space on the rise, what could be better than finding a planet full of mysterious alien technology that might solve all of our problems? Whether such places exist and can provide solutions is one point. Preserving the idea of their existence and the hope it brings to those in need, may be another.

The deductive reasoning of Felicity Farseer, a well-known engineer and explorer, is as good a place to conclude as any:

*Oh, They're out there alright. I've never met them, but I know they're out there. Think about how well known the stories are. Now think about how easy it would be for some two-bit band of hucksters to pass themselves off as the Dark Wheel and start trading on their reputation. Doesn't happen, does it? Not for long, anyway. Whenever someone tries to usurp the Dark Wheel name, sooner or later they get quietly shut down. And that's how I know.*

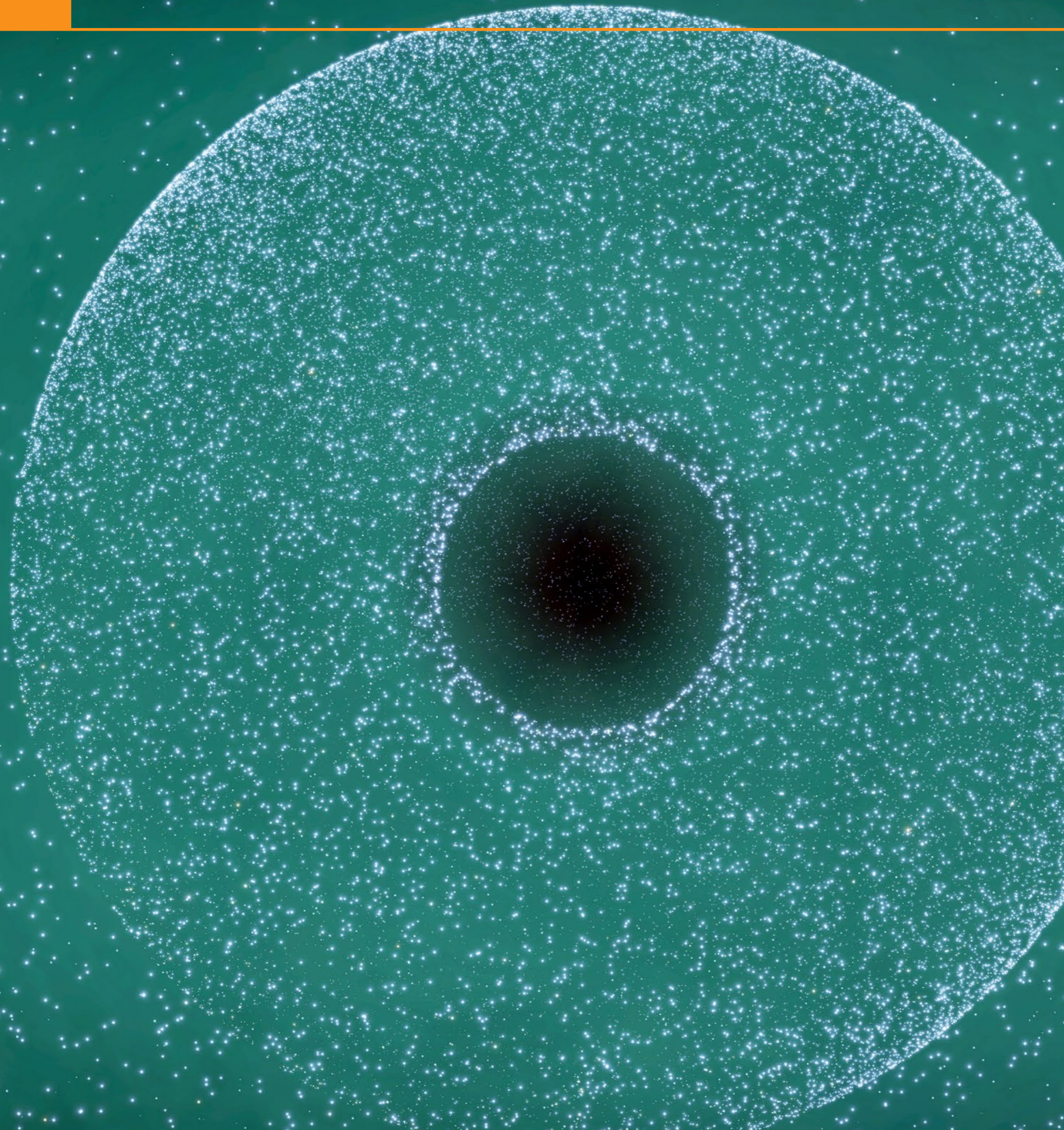
*The Dark Wheel: Fact or Fiction?*

**Text:** Allen Stroud, Icarus Maru

**Art:** ToCoSo

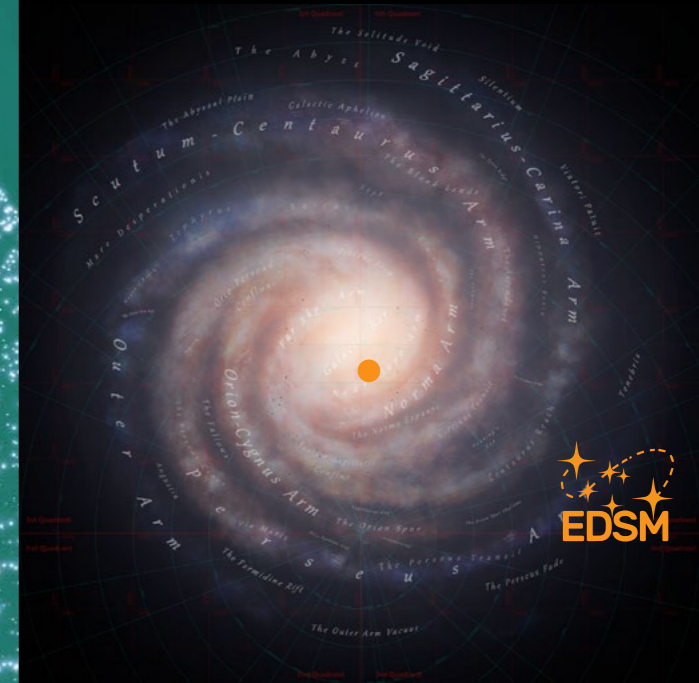
**Design:** McNicholl





# CARTOGRAPHICA

places to go before you die



## Black in Green

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Shrogea MH-V e2-1763

On the edge of the Galactic Core lies a system of remarkable beauty.

Within a green-hued planetary nebula lies the black hole Shrogea MH-V e2-1763. The gravitational distortion of the black hole against the dense starfield of the core and the green gaseous backdrop of the nebula is a truly awe-inspiring sight.

The system's startling beauty has made it a natural destination for wealthy tourists, and the recent construction of Tranquility's Stop provides welcome facilities to patrons and travellers.

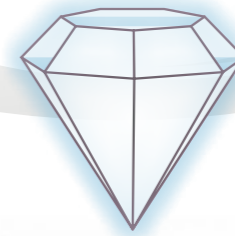
- **Image:** Zer0axis
- **Design:** McNicholl
- **Thanks to:** EDSM



■ Design: McNicholl

■ Text: Allen Stroud

## RARE COMMODITIES SPOTLIGHT



# AROUCA CONVENTUAL SWEETS

The world of Amutria, in the Arouca system, is a picturesque brochure model for advanced Federation terraforming techniques. However, it still suffers from some of the issues all worlds that have been artificially engineered do: chiefly, in this case, a misbalance of atmospheric oxygen needed to maintain life.

As such, the gender-neutral convents of the Aroucan monastic orders are not built in seclusion, as others tend to be. Instead, the clergy must base themselves close to population centres and the planet's huge industrial air miners to ensure they can breathe.

The Arouca Conventional Sweet is produced in several variations by the Amutrian monks. The system's populace are proud of their special export and Shipton Orbital, Amutria's space station, has an exclusive trade license with the monastic council. A high proportion of export proceeds go towards the upkeep and maintenance of convents across the world, but some profits also go towards the continued research and development of terraforming technology, to provide for the future of human habitation on Amutria.

This relationship is grimly ironic, in that some of the sweet's ingredients come from Amutria's surviving indigenous plant life, which itself is under increasing threat from the spread of human habitation.

The Conventional Sweet is usually served as a digestif. The sweet is soft and translucent, with a swirl of colour

on the inside to denote its encoded flavour. Six types are generally exported, distributed equally in packets and served as a selection.

There is a subtle smell to the sweet which engages the nose just before you place it in your mouth. The taste is subtle at first, but quickly overpowers any lingering memory of your previous meal, stealing across your tongue and into your throat without the need for you to suck or chew, and without stimulating that need, as other popular pastille ranges tend to.

The taste wave is certainly worth savouring. A notable byproduct of serving Arouca Conventional Sweets is that conversations tend to fall silent as guests concentrate on the sensation in their mouths. Selecting a second, different flavour produces a similar 'wave' effect, banishing all remnants of the previous sweet, almost as if you never tasted it. This has the added effect of making each of the flavours incredibly moreish.

Arouca Conventional Sweets are sold with a packet warning not to mix the flavours when you eat them. What the manufacturers are concerned about is anyone's guess, but it might be that the heady flavour experience is in some way lessened and lost in a competition on your tongue. Eating two at once is generally seen as disrespectful to your hosts – much like cutting the 'nose' off a fine cheese – so if you wish to avoid upsetting the locals of Amutria, stick to being monogamous with your sweets.

# Monsters of the Deep

Throughout the history of human civilisation, there have always been bad apples — people who reject the system and rebel against the law.

**W**e like to think these transgressors get caught and punished. The holo-vid dramas tell us how evildoers always meet their fate and that eventually, justice catches up with everyone. But in those stories, there's also something about the rogue living by their own set of rules that makes even the worst seem to have a few redeemable qualities. The vids invariably leave us with an idea suggesting these criminals can be saved.

In reality, across the vast expanse of human-controlled space, there are millions

of rulebreakers with innumerable places to hide. The reach of the law extends only fitfully, blocked by local interests, corrupt enforcers or problems with jurisdiction. Criminals who don't want to be caught can hide and stay hidden.

The worst of these are 'Monsters of the Deep', professional criminals who never seek the limelight, never boast or brag about their 'kills' or their greatest heists. These transgressors live by a code different from ours. They know that maintaining a life beyond the law means ensuring no-one knows there is a criminal to chase.

For these ghosts, the best jobs are the ones in which all tracks are erased afterwards. People disappear and evidence vanishes with nary a sign of foul play. The perpetrators understand that trading on good work by blabbing about

it undermines their credibility. These creatures are silent, unknown, and never looked for until it's too late.

However, occasionally, even the best can slip up, leaving behind a name, a ship ID number, or an enticing mystery that lingers throughout the ages. Some have even been known to turn over a new leaf, giving us a small glimpse of what lies just beneath the surface.

This report is the result of an extensive investigation into some of the most secretive criminals in human controlled space. Risks were taken and stories were shared. Those who contributed did so without knowing their exploits would be published. We have taken pains to anonymise their identities, but also understand that there could be consequences.

“ These creatures are silent, unknown, and unlooked for, until it is too late. ”

## Dentara Rast and Tiliála war averted

In the last days of 3250, the Tiliála system was descending into civil war. Dentara Rast, leader of the Valhallan Liberation Army (VLA), was on the verge of overthrowing the incumbent dictator, Augustus Chekin. In addition to this, tantalum resources had been discovered in the system and the major interstellar powers were starting to take an interest.

Days later, Dentara Rast was found dead and, deprived of their leader, the VLA fell apart. It was obvious that a crime had been committed. Interstellar news first pointed the finger at Federal security, then a private contractor, and afterwards, a variety of other individuals. The identities of any real assassins were never conclusively proven.

## The death of Mic Turner

A famous engineer and early leader of the Alliance, Turner was killed while testing an experimental 'Quest' ship, which he had designed with a new and powerful prototype hyperdrive.

The perpetrator was identified as Commander Javelin Saunders, a veteran pilot of the INRA and the Imperial Navy. However, due to Saunders' prominent status and powerful allies, there was a substantial propaganda effort to discredit any who claimed his guilt.

In the ensuing chaos, Saunders fought his way through an Alliance ambush, disappearing into the shadows. After many years, his former associates finally abandoned his cause, content that he was safely hidden and would never be found.

But did he really disappear of his own accord?

## The 34th century

Now, a new generation of monsters lurks in the darkness. Ambitious new factions, emerging from several different star systems, unite them under fresh banners and governments. These groups cannot rival the interstellar powers... yet. But they are more than willing to pay for an enemy or two to disappear.

It is in missions like this that budding professionals first learn their trade.

Every murder boat captain knows that hitting hard and fast is the best way to avoid complications. Their ships are set up that way, with high-powered weaponry specifically designed to smash shields and rip open hulls. To kill and exit without looking back is how they survive. If anyone asks questions, they lie about it and keep moving.

*I picked up the job whilst I was at [redacted] Station. I only deal with the terminal: that way, they can't see your face. All they get is my ship and pilot ID. No point in trading pleasantries. These people aren't here for a drink and a game of cards; they want someone murdered. That's what they're paying for. – commander 1*

*Sometimes, I track the quarry down using local contacts. It's amazing what people will give up when they think there is money to be earned. You jump into a system and there's someone sitting there, waiting to spill their guts and point*

*you in the right direction. Perhaps those folk feel guilty, or they've been paid off by the client. Whatever the reason, I don't care. – commander 2*

Usually, the twenty-kilometre station security zone is a no-kill environment. However, it's a great place to pick up a target. Sooner or later, people have to dock, repair and refuel, so hanging around outside, scanning a few ships as they traverse the entrance can bring a few nice rewards. Find a target, follow them, and slip into supercruise as they do. Anyone worth their fee can find a quiet spot to interdict and carry out the business.

Of course, there are exceptions. Some of the best know how to cause or exploit a chaotic situation, taking care of matters in plain sight.

*A contract I did in the [redacted] system was the one I remember best. I was lurking in the station superstructure when the Type-9 turned up.*

*A minute later, the docking bay was full of cargo canisters! Station security went nuts and so did all the civilian pilots, taking evasive action. My target, [Redacted] was stuck in amongst them, trying to wriggle out of the station entrance. Keeping my weapons retracted, I dropped down from above and nudged the side of his Asp Explorer, sending him into the wall. He tried to turn, but only succeed in running into a cluster of cargo containers. A moment later the station lasers lit us all up, [Redacted]'s shields failed and his hull ripped up like a rusty can. As soon as I saw that, I was gone. Mission accomplished! – commander 3*



After killing all his friends, he left.

## Lying in wait...

Whilst most live by a similar code in the core systems, they very rarely hunt in packs. Living a life outside of moral boundaries tends to make individuals less inclined to trust one another unless there is an economic incentive to do so. Besides, a gathering of ships in one place tends to attract attention, even if it's only for a funeral service.

Luring a juicy mark to a waiting ambush can be difficult. Coordinating an interdiction without drawing attention to the cluster of awaiting ships requires skill in the art of the tether to bring in the prize. But once a target arrives, the feeding frenzy begins.

Pack hunting is a good starting point in training. Watching ships being torn apart, escape pods destroyed and Remlok-protected survivors executed ruthlessly and efficiently is a quick way to purge a new recruit of their morals — or find out if they have too many. The transformation encourages initiates not to think of their prey as fellow human beings, but rather, a kind of status mark. Each kill is another rite of passage towards an icy heart.

*I took a contract against [redacted], some top-ranker in the Imperial Navy and head of the [redacted]. It took a week of planning and months of gathering information, but we tracked him down to the [redacted] system. The plan was to get him to fight a decoy and to get some stealth torp boats in to bust his Cutter's shields, then destroy his FSD with rails.*

*Unfortunately, half our squad didn't show, so we had to switch to plan B. I was the new decoy. We still had enough torps to bust his shields, but we didn't have enough rails to nail his FSD.*

*The only way to succeed would be to crack his hull fast and dirty, so we loaded up with every high powered gun we could find.*

*We didn't plan for him to have friends.*

*The firefight was a rush. We nearly didn't make it. Time and firepower were against us, but thankfully, my people are mad flyers. We made the kill and got out. — commander 4*

## Betrayal

A pack is only strong so long as each of its members has something to gain from being part of it. Secrecy will only be maintained while everyone has some reason to keep quiet. Of course, that reason can always be eroded by a better offer. Everyone needs to live and get paid.

*I heard about the Razor Wolves, running out of Phekda back in the day, before it became all corporate and respectable. Back then, civilised people stayed clear and only the worst kind of people ran missions between the three corporations trying to take control of the system. The minute one got ahead, the mercenaries would change their flags and start supporting another, keeping the whole place unfit for human habitation.*

*One day, Wolf leader just disappears. A week or two later, all the wolves just start vanishing until they're all gone. Six months later, Phekda's war starts to wind down and now, well... everything's gone corporate over there.*

*Rumour has it, Wolf leader wanted out. He took a fat paycheck, a new identity and a final contract to wipe out his gang. After killing all his friends, he left. They say he's a Jameson now, or a Smith, or something. — commander 5*

Sometimes the fraternity breaks up because more than one person wants to be the pack leader. Monsters need to feed their egos, and sooner or later those egos clash. When internal wars break out, everything becomes a weapon, and the first person who sells out to the law might be the one that wins — or at least lives to tell about it.

*They were evil people. I was misled... I just... I didn't have a choice, they made me work with them, please! — commander 6*

“ The best jobs are the ones in which all tracks are erased afterwards.”


## La Coda

The world of assassins is a dark and dangerous one where individuals make up the rules as they go along. Once a contract is agreed on, both parties have something over the other, meaning a step into the sewer can quickly become two steps, and then a need to hold your breath and swim.

This is a world of secrets, where boasts and braggadocio get people killed. Monsters survive by staying ahead of the game. The dead tell no tales, they say, and one death quickly leads to another if any trace or clue is left behind.

Those who thrive remain in the shadows, avoiding attention in pursuit of the next contract, risking everything for whatever reward they've been promised.

Getting out of the darkness? Well, that is nearly impossible. Most of those who manage it have found a way to die and be reborn. New identities, ships and lives which sometimes have to be purchased through betrayal, lies and compromise. Even so, there isn't one retired Monster who does not continue to look over their shoulder for the rest of their days.

As for this reporter, the die is cast. At least you, dear reader, will know the reason should anything go awry. 

### *Monsters of the Deep*

**Text:** Allen Stroud

**Images:** TwoSpoons77, Sirruf, StarFox

**Design:** Donald Duck

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■ **Design:** McNicholl



*Co-Pawlots*

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