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EDITORIAL

Mack Winston

common question amongst Pilots' Federation members is: why do we do it? Why do we spend so many hours just flying? When a Pilots' Federation member reaches the dizzy heights of triple Elite, a question posed by many is: why continue?

What many non-pilots (or "ground pounders" in the uncharitable vernacular of certain pilots) don't understand is that being a pilot isn't something you do, it is something you are. It is something that is embedded deeply into the very fibre of your being. Certainly, for some, it may be a mere occupation — but they are never likely to make it their life's calling. For anyone with the stay-



ing power to reach triple Elite, it can never be a mere occupation. It is a defining quality of who you are.

A poet who lived during the dawn of human flight on Earth wrote words that are as eloquent today as they were then:

Oh! I have slipped the surly bonds of earth, And danced the skies on laughter-silver wings; Sunward I've climbed, and joined the tumbling mirth...

John Gillespie Magee, "High Flight"

The full poem still captures the magic of space flight in our highly-advanced machines, just as it did for the aviators of ancient times in their primitive machines of steel, wood and cotton fabric. Collectively we've slipped the surly bonds not merely of the Earth, but perhaps of the very fabric of spacetime itself with our frame shift drive. Without a second thought, we travel to Sagittarius A* and through the core's boiling maelstrom of raw energy. What we do today was thought impossible in Magee's day, but whatever our technology, whatever our motivations, we retain the spirit of the aviator. For us, triple Elite is not an end, it is merely the beginning of the next chapter.

At SAGI, we try to capture this spirit — to inspire current and future pilots to get out in their ships and slip the surly bonds — whatever their calling, be it combat, exploration, trading or mining. Whether you are harmless, aimless and penniless hoping to make your way in this Galaxy, or already triple Elite, we will endeavour to ensure we have something to inspire you to continue to slip the surly bonds.



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SPEEDBOWL







The Pilots' Federation has a strange new extreme sport. We caught up with two of its wild-eyed practitioners, Commanders PrimetimeCasual and Sanderling.

SAGI:

Hey there, PrimetimeCasual. What's your involvement with Speedbowl? Did you come up with the idea?

PrimetimeCasual:

Well, I can't say precisely who had the idea, but basically it went like this.

He takes a sip from his cocktail.

I had this idea of building my now-infamous racing Hauler and testing it out against high gravity planets.

We have covered your Hauler in the magazine before!

My final stop on this little tour was Chi Hydrae A 7, with its 9g gravity. Cmdr Halo Jones heard of it and came to visit me there.

All the while, I had discovered that toggling flight assist ('FA') off on high gravity worlds lets you increase your speed. So naturally, I shared that knowledge.

I demonstrated, he followed; I posted a speed, he went faster; I went faster again, he went faster — you see the pattern — and at some point we agreed on a set starting altitude.

And then we said: "Well, you know, this is really, really fun—let's make an event out of it!"

So, from then on, I was co-host of the competition, looking for spots to have the event, refining rules, watching over submissions, doing PR, trying to get sponsors for prizes, and so on.

The highest speed reached

so far has been 34,403

metres per second.

How often have you run it?

we thought it would be a one-off event. Surely would be mad enough to take part in it.

But they did. And then came the Scotsman as well.

The plan was to run at least one per year. But then, we did two in 3304! The first was a real hardcore event, given the location, and the second much easier to access.

With both Halo Jones and me on Distant Worlds, there was no regular Speedbowl in early 3305, but we were asked to look over a 'Distantbowl' variation. Speedbowl 3 is the fourth iteration of Speedbowl, then.

Ok. So is Speedbowl 3 the one that's coming up shortly?

Correct. Early November, an end-of-year bash, smashing ships of all sizes into a planetary settlement. Or trying not to, and failing anyway.

Coming up with a location is the hardest part, by the way. We spent a few weeks looking for this one.

Why is it so hard?

Sanderling:

Gotta find the right ingredients.

Right. It has to tick so many different boxes!

He looks sadly at his empty cocktail glass with ice cubes

Like a rocky cake!

SAGI fills up PrimetimeCasual's glass from the office

And what are those ingredients?

High gravity, of course. It has to be close to the Bubble There needs to be a station to rebuy ships. There should be a good gathering point like a geological POI or a settlement or outpost.

We kind of hoped for canyons or rings as well, but that combination is near-impossible to find.

We used the EDSM database to find a long list of candidates and then half a dozen commanders went out and made sure they didn't just check those aforementioned boxes, but were 'nice' as well.

So how do you avoid just smacking into the planet?

That is Sanderling's core competence!

Being nice? Of course.

No, not smacking into the ground.

Oh yeah, that too.

Seriously though — we get how you end up going very fast down. What we're not sure about is how you avoid the dying bit. Do you just pitch up and boost?

Pretty much. Or rather, go level and boost.

I mean, at the end of the run, if you're doing it right, you're at a pretty shallow dive angle anyway.

So, there isn't much of upwards boost needed to save

That's the most common mistake people make. Pitching up and boosting is usually fatal. Very inelegant too.

Says the man who stops from 4,200 metres per second in less than 50 kilometres!

The thing is, no system on the ship is designed to slow you down from those speeds. So what a lot of people do is pitch up and engage flight assist.

That just plain cooks your ship, as the ship's Al can't handle that particular situation.

Instead, just... stop falling. Gently. Lie down on the bed of gravity like a kitten on a fluffy pillow.

So you overheat if you put FA back on at those speeds?

It is a huge danger, yes.

Control on high-G without FA is really about vertical thrusters. If you want to hover, you have to slow your forward vector down to under 50 metres per second for the Thirty-four kilometres per second? bulk of your power to be able to hold you up. But that's no

fun. Like Prime says... fast is where it's at.

I tend to turn my ship and use boosts in reverse to slow FA off.

Most commanders are just afraid of gravity. And that leads to bad instincts in situations like that.

I never fly FA on. Ever.

Seriously, Speedbowling teaches you a lot about gravity and FA off, and how your ship reacts to what inputs.

What's the fastest speed clocked so far? Do people's results tend to cluster together at an upper limit, or is getting to the very high speeds something only a few people

That's an interesting question, actually. There's usually a cluster near the top where speeds vary by tens of metres per second or less, and then a very even spread towards the bottom since not all people have enough time (or funds!) to run many attempts.

At least in the competitive events.

With more time, more altitude, and more gravity, you can get much faster.

As for the speed, it is hard to compare, since the gravity is different with each location.

But we're always aiming for top speeds in excess of 4,000 metres per second. Slower than that doesn't feel right.

The highest speed reached so far is 34,403 metres per second.

That's also known as '1 Sanderling.'



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Wow.

And yes, that's faster than the minimum supercruise

in normal space. It seems appropriate for an Elite Racer!

PrimetimeCasual gestures towards Sanderling.

Flying Scotsman. Mad as a hatter.

Does it seem as though there is a proportional relationship between the gravity of a planet and the maximum speed you can achieve? Or is maximum achievable speed just a function of altitude and time available to practise?

Gravity definitely plays a role, as that gives you the downward acceleration you can convert into forward momentum.

For example, Speedbowl 2 and 3 had the same set of rules in regards to starting altitude (200 kilometres).

But with a difference of .5 g, for example, we can already see a difference in top speed of 300 metres per second at the fastest point.

So, yeah, although practice is obviously needed and altitude plays a huge role, the upper limit is defined by the available gravity.

In the case of Speedbowling, gravity is your 'thrust'.

Yes I see. Do you use thrusters to begin your descent? How do you start?

The classic start is from a complete standstill. In order to get going, you usually boost to get to your maximum ship-limited speed and go FA off to get the initial downwards momentum. After that, you're falling at more or less a 45° angle, if you use basic techniques. And then the old 'upward vertical thrusters only' game begins.

That is certainly the fastest that anyone has ever flown The most common mistake is leaving the main thrusters going at full power, by the way. It not only drags you off course, but also saps power from the vertical thrusters. Disengage those engines!

> Interesting that the main thrusters sap power from vertical thrusters.

> Only with FA off, if I'm not mistaken. FA limits the power you can give to each set of thrusters anyway.

> Is there a best ship for Speedbowl? Or rather, what characteristics do good Speedbowl ships share? Presumably its official 'top speed' isn't that important...

> That is a question we've debated a long time. So far, the Viper has won all events. But the Adder looks good as

> The key factors are actually 1) power distributor for boost frequency and 2) thruster placement on the belly. You want a flat-bellied ship with the thrusters angled straight down, not to the side, as they are on the Asp, for example.

What about mass? Presumably more massive is better?

It's not as important as you'd think, as you still need the engines to perform within the 'maximum thrust' spectrum. More mass usually just means the pilot has a harder time of slowing down or changing flight vectors.

Okay, on to community stuff. How many people joined in for your first Speedbowl event?

Give me a second.

He rifles through papers of Speedbowl statistics.

The first Speedbowl had around twenty participants who come all the way out to Chi Hydrae. Sanderling won that one, with his Courier.

Speedbowl 2 again had twenty competitors, but quite a few more that didn't post official speeds. That one was dominated by iEagles and Vipers.

Distantbowl had over forty participants. There were all kinds of ships, obviously, and all fitted for exploration. The winner was a Krait Phantom, with the regular Kraits performing well. Of course, there weren't many Vipers and Adders out there. Looking back, it's amazing how many Anacondas, Corvettes and Belugas took part...

Do the same people tend to take part in various events?

Oh yes. We have our regulars. Some even abandon their long term exploration trips just to come back for Speedbowl!

Azzbo in his infamous racing Corvette is one example. There's also Halo Jones in his Sidewinder, and of course, Sanderling, reigning champion.

The Sidewinder is a great racing ship.

Again, it's light enough for the thrusters and has excellent ventral thruster placement.

Have you approached the Pilots' Federation to be featured on Full Throttle?

They have expressed interest and I'm in talks about the prizes. For Speedbowl 1 and 2 they provided paintjob packs, and we're currently trying to figure out the exact

prizes for Speedbowl 3 right now. Commander Benedetti is a huge racing fan, so, might be that they do some bowling!

When is Speedbowl 3 going to take place? Do you have a location yet?

The event is scheduled for the weekend of the 9th and 10th of November 3305, at Margulis Depot in the 61 Virginis system. There are a few announcements out there and more to come.

Residents are slowly either getting used to a few kilotons of spaceframe metal buzzing past or are evacuating. We are featuring a special 'Sanderling challenge' where you have to pass low between two residential towers while 'barrel rolling' your ship.

We'll get some SAGI press there! Thank you very much for taking the time to chat.

It's been a pleasure. Don't forget, fly fast and miss the

Now, about that minifridge back there....?

Speedbowl 3 was held on the 9th and 10th of November.

Speedbowl

Text: Souvarine

Images: OrangePheonix, Two_Spoons77, PrimetimeCasual

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SAGITTARIUS & EYE



in the Galaxy: that distinction would go to The DaVinci Corporation of Wolf 1230. Nor does it hold the most assets: the record holder there is the Alliance's Wolf 406 Transport Company, laying claim to no fewer than 230 stations and outposts. It's not the largest Imperial faction — that would be the Likedeeler of Michel who control 73 systems from their capital in the Michel system. The EIC can, on the other hand, lay claim to the title of the largest and most successful Imperial corporation, with (at the time of writing) no fewer than 45 systems and 89 stations and outposts controlled from Kappa Fornacis. The company also claims to have the longest historical existence of any corporation in the Galaxy. Many historians dispute this claim, and see linking the 34th century East India Company with its 17th century namesake as stretching history far past the breaking point, but at least some believe there is at least sufficient ancestral linkage between the two that the association is valid. There are certainly parallels between the business practices of the 17th century company and its present-day namesake.

The long view

To understand the philosophy of the 34th century EIC it's worth looking back into history to 17th century Earth, a period when the idea that the planets orbited Sol was still sufficiently controversial that people were cast out of major institutions (or worse) for believing it. The original British East India Company was formed in the year 1600, and became a major trader of tea, spices and textiles, moving goods over the Earth's oceans using windpowered ships. These merchant ships — known as 'East Indiamen' — were often the fastest on the 'high seas'. Many were 'tea clippers', large vessels with three masts festooned with sails and complex rigging, designed for

The company, while sizeable, is certainly not the largest in the Galaxy: that distinction would go to The DaVinci Corporation of Wolf 1230. Nor does it hold the most assets: the record holder there is the Alliance's Wolf 406 speed. The name 'clipper' comes from the verb 'to clip', or to move swiftly, and it won't be lost on most readers that the Gutamaya Imperial Clipper is one of the fastest large ships you can buy today.

As the company grew in size, its growth was not merely economic. It acquired its own military and engaged in brutal ventures of commercially-motivated conquest. Its military consisted of both naval and ground forces. The company formed an efficient and well-trained army, becoming the most powerful military force in the Indian subcontinent. Its unbridled expansionism was its eventual undoing and by the 1770s, almost two hundred years after the company's foundation, it found itself over-extended and at risk of collapse. The inevitable downfall that followed took another century to run its course as successive British governments propped the company

The corporate vestiges survived for a while as a legal framework, and there were a few revivals of the name in the late 20th and early 21st century, but these were mere branding exercises. As these revivals inevitably faltered, the name disappeared.

Twelve centuries later, in February 3301, the name resurfaced as a project of Emperor's Grace, lead by the wealthy Imperial industrialist Jahena Ya Savor. Savor claimed to be a direct blood descendent of the 17th century EIC founder, John Watts. Her project rapidly gained momentum and the newly-formed company quickly came into conflict with Emperor's Grace, at which point the newly formed East India Company broke away, establishing itself in its own right as an Imperial corporation.

The company initially based itself at Grant Horizons station in Hsuanqueno, at the time a rather obscure star system nearly 100 light years from Achenar, although much of the company's trading activities were centred around Tawilo and its surrounding systems.

Just as the British East India Company in the 18th century was known for tea and narcotics, the 34th century EIC is known for the same.

The company almost immediately acquired its own military forces and, to put its mark on the Galaxy, in March 3301 joined a coalition whose goal was to oppose what it saw as 'Federation expansionism'. The first operation, known as 'Arm Chop', began on 1st March 3301 with an effort to prevent the Federation from building a capital ship in BD+03 2338. The blockade was ultimately a failure, and the new ship, the FNS Nevermore, was completed on time, even though the capital ship's launch almost ended in disaster when its automatic systems accidentally opened fire on the station at which it was moored.

Not content with the failed blockade, the company went to war in Lugh to support the Crimson State Group against the Federation. In the beginning, it looked like the Federation would once again prevail through sheer military might, but the coalition arrayed against them now

included a rapidly-growing East India Company trade fleet that kept the CSG's supply lines fully open in the face of the powerful Federal opposition. While the victory against the Federation in Lugh was by no means the sole work of the EIC, the Company's role in the conflict made its mark, and it put the EIC firmly on the map both in the Empire (whose leadership was privately delighted at the Federation's discomfort) and elsewhere.

The move to Kappa Fornacis

During most of 3301, the Kappa Fornacis system had hardly been out of the news. In December 3300, the Federation singled out the system for its production of the narcotic onionhead. They intended to eradicate the crop, grown only on the planet Panem. The bombing of onionhead farms began in earnest, and while ultimately the Federation were unable to take over the system, the planet's agricultural systems were largely laid to waste. Production of the narcotic had been severely reduced, although not entirely eliminated. Other strains had appeared elsewhere in defiance of the Federation, most notably the Lucan variety produced in Tanmark.

Meanwhile, the East India Company had cultivated what ended up as a short-lived relationship with Zemina Torval, which undoubtedly raised the company's visibility with the Empire at large. With a unique crop and a destroyed economy, Kappa Fornacis was ripe for a takeover. While the EIC would tout themselves as the benevolent saviours of the system, the reality is rather different: the Company clearly saw a unique commodity which could firmly cement its trading power within the Empire and beyond, just as trade in tea and opium had powered the British East India Company in the 18th century. The takeover of Kappa Fornacis on 21st October 3301 was a





calculated move entirely motivated by cold commercial imperatives, rather than a humanitarian project. With an economy distressed from repeated Federal incursions, Kappa Fornacis was a weak system which could be bought out at a rock-bottom price. Nevertheless, a native of Kappa Fornacis named Jarrod Lynch would be admitted to the EIC Board as a Company Vice President, and would become the public face of the EIC for any commander considered an ally.

As soon as the takeover was completed, Imperial slaves poured into the system to complete the rebuilding of the onionhead farms far below Harvestport station, the EIC's new headquarters. It wasn't long before the 'good old days' of onionhead trading were back in full swing.

The EIC remains headquartered at Kappa Fornacis to this day, and is the producer of both the original onion-head strain from Panem, the newer Lucan variety from Luca in the Tanmark system, as well as Tanmark Tranquil Tea. Just as the British East India Company in the 18th century was known for tea and narcotics, the 34th century EIC is known for the same.

The Trading Post

Aside from the production of onionhead and Tanmark Tranguil Tea, the most well-known activity of the Company is The Trading Post. The Trading Post came out of an initially small operation known by the rather unusual name 'Khajit haz warez', which began in January 3303 as the Thargoid threat was growing. The goal of this operation was to provide a method whereby independent commanders could more quickly and easily obtain goods demanded by the Galaxy's reclusive ship modification engineers. Engineered ships would do better against any alien threat to commerce. The project was eventually formalised as 'The Trading Post', and continues to this day – ensuring that commanders can obtain the commodities needed to gain access to the engineers in the most time-efficient manner. In a turnaround from the Company's earlier strongly Imperial-only sentiment, The Trading Post is open to commanders of all allegiances.

The Trading Post has not been without controversy. Given its close relationship with suppliers of rare goods, it was only a matter of time before a problem with one of these suppliers threatened to draw the Company into a conflict. From the point of view of the EIC, this conflict would come from an unlikely source, far outside its normal sphere of influence: the Lave system. The demand for Lavian Brandy by the engineer Didi Vatermann — a specialist in shields, and an engineer whose services are in high demand — soon brought the East India Company into close co-operation with the ruling faction of the Lave system, and this meant that the Company had a very strong interest in keeping the brandy flowing freely. In May 3304, trouble began brewing. The Lave Radio Network (LRN), an independent faction and well-known broadcaster, took control of the system from the governing Alliance corporation.

Initially, this had no impact on the supply of Lavian brandy. However, the Lave system leaving the Alliance did not sit well with many Alliance factions. Many Alliance commanders attempted to force the return of Lave to the Alliance fold, beginning a sustained campaign against the LRN. By early August 3304, the security situation in Lave had become unsustainable. The system had been in and out of constant security lockdowns, believed to have been caused by the actions of Alliance-aligned commanders, and there was now a clear and present threat to the smooth supply of Lavian Brandy to the Trading Post. The East India Company was accused of taking sides and directly collaborating with the Lave Radio Network, in effect "meddling with the internal affairs of the Alliance". In response, a Company spokesman simply said: "Any rumours of Company involvement are just that: rumours".

As August 3304 wore on, an added complication was the sudden and unexpected 'UA bombing' (the act of sabotaging a station by delivering large quantities of Thargoid sensors) of George Lucas station in the nearby Alliance-controlled Leesti system. Accusations were made against the Company by the Leesti authorities, but again the EIC hotly denied any involvement.

In November 3304, the East India Company launched the Danksgiving 3304 expedition to Colonia in collaboration with the Lave Radio Network, which had retained control of the Lave system. Some saw this as confirmation that the EIC had been rather more involved in the Lave conflict than it cared to let on, but the Company continues to deny any direct involvement. It insists that the Danksgiving expedition was merely an act of kindness towards the citizens of Colonia, to ensure that Jaques Bar was properly stocked with Lavian Brandy and onionhead.

As their growth brings them into contact with other factions, new challenges emerge. While the Company has largely remained out of major conflicts since the Lugh War, there is now a distinct risk that due to proximity and misunderstandings, new conflicts could arise with other Pilots' Federation groups in nearby space. To avoid this, the Company operates a number of embassies with their neighbours in order to avoid needless conflict. After all, war is bad for trade. At least, the wrong kind of war is bad for trade...

The East India Company

Text: Mack Winston

Images: OrangePheonix, Two_Spoons77, Starfox

Historical images: 'Smoke N'Oakum' by artofjokinen, 'Boston Port Fog' by www.design, 'Ship Southern Cross in Boston Harbor' by Fitz Henry Lane

Design: LexMoloch

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THE MODERN EAST INDIAMAN

The archetypal East Indiaman of the 18th century was undoubtedly the tea clipper, and in the 34th century, this epithet can only be applied to one ship: the Gutamaya Imperial Cutter. It has all the hallmarks of the East Indiaman of the past: it is quick, capacious, and undoubtedly sturdy.

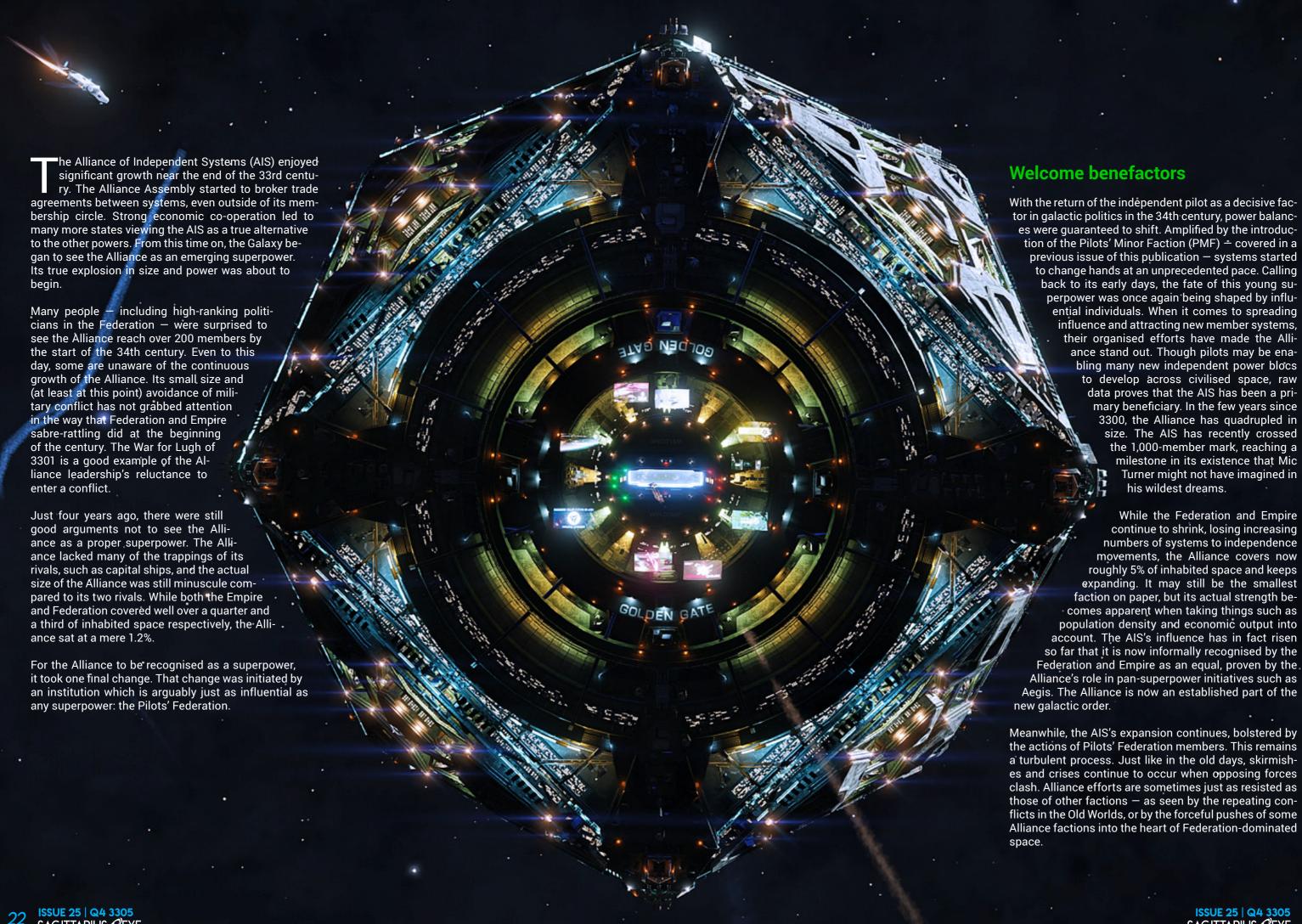
From the EIC's point of view, the ship is ideal. It is undoubtedly the best trading vessel of its class. It is equalled in cargo capacity only by Lakon's lumbering Type-9, but is one of the fastest vessels of its class when in normal space. In a typical configuration of this ship for run-of-the mill trade runs and as a frontline Trading Post vessel, an EIC Cutter will have around 2.7GJ of absolute shield strength, while simultaneously being able to carry 728 tonnes of cargo, and it will have useful extras such as point defence, heatsinks and chaff launchers. By contrast, a Lakon Type-9 in a similar configuration will have half the shield strength, half the speed, and will need serious powerplant engineering just to run passable shields. It's easy to see why the Cutter is so highly favoured by the Company. It is not merely the ship's Imperial pedigree but its unequalled capability as a trade vessel.

When it comes to trading in the more dangerous parts of the Galaxy, such as the Pegasi sector or community goals, the East Indiaman will trade some cargo space for extra defences. With the largest size 8 shield module, and the latest engineering, the Cutter will boast more than 5GJ of absolute shield strength while still being able to carry 536 tonnes of cargo, and exceeding 500 metres per second in normal space while boosting.

Having this kind of defensive capability makes it a difficult target for would-be pirates. On the other hand, it doesn't come cheap: a typical Cutter that's worthy of the name 'East Indiaman' will cost in excess of one billion credits to purchase and outfit, and requires a considerable investment in time to ensure it has all the best engineering upgrades.



In less than a century, the Alliance has grown from a local uprising to one of the three superpowers dominating our Galaxy. This article takes an in-depth look at the recent history of the superpower.



the 1,000-member mark, reaching a

milestone in its existence that Mic

Turner might not have imagined in

While the Federation and Empire

continue to shrink, losing increasing

his wildest dreams.

In the few years since 3300 the Alliance has quadrupled in size.

In the face of conflict

Edmund Mahon is often credited for setting the modern ous success is the result of many factors, framework for the economic success of the AIS. His commercial networks encompass several hundred nodes. The nickname "patron of the traders" suits him, as his supporters are usually busy hauling. In Alliance fashion, they are hauling paperwork.

Reflecting the fact that the AIS is not merely a military alliance but also an economic and political one, Alliance Enforcers can be found far outside Alliance borders. They are there to fulfil treaties and trade agreements signed with local governments, most of which are Mahon's doing. The Universal Cartographics 'Powers' map gives a rough estimate of the economic reach that Mahon has. Under the Prime Minister's lead, his pilots have made their power the dominating force, leading the GalNet charts in the most weeks since their introduction in 3301. Mahon's continu-

but it definitely helps that his opponents are locked in conflict with each other. Unlike the Federal and Imperial powers, Mahon has been able to stay out of most quarrels and has established neutrality with his neighbours. A prerequisite for that neutrality has been an ability to defend himself, as well as skilled diplomacy.

To give an example of this defence: in February 3302, Felica Winters decided to take the system DR Crucis, ignoring a regional faction's desire to remain untouched by her interference. NULL, the independent faction in question, decided to resist and team up with Winter's rival, Edmund Mahon. Skirmishes continued for months, with expansion attempts being constantly thwarted. Influential supporters of Winters eventually decided to divert enemy forces from

the area to undermine Mahon's systems, escalating the conflict between the two. However, this merely rallied supporters of Edmund Mahon, who previously had no interest in the conflict as it was not affecting Alliance members. Not only could Mahon's pilots defend most of their systems, but over the course of the following months, they struck back at Winters, making her war effort

expensive and lengthy.

Alliance strategists made use of the same old tactics that their founders did. They made extensive plans to ensure resources were spent efficiently, and would yield results. In total, they managed to undertake seven 'weaponised expansions' (hurting Winter's profits and contesting her space), while actually increasing their own profits. This was a novel move at the time, and it added drag to Winters' economy. Edmund Mahon left the war in a powerful position, which he still holds to this day. Despite a comparably small number of supporters, he would soon control by far the largest area of all powers. Even when hit by saboteurs and automated vessels over the next two years, his power would not diminish.

Recent Alliance expansion has been largely achieved thanks to the involvement of pilots who decided to commit themselves to that goal. Like all groups of pilots who support their favourite causes, this sometimes leads them to be in conflict with others. As a result, we have come to witness many new recent conflicts, some of which saw the AIS confront independent forces for the first time in history. This has sometimes been controversial, especially around the 'Old Worlds' - the cluster of stars surrounding the Lave system. This complex topic is beyond the scope of this article.









It quickly became clear that Colonia was here to stay. Supplies continued to arrive, the Colonia Council was established, and the region's first surface port, Colonia Hub, was built on the moon Colonia 2A. Some 22,000 light years from the Bubble, Colonia lacked almost all of its amenities. At the turn of 3303, the region's population was approximately 66,000: mostly miners, plus a not-insignificant number of people fleeing problems in the Bubble. There was a steady influx of migrants, but little to keep them entertained. Some festivities were needed to boost morale amongst the new colonists.

While the original story of Christmas becomes somewhat blurred the further you get from its origins on Sol, it is still a widely-celebrated holiday. The exact form of the celebrations may vary greatly; while onionhead farmers on Panem in Kappa Fornacis may have a completely different set of traditions from those of the residents of Mikhael Gorbachev station above Earth, there is one tradition that is common to all: that of gift-giving. Cynics often say that were it not for the gift-giving tradition (and the merciless commercial exploitation of it), the holiday would have been discarded well over a millennium ago. Others disagree, particularly those who follow the religious sects

that began the tradition. In any case, string of half a dozen outposts built. The first CCC was hailed a great suca group of commanders — amongst them many pilots who flew on the August Exodus expedition only a few months earlier - decided that a proper celebration of Christmas would be a great morale boost to the residents of the spartan and harsh Colonia. This time, instead of essential supplies to repair Jaques Station, the supply mission's main aim was to bring cheer and a muchneeded restock of Jaques Bar. The Christmas Carriers Convoy (CCC) launched from LTT 9846, headed up by Cmdr Qohen Leth under the auspices of the fledgling Colonia Citizens Network (CCN), with a fleet of over 100 ships. The route would make use of the recently-established Colonia Connection Highway: a

only a couple of months earlier along the route of the August Exodus. Ships from the Earth Defence Fleet, the 9th Legion, the Iridium Wing, SEPP and the Prismatic Imperium were pledged to provide a defensive escort for the fleet.

The Christmas Carriers Convoy also coincided with the controversial plan by the Colonia Expansion Initiative (CEI) to attract more factions into the Colonia region. This first journey was boosted by ships participating in the CEI, although it was observed at the time that materials being carried by ships involved in the CEI were displacing many of the more entertaining goods that the CCC intended to deliver.

cess, with the majority of the fleet arriving at Jaques Station en masse on 2nd January 3303. The CCC didn't merely bring just goods: many of the commanders on the convoy remained in Colonia for a time, and a number of celebratory events — undoubtedly good for the morale of Colonia citizens — continued in the wake of the convoy, in and around the Colonia system.

"It is the best thing I've encountered in 30 years of space travel. The priority for social quality, the helpfulness, the general kindness, all this is just stunning. What a group!"

- Cmdr Charles von Hackbeil, CCC participant



Heading towards the fourth convoy

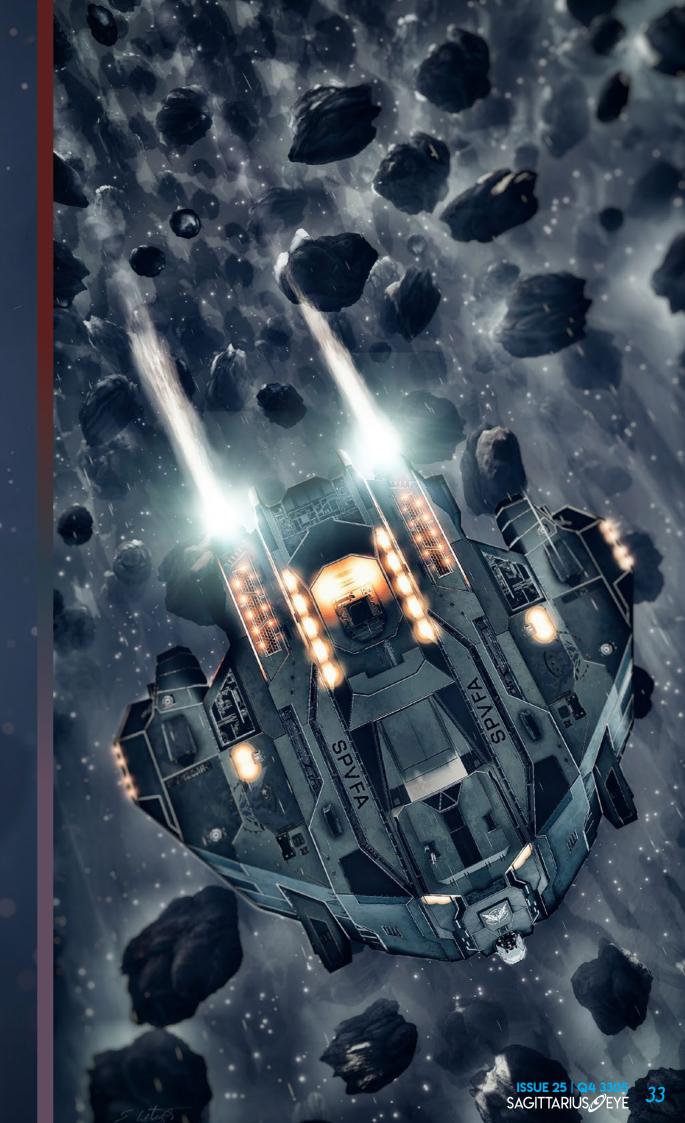
As December 3303 rolled in, the situation in Colonia had changed immensely compared to just a year earlier. Several waves of colonisation had taken place, and the population had expanded almost tenfold, with almost half a million colonists calling Colonia home. Colonia was no longer a backwater place with a few stations caked in dust from processing mined minerals, but a rapidly growing community. The Colonia Expansion Initiative had drawn to a conclusion, and there were now a number of varied factions putting down roots in this new outpost of humanity. Yet another convoy from the Bubble was, by this stage, not something desperately needed to prevent a tiny outpost's morale from collapsing, but more of a way of bringing luxuries to make everyone's lives just that little bit more comfortable. As such, the Colonia Citizens Network did not intend to run another convoy itself. The baton was passed to Cmdr Sirrus Tamus, who organised the second Christmas Convoy in association with Shadow of the Phoenix and the CCN.

The second Convoy in 3303 was rather smaller than the first, with a fleet of 31 ships. It departed from Haritanis on December 2nd 3303, and arrived in Centralis on December 24th 3303, after following the route established by the Colonia Connection Highway.

However, the Convoy saw a significant uptick on its third run in 3304, with a fleet of 94 ships, nearly as large as the first Convoy. This departed from the Karbon system on the 1st December 3304, and arrived in Centralis on the 24th December. Once again, it was headed by Cmdr Sirrus Tamus in association with the Shadow of the Phoenix and the CCN. Many commanders on the CCC3 had an additional goal of giving their newly built deep exploration vessels a proper 'sea trial' in advance of the much longer Distant Worlds II expedition. The Convoy would make an excellent opportunity to test the performance of larger ships intended to support the resource-gathering goals of the Distant Worlds II station-building mission.

In December 3305, the Christmas Carriers Convoy celebrates its fourth journey from the Bubble to Colonia. Not only has Colonia changed almost beyond recognition since the first Convoy, but also the Colonia Connection Highway has more than tripled in size, now boasting no fewer than twenty outposts, stations and bases. Some of those bases, it must be noted, are more luxurious than others. While many will enjoy the sights at Attenborough's Watch in the Lagoon Sector, few want to spend the night at Mjolnir's Wrath, a detention centre in the Nyeajaae sector some 7,600 light years from the Bubble.

The CCC didn't merely bring just goods: many of the commanders on the convoy remained in Colonia for a time.



At the time of writing, the Convoy's 3305 route had not been set in stone nor the fleet size finalised. Sirrus Tamus said:

"We plan to use a similar route, but we always throw in a new waypoint for nostalgia, something new, or the scenic views."

Regular base camps for the Convoy have always included the Colonia Connection Highway surface stations, effectively retracing the route of the August Exodus which established this particular route. This includes the dogleg through the Boewnst region, as well as the stunning night skies of Sacaqawea Space Port. Once again, it is likely the target arrival date in Centralis will be set as December 24th 3305, which followers of the tradition known as Christmas Eve.

The Colonia Nebula now boasts 71 inhabited systems with 99 ports and is, without a doubt, entirely self-sufficient. Even so, with a burgeoning migrant population (the last census in 3304 put the total population at around ten million inhabitants), the luxuries of distant homeworlds are in huge demand. The arrival of the Christmas Carriers Convoy will therefore be a highly-anticipated event for all those that call the Colonia Nebula their home. At the very least, Jaques will get the re-stock of the specialities that he so richly deserves.

The Christmas Carriers Convoy

Text: Mack Winston

Images: OrangePheonix, LexMoloch, Two_Spoons77, SebastianWehmeyer

Waypoint images: Exported, Alessio1607, NeepForNeep, Univero, Corbin Moran, Redshirt

Design: LexMoloch

Thanks to: Sirrus Tamus



Hillary Depot Blu Thua Al-A c14-10 Constructed in October 3302, this outpo

Connection Highway waypoints:

Constructed in October 3302, this outpost is named after the Earth explorer Sir Edmund Hillary. In May 1953 Hillary and Nepalese Sherpa mountaineer Tenzing Norgay became the first climbers confirmed to have reached the summit of Mount Everest, Earth's highest mountain. Aptly, Hillary Depot is found at the base of a large mountain.

Convoy Waypoints

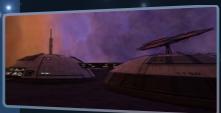
While at the time of writing the waypoints of the CCC4 are not yet finalised, based on the previous expedition's rout-

ing they will almost certainly include the following Colonia



Amundsen Terminal Lagoon Sector NI-S b4-10

Named for the explorer Roald Engelbregt Gravning Amundsen, who explored the polar regions of Earth. His expedition of 1910 was the first to reach the South Pole on 14th December 1911. In 1926 he led an expedition to the North Pole and became the first person to reach both of Earth's poles.



Eagle's Landing Eagle Sector IR-W d1-117

This name comes both from the Eagle Sector in which it lies, and the Apollo 11 lunar module, which was named *Eagle* and was the first spacecraft to take humans to another celestial body.



Sacaqawea Space Port Skaudai CH-B d14-34

Boasting spectacular night skies of the gas giant above tinted with the deep hue of the Skaudai nebula, this space port is named after Sacagawea of old Earth. Sacagawea was a Lemhi Shoshone woman who helped the Lewis and Clark expedition of North America. She travelled thousands of miles across the continent, establishing cultural contacts with the native populations. The name is an unfortunate victim of Universal Cartographics' many spelling errors.



Gagarin Gate Gru Hypue KS-T d3-31

Named after Yuri Gagarin, the first human to orbit the Earth. Gagarin flew *Vostok-1* on its historic mission, launching from the Baikonur Cosmodrome on 12th April 1961. His flight consisted of one orbit of Earth and lasted 108 minutes.



Polo Harbour Boewnst KS-S c20-959

Polo Harbour used to be the final stop for travellers on their way to Colonia, but as it is situated on a 'dogleg' in the route, most travellers these days opt to stop at Kashyapa's Vihara Gate starport instead. However, Polo Harbour's night skies are some of the most awe-inspiring on the route, with the Venetian Nebula's hues being punctured by the densely packed stars approaching the core region.

FEATURED ART

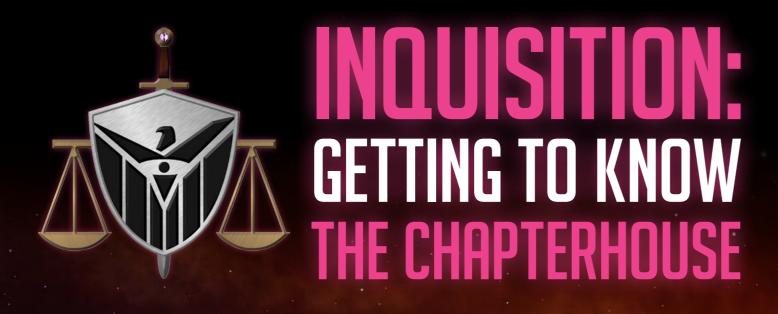


SMOKE ONACONDA BY SEBASTIAN WEHMEYER DIGITAL ART/PHONE EDIT

A composite of different smoke and dust images combined with a 'Conda shot. Absolutely unrealistic but looks cool! "The image was totally edited on my mobile. As always, I used Snapseed for general enhancements and PicsArt to combine all the elements."

g. What





The Chapterhouse of Inquisition: for some, the Empire's secretive enforcement arm is a bulwark against corruption, the champion of the Emperor's will. For others it is little better than a secret police, its jurisdiction everywhere and nowhere, answerable to no one. What is certain is that they are based in Arissa Lavigny-Duval's home system of Kamadhenu, and headquartered at Shajn Market.

t first glance, Shajn Market resembles any other Orbis-class space station one might encounter. Awe-inspiringly massive, of course — but Shajn is different. It is humbling to ponder the high-level discussions that surely take place within the station's secure sections. To visit Shajn is to be in close proximity to real political power.

There exist perfectly legitimate reasons to visit Shajn. Kamadhenu is an agricultural system, supported by the lush Earth-like world around which the Orbis revolves. Independent commanders of all backgrounds can find profit in delivering farming equipment and even biowaste, and will find no shortage of foodstuffs and fine teas to fill their holds. When it comes to the station itself, one is reminded that one is very much deep within the Imperial core.



men and women who comprise station personnel are adorned with fitted uniforms, and care is clearly taken with their appearance and grooming. Manners are perfect, a reflection of the Imperial propensity for ceremony and honour. Punctuality too is an Imperial value, and this correspondent was greeted by his host even as he was disembarking his shuttle.

long scar runs down the side of his face, crossing his eye and extending down to almost his jaw. He is dressed in simple blacks and greys; not quite a uniform, but not quite civilian garb either. The aquiline pendant of one in the Emperor's service glints on his erect collar. A curved sword hangs in a scabbard, the lacquered wood sheath itself a work of art.

mark of Achenarian culture, though the talk can hardly be dismissed as small. To visit Imperial space is to immerse oneself in an environment of infinite communicational nuance. One must be conscious of one's every word and action, as it is all too easy to appear accidentally rude or dismissive. This rule applies in greater degrees the closer that one moves to various spheres of power. At a formal event such as an Imperial ball, much

of one's wine goblet can be the cause of a minor scandal.

Fortunately, your correspondent is an outsider, and as such cannot be expected to blend in perfectly. Yet this is also a fact finding job, and polite conversation soon turns to questions. The topic moves to the Chapterhouse of Inquisition, and Himura loses none of his clipped manner while speaking.





"The Chapterhouse — we almost never call it the $\,$ same way, the honour that being a subject of Achenar Inquisition — serves at the pleasure of the Duval dynasty. It is the roof over people's heads and the ground that gives them footing."

It is an expertly-delivered line, but there is more beneath the surface. By now we are in a grand observation deck, the greens and blues of Kamadhenu's Earth-like planet in full, glorious view. It is on a civilian level of course, men and women going about their business. Others pause to take in the scenery. The conversation is anything but straightforward, yet the point is at last reached where it feels safe to broach a more sensitive topic: that the Chapterhouse enforces Imperial culture by force.

Himura is not visibly upset at the question, only turning to admire the view before him, his features serene. At last he answers, gesturing to the glass of pure, chilled water in my hand. He holds one too.

"The water we now drink is from the seas of Capitol itself. A simple thing, really: two hydrogen atoms combined with a single oxygen atom. It is often overlooked in favour of something more elegant: wine perhaps, or the creations of Master Chefs."

The man pauses, taking a sip, then holds the glass of clear liquid between us.

"Yet it is the foundation of countless other things, the element upon which so much depends. Honour works in the

bestows upon every Imperial. It flows from the capitol like the water in our glasses, a simple thing to be elevated in the right hands and polluted in the wrong. That is the Imperial way. That is the necessity of the Chapterhouse."

To visit Shajn is to be in close proximity to real political power.

I remain quiet. The view is impressive, and Himura's words invite contemplation - a most Imperial habit. Critics might call it obfuscatory. At last I summon the courage to return to the question of force, asked with greater directness. The issue of slavery is also broached. The Inquisitor remains placid.

"The Chapterhouse is an imperfect mechanism of an imperfect society. Anyone who claims perfection for themselves or their people is delusional. Yet our ideals reach for the stars, and the higher one ascends, the greater their burden is to live them."

Himura pauses, his eyes distant.

"Imperial slavery is often misunderstood, and even more frequently maligned. In truth, the lowliest of slaves is more free than the grandest of Senators. Do you remember what I said about expectations rising along with one's station? It's true. Honour is everything to us. The slave is honoured for their decision to cast aside the chains of debt by donning those of servitude. The Client is honoured for their loyalty to their Patron, and the Patron for their loyalty to their Senator. Yet that honour is always earned. The moment that one loses it, they have lost all that it brings as well."

It would seem that the higher one ascends in Imperial society, the more precarious one's situation. Again, Himura speaks carefully, his soft Imperial cadence almost a song.

"'Precarious' is not quite correct. The citizen who acts for the welfare of their slaves will never know disgrace, just as the Patron who reciprocates the loyalty of their Clients can always count upon their support. It is more a question of harmony in all things and in all relationships. This harmony is disrupted by greed above one's station or vulgarity below it. Poverty is not a vice, and neither is great wealth. Yet neither is a guarantor against dishonour."

For the first time, Jubei Himura smiles, his eyes betraying a hint of the predator. One gloved hand grips the hilt of his sword.

"The difference is that a dishonourable man of wealth is a far greater threat than an unscrupulous pauper. The pauper generally errs because of the need to survive or protect his family. The rich man willingly sullies himself, dragging countless others down with him. In a perfect universe, there would be no need for men like me or organisations like the Chapterhouse."

His hand releases the hilt. The man bows slightly. The lush world of Kamadhenu 1 continues its slow rotation before us.

"It is not a perfect universe."

With that the Inquisitor turns to depart, his every step one of balance and purpose. This correspondent is left alone to ponder the meaning of his time on Shajn Market. Are things truly as simple as his host described, with the Inquisition's true purpose one of honourable order? Or is this correspondent a babe in the Achenarian woods, ignorant of the wolves lurking in the trees?

Getting To Know The Chapterhouse

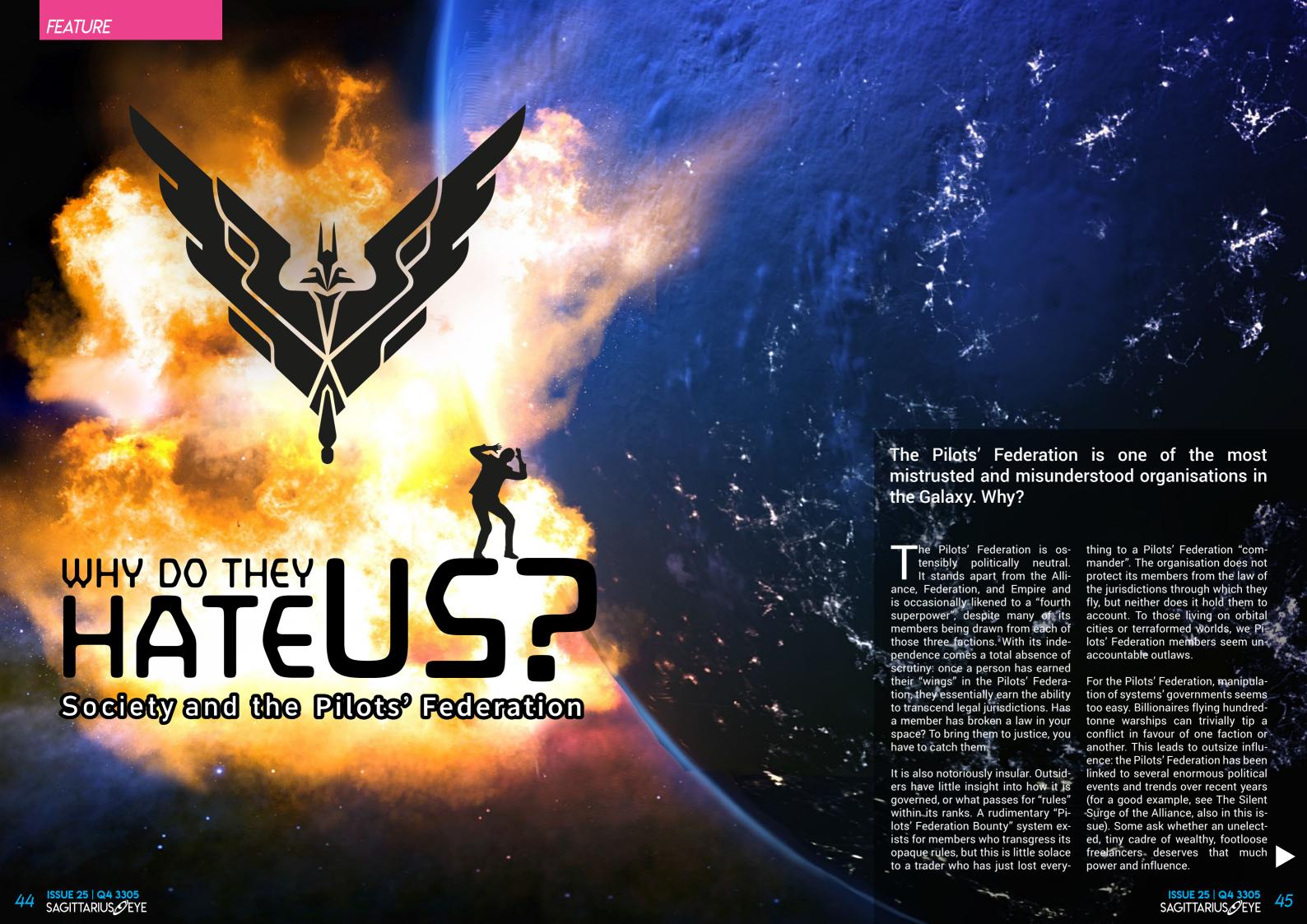
Text: M. Lehman

Images: OrangePheonix, Two_Spoons77

Design: LexMoloch

Thanks to: Jubei Himura

SAGITTARIUS PEYE





If the Pilots' Federation are rootless murderers, soldiers of destruction, and tyrannical raiders, why do they go unchallenged by billions? The organisation is few in number — it does not publish membership information, but it is thought that it might comprise as few as a couple of million pilots. However, the average wealth of its members is easily into the tens of millions, and this collective wealth and power give the organisation tremendous clout. The Federation, the Empire, and the Alliance could, conceivably, hold them to account if they put their minds to it, but none would like to let their rivals know just how extensively they rely on the footloose club of pilots. Extensive training, unlimited access to engineering, A-grade modules, multi-million credit ships and a plethora of technology give Pilots' Federation members an edge few navies can match.

Why exactly do these independent pilots do what they do? A member of the Pilots' Federation could have come from anywhere. One might be a freed (or escaped) slave, a Federal Navy deserter, a royal scion fleeing an oppressive family, or a multitude of other things. They might be a force for good in the spaceways: protecting traders, expanding the bounds of human knowledge, carrying essential medicine to the front lines of disaster. Still, in space, all we are to the people below are ships and ID tags.

Some ask whether an unelected, tiny cadre of wealthy, footloose freelancers deserves that much power and influence.

"Mudbooters" hate, fear, and mistrust us because we are unaccountable, and our wealth gives us the kind of freedom they can only dream of. What is more, that freedom is the route to yet more wealth. Ultimately, our reputation among the trillions of settled humanity is unlikely to improve as long as that envy remains among our critics.

Why do they hate us?
Society and the Pilots'
Federation

Text: Venus, Souvarine

Art and design: Balthazarn Noxx

SAGITTARIUS EYE





hen and how did The Fatherhood start?

I was in the flight seat late at night after my one-year-old son had finally gone to sleep, and I wondered how many other commanders were in the same position as me: only able to fly when their work and families allow. I decided to form a group and see if I could find some commanders in the same boat, and hopefully get some of them together. I figured a handful of us together could wing up and make friends, and to my surprise, it has grown way beyond anything I could have imagined.

It's now become a home for any commander who can't fly all day, every day, or just struggles for time: anyone from parents, students, disabled people or just people with busy jobs that involve working long shifts or travelling. Our motto is: 'When the kids go to bed, we go to space!'

We operate from our home base in the Hajangai system and boast a substantial and well-equipped private navy. Now, with the re-appearance of long-forgotten xeno threats and ancient mysteries, we find ourselves fighting not only for the next generation of pilots, but for all of humanity itself.





Our main goal is to have fun while helping others. Some fantastic friendships have been forged from this.

What 'code' do you follow, if any?

One: no griefing. The Fatherhood does not grief other pilots — this is our primary rule. Do not fire on other pilots unless first fired upon.

Two: be respectful to one another. We set the example for others to follow.

Three: help your fellow commanders.

Four: don't be afraid to ask for help.

And five: have fun!

What should a new recruit of your faction know before joining?

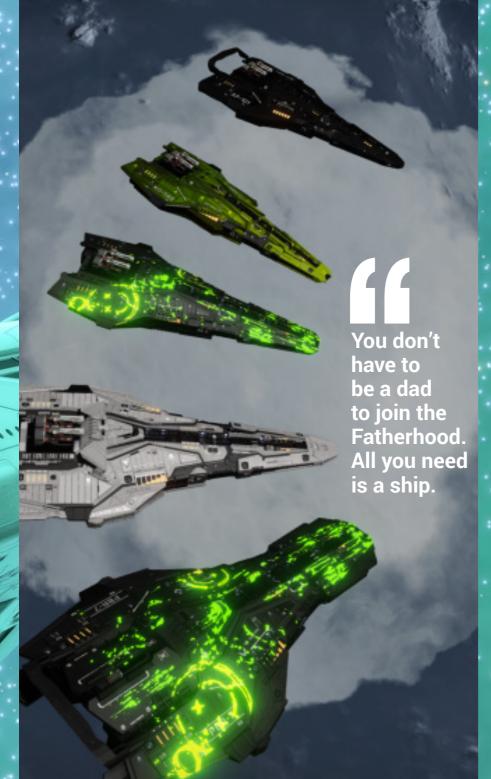
You don't have to be a dad to join The Fatherhood, that's just how it was started. All you need is a ship.











How many pilots are in The Father-hood now?

At present, we have 1,550 commanders across all platforms.

What are some of your pilots' favourite ships?

Being such a large and diverse group, it's hard to pinpoint some favourites, but the Federal Corvette, Imperial Cutter, Cobra Mk III and Python are firm choices for most pilots. Oh, and not forgetting the Keelback — we recently ran an event called Keelback Awareness Week which was great fun!

How does The Fatherhood help new pilots?

One way is to run wing missions with new recruits, which gets them used to flying from system to system, station docking, and the mission board. They also get the credit boost from the mission rewards.

Winging up for some deep core mining or bounty hunting is also a great way to get used to a ship's mechanisms. We are lucky enough to have some knowledgeable veterans in our ranks who can offer great advice on ship builds, engineering and many of the finer details of life in space.

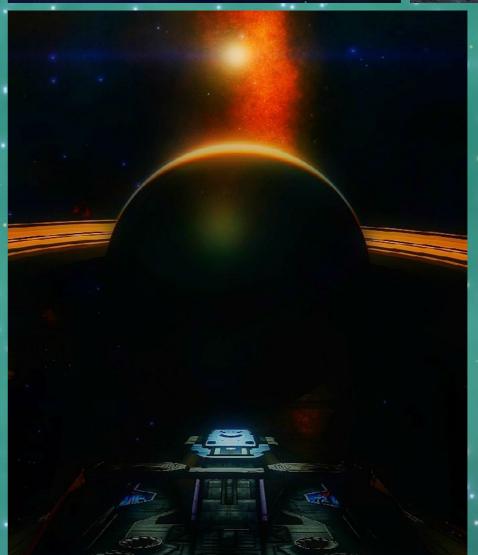
What does The Fatherhood offer pilots looking to join?

Friendship, advice and most of all, a shared appreciation of flight time!









What is something The Fatherhood does, but other groups may not?

We always make sure we greet new recruits straight away and do our best to make them feel welcome. I know there are many of our fellow groups that do this too, but it's definitely not something you see everywhere.

What is in store for the future of The Fatherhood?

We have Lost Souls 2, which is the follow on to the exploration event we ran last year. The waypoints are currently being finalised we hope to be announcing full details very soon. We will also be running some smaller exploration and racing events too!

Come to Daddy: Flying with the Fatherhood

Text: Venus

Images: ARC NC 327, Batwolf, LegionIsAlive, Vv Shysty vV, Draco Antimatter, Drazkul, Two-Spoons77, Revyn_Hunter, Sloth Peralta

Design: Donald Duck

Thanks to: TK7725



RING MINE BY BEETLEJUDE

- CHALK

A record of a visit to the cluster of bases near the NGC 1333 nebula. Ring Mine orbits a class five gas giant. "I love a gas giant and have to scan them all every time I visit a system just in case they look good. They always do. I can often be caught whistling the noise a class three gas giant makes in my FSS, even when I'm not exploring."







Canonn Research performed an indepth study on different weapon types and their respective damage distribution. Their analysis finds the mathematical truths that govern these plasma accelerators, railguns, incendiary multi-cannons, weapons. Not all commanders are of a mathematical bent, so we looked at the analysis to see what the research Speculation about the exact damage distribution for diffound, and present the results here in a practical, digestible manner for every pilot. We won't go into the mathematics here — anyone who wants to see the full detail in all its glory should read the Canonn paper.

here are twelve basic weapon types available for commanders that do not require alignment with a specific Power, nor the services of a tech broker. Each of these weapons has its own unique damage characteristics and preferred uses. Earlier this year, Commander Maligno of Canonn Interstellar Research thoroughly analysed a subset of these weapons, namely: high yield shell cannons, overload munitions for seeker missiles, and inertial impact burst lasers. The first three of these will be covered in this article.

ferent weapon types has long run rampant within the galactic community. As no exact numbers have been given by the Pilots' Federation or weapons manufacturers, this unsatisfactory situation continued for years, and was the subject of frequent arguments over beer and onionhead. Much speculation had sound foundations, but no one had attempted to prove it. For railguns, the speculation was 40% kinetic and 60% thermal damage. Plasma accelerators were believed to deliver 60% absolute and 20% each for thermal and kinetic damage. For incendiary multi-cannons no kind of numbers were available, just the unsatisfactory statement that the modification converts "a large portion to thermal damage."

The study conducted by Canonn Interstellar Research was able to provide solid numbers to replace all such speculation with careful experimentation and rigorous mathematical analysis. In the end, the study concluded that most of the galactic community's speculation was more or less accurate: railguns deal 1/3 kinetic and 2/3 thermal damage. plasma accelerators indeed do 60% absolute damage and 20% thermal and kinetic damage each. The incendiary weapons convert 90% of their damage to thermal damage, while 10% remains as kinetic damage.

Data acquisition was performed using the following method: experimenters ensured the target ship's shields were at 100%, then the systems capacitor was emptied by activating a shutdown field neutraliser. This was to ensure the shields did not begin to recharge. Discrete shots were fired at the target. It was important not to bring the shields down completely, so it was possible to determine the damage done specifically to the shields. After each shot, both commanders noted the remaining percentage of the target's shields.

The target ship, a Lakon Type-9 Heavy, was equipped with relatively weak shields (about 250-300 MJ), as shield displays have an error margin of one percent. The lower the shield strength, the lower the absolute error. The exact shield generator used was a 7C bi-weave with either thermal or kinetic resistance engineering, depending on the experiment that was being conducted. For some of the experiments the shields were brought close to 0%, again to reduce the margin or error by using the largest possible numeric range for calculation. Shield boosters were sometimes used to slightly strengthen the shields while keeping resistances at the same level.

In the end, experiments and calculations showed a relatively consistent damage distribution. The experiment only tested Class 4 multi-cannons, but according to the Canonn Interstellar Research Group the values should, most probably, be the same for any other weapon with this kind of experimental effect.

What does this mean for Pilots' Federation members?





Plasma accelerators

This weapon uses energy from the ship's powerplant to turn the ammunition into superheated plasma, which is then fired towards the target. The ammunition is simple and relatively inexpensive, since most of the weapon's damaging effects come from using the ship's power output to turn it into giant, glowing, purple balls of death. These weapons deal absolute damage, which bypasses the resistances that can make an enemy so much harder to crack. For engineered shields especially, the absolute strength will usually be much lower than any of the strengths including resistances. So the research has confirmed that 60% of the damage a plasma accelerator deals out will always be inflicted upon hitting the target, bypassing all resistances. The remaining 40% is split equally between kinetic and thermal damage, making this weapon the ultimate all-rounder in the hands of a skilled combat pilot: it hits shields and hull equally as hard.

This weapon is mainly used in small numbers, usually on the large and huge hardpoints, as the main armament: to Research has confirmed that 60% of the damage a plasma accelerator deals out will always be inflicted upon hitting the target.

inflict heavy or crippling blows on the enemy. As these weapons also are only delivered on fixed mounts and have a long reload time, they function best when fitted to smaller, more manoeuvrable ships such as the Fer-de-Lance, or used up close to make sure the shot hits home. The plasma accelerator does require some skill to use; the projectile travels relatively slowly, requiring the pilot to lead the target and favouring use when close. It has a heavy drain on the weapons capacitor, so the combat pilot needs to make sure every shot counts. It is also important that the projectile fully connects with its target: a glancing blow results in much-reduced damage.

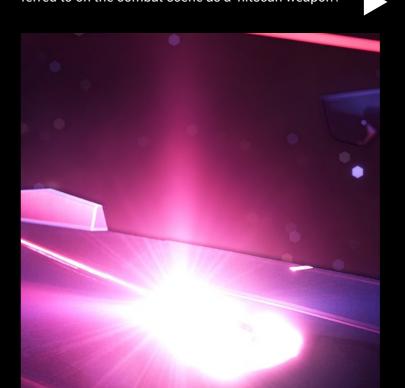


Rail guns

Instead of using chemical propellants, these weapons use magnetic rails to accelerate projectiles to very high velocities. The 2/3 to 1/3 thermal/kinetic damage distribution for these weapons makes them effective at taking out shields, while still doing adequate hull damage. They do have one special characteristic that comes into play once a target's shields are down: they are even better at taking out the systems of the target without destroying it, and this characteristic can be improved upon with the 'super penetrator' modification. Super penetrator projectiles damage every subsystem on their way through the target ship. This is useful to incapacitate ships if the plan is to rob them.

Super penetrator projectiles damage every subsystem on their way through the target ship.

As with plasma accelerators, rail guns are only available on fixed mounts. Again, this requires more skill from the user, and railguns are typically more useful on smaller, more manoeuvrable ships. It requires a bit of practice to use them to their full potential. They also need a brief "pre-charge" time before the projectile is fired, so they are less useful for opportunistic shots at an enemy that just happens to fly through the cross-hairs, and the trigger pull needs more careful timing than other weapons. The shots are so fast that pilots must aim directly at their target without giving the shot any lead. This is often referred to on the combat scene as a 'hitscan weapon'.







When these extremely hot incendiary rounds impact their target, they inflict mostly thermal damage.

Incendiary multi-cannons

While incendiary weapons have existed on Earth since at least ancient Roman times, their character has changed somewhat in the intervening millenia. Early incendiary weapons were used to set buildings on fire. These weapons were mostly arrows that were chemically tipped — usually with a mixture of sulphur and iron — and set alight. The chemical reaction would release a great deal of heat, and would not be extinguished by the arrow's flight through the air. Buildings at the time were often constructed from flammable materials and could be easily set ablaze.

Sadly, we don't know exactly how modern incendiary multi-cannons work as the engineers are reluctant to let the public know the secrets of their work, but in the vacuum of space, an incendiary multi-cannon round requires a chemical fuel and oxidiser combination to ensure a high temperature. Unlike the arrows that the Romans put to use, an incendiary multi-cannon will not set an enemy ship alight, given the lack of oxygen and flammable materials. However, when these extremely hot incendiary rounds impact their target, they inflict mostly thermal damage. Whatever the chemical mixture used, we now know they cause 90% thermal and 10% kinetic damage. As thermal damage is generally most effective against shields, these weapons are very good at depleting them. The incendiary multi-cannon modification can be applied to every kind of multi-cannon: fixed, gimballed and turreted, which makes them well suited for any kind of ship, from small and nimble to big and sluggish. Since they do nearly all thermal damage, they are best used in combination with other weapon types if the aim is to destroy enemy ships. Weapons with high kinetic damage such as multi-cannons without the incendiary weapon modification can be used for this.

In conclusion...

The paper from Canonn doesn't just shed light on the kinds of damage that these weapons do, but presents it in a rigorous, provable and repeatable mathematical manner which allows us to draw concrete conclusions. It is unfortunate that weapons manufacturers did not publish this data themselves, but clever and committed commanders have proven they can extract the data on their own. All it cost them was a little time (and some damaged Type-9s). We hope this article will help commanders make their weapons choices supported by confirmed facts, rather than bar-room speculation!

Gunnin' for ya

Text: Lord Tyvin

Images: Starfox, Zer0axis

Design: McNicholl

Thanks to: Maligno, Canonn Research, the Anti-Xeno

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Are you a devoted reader of Sagittarius Eye? Have you used your talents to render the beauty of the cosmos and the dirt and drama of humanity in artistic form?

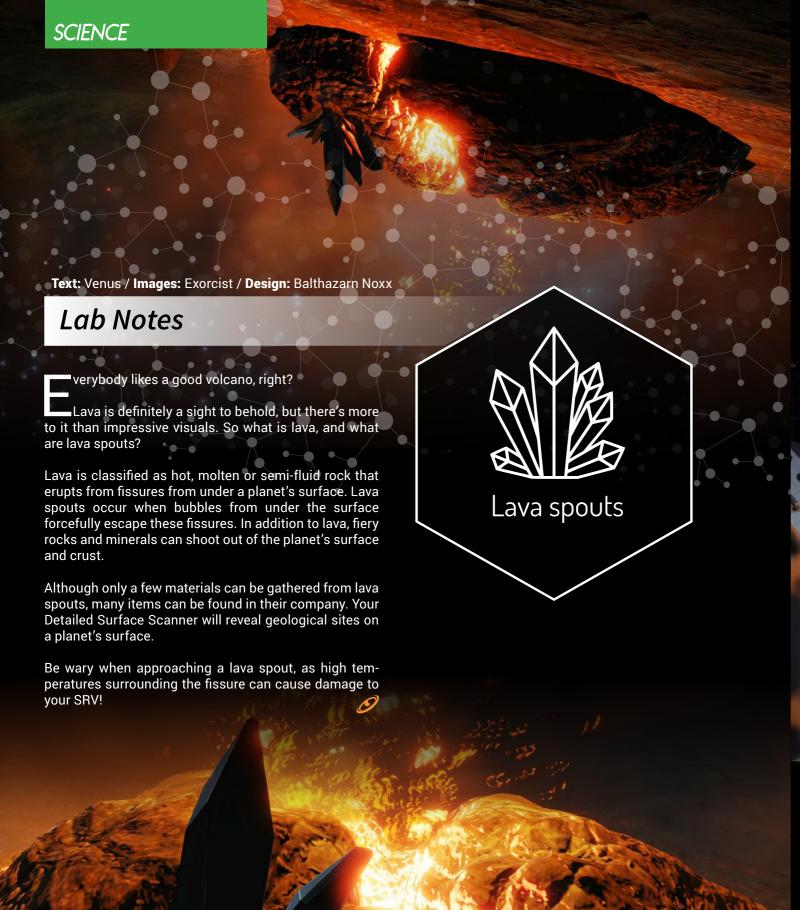
Consider submitting your artwork for future issues of this magazine! Your art could stand alongside the beautiful work of our illustrators and designers.

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Fly safe, commanders.

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nown to howl at nothing, chase Trumbles, and keep away the space madness — this issue's co-pawlot is Amber the Space Beagle!

Amber is four years old and, like most Beagles, is a nose on legs. You cannot open a ration pack within the ship without her sudden appearance! She likes to chase offworld fauna and leaves her hair everywhere. She's definitely no guard dog and has been known to loudly throw up under TheMindBuddah's bunk on occasion. However, his life is never boring with her around.

"She's really the sweetest of dogs when you get to know her, and — while not a big animal — has a massive heart for adventure. She's constantly around while I fly, or will retire to my bunk if she gets bored. A few checkup visits just to make sure I'm not snacking without her!

"She will often remind me to take breaks from long hauls by staring at me till I relent and rest, usually with snacks for both of us. She's basically my furry daughter and possibly best friend, and always reminds me what an old space drunk once told me: 'Everyone thinks they have the best dog. And none of them have ever been proven

TheMindBuddah has 437 hours' flight time. He has a small, specialised fleet dedicated to particular tasks. All his craft are named after hounds, simply because he loves dogs.

Co-Pawlots

Design: McNicholl

Thanks to: TheMindBudddah

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