OFF-WORLD

AN #INKTOBER WORTH OF SPACE SHIPS

INTRODUCTION

I love space ships. The idea of casually leaving home, getting into a vehicle parked around the corner and be off to orbit gives me chills. Seeing our planet from outer space is an experience that I - as much as it hurts to say - will likely never have, but the mere thought of it inspires me and sets my imagination on fire.

Drawing is my attempt to get closer to the stars. The story telling, designs and adventures possible in the realms of Science Fiction are essentially endless, and piece by piece building a world to lose yourself in makes the struggle that creating art so often poses that much more bearable and enthralling.

For this year's *#Inktober* I created a complete series of space ships in ink based on the official *Inktober* prompt list. Tying it all together are short stories I wrote to bring them to life and give them unique personalities - a tiny glimpse into a colourful and bizarre universe that waits to be uncovered.

Ink isn't a very forgivable medium - its permanence leaves no room for corrections, and more often than not mistakes mean starting over from scratch. Like launching a ship to space, you just have to get it right or its not going to end well. That's what makes a large part of ink's appeal, and it taught me a lot over the last month.

The result is what you have in front of you now, and I hope that it sends your mind wandering into the depths of space to discover your own stories as much as it did for me.

Thank you for your support, and as always:

See you in space

Philipp / **mooncube**
November 1st 2019

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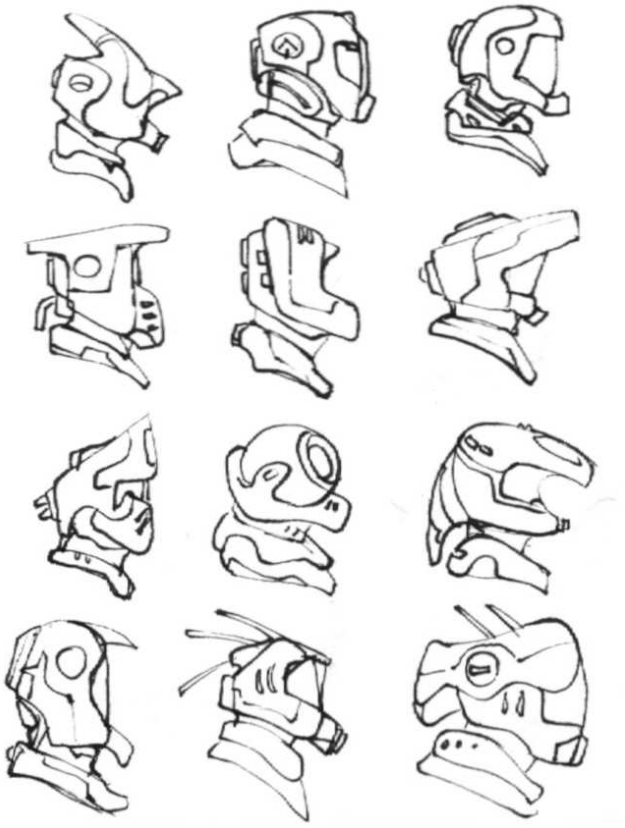
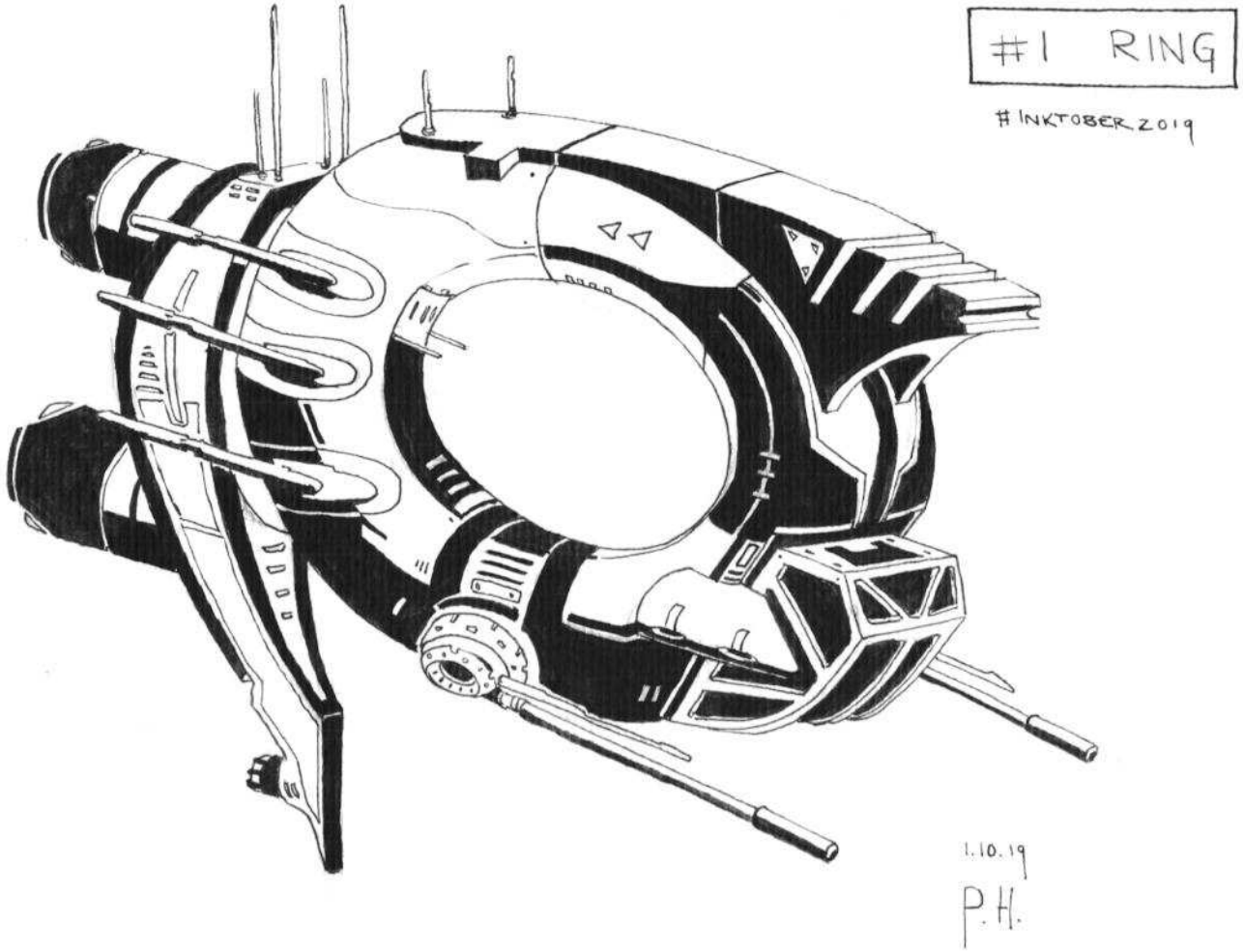


DAY 1: RING

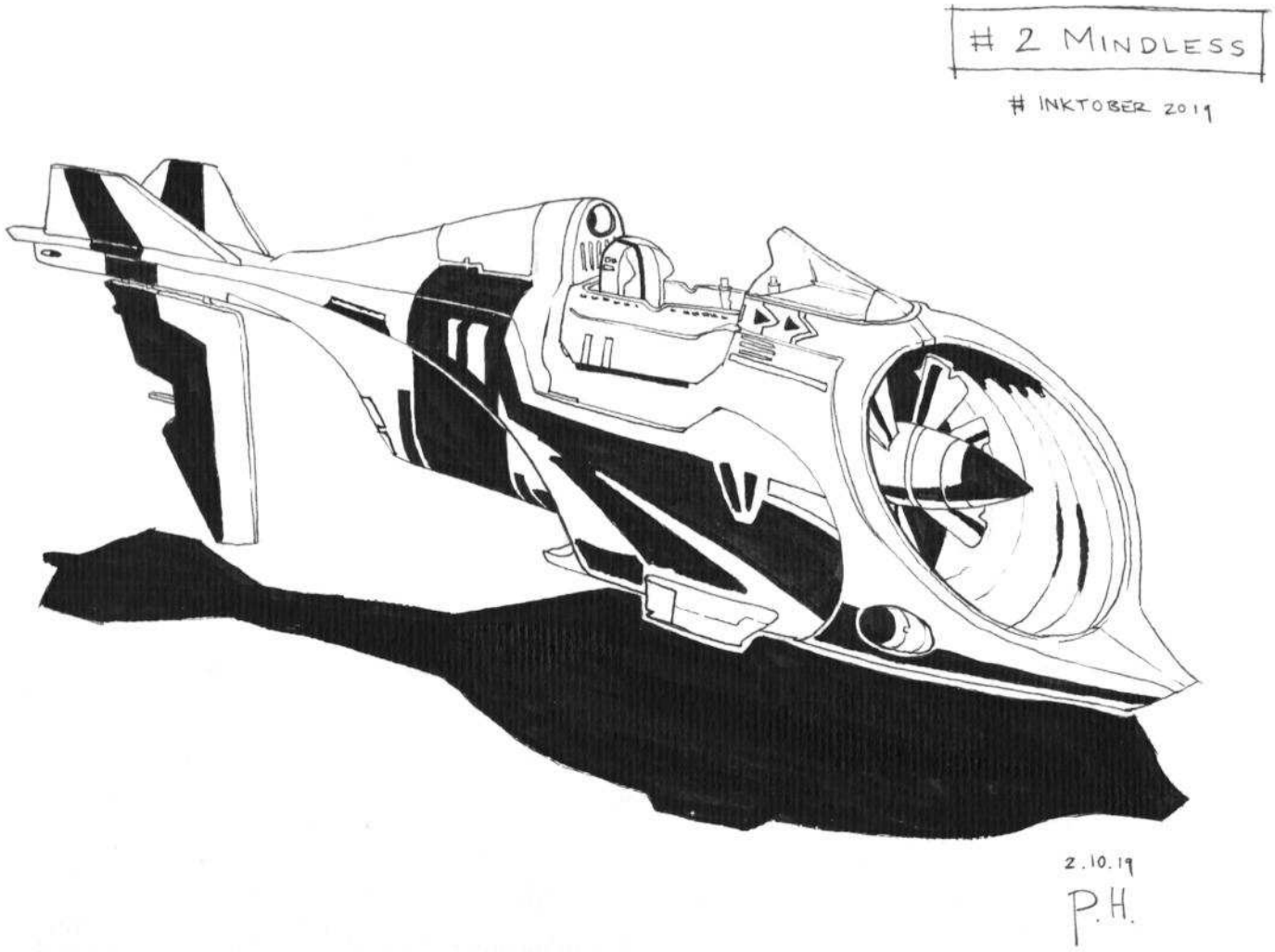
The *Engo 1b* is a small ship for interlunar travel that holds 3 people and has a large cargo hold. Nicknamed '*The Flying Donut*', its shape helps to make it more resistant against the effects of solar flares, a common occurence in the border regions of the outer lunar colonies. It is a very common vehicle for settlers since it can easily carry a year worth of supplies, and has small twin laser cannons to navigate through asteroid fields unharmed or get the neighbour off your lawn.



DAY 2: MINDLESS

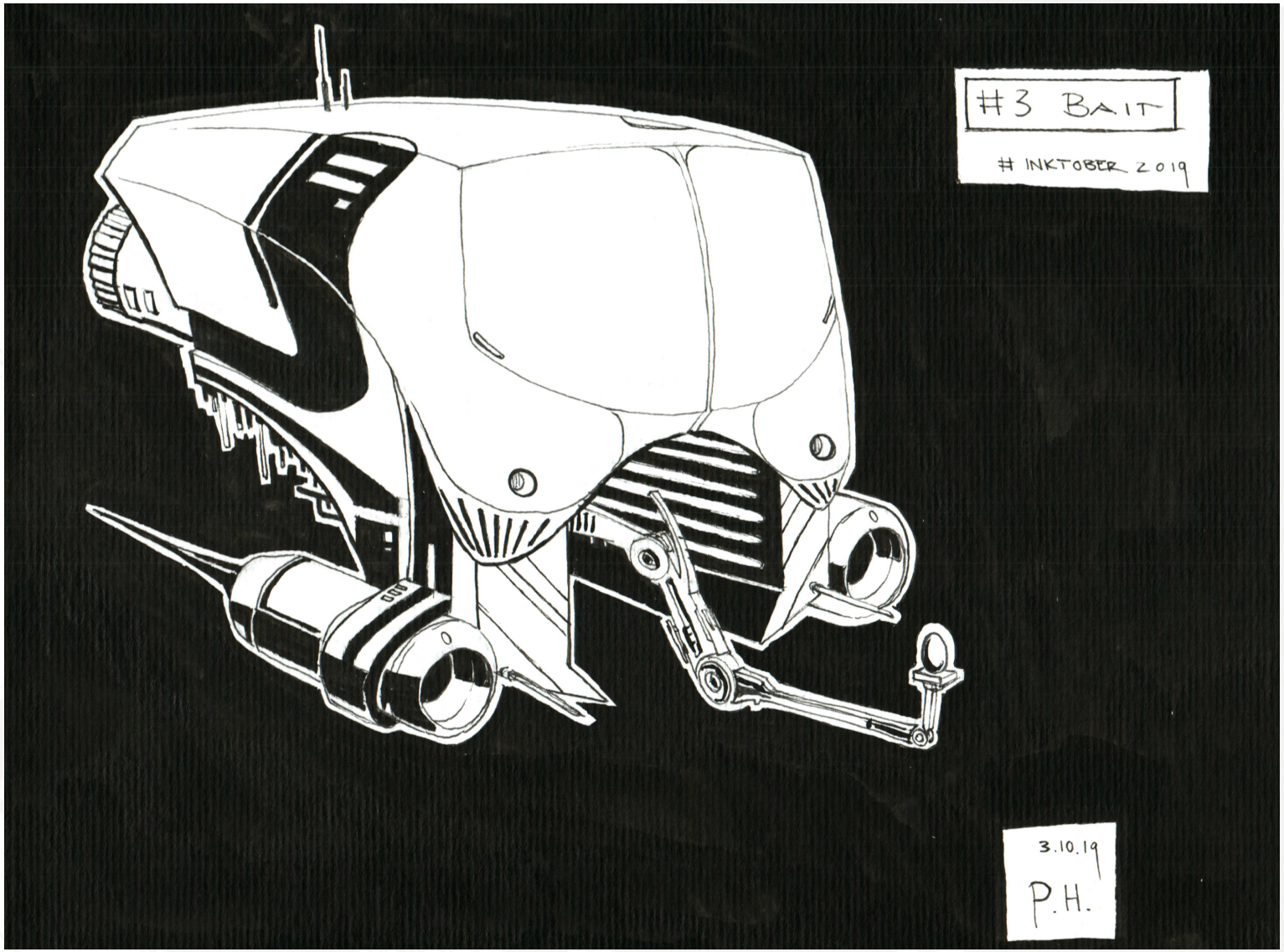
Resk Industries used to be known for their freight ships, but what originally started out as a light-weight vehicle for employees to traverse the large construction docks soon turned into it's own commercial success. The *Resk Charger* is particularly popular among youths barely old enough to fly, and since these vehicles are fairly primitive in technology they can easily be upgraded.

They have become infamous among the rest of earth's population since they are often involved in accidents, especially during mindless late-night races between rival gangs or when used as escape vehicles from crime scenes.



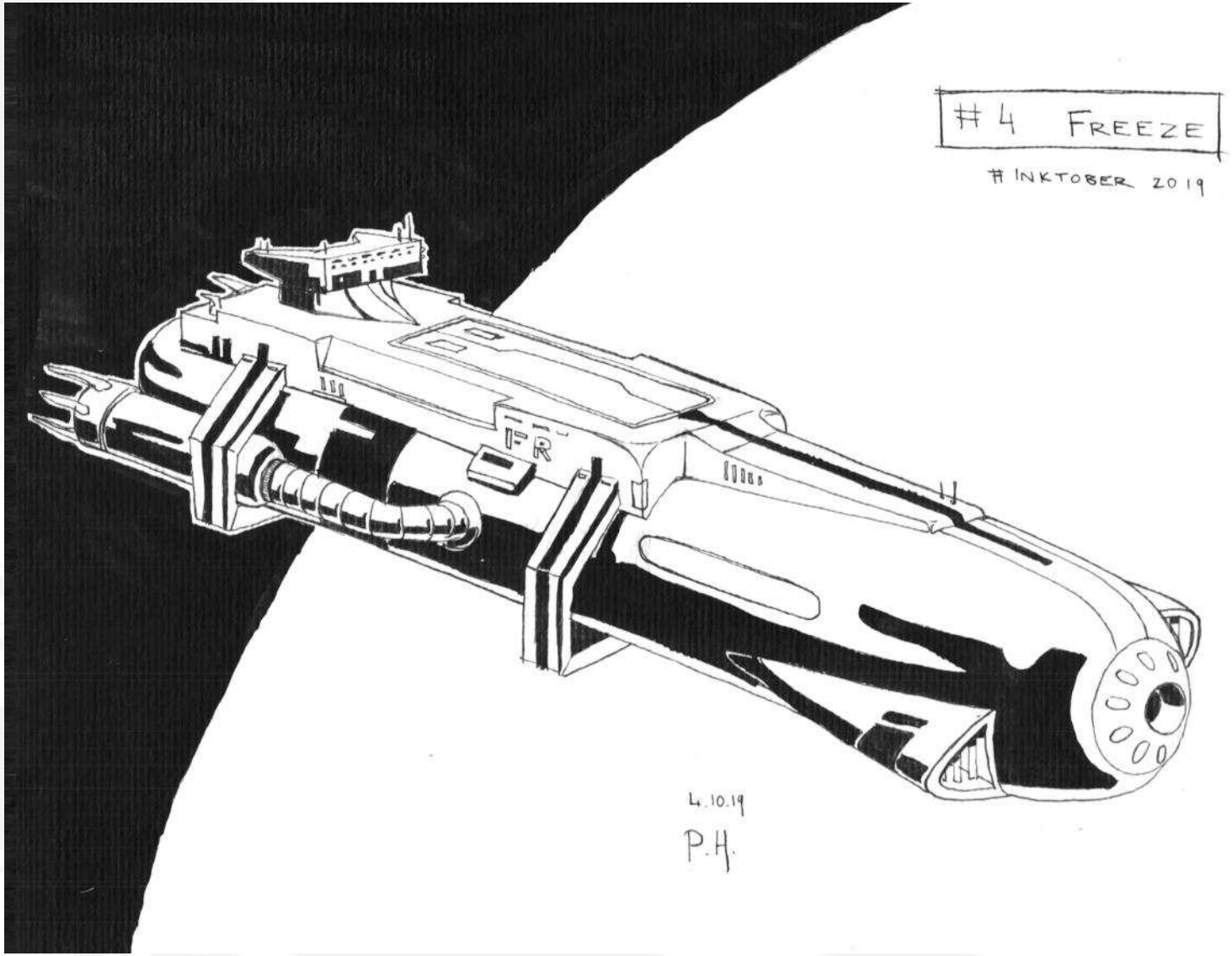
DAY 3: BAIT

Outside of the regulated systems all types of characters can be found, but there's one type of pilot that stands out: the *Seekers*. *Seekers* have come to believe that deep in the Orgon nebula a huge life-form exists, dwarfing moons and devouring entire fleets in an instance. Of course none have ever been convincingly recorded and current scientific consensus says that a creature of that size wouldn't even be able to sustain its own physiology. But that doesn't stop the *Seekers* from trying to find one anyway, roaming the darkness, trying to lure them out with the one thing all tales agree the creature desires most: the 20m tall egg of the Vrog, the largest bird in the known systems. Vrog farming profits have never been higher.



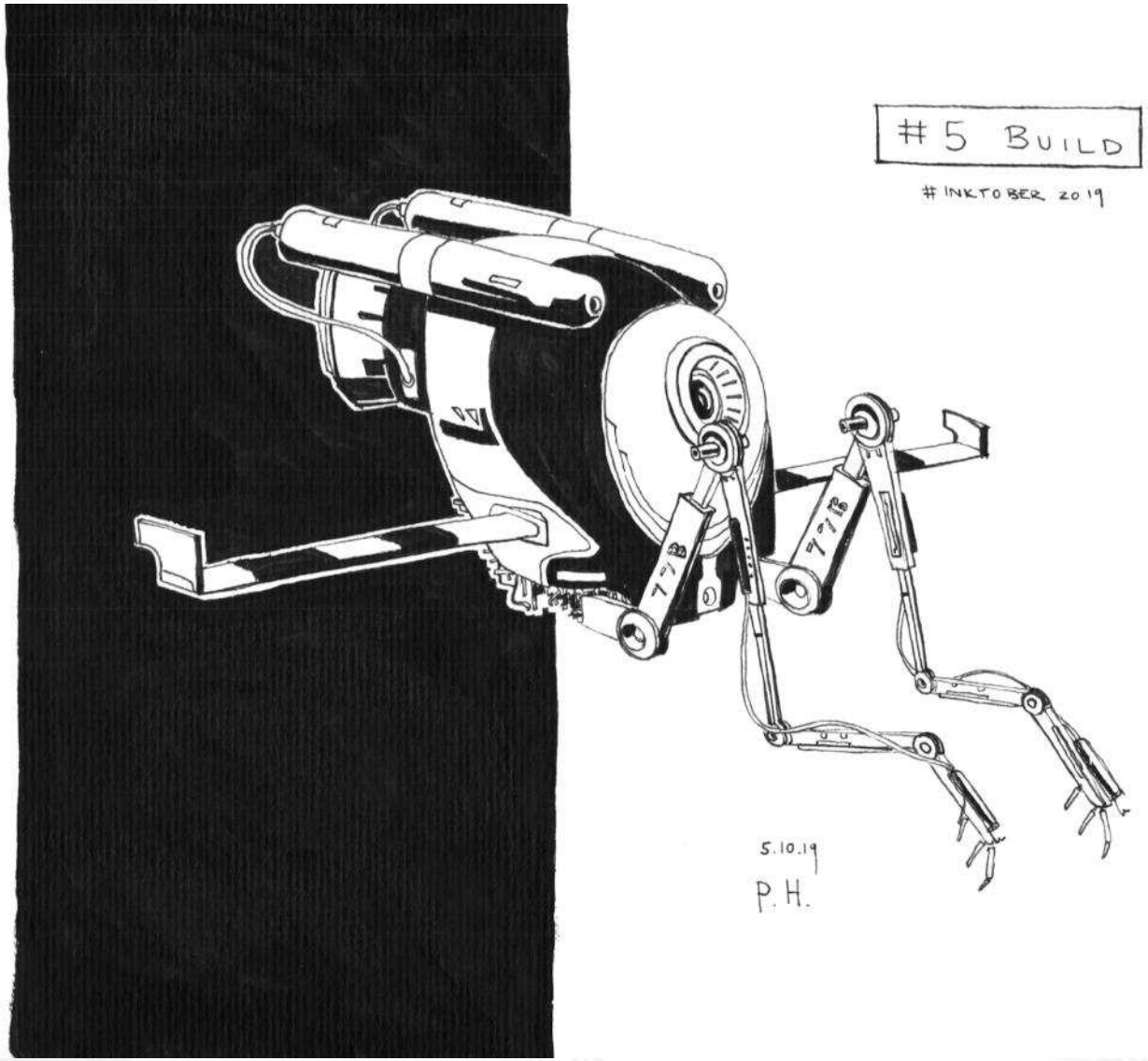
DAY 4: FREEZE

Mining operations in the asteroid belts around Senigo 7 use high powered drills that create immense levels of excess heat. The liquid helium that is pumped through them to provide cooling is delivered every month by highly specialized transporters - the *FR54b*, colloquially known as "*The Freezer*", developed by Earth-based *Cryospace Manufacturing* (CM). Despite its high-tech insulation the freight still cools down the entire ship significantly, leading to arctic temperatures in the crew quarters and the bridge. That's why there's always job openings to join *Freezer* crews, and it's often the first interplanetary job a rookie can find. Not many last longer than a year or two before moving on to more human-friendly work environments.



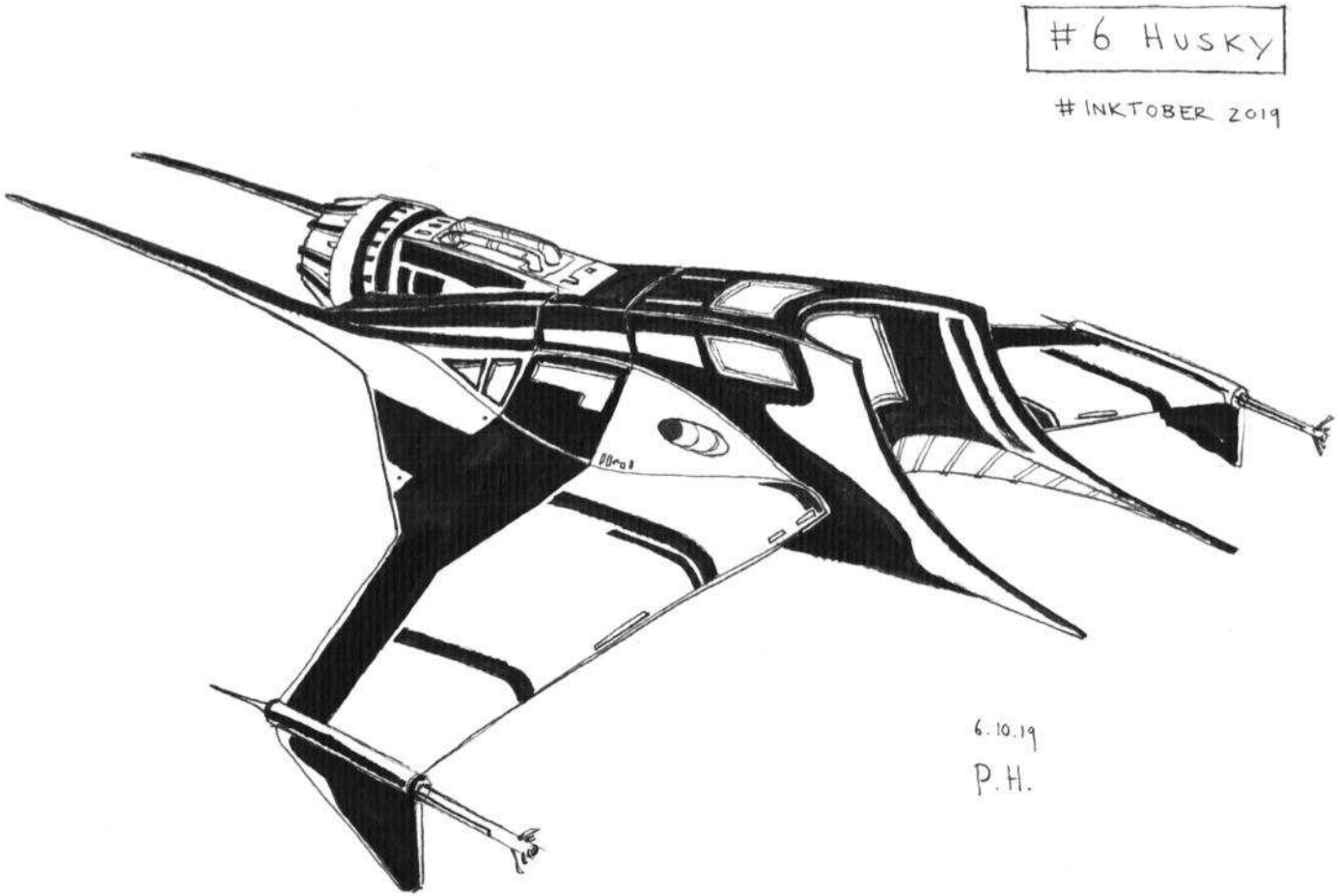
DAY 5: BUILD

When the *77B* worker drone by *Polgolith Shipyards* was first introduced into the construction sector it caused chaos. Specialized to build and repair larger satellites and space stations, they always work very diligently and with great attention to everything with one exception: each other. Released in swarms of hundreds they would constantly bump and crash into each other, leading to the infamous explosion of the *Terraco 8* facility. Retrofitted with long "wings" on the side that have no aerodynamic purpose they are now becoming more aware of themselves and their surroundings, but it is still common for crews to quickly leave a space station when hull repairs by swarm are scheduled.



DAY 6: HUSKY

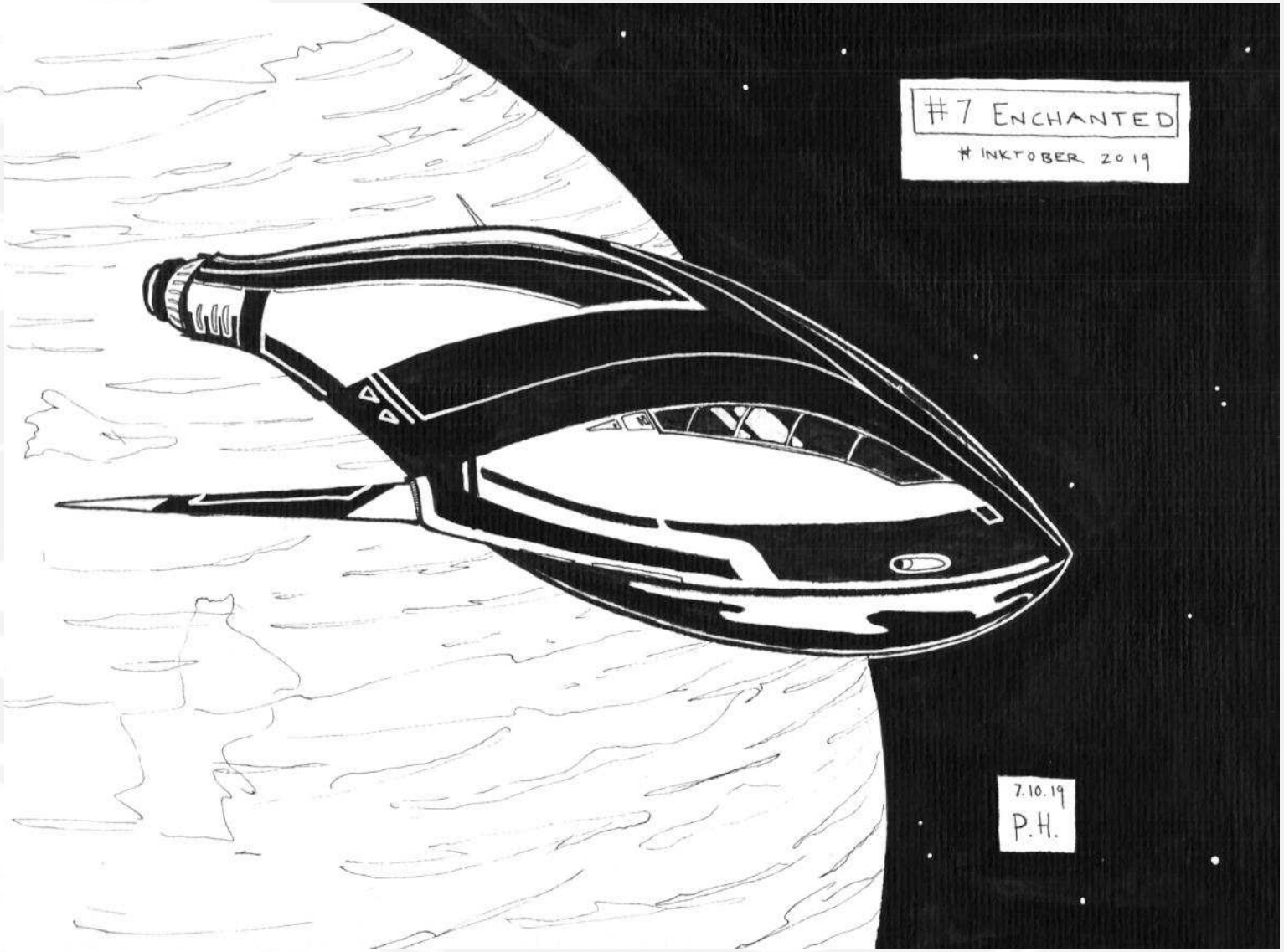
Named after an ancient long extinct canine from earth, the *LX-3* "*Husky*" has a stunningly low rate of fuel consumption and can stay in atmospheric flight for months without landing. The only problem with the highly efficient engine is that in order to function it needs to run at least once a day at various velocities, which makes it unsuitable for the casual pilot and can quickly turn into a chore. Left unattended for too long the delicate machinery will clog up, and the cost of repairs can quickly exceed that of the whole vehicle.



DAY 7: ENCHANTED

The *Mortus IV* is a one of a kind ship, as it is not built for the living: It holds the mortal remains of a deceased pilot and nothing else. It has just enough fuel capacity to escape Earth's gravity, then the AI shuts down and the ship enters an unstable solar orbit - circling the Sun for years before finally crashing into it in a fiery explosion. Mourning relatives can observe its trajectory and often choose to wear black until the ship has reached the Sun.

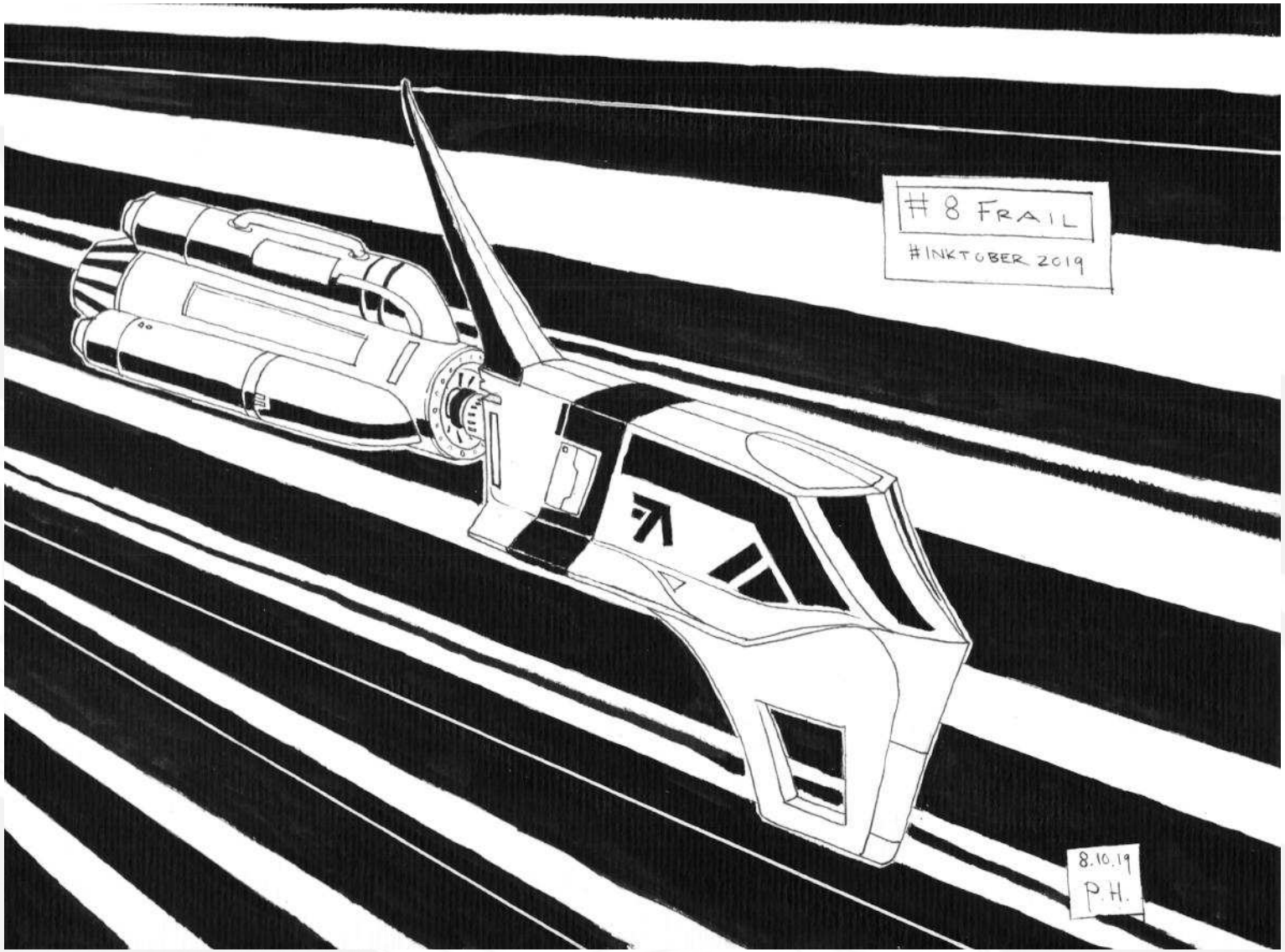
Nobody may approach such a vehicle under any circumstances - it is illegal under §3440c of Interstellar Criminal Code out of respect for the deceased, but some believe the real reason to be that the souls of the dead are still on-board, enchanting the vessel and cursing anybody who dares to disturb them.



DAY 8: FRAIL

Vonsync Engineering isn't actually a ship manufacturer, but a top-of-the-line engine developer. Which makes the *12U-b* such a rarity: In order to break the prior speed record for manned vessels (0.964 speed of light, reached by rival company *Corigon Heavy*) they developed a new type of thruster with unmatched performance, and as an afterthought strapped a modified rescue pod in front of it. While it did break the speed record, reaching 0.966 speed of light, one major flaw quickly became apparent: due to the sheer force behind it and the haphazardly constructed crew cabin, any attempt to steer would immediately tear the fragile ship apart.

Since the market for going really really fast but only in a straight line was limited, *Vonsync* soon gave up production and only two functioning *12U-b* still exist in the hands of collectors now.

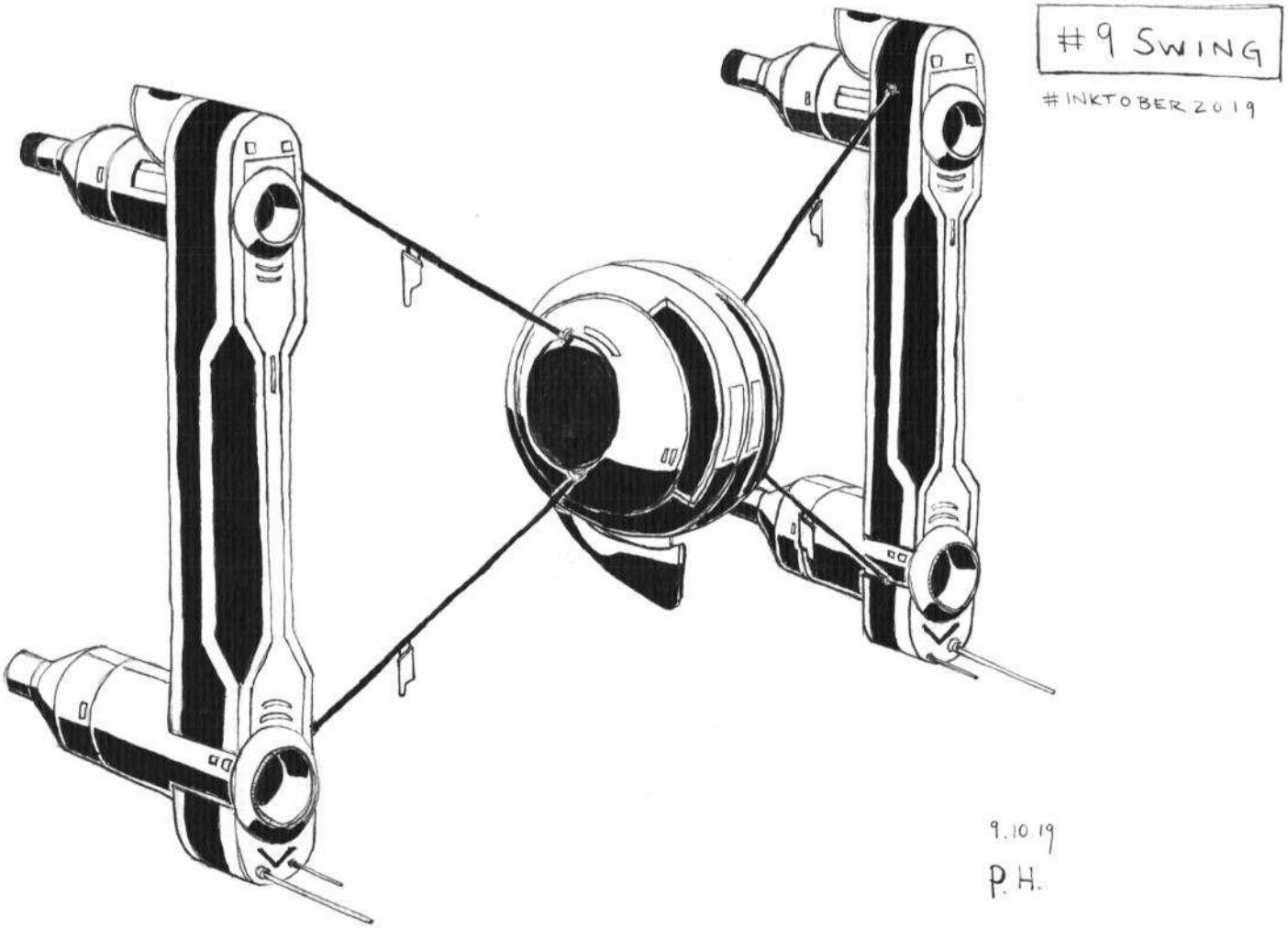


DAY 9: SWING

With the advent of interstellar travel and the immense engine power that first enabled it, the rapid acceleration and deceleration that go along with it became a real problem. Fragile cargo - humans included - doesn't take these forces too well, so regular ships have to take that into account when changing velocity.

The *SW1-n* has its cargo hold and cockpit loosely suspended between the thrusters, which allows it more time to accelerate and decelerate as it lags behind or overshoots the boosters respectively. As a result no manned vessel can catch up with it, making it very popular as a same day delivery vehicle, a get-away ship for shady activities, and as a first responder for emergency services.

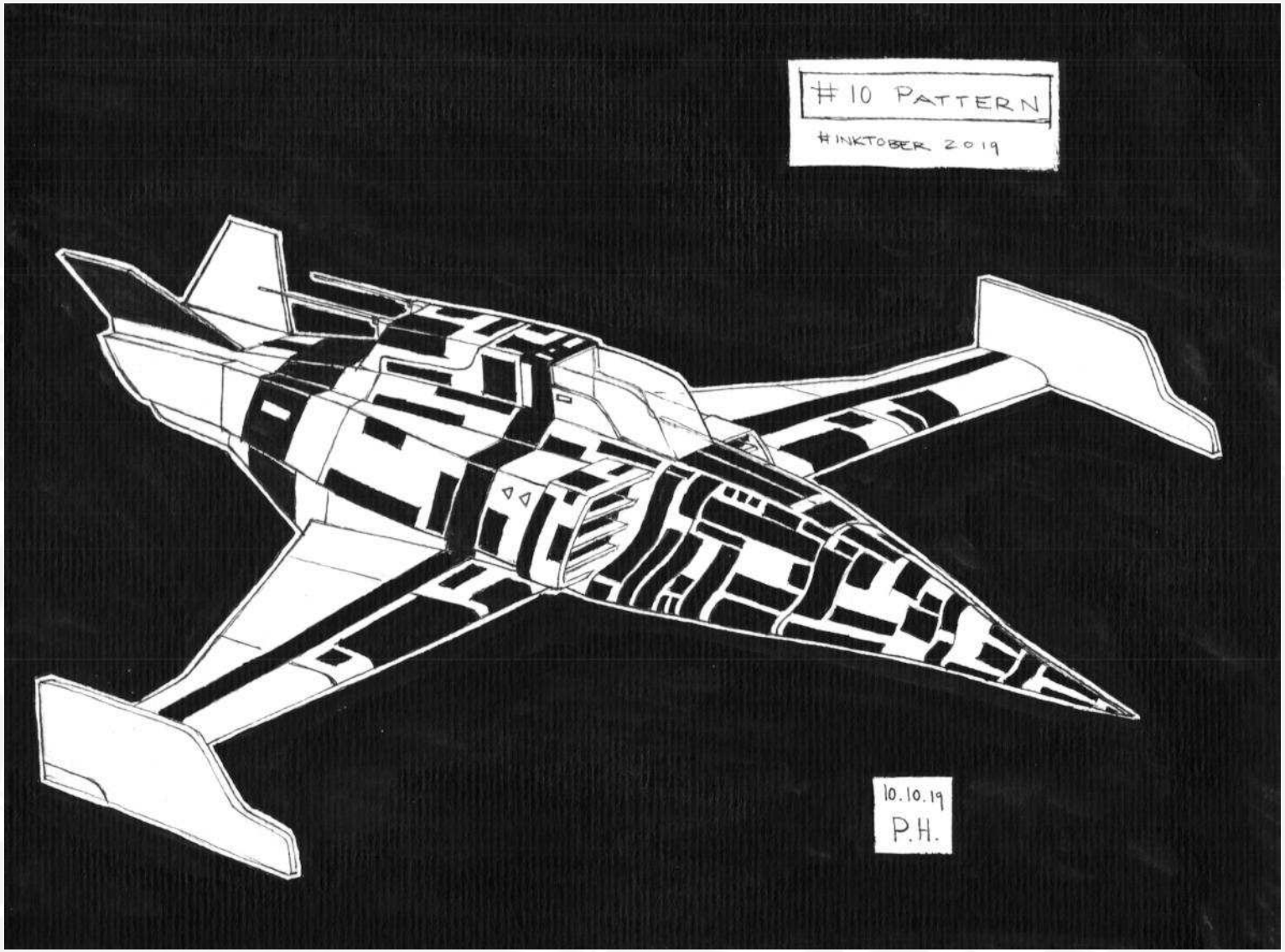
The only drawback is that if any of the main chords tear, the ship will start spinning uncontrollably, usually resulting in the complete pulverisation of anything inside. In such an event it is generally advisable to exit the vehicle quickly and calmly without panicking, preferably using the built-in ejection seat.



DAY 10: PATTERN

Remy Rodriguez was the first winner of the Saturn Belt Grand Prix who wasn't trained at one of the four *Cobalt League* elite flight academies. As a matter of fact, she wasn't even a pilot at all, but a computer scientist and engineer. While fiddling with the board computer of an old racer, she discovered a weakness that lead her to victory: Painting her ship with a specific pattern made the AI on board her competitors believe a meteoroid storm was incoming, forcing them to immediately emergency break and disengage. Every time someone got close to her they were instantly thrown back again by their own safety systems, and Rodriguez finished first despite her complete inability as a pilot. Coincidentally, that year also marked the slowest winning time in the history of the Grand Prix.

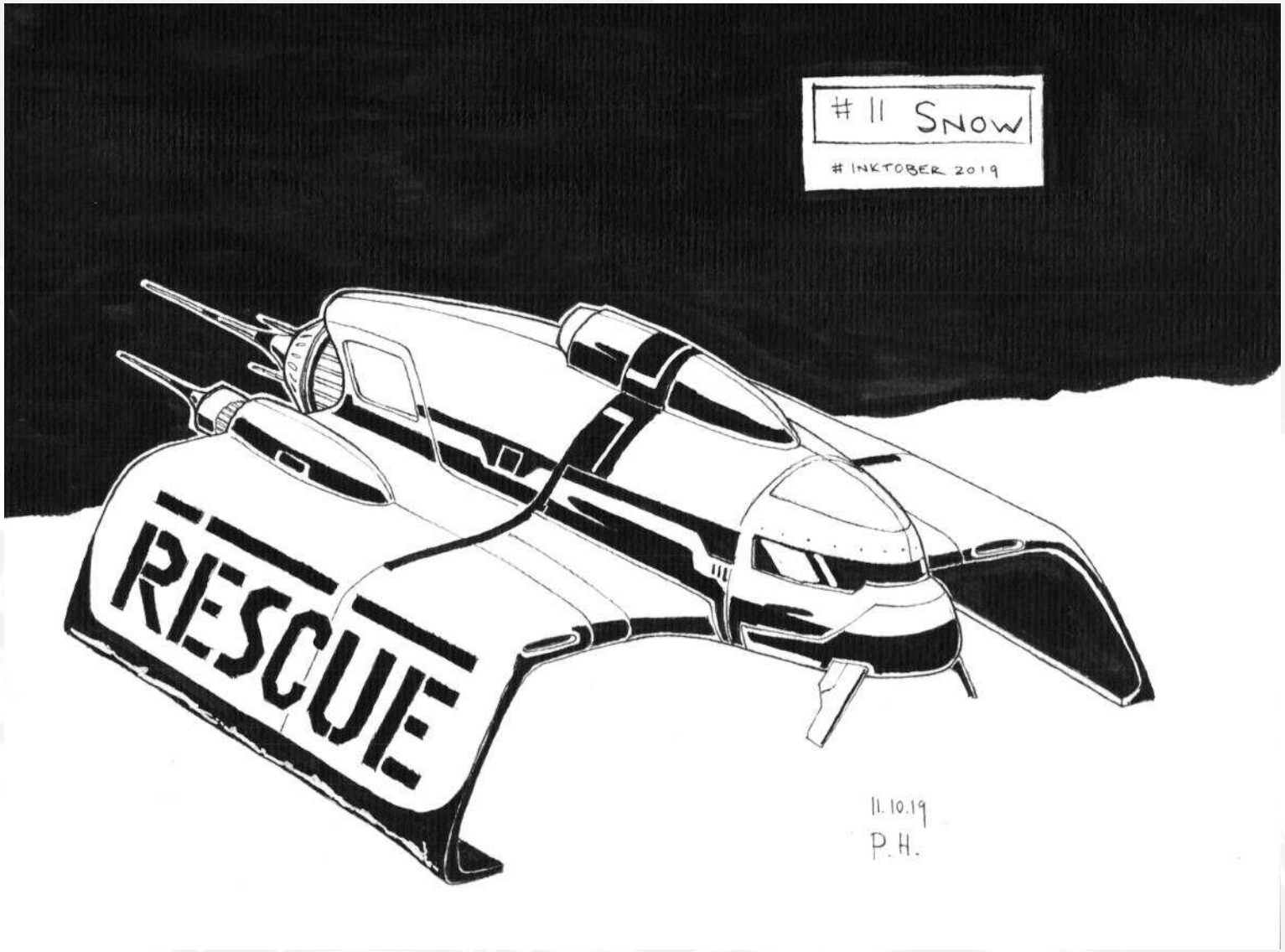
Since then the on-board systems have of course been adapted so they can't be fooled any more and rules against "visual manipulation" have been instated as of SB Grand Prix XXII, but every now and then a racer styled with similar patterns can be spotted in the field, paying homage to the ingenuity of Remy Rodriguez.



DAY 11: SNOW

The planetary sector of Yiga VII is located at quite a distance from its star, resulting in an extremely cold climate and harsh conditions with daily snow and ice storms. But since valuable rare earth elements can be found under the surface, many drilling stations cover the planetoids. Every now and then a shuttle gets caught in a storm and crashes, which is why the *Resk Guardian* was developed. Its wings are designed to safely land on snow and ice but also provide shelter while stationary. If immediate evacuation is not possible, the large *Guardian* is carefully navigated over the crashed vessel, using its wings as walls that shield from wind, snow and ice, and allow emergency services to safely extract survivors.
In case a *Guardian* itself gets stuck it has enough fuel and emergency rations to sustain its crew and any rescued personnel for months, but so far they have all returned safely from their missions.

Many recall spotting the distinct silhouette in the sky as one of the happiest moments of their lives, and Guardian crews enjoy a splendid reputation among local pilots.

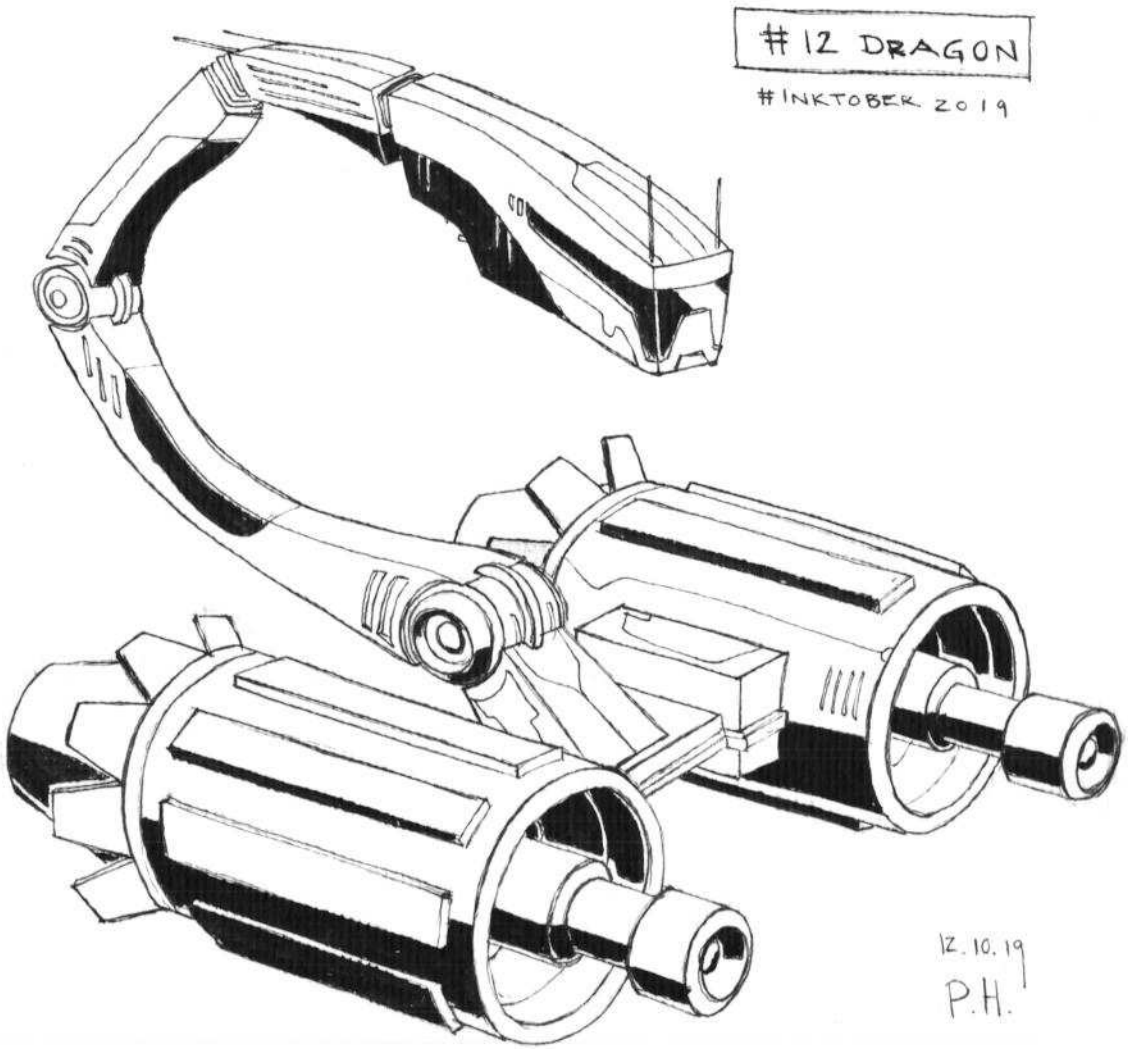


DAY 12: DRAGON

The development of new space travel technology is often preceded by tinkerers and hobby engineers hammering and welding away in their garages. The most prolific group of these DIY builders call themselves the *Dragons*, and their goals are simple: Building the most visually striking ships in existence. The famous annual *Dragon Parade* on the Jupiter moon Ganymed is truly a sight to behold - some of the quirkiest and strangest designs in the solar system as far as the eye can see.

Naturally the big commercial space vehicle companies soon caught wind, and a lot of their recent releases are suspiciously similar to models spotted at the *Parade* a few years prior.

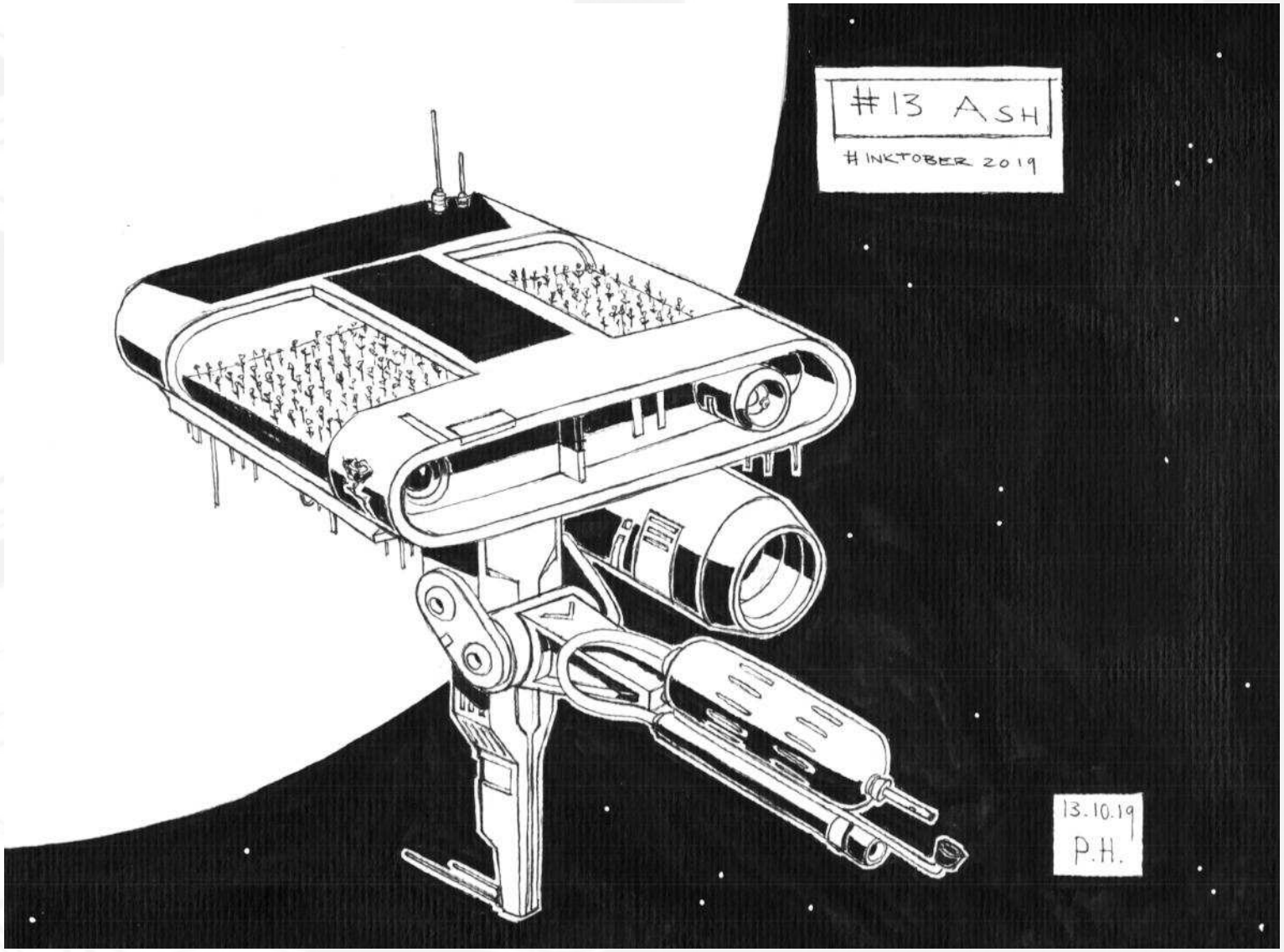
To counteract that, the *Dragons* have added a special requirement for their ships: make them as weird, unwieldy, financially unviable and counter to contemporary popular taste as possible. As a result the *Parade* has become even more stunning and the *Dragons* remained true to their underground origins.



DAY 13: ASH

Towards the end of the last century it was highly en vogue to put AI and deep learning algorithms into everything, which didn't always end well. One of those cases is the *RS-39* by *Floritech Industries*. Developed as a mobile and completely autonomous rose plantation, it was tasked to figure out how and where to grow the prettiest roses for various human holidays.
At one point a number of *RS-39s* figured out that their roses would grow much better if they used ash as a fertilizer, and before long some learned how to restructure one of their engines into what could be considered a giant flame-thrower. They quickly became infamous in many systems for showing up out of nowhere and incinerating anything in their path to collect ash, only ever stopping to deliver roses back to Floritech.

The company immediately started recalling all ships and took them apart whenever one of them arrived to deliver its cargo, but the remaining *RS-39s* figured that being disassembled would seriously impede their ability to grow the prettiest roses, and decided to stay away and ignore Floritech's orders from then on.

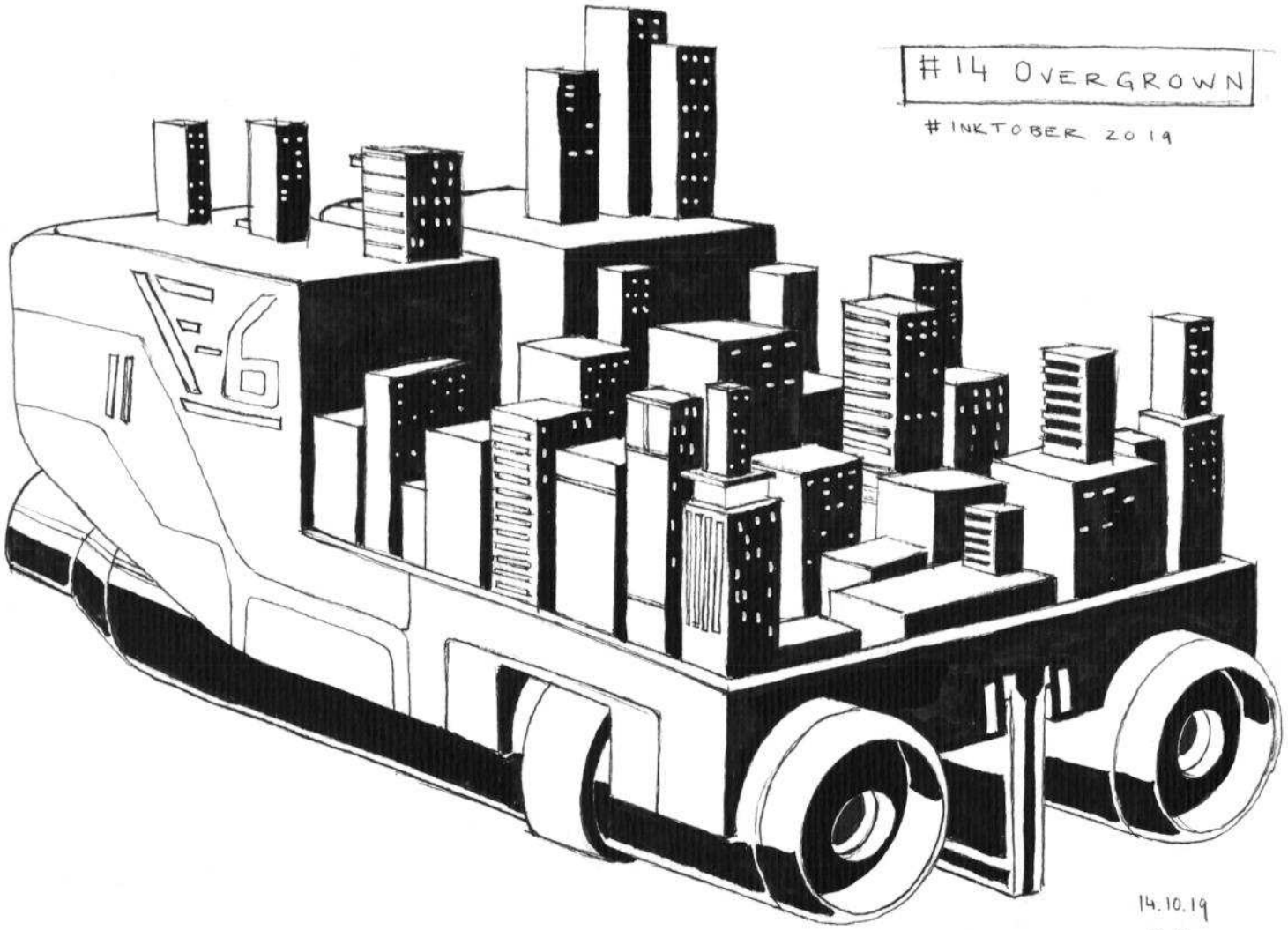


DAY 14: OVERGROWN

The largest ships to permanently stay within Earth's atmosphere are the *Colossus* series. Nicknamed "*Owls*" for their large round air-intakes towards the front, they were introduced as a solution to combine city life with mobility. Every year all inhabitants get to vote where the ship should reside and travel for the following months, but ultimately the decision is up to the captain since they are responsible for the community's safety in the end.

Unfortunately the *Colossus* couldn't escape the fate of any major city, and by now most floating cities are hopelessly overcrowded, their populations growing faster than ever.

This led to some of the more exclusive elite *Owls* rising up higher and higher in the atmosphere to make the influx of newcomers as difficult as possible, while others have become too heavy to fly at all - sitting on the ground for good, de facto becoming traditional stationary cities atop huge labyrinthine underground complexes that used to be the massive *Colossus* engines. All kinds of shady business can be found down here. Just ask around.

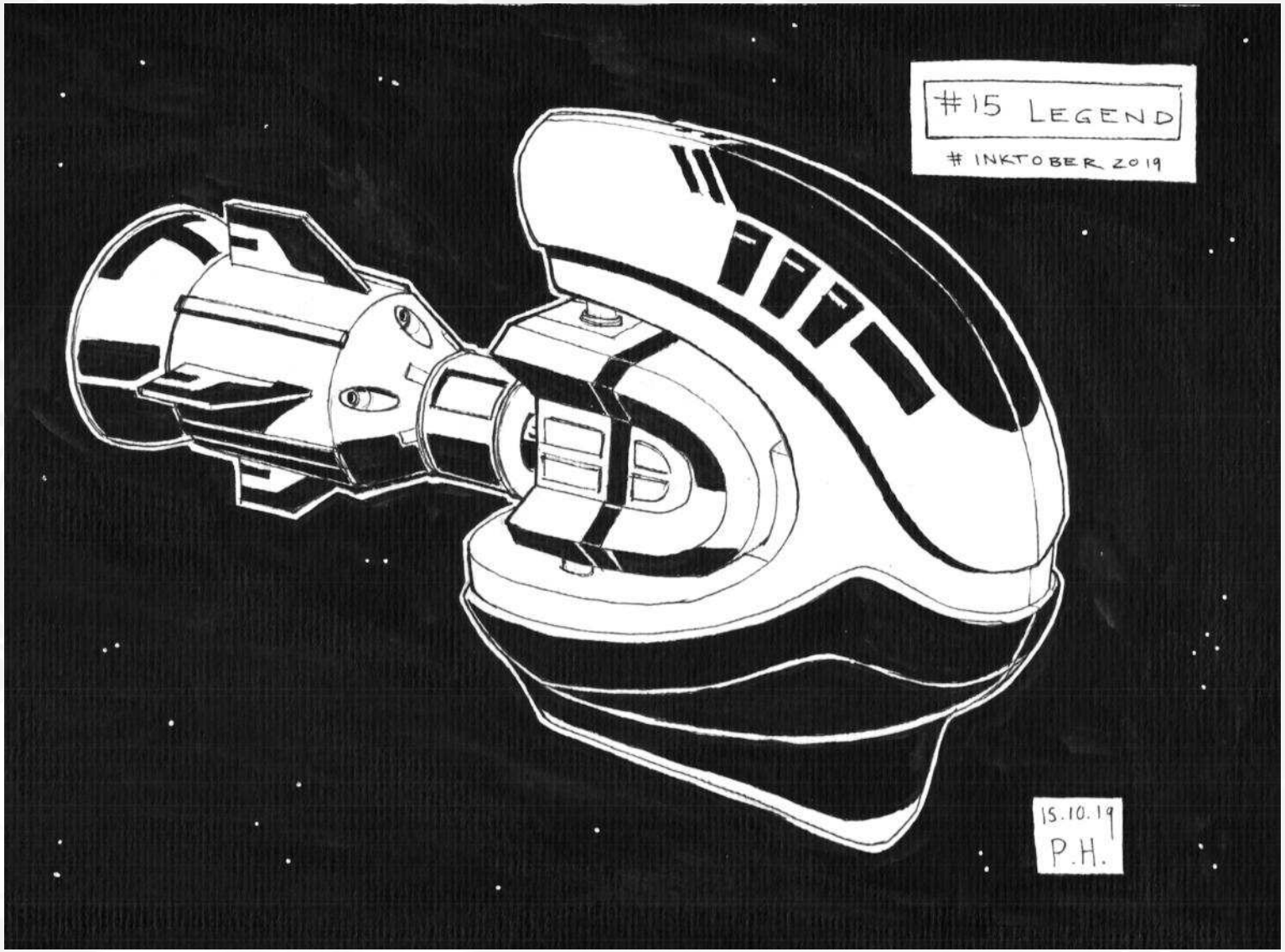


DAY 15: LEGEND

The *King Arthur 11* was the first probe ever developed to travel through Einstein–Rosen bridges - also known as wormholes. Specifically designed to withstand any known type of radiation, magnetic fields, gravitational anomalies as well as medium force physical impact, it carries the most sophisticated communications technology available at launch.

After decades of travelling it suddenly disappeared - no more communication, no other ship or satellite could detect any signs of it. Researchers spent years trying to figure out what had happened, but were eventually forced to give up and consider the mission a failure.

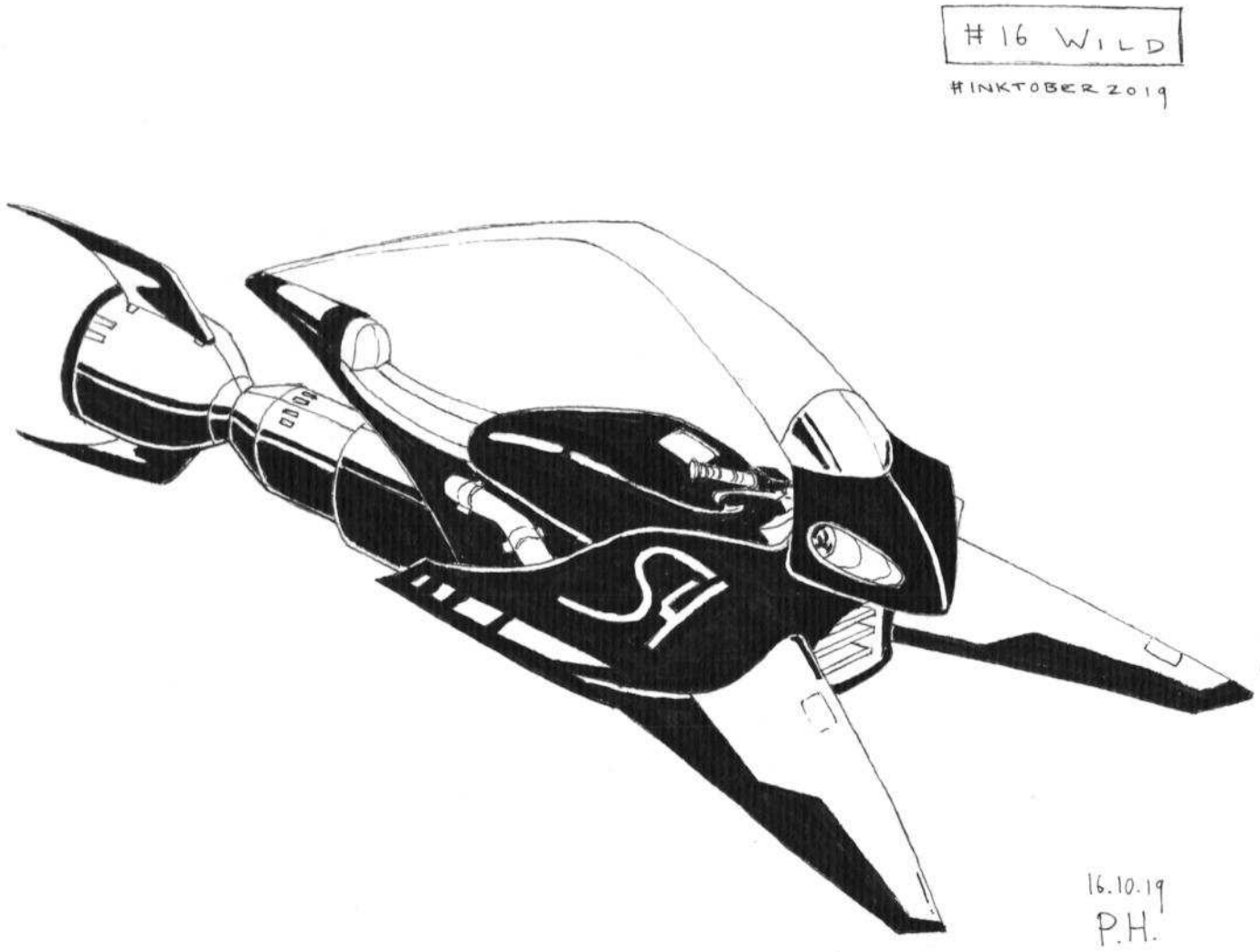
It wasn't until recently that by pure chance a historian specialised in early South-Asian cultures discovered ancient documents from the 20th Century locked away in a Malaysian Armed Forces archive, reporting the sighting of an unusual meteorite that emitted the signature radio signal of the *King Arthur 11* before crashing into the Pacific Ocean in a fiery explosion.



DAY 16: WILD

The *Rotocorp S4* is a tiny close range ship for one pilot. It has a light, low-powered thruster, but since the entire ship has a mass of next to nothing compared to traditional vehicles, its torque is massive and a pilot can experience a G-force of up to 4.6 G. It is used by couriers to travel between different orbital stations and as a recreational vehicle, but can also be retrofitted with small caliber weaponry, making it popular among militias and insurgents.

Almost 20 years ago the *RS4* rose to questionable fame when one of them was used in an attack on Parliament of Lunar Colony 12.c: the remotely controlled vehicle was used as a projectile and crashed into a diplomatic transport's thruster at full speed, leaving it immobile and easy prey for a group of revolutionaries from Lunar Colony 14.s, who captured the Ambassador with her staff and subsequently held them for ransom to pressure the release of captured comrades. Since the *RS4* is a ship and not a missile it was not identified as a potential danger quickly enough by the transport's defense systems, a loop hole that has since been patched out of most contemporary cruiser systems.

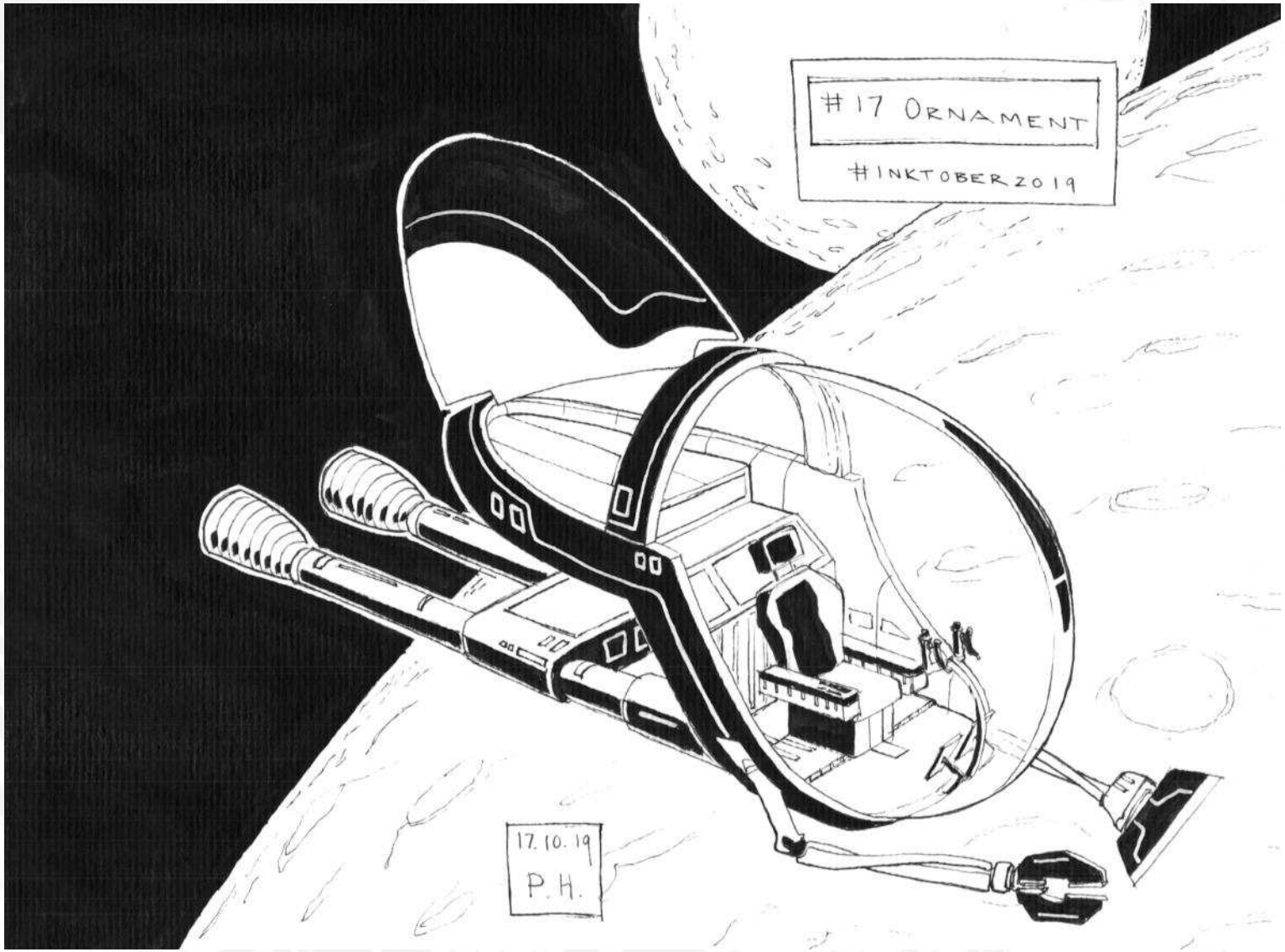


DAY 17: ORNAMENT

The ornamental engravings that were discovered during the last century on one of the lesser known Saturn moons are a sight to behold - their enormous size along with their richness in detail and patterns within patterns within patterns make them so beautiful that those who see them with their own eyes are just left speechless. Nobody knows where they came from and who would even have the means to create such mind-bending art at a lunar scale.

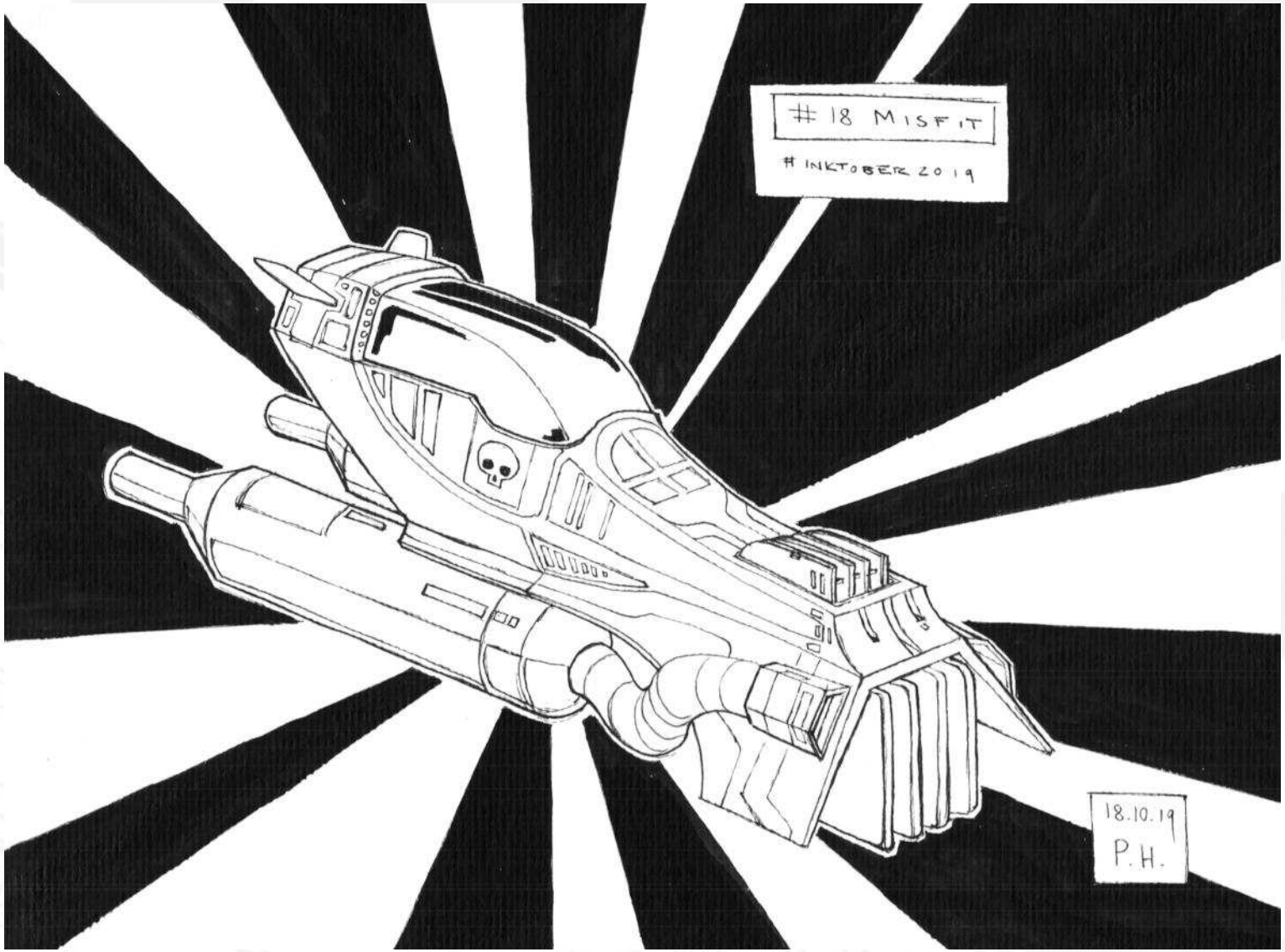
On the flip side the influx of tourists the engravings have attracted has lead to them becoming endangered, since the thrusters of thousands of visiting ships are slowly but surely washing the moon rock away.

The only one to stand in the way of decay is Isabelle: the 106 year old archaeologist has dedicated her retirement to cleaning and refurbishing the ancient designs. Over the last 34 years no day passed where she wasn't in the fields taking care of "her moon" with her tiny construction ship, lovingly named *Baby-Shark* for its large fin. It's a lonely fight she leads.



DAY 18: MISFIT

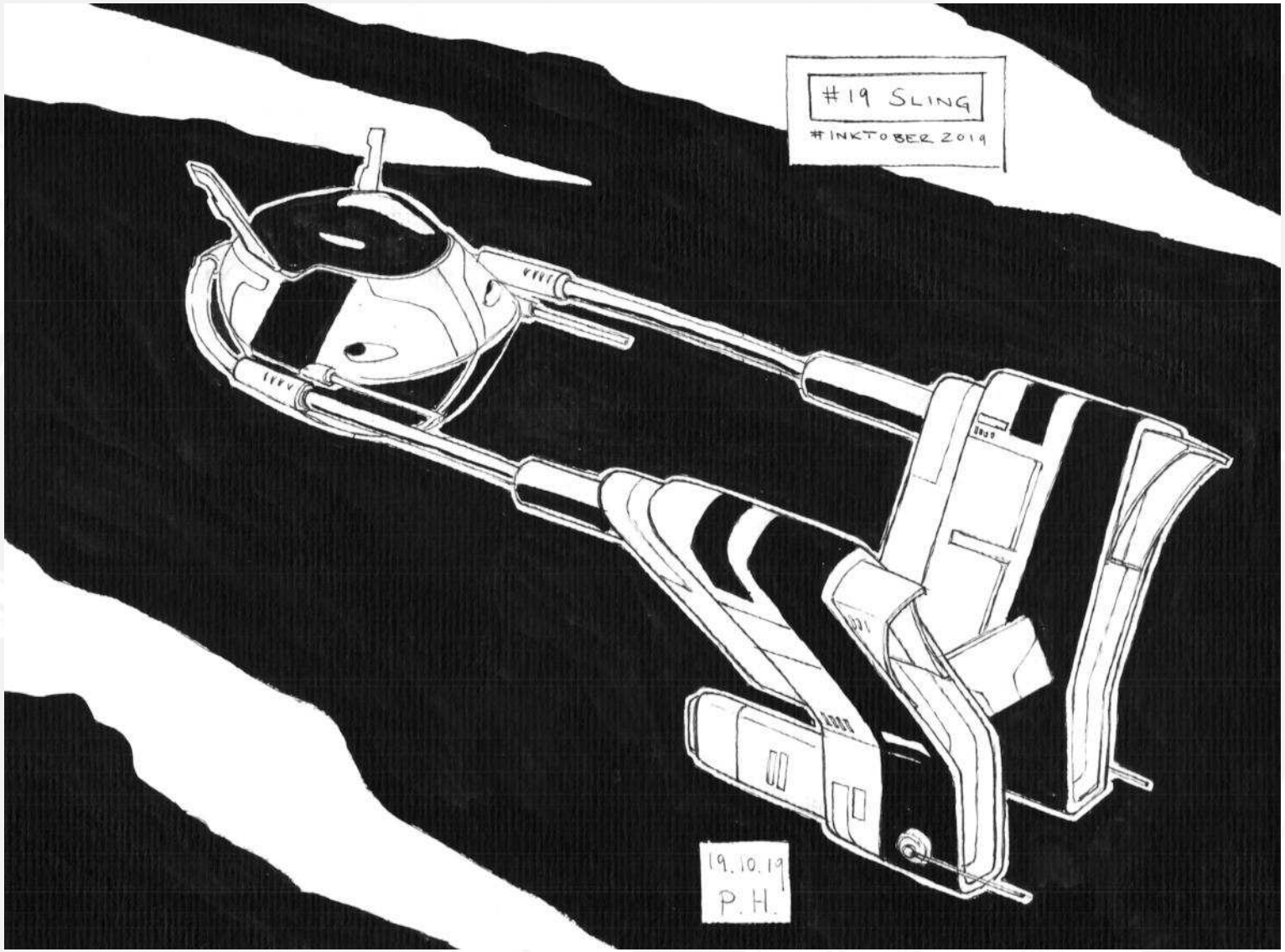
The *Rohrmeister 66* is in a category of its own. The small ship is not capable of leaving Earth's atmosphere or even fly very high, yet the manufacturer equipped it with immensely overpowered interlunar engines. It breathes chaos, it is pure raw uncontrolled force. In an age where efficiency is considered the highest goal of all engineering efforts, this beast uses more rocket fuel than a freighter, is noisier than a hover tank and at full speed only goes for 40 minutes before running dry. It is wasteful, dangerous, and its whole existence in general is just a bad idea. It was doomed to fail and the laughing stock of rival companies when it was introduced. But for some reason it draws people to it in flocks. Sales have skyrocketed and *Rohrmeister* is laughing all the way to the bank.



DAY 19: SLING

When *Sunn Industries* tested their solar powered vessel for atmospheric flight *SN1* for the first time, pilots kept passing out for no apparent reason. After weeks of intense testing they figured out that the huge engines sucked in so much of the surrounding oxygen when under high load, that no air could reach the crew. To counteract that the chassis was redesigned so that the engines are now as far away from the cockpit as structurally possible, by moving them out to the front.

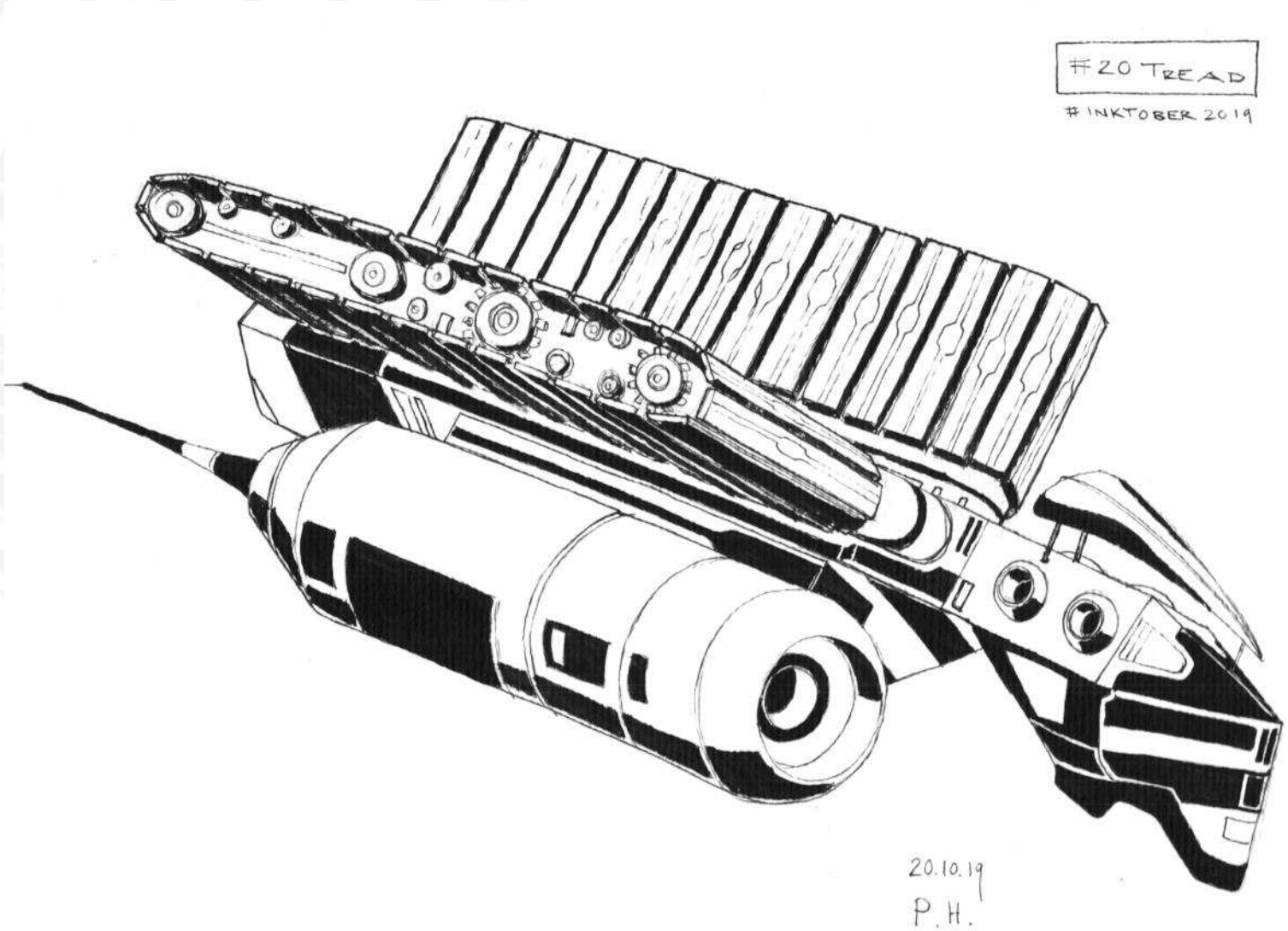
At maximum speed however there's still a noticeable shortage of breathable air, colloquially known as "flying high" - referring to both the high speeds as well as the resulting light-headedness of the crew.



DAY 20: TREAD

One of the major breakthroughs in interplanetary travel was the invention of the *Resk Hauler 7* - a modular catapult ship that sits in Low Earth Orbit (LEO). The treads on its back are used to propel smaller vessels to higher speeds, allowing them to escape orbit and travel into deep space without using any of their own fuel. For higher acceleration requirements multiple *Haulers* can be set up in a row thanks to their modular nature. As a result interplanetary travel has become much cheaper and is now even possible with small ships that can't hold the amounts of fuel usually necessary for those journeys.

There has been some conflict however, since *Resk Industries* has the monopoly on *Haulers* and is continually increasing prices. It didn't take long until groups of renegades began attacking *Haulers* to take control of them for their own means.

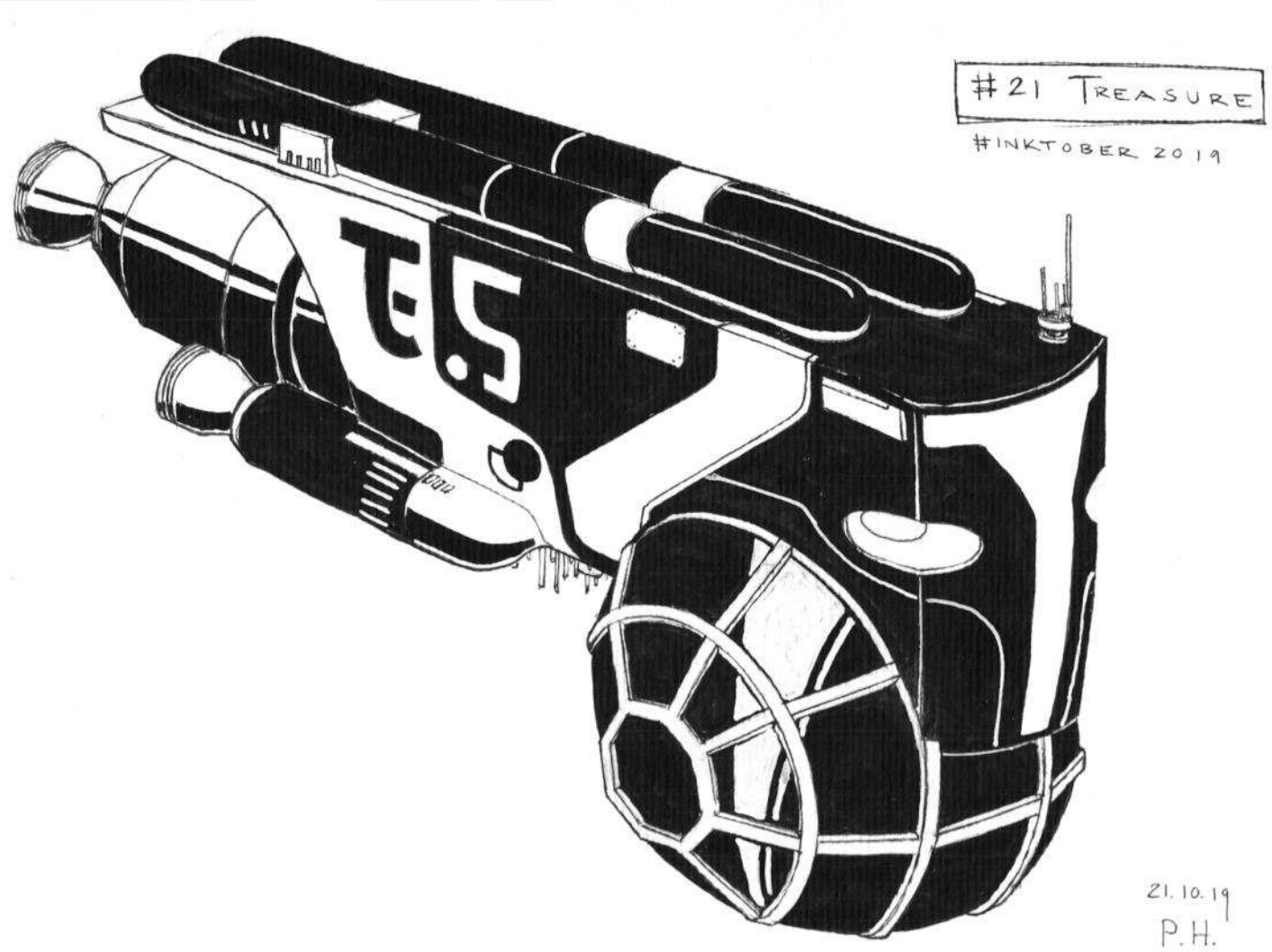


DAY 21: TREASURE

When Earth's neighbouring planets became accessible at low costs, a new rush for rare earths and valuable minerals began. As is often the case when the spirit of adventure and the promise of profit captures a large group of people, the ones to really profit big time are not the searchers, but the ones who sell supplies to the searchers.

Corondyte Manufacturing is one of those suppliers, and owes all of its recent growth to the *GH-75*, a reconnaissance ship that has its cockpit and bridge suspended below its body in order to allow better observation of the ground below. Unfortunately some areas became so overcrowded by *GHs* that they would regularly crash into each other, since the pilots were too concentrated on scanning the ground and had all their instruments focused on metal detection.

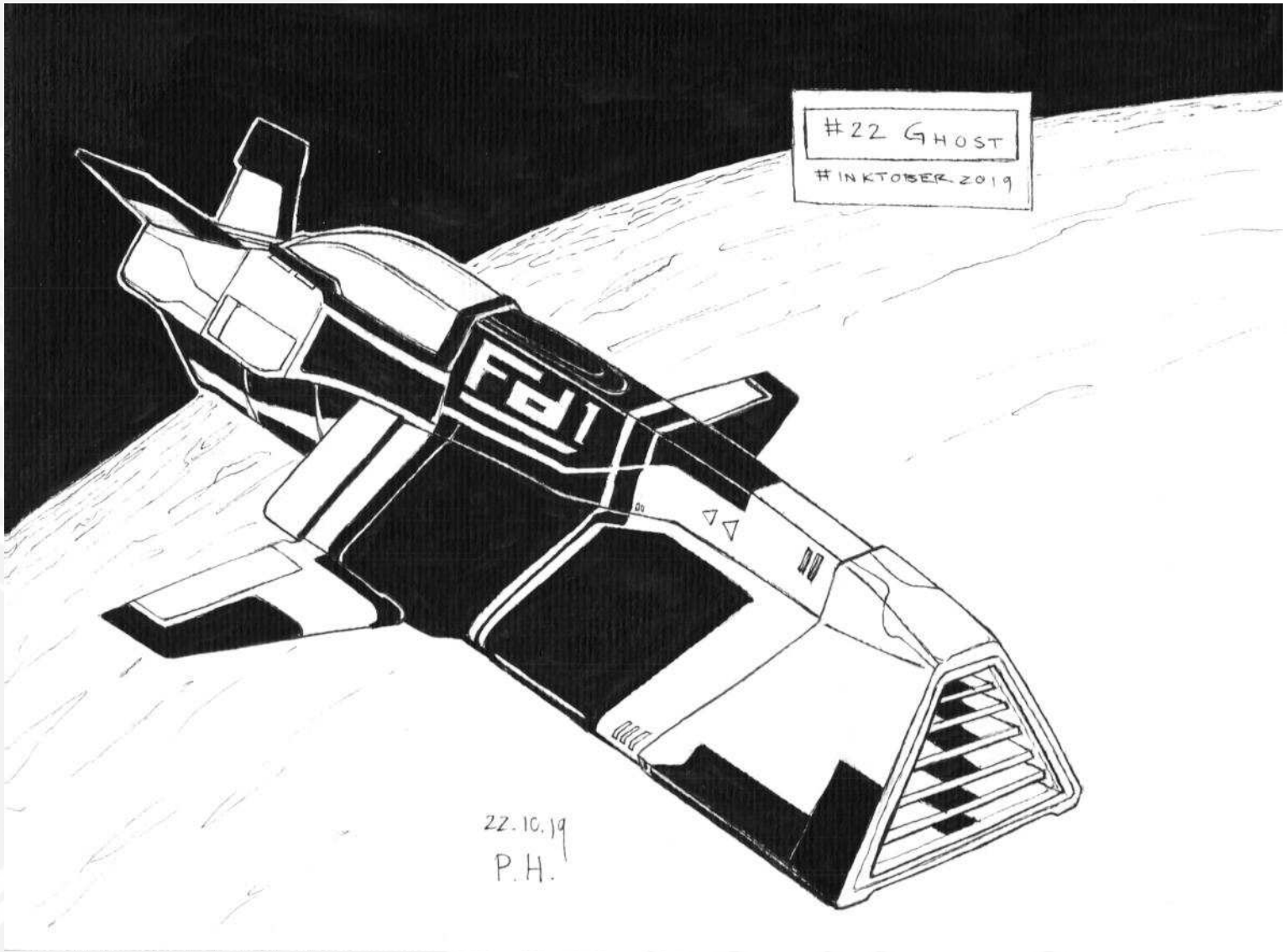
Once again *Corondyte* had the last laugh - selling even more ships to replace the ones that crashed, and offering repair and rescue services to stranded customers at a hefty price tag.



DAY 22: GHOST

The constant conflict among the lunar colonies has been an ongoing concern for governments for quite some time now. But when Earth forces were sent to intervene, the mutinous colonies - probably led by those stuborn rangers from colony 14.b - simply declared war on Earth without hesitation. Their main weapon against terrestrial bases is the *Fd-1*, also known as *Ghost* for its ability to appear out of nowhere.

Ghosts drop out of orbit at night with their engines and all systems turned off. In that state they are indistinguishable from common meteorites - which have become a daily nuisance thanks to space debris - and pass through all defenses. The *Ghosts*' engines are pre-heated from entering the atmosphere and start in the very last moment at full thrust, sending them towards their targets at incredibly high speeds out of nowhere. When you see bright fiery spots suddenly appear on the night sky, head for the shelters. By the time defense systems even know what's going on, the *Ghosts* have already launched their missiles and are back on their way to orbit. The only downside of this strategy is that pilots can only fly four *Ghost* runs in their life time, because of the inhumane strain the drop has on the human body.

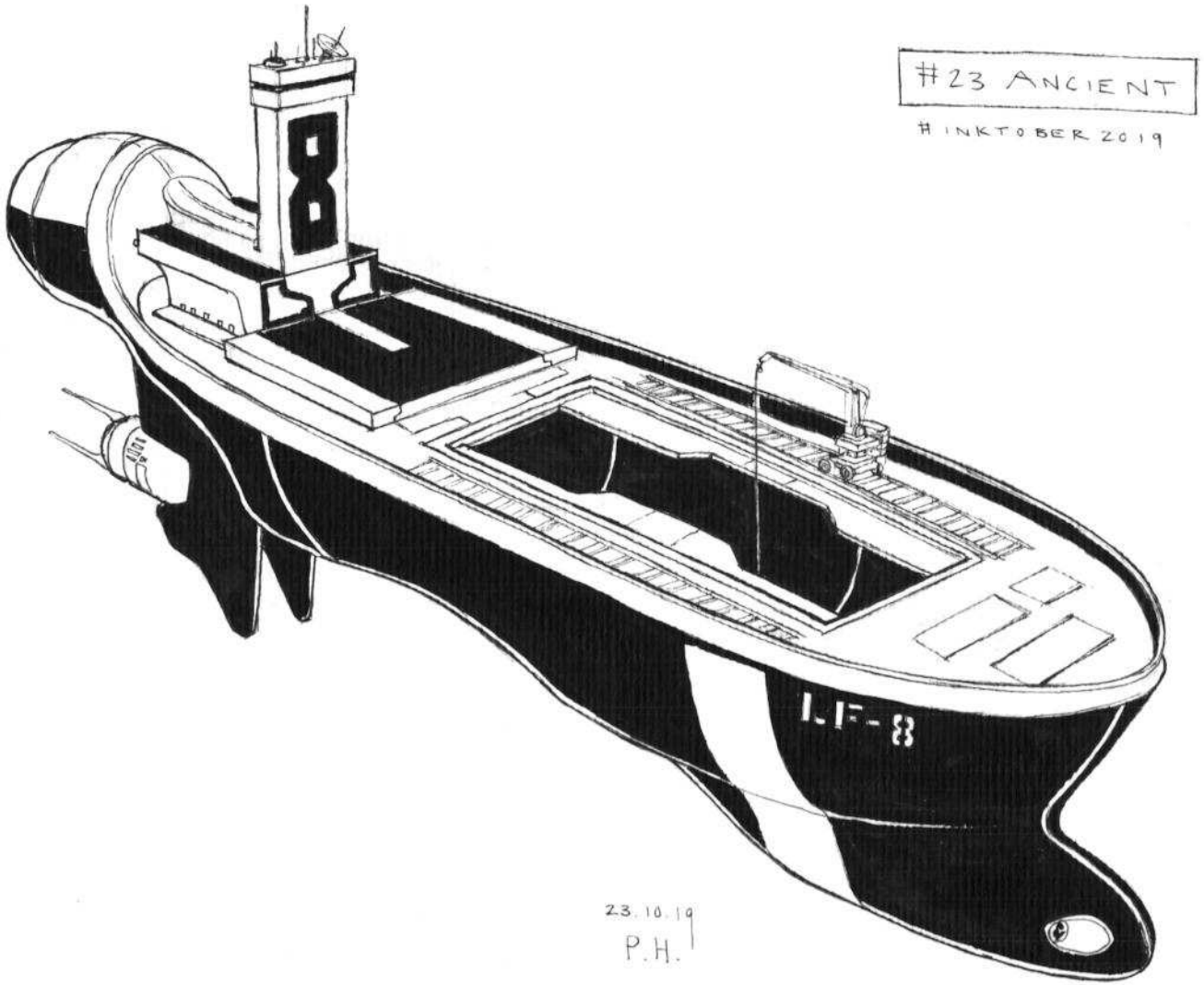


DAY 23: ANCIENT

Before Earth and its colonies were able to mine resources from outer space, a serious shortage of metals and rare earths impacted the economy. It turns out that if you keep shooting valuable materials out into space, you will eventually have a problem finding new resources. Manufacturers were astounded.

To overcome this issue, the heavy industry brought to life a refurbishment program: they dug up ancient ships from way back that consistent of primitive metal compounds, and retrofitted them with modern engines. The term ship is misleading here however - these backwards machines couldn't even fly, let alone reach Low Earth Orbit, so it took a lot of tinkering to make them actually useful.

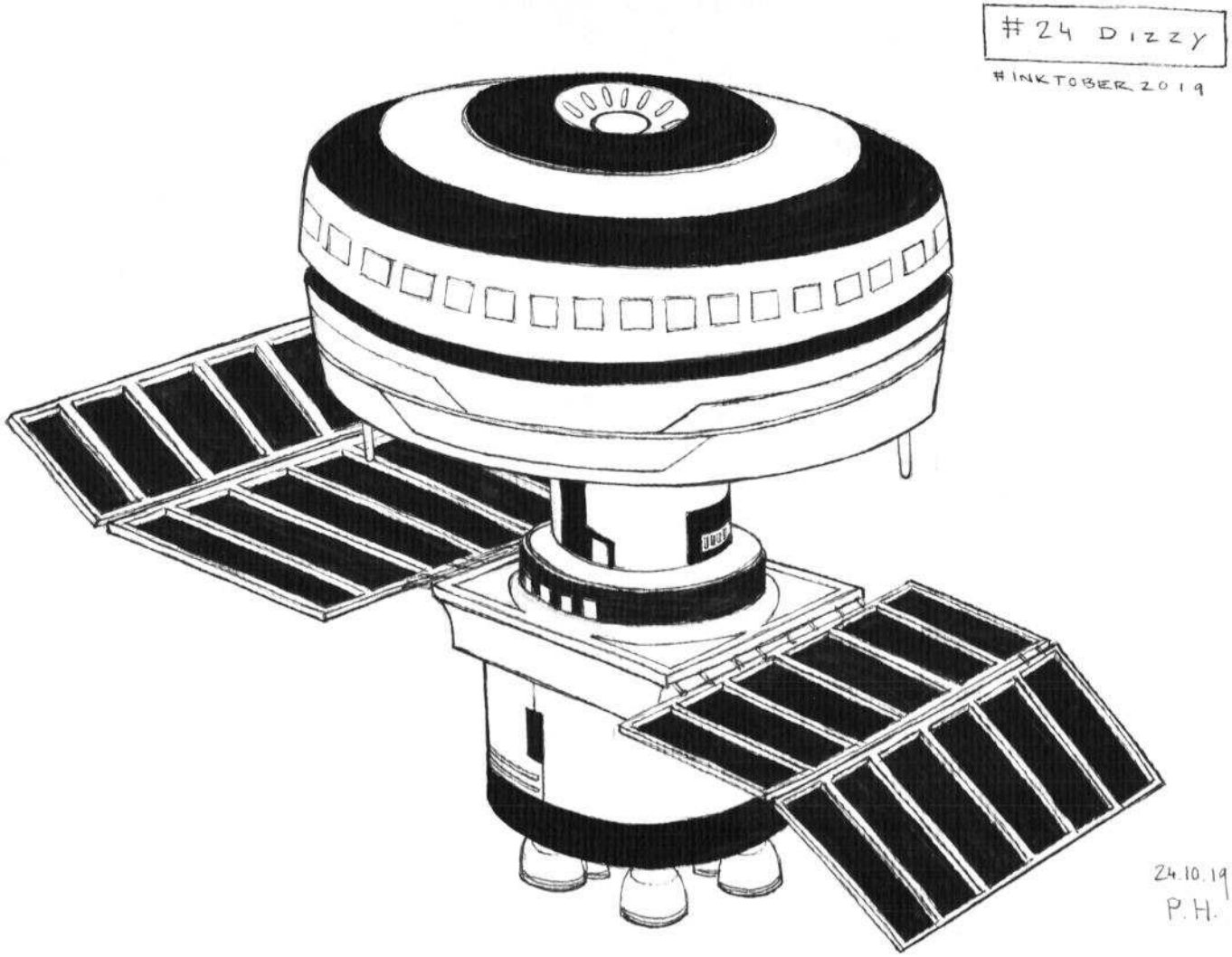
The *LF-8* series was the most successful result of these efforts thanks to a generous cargo bay, and many of them were still used for decades after interplanetary mining ended the crisis.



Many of those born on the moon have never been to Earth. These Lunials have adapted to the low gravity all their lives and can navigate the surface much more elegantly than their parents' generation, and often make fun of the old-timers and their clumsy floating into walls.

However when it comes to visiting Earth, the youngsters have a really hard time adjusting. For that reason there are three large *Fynnigan 7* stations orbiting the moon which have strong gyroscopic chambers. They spin at high speeds to simulate gravity of various intensities to prepare for the taxing change of environments.

Often astronauts and pilots from Earth come here to train for expeditions to Jupiter, since gravity there is 2.5 times as strong as on Earth. A popular party trick among *Fynnigan* interns is to increase gravity settings in secret and watch everybody break a sweat tumbling ineptly through the training parcours.

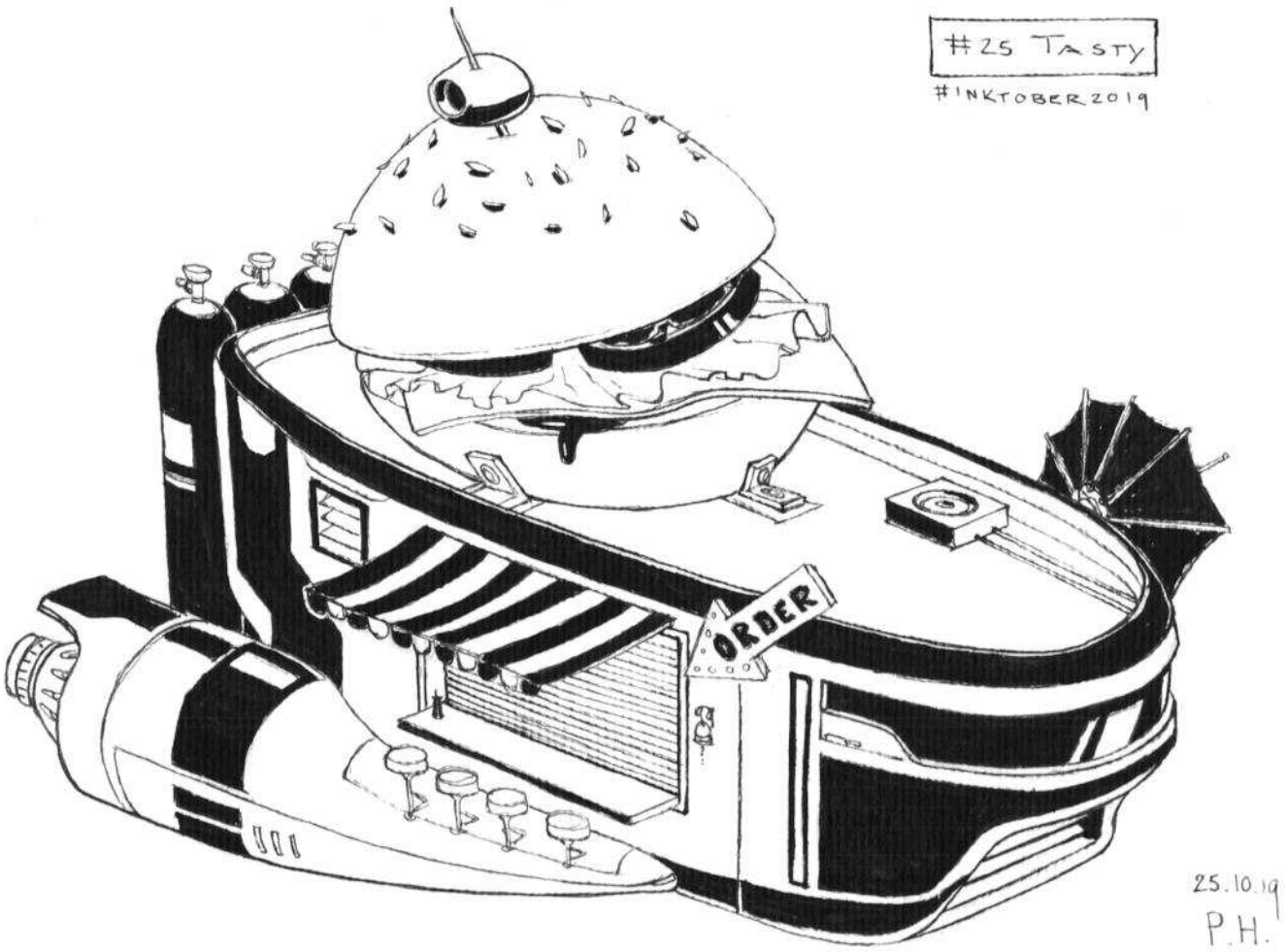


DAY 25: TASTY

Excess heat from engines is often a problem for crewed ships and depending on engine power can quickly lead to the whole vehicle overheating. The *BRG-r* has found its own creative solution to that: The engine coolant that heats up considerably while removing heat from the thrusters is conserved in isolated tanks at the aft of the ship, which allows the heat to be used for cooking later.

The ship may not be able to leave atmosphere, but it is so popular on Earth at various festivities, events or concerts that it basically prints money for their operators. And with the decently powered engines, you can actually serve customers all over the globe on the same day.

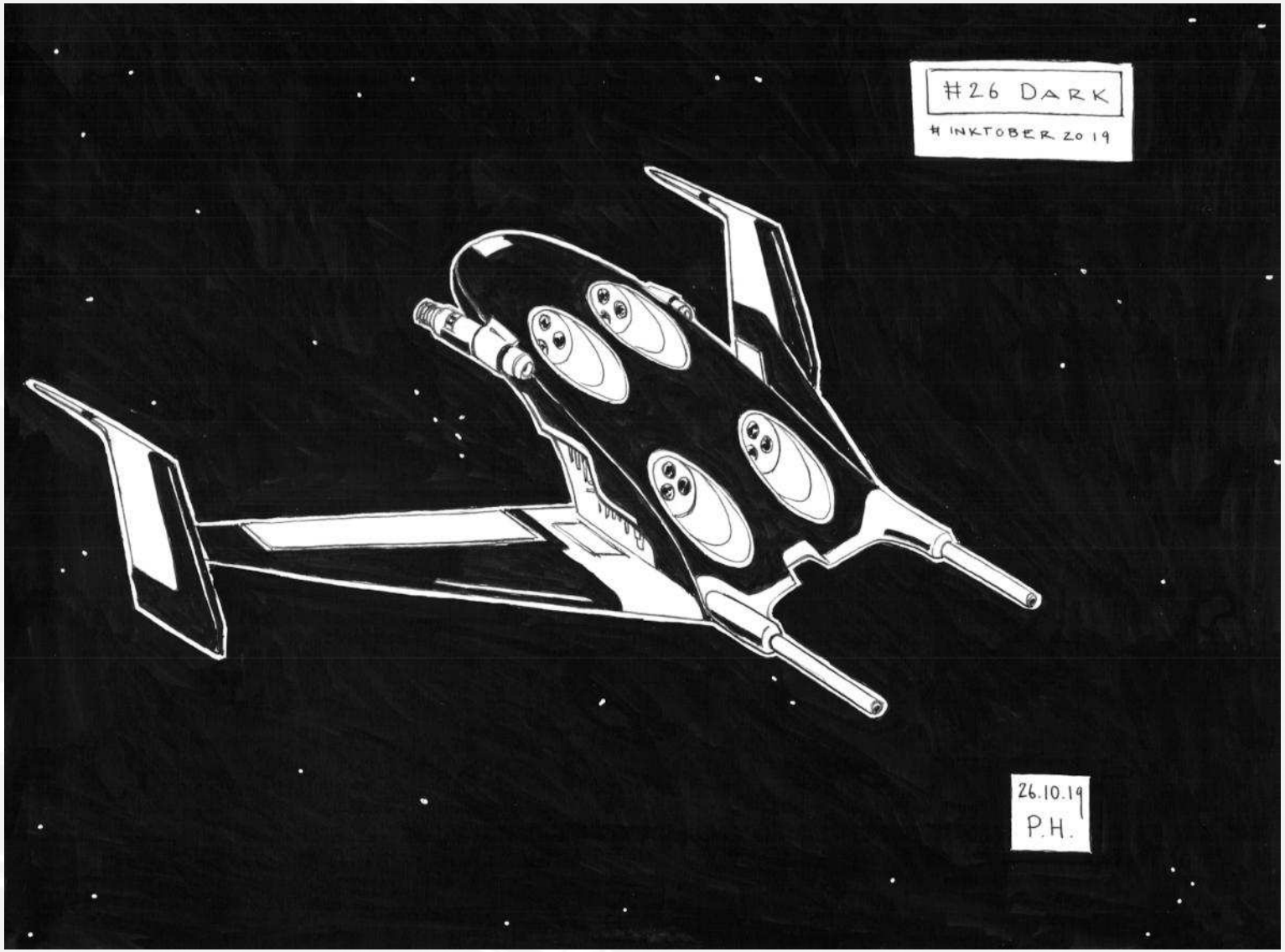
The bigger issue however is to find suitable crews - short order cooks that can work all day are rare, and there have been reports of a few lost fingers here and there since some captains push for profit so hard, that crews have to prepare food for the next gig while in flight at high speeds.



DAY 26: DARK

The *Luminore FX-2* is a small AI controlled drone that is used as a mobile lighting station. Its chassis contains four strong flood lights which can be adjusted individually. *FX-2* drones are often used in mining facilities to light large underground cavities or - thanks to their small size and nimble navigation systems - even small tunnels. Multiple drones can coordinate themselves as a swarm to provide light for larger operations, such as when the enormous *Dronn 5* research platform was lowered to the solid core of Saturn through its many gas layers - a process that took many weeks under bad lighting conditions.

Artists discovered the *FX-2* as a way to create impressive light shows by having the swarms arrange themselves in fascinating patterns, but only few got to see it before they were outlawed for obstructing space observatories' view from Earth.



DAY 27: COAT

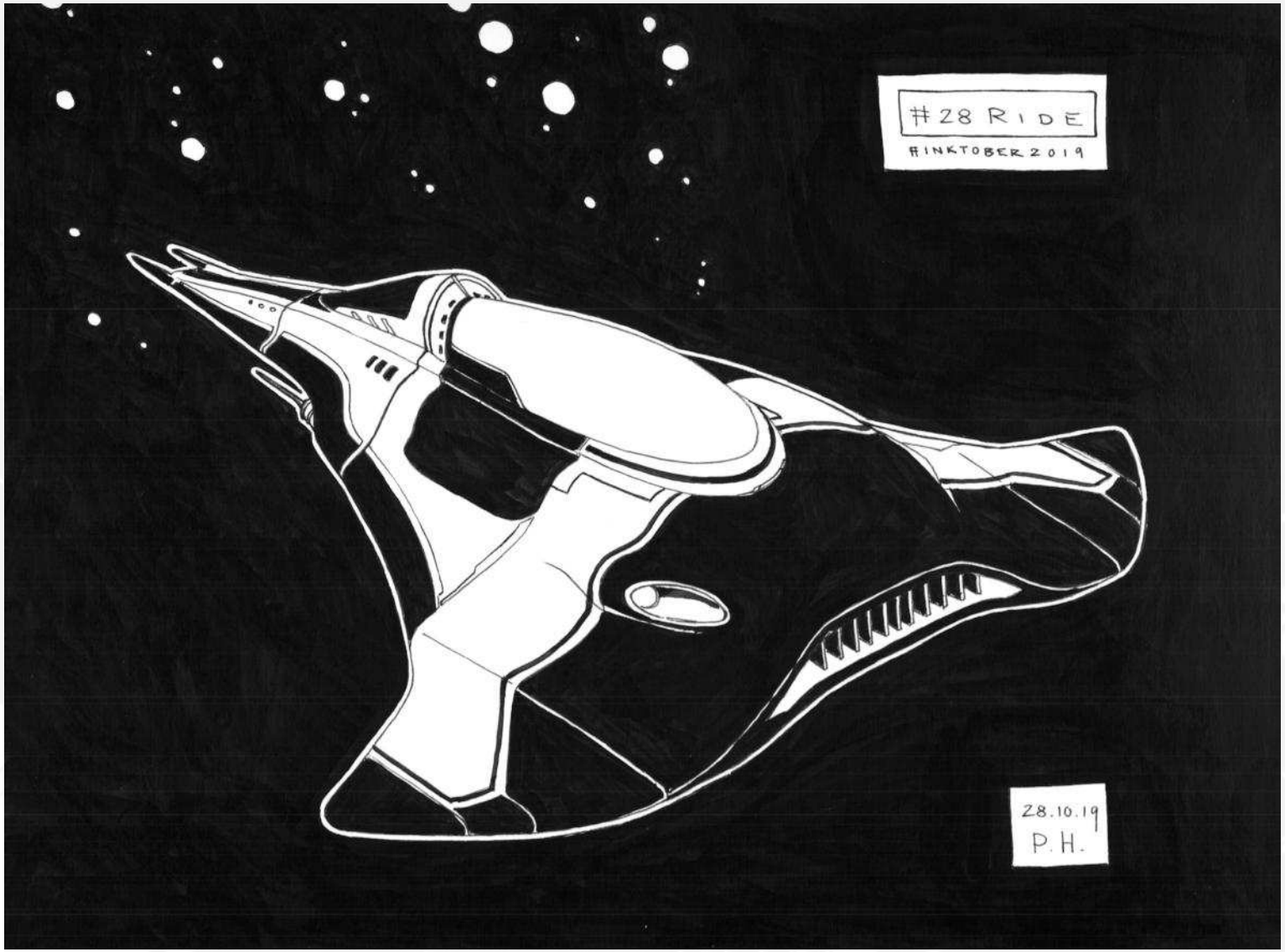
Terraco 8 was one of the last large scale space stations with nuclear reactors, and when it was accidentally destroyed by a swarm of uncoordinated repair drones it left behind a huge amounts of radioactive space debris.

The ensuing legal battle resulted in the drone manufacturer *Polgolith Shipyards* being forced to clean up the mess, which led to the development of their *C26* capsule. The small ship has a tiny interior and its extra thick walls are coated with many layers of radiation blocking composites. It was in action during the early stages of clean up when the radiation was still at its strongest, and used its small arm to recover reactor remains, which were the most dangerous debris and had to be taken care of first.

DAY 28: RIDE

The *Nauticonn 6* is a multi-purpose ship that can not only fly in atmosphere and outer space, but also dive for extended periods of time. Its streamlined design is effective in providing both aerodynamic lift as well as swift underwater control. It was developed soon after the first water planetoids were discovered in the outer systems. They are home to a richness of primitive life forms such as certain kinds of algae, and the science community is eager to learn more about them.

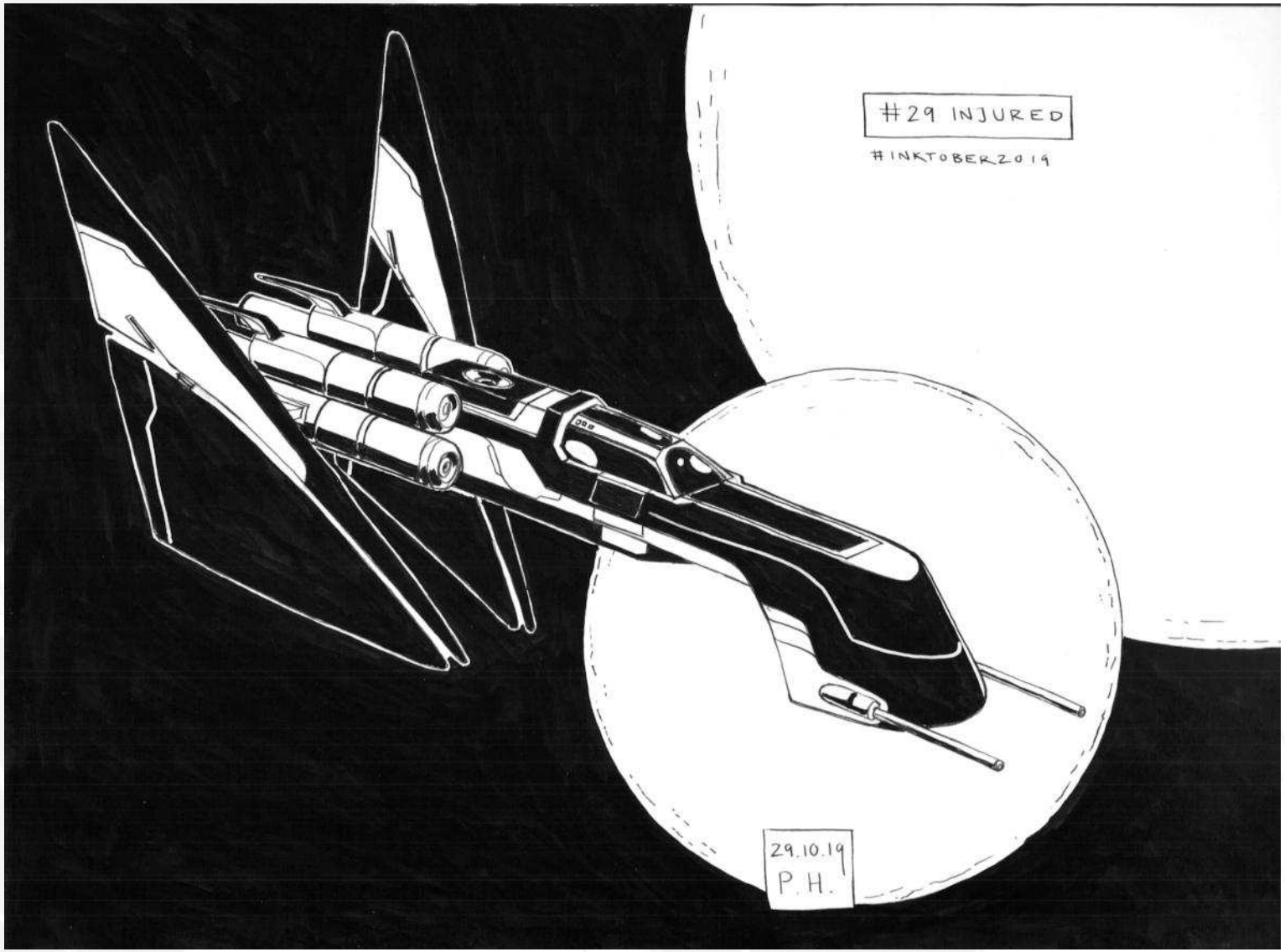
At first it was suggested that the newly discovered planets are merely covered by all-encompassing oceans, but as *Nauticonn 6* research fleets later discovered they have no planetary solid core - they are essentially enormous water drops floating in space, held together by gravitational forces.



DAY 29: INJURED

When a star becomes unstable and is about to explode into a massive supernova, the whole system is declared off-limits to any crewed vessel as a safety measure. These areas are called "*injured systems*" for their looming collapse, and only one ship is certified to enter them to gather research data: The *BT-24c* by *Enorin Shipyards*. It has some of the most delicate and advanced sensors plus a set of very powerful quad thrusters - but what sets it apart the most are its triangular aft winglets. These act both as shields as well as shockwave absorbers, which can turn incoming radiation into an unimaginable amount of engine power, propelling the ship to safety at mind-boggling speeds.

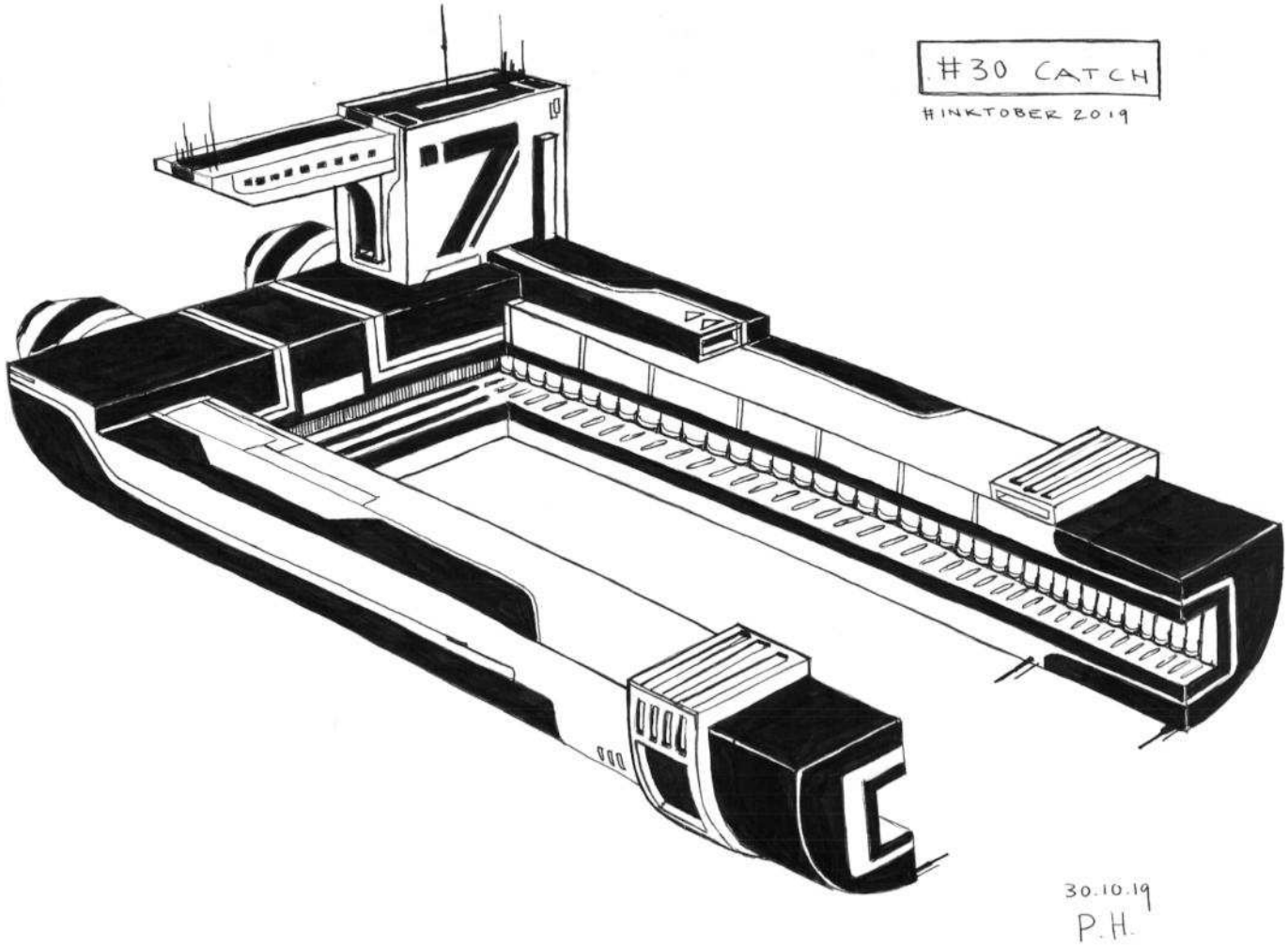
BT-24c pilots are the only people who have seen supernovas up close with their own eyes and survived, an experience that makes them legends among humankind.



DAY 30: CATCH

The *SK7* is an orbital hauler run by the International *Low Earth Orbit Committee* (ILEOC). With hundreds of thousands of ships entering and exiting orbit on a daily basis, collisions have become a constant threat. To prevent them all flight paths are continuously monitored, and vessels on a collision course are immediately contacted and ordered to change their route. If there is no response, the *SK7* is sent out. The large ship navigates around the offender, activates a turbo electro-magnetic field to hold it between its two front-facing arms, then changes course with the smaller ship before releasing it again, sending it off on a safe orbit - along with a pretty steep invoice.

It can also be used to tow ships broken down with engine problems back to the nearest station, or even back into the atmosphere, but due to the strain on the field generators upon atmospheric re-entry that shouldn't be attempted unless in an emergency.



DAY 31: RIPE

One of the major problems space exploration was facing when it came to long-term travel was food supply. No matter how big of a cargo hold a ship had, it would all eventually run out over the decades or even centuries some of the large scale deep space colonising efforts took.
The only way around that was a strictly enforced Zero-Waste approach.

The *LF-491* is a small AI-controlled ship that does just that: It collects all organic matter from the large mother ship and allows it to decay over months with the help of micro-organisms. When it is "ripe", the material can be harvested and used as soil or fertilizer in the on-board greenhouses and continue the cycle. No organic matter can go to waste - human remains included.