

Chapter 421 Like Pirates

After a number of transfers, Ves entered an old-model transport ship. While large number of bots filled up the ship's cargo hold with containers of supplies, Ves and two other mech designers entered a nearly-empty passenger compartment.

The compartment offered enough space for thirty passengers, though space was at a premium and the amenities left much to be desired. The yellowing white-paneled corridors and the faded and worn furniture made it clear that the vessel wasn't well-maintained.

"This is where you mech designers will stay for the time being." A crewman assigned to guide them said as he chewed some sort of stimulant that would have seen him cashiered aboard a properly-run ship. "Once you enter, the main hatch here will lock so you won't wander off and disturb the rest of the crew."

"We have to stay here for the entire duration of the trip!?" The only female mech designer among them spoke out. "There's barely anything inside!"

"You can always stay within your bunks and go back to sleep. There's a cabinet of nutrient packs along with a food recombinator, so you won't starve. If you want some distraction, we left you some data chips that contains some of the games we play in our off time."

Ordinarily, Ves could at least browse the galactic net if he wanted a distraction. However, ever since he received his military-issued comm, he started to get around the fact that the Mech Corps would never let someone like him with a sliver of access to the rest of the galaxy. The local networks plainly refused to let his comm access the galactic net.

The spacer quickly went through some obligatory safety instructions before letting the mech designers stew inside their empty but cramped abodes.

A couple of seconds passed by as the three looked at each other awkwardly.

"Let's claim our bunks before the others arrive."

"Good idea." The young woman nodded.

They each split up and entered some of the available cabins to claim their preferred sleeping spots. Ves stayed within the cabin and started to rearrange his thoughts. Ever since he learned he would be joining the design team of the 6th Flagrant Vandals, he dredged up every piece of knowledge that pertained to spaceborn mechs.

While spaceborn mechs didn't look very different from aerial mechs, they actually operated under very different circumstances. An aerial mech could operate in space in a pinch, but would only be able to express eighty-or-so percent of their strength.

Spaceborn mechs on the other hand fared much worse in atmospheric conditions. Some didn't even carry a strong-enough flight system to let their mechs remain aloft under standard gravity conditions.

Compared to landbound mechs, spaceborn mechs predominantly carried a notch less mass around. This was because it took a lot of energy to move these mechs around in space. The heavier the mech, the more energy it took to get it to move and make it come to a halt once it reached its destination.

Therefore, spaceborn mechs consisted of a much higher proportion of light mechs, though plenty of medium mechs existed as well. Besides the space knight mechs, every other medium spaceborn mech tended to mass at the lighter end of the medium weight class.

The decreased mass allowed these mechs to accelerate and decelerate rather quickly with more efficient but less powerful flight systems. It wasn't unheard of for spaceborn mechs to be able to last an entire standard day in space.

"They're smaller and lighter, but they're also more fragile."

The emphasis on speed and agility and the vast room for maneuvering in space shifted the design of spaceborn mechs away from a reliance on armor. While the existence of Space Knights and the like still proved that armor played a role, in space, speed, or rather acceleration was king.

The higher a mech's ability to accelerate, the better it would be able to dodge incoming attacks. Fast, unpredictable dodging patterns threw off the aim of enemy pilots.

For this reason, ballistic weapons was a tad bit less popular in space, though they still played a huge role when it came to attacking ships. It took far too long for lasers to carve through the hull of an enemy combat carrier.

Melee mechs played a role as well. Light skirmishers generally boasted excellent thrust-to-weight ratios, allowing them to close the distance to elusive ranged mechs and carve them up from up close.

"Still, the lack of any cover in space makes ranged mechs the dominant types of mechs in space."

Many battles took place in orbit or in the middle of an empty patch of space. Only rarely did battles erupt in asteroid fields or any other area where lots of objects floated nearby.

The lack of any cover for mechs to hide behind heavily favored ranged mechs. Even though their targets were easily capable of dodging most enemy fire, as long as a squad of mechs coordinated their fire, they could trap their target in a cage where they would get hit no matter where they dodged.

"In short, it's a numbers game as well."

Spaceborn mechs therefore tended to be rather cheap and disposable. Their lighter construction meant they got damaged more easily and needed more

frequent repairs or replacements. Fortunately, they rolled off the production lines in great numbers.

Only their mech pilots couldn't be replaced. Although spaceborn mechs skimmed out on a lot of areas compared to landbound mechs, the one component they left intact would always be the cockpit.

"This way of combat still sounds really wasteful."

The nature of space combat meant that skirmishes started and ended quickly. Whoever won the fight received the opportunity to salvage the wrecks and recoup the costs.

When Ves finished sorting out his knowledge base, he realized he still possessed a couple of holes in what he acquired up to this point.

"For spaceborn mechs, it's important to know how flight systems works and how to compartmentalize the interior of a frame to the point where every separate compartment was airtight.

The most complicated variable related to space combat was definitely heat management. Without ground and air to transfer much of the heat generated by mechs, mechs mostly radiated out their heat like the ancient practice of toasting a bun.

This was far too slow compared to the amount of heat a mech built up during battle, so mech designers did everything possible to extend the time a spaceborn mech could fight without becoming too hot.

The Bright Republic didn't have access to a lot of means to improve the heat management of their mechs. Therefore, the Republic's spaceborn mechs tended to be built according to endurance and efficiency rather than peak performance.

That was one area where Ves happened to know a lot.

Ves reluctantly concluded that he should be able to understand most spaceborn mech designs. He could even design a mech on his own, though it would be a lot more inefficient compared to what was available in the market.

Someone knocked at the door of his cabin. It was one of the guys who initially boarded the ship. "Mr. Larkinson? Can you come to the common room? We should talk."

"Coming."

Ves jumped to his feet and smoothed down his standard-issue clothes. The Mech Corps stocked the dressers in the cabin with a simple green uniform that carried a patch of a half-designed mech. This was how a working uniform looked like for mech designers called up during the war.

The mech designers that formed the true core of the design teams wore the same uniform, but boasted a couple chevrons that denoted their higher stations.

As Ves exited his cabin and approached the common room, he took a seat at an oil-stained table. He looked around, and besides the young man and woman who arrived aboard the transport ship together with Ves, no one else was there.

"Is this it?" Ves frowned.

"I believe so."

Bentheim held an enormous amount of mech designers. Ves only saw a couple of hundred mech designers in the processing center where he went through training, but the Mech Corps erected a lot of other processing centers elsewhere. All those mech designers should have finished their training by now and boarded their ships today.

"Maybe we finished sooner than others."

"I just checked the panel near the hatch." The other man said. "It projects the estimated departure time of this ship. She's disembarking from the military station in less than fifteen minutes. It's safe to say that other passengers won't be joining us."

This really startled Ves a bit. "Truly? I thought that design teams needed at least fifty mech designers or more."

During his training, Ves learned that design teams typically employed around full-time mech designers. During wartime, these design teams needed to accelerate the development of new designs, so the Mech Corps supplied them with a lot more mech designers.

The reinforcements consisted of one or more Journeyman Mech Designers accompanied by at least fifty Apprentice Mech Designers.

Hearing that this transport ship would depart with only 3 Apprentice Mech Designers was a whole other thing. Neither of the two other mech designers had a clue why their ship was empty of passengers.

"Maybe the Tarry System already received a batch of mech designers, or maybe they are aboard a different ship."

"Don't kid yourself." Ves interjected. "This is the only transport ship that's headed to the Tarry System. It's not because their needs are already met, but because one ship is sufficient to supply the Vandals."

"What?!"

"Do you know what the 6th Flagrant Vandals looks like?"

Both the male and female mech designers shrugged or shook their heads.

"They're a bunch of rogues." Ves began, and proceeded to bring his fellow mech designers up to speed with their reputation.

"They sound like pirates!"

Ves found that description to be particularly apt. It actually led him to believe that the Flagrant Vandals used to be a pirate gang that went legitimate.

The table fell into silence once again. Both the other two mech designers shuffled around their chairs with discomfort. They took part in the same training regime as Ves, so they still looked at him with apprehension.

"I'm not going to bite you all." He sighed. "I'm a Larkinson. You ever heard of them? I'm no different. I just chose to be a mech designer instead of a mech pilot."

That helped calm them down a little. The Larkinsons were known entities to the two designers, so associating them with Ves turned him into a somewhat more relatable person.

"Let's start with the introductions. You already know who I am, so let's move on to you two. Who are you?"

The woman started first. "My name is Laida Nnvist. I'm an Apprentice Mech Designer."

"Where are you from?"

"...Haston."

That caused Ves to take another look at Laida. The woman looked young and rather timid, completely unlike the stereotypical assertive hags that often came from this low-class city on Bentheim.

"That's... interesting." Ves quickly turned to the other guy in the room. "And you?"

"Pierce Yuvalis." The man spoke in a low tone, as if he was affected by the presence of Ves as well. "I came from the Friday Coalition."

If Laida's peculiar background raised some eyebrows, then Pierce's origins absolutely floored Ves.

"Which partner do you hail from?"

"The Gauge Dynasty."

Both Laida and Ves stared at Pierce as if he was an alien. How in the hell did a mech designer who hailed from the most powerful partner of the Coalition ended up in the clutches of the Mech Corps?

"Tell us more."

Pierce provided some context. "My father is a mech designer from the Republic who emigrated to the Gauge Dynasty and married a local there."

Though Pierce was a little reticent, Ves applied a little pressure in order to get him to open up. It turned out that Pierce was the oldest among three children. He was also the least talented of the three.

Whereas his younger siblings excelled early in their studies, Pierce turned out to be a tad bit slower in being able to understand the fundamental sciences that every mech designer needed to learn.

His father, angry and disappointed at Pierce's performance, pretty much banished the lad to the Republic.

Ves didn't know what to say about that. It must have been a crushing letdown to be sent away by your own father. Moving from the most prosperous part of the Friday Coalition to the backwards Bright Republic would have pushed most mech designers into ending their own lives.

Hearing their stories and matching them with his own made him realize that they were outcasts.

Chapter 422 Stories

The transport ship sluggishly separated from the military station and fell into formation alongside a convoy of vessels heading in the same direction. Most of the other transports would drop out along the way as they reached their

destination star system. Only one ship was scheduled to reach the Tarry System, an important but fairly isolated defensive border system.

In the standard territorial depiction of the Komodo Star Sector, the Bright Republic and the Vesia Kingdom were situated at the northwest portion the map. Any ship that travelled further northwards reached the borders to the vast frontier.

The Tarry System was located at the southern portion of the border between the two warring states. It anchored a vast stretch of low-value star systems with scarce resources and even scarcer population. The Tarry region therefore held limited value even for the Vesia Kingdom, because they would need to allocate far more mechs to garrison the region than what was economical.

This didn't mean that the Vesians ignored the border region entirely. Sometimes, desperate nobles shied away from the heavy fighting at the center of the border. On paper, the Tarry region only held a couple of mech divisions, so it should have been an easy target.

The truth turned out to be different. Located far away from Bentheim or Rittersberg, the Tarry divisions sat at the far end of the supply lines. Nevertheless, they learned how to make the most out of limited resources. The sheer amount of distance from the political and economic centers of the Republic granted the Tarry divisions a lot more leeway on how to operate their mechs, and they did well in adapting to the circumstances.

"From what I heard about the Tarry divisions, they form their own faction within the Mech Corps." Ves explained in front of Laida and Pierce. The strength he displayed during the training sessions elevated him to the forefront of their little group. "They're often the last divisions in line to receive new upgrades or additional resources. I think this is the case for us as well.

There's no getting around the fact that we are the least desirable mech designers of our batch."

Somewhat surprisingly to Ves, the other two designers accepted his assertion without any challenge. Both Pierce and Laida encountered many disappointments in their lives.

"Let's make the best of things. At least we aren't being accompanied by some Journeyman Mech Designer that wants to boss us around. We can relax throughout the journey."

Ves studied the appearances of his newly assigned colleagues. Pierce looked similar to what Ves looked like before his various enhancements. Though he appeared rather skinny, his eyes reflected a very keen and measured mind. He possessed a black mop of hair not too different from Ves, though he let the grooming bots style his hair in a very neat and slick fashion.

As for Laida, Ves felt as if he faced a timid cat. The young woman's body language displayed her lack of confidence that shouldn't be present in Apprentice Mech Designers. She possessed dull light brown hair which was styled in a plain and boring bun. Her standard green uniform added a bit more sharpness to her body, and if not for her slouch, she would have looked moderately attractive.

Ves met a handful of female mech designers in his life. Those who achieved some success always held their heads up high and asserted themselves in some way.

For example, despite being just a Novice back then during the Leemar Open Competition, Miss Barakovski acted like she was a queen among peasants.

Patricia on the other hand acted in a more enigmatic fashion. Both at Rittersberg and at Leemar, she acted as if she was no one special, but her stellar performance made it impossible for anyone to dismiss her presence.

Therefore, Ves really didn't understand why Laida put herself down like that.

Through some prodding, they got to know each other a little better. Ves expected that they would be working together from now on, so it was important for him to establish a good rapport with designers of the same level.

Ves shared some of history to the two designers. What they found most impressive with Ves was his willingness to partake in dangerous expeditions.

"I don't have the guts to do the same." Pierce admitted with a rueful expression. "Mech designers aren't meant to be out in the field."

Ves understood the sentiment. "That's true in the strictest sense, but sometimes you won't be able to achieve your dreams without putting in some extra effort. With so many mech designers out there doing the same things over and over, it takes a lot of inspiration and a unique perspective to stand out from the crowd. The rewards are also good as well."

"It's too dangerous. Sorry, but I don't agree with you. Better designs come from hard work. As long as you study hard and apply your knowledge well, you should be able to achieve more solid results."

That only worked up to a point, Ves thought, but he didn't argue the point. Instead, he asked the other man a question. "You're an Apprentice as well, right? What kind of work did you do since you graduated?"

"I worked at at a major mech manufacturer and joined their design teams. It wasn't as large as the ones where we are heading into. The lead designer did most of the work and assistants like me only played a role in the debugging process."

"How good is the lead designer?"

"Oh he's really good. He's old but he's a very seasoned Journeyman Mech Designer. He often stopped by to teach some points to us. I really benefited from his tutelage."

Unmentioned by Pierce was that the Journeyman Mech Designer likely held an ulterior motive for doing so. The way Pierce spoke about the lead designer didn't carry a lot of endearment.

Likely, the Journeyman wanted to catch the attention of Pierce's father.

There was nothing wrong with that in his eyes. Both Pierce and the lead designer benefited from such an arrangement. The only problem was that it didn't look as if the lead designer succeeded in his goal.

"What kind of mechs have you worked with?"

"I have an extensive amount of experience in working with several different types of landbound mechs. I've taken part in the design process of at least eight different types of mechs."

That sounded very impressive, though it was easier to do when you spread the workload over multiple designers.

"Sounds like you have a lot of experience working in a team." Ves nodded. "I only worked on my designs on my own. I've never really collaborated with others when it came to developing an original design."

While Ves admired Pierce's experience in working on many collaborative projects, the other two mech designers expressed their own admiration to him for relying on himself to develop a functional design.

Pierce let out a weary sigh. "Even with my experiences, I only ever attempted to publish a single original mech. I couldn't get the lead designer to release the funds for me to fabricate a prototype. It wasn't a commercially attract product, he said."

It wasn't easy to make the jump from taking part in a collaborate project to designing mechs on your own. Ves only managed to do so by acquiring years worth of knowledge with the help of the System.

"If you want to design your original mech, there's no substitute for learning the theories on your own. Teaching can only go so far."

"I know. I have access to plenty of reading materials, but the things I need to learn are too much or too hard."

"Even so, at least you have access to them. That's a lot better than what most mech designers enjoy."

After learning just enough about Pierce, Ves turned to Laida, who had been listening quietly all this while.

"What about you? What's your story?"

"I graduated from the AUMD."

It turned out she excelled in school in Haston and succeeded in applying to Ansel on a scholarship. This was extremely impressive for someone who grew up in Haston.

Still, Laida didn't talk too much about her experiences in the AUMD. She skimmed over her years in school and skimmed through her graduation.

"After that, I found a job at a design studio. I chose to specialise in designing aerial mechs, so I became involved in all of the designs that could fly."

"How many designs have you contributed to?"

"Over twenty different designs."

"That's a lot."

"It's not that impressive. Design studios work differently than mech manufacturers. We developed as much designs as possible, and many of

them consisted of variants that shared a lot of things in common. Only one out of ten of our designs are licensed. The rest end up collecting dust in an archive."

Even so, Laida must have gained a lot of experience in working with different mechs. This was the norm for mech designers that worked in a team.

Though Ves still thought he had the edge in terms of independent design, he probably would fare a little worse if he ended up in a situation where he had to work together with others.

"I have one question for you, Ves." Laida blinked at him. "Why did you choose to stay in the Republic? With your opportunities, you could have made a name for yourself in the Coalition."

Ves and Pierce both shrugged their heads.

"The Coalition isn't so easy to establish a foothold on. There's more money to be made there, but there's a lot more competition there as well. The best and brightest of the Komodo Star Sector all flock to Coalition space in order to take advantage of the higher spending power and more abundant resources. What they don't realize is that as outsiders, they are already on the back foot compared to the locals."

"Oh."

"I'm doing fairly well on my own here in the Republic. My company has grown fast and I've already published two original designs. I would have never been able to achieve this much if I tried to do business in the Coalition."

The Bright Republic was also his home and the root of the Larkinsons. Ves felt at home here in a way the Coalition could never provide. Their cultures different too much for Ves to ever grow comfortable in that prosperous second-rate state.

Pierce knew a lot about this as well. "There are too many foreigners in Coalition space. The Carnegie Group is the most attractive destination for them as their institutions accept the most outsiders. What these foreign mech designers don't realize is that the Carnegie Group only picks out the best. The vast majority of foreigners aren't able to accomplish anything except to become saddled with mountains of debt."

"What happens to those with debt?"

"They hire themselves off as slaves, basically." Pierce answered grimly. "The Coalition doesn't call them that, though. They instead employ extremely restrictive hiring contracts that run for a period of fifty or even a hundred years, depending on which coalition partner you are dealing with. A mech manufacturer from the Konsu Clan can even get away with a contract that lasts for your entire lifetime."

"Who would ever accept that kind of contract?!"

"A lot more mech designers than you think. You have to realize that it's extremely expensive for someone from a third-rate state to live in a second-rate state. The price of everything you buy is a hundred times more expensive. That goes for rent and tuition as well."

In short, staying a single year in Coalition space cost as much as living a hundred years in an average third-rate state like the Bright Republic.

"Why don't they declare themselves bankrupt and start anew?"

Pierce shook his head. "The laws of the Friday Coalition only extends that right to its own citizens. Foreigners like you and Ves won't get away that easily. They'll put a metaphorical gun against your head and force you to sign a contract of indentured servitude. Don't think that you will end up designing mechs after signing such a contract. You'll mostly be used as human calculators that need to do jobs that require human judgement."

"Therefore, the Friday Coalition isn't that good of place to go unless you are supremely confident in your talent." Ves added after that. "And in most cases, they won't even consider employing a mech designer who graduated from an institution from a third-rate state. We're too low-class for them to take us seriously."

Laida looked crestfallen at the news. Ves figured that she might have held some hopes for starting elsewhere, but the truth was often brutal.

Chapter 423 Design Process

It took three weeks for the convoy to meander through Republic space, dropping a couple of ships off at every star system along the way, before it reached the Tarry System. By then, the convoy only consisted of a handful of ships.

The three mech designers noticed none of that. The crew kept them in their assigned compartment and never issues any notifications except to warn them of FTL transitions.

As a group of outcasts, none of them shared much in common, nor did they speak too much about their background beyond the basics.

The restrictive passenger compartment contained nothing but furniture and food. The few projectors they found couldn't be turned on to display a news feed or outdated dramas.

Thus, with nothing else to do, they shifted to talking about the only thing they had in common.

"What are the nuances of designing aerial mechs? What do you have to take into account?" Ves asked as he sat across the table from Laida.

"Aerial mechs are designed specifically according to a range of gravities. Most designs work best at 1.0 g, the standard gravity of Old Earth, because most states prioritize on terraforming planets that closely match this gravity."

"Not all planets feature standard gravity. A significant amount of planets have gravities that range from 0.5 g to 2 g."

Though the woman was rather shy when it came to her personal life, she carried herself with a bit more confidence when it came to her expertise.

"That's why a mech that's designed to operate at 1.0 g will always lose against a mech designed to operate at 0.6 g on a 0.6 g planet."

"Why is that so?" Ves furrowed his brows. "A mech that's rated to fly at 1.0 g carries a much stronger flight system. I can understand why it won't be able to perform as effective in a 2.0 g environment where gravity is twice as strong, but if the gravity is forty percent weaker, shouldn't it be forty percent stronger?"

"You landbound mech designers are all the same." Laida rubbed her head.

"You have to realize that aerial light mechs devote up to half of their volume and carrying capacity to their flight systems alone. I can't say too much about medium mechs, but for light mechs, every cubicle centimeter is as precious as exotics. Space that could have been used to strengthen the mech's armor or firepower instead has to be dedicated to powering the flight system or shunt away its heat."

"Ah. So it's a matter of priorities. So if I understand you correctly, an aerial mech that's designed to fly in 0.6 g will allocate less capacity to supporting the flight system?"

"Correct." Laida bobbed her thin head, causing her bun of hair to bob in a cute fashion. "You can say that such a mech is becoming less of an aerial mech and more of a landbound mech. In extreme cases, such as small moons or large asteroids, an aerial mech could theoretically make due with a handful of anti-grav modules for three-dimensional propulsion, though the lack of atmosphere in those environments is better suited to spaceborn mechs."

"What's the difference between spaceborn mechs and aerial mechs?"

"Early on, there wasn't any difference. Mechs with flight systems did double duty because it was more affordable to design and produce a single model that could do both than dedicate two separate models entirely. It's only later that the two classifications came into being."

"Because of specialization?"

"Yes. A mech designed to operate in space doesn't need to accommodate for gravity. Instead, they have to be designed to withstand a lot of g-forces and rapid changes in course. As for aerial mechs, they need to be able to retain their balance in the air at all times. Their flight systems are also tweaked to be highly efficient in counteracting the force of gravity that is being exerted from below."

Laida freely explained all of the nuances behind designing aerial mechs. Ves heard about some of these maxims, but never in such detail and accompanied by the personal insight of a mech designer who knew what she was talking about.

Of course, Laida didn't explain her insights for free. Among mech designers, an exchange of this nature required Ves to put up knowledge of equal value.

As Laida finished providing Ves with a general overview of aerial mechs, she began to ask her own questions. "What do you need to pay attention to when you design an original mech on your own?"

"A lot of things. There's too much to mention. Leaving aside the material requirements such as possessing the right licenses and having access to the production equipment, designing a mech is mainly a test of your vision."

"Vision?" Laida frowned as she pursed her lips. "What is vision?"

That caused Ves to stare at Laida as if she forgot to wear a helmet on a spacewalk. "You studied at the Ansel University of Mech Design, right? Don't they teach you the importance of vision in their classes?"

Laida still looked clueless. "They primarily focused on teaching the sciences to us. The school calls it setting a firm foundation. Without knowing the math and science behind designing mechs, there's no chance of becoming a qualified mech designer."

Through their talks, Ves found out that Laida was indeed fairly competent in that area. Her intelligence couldn't be underestimated and it was impressive how well she grasped the mechanics of designing an aerial mech.

However, Ves found it really strange that her school neglected to teach the artistic side to mech design.

"Designing mechs is both an art and a science. Building up a foundation sounds good and all, but that doesn't prepare you to design a mech on your own. Did they even teach you the steps you needed to follow to develop an original design?"

"...No. Many graduates of the AUMD are expected to learn these lessons after graduation. A lot of promising alumni take in the most promising graduates and teach them the ropes."

Despite her talent in learning, Laida fell outside their scope. Her hometown of Haston did not fit in the elite society of Ansel.

She was lucky that other employees still valued her AUMD degree. She reluctantly joined a design studio as a junior assistant and enjoyed a first-hand glimpse on how the designers of the studio created new aerial mech designs.

However, the design studio's generosity had limits. The senior designers never seriously groomed her into becoming a senior designer in their studio.

Perhaps that was why Laida radiated a lack of confidence.

"Laida, designing an original mech is not that hard." Ves said softly. "It comes from the heart, not the mind. True, a mech is a technical product that can be broken down in a set of parameters, but if everything can be solved with numbers, why don't we leave the job of designing mechs to AIs?"

Creating a complex war machine the size of a building opened up an endless amount of possibilities. Its design could take on countless of shapes. Some of them might be better than others, but none could claim to be perfect. Even the strongest processors in the galaxy would never be able to derive the perfect mech design.

Because it didn't exist.

"Rittersburg might not be the most renowned institution in the Republic when it comes to mech design, but the method they taught me has served me well in my career."

Ves understood why the AUMD took a different approach. For Novices and Apprentices, it was indeed important to accumulate as much knowledge as possible. Someone who didn't know the answer of one plus one could forget about designing a mech.

For the next half hour, Ves conveyed her with a brief introduction of the basic approach on how to design an original mech.

It started with setting a vision. Without a solid clue on what you wanted to design, your work wouldn't be constrained by any rules. Mech designers who forgot about vision often strayed from their initial intentions and let their designs to be affected by feature creep and disharmony.

Only after a designer established a vision for their mech could they begin to follow the other steps. Ves briefly explained on what she needed to pay attention on when she moved to the draft stage.

"The specifics aren't very important. A good draft design is flexible enough to accommodate a number of different component licenses. Don't set anything in stone, or else you will limit yourself to components that turn out not to fit with your design."

After that came feedback, the initial design phase, the initial simulation phase, the prototype testing phase, and depending on the amount of time, manpower and resources available, the design process might loop back into a second round of designing and testing.

"That sounds exactly like how we work at the design studio." Laida nodded once she realized she came back to familiar territory. "Designing mechs is a very iterative process. Involving more designers allows for more directions to follow. Sometimes, the lead designer of a project changes after each new iteration. The studio takes the original design and publishes it while the design team that's in charge of the project is already developing a new variant."

Ves nodded in understanding. Adopting such a development cycle enabled the design studio to come up with a large amount of variants, each of them carrying unique traits due to the change in lead designers.

"When you work on your own, you don't have the luxury to iterate all that much. Up to now, I only went back to the design board after one or two rounds of testing. Due to practical constraints, I couldn't spend more than a couple of months on each of my original designs."

"That's still an impressive achievement!" Laida softly praised as her eyes grew a little more worshipful at him. "I could never finish an original design within a year."

"A year is too long. If it takes you that long to get a design together, then you aren't ready to embark on this venture."

"How can I speed up my work, then?"

"Think long and hard about your plan. When I designed my mechs, I could have spent a lot more time on modelling the performance of my design. Yet I only spent a month or so on this at most. Do you know why? Because the tradeoff wasn't worth it. I could have spent another month at crunching the numbers, but it would have only improved my work by one percent or less."

Granted, many people cared about about that one percent. The whole point of the Mech Corps drafting so many mech designers was to provide more manpower to operations that only achieved something substantial as long as it involved enough people.

It was a very brute force way of solving a problem, but as long as it worked, the Mech Corps did nothing wrong.

Laida needed some time to realize this point. "I learned never to let go of an opportunity to improve the design, no matter how slim the parameters grow. It's hard for me to adjust my thinking into letting these opportunities go."

"Trust me, when you run your own business, you need to get used to balancing costs and priorities." Ves chuckled in amusement at her struggle. He felt as if he threw a cat in a bathtub full of water. "When designing your mechs, you should never lose track of your vision for your design. Parameters are important, but I'd rather let go of some percentage points of performance and adhere to my vision than the other way around."

Ves truly provided a different perspective to Laida. Though his approach to mech design didn't sound very complicated, it differed substantially from everything she learned from the design studio. None of the senior designers there talked about a vision. The only thing that resembled a vision was a list of demands that their designs should meet.

A different voice spoke out from the side. "You're wrong, Mr. Larkinson."

They both turned around to see Pierce, who had just finished taking a shower.

"Why am I wrong?"

"Your method is too rigid. It's all well and good to visualize your end goal at the start of your design process, but designing a mech is a very fluid process. The more you flesh out your design, the more you start to reconsider the choices made at the start. You always know more when you are in the middle of designing your mech than when you started on the draft."

"The iterative cycle is meant to accommodate a mech designer's desire to change his choice."

"That's different." Pierce retorted. "It's like putting a box of rusting bolts from one side of a storage room to the other side of the storage room. The correct decision here would be to take the box away from the storage room entirely."

This was a very different mindset from what Ves had encountered before.

Chapter 424 Ruffians

"Why do you say so?" Ves asked Pierce.

Though the other mech designer looked a little uncomfortable at voicing his thoughts, as a mech designer he had his own way of doing things. "Well, from what I've learned from my father's admittedly brief tutelage, your method is best suited for beginners who aren't always able to control their impulses. Sticking to a well-defined concept formed at the start is very helpful preventing the project from going out of control. Yet it's not the way an ambitious mech can be designed."

Ves thought about it a bit. Pierce had a point. "If you are designing something experimental, then I can see why you would want to keep your options open, but it sounds too much as if you are starting your design with no idea what will happen as a result."

"The people I worked with think that designs that can be imagined from the start of a project aren't good enough to be developed. A great design is a product that is only revealed at the end of a lengthy journey of exploration."

"Is that how it goes in the design team of a large mech manufacturer?"

Pierce nodded. "The mindset among the older, more experienced designers is that they need to be more unconstrained in their design process. The best designs they came up with are often the result of long periods of experimentation. The fewer the limitations, the higher the odds of creating something remarkable."

This was a completely different perspective from what Ves had learned. "How can mech designers keep control? It sounds really chaotic to me if nobody on the design team have a common vision on what their end product should look like."

"That's exactly the merit of this approach. Because everyone has a different picture in mind for the design, everyone has the opportunity to test out their insights. This way, you get the most options possible and allows the lead designer to pick from a wide range of possibilities."

"So the key here is the lead designer."

"Yes. The lead designer is the only person on the team who needs to retain some semblance of control. In some design teams, he acts as a herder that guides the mech designers under him in the right direction. In other teams, the lead designer takes the role of the composers, and imposes a bit more order in the process. THE most important factor however is that the design team should be setup in a way that takes advantage of each member's creativity."

Ves understood the point of such an organizational structure when Pierce mentioned creativity. It allowed every member to contribute, thereby effectively making the most out of the design team's creativity.

In other words, it compensated for the lead designer's lack of imagination.

"I can see the advantages in such an approach." Ves replied. "Yet it sounds awfully wasteful and inefficient. Many ideas will be tried without any chance of ever getting incorporated in the main design. An incoherent vision will also do the design no good when it ends up with a lack of harmony."

That last point was difficult to explain. Ves really wanted to say that his method of fostering the growth of the X-Factor in his designs wouldn't work if he didn't hold on to a strong and predetermined vision.

All three mech designers argued about the merits of both approaches. Ves was a strong proponent of previsualisation, while Pierce thought that such an approach was only suitable for inexperienced mech designers.

"What do you think, Laida?"

"It depends on your goal. Although it sounds simple and limiting, the approach from Ves sounds the best if you are designing an original mech on your own. As for exploring many different ideas at once, it's only suitable if there are lots of mech designers working on the same project."

In the context of a design team, the two methods determined whether the lead designer wanted to take a top-down or bottom-up approach to mech design.

"The latter approach only makes sense if the design team consists of a gathering of equals." Ves stated. "In nearly every other case, the design team will be better served if the lead designer exerts control."

After a bit more back-and-forth, they couldn't come to an agreement on this topic. To Ves who valued mechs for their intrinsic identities, he knew the importance of defining a mech's existence from the start. However, he couldn't convey this argument because it touched upon his trade secrets.

Ves prized his secrets above everything else, so he willingly let the argument end with a tie. Laida still looked a little confused, but she appeared to be getting around the idea of developing a vision for her design.

Throughout the rest of the journey, they discussed other matters related to mech design, and each designer came away with learning something new.

From Laida, Ves learned what he needed to pay attention to when he designed an aerial mech. From Pierce, Ves became enlightened to the different methods used by mech designers in the Gauge Dynasty. From both, he also learned how to work in different design team environments.

This was essential knowledge to him because he desperately lacked experience in this area.

As Ves happily soaked up knowledge and gave out some of his own in return, the transport ship finally reached the end of the convoy route. The weathered transport transitioned out of FTL at the edge of the Tarry System.

For the first time in weeks, the outer hatch opened up. A crewman popped his head inside. "We've reached the Tarry System. A shuttle is on its way to take you to another ship."

Ves looked up at the news. "This isn't our end destination?"

"Not from what I heard."

Perhaps the Vandals maintained their bases elsewhere. The mech designers shrugged at the news and waited to be picked up.

With their arrival to the Tarry System, some of the restrictions to their comms had been lifted for some reason. They gained access to a highly limited network that nevertheless proved to be a treasure trove of information.

"A number of battles have already occurred in the Tarry System."

The reports made available to them didn't specify the number of mechs involved or how many of them got wrecked. They didn't even mention the units involved either.

The only special thing about the reports was that they detailed the designs of the mechs involved and analyzed their strengths and weaknesses after the fact. This granted Ves and the others a pretty good picture of what kind of mechs saw use on this part of the frontlines.

Ves quickly came to a conclusion after skimming through the reports. "When it comes to both ground and space warfare, the mechs here are smaller and lighter. Pitched battles are rare, but skirmishes and raids are the order of the day."

The others agreed, though they stayed silent. Their reading and comprehension speeds couldn't keep up with Ves.

"Have the Vesians ever committed to an invasion?"

"They overwhelmed some border systems at the outbreak of the war, but hadn't moved forward since. They are still consolidating their gains and haven't made a major move since."

The Vesians took the slow approach in the Tarry region. With much less mechs and resources allocated to this front, the Vesians moved at a snail's pace. Yet despite their languid pace, they proved impossible for the Tarry divisions to dislodge.

As they read the reports, the transport ship quietly reached a midpoint in the System, whereupon the mech designers suddenly had to leave the passenger compartment. Without much ado, they entered an airlock which extended out an enclosed ramp onto the hatch of another ship.

Once they walked across and entered the airlock of the other ship, they entered a metallic grey corridor of a small and cramped corvette.

"Mr. Larkinson, Mr. Yuvalis and Miss Nnvist, right?" An easy-going spacer greeted them as they entered the ship. The man looked like he could use a good shave, and his red-colored uniform could use another wash. "Your cabins are already prepared. It's a little tight here, so you're going to have to bunk with the crew. Apologies for that."

Ves and the others looked at each other. Nobody had a clue what went on. "Lead the way."

The spacer guided them to their cabins as he casually chewed a stimulant, something which the Mech Corps strictly forbid. "You guys came at a swell time. Professor Velton has been ringing the Mech Corps for extra manpower for years now. It finally took the outbreak of the war for those stingy bastards to send some of you out to the Vandals."

"Who is Professor Velton?"

"That's the boss man of the research base you're about to go to. I can't tell you where it's located, it's all hush hush and such. All I can say is that the Vesians will never be able to pin it down."

They reached the cabins where their bots dropped off some of their luggage. Ves continued to ask some questions from the crewman. "Is this ship part of the Vandals fleet?"

"She sure is! She's called the Bloodless Dagger, born and bred as a Vesian but taken as a prize by us a couple of years ago. We sure taught those bastards a bloody lesson back then!"

The three mech designers looked shocked at the spacer. "The war didn't even start until more than half a year ago!"

"Hah! It's not like we need a declaration of war to stir up some trouble. We Vandals are all about taking opportunities. The Vesians have always been our enemy. Peace with the Vesians is a big fat lie. We've raided their systems and

trade routes plenty of times and they have done the same to us. The only difference now is that we don't have to go through the trouble of camouflaging ourselves as pirates."

The more the spacer blabbed on about the previous actions of the Vandals, the more they sounded like pirates!

"Why all the raids?" Ves couldn't help but ask.

"Because we're the 6th! Those fancy ponces over at Rittersberg and Bentheim never send out adequate supplies to us! Our division is at the end of a long supply chain, and the 1st, 2nd, 3rd, 4th and 5th regiments get their turn first before leaving the leftovers to us! Hah! By the time we receive our supplies, everything has been siphoned away."

This happened a lot in the Mech Corps, but Ves never realized that the 6th Flagrant Vandals had it so bad.

"So the Vandals have resorted to stealing from the Vesians to gather their supplies?"

"Yup."

"How do you get away with it?"

The spacer grinned. "It's all thanks to Colonel Lowenfield. Ever since she took charge of the Vandals, we're no longer begging the others for fuel, parts and other supplies."

This colonel must be a remarkable leader if she was able to control this bunch of ruffians.

The Bloodless Dagger didn't stick around the Tarry System for long. She headed towards a nearby gas giant's Lagrange point and smoothly transitioned into FTL.

As the three mech designers spent their time aboard the corvette, they quickly learned that the crew didn't make any attempts at keeping them under control. Besides restricting their comms, they allowed Ves to go outside their cabins and explore the tiny ship, not that they saw all that much. It was still a corvette.

Though the crew acted a little casual around the mech designers, they still showed some discipline in their normal operations. They at least still showed signs of being a part of the Mech Corps in the things that mattered. The Bloodless Dagger was well-maintained for a captured ship and none of the spacers appeared incompetent. It showed that the corvette had definitely taken a lot of risks.

"You know, maybe it's not so bad to be assigned to the Vandals."

Chapter 425 Hellca

The corvette entered a lifeless star system with no known settlements. Ves and the mech designers weren't allowed to know where it was located, which underscored the importance of this seemingly empty system.

After another day of coasting towards the inner system, they stopped by a vast asteroid belt that ringed around the dull yellow sun. From there, Ves expected to enter some sort of secret asteroid base, but instead the corvette came face to face with one of the largest industrial ships he had ever seen.

"Is that a factory ship?"

"That, and more. You're looking at the one and only Wolf Mother."

The so-called Wolf Mother was imposingly large. Larger than a fleet carrier, even, though both her hull and armor couldn't compare to a ship dedicated for battle.

As a factory ship, the Wolf Mother was basically a manufacturing complex compressed in a single hull with some thrusters and an FTL engine slapped

to her. The Wolf Mother's design looked rather crude, displaying many gaps in the hull that led to empty cavities that hadn't been filled since her commissioning.

"So this is where the Vandals design and produce their mechs?" Ves asked in a weird voice.

"That's right."

"That's not possible! A ship of this size can't service an entire regiment's worth of mechs!"

A normal regiment fielded around two-thousand mechs at a time, but that didn't take into account the spare parts and spare mechs that would be necessary to keep the unit at full strength.

Despite its massive size, only a tiny portion of the factory ship could be dedicated to the production lines. Each production line expended an enormous amount of power and resources, so Ves estimated that the Wolf Den only held two production lines at most, and that would be straining the ship.

To that, the spacer sent a cheeky smile at Ves. "Who said we need to rely on our own mechs to fight?"

"Oh."

Ves forgot about the usual conduct of the Flagrant Vandals. They were so cut-off from conventional supply lines that they needed to steal or scavenge everything for themselves. This also applied to mechs.

The imposing manner of the Wolf Mother only grew as the tiny corvette approached one of her docking spaces. The factory ship looked so immense that her hangers even offered enough space to let in the Bloodless Dagger,

not that they did so this time. The Bloodless Dagger didn't require any servicing.

"How old is the Wolf Mother?" Pierce asked.

"She's over thirty years old. She's actually a product of the previous war."

Ves didn't know whether he should feel afraid or reassured at that fact. The vessel definitely looked like she had been through a war. Much of her armor looked like a patchwork construction where different holes and battle scars had been covered up by any available armor plating the Vandals could get their hands on.

This led to a very shabby appearance. If not for her size and solidness, Ves would have mistaken the Wolf Mother for a floating junk heap.

The interior of the ship looked a little better compared to her exterior. Once the Bloodless Dagger docked with the factory ship and let out the mech designers, Ves felt as if he entered a cross between the Mech Nursery and a fleet carrier.

The Wolf Mother was completely geared towards logistics. Massive grinders and other processing equipment broke down asteroid chunks and extracted every useful materials from the remains. Elsewhere, mighty production lines churned out part after part for both mechs and ships.

The brief view he got as a guide led them across the corridors made it clear that the Wolf Mother had been built in a piecemeal fashion. She started small, but the Vandals tacked on more compartments over time, until she eventually reached her current size.

This haphazard method of expansion might have suited the Vandals well, but it left little room for protection. Even a much smaller combat carrier would be able to endure more damage than this tough-looking but fragile-shelled logistics ship.

After passing through a maze of corridors, they reached a large out-of-the-way compartment. "This is your stop. Professor Velten is expecting you."

They entered what appeared to be a design lab. Rows of terminals connected to powerful processors stood ready to perform any number of simulations. Further ahead, Ves spotted areas which facilitated the design process in many different ways.

For example, one open space contained a table that supported minifab. This tiny 3D printer only worked with a handful of materials, but through the application of different treatments, it was perfect for fabricating tiny models that could help with the visualization of the design.

The newcomers entered an office to the side. Professor Velten looked up from the data pad he studied and smiled. "Come on!"

The Professor was a short and aging woman. She obviously enjoyed a couple of age-prolonging treatments, but they didn't seem to be of very great quality. Nevertheless, her status alone forced the three arrivals to show a measure of respect before taking their seats, because the professor turned out to be a Senior Mech Designer.

"Ah, it delights me to see new chickens have come." The professor smiled in a slightly creepy manner. "You are the fourth, fifth, and sixth mech designers to have arrived from the inner regions of the Republic."

The old woman spoke no further but eyed them as if they were exotics.

"Ahem, Professor," Ves began. "What are our responsibilities?"

That forced the absent-minded professor back into the present. "There is much that needs to be done! You may have realized that we are very short-handed. Even if we cut back our projects, we are barely able to keep up! There are a total of three Journeyman Mech Designers under my wing, and each of them lead a small design team of around three Apprentices."

That didn't sound like an impressive team at all.

"Due to... the difficulties in securing a sufficient amount of time, money, resources and manpower, I have restricted the development of new and improved designs to three different mech lines."

A typical design team with over a hundred mech designers working together could easily support the development of a dozen designs at the same time. Professor Velten's team barely managed to scrape by with only three designs.

Like a lonesome granny who only saw her grandparents once a year, Professor Velten treated Ves, Pierce and Laida like they were precious treasures.

"Three Apprentices have already arrived from the Rittersberg region. Along with your arrival, that makes six fresh faces. Sadly, that's the extent of their generosity. They haven't even sent us some much-needed Journeymen!"

After ranting a bit about the lack of concern from headquarters, Professor Velten returned to the topic at hand.

"It's best if the three of you split up and each take part of one of the three projects in development. It is not as if the addition of three extra Apprentices to a single project will make any difference compared to sending only one. It takes at least ten more mech designers for the synergy to become apparent."

The professor didn't let them choose their assignment. She briefly read their profiles and track records and arbitrarily added them to the teams that best matched their skills.

"Miss Nnvist, you will be joining the design team that is working on the Inheritor spaceborn skirmisher design."

"Mr. Yuvalis, you shall be joining the design team that's responsible for improving the Akkara heavy mech design."

"As for you, Mr. Larkinson, you will fit wonderfully with the design team that is developing the successor to the Hellcat spaceborn hybrid knight design."

What? A spaceborn hybrid knight design?

Before Ves could puzzle over the extensive challenges behind designing a hybrid knight with enough capacity to support a flight system, Professor Velten pushed them out and ordered them to meet with their respective design teams. The professor unceremoniously shooed them away from her office.

Once the hatch locked, they all looked at each other.

"The professor is a little senile, is she not?" Ves remarked.

Neither Laida nor Pierce dared to comment on Professor Velten's mental state. She was a Senior Mech Designer after all. Even if they left her presence, she could still be listening in through the countless bugs embedded in this compartment.

Ves sighed. As someone who met a Master Mech Designer in the flesh, the prestige of a Senior Mech Designer hardly fazed him. He even found the professor to be a rather pitiful person. Perhaps her erratic mind was the reason why she lead the design team of the Vandals.

After consulting their comms, they split up and entered different compartments. Ves entered a sub-lab area where three other Apprentices sat behind a row of terminals performing various simulations and microadjustment of the latest iteration of the Hellcat design.

The other Apprentices stopped their work once Ves entered the compartment. A thin man with a towering height in his late thirties looked up from the schematics of a power reactor and turned his attention to Ves.

"Have you come from Professor Velten?"

"Yes, sir. These are my orders."

Ves passed over a data chip to the Journeyman, who slipped it into his terminal and read the contents.

One tidbit caused the man to stop his perpetual glower for a moment. "You're a Larkinson? Are you related to..."

This was a familiar refrain to Ves. "Yes, I'm part of the Larkinson Family."

A few seconds passed.

"Very well then." The Journeyman nodded and resumed reading his records. "It says here that you have experience in designing hybrid knights."

"Not exactly, sir. I haven't designed a hybrid knight from scratch. I developed a variant of an existing model."

"Which base model?"

"The Caesar Augustus."

That caused the tall man to scowl. "That piece of crap?! Why did you waste your time on that bloated mess?"

"I didn't have any choice. I received its production license from a generous grant."

After making it clear that Ves didn't deliberately choose to work with the Caesar Augustus, the Journeyman calmed down. "Very well then. Despite your limit track record, at least you know your way around with hybrid knights. Do mind you, a spaceborn hybrid knight is a radically different creature from a landbound hybrid knight, so don't think you have the edge over your fellow Apprentices."

The Journeyman bobbed his head towards the three young Apprentices who sat attentively as they studied Ves.

"My name is Alloc Brandstad, and I'm the only Journeyman Mech Designer that lasted more than five years under Professor Velten's supervision."

Alloc spoke those words with an exhausted tone. He shook his head and returned Ves his data chip. "Keep that chip safe. Otherwise you'll get in trouble with the Wolf Mother's security contingent."

"Understood, sir."

"Let me apprise you of the role of the Hellcat within the Vandals."

The 6th Flagrant Vandals used to be supported by a team of over fifty mech designers. That was only half as much as any other regiment, but it was more than sufficient to the undersupplied Vandals.

For some reason or another, the design team diminished to its current state. Professor Velten need to make a brutal choice and cut back the active number of designs in development. She chose to retain the most essential designs that formed the core of the Vandals.

The professor's choice of retaining the Hellcat in active development turned out to be very controversial.

"Hybrid knights are difficult to design at the best of times. Spaceborn hybrid knights are almost impossible to design even if you put over a hundred mech designers to the task. Nevertheless, both Professor Velten and Colonel Lowenfield put down their feet. The Hellcat is an essential mech that enjoys a place of honor among the Vandals."

Much like the Caesar Augustus, the Hellcat was a versatile mech meant to be piloted by leaders. The Vandals fielded less than twenty-five Hellcats at a time, mainly because they couldn't scrounge up enough mech pilots that could make good use of a hybrid knight.

"Make no mistake." Alloc said with emphasis. "Despite the small number of Hellcats in existence, they have served as the linchpins of the Vandals in every single battle in space since their inception. The hellcat is more than a single design. It is a symbol."

Chapter 426 Boondoggle

Developing and improving the Hellcat design required an enormous amount of effort. Yet the Hellcat design team only consisted of four permanent mech designers with two temporary additions, of which Ves was one of them. Professor Velten supervised the entire effort and occasionally stepped in to solve some difficult issues, but she was too busy to spend all of her time on a single design.

"Professor Velten isn't as spry as she used to." Alloc said in an emotional fashion. "A couple of decades ago, she could easily keep track of dozens of concurrent designs, but now... she's barely holding it with three concurrent designs."

Any mech designer who advanced to the rank of Senior was a formidable person. No one ever reached this height by being stupid. Professor Velten must have been an intellectual force at her prime.

Ves barely knew anything about the 6th Flagrant Vandals or Professor Velten. Both diverged so much from how the Mech Corps usually organized their units that Ves wondered what lay at the heart of their difficulties.

"Sir, I've just arrived and I'm not very familiar with the Tarry region or the Vandals. Can you give me a rundown on the mech regiment?"

Alloc sighed and released a weary breath. "The Flagrant Vandals look kind of bad, don't they?"

Ves nodded.

"That's because the Vandals never quite fit into the Mech Corps."

Alloc briefly explained the origins of the Vandals. It used to be setup by an ambitious general over sixty years ago. The general tired of the constant defensive attitude of the Tarry region divisions, so erected an additional mech regiment with the express purpose of giving the Vesians a bloody nose.

"The only problem with the Vandals is that the Tarry region is poorly endowed. It can barely field whatever forces they already possessed. Burdening the regional headquarters with a full regiment of mechs and everything that came with it pretty much broke the budget."

Other problems also became apparent. Entering Vesian space was a perilous ordeal and while the Vandals achieved some early successes, they occasionally ran into a prepared opponent that decimated their raiding forces. The regiment used up a lot more mechs, mech pilots, ships and supplies than originally projected.

"So what changed from the start?" Ves asked.

Alloc shrugged his head. "Headquarters came up with a new order for the Vandals that's never been recalled. The 6th Flagrant Vandals needs to be completely self-sufficient. They have to fabricate or procure their own mechs and ships and they need to recruit and train their own mech pilots."

This completely cut off all of the support that was necessary to sustain a mech regiment. Maintaining the mechs alone drained a lot money, but supporting all of the ships was even worse.

If Ves didn't know anything better, then the Tarry region's regional HQ wanted to dissolve the Vandals by starving it to death.

"It's a good thing that we're more resilient than that." The Journeyman Mech Designer grinned. "We slimmed down our ships and mechs, all of our mech pilots have taken pay cuts and steal everything we need from the Vesians when we're short on something."

Still, financing an entire mech regiment through raiding planets and trade ships could only stretch so far. Most mech regiments would have collapsed eventually from the burden.

"Our budget declined year after year. Nothing we did could have changed our downward slide. The biggest burden by far is the cost of replacing aging mechs and ships. Even if we're able to recoup most of the costs by recycling them, we were still bleeding a ton of money this way."

"Were?"

"That's right. I didn't misspoke. Ever since Colonel Lowenfield took over as our regimental commander some time ago, she made a clean sweep of our regiment. She cut down costs to the absolute minimum by trading away our only fleet carrier, letting go of as much support personnel as possible and shutting down all of our bases. Under her urging, we've completely transitioned into a nomadic fleet."

Relying on logistic ships such as the the Wolf Mother factory ship formed the core to their strategy. Though it cost a lot to maintain their operations, their ability to move with the fleet meant that the Vandals never had to worry about stretching their supply lines if they ever went deep into enemy space.

Ves felt a little nervous after hearing this. "You mean the Vandals bring the Wolf Mother along whenever they cross the border?"

"Exactly! She spends more time in the Vesia Kingdom than the Bright Republic even. We know the Kingdom inside-out and while the Vesians have caught us out a few times, we've always been able to get away."

"Has the regiment lost any logistic ships over the years."

"A handful of smaller vessels have succumbed to the enemy in recent times. They didn't last very long under enemy fire."

Great. When Ves imagined serving in the Mech Corps as a mech designer, he always thought he would be put in some secret base deep underground. Serving aboard a moving factory ship was an entirely different matter altogether. The Vesians must be hunting for the Wolf Mother all the time.

Alloc briefly looked at the time. "That's enough about the Vandals. We've got to get back to work. Ves, since you're new, you should study the design files of the Hellcat first before you do anything else. The Hellcat is an exceedingly complex design, and were it not for your prior experience, I would have given you a refresher course instead."

Everyone turned around and went back to work. Alloc passed around a weathered data pad to Ves before he returned to debugging some piece of software.

Ves didn't disturb the design team any further and sat down at a sofa pushed into a corner. He activated the data pad and began to study the confidential documents held within.

"So this is what the Hellcat looks like."

The Hellcat's humanoid frame looked bulky but powerful. Its head was shaped like a lion, but that was the only reference to its name. The rest of the design evoked pure power due to the thickness of its armor and how many weapon systems it carried.

One arm carried a saber and the other arm carried a kite shield. The kite shield wasn't all that thick and didn't provide full coverage, but that lessened some of the weight concerns of the knight. The Hellcat compensated for the deficiency in the shield by bulking up its armor to the very limits of what was expected of medium mechs.

The Hellcat's second weapon system consisted of a pair of wrist-mounted nail drivers. A nail driver was a rather exotic weapon that didn't see much use.

However, they packed a substantial kinetic punch without demanding too much space. Mech designers referred to them as the poor man's railgun.

The pair of nail drivers wouldn't be very accurate if fired from the arm of a hybrid knight, but they granted the Hellcat a potent close-ranged punch that would be useful in a variety of situations. The only downside to the nail driver was that it only carried three nails in its tiny magazine. Along with the nail in the chamber, a Hellcat could only output 8 nails in total before needing to reload, which turned out to be a massive pain for the mech pilot. Changing magazines in the thick of battle was impracticable at best.

Much like many other hybrid knights, the Hellcat also carried a pair of missile launchers on its shoulders. As a fairly low tech weapon system, it hardly looked special in his eyes. The true worth of a missile launcher lay in the missiles themselves.

Surprisingly, the Hellcat's tube diameter diverged from the standard used by the Mech Corps. Each state used their own standards in order to prevent the enemy from using their own munitions against them. If the Vesians ever captured a couple of containers worth of missiles, they were better off recycling them than trying to modify them to fire out of their own missile tubes.

Adopting the enemy's technical standard on a mech that was supposed to be the standard bearer of the Vandals said a lot about the regiment.

"The Flagrant Vandals can't afford to ship in Republic-standard missiles, so they're getting them from the Vesians instead."

It sounded crazy, but on second thought it was a brilliant design decision. The Flagrant Vandals spent a lot of time in Vesian space and frequently replenished their supplies by raiding enemy trade routes.

Since the Vesians loved to employ a lot of missiles, many of these convoys would be carrying tons of mass-produced missiles. Rather than destroy the

shipment or recycle them down, the Vandals were better off if they made of them. This became especially attractive after months of moving behind enemy lines.

The only complication was that these missiles implemented safeguards that prevented them from exploding in the Mech Legion's faces. The Vandals needed some time to crack these safeguards before they could put them into their own launcher tubes.

"A saber for close-ranged combat, a pair of nail drivers for close-to-medium ranged burst attacks and a pair of missile launchers to provide long-ranged suppression."

The weapons might be different, but the Hellcat pretty much adopted the weapon patterns as the Caesar Augustus and the Marc Antony. Many other Hybrid knight designs copied the same pattern to the point where it became a standard in the industry.

The Hellcat's flight system was the last thing that grabbed his attention. Ves became impressed and concerned at its sheer size. It was about fifty percent bigger than any other flight system he had seen on a medium hybrid knight. It took a lot of power to keep them running for a decent stretch of time.

Ves turned to another file that detailed the internal architecture of the design.

It looked completely different from what he imagined.

Ves expected a cramped up interior where each part tried to squeeze out its neighbors. Much like the original Caesar Augustus, mechs needed to accommodate a lot more components if it wished to support so many weapon systems.

The internal architecture of the Hellcat turned around his expectations. The internal components took up much less space than he thought, which allowed the design to feature a high level of redundancy and compartmentalization.

The Hellcat was unimaginably tough. Its armor was thick enough to take a good beating, but its internals extended the durability of the mech by a significant amount.

Inside and out, the Hellcat put the original Caesar Augustus to shame.

How did the design team do it?

The secret quickly became evident.

"This is a really expensive design."

Ves performed some mental calculations. He took note of the material composition of the mech and ran the numbers on their cost. The raw materials required to fabricate a brand new Hellcat cost as much as 350 million credits at market prices!

That was as expensive as a heavy mech!

"This is a prestige mech!"

The Hellcat was a marvellous design that hid a lot of ingenious tricks and nuances that Ves didn't fully understand. Professor Velten was a legitimate Senior Mech Designer, so the Hellcat's design contained an invisible strength that brought out strength beyond what its materials should have been able to bring out.

Nevertheless, cheap materials could only be elevated up to a certain point. In order to meet the Hellcat design's insane demands, Professor Velten resorted to powerful exotics that did more with less.

That came at an enormous cost. In fact, when Ves compared the performance of the Hellcat to an average heavy knight, he could hardly justify its existence.

"Why do the Vandals treasure the Hellcat over more practical designs?"

Heavy knights provided a lot more impact on the battlefield. Sure, they were too unwieldy to be used in space, but that was not a reason to develop an expensive boondoggle like the Hellcat.

The files failed to list any information that could satisfy his curiosity. Ves had enough of looking at the schematics. He needed to see some footage of the Hellcat in action.

Chapter 427 Shock Attack

When Ves asked Alloc to see some footage, the Journeyman immediately agreed to provide him with some footage.

"The footage is stored in the restricted archives, so you can't access it from your comm or from the terminals in this room. The proper procedure would be to apply for access to a secure terminal in an isolated chamber. Normally, only Professor Velten can weigh on your request, but she handed me a lot of leeway in these matters."

Alloc quickly prepared a code and access pass for Ves. After pointing out where he could find the isolated chamber, he returned to work.

He used the pass to unlock the secure hatch and enter the barren but highly restricted chamber. A very visible laser turret constantly tracked his movements as he walked to the middle where he sat down on a stiff, metal chair.

After supplying the code into the terminal, the projector began to expand and run some footage of a battle that happened around four years ago. At that time, the Bright Republic was at peace and Ves was still studying at Ritterberg.

No one had a clue that a handful of combat carriers of the Flagrant Vandals penetrated the border and crossed several noble domains until it reached the interior of Vesian space.

Their target? A massive refinery complex in an otherwise quiet star system midway between the mines and nearby industrial planets. The complex orbited a rocky, broken planet that suffered numerous asteroid impacts hundreds of millions of years ago.

Most of those asteroids turned out to be made out of several exotics. These materials reacted with the minerals buried beneath the surface to produce a strange new substance that made for extremely flexible armor plating that performed well against kinetic impacts.

The footage started with the raid already in progress. The Railguns and lasers flew in each direction as several companies of the Vandals assaulted the defenses of a massive depot in a head-on collision.

What struck Ves the most was that the attackers hardly looked any different from the defenders! Much of the mechs used by the Flagrant Vandals actually consisted of a hodgepodge of distinctly Vesian designs!

The battle went well for the Vandals. They scoped out their target and gathered as much intelligence as possible before committing to the raid. They brought more than enough mechs to overwhelm the defenders.

Although the defenders possessed enough mechs to put up a stiff fight, they were chained to the refinery complex in orbit. Their static turrets fell like dominoes and their defensive positions started to crumble from the sheer amount of fire being thrown in their way.

The Vandals primarily made use of ballistic and kinetic weaponry. Though they wouldn't be able to outlast a force that fielded mechs with laser weapons, their damage output was extremely high so long as they didn't run out missiles.

Just as it looked as if their mechs would easily break through the defensive line, more than one-hundred Vesian mechs popped up from behind.

"Enemy reinforcements from the rear!"

"Where did they come from?!"

"We've got to get out of here!"

The Flagrant Vandals deliberately chose to attack a privately-owned refinery complex defended by nothing more than a company security force. The lightly populated star system shouldn't have been able to support any other mech force, so the appearance of over a hundred additional mechs unsettled the Vandals.

"Calm down." A clipped and clinical female voice broke through the chaotic chatter. "They outnumber us, but won't be able to match our grit. Gather the Hellcats!"

The woman began to issue a rapid set of orders that split them into two. Most of the Vandals continued to press against the complex, while a smaller portion of mechs looped around to face the incoming horde of mechs.

As the reinforcements came closer, the Vandals learned their makeup. Three-fourths of the incoming mechs consisted of frontline mechs while the remainder consisted of cheap melee mechs.

Facing them were twelve nearly identical Hellcats. All of them were piloted by officers or elites. Pulling them out of the assault on the complex risked delaying the breakthrough, but the Vandals had no other choice.

"Your orders?"

Colonel Lowenfield spoke for the first time since the start of the footage. "Meet the enemy reinforcements and smash them apart."

Her orders sounded simple and to the point. As Ves watched and listened to this record of past events, this was the first time he heard Colonel Lowenfield's voice.

To his ears, she spoke without the usual force and gusto of mech pilots when they were on duty. She sounded like an office worker instead of a commanding officer.

Nevertheless, the lack of weight in her voice didn't detract from her gravitas. The Vandals followed her orders without question, as if they had absolute faith in her leadership.

What Ves couldn't understand was why she felt so confident about her Hellcats. Even though their performance was extremely good, sheer numbers always had a way of negating any advantage in quality.

"The disparity in quality is not enough to make up for the deficiency in numbers."

That was what Ves concluded if he applied the conventional maxims. Any other commanding officer would have allocated at least thirty mechs against the incoming reinforcements.

As the fresh wave of Vesian mechs neared the battle site in orbit, the dozen hybrid knights prepared their missile launchers. The protective ports retracted, allowing the missiles to escape from the launchers and arc out into space.

The missile launchers carried by this older iteration of the Hellcat used larger mech-sized missiles. Each Hellcat only released twelve missiles each. Therefore, they only unleashed 144 missiles in their only volley.

Nevertheless, these missiles packed quite a punch. The reinforcing mechs must have recognized their own missiles because they quickly halted their forward acceleration and entered a defensive posture. Numerous lasers started firing from their formation in an attempt to shoot the missiles down.

It was tough going for the Vesian mechs because these large missiles incorporated many elements that made it more elusive.

For the most basic-level mech pilots that piloted the frontline mechs, their abysmal accuracy insured that the chance of knocking down a missile was low. The only thing the reinforcements had going for them was their sheer weight of numbers.

More than half of the missiles got shot down by the sheer spread of fire, but that left a lot of missiles alive. The Vesians barely had time to brace their mechs before the missiles impacted their frames.

"That was a good volley!"

"I love flinging their missiles back to them!"

None of the missiles carried enough force to destroy a mech outright, but all of the impacts succeeded in throwing the Vesians off-balance.

"Charge!"

The hybrid knights accelerated forward in a sluggish manner. Even though they carried proportionally huge flight systems, it took some time to get them going. However, once they built up a reasonable amount of speed relative to the Vesian formation, the amount of force they could produce upon impact was extremely serious.

Meanwhile, the Vesians just recovered from the missile salvo. The missiles outright disabled four or so mechs while heavily damaging ten or so more. Every other mech only suffered scratches from the flying debris.

"Hellcats, charge formation!" The highest captain of the Hellcats ordered.

The hybrid knights adjusted into a V-shaped formation as they neared the Vesians. Both sides accelerated into each other, so the time before impact wouldn't be very long.

The Vesians might have gotten an inkling of what they planned. Their legless spaceborn frontline mechs frantically opened fire at the incoming Hellcats.

Many shots went wide but those that hit only added a couple more scratches to their armor and shields.

"Ready the nail drivers!"

The hybrid knights adjusted the grips of their sabers and shields and extended out the barrel of the nail driver poking out of their wrists.

"Aim at your designated targets!"

The captain transmitted a series of targeting instructions that focused everyone's fire on a handful of important-looking mechs.

"Fire!"

The nail drivers emptied out their chamber, releasing a long and sharp nail that flew forward until it met the Vesians. Every mech that the captain targeted suffered a lot of damage. Many mechs flung backwards upon getting hit, and all of the nails that hit had been able to punch through their flimsy armor.

The Vesian formation fell into disarray yet again. The lead Hellcat officer successfully managed to take out the mechs that carried the officers in charge of the reinforcements.

Though the surviving officers of the Vesian reinforcements quickly imposed order, the damage was already done. Though they managed to reassert their formation, they hadn't been able to retaliate as effectively.

The Hellcats spent the rest of their time on approach by emptying out their magazines at the enemy. Most of those nails hit as the fire hadn't been concentrated on any single enemy mech. Instead, the scattered fire was meant to disarray the enemy formation and prevent them from bracing against the imminent collision!

"Bring it on!"

"Vandals Ever-burning!"

"Three, two, one, impact!"

"Yahooooooooo!"

Twelve spaceborn hybrid knights simultaneously tore through the mechs of the Vesians. The difference in mass proved to be decisive. The Hellcats bulled through several mechs with their kite shields held in front.

Though the shields quickly got dented, the Vesians completely didn't know how to handle the sudden intrusion. They aimed their barrels at the hybrid knights in the midst of their formation but hesitated in pulling the trigger. Their formation was too packed. While that added to their cohesion, once the Vandals entered their midst, they risked missing the intruders and damage one of their fellow mechs instead.

"They're dispersing!"

"It's too late!"

The commanding officer of the Vesian reinforcements decisively ordered his mechs to split, but it was far too late for that. The Hellcats moved in unison as they mowed down mech after mech.

The Vesian frontline mechs never lasted more than a second up close while the Vesian melee mechs only delayed their destruction by a couple more seconds.

Mech after mech got cleaved apart by the brutal sabers wielded by the Hellcats. As the Vesians belatedly dispersed, the Vandal elites split up into two squads. Six mechs went high while the other went low.

Though splitting up into two squads of six wouldn't allow them to catch all of the Vesian mechs, they still exhibited strength beyond what their numbers suggested.

"Hybrid knights are shock weapons." Ves realized as he watched the Hellcats make a mockery out of a Vesian force that outnumbered them.

Though this force was fairly shabby, Ves still found it impressive that the Hellcats managed to route the mob without sustaining any losses.

"Very interesting."

After smashing the reinforcements, the Vandals easily broke through the orbital complex and stole all of its inventory before breaking it up and sending the pieces into an inescapable descent to the rocky planet below.

The key takeaway of the footage was the way the Vandals used the Hellcats. Though they would usually be dispersed among the rest of the Vandals, whenever the commanding officer needed it, he or she could easily order them to form up in a single group of Hellcats.

Several Hellcats working together was a lot stronger than he thought. Naturally, much of the victory was achieved due to the disparity quality between the two forces. The Hellcats didn't fight against the Mech Legion. If Ves had to guess, the reinforcements looked a lot like mercenaries.

This was also why the Hellcats proved to be so effective. The Vandals mainly raided enemy infrastructure. They weren't meant to go toe-to-toe with the Mech Legion, the Vesian premiere mech force.

The Mech Legion was famous for their high morale and their willingness to fight to the death, but the outfits that did business in the Kingdom's private sector was made out of much less sterner stuff.

"It's much more efficient for the Vandals to attack their morale. As long as the Hellcats deliver a sufficiently great shock, they'll be able to route any number of inferior mechs."

Outfits in the private sector never fought to the death. As long as they glimpsed a hint of defeat, they wouldn't hesitate in running away.

Chapter 428 Prestige Mech

Ves only needed to witness a single battle to understand the characteristics of the Hellcat design.

Even though its design appeared to be a little scattered, in actual fact it prioritized one capability above all others.

"The entire frame is built to deliver a devastating collision attack."

The schematics and material composition prioritized sturdiness and shock resistance. It insured that even if the hybrid knight built up a lot of speed, it wouldn't fall apart as soon as it collided with another mech. Even the shield that looked a little small for a knight hid a surprising amount of resilience.

The additional weapon systems facilitated this mode of combat. They were meant to soften up the enemy and disrupt them from meeting the Hellcats in a prepared formation.

"That's why these Hellcats don't carry much ammunition around. They're only designed to deliver one big whallop before they close in with their shields and sabers."

Still, for a highly advanced mech that incorporated many ingenuities, its design was also surprisingly one-dimensional. Its strengths were evident, but that only magnified its weaknesses.

The biggest and most egregious fault spoke for itself. "The Hellcat is too heavy."

Spaceborn mechs relied on speed and acceleration to move around in the vast void of space and to dodge most of the attacks fired in their direction. An exception existed for knights, but usually mech designers exerted their utmost to minimizing their weight.

The less they weighed, the easier it was to change their direction on the fly.

Right now, the Hellcat resembled a transport ship in its movement characteristics. It weighed a lot and though it possessed a larger flight system compared to other medium mechs, the increase in propulsion force couldn't keep up.

"This mech is as heavy as a Caesar Augustus."

The same weight on a landbound mech like the Caesar Augustus played to its advantages. Locomotion on land demanded much less of a mech. The weight might slow it down, but it also added weight to its movements and allow it to anchor itself into place whenever it received a mighty impact.

In space, this weight came with much more downsides. The amount of time needed to adjust the Hellcat's inertia was at least twice as long as a conventional space knight. This difference was quite massive when it came to fast-paced battles such as smaller skirmishes in space.

Essentially, this meant that the Hellcat excelled in larger battles where they faced company-sized forces and more. "It's not a duelist mech, that's for sure."

The second major downside to the Hellcat design was its lack of staying power. Every part in its design cranked up as much power as they could possibly unleash without degrading their longevity by too much. Even with light and careful use of this mech, it would eventually by itself within a decade.

The Hellcat simply demanded too much out of itself.

Naturally, the upside to this was that the mech pilots could be assured of the best performance possible whenever they committed to the battle. Before that, they needed to carefully conserve their Hellcats in order to prevent them from running out of steam before the decisive moment came.

Mechs designed to stay in reserve and exert their full power in a single maneuver had always existed, but they never went to such extremes. The mech industry had a moniker for mechs like that.

"A prestige mech. It's the parade horse of the regiment."

What Ves meant by that was that the Hellcat served a dual purpose. It broke through stalemates and reversed unfavorable situations not only through its objective performance characteristics, but also through shaping everyone's perceptions.

The Hellcat was a standard bearer and the trump card of the Flagrant Vandals. Every mech pilot that fought alongside a Hellcat would receive a boost in morale. On the opposite end, enemies that recognized the Hellcat and everything it represented must be feeling a little suppressed.

In truth, the Hellcat's ability to boost to friendly morale and damage enemy morale was much more important than the material damage it could unleash.

By delivering an overwhelming impact in a single moment, it exceeded the limit of how much enemy pilots could deal with.

If the Hellcat exhibited a more gradual performance curve, while it would be able to last much longer in a battle, the shock to the enemy wouldn't be as potent.

Ves understood the challenges faced by the Hellcat design team. With only five Apprentices and one Journeyman working full-time on this design, hardly any progress could be made. The Hellcat's design was simply too complex.

After returning to his team, Ves began to integrate himself with the team. Over the course of several days, Alloc taught him his responsibilities and what kind of expectations the design team shouldered.

"The Hellcat is not a fixed design like you see with private sector mechs." The Journeyman patiently explained. "Mechs in the military can come in many different variants. You can see it as a cross between updating an old design and modifying an existing design. For minor changes, we don't bother fabricating new mechs, but apply them to existing mechs. This way, we can be sure that they possess the right configuration to deal with their upcoming missions."

"How many brand-new mechs are fabricated in a year?"

"Not as much as you think. The Flagrant Vandals have learned how to be frugal. You'll have to take that into account when you do your work. You need to incorporate some tolerances and account for the most common cases of wear and tear. This is because our mech technicians reuse as much old components as they can get away with it. Professor Velten is watching out for this so you don't have to be too concerned."

Alloc also explained the nature of the work being sent in his way. Predictably, the Journeyman didn't think much of Ves and his abilities. After hearing that Ves excelled in physics and was passable in a couple of other areas, the seasoned mech designer dumped some trivial assignments onto his lap.

"Our design team is short-handed and the Hellcat needs tons of tweaks. Whenever Professor Velten and I introduce a major change in the Hellcat's design, the knock-on effects are numerous. Many components are affected, some for the better and some for the worse. Your responsibility as an Apprentice is to record and quantify these effects, and whenever possible provide a suggestion on how we can mitigate the detrimental side effects."

While Alloc sounded solemn and made his task sound important, Ves knew he was being pushed aside to the kids table.

Still, Ves had only just arrived. He wasn't arrogant enough to believe he could outmatch an actual Journeyman who was deeply familiar with the design in question.

He adopted a humble posture and did his best to reign in his arrogance. "Understood, sir. I'll get right on the job."

Ves spent the next couple of weeks keeping his head down and doing what he was told. To be frank, the makework he received required hardly any thought at all. Most of the time, he inputted some settings in a mathematical model and let a portion of the Wolf Mother's immense processors simulate the outcome.

Someone less knowledgeable than him might need hours to come up with the right settings and determine which models to use, but to Ves that was as easy as breathing air. He even showed some initiative by adjusting some of the math behind the models to best suit the exact conditions of where the Hellcat would be deployed.

The nature of his work meant that Ves mostly waited around for the processors to spit out their data. He idled around and looked at the others who worked with utmost concentration on their own assignments.

As the new kid on the block, the other Apprentices didn't know what to make of him yet. In their off-time, they were usually too tired to socialize a lot. A complex design like the Hellcat required at least twenty mech designers to achieve stable amount of progress. All of that work that should have been carried out by twenty Apprentices was actually being shouldered by only five Apprentices.

Ves did not downplay his abilities, but neither did he call out too much attention. He merely accepted every task sent in his way and completed it a little bit faster than anyone else could manage. The only reason why he

couldn't solve the problems instantly was because he couldn't do anything to speed up the simulations.

The processors only provided so much processing power to him. The massive factory ship needed to reserve the bulk of her calculations to her other operations.

Still, Ves believed his performance exceeded expectations. He hoped that Alloc would notice and entrust him with more meaty tasks, but he was all out of luck in that regard. Alloc was fully preoccupied in his own responsibilities for the moment, and until he finished his current assignments, he wouldn't pay attention to anything else.

All of the other Apprentices in his design team was too self-absorbed in their own work, so the only people Ves could really talk to were the other Apprentices from Bentheim.

One day, Laida, Pierce and Ves gathered in a canteen adjacent to the labs. As they filled up their stomachs, they talked about their work.

"The permanent mech designers don't take us temps very seriously." Pierce complained. "It's not our fault we haven't spent years obsessing over a single mech model line!"

Laida agreed with the sentiment. "They don't expect very much from us. The mech designers who arrived a little earlier from the Rittersberg region are in the same boat. They're even keeping secrets from us!"

That was the most annoying fact about their work. The design teams expected them to understand the designs they worked with and become familiar with their characteristics. However, while they had access to the top-level schematics, they couldn't access the details to the proprietary systems.

For example, Ves couldn't find out the exact material composition of the armor and the internal support structure. Neither would he be able to study the

designs of key components such as the engine and power reactor in great detail.

The software he worked with treated these elements as black boxes. Ves was allowed to work with them as a whole as part of modelling their performance, but he wasn't allowed to tinker their internal makeup.

"It's understandable why they chose to compartmentalize their proprietary knowledge." Ves responded neutrally. "We're newcomers and we won't be sticking around for long. Compared to careerists like them who have volunteered to serve the Mech Corps for decades, conscripted mech designers like us are unreliable."

That depressed the mood in the table. None of them like to waste their time here. Working in a design team of the Mech Corps was both an obligation and an opportunity. They could not only access a lot of textbooks and teaching materials depending on their merits, they could also play around with the immense amount of proprietary technology developed in-house.

Many of the implementations used by the Mech Corps would not show up in the MTA's catalog of licenses because the Mech Corps didn't license any of their advancements. Sure, much of what they developed could be replicated with a similar enough license, but a standard solution from the market would not be tailored to the exact situation at hand.

"We should try to make the best of things." Ves said. He spoke the same words to Carlos a few months ago. "At the end of our service period, what did we get out of this unique time in our lives? I don't want to look back and conclude that we missed out on treasures that we can only obtain in our time here."

While Laida and Pierce both expressed their frustrations, they didn't possess the spine to assert themselves. Not that Ves was anything different at this point, but his ambitions would eventually drive him to greater things.

His words served as a reminder to them to not be content with their current status and miss out on the benefits that they could grasp. Certainly, every temporary mech designer needed to play the long game here and work themselves into the system without stepping on everyone else's toes.

"Did you hear? The Wolf Mother is almost done with harvesting the asteroids in this system. It's about to rendez-vous with the main fleet of the Vandals."

Chapter 429 Small Steps

Life aboard the Wolf Mother did not seem so hectic to Ves. He spent most of his time in the compartment assigned to the design department. This only took up a fraction of the space aboard the massive factory ship.

The factory ship was like a city compressed into a capital ship. It housed thousands of servicemen and devoted caverns of space to the industry of keeping the Vandals afloat.

A lot of responsibility rested on the shoulders of the Wolf Mother. While it wasn't unheard of for vagabond outfits to pursue a nomadic lifestyle aboard their ships, in the Komodo Star Sector, it was rarely seen on this scale.

From the basic information that Ves received on the factory ship, she used to start off as a smaller logistics ship. After some time, the voracious demands of the Flagrant Vandals necessitated further expansion.

Modules kept being added along her hull. The rising demand for services caused the Vandals to expand the capabilities of the logistics ship to a reckless extent. More asteroid breakers, more refineries, more alloy forge, more repair bays.

The expansion never ended, though it slowed down at this point due to physical constraints. The shipwrights among the Vandals did their best to accommodate the expansions. They strengthened the hull, overhauled the internal structure and sized up the essential components such as the power reactor, the thrusters and the FTL drive.

Ships of the Wolf Mother's current size were hardly seen in the Komodo Star Sector. Further expansion necessitated an essential upsizing to her FTL engine, something which could not be done by in a third-rate state like the Bright Republic. Only the Hexadric Hegemony and the Friday Coalition could afford to field capital ships of that scale.

In truth, it was cheaper to maintain a single base on an asteroid or an abandoned moon. Running a ship came with its own costs, and a vessel that ballooned to such a size must be using up an enormous amount of power and fuel each day.

Yet that was also the genius of it. The capability to move their main logistical base around gave the Vandals unparalleled flexibility in their deployments. From the stories he heard, the Vandals became famous even before the outbreak of the current war for their deep raids. They struck Vesian star systems situated well within the Kingdom's interior and fleeced their complacent industries to the bone.

While this sounded impressive and commendable, not everyone in the Mech Corps thought so. People would hardly be able to distinguish them from pirates, and their conduct of sneaking around to attack the weakest parts of the Vesians was seen as dishonorable.

While the warrior culture of the Mech Corps allowed for clever tricks and strategies to defeat an enemy force with ease, the Flagrant Vandals took it too far. The shamelessness in which the Vandals avoided standing battles against

the Mech Legion led to their estrangement from the conventional military order of the Republic.

A mech pilot of the Vandals regarded themselves as Vandals and not as a serviceman of the Mech Corps. This was a problem, because the mech pilots who served in any other regiment held loyalty to both without any conflict.

Occasionally, Ves heard some talk of that nature whenever he ate in the canteen. Mech designers only made up part of its clientele. A lot of crewmen working in the nearby compartments ate their meals in this canteen.

"We're Vandals, not soldiers."

"Leave the heavy fighting for the big boys."

"I heard they're downgrading our paychecks again. As if they couldn't get any lower!"

"Damn, what are the field marshals up to? They're letting the Vesians intrude upon our territory for the umpteenth time. When will they ever have the guts to hit them back?!"

"Hah, we're the only ones who give a damn about that. We might as well be an alien species to the big chiefs."

Talk like this was a bad indication of how far the Vandals became estranged to the Republic. The Tarry region was already isolated enough, and this undercurrent of resentment posed a lot of risks to the Mech Corps.

Maybe it was the Larkinson within him, but no one else shared his concerns. Outsiders like Pierce and Laida didn't know anything better, but for Ves who grew up with the Larkinsons, some of the talk sounded outright mutinous.

"You know, won't things be better if we just pack up and go?"

"Whadda ya mean?"

"Think about it. What has the Republic ever done for us? We built up the Vandals all by ourselves without a single credit from the state. We worked hard to pay for what we got, so how are we any different from a mercenary corps? If you think about it, we're actually worse than mercs. At least they get paid, whereas we get nothing at all!"

"That's not entirely true. We still have access to their facilities and their database. We couldn't have gotten this far without all of the advanced technology at our fingertips."

"I still think we should make a getaway. It would be easy as pie. We aren't anchored by any planets. Those with families who live on the surface of one can just take them along for the ride when we leave Republic space."

"It does sound easy. Getting cut off from the data banks will hurt us hard, but the Wolf Mother has a lot of life in her yet."

This was merely a sample of the talk that sometimes popped up from the lowest ranks of spacers. It did not mean their officers or the mech pilots fostered the same ideas. Without a better exposure of life among the Vandals, Ves couldn't make any definite conclusions.

It still looked bad though. The canteen was surely monitored. Why hadn't any officers come and reprimanded the spacers?

"Maybe they don't care."

The crewmen aboard the Wolf Mother could be extremely dedicated to the Vandals and did their utmost to keep the Wolf Mother running. Yet they could also be extremely lethargic when it came to the rest of the Mech Corps.

The only person who could make or break this regiment was the elusive Colonel Lowenfield. Despite her name popping up everywhere in every important event in the last few years, Ves still had no clue what made her so respected among the Vandals.

"Did you hear? The colonel has recalled all of the detachments. We're almost done with our repairs and resupply."

"Oh, finally! I'm bored to tears staying in this noname star system. I want to see some action!"

"Me too! There's always a good score to be found when we shear the wool off the Vesian sheep. I'm broke and need more money!"

Ves shook his head and finished his meal before returning to the labs. He returned to his terminal only to see that the simulations in the queue needed another hour to complete.

He still had some free time on his hands.

He was pretty much the only person who enjoyed this privilege. A less capable mech designer would have spent a couple of hours trying to get the settings right or spend many late nights on interpreting the data.

The workload put into his lap could not keep up with his capabilities. If not for Alloc's current preoccupation with getting the software right for the Hellcat, then he might have been more attentive to how fast Ves completed his work.

Ves quietly sighed. He looked around and saw that one of the mech designers had left.

While everyone except Ves constantly faced a mountain of work, it was important for the mech designer to keep in touch with how the mechs performed for real. Occasionally, Alloc assigned a mech designer to liaise with the mech technicians and the mech pilots that worked with the Hellcats. They mostly gathered feedback and measured the state of the existing Hellcat mechs.

He wanted to come into contact with the mechs as well, if only to get out of this tiny corner of the Wolf Mother. Ves had never seen a true Hellcat mech

and that hampered his work somewhat. Other mech designers might be fine with a bunch of technical documents, but much of what made his work great was his feel for the intangible qualities of a mech.

Within a day or two, the Wolf Mother finally moved. She first exited the asteroid belt and headed towards the border of the lifeless star system with a couple of escorting combat carriers in tow. Once they reached the edge of the system, they transitioned into FTL.

The entire factory ship bucked and groaned while Ves momentarily lurched when that happened.

"Oof!"

The other mech designers laughed. "The first time is always the worst!"

Ves rubbed his head for a bit. The moment the factory ship entered FTL, Ves felt as if a nail had been driven through his skull. "How come it's so painful? It is safe to be aboard the ship when it enters FTL?"

"This is normal to us." Alloc answered gently. "You have to keep in mind that the Wolf Mother expanded in an ad-hoc fashion. There was hardly any planning involved. Slapping modules onto her hull without restraint has made the Wolf Mother rather unstable. The Wolf Mother's FTL drive is barely rated to carry along a ship of her size and mass. Some kinks are to be expected."

In other words, the FTL drive could barely cope. The worst case scenario was that it might eventually break from the all of the strain.

Bad things happened when FTL drives blew apart, especially when the ship was still in FTL.

Only a handful times did ships drop out of FTL after their drives became inactive. Most of the time, something freaky would happen and the rest of the galaxy never saw the ship again.

"How well is the FTL drive protected?"

"Oh, the Vandals aren't unaware of dangers posed by a faulty FTL drive. They've put their best engineers to keeping it in shape. There's also a lot of security surrounding this component. Nobody can wander in and do what they want with this critical part of the ship."

That might protect the FTL drive from boarding troops and internal sabotage, but it did not help the Wolf Mother's inherent vulnerability to outside attacks. She was not a ship meant for battle.

Therefore, the recent orders concerned Ves a bit. Heading deep into Vesian space was a perilous matter even in times of peace. There was always the risk of getting tracked down by a dogged Vesian task force on its way to the frontline.

Ves did not know whether to see it as a good thing or bad thing, but it was undeniable that he would be able to grasp a lot more opportunities in that case. His time with the Vandals might stretch for years, so he would have plenty of time to ingratiate himself with the crew.

"Ves, are you available?" One of the young men looked around for help and saw that Ves was basically daydreaming behind his terminal. "I need some help with this stupid equation. I followed all of the instructions according to the handbook but the simulations are getting out of whack."

"Show me what's the problem."

This was the first time someone asked him for help. The three permanent Apprentice Mech Designers often consulted among themselves and never asked Ves or the other designer from Rittersberg for any input.

Ves took a look at the model and spotted the problem at first glance. "It's no wonder your simulation delivers such a nonsensical result. There's nothing wrong with the equations or the model. It's this bad set of data that is at the

root of the problem. This is a typical case of garbage in, garbage out. Look at the input data. Do these measurements seem correct to you?"

The mech designer worked with actual measurements taken from a previous visit to the mechs. Whoever took these measurements made a mistake somewhere down the line.

Once Ves pointed out the problem, the mech designer could handle the rest. The young man nodded at Ves with a modicum of respect this time.

As Ves wandered back to his terminal to go back to his daydreams, he smiled in satisfaction.

"It starts with small steps."

Chapter 430 Mech Lineup

Every time the Wolf Mother transitioned in and out of FTL, the entire deck lurched and a nauseous feeling overcame Ves. He never really got used to it, but the other mech designers in the design department shrugged it off like they got sprayed by mist.

The Wolf Mother already transitioned over seven times. From this, Ves could infer that either the range of the Wolf Mother's FTL drive was really short, or they traversed a huge distance.

The Vandals didn't release a lot of information to someone low in the totem pole like Ves. He learned more from eavesdropping the spacers in the canteen than in the pathetic amount of documents made available to him. The most he knew about the layout of the factory ship came from contingency plans in case of disaster, and they only outlined the most direct path to the escape pods.

What he did learn from from listening in on the crew was that the factory ship's exhibited an onion ring-like shape. The original logistics ship that formed the core had already been changed beyond recognition, but most of the central

functioning of the Wolf Mother was buried here. It contained the databases, the processors, the combat information center and many more goodies.

Tacked on to the top, bottom, port, starboard, bow and stern of the original structure were many other modules. For example, the compartments that made up of engineering took over the entire rear end of the Wolf Mother. Those who entered this section in person described it as a chimera of ship components that kept the factory ship up and running.

One day, Professor Velten called up every mech designer in the department for a general meeting. Ves filed into the conference room after the others and sat on a random chair in the rear. The room could have housed over a hundred mech designers.

With only sixteen people present, the place had obviously seen better times.

"It is the time for our monthly update. For the six of you who transferred in recently, this meeting serves to bring us all on the same page." The old woman nodded to Ves and the other temps. "Let us begin with everyone's works. Journeymen, please present your progress."

The Journeyman Mech Designers who led their individual design teams walked up to the front and projected their results. Ves watched keenly as he got to see the details of the other two actively developed designs.

The 6th Flagrant Vandals started up as a spaceborn mech regiment in order to raid Vesian shipping lines. Only later on did they acquire the capability to field mechs on land.

Still, spaceborn combat remained the norm among the Vandals as most of the time they couldn't afford to stick around a star system long enough to go through the trouble of descending and ascending from orbit.

The most widely-used design in active development was therefore the Inheritor line of spaceborn light skirmishers. Their small stature enabled the

Vandals to fabricate them fast and cheap from the Wolf Mother's own production lines. Their simple nature also lowered the burden of training rookie pilots into becoming proficient in piloting these mechs.

"We failed to find any means to reduce the weight of the cockpit by zero-point-three percent while retaining the same level of protection. I have personally tried to vary different shapes and sizes, but the current iteration is already highly optimised. Tweaking the ratios of the alloys used to construct the cockpit has led to a minor amount of weight savings, but will also weaken the cockpit by a disproportionate amount."

As the Journeyman in charge of its development reported on his team's progress, Ves understood more of the nuances of its design. The Inheritor aimed to be fast. It had to be nimble enough to turn on the fly and powerful enough to accelerate to a great speed. The Inheritor relied on these strengths to close the distance quickly and tear apart vulnerable ranged mechs with its twin knives.

This was extremely hard to accomplish on a light mech which needed to devote a substantial amount of internal volume to its flight system.

"How much progress have you accomplished in decreasing the size of the Inheritor's flight system?" Velten asked from the side.

"We accomplished a little bit more in that area. The Mech Corps recently released new formulas for alloys and composite materials. I've selected the formulas that are most compatible to the Inheritor's flight system and tried to simulate what would happen if we substitute the old formulas with the new ones. Most outcomes didn't come out in our favor, but I've tasked my team to tweak the design in order to provide a better fit for the new formulas. These results look more promising, as you can see on this projection."

Ves paid a lot of attention on this particular topic. He lacked first-hand experience in working with actual flight systems. Working with outdated flight systems for virtual mechs didn't count in his eyes.

He noticed that every other mech designer paid a lot of attention as well. In a way, this was a valuable opportunity for the Apprentices to listen in to the insights of a Journeyman Mech Designer.

As Ves learned more about the development process of the Inheritor, he found out that the current state of the Inheritor was in a very good place. Its relative lack of complexity made it easier to tweak some of its elements without throwing everything else into chaos.

Of course, the mech designers faced many limitations as well. They weren't allowed to exceed the Inheritor's mass and volume, no matter how much of an improvement they achieved. This truly frustrated the designers who worked on the Inheritor because they accumulated a list of over a hundred easy changes they could implement if only the Vandals relaxed the restrictions.

"To sum up my report, I truly believe it will benefit the Vandals if we can convince Colonel Lowenfield to agree to a two-point-five percent increase in mass and three-point-seven percent increase in volume for the Inheritor design. There are so many new innovations just waiting to be implemented."

Professor Velten nodded gently. "I will take your words under advisement in my next meeting with the colonel."

In other words, nothing would change and the status quo persisted. The Journeyman must have realized it as well and looked deflated as he returned to his seat.

Another Journeyman went up to report on the work done on the Akkara line of heavy landbound mechs.

The 6th Flagrant Vandals predominantly used Vesian mechs, which was very unusual for a mech regiment of the Republic. They didn't buy these mechs from the market and neither did they fabricate them in-house.

Instead, they stole the brand-new machines by raiding mech manufacturers or scavenged damaged ones from battles. The Vandals had become so adept at sourcing mechs in this manner that they stopped ordering mechs from the Mech Corps entirely.

There was only one downside. They couldn't get their hands on any heavy mechs.

Only a proper military force fielded heavy mechs. To the Vandals, they could only obtain Vesian heavy mechs by raiding military bases or attack proper Vesian mech regiments.

The Vandals would be crazy to do so. The losses they'd sustain in any single assault wouldn't make up for the acquisition of a couple of heavy mechs.

So, as burdensome as it sounded, the Vandals had to continue to develop their own heavy mech design.

"We've finally solved the air intake issue for cycling the heat build-up. It turns out that the filters we placed to protect the mechanisms aren't coping too well when it comes to moisture in the air."

Compared to the more polished state of the Inheritor design, the Akkara appeared to be a lot less refined. The development problems outlined by the Journeyman sounded a lot more basic and impactful. They weren't dealing with a highly optimised design. The Akkara was still a work in progress.

"We are still unable to determine whether it is better to stick with the older targeting system that is relatively reliable or the newer one that is made available by the Mech Corps."

"What are the issues with the new system?" Velten asked.

"The newer targeting system isn't interfacing properly with our design. We don't know why, but I think it's because the Akkara possesses a lot more gun tubes than it can cope."

The Akkara heavy mech was a landbound mech that weighed so much that the Vandals never moved them from beyond their landing sites. As the only heavy mech of the Vandals, the Akkara distinctly served a defensive role.

On land, the Akkara's moved on four legs to provide a stable firing platform. Dozens of rapid-fire laser and ballistic cannons dotted its spider-shaped torso, allowing it to bombard anything that approach from the ground and air.

A special feature of the Akkara was that it served as a weapon platform in space as well. Its heavy design incorporated some of the traits more often seen on spaceborn mechs.

This allowed the Akkara mechs to stay relevant in space battles as well. Every Vandal combat carrier incorporated special bunkers that enabled the Akkara to anchor its four legs into the bunker structure and fire out its weapons from the well-placed slits.

"We've experimented with changing the layout of the cannon barrels, and have come up with three alternatives that should better balance out the stresses placed upon the mech whenever it fires off its ballistic cannons. One solution is better for land and the other is better for space."

Balancing out the Akkara's performance on land and in space demanded a lot from its design. Ves didn't envy their design team, because optimizing the mech for one environment often compromised its performance in the other environment.

Once the Journeyman listed out a bevy of solutions, Alloc finally made his way up to the front.

"My team has not made any significant improvements to the Hellcat design."

With those words, Alloc laid out the reasons why, though Ves already predicted them. The spaceborn hybrid knight incorporated too many systems. Thereby, a change in one system affected the performance of the others, often in a detrimental way. This was a classic reason why hybrid knights hadn't become more prolific.

"Lately, my work on drawing out more strength from the Hellcat design through tweaking its software has met a wall. I've already worked extensively in this area and most of my progress in the last few months represent the easy solutions. Any further improvement requires an exorbitant amount of time to dig up."

Velten honed in on this remark. "So you believe it is no longer worth your time to work on the programming of the Hellcat?"

"It is not cost-effective. All the bugs that I could think of have been squashed or circumvented. Any further improvements demands lots of research. My time is better spent on other things."

"Very well then. If you believe there is no further merit to put your attention in this area, then you may change your focus. What do you have in mind?"

"We are still working on strengthening and miniaturizing its oversized flight system. Our core issue with the flight system is that it generates a large amount of heat, something which our hybrid knight has never really learned to cope with. I'd like to take a stab at improving its heat management systems."

The professor nodded in approval. "Research our options and present them to me in private. I'll derive a change in the Hellcat's design according to the data that you present to me. Continue on with the report."

The rest of the report sounded familiar to Ves, as he worked on them himself or helped his colleagues solve some of their conundrums about them. The

Hellcat design still hid a lot of secrets, but Ves already understood the broad strokes.

After Alloc finished his presentation and returned to his seat, Professor Velten went up again and made an announcement.

"Pardon the secrecy that is hanging over the department. We needed to make sure that Colen Lowenfield's plans for the Wolf Mother hasn't leaked."

Everyone looked at each other in a worried manner. "Ma'am? Where are we right now?"

"That's a good question." Velten smiled. "The Wolf Mother has just arrived at Tomalin System. There is nothing special about this star system. It is an out of the way location in the Tarry region. The reason why it is our focus is because we are about to meet with the Vesian rebels."

Everyone was taken aback at the news. They were actually collaborating with rebels this time!