Mech 4101

Chapter 4101 Cross Production Complex

The C-Man went into service after conducting a sufficient number of testing sessions.

The Larkinson Clan as well as Melmen Advanced Systems gathered a lot of data on the performance of the new expert brawler mech and the incredibly powerful TESMAS that adorned its frame.

The expert mech and its various parts and systems did not show any signs of concerns during these long and exhausting tests.

The C-Man actually exceeded the expectations and predictions made by the mech designers during numerous instances!

There were multiple reasons why this was the case. Venerable Vincent's bond with the C-Man continued to grow at a rapid pace, allowing him to resonate with his expert mech to a greater degree.

The stronger the true resonance produced between an expert mech and an expert pilot, the more the pair were able to defy their limitations and impose their own will and desire into reality!

The performance boost even extended to the TESMAS, which produced both joy and consternation to the researchers working for Melmen Advanced Systems.

On the one hand, TESMAS was designed to become the flagship product of the development company. The better it performed, the more it was able to convince other customers that it was worthwhile to invest in this new but brilliant phasewater-infused smart armor system!

One the other hand, the distortions that skewed the performance of the C-Man's TESMAS made the gathered data less representative. It was hard for Melmen to figure out what part about the C-Man's application of TESMAS was transferable to the base version of the product and what was specific to the expert mech and its expert pilot.

These were manageable downsides, though. Melmen had many other ways of testing the performance of its TESMAS. It was also undeniable that the C-Man provided a very useful platform to verify the overall functions of the smart armor system.

Already, Professor Neihy Almar and her expansive team of scientists and engineers were already in the process of tweaking and updating the design of their main product in light of what they learned.

Their company had also grown a lot busier as dozens of potential clients inquired about TESMAS.

None of that was important to the Larkinsons. Even though their clan had taken minority ownership in Melmen Advanced Systems, they were all preoccupied with their own priorities.

To Gloriana, the most important consequence of completing the C-Man Project was how much her work progressed her design philosophy.

She spent many hours with the C-Man. Aside from monitoring and evaluating its performance, she also kept a close eye on how its ongoing transformation process improved the physical parameters of the expert mech.

As Gloriana gained a better understanding of the effect of the Divine Markers and the influence of the C-Man's superfans, she ultimately obtained mixed results.

The good news was that the strengthening effect definitely existed. While it was difficult to detect, the sensors that recorded the C-Man's physical properties and performance metrics were able to detect minor improvements in a number of areas.

Even when accounting for Venerable Vincent's notable growth and his constantly improving cooperation with his battle partner, there was no denying that the expert brawler mech was performing better relative to its physical design and construction!

The bad news was that the rate of improvement still remained glacial. The spiritual feedback from Venerable Vincent along with the feedback provided by tens of thousands of fans were not significant enough to substantially increase the rate of improvement.

"It will still take years for the C-Man to display a qualitative difference in performance." Gloriana frowned.

This put her in an awkward situation. She craved validation but the glacial evolution process prevented her from determining whether her new god body method truly allowed her to elevate the physical form of her expert mechs.

Still, the C-Man already offered sufficient proof that the concept was viable. As long as Gloriana continued to work on it and implement god bodies in other expert mech designs, she could gather more data and make comparison studies.

Fortunately for her, she still had several more expert mech design projects on her plate!

The C-Man was the first expert mech that she managed to complete in this design round. There was still the Blade Chaser Mark II as well as a handful of expert mech projects started by the Larkinson Clan's allies.

Of all of the ongoing projects, none captured her imagination more than the Mars Project.

"What would it be like if I can apply my revolutionary god body method with an expert mech that is much closer to matching the power of an ace mech than the Bolvos Rage?"

She practically salivated at the thought!

In fact, Gloriana already held a few talks about this topic with Professor Benedict Cortez.

The lead developer of the Cross Clan's flagship project expressed a lot of interest in Gloriana's unique innovation, but he was not willing to take too many risks.

It was highly irresponsible to gamble on experimental solutions on a mech design project that literally determined the future of the Cross Clan!

As such, Professor Benedict was only willing to allow Gloriana to apply her latest method to the Mars Project if she was able to prove the viability and power of her new solution.

"It is definitely viable!"

As Gloriana wrapped up her work on the C-Man Project, she began to spend more time on her other mech design projects.

She was not in a hurry to complete the Blade Chaser Mark II which was a bit more standard compared to the C-Man Project.

In contrast, the Mars Project was filled with elements that made her excited! The Cross Clan invested a lot of MTA merits and phasewater to acquire the rights and materials to utilize the best and most impressive materials and components for the ambitious expert mech design!

Since the Mars Project was meant to be a powerful and sensitive expert mech, Gloriana was not allowed to work on it remotely.

Each time she wanted to work on the Mars Project or hold a substantive discussion with Professor Benedict, she needed to visit the Cross Clan's branch on Davute.

This was not a serious burden as the Cross Clan had also decided to build a compound at another available plot of land inside Industrial District 2.

Gloriana only needed to take a brief shuttle ride to arrive at the Cross Production Complex.

Unlike the Larkinson Clan that partially turned its own production complex into a cat-infested playground, the Cross Clan adopted a much more professional approach and did not do anything strange with its branch site.

The Cross Production Complex resembled the site of a high-security military manufacturing complex. Mechs and fixed defenses were ubiquitous as the Crossers maintained constant vigilance against any form of intruders.

Just like Ves, the Crossers had suffered betrayal in the past and could never bring themselves to trust other institutions as much as before.

The CPC was not only meant to concentrate the Crossers in a single, defensible location, but also provided the people assigned to the branch with a quick channel to evacuate off the planet.

"Boys." Gloriana muttered as she observed the alert Crosser guards and the looming Crosser mechs.

At least the Larkinsons put serious effort into making their own production complex more pleasant.

Though she initially disliked the lack of professionalism of the Cat Nest, she soon came to adore the happy and cheerful atmosphere of her home and workplace.

The Crossers appeared to be fine with living in a strict and disciplined environment. Having visited the CPC plenty of times in the past had given Gloriana a good understanding of how the Crossers embraced militarism to a greater degree than the Larkinsons.

While the Crossers knew how to have fun and relax when they were off-duty, they aimed to be consummate professionals when they were on the job.

Gloriana approached a facility called the Primary Cross Lab.

This was the Cross Clan's equivalent of the Genesis Lab and it was where the Crossers conducted all of their main mech design activities.

The Crossers had already hired a batch of mech designers a few months ago and already intended to hire additional batches in the future.

Hundreds of mech designers and specialists worked at the Primary Cross Lab every day, though most of them only played an assisting role to the Cross Clan's design projects.

Gloriana passed through the mandatory security checks without any incident and arrived in a room where Professor Benedict performed most of his design work.

Similar to the Larkinson Clan, the Cross Clan invested a lot of funding and resources to expand its lab and workshop facilities.

The Crossers actually invested more in these areas as Benedict possessed much higher requirements than a group of Journeymen.

As a Senior who had long aspired to become a Master, the Mars Project was too important to Professor Benedict. He did not hesitate to spend and squander much of the fortune of the Cross Clan to further his personal interests and ambitions!

If he succeeded, then the Cross Clan would not only gain a powerful Master Mech Designer, but might also welcome the Golden Skull Alliance's first ace mech pilot!

If Professor Benedict was unable to deliver on his promises, then much of the investment would still be worth it. After all, the Mars Project was still strong whether Patriarch Reginald broke through or not. Meanwhile, the Senior and the growing industrial wing of the Cross Clan were able to design mechs and develop other products much better and faster with all of the new processing banks and other helpful equipment!

When Gloriana entered Professor Benedict's personal workplace, the Senior was already in the process of studying and tweaking the design of the Mars Project's many integrated weapon modules.

"Madame Gloriana." The Senior spoke up. "I have heard good news about your newly completed C-Man. I suppose you are here to talk about your god body method?"

The young mother nodded as she approached the central design table. "That is correct. I have brought the data and documents you wanted. They contain all of the proof and analysis you need to make a judgment."

"Please transmit the files so I can peruse them immediately."

Gloriana did so. As soon as Professor Benedict received her materials, the older mech designer rapidly read through the files with the help of his implant.

"Hmmm. The data is rather sparse." Benedict remarked. "I did not notice any drastic performance boosts when I observed the C-Man in action during its public debut. Still, I am pleased with the data that you have provided. They tentatively support your hypothesis and proof that a mechanism to upgrade a mech's physical properties is not a ludicrous idea. However…"

"I'm aware of the shortcomings and limitations of my data, but the C-Man is still a recent existence. I can provide additional data to you in two or three weeks. The changes over time should be more obvious at that point."

"The Mars Project is still months away from completion. I can afford to wait until you have provided more proof. I can already see from the trends that it would be beneficial to implement your god body method on my expert mech design, but I cannot make such a drastic choice based on limited empirical data. If there is one lesson that I have learned over the course of my long design career, it is that it is never wise to cut corners. Just because you are excited does not mean you are allowed to break the rules."

"I understand."

"Now that you are here, come and inspect the Mars Project's transphasic armor system. What is your opinion?"

Gloriana was already familiar with this extravagant feature. TESMAS was not the only recent product that took advantage of the properties of phasewater to achieve new levels of performance.

There were plenty of development companies that were busy with inventing many new transphasic alloys that were much tougher than ordinary materials and also possessed a host of phasic properties!

The transphasic armor system selected for the Mars Project was one of the more extravagant solutions available for use. It demanded a whopping 11 kilograms of phasewater in order to produce enough alloy to protect both the exterior and the interior of Patriarch Reginald's future expert mech!

Chapter 4102 Business Investments

"We are not the Larkinson Clan."

When people spoke of the Golden Skull Alliance, they mostly referred to the Larkinson Clan.

How could they not? The Larkinson Clan was young yet had risen rapidly in terms of wealth, size, prestige, innovation, industry and battle honors.

Led by a brilliant Journeyman Mech Designer with a daring mindset and a constantly expanding bag of tricks in his arsenal, the Larkinsons had managed to become a force to be reckoned with in less than a decade.

This was an admirable accomplishment and one that should not be diminished. Patriarch Ves Larkinson started from almost nothing and built up an organization of hundreds and thousands of loyal and highly competent clansmen. There were a near endless amount of humans in both the Milky Way and the Red Ocean, but scarcely any of them could replicate the success of a former citizen of a third-rate state.

Of course, having spent years fighting and traveling alongside the Larkinsons had given Patriarch Reginald Cross a more thorough understanding of them than a bunch of outsiders.

What he knew about Ves and his expanding collection of quirky personalities only made the expert pilot respect the mech designer even more.

"That does not mean that we should continue to allow them to take the lead." Patriarch Reginald said as he folded his arms behind his back.

The leader of the Cross Clan stood before a window that provided him with an expansive view of the Cross Production Complex.

Despite their differences, the Crossers shared some of the same traumas and paranoia of the Larkinsons, hence their main compound on Davute VII was built like a fortress as well.

Even when Davute looked peaceful and idyllic to everyone's eyes, Patriarch Reginald did not let down his guard, and he hoped his fellow Crossers would also maintain their vigilance.

"War is the natural state of the cosmos."

Reginald had grown up in a state where conflict was frequent. Fights broke out due to all sorts of reasons. The strong plundered their way to the top while the weak succumbed to the pressure.

Was there any injustice in this? The Cross Patriarch did not think so. This was the natural course of life. In an environment where resources were scarce, only a part of the population could enjoy the spoils.

It would be a greater injustice to allow the weak to devour the resources that could make a group stronger!

If such a pattern took place on a large scale, then the entire race would ultimately grow weaker and more vulnerable. The people who were a part of this race might feel good about it, but that would not avail them at all when a stronger race who believed in the primacy of might came in and drove them to extinction!

"Survival. Survival is the first priority that anyone should have. Those who lose sight of the struggle they are in are… fools."

In his brief stay in the Red Ocean, Patriarch Reginald encountered many of such fools. Sure, many pioneers and colonists were initially vigilant when they passed through the greater beyonder gate, but as soon as they built a semblance of civilization, they eased their concerns and began to think about other concerns.

Fools.

The Red Ocean was just as dangerous if not more than the old galaxy. Peace was a lie that only comforted the soft. To someone who was born and raised in conflict, peace was a false blanket that offered no protection as soon as times grew more turbulent.

His strong willpower pulsed with conviction. The peaceful planet known as Davute was not his home to him. In his eyes, it was merely a place where his clan could temporarily rest and recuperate.

As for all of the money being spent to build the Cross Production Complex? Money and resources were ultimately consumable. What truly mattered was converting these useless goods into real strength.

The CPC existed to funnel mechs, mech pilots, supplies, starships and other essential war material to the Cross fleet.

As long as the Cross Clan maintained a strong fleet, it would retain the capital it needed to survive the new frontier!

"Fleets are harder to pin down."

Patriarch Reginald had vowed to never repeat the mistakes that led to the initial downfall of the Cross Clan. From turning one's back to unreliable allies to gathering the bulk of his clan's population and assets on fixed planets, all of these decisions only magnified the ruination of the Crossers.

Fortunately, with destruction came rebirth.

From the ashes of the old clan, a new one had risen.

The modern Cross Clan looked similar to the old one, but the survivors implemented many changes.

"We will be ready this time."

Patriarch Reginald had to be ready for anything. Whether the native alien races of the Red Ocean launched a suicidal reprisal action or whether every pioneer in the Red Ocean turned against the Cross Clan one day, it was better to be ready than to sink into complacency again.

It was difficult for him to maintain this stance and keep his clan in a vigilant state. Many of his fellow Crossers, especially the large number of recruits that had recently joined his ranks, did not personally experience the times of betrayal and persecution that still haunted the original members of his clan.

Still, both new and old Crossers listened to him, and that was mainly because of one reason.

He was the strongest warrior of the clan.

The strongest surviving one, at least. His expression soured when he thought of his father. He clutched the large and blocky metal cross that hung on his neck like a prisoner's chain.

The weight of the relic did not bother him at all. It was comforting to him. Aside from keeping a remnant of his father close to him at all times, the literal burden it imposed on his body constantly reminded him of the figurative burden that he had taken on when he stepped up to lead his clan.

It was that sense of duty that prompted Patriarch Reginald to stop his introspection and turn to more relevant business.

"Professor." The expert pilot spoke as he reined in his surging will and turned to the older man who was sitting at the conference table. "Tell me about the developments of our clan."

"We have initiated a great expansion that will see us grow several times stronger in the coming years." Professor Benedict Cortez efficiently explained. "We have made huge investments in both our mech and mech component industries. The Cross Production Complex will be our first but certainly not our last planetary branch that we shall set up in the new frontier. While it costs the equivalent of tens of thousands or hundreds of thousands of MTA credits to build these large-scale production sites, our investment will eventually pay off, allowing us to continue the expansion of our military capabilities."

"That is, until a great enemy comes and bombs our facilities into ruin." Reginald remarked.

The Senior Mech Designer nodded. "That is a possibility. If you live long enough, then suffering losses is an inevitability. That should not stop us from building our own industries. Every organization needs to pay their bills. We cannot rely on high-risk expeditions such as the Purgatory Campaign to cover our growing expenses in the long term. We must establish sustainable businesses that can continually supply us with funding. As long as we have money, we have power. If we do not have any revenue source at all, then our mechs will rot, our starships will break down and our men will go hungry."

Professor Benedict was exaggerating a bit. Even without any sustainable businesses, the Cross Clan could still earn enough money to cover its basic needs. The Crossers merely had to take advantage of their military might and either go into the mercenary business or plunder another party's riches.

However, even the Cross Patriarch acknowledged that this was not a way to sustain a clan. The Crossers needed to engage in at least some productive activity to survive in the long term.

"What are the prospects of our mech business and our other businesses?"

"Our Cross Mech Corporation will not become a major player in the regional mech market for the time being." Professor Benedict frankly admitted. "As a Senior, my work is not remarkable enough to compete in the big leagues. There are many Masters and other talented mech designers who are able to publish more desirable mech designs than me. I do not think I need to elaborate about the Larkinsons."

Both the patriarch and the head developer of the Cross Clan acknowledged the strength and usefulness of the Larkinson Clan's mechs. It was only natural for the market to embrace these products as well.

This left the Crossers at an awkward position, though. Professor Benedict may be a capable and experienced Senior Mech Designer, but his design philosophy was not able to provide as much added value to his mech designs as the Larkinson Patriarch!

As a result, the business prospects of the Cross Mech Corporation were not optimistic. Without developing a killer product that could capture a significant amount of market share in any product category, the company would basically remain as a marginal existence in Davute.

"That is because you are too weak." Patriarch Reginald pointed out. "If you became a Master Mech Designer…"

"Then everything will change." Professor Benedict said as his eyes blazed with desire and ambition.

Both of them possessed the same attitude towards life. As long as they advanced their respective professions, they would have the strength to survive and pursue their greater ambitions!

The Cross Patriarch let out a sigh. "Very well. I will allow you to invest our clan's resources into the Cross Mech Corporation in the hopes that it will be of greater use to you when you finally reach your goal. I hope it will not slow down our overall development for the time being."

"You need not be concerned about that. The CMC at least provides us with a greater platform to develop and produce mechs that service our own needs. Compared to relying on mechs sold by external parties, it is better for our men to rely on products designed with their needs and the needs of our clan in mind. We will be able to completely renew our clan's mech roster within two years."

"That is good news. What of our other major business?"

Professor Benedict smiled. "Our Cross Development Center may still be in its infancy, but it is growing rapidly. It is much easier for us to expand its scale and increase the quantity and quality of our products by spending a massive amount of capital. We have bought out two-dozen development companies and research institutions at this time and we will doubtlessly continue with this until we have reached a substantial scale in the regional economy."

"I see. Well, continue onwards." Reginald spoke in an indifferent tone.

He did not care too much about the CDC because it was rooted in fixed locations. If necessary, his clan needed to be ready to abandon all of those assets. That was why the Cross Patriarch did not develop much of an attachment to any of these industries.

"Will our development company be able to produce any strong mech parts that are able to provide our mechs with an advantage on the battlefield?"

"That… is difficult to say. There are many new possibilities in the Red Ocean, but R&D can be a hit or miss. We have yet to hire any top researchers and developers who are most proficient at inventing qualitatively superior solutions. The most we can do is partner with other established institutions."

"Work on it. The Larkinsons are able to rely on their growing specialties to make their mechs stronger. Our clan must not fall too far behind."

"We shall work on it." Professor Benedict promised. "Our development company will be able to provide much greater benefits if I manage to realize my design philosophy, but we can partially make up for it with money."

Patriarch Reginald wondered how much money the Cross Clan would have left after completing all of these business investments.

Chapter 4103 Abasis Armor

As a powerful expert pilot who was preoccupied with overcoming his current limits, Patriarch Reginald did not possess much interest in the administrative and bureaucratic matters of his clan.

He had never made that a secret and was content with letting his deputies and underlings take care of these matters in his stead. As long as they followed his directives and did not weaken his clan, the specific decisions were not that important.

Ever since Professor Benedict entered the clan, his strong personality and his formidable competence in business and administration had turned him into a powerful decision maker in the Cross Clan.

Perhaps too powerful according to some people.

The Cross Patriarch was not concerned, though. His mind might not be as brilliant but his fist was definitely bigger!

In a contest between brain and brawn, Patriarch Reginald always believed the latter was able to vanquish the former!

Both he and the Senior Mech Designer formed an unspoken understanding about their roles and their responsibilities in the clan. As older people who experienced many winds and waves, there was no need to say these considerations out loud.

No matter what, both of them were ultimately members of the same clan, and both of them needed an organization and an army to survive and fulfill their ambitions.

Therefore, Patriarch Reginald allowed the Senior to do what he wanted and make decisions on the Cross Clan's future development. Everything would ultimately benefit every Crosser.

As Professor Benedict was done with outlining the overall plans and activities of the Cross Clan ever since it had temporarily settled in Davute, the Senior finally addressed the topic that was of greater import.

"My main priority is the development of the Mars Project. I have already laid the groundwork for this crucial expert design project many months ago, but the windfall that we have obtained from the Purgatory Campaign has opened up many new and powerful options that we previously couldn't afford. I have spent weeks researching and contacting different parties to discover powerful new tech that we can use to strengthen your future machine even further."

"Did you manage to find anything good?"

"That, and more." Professor Benedict grinned. "It is surprising to see how many developers are willing to cooperate with us as long as we dangle enough money or phasewater in front of their noses. The latter is especially alluring to researchers and developers who possess the ambition to develop transphasic products."

Patriarch Reginald frowned when he heard this unfamiliar word. "What are transphasic products?"

"The short version is that they are items that are much more powerful than normal because they leverage the power of phasewater. I won't bore you with the details, but phasewater is an incredibly powerful exotic that opens up many new possibilities in many fields of technology. Possibilities that people such as myself could never turn into reality before. You cannot imagine the amount of researchers and developers that have gone crazy over the powerful properties of phasewater. Their demand for this strategic

resource is incredibly high, but the problem is that there is not enough supply for them to develop their new innovations."

"And that is something we can help with." Reginald spoke. "We are in the possession of many kilograms of phasewater while many other organizations are only able to measure their stock by grams."

The supply of phasewater was simply too pitiful. It didn't help that the MTA and CFA collected most of the phasewater harvested by different pioneers! The Big Two had enormous uses for phasewater. Since their fists were bigger than anyone else's, it was natural for them to obtain the greatest share of this precious resource!

Fortunately, the Big Two were at least thoughtful enough to leave a few crumbs for other parties.

The mech designer grinned. "It turns out that the heads of the various research institutions and development companies can become quite sincere once we show a willingness to provide them with phasewater. I have been introduced to some of the best and most powerful high-end product development projects because of this. After making a careful examination and selection of all of these new possibilities, I have made a basic selection of key systems that will hopefully satisfy your desires for a more powerful expert mech."

Professor Benedict waved his hand. Two projections appeared in view. They displayed two different draft designs of a powerful high-tier expert hybrid mech.

Patriarch Reginald was familiar with the one on the left. He had seen it multiple times when the head developer appraised him of the progress of the Mars Project.

Although the expert pilot did not understand much of the science and engineering of mechs, he was intuitively able to feel that the initial drafts of the Mars Project were already much more powerful than the Bolvos Rage could ever be. How much more powerful, Reginald couldn't say, but any progress was commendable.

However, the Cross Patriarch did not pay attention to the familiar design.

That was because the one on the right had completely captured his attention.

The newer draft design definitely shared a resemblance to the older one. The overall layout and lines looked similar, but the specific components and systems were completely different.

Everything about the newer version looked more sophisticated, more dense and more high tech.

Reginald even thought that a couple of the advanced mech parts looked like they could belong in a first-class mech!

As a powerful mech pilot, there was nothing he loved more than coming into contact with a powerful mech. While the draft design's depiction was short on details and lacked a lot of definition, Reginald's instincts and vision absolutely became attracted to the sight.

"This…"

"It is a complete reimagination of the Mars Project." Professor Benedict confirmed. "It is no longer a mere update or improvement upon an existing mech concept. The leap is so great that you can practically think of it as the Mark II version of the Mars Project. It is a second iteration of an expert mech that has yet to be designed and built."

In other words, this was what the Mars Project might have looked like after one or two decades!

Instead of developing and building a more modest version of the expert mech and waiting until the Cross Clan became wealthier and more powerful, the gains from the Purgatory Campaign effectively allowed Professor Benedict to skip all of this waiting!

Patriarch Reginald liked this a lot. Who wouldn't want to obtain a version 2 instead of a version 1 of a mech?

"Let me start with the most important and by far the most expensive aspect of the new and improved Mars Project. This is the Abasis Armor, a high-end transphasic armor system developed by Truvek Defenses."

The projection on the right grew larger while also highlighting its exterior in red. Reginald could see that while the armor hadn't grown much thicker compared to the old version, it was definitely a lot more sophisticated!

The most defining visual change of the armor system was that the surface of the armor plating was segmented into many small circles.

It made the new draft design look as if it was wearing a form of chainmail.

"Why does the armor look like that?"

"That is so that the Abasis Armor can better project its transphasic properties while reducing the quantity of phasewater needed to construct it. If the armor system was completely solid, then you would need to use up twice or thrice as much phasewater while only increasing the defensive properties by 20 or 30 percent. This is not a cost-effective tradeoff."

"I see. How much phasewater is needed to build this Abasis Armor for my expert mech?"

"More than 10 kilograms."

This was an astronomical sum for any single mech, but Patriarch Reginald did not even bat a single eyelid!

To him, the more resources invested in a mech, the better! As long as the investment produced a measurably stronger mech, Reginald did not care too much how much his clan would have to deplete its reserves.

"What made you go for this Abasis Armor, Reginald?"

"There are many reasons. First, it is several times tougher and more difficult to damage in its base state. Your Mars Project's survivability is already much higher, but it can reach even greater heights. You see, transphasic armor systems can be energized in order to boost the beneficial properties of the phasewater integrated into them. Most transphasic products can be powered by electrical energy, but the Abasis Armor is special. It is especially designed to work with expert mechs and can be empowered solely through true resonance! While the burden to empower a full application of Abasis Armor is great, I do not believe it will impose too much strain on a high-tier expert pilot such as yourself."

"What if I grow stronger?"

"Then that is even better. Abasis Armor happens to be highly scalable. The more true resonance affecting it, the greater its defensive output. What I mean by that is that in the event you ever manage to advance to ace pilot, your Mars Project will not immediately become irrelevant. You can at least be assured that the defensive parameters of your expert mech will not drag you down if you ever get challenged by an ace mech."

That certainly caused Patriarch Reginald to express a lot of surprise at the effectiveness of this new armor system. The upper limit of Abasis Armor was far higher than the previous armor system chosen for the Mars Project!

Professor Benedict was not done with extolling the virtues of this high-end product.

"Aside from this obvious benefit, Abasis Armor also offers other benefits that are present in every transphasic armor system. They can allow a mech to anchor in a fixed coordinate in space, they can resist spatial effects and they can speed up transluminal travel. However, one of the other main reasons why I chose this product over the alternatives is that Abasis Armor possesses an offensive edge. It can provide a powerful mech with a Transphasic Attack System. Do you recall the battle of Purgatory?"

"I do."

"Then you should still be able to remember how the Phaser fish-whales fought by generating all sorts of phasic attacks with their phasewater organs. The Abasis Armor can partially serve as this organ and allow your expert mech to produce a large variety of spatial attacks, thereby granting you an additional method to defeat your opponents, especially at close range."

Patriarch Reginald was truly astonished this time!

"Are you serious, professor?!"

"I am. Before you get too excited, let me warn you that Abasis Armor is based on an experimental program that is far from complete. Truvek Defenses has mainly focused development on the more fundamental defensive aspects of its product. We know pretty sure how it will fare in terms of defense. The offensive possibilities are still experimental for the most part. If we choose to go ahead and make use of Abasis Armor anyway, then Truvek Defenses has pledged to cooperate with us to help with researching and fleshing out the Transphasic Attack System."

Patriarch Reginald was not so concerned by the experimental nature of this armor system. The best and most advanced mech parts and systems were often still in development. If not, then they wouldn't have been ahead of the prevailing market standard!

"All of this sounds vague. Can you give me an impression of the transphasic attacks that I can launch with the help of Abasis Armor?"

"It is difficult to say. I think I should add that both the defensive and offensive properties of Abasis Armor will vary depending on the pilot that is resonating with it. The reason why it is described as transphasic is because it combines the power of phasewater with another power, which is true resonance in this specific case. Since true resonance is incredibly varied and individual to every high-ranking mech pilot, the only way to know for certain is to allow you to pilot the Mars Product when it is finally complete."

That was helpful. Not.

"So it is a complete mystery?" The Cross Patriarch frowned in irritation.

"Well, I suppose I can make a broad estimate. From what I have observed from your previous battles, the true resonance that you generate with the Bolvos Rage tends to be explosive and forceful in nature. I can imagine that the Transphasic Attack System will also produce attacks that align with these descriptions. The lethality of your expert mech at close range will doubtlessly be terrifying. The premise is that you are powerful enough to control the Abasis Armor."

Reginald raised an eyebrow. "Do you have so little faith in my strength, professor?"

"To be honest, Abasis Armor is actually a top-end armor system developed with ace mechs in mind. Truvek Defenses believe that a powerful high-tier expert pilot such as yourself can reluctantly harness it because of your formidable resonance strength. In fact, that is also one of the reasons why the company is willing to cooperate with us. We are all curious whether you have the power to draw out the true potential of this transphasic armor system."

In other words, Truvek Defenses wanted to turn Patriarch Reginald into a test subject!

Chapter 4104 Transphasic Everything

The fact that Abasis Armor was actually an armor system developed with ace mechs in mind explained so much.

It explained why it took more than 10 kilograms of phasewater to equip a single high-ranking mech with this transphasic armor system.

It explained why its various properties were so strong and useful.

It also explained why it came paired with a so-called Transphasic Attack System that allowed ace pilots to generate strange attacks and effects that were usually associated with the phase whale race!

The incredible cost and even more incredible capabilities of Abasis Armor were already out of the scope of ordinary expert mechs.

In fact, even high-tier expert mechs weren't supposed to have anything to do Abasis Armor either!

The foremost reason why the Mars Project came into contact with it anyway was because the Cross Clan was willing to squander an excessive amount of resources to develop the strongest possible expert mech!

Professor Benedict could talk about Abasis Armor for days. Although he was not specialized in transphasic products, he had already started to study them. It also wasn't necessary for him to understand the ins and outs of Abasis Armor in order to comprehend its uses and its estimated performance parameters.

However, he knew that Patriarch Reginald would quickly grow bored if his lecture became too technical, so the Senior Mech Designer finally moved on from talking about Abasis Armor.

"While Abasis Armor plays a large role in your future expert mech, it is not the only part that is new. Let me tell you about the changes to the internals."

Professor Benedict quickly skimmed over the new choices he had made for the power reactor, the mech engine and numerous other internal systems.

Each of them were considerably more powerful than his previous selection. They weren't necessarily more exciting, though. Aside from producing higher outputs, they did not come with too many extra bells and whistles.

"It may not seem much different from before, but the changes are all substantial and necessary." Benedict explained. "All of these essential systems are considerably more powerful in order to support the operation of many other upgraded systems. The latter is where you will truly feel the differences."

"So there is nothing special about the power reactor and the mech engine other than producing more power?"

"Not exactly. They are also much more robust and stable than normal. You can fully be assured of throwing your Mars Project into the thick of battle and not worry about your internals malfunctioning just because your expert mech suffered a heavy blow."

"I see. That is good."

"The flight system is a little more special, though." Reginald spoke as he manipulated the projection to show a more detailed view of the rear of the Mars Project. "This is because the Pulsvar V-1 is a transphasic flight system. In its base state, the Pulsvar V-1 already performs better than the previous flight system intended for your Mars Project. The product excels at producing a high amount of forward acceleration, but its ability to produce lateral acceleration is also good, allowing your expert mech to dodge and weave considerably more effectively than other expert medium mechs."

"What is the benefit of making it transphasic?" Patriarch Reginald curiously asked.

"Ah, that is what makes this product more special. You see, the Godwin Institution actually developed the Pulsvar V-1 by reverse engineering a relatively high-end alien flight system developed by the puelmer race. By copying the materials and the mechanisms of the captured alien device, the researchers and developers of the Godwin Institution have succeeded in developing a smaller flight system that is specifically adapted for expert mechs."

"I… see."

"Of course, the developers also added plenty of human ingenuity to the flight system in order to make it competitive. All of these efforts have resulted in a flight system that possesses a few more powerful features. Two of them are particularly relevant to you. First, the Pulsvar V-1 comes equipped with a small but powerful spatial shield."

Patriarch Reginald looked confused. "What does that mean?"

"That means that the flight system is covered by an energy shield that behaves like an invisible wall in space. Any attacks aimed at the flight system will be blocked just before they strike this weak point. While I cannot estimate how much damage this localized spatial shield can resist, you shouldn't have to worry about a powerful enemy crippling the mobility of your Mars Project if you ever expose its back."

That could be extremely helpful in many different situations. The localized spatial shield could play an especially crucial role in a duel against an expert mech that was comparable in strength!

Reginald looked a little more satisfied. "What else can it do? Can it make my mech move faster?"

"That is to be expected. As long as you direct additional energy to the flight system, it will directly amplify its acceleration, allowing you to move up to 200 percent faster in every direction."

"Just 200 percent?"

"Why do you sound so disappointed? Your expert mech will effectively be able to accelerate three times faster than normal. In fact, you should actually be able to move even faster if you resonate with it. Since the Pulsvar V-1 is developed for expert mechs, it incorporates generic resonating materials that can allow you to add your own strength to its performance."

That was fairly normal for flight systems developed for expert mechs.

"Why is there such a big difference in amplification between the Pulsvar V-1 and the Abasis Armor?" The expert pilot asked.

"Just because they are both transphasic doesn't mean they are on the same level. The Pulsvar V-1 is not as extravagant as the armor system that I have detailed earlier, and that is mostly because it takes considerably less phasewater to build it. I believe it will only take around 400 grams of phasewater to construct this flight system."

"400 grams? We have much more than that in our storage. Why did you not opt for a higher-end flight system?"

The Senior Mech Designer let out an exasperated breath.

"Designing a powerful expert mech is not about stuffing it with the most expensive and powerful resonating materials that you can find. There are hard limits. Adding more will either produce more interference or destabilize the entire machine to the point where it may fall apart. The same applies to phasewater. The more phasewater you concentrate in a single location, the harder it becomes to keep it under control. While it is much easier to handle phasewater when blended into different materials and components, the

danger of gathering so much of it in a single mech is still high. In the worst case scenario, your mech might become engulfed in a spontaneous spatial storm that will literally shred everything within the vicinity."

"Oh. I did not know that."

"It is not a problem that most people concern about simply because it is rare for people to stack entire kilograms of phasewater in a single mech." Professor Reginald said. "In any case, since we are working on a limited budget of phasewater, I opted to prioritize defense over mobility."

"Hmmm. That is fine as long as the offensive power of my Mars Project does not fall behind."

"Oh, you do not have to be concerned about that. I was just about to bring that up. Your Mars Project is equipped with many weapons, each of which will satisfy you in one way or another. Let me begin with the basic set of integrated weapon systems."

Professor Reginald changed the projection so that it highlighted numerous different energy weapons embedded into different parts of the Mars Project.

"As a hybrid mech, the Mars Project is always armed even if it deploys while carrying nothing. Instead of choosing different individual integrated weapon systems that do not necessarily have to do anything with each other, I have chosen to adopt a transphasic weapon suite called the ARCEUS System that provides a truly integrated and interconnected offensive package."

The expert pilot keenly studied the outlined integrated weapons. "Two medium weapons on the wrists. Two medium weapons on the lower legs. Three on the chest, of which one of them is large and the other two are small-sized. There are also two more tiny weapons on the sides of the head. That is quite a large collection."

"We can afford to include them into the mech because they are substantially miniaturized." The professor clarified. "They do not take up as much space or capacity as you think. Their firepower might not be the strongest, but they should be more than sufficient for you to defeat the majority of the enemies that you may come across."

What Patriarch Reginald liked about the ARCEUS System was how many weapons they added to the mech frame. There was a lot of redundancy with 10 different integrated weapon mounts. It didn't matter if a few of them got smashed over the course of a battle because he still had more at his disposal!

"This is also a transphasic system, right? What else can it do that makes it more powerful than regular systems?"

"It takes around 650 grams of phasewater to make it transphasic. This will empower any laser or positron beams that the integrated weapons can output with special properties that make them more effective, but only when you feed additional energy to them. While the use of phasewater cannot straightforwardly affect the ARCEUS System's damage output, the transphasic attacks deal increased damage against transphasic defense systems."

"So it is only useful against other transphasic mechs?"

"I did not say that, Reginald. The second major benefit of transphasic attacks is that any strike will partially phase through one or more layers of protection."

"You mean my shots can literally bypass armor?!"

"Partially. A lot of energy will still be lost when phasing through any barrier, but it will allow you to use your ARCEUS System to quickly take out a large amount of relatively tough targets. I should also add that it takes more than that to effectively damage resonance shields."

Professor Benedict provided more details on the ARCEUS System. While it was not as powerful as Reginald hoped, it was still an effective tool in wiping out hordes of weaker opponents while also capable of applying a lot of pressure onto stronger enemies.

"What about physical damage options?" The Cross Patriarch eventually asked. "The ARCEUS System sounds good and all, but there were times in the past where I fought against opponents that can absorb a lot of energy damage."

"Your Mars Project still has two weapon systems that can deal physical damage. You can employ a newer and more advanced shotgun that is different from a normal one due to the fact it is equipped with a dimensional magazine drum."

"How many shots can I fire with this new gun?!"

"65 times." The mech designer replied. "Perhaps that does not sound as impressive as you thought, but keep in mind that this dimensional magazine drum as well as the transphasic systems that I have mentioned before are all first-generation products. They are crude, less efficient and not as optimized as more mature products. As long as the companies responsible for developing them continue to iterate on the designs, they will eventually release updated versions that require less phasewater to accomplish more. Perhaps a decade from now we can replace the initial magazine drum with an updated version that can store 130 shotgun rounds."

That made sense. Patriarch Reginald felt a bit better about his Mars Project after he realized how easy it was to upgrade its various components. If he ever succeeded in breaking through to ace pilot, then Professor Benedict only needed to upgrade parts of the expert mech instead of developing an entirely new ace mech from scratch!

It was obvious that Professor Benedict had made sure to future proof the Mars Project. No matter what the future held, Reginald's expert mech would always be able to keep up with the changes!

Chapter 4105 Flagship Project

Professor Benedict Cortez did not hold anything back when he sought out the best possible parts for the Mars Project.

The large amount of transphasic systems completely elevated the expert mech design project to a point where its theoretical performance parameters exceeded that of any expert mech that Professor Benedict had ever come into contact with in his long career!

As a former mech designer of the Friday Coalition, he had worked on and otherwise been able to witness all sorts of expert mechs. This was especially the case in the period where he believed that working on high-ranking mechs was the key for him to achieve his breakthrough.

Yet the majestic machines he had witnessed back at home were nowhere capable of matching the unique mech that he was about to design.

As one of the first high-tier expert mechs that could truly be called transphasic, the Mars Project was completely rooted in the Red Ocean.

Many traces of the previous iteration of the design had disappeared. The limitations and constraints that prevented the Cross Clan from applying some of the best possible tech that the Red Ocean had to offer were gone now that it had reached a new level of wealth and prestige!

The Mars Project centered around way more than the ambitious Magma Vein System that he had initially conceived to give his expert mech an additional edge in combat.

Compared to extravagant and powerful transphasic systems such as the Abasis Armor and the Pulsvar V-1, the Magma Vein System did not seem impressive in the slightest!

However, that was only the case if it remained unchanged after Benedict upgraded his original mech configuration.

Now that the budget for the Mars Project had expanded by an enormous degree, the Senior completely overhauled his original Magma Vein System and redesigned it so that it took advantage of much more expensive exotics and materials!

The efficiency of the Magma Vein System had been magnified to a degree where it was difficult to find any waste. The use of smaller components that nonetheless delivered superior performance also allowed Benedict to add a lot more redundancy to his flagship energy transmission system.

This meant that even if the Mars Project suffered serious internal damage, it should still be able to perform closer to its peak state with the help of redundant energy channels!

There were many other benefits to the upgraded Magma Vein System that were too small to mention but considerably increased its performance.

"The ultimate goal is to make this powerful mech as efficient as possible." Professor Benedict whispered to himself.

The power of the Mars Project was insane. It utilized an extremely luxurious power reactor that was meant to provide torrents of power to many of the extravagant parts and systems of the mech.

This was especially relevant to the ARCEUS System, which encompassed ten different integrated energy weapon systems!

Although the sizes of these weapons were not that exaggerated, each of these miniaturized guns were able to inflict damage comparable to full-sized rifles due to their highly sophisticated designs and premium materials.

It was practically impossible for the Mars Project to fire all 10 integrated weapon systems at the same time for an extended period of time!

The expert mech simply couldn't feed all of the energy needed to keep all of them active at the same time!

However, the Magma Vein System should be able to maximize the output as best possible.

In order to increase its optimization processes even further, Professor Benedict had made sure to add multiple powerful AI processing modules to his novel energy transmission system so that it was more capable of making the best possible use of each joule of energy!

The newly-revised Mars Project with all of its powerful transphasic parts and systems was already a powerhouse among high-tier expert mechs.

However, the problem with such powerful mechs was that their raw might became increasingly more difficult to control as their parameters rose to even greater heights. The amount of effort and resources required to maintain or increase its efficiency became exponentially harder.

Professor Benedict's Magma Vein System should be capable of making the Mars Project significantly more efficient. If he was able to make this powerful expert mech 20 percent more efficient, then not only would the mech be able to output more weapons at

the same time without worrying about overloading any systems, but it would not have to worry about building up as much heat as well!

In fact, the Senior had already improved the heat management of the Mars Project as well. The original design called for the use of a small number of expensive dimensional heatsinks.

The advantage of this arrangement was that the Mars Project could constantly vent heat into bottomless dimensional pits.

The disadvantage was that the smaller quantity of heatsinks meant that the Mars Project would have to wait for them to do their work, thereby limiting the time interval that Patriarch Reginald was able to fight at full strength.

The raised budget and the abundant availability of phasewater allowed Professor Benedict to equip the Mars Project with triple the original number of dimensional heatsinks. Their models were also significantly more expensive as they utilized more phasewater to perform their roles.

Although it was impossible for the Cross Clan to repair the high-end heatsinks once they were broken, their existence allowed the Mars Project to have little to no concerns about overheating in practically every eligible environment!

In summary, the Mars Project was a powerhouse that was made for high-intensity ranged combat. It was the ultimate second-class expert hybrid mech that already possessed numerous first-class parts and systems to give it an extra edge over the competition.

Just the ace mech-grade Abasis Armor was enough to propel the Mars Project to the top of the hierarchy of expert mechs in the Davute region!

There shouldn't be any groups in the Krakatoa Middle Zone that were capable of outperforming the Mars Project when it came to raw specs!

Of course, despite the Cross Clan's immense commitment to this pivotal expert mech design project, neither Patriarch Reginald nor Professor Benedict were conceited enough to think their mech was invincible in Krakatoa.

"There are still actual ace mechs that are on a completely different level. If the standards of the Abasis Armor is anything to go by, then the design budgets for those top-end machines might actually exceed that of the Mars Project!

The Cross Clan's flagship project was ultimately limited by the rank of its intended pilot and the lack of access to exclusive high-end research projects.

During his search for better components and systems for the Mars Project, Professor Benedict held many discussions with many high-ranking officials and developers.

He had always gotten the sense that many research institutions and development companies that were attached to different powers had more surprises in store. They never revealed them because their best projects were solely reserved to their respective patrons.

"It's okay."

The Mars Project possessed more than enough power to keep Patriarch Reginald Cross busy in combat.

If the abundant amount of ranged solutions wasn't enough to keep the Cross Patriarch occupied, then he could always opt to defeat his opponents in melee combat.

The limbs of the Mars Project were not frail in the slightest. The legs were capable of unleashing forceful kicks if necessary while the arms could wield a variety of powerful one-handed and two-handed weapons.

The Whale-Cutting Saber that Ketis had once designed and forged for the Bolvos Rage was still great at cutting through massive opponents.

However, Patriarch Reginald possessed a preference for wielding axes, so the Senior opted to commission a custom transphasic one-handed battle axe from a weapon development company based in Davute.

The company estimated that it would take 90 grams of phasewater to impart the custom battle axe with transphasic properties.

This would grant the weapon with excellent armor-penetrating capabilities, which was extremely helpful if the Mars Project ever fought against another high-end expert mech, particularly ones that also took advantage of transphasic armor systems!

"Transphasic weapons and armor will become the new norm in high-end mech combat in the Red Ocean." Professor Benedict explained to the patriarch of the Cross Clan. "While they are not that common for the time being, once the supply of phasewater picks up and once all of the R&D organizations have developed cheaper and more efficient transphasic products, we should expect them to show up in more and more mid-tier and high-tier expert mechs in the next thirty years."

The expert pilot understood the underlying message.

"We'll be able to get ahead of the curve with the help of the new Mars Project." Reginald spoke.

"Precisely. Regardless of the disparity between expert pilots, the gulf in capabilities between a transphasic expert mech and a more conventional expert mech will already decide the outcome of a battle. Let me put it in a different way. If all of the Larkinson Clan's unique and quirky expert mechs confronted your Mars Project at the same time, they will unquestionably suffer defeat with any doubt!"

Patriarch Reginald's eyes blazed with satisfaction when he imagined such a fight.

The Larkinson Clan's expert mechs were not weak. Whether it was the Amaranto's extreme energy output or the Shield of Samar's indomitable defense, each of them performed way beyond the level of a typical mid-tier expert mech.

Nonetheless, the Mars Project's transphasic systems overwhelmingly trumped the performance of all of the parts utilized by the Larkinson expert mechs.

The Mars Project possessed greater firepower than the Amaranto, was able to rival the Dark Zephyr in straight-line acceleration and arguably possessed superior defenses compared to the Shield of Samar.

Sure, the Mars Project might not be able to replicate the more unusual and special properties of the Larkinson expert mechs such as the Everchanger's ability to adopt any glow or the Minerva's ability to connect and empower with every friendly unit within its range, but there was no need for the Mars Project to resort to those tricks!

As an offensive powerhouse beyond par, the Mars Project was designed from the beginning to crush enemy champions and defeat entire opposing armies by relying on absolute strength!

"The Mars Project is the embodiment of the Cross Clan!"

As such, as soon as Professor Benedict and Patriarch Reginald decided upon the mech concept and overall configuration of this extremely ambitious design project, the clan began to channel as much manpower and resources to its development as possible!

Many other goals and activities were left to the side as anyone and anything that could contribute to the Mars Project took priority.

The Cross Clan hired lots of additional personnel that could help with performing assisting work or developing specialized high-end subcomponents that were needed to complete this unprecedentedly powerful expert mech.

Even so, work on the expert mech design proceeded slower than planned. The exceedingly high complexity of all of the transphasic components and systems hindered the participating mech designers from properly handling them in the design.

Ves, Gloriana, Juliet and Sara Voiken had all signed up to participate in this extremely high-end design project, but they quickly found that their recent dabblings in phasewater tech left them woefully under-equipped to handle transphasic products such as the Abasis Armor and the ARCEUS System!

Even Professor Benedict himself was unable to do much better due to how little time he spent on studying phasewater applications himself!

"We will have to ask for help." The man eventually concluded.

As such, he actively brought in the developers of all of the transphasic systems as consultants. While this made it harder for the Cross Clan to keep the crucial mech design confidential, the technical expertise was absolutely essential to complete the Mars Project!

Months went by as Professor Benedict and the contributors from the Larkinson Clan cooperated with all of the external consultants to flesh out the ambitious design.

Each of the mech designers had added their own charm and specialties to this project. Being able to work with transphasic systems beyond anything they had ever handled in the past provided them with a precious opportunity to explore the upper limits of their design solutions!

Chapter 4106 The Transphasic Trend

Traditionally, hybrid mechs were classified as offensive mechs.

They carried an abundance of integrated and handheld weapon systems in order to defeat their enemies by relying on the weight of their firepower.

The quantity of different weapon systems not only made sure that hybrid mechs were able to output more shots than any other mech type, the variety of them also provided the machines with different damage types that were effective against different opponents.

However, the cost of carrying all of these varied weapon systems was that it became harder to protect the mechs against damage. Each integrated or mounted weapon system took up space that could have been carrying additional armor. The weapons were also inherently more vulnerable against attacks and could more easily allow enemies to punch through the armor of hybrid mechs.

Though hybrid mechs tended to be rather chunky due to all of the systems they carried, their protection was often considered above average at best. They could never catch up to knight mechs or even striker mechs in terms of defense.

Professor Benedict wanted to change that with the Mars Project. Although Patriarch Reginald Cross had made it clear more than once that he wanted his expert mech to pack the greatest possible punch, it was essential to make sure that the machine was able to keep up with the heavy abuse that such a high-profile mech would doubtlessly attract on the battlefield!

Therefore, it was not without reason that the Senior Mech Designer invested heavily in the Abasis Armor.

The transphasic armor system was far more than a collection of armor plating that were made out of alloys that blended bits of phasewater into their structures.

It was truly a comprehensive system that included additional electrical components and supporting elements that helped make the Abasis Armor worthy to be used in ace mech designs.

The technological and material complexity of each of these components and subcomponents quickly overwhelmed Professor Benedict and Sara Voiken.

Neither of the two had worked with anything so advanced and high-end!

"Don't blame yourself." Benedict told Sara as he placed his hand on her shoulder. "The Abasis Armor was not developed with a client like us in mind. It was made to be utilized by highly-respected Master Mech Designers whose grasp on technology is far greater than we can imagine. Only the best mech designers of a state or large organization are qualified to design ace mechs. I don't think that the developers of this armor system ever imagined that a smaller player such as us would actually make use of it in a 'mere' expert mech design."

Sara Voiken still felt bad. Despite spending much of her time on studying the trove of textbooks on phasewater applications in defensive technology that Ves had exchanged with MTA merits, she barely made any progress in understanding the brand-new theories.

Phasewater was too damn difficult to comprehend! The amount of requisite knowledge needed to do anything with this liquid exotic was so massive that it would take at least a decade before she was able to develop a basic transphasic product herself!

"Can we call for tech support?" Sara asked in a defeated tone. "If I have to keep working on Abasis Armor, I think I will go crazy."

"I will call Truvek Defenses right away. Considering how much we are paying the development company to make use of its Abasis Armor, it is obliged to offer support."

It was not a surprise that the pair of mech designers had little choice but to depend on the assistance provided by the developers working for Truvek Defenses.

Fortunately, the developers were more than willing to assist in the design process. They might not be mech designers, but their understanding of armor and materials had reached such a high level that they were qualified to provide input on the armor design of the Mars Project.

The challenges were still considerable, though. Professor Benedict and Sara could not outsource all of the work to the Truvek developers and had to make plenty of adjustments of their own. It was also essential for them to understand every design choice and impart their own expertise to the mech design.

There were still far too many differences between mech designers and specialized component developers in this regard.

One day, Ves approached Sara as they were both working on the Mars Project at the Primary Cross Lab.

The latter mech designer still looked exhausted despite the additional technical support at her disposal.

"How are you doing these days, Sara?"

"It's… frustrating." The brown-haired mech designer in a plain white lab coat replied. "Each and every aspect about the Abasis Armor is far beyond what I can understand. While I do not need to know how it is put together, just the fact that I need to take into account the interference and other interactions between different phasewater-infused subcomponents is enough to keep me busy for days."

"Is it really that bad?"

"I get the impression that mech designers at our level are not qualified to work with any form of phasewater technology. This is high technology that can be applied to the best and most powerful mechs that humanity can develop. We are like children playing with forces that belong to gods."

Ves frowned. "Technology is technology. Compared to all of the weirder phenomena that I have come into contact with, phasewater tech is still reasonable. While the key material is a bit too abstruse, the tech based around it is based on solid theories, logic and math. Each of us can decipher it as long as we put in enough time in our studies."

"That's the problem, sir. We don't have the time to learn what we need to know in order to keep this project on schedule. There is no possible way that we can complete this ludicrously overloaded design within a single year. Not with the expertise that we possess."

"I will talk to the Crossers about this." Ves sighed. "For what it is worth, I agree with you. The original timeline may have been more appropriate for the pre-Purgatory Campaign

iteration of the Mars Project, but this transphasic version demands far more hours for us to complete. It would be fine if we don't have any other design projects on our plate, but we cannot ignore the needs of our own clan."

He did what he said and held a brief discussion with Professor Benedict.

It turned out that the Senior was already aware of how untenable it was to maintain the original timeline. Everyone had fallen behind schedule and Benedict was no exception.

"I have already seen the necessity in extending the schedule for our design project." Benedict spoke. "The hardest part will be convincing Patriarch Reginald that he won't be able to play with his new toy as quickly as he hoped. I will try to persuade him of the necessity regardless. He still cares about the quality of our work."

In the end, Patriarch Reginald and the Cross Clan accepted the need to spend additional time on doing everything properly. A huge weight had been lifted off the chest of the participating mech designers.

They not only had additional time to hit the books and learn more crucial details about phasewater technology, they could also spend more time on figuring out the correct solutions through trial and error.

Ideally, it was better if mech designers like Sara Voiken got everything right by relying on superior skill and experience.

If mech designers were lacking in either of these qualities, then they had little choice but to fall back on trying stuff out until they finally came across a solution that worked.

It was a profoundly stupid and time-consuming approach towards mech design, but it was the only way for less-than-qualified mech designers to achieve results in any difficult design project.

Slowly but surely, the participating mech designers persevered. Sara Voiken quickly became more proficient with handling phasewater technology.

The speed in which she was able to understand and play with the basic properties of transphasic products was impressive, mostly because of all of the trial and error she had invested herself in. There was no better way to develop a more intuitive grasp and understanding of phasewater technology than working with its applications in a serious design project!

She already developed a few ideas on how to take advantage of her growing proficiency in defensive phasewater technology.

"We can start to upgrade our older Larkinson expert mechs with transphasic armor systems in a few years." Sara Voiken told Ves one day. "I need more time to study the

required knowledge, but I think I will be able to start with this kind of work sooner than expected due to everything I've learned over the course of working on the Mars Project. We won't need to rely so heavily on external support either. As long as the transphasic armor system is not as complicated, I am confident that I can apply it to any expert mech design."

Ves looked surprised. "Truly? That is great news. Do you have any preliminary suggestions on which of our existing expert mechs we should upgrade?"

"Hmm. That is difficult to say. The Dark Zephyr, the Riot, the First Sword, the Shield of Samar and the Everchanger are all clad with Unending alloy. Even though this material does not possess transphasic properties, it is already extremely tough by nature. There is no need to replace the armor systems of the aforementioned expert mechs unless you truly insist on imparting them with the benefits of transphasic armor."

Sara had brought up an important point. Ves truly felt it was difficult to make a choice between the two options.

"Can't you develop a way of making Unending alloy transphasic?"

"Impossible." The armor specialist firmly shook her head. "You are dreaming if you think I can do that. It would take decades of learning to obtain the minimum qualifications necessary to undertake such work. Not only do I need to learn enough about metallurgy and materials science to decipher and reverse engineer the formula of Unending alloy, I also need to possess a far greater mastery of phasewater technology and transphasic armor systems in particular to perform such work."

Ves looked ugly. This was not what he wanted to hear. Unending alloy played such an important role to his expert mechs because it was not only as hard as first-class alloys, it also happened to be a prime material!

The Everchanger was the most dependent on the properties of Unending alloy due to how much it relied on glows and prime abilities to make itself useful. It was the mech that could least afford to move away from Unending alloy as the principal material for its armor system!

Unless the Larkinson Clan was able to reproduce Unending alloy or find a serious alternative in the Red Ocean, the future of the Everchanger would grow increasingly bleak.

After all, if every expert mech around it began to adopt transphasic systems aside from the Everchanger itself, Venerable Joshua would always have to fight with one hand tied behind its back!

"Sir, I have a suggestion."

"Please share your thoughts."

"Just because I can't do it doesn't mean that others are incapable. If it is truly necessary for you to modernize Unending alloy, then you should consider working with the development companies that we are working with. Of the ones that are based in Davute, Truvek Defenses is arguably the best at developing high-end transphasic armor systems. Melmen Advanced Systems is not as capable, but since we own shares in the company, it might be better to cooperate with it instead."

These were good suggestions, but Ves was not willing to entrust something as important to his clan as Unending alloy to an external company that he did not even control.

"I'll take your words under advisement." Ves replied in a noncommittal tone. "Our Unending alloy expert mechs are still more than capable of keeping up with other expert mechs in terms of defense, so there is no hurry for us to renew their armor systems. Let's revisit this topic in a decade. Our situation should be much better at that time."

"If you say so, sir."

Chapter 4107 Disruptive Technology

The Mars Project was so advanced and ahead of its time that it presented the Larkinson mech designers with a vision of what future expert mechs would be like.

Ves and the others were clever enough to understand that the transphasic trend was unstoppable. There was no way to prevent different people and organizations from stuffing phasewater into mechs in order to grant them a massive boost in performance.

While it was unlikely for most expert mechs to be infused with several kilograms of phasewater, less exaggerated phasewater products that only integrated a hundred grams of phasewater were already considerably powerful!

It was difficult to predict how long it would take for every decent expert mech to possess transphasic parts. It heavily depended on how much phasewater would become available in the coming decades and to what extent phasewater technology had advanced.

Personally, Ves believed it would only take two mech generations at most for the Red Ocean to be completely dominated by transphasic expert mechs!

Compared to regular expert mechs, their transphasic counterparts were much faster, much tougher and much more capable of penetrating through armor.

They might even be able to compete against warships because of those advantages!

Ves also made another important realization about this new branch of technology.

"What is even better about transphasic technology is that it is only practical at the smaller scale!"

He estimated that the cost required to equip even the smallest armed frigate with phasewater systems was already multiple times greater than the cost to make the Mars Project!

This was because warships were inherently larger and relied on larger weapon systems, much greater and thicker armor coverage and much more sizable thrusters to overpower weaker weapon platforms such as mechs!

For a long time, the seemingly limitless size and scale of warships was like an undaunted obstacle to mechs.

Since the mech industry rejected the use of juggernauts as an alternative to mechs, it was hard for mech designers to come up with a product that could fairly compete against warships.

It was only now that Ves realized that the competition between the two weapon platforms was not as skewed against mechs as he initially thought!

"Transphasic products have the potential to equalize the gap between the two. You can dump tens of kilograms of phasewater on a typical warship and only selectively improve a few parameters. As for expert mechs, it can take as little as a couple of hundred grams to amplify their performance by three or four times, and that is just when phasewater technology is still in its infancy!"

Even if a single transphasic expert mech wasn't able to compete against a warship, what about two?

If two wasn't enough, what about four?

Even if a force deployed multiple transphasic expert mechs against a single warship, the former would still be cheaper and more cost-effective to deploy due to how little phasewater it took to make them powerful enough!

"The smaller scale of mechs actually plays to their benefit this time!"

Ves found this to be a profoundly ironic notion. Mechs were often regarded as weak because they weren't as big as the war weapons employed by the big boys.

Yet with a rare, precious and powerful material like phasewater in the mix, this paradigm suddenly became less true!

The reason why phasewater could play such a critical role in altering the balance between mechs and warships was because it lowered the requirements for the former to compete against the latter!

Many industry insiders generally believed that ace mechs possessed the capital to compete against warships by themselves.

This was all well and good, but the biggest problem with ace mechs was that they needed to be piloted by ace pilots.

Ace pilots were extremely scarce in human space!

It was far easier for a state like the Friday Coalition to construct hundreds of warships than to accumulate a dozen ace mechs.

This was such an enormous disparity that ace mechs simply wouldn't have a chance to tip the scales of a war!

Quantity mattered. Perhaps an ace mech might be able to overpower a single warship, but if it happened to bump into a dozen enemy warships, then even a Saint needed to make a tactical retreat!

Expert pilots were much more numerous than ace pilots, but the problem was that their expert mechs traditionally weren't strong enough to compete against a warship in open combat.

Yet what if all of those expert mechs became transphasic? What if each of them were supplied with phasewater harvested by the colonial states that controlled a number of phasewater-rich star systems in the Red Ocean?

The balance would completely change as the smaller and much more economic expert mechs suddenly possessed the capital to threaten warships to a much greater degree!

It took less time for them to cross the deadly zone where they would have to withstand withering firepower with the help of their transphasic flight systems.

The expert mechs were able to resist heavy caliber shots much more easily due to their transphasic armor systems.

Once the machines came into effective range, the mechs could easily pierce and inflict crippling internal damage to the warships with the help of their transphasic weapon systems.

In fact, it was theoretically possible for ordinary mechs to do this job as well!

"It's not that economical, though." Ves quickly dismissed this possibility.

The Red Ocean would have to be drowning in phasewater in order for everyone to equip regular mechs with transphasic products!

Compared to ordinary machines, expert mechs possessed the advantage of true resonance.

The reason why the Mars Project was so powerful was not just because it was transphasic, but because it combined phasewater technology with true resonance.

The combination between the two produced a degree of amplification that scaled extremely well!

The more powerful the expert pilot, the more powerful the transphasic effects!

This was why transphasic expert mechs were so cost-effective to counter warships in the future.

As Ves became engrossed by this new realization, he couldn't help but discuss this topic with Professor Benedict.

The Senior nodded when he heard Ves share his thoughts.

"This is not a secret among the high-level mech community. The upper circle of the mech industry has already recognized that phasewater technology can play the role of disruptive technology. The reason why it hasn't become more common knowledge is because it is still too early to say for sure whether all of this can come true. The most essential requirement to turn expert mechs into effective threats against warships is the availability of enough phasewater."

Ves frowned. "Isn't the MTA shooting itself in the foot, then? With how much phasewater the mechers are claiming for themselves, how can we ever build enough transphasic expert mechs to meet our own needs?"

"Who says the MTA isn't doing the same thing right now?"

"...You have a point."

If the MTA made the same realization about phasewater, then it absolutely made sense for the mechers to go crazy with upgrading all of their first-class expert mechs with phasewater technology!

This would massively reduce the absolute power disparity between the two trans-galactic organizations!

Even though there was no doubt that the CFA was in a hurry to upgrade its formidable warships with phasewater technology as well, it was a fool's errand to fully upgrade even a fraction of its massive fleet!

Their titanic battleships that were more than 10 kilometers long each required an astronomical amount of phasewater in order to improve any of their aspects to a significant degree.

If the fleeters didn't put in enough phasewater, then it was too difficult to achieve a measure boost in performance!

What screwed the CFA even more was that its technological direction was completely opposite to that of the MTA.

The mechers had always invested a huge amount of research into miniaturizing components and making mechs more efficient. It had always been difficult to make mechs more powerful after each generation without scaling up their sizes, but mech designers had become increasingly more proficient at coming up with inventive solutions.

The fleeters on the other hand always resorted to size in order to make their warships more powerful. The idea was that as long as there were enough resources, there was no problem with larger and more unwieldy vessels! The CFA's research teams always prioritized power over efficiency!

"The implications of the invasion of the Red Ocean are far greater than what is obvious to the public." Professor Benedict spoke. "What you have just touched upon is another facet that may very well have a profound influence on the balance of power between every major human group. The Common Fleet Alliance is by far the most threatened by the potential of transphasic products."

The overall scarcity of phasewater presented a serious flaw to the CFA's naval doctrines and technological focus.

Nor just the Big Two, but also the first-rate superstates would be in a better position to stand up to the CFA if all of these changes came to pass!

Ves quickly tied this potential development to a rumor that he had heard from more and more people.

"Is this why the CFA might be pushing to revoke the taboo on warships?" He asked.

The professor did not answer directly. He gazed to the side where the central projection of the design room showed off the half-complete design of the Mars Project.

"One of the particularities of the Age of Mechs is that the common people are only able to employ mechs to wage their wars. Warships have turned into forbidden fruit ever since the Big Two heralded their new order. As such, a new profession has emerged across human civilization. We are but a few of the huge number of mech designers who are dedicating our entire lives to further the technological state of mechs. Even if our individual ability is not as great as a mech designer brought up by the MTA, our quantity is so enormous that our community will always be able to produce exceptional innovations from time to time."

Ves quickly saw where the Senior was going with this story. "In contrast, the development of warships has become a lot less lively. Aside from the CFA and to a certain extent the MTA, there are no researchers, developers and shipwrights that are putting any serious work in advancing the state of warships. The CFA may have hired a lot of brilliant scientists and engineers who have done a good job at making warships stronger over time, but their quantity is so small that their progress cannot possibly keep up with that of their colleagues that are involved in the mech industry!"

"That is correct. Human ingenuity is like this. The more people who are working on a branch of technology, the faster it will improve. That is the general rule. While the state of mechs is still highly immature compared to tried and true warships, it is undeniable that the latter have not been able to grow as quickly as before due to lack of attention. The generational differences between warships used to be significantly greater back during the Age of Conquest."

"So… the CFA's plan to prevent warships from being overtaken by mechs is to reintroduce a portion of the Age of Conquest to modern society?"

"That is a rather crude description, Ves, but we believe that this should be the general idea. The fleeters are heavily conflicted on this issue, so it is not absolutely certain whether the CFA will make this drastic choice."

"What do you think, Professor?"

The older man smirked at Ves. "Humans are the same regardless of the uniforms they wear on their bodies. In my experience, as long as people become desperate enough, they are more than capable of throwing aside their principles and their promises if it means they can resolve the crisis that threatens their existence. Think about what would happen if the state of mechs improved so quickly that any expert mech could put up a good fight against a warship. Will the fleeters be happy that humanity has finally gotten rid of its obsession with destructive warships, or will they be scared now that their greatest dependence can no longer guarantee their hegemony over human civilization?"

Chapter 4108 Organizational lnertia

The pattern of trans-galactic politics and societal change became a lot clearer now that Ves became enlightened by the potential of phasewater.

On the surface, phasewater looked as if it was most suitable for starships and warships due to how much they could speed up superluminal travel.

Being able to arrive at distant destinations ten times or even a hundred times faster was an incredibly powerful advantage in warfare!

On top of that, phasewater also enabled the creation of beyonder gates, which enabled instant travel across tens of thousands or even hundreds of thousands of light-years!

While it was undeniable that phasewater had changed the state of transportation in human civilization forever, Ves realized that the mech community benefited even more from the introduction of this liquid exotic!

The onset of transphasic mech parts represented a profound breakthrough in the balance of power between mechs and warships.

Since the former was much smaller and more economical, the same quantity of phasewater amplified their combat performance to a much greater degree than the latter!

This undeniable truth had profound implications, one that made Ves feel a lot more certain that human civilization was about to undergo an epochal change!

"If the CFA is losing ground, then it definitely should not be resigned to this fate. Why hasn't it changed its policies already?" Ves asked.

If an organization fell into a decline, it was logical to address the causes of the downturn. The fleeters should definitely be smart enough to recognize that the increasing availability of phasewater was not necessarily good for their own futures!

"Do you think that a massive behemoth like the CFA can change course so easily?" Professor Benedict smirked again. "The CFA is a naval organization that is bound by tradition, hierarchy and seniority. A number of its most important factions and lineages are headed by grand admirals who have lived long enough to experience the end of the Age of Conquest and became traumatized by the horrors that happened until then. They consider themselves to be the guardians of human order and resolutely maintain the belief that warships should never be made available to the common people again. Their mantra has always been that space peasants are too impulsive and irresponsible to handle such great weapons. Do you think it is easy for these old fossils to approve of a change in policy that goes against their most important mission?"

Ves widened his eyes. That was right! Compared to the more forward-minded MTA, the CFA was much slower to change due to the fact that it was formed from different naval fleets and institutions, many of which were already centered around tradition for many centuries.

The large quantity of old fogies in high positions definitely did not help that much either. Compared to the MTA where most of its contemporary leadership emerged well after the Age of Mechs had commenced, the amount of living fossils occupying the admiralty of the CFA was definitely higher!

To put it differently, the continued existence of geriatrics among the leadership fueled the organizational inertia of the CFA!

Perhaps the younger officers of the CFA may be far more supportive of a change in policy, but these fleeters simply could not beat the seniority of grand admirals who were over four or five centuries old!

While it was possible that those old and wise elders might have a change of heart as the CFA's prospects continued to decline, but Ves thought that was unlikely.

He had already met with plenty of old geezers and they were pretty much set in their ways. After decades or centuries of holding the same principles, their mindsets solidified into permanent edifices that formed the basis of their continued existence!

Ves looked at Professor Benedict who recognized the CFA's inertia quite well.

"Do you think the CFA will remain stuck in the past due to its atrophied leadership?"

"No." The older mech designer shook his head. "How could such a good thing happen so easily? While it is true that the CFA's leadership is disproportionately conservative and unwilling to embrace any change, reality does not obey its will. The MTA, the first-rate superstates and even smaller players such as us will continue to adapt to the changing times. If the CFA refuses to evolve as well, it will become more and more incapable of maintaining its superiority. It might not be enough for the fleeters to foresee these changes in advance, but once they start to experience the consequences for themselves, the amount of people advocating for change will rise meteorically, at least from the younger generation of officers."

This could become quite scary. The lower and middle ranks of the CFA represented the future of this grand trans-galactic organization. Their decision-making power might be low, but as long as enough of them united their voices, they could definitely exert enough pressure on the living relics who reigned over the CFA for centuries!

"Hmmm…" Ves rubbed his smooth-shaven chin. "So in your opinion, it's not a matter of if, but when. The CFA must change. The only uncertainty is whether it will happen sooner or later."

"Exactly. It is a conflict between the forces of inertia and the forces of change. It is a power struggle between traditionalists and radicals. It is a contest between fleeters who believe in the founding principles and mission of the CFA and fleeters who only care about power and riches."

As a radical who had always fought against the current order and sought to become an agent of change, Ves developed an instinctive intimacy towards the younger and more forward-thinking members of the CFA.

He shook his head.

It was wrong for him to side with this group this time!

As a mech designer who was already closely entangled with the MTA, he shouldn't be rooting for the fleeters who were attempting to save their own organization.

He should be rooting for the old, archaic grand admirals who still possessed the most say in the CFA and always made sure that their outdated views remained the standard within the organization!

The longer those half-dead corpses remained in power, the more the CFA would fall behind, thereby stalling the development of warships even further!

Professor Benedict patted Ves' shoulder. "Don't think too much about the CFA and whatever they might do in the coming years. It is the responsibility of the MTA to prepare the appropriate response to all of these defenses. The only advice I can give you is that mastering phasewater technology will be an essential qualifier in the mech industry. Whether you can design transphasic mechs or not will determine your place in the new hierarchy."

That was something that Ves already understood. Fortunately, he already expended around 60 million MTA merits to gain early access to knowledge related to different branches of phasewater technology.

While it was not easy to digest all of the high-level study materials, the Larkinson Clan would definitely be poised to become a participant in the new market for transphasic mechs in a few decades!

As Ves internalized all of the revelations and insights he gained from this conversation, he asked one more question to the older mech designer.

"Is the Mars Project primarily intended to counter warships?"

"Hahaha!" Professor Benedict laughed for a bit. "No. I wish I could do so, but Patriarch Reginald Cross is too obstinate for that. Despite the fact that our greatest threat and the ones we are least equipped to handle are alien warships and alien warfleets, our patriarch has spent his entire life fighting and preparing to fight against mech champions. His eyes are solely set on becoming strong enough to vanquish every expert pilot and ace pilot that comes across his way. Just like the Bolvos Rage, the Mars Project must first and foremost be capable of keeping up and overpowering other high-ranking mechs."

"I see. That explains the choice of weapon systems. The Mars Project lacks a heavy caliber gun that can make it a lot easier to blow a hole in well-armored warships."

"Our design actually has room for that, you know." Professor Benedict told Ves. "There are two ways for the Mars Project to equip anti-ship armaments. First, we can design or procure a self-contained cannon that our expert mech can carry in its arms in lieu of its transphasic axe and shotgun. Second, we can equip modular artillery cannons on the shoulder hardpoints of our machine."

Professor Benedict turned to the central projection and zoomed in to highlight the shoulders of the current design.

While the shoulder areas were empty at this time, there were two obvious slots in the middle of both the left and right shoulders.

Ves didn't need to be a mech designer to know that additional equipment could be slotted onto either of those shoulders!

"Aren't those slots designed to accommodate the small shoulder-mounted missile launchers that you've been working on?" He asked.

"That is true, but why leave it at that?" Professor Benedict smiled. "The Mars Project is destined to be the powerhouse of the Cross Clan. It is too wasteful for us to limit it to a single loadout. As long as we develop additional handheld weapons and modular equipment, we can prepare multiple loadouts that are optimized for combat against different types of enemies."

The numerous different shoulder-mounted weapon systems appeared on the central projection. Each of them slotted onto the Mars Project in turn, giving the expert mech a substantially different look whenever it changed its modular loadout.

Ves was already familiar with the missile launchers, but it appeared that Professor Benedict already prepared at least three more modular options.

There was a pair of autonomous laser turrets that were good at launching long-range precision attacks and intercepting incoming missiles.

There was a pair of shoulder-mounted flamethrowers that were incredibly effective against swarming opponents and enemies that were vulnerable against thermal damage.

There was also a pair of small miniaturized gauss cannons. With the help of dimensional magazines, the ammunition capacity of these small cannons was surprisingly abundant.

These artillery armaments were perfect against large but relatively slow-moving targets!

"Will you complete the design of all of these modular loadouts by the time we wrap up the Mars Project?"

Professor Benedict shook his head and waved away the modular equipment designs. "No. We can do that after we complete the core design. Let's not bite off more than we can chew. Patriarch Reginald wants to obtain an expert mech that can help him achieve absolute superiority in any battle against a powerful opposing mech, and that is what we need to concentrate on delivering first. Besides, the base version of the Mars Project can already pose a significant threat against certain warships."

That was true. The ARCEUS System might not have that many big guns, but what it lacked in caliber, it made up in quantity!

The Mars Project's melee combat capabilities were not weak either. It could easily cut huge wounds across the surface of warships with the help of the Whale-Cutting Saber.

In short, the Mars Project was already an anti-ship mech by virtue of its extremely high specifications!

Ves quickly went back to working on the Mars Project. His talk with Professor Benedict had not only given him a greater appreciation of the high-tier expert mech design, but also made him feel as if he was taking part in a greater endeavor.

It was mech designs like the Mars Project that would become part of an unstoppable trend that enabled mechs to compete much more fairly against warships in the next couple of generations!

Of course, Ves didn't think that warships and their many adherents would be willing to get pushed back so easily.

Once the CFA finally pulled its head out of the sand, a new era might start for the warship community as well, thereby making it considerably harder for transphasic mechs to achieve primacy in human civilization!

"Damn, this is so exciting." Ves grinned as he became more passionate about completing this powerful transphasic expert mech. "I cannot wait to see the Mars Project demolish warships with overpowering might in our next possible battle!"

Chapter 4109 Combining Technologies

The ARCEUS System was quite interesting to say the least.

As the closest thing to an energy weapon specialist among the design team of the Mars Project, Ves mostly took up the responsibility of integrating the ARCEUS System.

It was not as simple as slotting in all of the integrated weapons and accompanying systems into a mech frame.

The more powerful the parts, the more demands they imposed on a mech design. From the beginning, Ves struggled with placing all of the components and subcomponents into a mech design that was still under development.

Not only did he have to prevent the powerful and sometimes volatile parts of the ARCEUS System from interfering with each other, he also had to make sure that they did not disrupt any other parts placed in their vicinity!

If not for the fact that he could regularly call for help from the developers of Immace Energy Armaments, he would have gotten lost by all of the high technology that made up this suite of integrated energy weapons!

Though Ves still struggled to make any progress with taming and harnessing the ARCEUS System, he harvested many benefits over the course of his design sessions.

Just like how Sara Voiken was able to accelerate her mastery of defensive phasewater technology by tackling advanced problems related to this subject, Ves also found himself becoming rapidly more familiar with some of the more basic principles behind this high-end tranphasic weapon system.

Combined with studying the high-level knowledge that he had exchanged from the MTA, Ves was able to combine theory and practice, thereby amplifying his gains whenever he did anything related to this field!

"It's too bad that transphasic energy weapons can't be integrated with luminar crystal weapons yet." Ves sighed in regret.

While the two shared the same base, they followed completely different technical directions.

Luminar crystal weapons were both powerful and versatile. They derived their power from advanced energy transformation processes enabled by the use of obscure and exotic alien crystalline components.

The luminar race truly developed incredibly powerful energy weapon applications by dedicating much of their research in this field. What was especially helpful was that the key theories and applications were not dependent on the use of specific materials and exotics.

Just like how Ketis could forge a sword out of many possible metallic materials, Ves could make luminar crystal weapons out of many different combinations of exotics!

This was because the essence of luminar crystal technology lay in the structure of the crystals, not in the materials it was made of. Ves could make them out of junk materials mined from worthless asteroids and still end up with serviceable weapons!

"Transphasic energy weapons are completely different in this regard."

They were basically energy weapons that have been modified to take advantage of some of the amazing properties of phasewater. Just like how adding a bit of carbon to iron could produce steel with vastly superior properties, adding just a little phasewater to energy weapons could substantially increase their effectiveness in combat!

The ARCEUS System's energy weapons were all based on incredibly high-end tech and methods. Ves would have struggled to harness them before phasewater ever came into the picture due to how convoluted their designs had become.

However, once the developers of Immace Energy Armaments forcibly tried to merge these advanced weapons with phasewater, the complexity of the entire system skyrocketed!

The fusion between energy weapons and phasewater still looked fairly crude to Ves. While he discovered that the developers of the ARCEUS System partially based their design solutions on salvaged and reverse engineered alien technology, their understanding of phasewater technology was still relatively immature compared to the engineers of the puelmer race.

All of that meant that the ARCEUS System was an experimental first-generation product that still had lots of room to improve.

"Even so, it is already stupendously powerful in this immature state."

This was not a guess, but an undisputed fact. Ves had once received an invitation from Immace Energy Armaments where he could witness a live test and demonstrations of one of the energy weapons of the ARCEUS System.

The power of that single energy gun alone had completely solidified his respect and awe for transphasic energy weapons.

Just a single laser beam succeeded in phasing through several layers of thick second-class alloys!

Not a single ordinary mech or starship could stop a mech equipped with the ARCEUS System from inflicting effective internal damage!

In fact, the integrated energy weapons of the ARCEUS System were so exaggeratingly effective at phasing through solid armor that overpenetration was a serious problem.

Mechs that were too weak suffered comparatively little damage because the laser beams and positron beam just phased right through their fragile frames without inflicting much damage!

Therefore, Patriarch Reginald or the Mars Project would have to tweak the settings of the ARCEUS System in order to make sure that they did not waste too much energy in destroying weaker targets.

"Damn, a transphasic energy weapon is incredibly useful for the Amaranto."

The Instrument of Vengeance was a powerful expert mech-grade rifle, but it was not capable of penetrating armor with as much ease as a transphasic energy rifle.

Against certain opponents, it was much more useful to possess the latter than the former!

Still, if Ves had to make a choice between the two, he would probably settle for luminar crystal weapons.

They were more accessible, more economical and more versatile. Ves already possessed a foundation in luminar crystal technology and he could gain an even greater feel and understanding of them if he enlisted the help of the Illustrious One.

There was another important reason why he preferred to stick with luminar crystal technology.

"Luminar crystal weapons interact quite well with spirituality."

The two shared a certain relationship with each other. The luminar race was definitely aware and proficient with spirituality. The luminars developed their crystal technology with the option of combining them with spiritual phenomena in order to produce even more astounding results!

Ves would be a fool to abandon luminar crystal technology. As a part-time spiritual engineer, he could make much better use of it than all of the MTA researchers who had spent years or decades on studying this alien tech!

Yet… the power of phasewater energy weapons could not be denied either. It may not have anything to do with spirituality, but that did not stop it from being able to render almost every defense solution irrelevant!

"It would be best if I can combine the two." Ves frowned. "If I can combine phasewater with luminar crystals, then I would have have the best of both worlds."

It was easy to say this, but extremely hard to execute. Ves would need to develop a much higher level of mastery and proficiency in both fields of technology before he could dream about combining the two into a synergistic fusion.

If he was only good at one of these fields but neglected to enrich his knowledge in the other field, then he would not be able to make quick progress. The technological sophistication of both techs were simply too high to make it easy to combine the two without blowing up the resulting combinations!

Ves already knew that this would happen because that was exactly what he had attempted to do back when he returned to the Genesis Lab one day.

His plan at the time was simple. He designed a basic but incredibly sturdy luminar crystal weapon made out of expensive materials that made it more solid.

He then tried to integrate half a gram of phasewater into the weapon in a way that was similar to how the ARCEUS System enhanced its energy weapons.

"The less said about the result, the better."

His wife had certainly given him an earful after the disaster almost ruined one of the testing chambers. The lab equipment certainly wasn't cheap and it would cost a lot of MTA merits to replace them if all of the gear broke with no possibility of repairing them in any way.

After a bit more research, Ves eventually figured out that it was not possible to blend phasewater technology with luminar crystal technology in the short term.

"Urgh. What am I going to do in the future? Will I have to equip the Amaranto with both a luminar crystal rifle and a transphasic rifle? What about the Firestarter Project?"

These were difficult questions that would only grow more troublesome in the future. The realization that he was not adequately equipped to handle difficult matters concerning phasewater technology made him want to hire a specialist that could solve these problems in his stead.

"The problem is that most people who know anything about phasewater at this stage are incredibly valuable to every major organization!"

Phasewater technology was the next big thing in human technology and the scientists and engineers who harnessed its theories in advance were as rare and precious as phase whales.

People such as Professor Neihy Almar either hired themselves out to the highest bidder or tried to build their own companies.

The chances of being able to lure any of them over to the Larkinson Clan were too small!

Ves couldn't even buy out the companies that employed these phasewater specialists because they were already too expensive or out of reach!

"I will have to figure something out in the future."

The more time passed by, the more phasewater specialists emerged from the population. It would become a lot easier to get his hands on them five or ten years later.

In the meantime, Ves threw away any notion of trying to combine phasewater technology with luminar crystal technology and honestly worked to complete his work on the Mars Project.

Naturally, aside from helping Professor Benedict integrate the ARCEUS System into the Mars Project, Ves also took responsibility for shaping its spiritual design.

This required a bit more thought and planning on his part due to the special nature of the expert mech.

"This is a powerful machine that will likely be dominated by a powerful pilot." Ves rubbed his smooth-shaven chin in thought.

He interacted enough times with Patriarch Reginald Cross to know that the man was not easy to work with. If Ves wanted to make sure that the strong-minded expert pilot would be able to develop the highest degree of synergy with the Mars Project, then the personality of the latter was crucial to fostering better cooperation!

Fortunately, the Mars Project was already strong in its material form. The strong physical design and construction naturally supported a larger spiritual base, allowing Ves to be a lot more generous with the spiritual design of the expert mech.

What Ves had to decide was whether he should turn the Mars Project into a more facilitative or assertive partner to Patriarch Reginald.

In the case of the former, the mech would let Patriarch Reginald take the lead and allow him to decide every action on the battlefield.

Most living mechs were facilitative in nature. This was the norm as mech pilots were supposed to be in charge.

"However, is that the best choice for Reginald?" Ves wondered.

He began to entertain the notion of inserting a more assertive and combative personality to the Mars Project.

Not only would it fit with the character of such a powerful and high-quality machine, Ves also believed it might help Patriarch Reginald in the long run if there was another voice that constantly questioned the man's own decisions.

It was quite obvious to everyone that had interacted long enough with the Cross Patriarch that the man wasn't exactly known for being open-minded.

Sooner or later that obstinacy and unwillingness to listen to other voices would get Patriarch Reginald in trouble!

It would be fine if the guy suffered from his own mistakes, but the problem was that he played such a big role in the Golden Skull Alliance that he might take the rest of the Cross Clan and the alliance down with him! That would be an absolute tragedy!

"I need to stop this fellow from following in his father's footsteps!"

The more Ves thought about pairing Patriarch Reginald up with a back-talking living mech like the Quint, the more he fell in love with the idea!

"Reginald might not be willing to reason, but I bet he would definitely pay more attention to his own mech!"

Chapter 4110 Downscaled

Work on the Mars Project proceeded at a slow but steady pace. The sheer amount of design and engineering challenges frequently drove Ves and the other mech designers crazy, but they always managed to find a way out with the assistance of external consultants.

If the developers of the complicated transphasic systems weren't able to provide any assistance, then Professor Benedict sought assistance from other channels.

As a competent Senior Mech Designer, his ability to connect with other high-ranking professionals in the mech and tech communities was not small.

It was with the help of various guest experts that everyone working on the Mars Project were able to ensure that they did not remain stuck for an extended amount of time.

Months went by as the half-complete mech design started to look a lot more whole and solid. More than a year had passed since they embarked on this design project, so the mech designers wouldn't have been able to justify their work if they failed to make at least this much progress!

Even though the Mars Project looked a lot more complete at this time, it was still a ways off from reaching completion.

The reason was that no one knew for sure whether the mech would fall apart if someone attempted to construct it. By concentrating so many high-energy and transphasic parts in a single mech frame, the chances that something could go catastrophically wrong and subsequently blow up the expert mech from the inside was quite real!

Testing the various implementations and optimizing the operations of the mech became incredibly crucial. However, this was an incredibly difficult challenge in itself because simulation programs simply froze and crashed whenever they needed to calculate anything with reasonable accuracy.

Expert mechs that began to touch the edge of ace mechs were so far beyond conventional understanding that math and logic could no longer encompass them anymore!

"How the hell are we going to optimize the Mars Project if we can't use our simulation programs?" Ves furrowed his brows.

"It's quite simple, Ves." Professor Benedict said. "We can resort to at least two solutions. First, we can cut the mech design up in more manageable parts and test them all in isolation. That is what we have already done to an extent when we initially designed the mech. Second, we can build scale model versions of either the entire mech or parts of it and conduct tests on them in realspace."

Ves and the other Larkinson mech designers looked taken aback when they heard the second solution!

"Are you actually willing to build scale models of the Mars Project?" Sara Voiken gasped. "The expense of doing so would be… considerable. Even a 1:50 scale model of the Mars Project will cost a fortune to make. Not only that, you will also have to use up many rare and precious materials to construct the various transphasic systems, which includes phasewater. You won't be able to recover it all if you decide to recycle the scale model once you have performed enough tests."

Gloriana crossed her arms. "If you want to do a good job, then you have to do it properly. This is absolutely the correct decision to make. If our best computing and processing equipment can't give us the results we need, then we need to find any viable alternative. Using scale models to test the design work we have done so far is an adequate substitute."

"It is also quite common to see this method of testing in the most advanced design projects." Professor Benedict informed the Larkinson mech designers. "Sure, first-class mech designers have access to even more powerful and realistic simulation equipment, but even they are forced to resort to more primitive methods when their expensive toys reach their technical limitations."

Ves raised his hand. "I have a question. Is it possible for Patriarch Reginald to 'pilot' a scale model of the Mars Project?"

"It is possible. In fact, I intend to do just that." The lead designer of the project replied. "Naturally, I will not try to force a human into a mech that is literally 50 times smaller than the actual Mars Project. Reginald will never be able to fit inside the replica cockpit. Instead, I will construct a mock cockpit and have Reginald interface with the scale model by remote. The piloting experience will not be realistic, but that is not important at this phase. It is more important for us to collect high-quality data on the technical performance as well as the stability of every component and subcomponent of our mech design. As long as we have what we need, we can improve our design and prevent many problems from occurring in advance."

Using scale models to test the performance of the full and completed version of a product was not a perfect method by any means.

Physics did not completely behave the same on an object that was full-sized and an object that was much smaller.

Professor Benedict and the others would have to make good use of their heads and interpret the data into an intelligent manner. Taking everything literally would be a serious mistake!

When Benedict brought up this topic, he already made a decision in advance. He was merely informing the Larkinson mech designers so that they could make the right preparations and get ready to conduct the right tests.

Though Ves had never tested a mech design through this method before, he knew the basic theories and understood what he needed to do in order to achieve further progress.

Fabricating the scale models was quite complicated as it was smaller and more delicate than the real mech.

In order to make it, the mech designers could not straightforwardly shrink the original design by how many times they needed to produce the right scale model.

They all needed to make numerous modifications to the down-scaled design in order to make it work!

Ves and the others did not enjoy the additional burden, but they knew it was necessary in order to proceed with this crucial step.

It was actually quite interesting for him to downscale his implementation of the ARCEUS System. The more he manipulated and played around with the advanced transphasic

energy weapon system, the more he understood its nature and mechanisms, though only to a minor degree.

The work was actually quite difficult, but fortunately the developers working for Immace Energy Armaments came through once again.

Over the course of developing the ARCEUS System, the development teams employed many different scale models in order to test their product. It was easy enough for them to apply their old solutions to the current problem and downscale the transphasic energy weapon system in a way that still allowed it to perform in a similar fashion to the original version.

It took several weeks of work for the mech designers to be able to fabricate their first partial and complete scale models.

Since even the miniature versions of the Mars Project were expensive to build, Professor Benedict and Gloriana took up most of the responsibility for fabricating these tiny and delicate items.F

Ves wanted to gain some practice with fabricating a version of the Mars Project as well, but his wife practically turned into a banshee when he volunteered himself for this duty.

"STAY AWAY FROM THE WORKSHOP! I WON'T ALLOW YOU TO STEAL AWAY MY PRECIOUS PRACTICE TIME!"

Ves sighed as he stared at the closed and locked doors that led into the workshop of the Primary Cross Lab.

That was the end of his attempt to get his hands dirty.

He understood why his wife acted so possessively towards the simple chore of fabricating the scale models. She wanted to master the art of fabricating portions of the Mars Project as much as possible.

By familiarizing herself with the various quirks and properties of the mech design by working on its scale models, Gloriana would be able to gain a lot of practical proficiencies and insights.

This would subsequently allow her to fabricate the actual full-sized mech with greater skill and results. The chances that she would be able to fabricate a masterwork mech would minutely increase as a result.

Though Ves wanted to receive this benefit as well, it was not as important to him. He could live without this opportunity as he had managed well enough without any practice runs in the past.

It took a few days before Gloriana emerged out of the workshop with a few scale models in tow.

Most of them were only partial reproductions of various parts and systems such as the legs.

However, Gloriana made sure to fabricate at least one whole scale model of the Mars Project.

The miniature mech made an immediate impression on those who laid eyes on its flaring red frame.

Although its decorations were a little bare due to Professor Benedict's decision to dispense with them for the time being, the down-sized Mars Project still made a powerful impression by existing!

The red exterior, the aggressive angular lines and the Abasis Armor that was filled with transphasic potential all made it clear to everyone that it was far more than a toy or a collectible!

"If this is what a mini version looks like, then the real deal will doubtlessly be a powerhouse." Ves remarked.

"It's not really alive, though." Gloriana frowned. "I tried to follow the design of the scale model as best I could, so why isn't this scale model as alive as other second order living mechs?"

"Ah, I purposefully prevented that from happening."

"What?! Why would you do that, Ves?!"

"Because this is only a test product that we will dispose of when we are done with it." Ves told his wife. "Don't you think it is cruel to bring a creation to life only for us to trash it shortly after we are done with it? I would rather not bring any scale model to live if that is its fate. Besides, is it really necessary for these small models to be alive? The focus for this testing phase lies on gathering accurate physical data on the technical performance of the Mars Project. Nothing more. Making the scale models alive will only increase the chance of skewing the results. Trust me, it is better this way."

In fact, part of the reason why he was so reluctant to make the scale models alive was because Ves had not yet completed the spiritual design of the Mars Project.

Ever since he made a bold decision to figure out a way to impart the Mars Project with a strong personality, he has tried to find ways to accomplish his goal.

It was not so simple to turn a newborn living mech into a strong and assertive character that possessed enough fortitude to resist Patriarch Reginald's powerful will and desires.

Other than attempting to feed the living mech with lots of universal life energy, Ves did not have any compelling ideas on how he could make the Mars Project's personality strong on the onset.

"What if… I can transplant another life into the Mars Project?" Ves muttered.

This was not the first time he developed this notion, but this was certainly the first time he took it seriously.

While it was possible to do this with any living mech, Ves believed that it would not end well if Patriarch Reginald and the Mars Project became incompatible with each other.

The greatest advantage with starting off with a fresh living mech was that the mech pilot would be able to mold its personality in a way that fit!

If Ves skipped this process and inserted a defined personality into the Mars Project from the beginning, then the results would be similar to how the Larkinson Clan tossed different expert candidates in the cockpit of the Quint.

"So the key is to establish a matching personality in the Mars Project, one that Patriarch Reginald will definitely respect."

Ves began to develop a few interesting ideas…