

A Thesis Presented to
The Faculty of Alfred University



潢 DIASPORA

by

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FOREWORD

Sometimes people lie down on the grass on a warm summer night, look up at the countless stars stretched across the heavens, and wonder what other life might be out there. I have stargazed for as long as I can remember, but the question I ask myself is a little different: rather, I am curious to know “What will we be like when we get out there?” This project, *Diaspora*, represents the academic culmination of a project that I embarked on nearly a decade ago. As far as I am concerned, it is far from finished, and what you hold in your hands is merely the beginning of a much longer journey.

The seeds of this specific fictional universe date back to the year I turned fifteen. It was 2009, and I was attempting to find diversions sufficient to keep me occupied through the long slog of my sophomore year of high school. One of my friends, a person with whom I share a boundless love for the *Halo* series of video games and science fiction in general, tasked me with a particular challenge. In essence, he dared me to design a competitor for the fictitious powered armor featured in the aforementioned series, and to do so without resorting to handwavium and technobabble. A few days later, I had a proposal finished: I believe my perfectionistic tendencies had caused me to far exceed the detail he had in mind, but I submitted it nonetheless. He perused it, nodded appreciatively, and declared the matter closed. I revised it. Several months passed – the document was now twelve pages in length, and I had started work on an associated setting placed in a future version of our solar system. By the time I was finishing my senior year, I had begun writing the beginning of a much broader narrative, one featuring a grizzled soldier named Lee Grant. Now, almost four years later, *Diaspora* is an entire universe. It’s been torn down to scratch a few dozen times, started and restarted as I introduced new concepts, but the core is the same.

I chose *Diaspora* as my proposed thesis for a number of reasons, though some of them are more legitimate than others. Firstly and mostly tongue-in-cheek, I cannot deny the appeal of having my greatest scholarly achievement while at university be convincing tenured professors to give me Honors status for playing around with *space cyborgs from the future*. Similarly, it represented a chance to prove the mettle and merit of my work, by pitting it against academic rigors and

attempting to come out on top. The truth, of course, involves somewhat less jest, and it is that I wanted to try something new. Many people choose to relate their Honors theses to existing mandatory projects for their majors, making the most efficient use of the proverbial stone. In theory, I had that option through one of the many projects for my Psychology major, but the potential did not interest me. Rather, I wanted to take the opportunity offered to me to create something truly interdisciplinary, following my other passions instead of just my profession. Make no mistake, I put my specialization to good use and included a great deal of psychological theory, but this project is ultimately meant to be just as meritorious from a literary, historical, or scientific perspective.

The thesis ultimately became an expression of myself, as I poured my interest and my passion into the many different facets of the world. In some ways, the maturation from a stereotypical military science fantasy to a character-driven speculative world mirrored my own growth throughout my years at Alfred University. I explored my identity as a transgender woman, and the two-dimensional male Lee Grant became the fiery and haunted girl who is Lena Ward. I explored my academic interests and settled on a Psychology major, and the setting expanded from objectively minimalistic to nuanced and historical. I served as editor on magazines and newsletters, and my writing went from screenplay to prose. Depending on how one sees it, it could be said that I channeled Roddenberry, writing the change I wished to see in the world.

Diaspora also represents one of the truest expressions of my own personal beliefs, dreams, and convictions. By writing about the future, I am speaking my mind about what I think the destiny of our species and our civilization will be. The original setting was in 2065, but I found myself pushing it further into the future, moving to the 2500s and finally the early 30th century. This was largely for the sake of novelty, and to distance myself from familiar ground. The stretching of the timeline let the scenarios I had devised play out in the fullness of time, allowing for more diverse outcomes and possibilities. Certain issues are universal, but I find great purpose in pondering new perspectives in ways I hadn't previously considered. Much of the body of military science fiction has historically been written by Generation Xers and informed by the sociopolitical

climate of the Cold War, and it was my objective to write based on the developments of the early 21st century. We are all products of our times, and I created an original piece of speculative fiction that is clearly a work of the Post-9/11 world.

Once I had settled on the general topic of the thesis, my next challenge was to decide which portions out of a universe spread thin I would pursue. Much to the probable frustration of my committee members, I was very indecisive at first, deflecting specific questions with things like *well, it's semi-narrative, so...* Predictably, they were not impressed, but continued to work with and make demands of me until I was able to formulate a much more decisive answer. With the objective established, things began to fall into place more easily: it was to be a story about a single person, a survivor who would become a soldier, and then a hunter. It would trace their story from beginning to end, hitting a few of the high points in between. It would include the background and worldbuilding components that I used in creating the setting.

The finished product, like most Honors theses, has changed and evolved somewhat over time, but what follows is the beginning of that story. It concerns a young woman named Lena in the early 30th century, living an otherwise-unremarkable life fraught with the drama of adolescence. The world around her is one shaped by the hundreds of years of isolation and history that have transpired since humanity left the ecological devastation of Old Earth behind forever. In the midst of this tentative frontier, a devastating terrorist attack brings her former existence crashing down around her. Feeling as though she has no other choice left, Lena joins the military and throws herself into the brewing conflict. Her attempts to find a place for herself in the world mirror the struggle of the human race to adapt to our new homes, and the selection of the narrative presented here spans more than ten years of her life.

The first section, "Wildfire Season," is set in Lena's youth and marks the definitive start of her story. Concerning her everyday life, it sets the scene, introducing her *in media res*. Having an idea of where someone comes from makes the journey all the more poignant, and this chapter is one of the most important days in her life. It details an event that would exert a major force on the

course of her life, but for the sake of spoilers, I will leave it at that. Suffice it to say that it should do its job as an introductory piece.

The next is entitled “Ikejime,” and takes place about six years later. During the intervening time period, Lena joined a military organization called the Interstar Authority, and was deployed on several tours of duty. Surviving a disastrous battle representing a failure of command judgment and political foresight that resulted in staggering casualties, she managed to forge a group of scattered Marine remnants into an effective band of survivors. The IA largely neglects them in order to lick its wounds, but Lena and some of the others receive an invitation from a secretive black ops organization named FARWAR: they have been selected. She accepts this offer, embarking on a hazardous and uneasy path. The chapter concerns the point where Lena and her squad are about to take the final step in becoming Jägers, undergoing major surgery.

The last is a brief summation of her journey over the past 12 years called “The Things She Carried.” It is set several years later, and references a few events not detailed in the other accounts. In short, the Lena in this memory is a changed woman. She is still recovering from the loss of every member of her squad save one, all killed in the same devastating failure that left her bitter and mutilated. The perspective of the narration does not quite match up with the others, but I enjoyed the opportunity to explore her character from another angle and through new devices. The focuses of the piece are the objects that she holds dear, not necessarily Lena herself, and it is undoubtedly the most psychological of the three.

It is these three works, combined with an extensive afterword that details many of the concepts and themes not directly explored in the narrative sections, which represent the final submission of my Honors thesis. What is written here was possible only through the relentless and unyielding support of my committee members. Without their critique, consultation, irksome prodding, take-no-quarters editing, and numerous conversations over coffee, this would not approach anywhere near its current level of coherency and relevance. Above all, I offer the best and most curious parts of myself, open and waiting for anyone willing to take the leap.

Welcome to the Diaspora.

PART ONE



移幻 WILDFIRE SEASON

1438 HOURS LOCAL
 9 AUGUST 2905 USC
 SPRUCE VALLEY
 VERGE (ANCALAGON-IV)

Lena wasn't paying much attention to the lesson when Herr Carlyle called on her in Astroethics. She sat towards the end of a horseshoe of desks that occupied the rear of the amphitheater, behind the other students who at least attempted to display rapt interest. The open smartshades let in the warm breeze and smell of dry grass that heralded the end of the summer perihelion. Instead of staring absently out at the mountain rising above the school or the silver Strand arrowing into the clouds, Lena concentrated on her sketchbook, trying to recapture the elegant curls of a warpfield she had seen the other day. She was working off a glimpse she caught of manifold Doppler shifts in Fa's office, glancing in just as he shut down the holotank. Her tablet lay forgotten, dormant and half-covered by the paper after abandoning her earlier electronic attempts. Whatever programming the touchpad used, it stubbornly refused to capture the asymptotes of bubble-chamber arcs just *so*, try as Lena might to tweak the curves or add depth where none existed.

Most people just called Sylph engines *Stormdrives*, Lena's father stubbornly referred to them as *Higgs-Davis Translight Matrices*, and she herself had only the slightest inkling of the mathematics or physics involved. Instead, the shapes intrigued her: graceful curves, fractal whorls, and chaotic branches like river tributaries. Lena liked the *look* of math more than anything else about it, and had relied on artistic interest to survive the boredom of last term's Orbital Dynamics class. Now she was bent over the paper, totally engrossed in the ink, and only dully registered her teacher's voice. Lena thought she heard her name, and glanced up, brushing a lock of blue-tinted hair out of her eyes just as Herr Carlyle's tone sharpened.

“Frau Ward...” Carlyle’s slightly sing-song voice rang out, with the inflection of an orator displeased with his captive audience’s decorum. She flinched slightly, yanking the stylus off the page and straightening abruptly. Anxious, she scanned the room in an attempt to identify exactly what it was she should have been paying attention to. Windowwalls wrapped around her back and sides, a spacious arced table served as desks for the students, and the teacher’s lectern stood off to one side opposite the door. Neither the screen, defaulted as it was to a pleasant eggshell-colored wallpaper, nor the faces of her peers yielded any real clues. *Scheiße, why is he calling on me? Normally he just drones on and on until we can leave.* Embarrassed, Lena mumbled something to Herr Carlyle about rephrasing the question.

“Perhaps,” he said acidly. Carlyle’s lips pursed to a thin line, and he regarded her with an air of condescension before continuing. “Or perhaps since Lena seems uninterested in the topic at hand, she might better serve this discussion as evidence.” *Oh, fuck.* The dark-haired rail of a man paced along the semicircle of their desks before turning on a heel to face them again.

“Well, let’s take this as an example. We are *here*—” He tapped away, staccato, at his tablet and drew up a three-quarters diagram of their system on the wall as the windows darkened automatically. Verge spun slowly in the foreground, a stylized marble in shades of blue and white. Ancalagon burned silver behind it, with tiny labels and oblate traces picking out the other planets in the distance: Gothmog, Smaug, Sundering, Caradhras, and Helcaraxe. “—on the boundary of all Coalition space.”

Another tap. Verge shrank to a solar pinprick, highlighted against the woad-colored spread of Coalition livery. The starmap helpfully headlined where the blue area of *Coalition of Colonial Governments Territory* began and ended. The capital world of Threshold sat brightly-lit in the center, safely insulated from the borders. The nearby space was a cardinal red expanse labeled *Protectorate Sovereignty* that half-surrounded the area controlled by the Coalition, speckled with glints of systems within the decentralized alliance. The colonies of the Protectorate were small and disparate, but great enough in number to keep the uneasy truce that had endured since the Secession War.

“We’ve been here for more than four centuries, since the Vigil. What was Verge like before then?” Nobody answered, so Herr Carlyle continued stubbornly. “That’s right — we just don’t *know*. Nobody bothered to keep records of what this wet garden rock was like when it was just *Ancalagon-IV*. Settlers landed here, gutted their ships, and set about changing the planet.”

Lena frowned, a touch of unease twisting her insides as she waited for him to get to the point.

Herr Carlyle gestured to the mountain outside the window, making his point. “This system was habitable enough to begin with: fair temperature norms even with the elliptical orbit, more than one wetworld, Jovians to sweep the clutter before it does too much damage. But we weren’t satisfied with that. The environment could have been better, the ecology easier. So we started *changing* things.” Lena flushed, her heart beating faster as she figured out what he was getting at a few sentences before he finished. Carlyle paused for effect. “And we ended up with anthroformation. Some was geological, some was genetic. Care to elaborate, Lena?”

Everyone’s gaze shifted over to her, the girl with wild blue-edged hair and silver eyes. Suddenly she felt very small in her desk, so much shorter than her 160 centimeters. Lena rubbed at her forehead nervously, hair falling over her eyes as her gaze dropped into the floor. Indistinctly, she tried to piece together a reply.

“S’an old genetweak for better night vision, that’s all...” Lena muttered. Herr Carlyle looked smug and turned away, having gotten the answer he wanted. He started lecturing again, but Lena tried to control her breathing, digging stubby fingernails into her palms. Her mind raced as one foot drummed absently on the floor. *Wait a minute, what the hell does he mean by this? I’m just a Variant, not some milcorps Chimera!* Lena’s blood was up, and she looked Carlyle square in the face.

“Catseye, Shiner, call it whatever the hell you want. It’s a genetic tweak to produce a, a...” She floundered for a moment, angrily trying to remember what Mu had called it. “*Tapetum lucidum*. It’s just a reflective layer in the eye, bounces starlight or whatever around so we can see better. Whatever alleles they changed to get it to work, it mucks something in the iris and that gets shiny like metal too. Probably started on Shadow or Whippoorwill or one of the tidals and now it’s—”

Herr Carlyle took back the floor, interrupting her remaining protests. “In other words, an *anthroformer* — invasive changes in the environment or the individual in order to conform them to an arbitrary standard that only benefitted humans. Geocentric thinking, see? A perfect example of altering things to fit human tastes and not human needs.”

“But . . . we changed ourselves, adapted to the environment. Isn’t that the opposite? Took their fingers outta their ears and went with the worlds they could at least work with?” Jan Mayen had piped up from Lena’s right before she could retort. He was probably more concerned with coming to her defense than the academics, but she appreciated the reprieve nonetheless.

“It may have been,” the teacher conceded. “But the fact is, such things persist even when not necessary. It wasn’t a specific adaption, they made it indiscriminate, *inheritable*, with no regard to the environment. Brute-force adaption, loose in the wild like any other GMO. And now some people are voluntarily spreading – resurrecting, really – this strain—”

“I didn’t *choose* this! My parents did,” Lena exploded, furious in equal parts with Carlyle for putting her on the spot, and with *mutter* and *fater* for their decision. “Saw it clear as day prenatal, like anything other congenital or defect, and they decided to not fix it. So now I’m a Catseye, and you think I enjoy colors going wonky every time it’s real sunny out, or having to unfocus my kriffing eyes to make some things out because my rods and cones are all screwed? Where do you get off using me as a prop for some philosophical bullet point?”

Herr Carlyle’s face tightened, and he started to retort when he was cut short by the bell. The others rose quickly, eager to escape the confines of the classroom, and filed out. Lena, eyes stinging and cheeks burning red, stuffed her things into a satchel and threw it over her shoulder. Carlyle tried to pull her aside, saying something about *not meaning it like that*, but Lena turned on her heel and walked quickly away. By this point in the day, the glare headache was impossible to ignore for much longer, and she just wanted to get out of there.

She found herself overwhelmed almost as soon as she left the room, caught up in a stream of students making their way around the looped hallway of one of the interconnected circular buildings. The students heading home were abuzz with energy, eager to be back outside as they

milled through the hallway. Lena pulled her striped hat over her ears, acoustic chords strumming through the fabric's built-in headphones and drowning out the hubbub of the crowd. She strode angrily towards the back entrance, almost running straight into Jan as he exited the hall leading to the student lockers. He flagged her down as she passed, backpack slung hurriedly over his shoulder.

"Hey, Lena! Lena, wait!" He jogged after her, gesturing towards a side hallway. "Hold on a minute, will ya? I just wanted to—" Lena ducked out of the crowd for a moment, her gait sharp with purpose, and he joined her in the alcove. She pulled her hat up slightly so she could hear over the din of the crowd. Jan was always slightly awkward, as though he never really believed in his own charm or fair-haired good looks. His smile was self-effacing, a touch of worry over his normal high spirits. "You okay there? I've never seen you go after a *lehrer* like that — even Carlyle, though I'm sure he didn't mean anything by it."

Lena adjusted her satchel and toyed with the charms pinned to the strap, smiling tightly as she leaned against the wall, one foot tucked behind her. "It's not really him, just... the subject, more. Hate it when people bring it up. Wish they'd leave me be." She glanced up at him, shyly, from under the fringe of her hair, and struggled to read the expression on his face.

"Oh, okay. Well... see you tomorrow, *ja*?"

"*Ja*, tomorrow." Lena looked over her shoulder at Jan as she pushed off the wall and disappeared into the crowd. Winding her way along the corridor, a cynical quip sourly crossed her mind, something like *gonna go get a second opinion*.

She pushed through unmoving groups of students, chatting away as their conversations blocked the entrance. She frowned, annoyed by how these sessile mobs seemed oblivious as to what the purpose of a *hallway* was. As she broke free into open air and stepped quickly onto the tarmac of the back path, she made quick time along the sidewalk to the upper road, taking the stairs two at a time. Lena stopped for a moment to release the claustrophobic tightness in her chest, and shaded her eyes to look down the slope. The school's athletic fields lay behind her along the upper level, and the back road stretched off to the north.

Tugging absently at the collar of her button-up shirt, she enjoyed the slight breeze for a moment, and watched the gaggles of people milling about on the front loop as they waited for the buses. Spruce Valley's Briefmarke charter school was built into the slope of a glen, with an oxbow of the river running below on its way to the main flow of the Escaut. The architecture was a mixed bag, the latest windowwalls and smartscreens blending with stone facades and shingled roofs. The grey-and-brown roofs were sloped to shed snow during the winter aphelion, the quaint design the result of some environmentalist push before Lena was born. The school was partially buried, dug halfway into the slope for structural support and insulation. A few amphitheaters and stone patios stretched out onto the hill, and the cafeteria was a circular room that surrounded an open-air atrium and garden.

Spruce Valley was an eclectic blend of Vergen tradition and more cosmopolitan Colonial sensibilities, and it showed in the society of the school just as much as the aesthetics. It fit into neither category, and was a smaller alternative to the Guard Academy at Sentier Base, or the corp-funded preparatories in Haven. Lena had heard from her friends who attended school elsewhere that it was almost lazy compared to the competitive mentality of the 'cademy, but lately she found herself almost missing her usual table in the cafeteria as the trimester drew to a close.

Sighing, Lena scuffed at the grass, feeling almost nostalgic for something she couldn't put her finger on. The sun hung lower over the trees, happy shouts from by the school drifted up the hill, and the stream rushed through eddies and waterfalls as it glinted painfully in the afternoon light. Lena shook her head, tugging her hat over her ears once more as she turned for the road and walked away from the hill.

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She jogged the three kilometers home in less than fifteen minutes, music loud in her ears. The school ran shuttle 'buses to Haven City and the Guard housing outside of Sentier Base, but Lena's house sat in the mostly-rural space between, and so she chose to walk or bike to the school. There were only a few neighbors nearby, and living on a side road off the main route to Haven gave them plenty of room in the forest abutting Baumkopf Mountain.

Lena paid little attention to the familiar scenery, head down and fingers tapping a staccato drumbeat on her hip, as she turned down the driveway to the house. The blue-sided cabin was deliberately anachronistic, blending modern materials with local timber in a failed attempt to appear lower-tech than it was. Her sneakers crunched through gravel on the path as Lena tried to catalogue her thoughts, but they slipped away, defying her attempts at organization. Mostly, she was tired and annoyed, sourly imagining how her parents would react to the news of her day. She skipped up the stone steps, satchel bouncing at the back of her hips, and pushed the kitchen screen open.

The windowall lining the opposite side of the kitchen let in the afternoon sun as it filtered through the trees, dusting the kitchen in gold-tinted light. A few houseplants dotted the shelves and counters by the large sink, and a rustic wooden table was pushed up against the interior wall. Dressed in slate-blue scrubs and a white lab jacket, winged hospital pin at her breast, Mu nursed a cup of coffee while she sat at the island. Fa absently leaned back in a kitchen chair as he perused a flexscreen laid on his lap, the paper-like tablet scrolling diagrams and blueprints. His head swiveled towards the sound of the door, and he called out a greeting.

“*Tag*,” Lena replied, stepping onto the colorful geometric tiling of the floor and lazily kicking her shoes in the general direction of the mat in the corner. She scampered up the stairs, ignoring her parents before they could rope her in. She took another turn up the steep stairs to her room in the loft, pushing the door open and unslinging her satchel with one hand.

The room was small, painted in warm grey and blue, with high windows and a bed lining the far wall alongside a desk and drafting table covered in beads and wire. A long bookshelf occupied another side, half-stuffed with a few hand-me-down books, a collection of model ships, selected rocks, some feathers, and other baubles. Dozens of sketches and watercolors on cellusheets were tacked up on the walls and ceiling, alongside patches from IA Medical, the livery of a Sylphracing team, and the Verge sovereign flag. She dumped materials for school out on the rumpled sheets of her bed, then retrieved a few things from her desk, pushing the screen of her workstation to the side.

Lena clipped the pocketknife she habitually carried everywhere except school to the inside of a hip pocket, hung her hat by the door, then slipped her drumsticks into a side pocket. She pulled her glasses off, rubbing her eyes with the back of one hand, and dropped the carelessly onto the desk. Satisfied, she grabbed her satchel and tablet and headed downstairs, finding her parents exactly how she left them. Lena sat down heavily across from her mother, tapping restlessly on her knee, then looked up as her *fater's* spoke.

"How were classes?" Fa asked, peering over the half-creased screen as Lena turned to retrieve her sketchbook from the satchel.

She thumped it on the counter and thumbed through it, looking for her current page, then snorted and replied without looking up "Same as always — 'cept when Herr Carlyle decided to use me as a talking point for some idea of his."

"Which course does he teach, again?"

"Astroethics. I was sketching and he got annoyed when he called on me. Only this time he seemed more concerned about some grandiose point about how *evil* we were for settling anywhere, or making homeworlds for ourselves. Like they should have floated around in the Black 'til they starved — and the *mensch* stuck me out in front 'cause of my eyes. Why? I don't *ficken* know... they're obvious or something—"

"Language," Mu said dryly, taking another sip from her mug. "What did he say, exactly?" Lena dropped her stylus huffily onto the page. "*Ich parlant Nordeutsch*—" she muttered defiantly, before launching back into her rant. "Like I'm the only Variant around — with the IA a stone's throw away at the Base, I'm pretty sure half the class has more origami in them than that thing about the paper cranes!"

She paused for a moment, considering her *mutter's* question. "Oh, he just made me out to be some sort of trend-slaved follower, bringing back ecological missteps for the sake of fashion. Guess he figured I *asked* to get Shined." Lena kicked her mismatched, socked feet absently, bare shins hanging off the high stool. *Well, here goes nothing.* After a moment, she settled on a question, and piped up hesitantly. "Why did you even keep the Catseye in me, anyway?"

Mu and Fa exchanged a long glance, and there was a long pause before Fa eventually answered. “Well, we... didn’t want to interfere, change things without understanding them. It’s...” He trailed off, and Mu shot him a glance before cutting in.

“There’s more to it than that, sweetie. It’s in your whole body... all those cells, not just your eyes. The genemod for night vision — *NYXi*, they called it — can be passed down from parent to child, just like the tweaks that let us digest different amino acids without going into allergic shock. And, well, plenty of people living on worlds with unrelated ecologies still carry the genes for those aminos.”

“Before I was born, you still could’ve... switched it off, right?” Lena looked at her inquisitively, and Mu sighed.

“Yes, possibly. But three centuries is a long time for genetic drift. Just because the prenatal panels lit up for the ‘mod doesn’t necessarily mean that it could have been safely isolated or overwritten. Your *fater* and I must both be carriers, and it ended up expressed in you. We decided...” she paused for a moment, glancing at Fa. “That it would be best if we left your genome without any further modification. We believe people should remain as they naturally are until they can make the choice on their own.”

Lena sat for a while, processing what Mu had said, then commented testily. “So before I was even born I was mature enough to handle glowing in the dark, but I’m just too young to get a tattoo?”

She had brought that up before, alternatively pleading and demanding, her heart set on a small tattoo inspired by a mathematical concept in school. Temporary ones were easily available, but the important thing to her was the permanency. Her parents had refused at every turn, of course, and it became a jab to get under their skin. Fa folded the flexiscreen with a touch of annoyance, brushing his greying hair out of his face as he leaned forwards in the chair. “Lena, that’s not—”

“Of course it’s not fair!” Lena exploded, hopping off the stool and stalking angrily around the kitchen. “Yeah, I’m just a teenager — and I was way younger when I had to deal with knocking

Jin Fowell on his ass in school for calling us Luddites! You know I had to look that word up on the inNet after they hauled me into the office? I didn't even know what it *meant*, and I was still on the bounce to stand up for our family."

Mu set her mug down sharply, addressing Lena with a touch of patronization. "Look, Lenie... We're hardly Luddites, I mean, what is it your parents do again? Surgeon and Sylph engineer? Besides, that fight you talk about is a perfect demonstration of you being too immature to consider the consequences of your actions."

"I was *eleven*!"

Mu took a deep breath before continuing. "Well, as your parents, we have a duty to ensure and decide certain things in your life. You're only sixteen, and that's just the way it is."

"Oh, *ja*, like you decide how I dress or look or date — just so you know, letting me dye my hair isn't exactly some grand sacrifice or concession." Lena grabbed her satchel off the counter, oblivious to her parent's protests as her voice steadily rose. "You don't *get* it! Just because someone has baseline genes or acts normal doesn't mean they're accepted, for *fick willen*! There's no rule that says—"

"Lower your voice, Lena! Can't we, for once, have a conversation without yelling?" Fa tossed his screen onto the table, standing abruptly as he stepped towards her.

Automatically, Lena darted back, shoulders hunched at she dodged away. Half-leaning against the wall as she pulled her shoes on, Lena spat back a retort, words sharp and quick. "Conversation into debate into argument, because you always make me justify myself. Maybe I just wanna have you listen instead of having to fight and yell just to be heard. Maybe this *scheiße* is always hiding under the surface and I'm the only one in this house who *feels* it anymore!"

Lena's blood was pounding in her ears, throat tight and body so on edge she felt like her hair was prickling with static. Nobody said anything for a few painful heartbeats, Lena and Fa standing apart from each other in a sullen stalemate, until Mu rose without a word and retrieved her keys from the holder near the coat hooks. The tension broke, and Lena pushed past her mother and shoved the door open. She turned for a moment, and her parent's eyes glared back in accusatory

silence. She felt sick to her stomach, anger fading against her will to something vulnerable and pained. Shoulders slumped, Lena's last words were quiet, her voice tired and resigned.

"Disapprove all you want, I guess. You can't really make me do anything, any more than... well, than you can make them treat me right. I dunno if it's the lesson you wanted to teach me, but... I learned it all right." She turned away and half-tripped down the steps, letting the statiscreen spring shut behind her, though she barely heard the slam. A loud volley of voices flew behind her, Mu and Fa snapping at each other, and then the door flew open as Fa yelled at her to stop. Paying him no heed, Lena yanked her bike away from the clapboard of the house and dragged it across the gravel, not bothering to walk it in line with the wheels.

Hurriedly, she strapped the satchel around her waist and swung a leg over the bike, slewing in the driveway for a moment before she got traction and climbed the short hill, coming upright with every push and stomping down aggressively. As she coasted in a lazy curve around the turn to the main road, Lena paused for a moment. She settled back onto the seat, put out a foot to stop herself, and glanced back towards the house almost involuntarily.

Mu was already climbing into the family car, probably fed up with the bickering and eager to escape to her shift at the Guard hospital. Fa stood at the edge of the yard, shoulders bowed and one hand in his pocket. The other shaded his eyes, and Lena thought he may have been looking in her direction, trying to make her out against the sharp afternoon sun. Not wanting them to see her hesitate, Lena dragged her gaze away and started pedalling again, vowing to not stop until they were long out of sight. Head down and legs pumping, she started for the mountain.

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Despite the Nullmass core in the bicycle's seat and its ultralight composite frame, which were supposed to make slopes easier, Lena was still thoroughly out of breath and soaked in sweat by the time she crept up the switchback on the ridge. Rather than take the long way around Baumskopf, the Haven road skirted the foothills, and she had fled halfway up the road before stopping. Lungs and calves burning, she guided the bike unsteadily towards an overlook along the road, crunching in the gravel.

Lena weaved to a stop, let the bike fall on its side as she swung off, and almost fell over when her legs gave out. She leaned against a splinetree for a minute or two, head down and panting, before she slid down and rested her back against the trunk, rough bark pressing through the thin fabric of her shirt. Lena closed her eyes for a moment, throat raw as she tried to gulp in air, then opened them to get a better look at where she was. Pine needles in the sandy soil prickled at the bare skin below her baggy shorts, and she drew an aching knee up to her chest, toeing absently at the dirt between the roots as she thought.

Part of her felt guilty for leaving so abruptly, but she was also hurt, fed up with her parents' attitude towards her. She tried to rationalize it, but mostly she just wanted to be *away* from them for a while. She poked sullenly at a fallen stick in the hackgrass, focusing on the gently-raspy feeling of the blades on a hand sweaty and creased by the bike's handlebars. Breath slowing somewhat, Lena hauled herself back up, holding onto the tree for support, and ambled towards the stone railing at the edge of the overlook. She hoisted herself up gingerly onto the broad sun-warmed slabs, then crossed her aching legs and leaned back, stretching her spine to work out the kinks.

Lena peered up into the lavender sky, the lacy blue auroras of a solar storm dancing beyond the clouds, and marveled at the heat of the sun on her cheeks. Neck prickling with heat, she unbuckled her satchel and set it next to her, then worked her way out of her overshirt. Peeling it off and lashing it around her waist, she sighed with relief at the cool air on her skin, then looked over the edge.

She sat at what seemed like the top of the world, swaying treetops stretching like a carpet along the boulders and ridges of Baumskopf until they met the lush grass of the floodplain below. She turned to the side, looking along the road as it faded up the mountain, and a part of her marveled at how *bright* everything seemed, golden-green foliage silhouetted against the cloud-scudded purple of the sky. The slate-grey buildings of Sentier sprawled across a valley to the north, and stretched off along a series of large hangars and warehouses, forest cut well back from the base

perimeter. It was a large collection of buildings, and not particularly well-defined either; the IA Guard was well-integrated here, blending into the community with stores, housing, and services.

Lena shaded her eyes with a hand, trying to make out the space tether in the distance. *How far away is that? At this height, maybe... twenty clicks? Mu says it's about fifteen to the hospital.* She'd seen it up close once or twice, the triple ribbons of climber cables wrapped in concentric rings of reinforced cladding, reaching like diamond-rod lasers into infinity. From up on Baumskopf, part of the Anchor was visible, a latticework pyramid of structural beams and cargo elevators. The tour guide had said it was protected against weather and accidents, wrapped in interconnected ceramic armor for ten or fifteen kilometers. Beyond that, the silver threads of the Strand stretched alone and unbroken until they disappeared into the glare above.

The road to her house lay directly beneath her, picking its way down the foothills, with the school barely visible in the river's oxbow beyond it. She could make out the outskirts of Haven, half-hidden by the mountain's base. Across the valley the Escaut had carved through rock, the rest of the mountain range curved to the west, growing pale in the distance. As the wind teased at her hair, a slight grin touched her lips, happy to be sitting alone with such a view.

Finally feeling refreshed, she slid off the wall, grabbed her satchel and ambled over to the bike, levering it upright with her foot as a fulcrum. Lena slipped the bag into a holder behind the seat and mounted the bike, leaning forward with arms crossed over the handlebars and enjoyed the cool breeze on her bare shoulders. Irrked by the ticklish feeling of hair on skin, she adjusted the straps of her sports bra, then ran her fingers through her shoulder-length hair and combed it back, trapped in a messy twist at the nape of her neck.

She leaned back and sighed with a touch of relief, then pushed off the gravel. Pedaling lazily onto the road, the beginnings of an idea started to form in her head. Lena muttered under her breath with frustration, unwilling to head home yet, loath to crawl back to her *fater* with her tail between her legs. *Might as well wait until evening, give them something to worry about,* she thought, tapping a foot on the pedal. She decided on an alternative and, satisfied with the plan, dug her heels in as she headed along the upper road towards Haven. She might feel spun about

and lonely, but Lena reasoned there were few ways better to regroup than taking counsel with an ally.

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As Lena coasted down the old logging backroad to the Renard family cabin, it appeared almost deserted. Shaw and his family lived on the far side of Spruce Valley from Lena, closer to Haven, and their house sat well back from the road. Even though he wasn't in school any more, Lena still tried to see Shaw as often as she could, trading turns to make the long trip to each other's houses. The house was silent, and Shaw was nowhere to be seen, though this was far from unusual. Being the outdoorsy type, he was intimately familiar with the woods by their property, and often built semi-permanent shelters and lean-tos along the gullies and creeks.

Lena pedaled lazily, and just as the cabin peeked into sight at the end of the driveway, a loud, sing-song tone whistled from her left. She stopped, leaning on one foot, and scanned the bushes fruitlessly. It came again, louder in a single long note, and her gaze followed the trunk up until she spotted a suspiciously-opaque patch of needles. She whistled a pair of notes in response, high-low, and called out to Shaw.

"C'mon out, Foxface."

There was no response for a moment or two, then a head sporting a broad grin and a fauxhawk emerged from the tree with a rustle of foliage. Shaw was hidden behind a screen of leaves a fair distance up a large splinetree, and this vantage point let him see her long before she arrived. He stood up on the branch and spread his arms grandiosely.

"Welcome to my realm, Riverine. You are trespassing – and topless." He leaned lazily against the trunk, looking down with an amused expression.

"Shaddup, Shaw. You've seen me in less and liked it, even if you're getting none." Slightly flustered, Lena untied her shirt as she talked, pulling it over her head to cover the beginnings of a blush. "Besides, leave my middle name alone, you know I hate it."

Shaw, several years older than her and endlessly mature, stuck out his tongue impishly. "I haven't seen you for weeks. What brings you out here on a school night?"

“Eugh.” Lena grimaced as she finally located the neck of her button-down and popped her head out. “I’ll tell you all that and more... once I feel a bit less salt-encrusted.” She gestured to her disheveled appearance, trying to work the kinks out of her spine as she spoke.

Shaw chuckled, clambering down from branch to branch. He landed near her with a loud thump, windmilling his arms for a moment before he caught his balance. He straightened back up, his full stature stocky as he towered over Lena’s slight frame by more than 20 cm. Shaw extended a forearm for Lena to clasp, tanned and marked with the countless small scars of a homesteader who didn’t bother with more than basic first aid. She took it and tugged, hopping off the bike and holding it upright with her other hand. Shaw beckoned for her to follow as he turned down the road to the cabin, picking his way across tire ruts in the dried mud.

Lena followed slightly behind, giving up and stepping along a track as she walked the bike. She aimed a light shove at Shaw’s ribs. “Why didn’t you come down to visit either, you big oaf?”

“Another round of planting, and the photovoltaics were acting up. Besides, my *mère* didn’t want me down by the Guard base, what with those demonstrations between the IA and the Insurrectionists getting nasty recently.”

Lena was silent for a while, thinking, as they walked towards the cabin. Spruce Valley claimed neutrality between official CCG policy and Vergen sensibilities, but even among children and academics, the strain was starting to show. The armistice between the Protectorate and the Coalition was still in effect, but hostilities had never officially ended, just petered out due to political and economic pressures. *Yeah, I guess things have been a little crazy over the summer. Was that what Mu and Fa were arguing about the other day?* Lena’s parents stayed mostly out of politics, and she just tried to ignore it. In a way, everyone was feeling it: the exNet was abuzz with talking heads, and she knew some of her friends at Briefmarke had families more invested in – or split by – politics. “*Ja*, same old, same old... *Innies want out* and all that.” She paused, frowning. “Can we leave it alone, though? S’exactly the kinda shit I wanted to avoid.”

Shaw turned, his brow furrowing slightly. “Sure, sorry... here, let’s get you cleaned up, and then we can go relax.” Lena smiled gratefully, glad to be back on the homestead again. The two of

them emerged from the woods at the top of a meadow, Shaw's family cabin stretched out on the slope below. Like the buildings at school, it was built partially into the hill, but the cabin was far more rustic, in a slightly haphazard way that Lena had always loved.

His homestead had additions and afterthoughts built on, with a collection of solar cells, a heliostat, and groundwater taps adorning the property like an explorer's camp. The Renards had neither the funds nor the desire for a modern-looking house, and had embraced a slightly archaic brand of architecture. The family tended small plots of vegetables and grain in clearings further down the mountain, and Shaw lent his technical aptitude to a series of clever improvised projects scattered across the property. Ahead of them were a couple sheds and a storage building, as well as inset skylights for the rooms below. Down a sharp incline lay the rest of the house, opening onto a staiscreen porch.

"Park your bike and c'mon over — we'll get you rinsed off, then you can change." Shaw walked to a pump and filled a small pan, while Lena leaned the bicycle against the shingles and pulled off her top. "Your bike looks different. Did you get a new one?"

Lena glanced over at the two-wheeled contraption. "Oh, nah. Just touched up the paint, and Fa brought home a spare Nullmass core they were working on or something."

Shaw laughed, examining the rigged addition more closely. "You put a piece of a Stormdrive on a *bicycle*?"

"Not a Stormdrive, *dummkopf*." Lena rolled her eyes, amused by the incredulity in her friend's voice. "Just a little Higgs cell, doesn't take more than a few kilos off, but it makes hills that much easier.

"You're something else, Lee." Shaw shook his head, dusting off his knees as he straightened up. "Wash off and come in when you're done. I gotta check on the Ballard-stacks in the cellar before we head out." She nodded, pulling off her sneakers and looking over her shoulder as he stepped inside. "Just don't take too long showering, girlie!" He quipped, dodging a wadded-up shirt and a curse from Lena, as he disappeared down the steps to the back door.

Lena stepped towards the pump, which Shaw had piped in sequence along with a collection of dewtraps and the cabin gutters. She lifted the pan and emptied it over her head, then shot bolt upright and gasped at the temperature. *Fickscheiße—! Aaaaassmerde gaaaah fuckthat'scold!* Freezing-cold rivulets of water trailed down her neck, across her nipples, and dragged icy fingers along the backs of her knees. Gradually unfreezing and teeth chattering slightly, she finally lowered her hackles and raked hair out of her eyes. Lena glowered after Shaw as she dripped steadily onto the slate, toes curling on the warm stone. “Damn,” she announced to nobody in particular, then shook herself. *Eh, actually felt kinda good.*

Tenderly hopping from rock to rock on bare feet, Lena followed the path back to her bike and stripped down to bare skin, draping her bra and underwear across the handlebars to dry. She pulled her shorts back on, trusting the military-style fabric to shed water as quickly as advertised. Arms crossed protectively across her breasts, she padded down the steps to retrieve her button-up, then draped it across her shoulders and headed for his room.

She passed the kitchen and living room on her way, glancing in at the large hybrid wood/electric oven that Shaw’s sisters had cleverly covered in stone. The couches and table in the living room were draped in blankets but otherwise empty. Shaw’s room lay at the end of the wood-floored hall, the light left on for her. His bedroom took up what used to be his father’s office, and had a bank of wood-framed windows overlooking the meadow. It was about as messy as she remembered it, half-assembled capacitors on a darkened workbench, clothes overflowing his closet, a drumset in the corner. Lena paused near a mirror by his dresser, slinging her plaid shirt over a shoulder and taking in her reflection.

The image stared back at her: small in stature, narrow shoulders bony and chest nearly flat. Her hair was plastered down, streaks dyed electric blue stark against dark, wet locks that were normally mouse-brown. A few charms dangled on a woven tricolor bracelet tied around one wrist, and her techband was clasped around the other. She bent a leg up behind her to stretch, catching a glimpse of the shell-adorned band on her left ankle. A lopsided, awkward half-smile touched her

lips as she noted the baggy way the shorts hung off her narrow hips. Her eyes, though, still glinted bright — silvery in the low light.

“I swear you never get older, just skinnier.” Shaw’s deep voice came from the doorway, and Lena jumped, heart pounding.

“For fuck’s *sake*, Shaw—!” She exclaimed, hurriedly pressing the shirt to her chest, and spun to face the older boy. He leaned against the doorframe, studiously looking anywhere but at her as he chuckled with amusement. Lena glared at him, drawing herself up despite the difference in their heights.

“Relax, fledgeling. Two sisters, remember? Got plenty of practice looking at things without seeing ‘em. Here—” He tossed some clothes at Lena, which hit her squarely in the face. “Found some old ones of Claire’s that should fit you. Pull ‘em on, there’s something I wanna show you.” Back to him, Lena retrieved the clothes and straightened up. There was a small towel, along with a pair of colorful, tight-fitting athletic shorts, and a large black shirt emblazoned with a trio of warning symbols and the words *NORTH BY CANDLELIGHT*. She dried off and pulled them on, bundling her wet clothes under an arm and turning to Shaw. He had his back to her, long pants gathered by boots at the ankles, faded shirt tight over his broad shoulders.

“Now you’re foisting your band merch on me? Really?”

Shaw made a disgusted noise. “Pah. More like it was the only thing around your size that wasn’t besequined or so colorful it hurt.” Lena laughed. Shaw’s younger sisters Claire and Joane, while just as rough-and-tumble as their brother, still diverged wildly in terms of fashion sense. Shaw, on the other hand, still wore much of his father’s clothing, taking on the vestments and role the man’s absence left vacant.

“Where are they, anyway?” Lena asked, following Shaw back towards the door, wincing apologetically at the small trail of water she’d left on the floor.

“Oh, my mother and the sistern? Day trip. *Mère* took them out of school to go somewhere past Haven.” He paused. “So what was bothering you earlier?”

Lena frowned slightly, blinking as they emerged onto the grass once more, and attempted to change the subject. “Can that wait until we get where we’re going? What’s up with NBC?”

Shaw laughed drily, talking over his shoulder as he rummaged in the shed and emerged with a complex-looking bow and a quiver of arrows. “Not much – it was just a garage-band hobby thing, and I’m pretty sure you’re the only one who still listens to our stuff. Besides, after Cally ponied up for bootcamp and Jean-Luc decided to *focus on other things*, I guess North by Candlelight is on hiatus.” He pronounced the last word like a curse, shook his head sourly, then slung the quiver and handed the bow to Lena as she hopped on one foot to pull on her shoes. “Take a look at it while we walk, I made some tweaks.”

Lena thought for a moment, sorry to hear the bitterness in Shaw’s voice. He had taught her how to drum, and weekly meetings with his bandmates were one of the few things that had gotten him out and socializing beyond the farm. Truth be told, he was partially right: Lena still had their old demo songs on her techband, and listened to them often. She liked louder stuff, and NBC was kinda quiet, but there was a rawness to the music that she appreciated when she was feeling down.

Side by side, the two of them headed for the treeline, chattering to each other and catching up on events they had missed. A few minutes later, Shaw had led her on familiar paths past a ditch, along a half-fallow field, between boulders across a trickling stream, and up a short hill to a circular stand of trees in a small depression. There, in and around a massive splinetree, Shaw had affixed boards to the trunk in a rudimentary ladder that snaked up the tree, culminating in a collection of platforms in the branches higher up. Lena whistled appreciatively, craning her neck to make out the tarps and shingles appropriated to form a makeshift roof and walls.

“C’mon up.” Shaw ascended the tree with Lena close behind, emerging onto a broad platform with some crude but comfortable-looking furniture fashioned from the branches. He collapsed with a sigh against the trunk, passing a patchwork green-and-brown cloak adorned with leaves and feathers to Lena. “Here... take a look at this.”

Lena sat cross-legged on the floor next to him, leaning lazily against Shaw as she ran her fingers over the fabric. Shaw pointed out a few details, like the whistlehawk primaries affixed like crests near the hood's ears. She felt words welling up in her throat, chest tight with something like nostalgia, she but couldn't quite find a way to get them out. Shaw broke her out of her reverie a moment later.

"I'm hoping to winterize the blind at some point, once I get enough creds for a run to Haven or one of the surplus depots." He patted the trunk affectionately. "It's nice to spend some nights out here when the 'lights are really going... The sky's beautiful with the lightning storms against the mountain. Gives me a chance to get away from folk, y'know?"

Lena nodded, and replied quietly, "Yeah." In recent months, as her house seemed more and more crowded and tense, she would have liked an escape of her own. She sometimes felt awkward around Shaw, grateful for his friendship and the novelty of a different lifestyle, but nonetheless convinced she was somehow still an impostor. Suddenly feeling restless, she asked "Hey, you wanna get this bow worn in?"

Shaw grinned, and they descended the tree, jogging down the slope to find the overgrown ramp of an old quarry. It was here that she and Shaw often practiced archery, using the sheer sides of the scarp as a backstop to avoid losing arrows. Lena held the compound bow out to Shaw, but he gestured graciously for her to go first. She pulled the slim vambrace from the quiver, slung the shafts over her shoulder, and strapped on the wristguard and archer's glove.

Drawing herself up and flexing her shoulders, Lena nocked an arrow, glad to once again feel the texture of fletching, metal and matte carbon fiber familiar against her fingers. She paused for a moment, then drew smoothly to the ear and sighted one of the crudely-painted wooden targets before letting it fly. She was off the mark, but not by much. With a touch of annoyance, Lena pulled four more from the quiver, sticking them point-down in the dirtbank next to her.

"I missed being out here, you know? I envy you sometimes, being able to just head out on your own and have some time alone." She shot again, sending the arrowhead glancing off the edge of a target. "My family tries to keep tabs on me all the damn time – the only reason I'm up here

now is because I ran out on ‘em.” She glanced at Shaw as she retrieved another arrow; he was standing a few feet back, listening with a sympathetic expression. Lena loosed the last three shafts with increasing frustration, punctuating the shots with venomously-spit words. “For people so damn concerned with my business, they just do not — seem to give — a *fuck* — what I’m *going through!*” On the verge of yelling, she slung the bow and quiver onto the embankment, turning to pace as she ranted and gestured angrily.

“You joke about not seeing me changing, but you think I like being a stick? I didn’t start puberty until last year... just ‘cause I’m a tomboy – or because I’d fuck girls if I could – doesn’t mean I’m actually *one of the guys*, but try telling that to the aristocrats at Briefmarke. Their commodity is superiority, and do they ever like having a monopoly on that. My *ficken* parents, too! Everything’s always clinical with them, and they never stop to think that just because it’s *statistically insignificant* doesn’t mean other people magically stop giving a shit. What say do I have in it? Pffft... Tattoos, dyeing my hair? Not clean-cut enough for them. Dating or, *gottverboten*, sex? Not old enough for it! Meddling with my genes is just fine, but the minute *I* want to change something I’m too young and immature to deal with the consequences. Skies, just – what the *fuck?!?*”

Lena finished with an angry scream, swinging her fist hard into a tree. She stood for a moment, breathing hard, until the pain of split knuckles made its way to her brain and she turned back to Shaw, shaking with adrenaline and barely-contained fury. She started to stumble, suddenly worn-out, and Shaw took three quick steps to catch her. Her throat burned as she fought back tears, trying not to cry in front of him, and she spoke quietly into his shoulder.

“Y’know me, why I act like such a punk. I know I’m gonna stand out, I just want it to be ‘cause of something I *chose*.” She sniffled slightly, frustrated with her lack of control. “Rather be weird for tats or hair or clothes, than for being a Catseye or unmodded or gay, yeah?” Shaw hugged her close, and Lena relaxed against him a bit. Blood relations or not, the Renards had been there for her as long as she’d lived in Spruce Valley, and he always made her feel a little better about herself. After a moment, she pulled away, rubbing the nape of her neck awkwardly. She looked up to find Shaw staring back at her with a crafty expression.

“Tattoos, huh?” He trailed off, then nodded emphatically. “I’ve got an idea. Come on back to the cabin.” Lena walked down to retrieve the arrows as Shaw gathered up the rest of the gear, and she picked about in the hackgrass and weeds until she located them all. One of the shafts had struck a rock and splintered, but she collected it along with the others. Shaw waited for her at the ramp, bow and quiver slung across his back, and he put an arm around Lena’s shoulders as they walked back together.

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Half an hour later, as the sun started to sink low over the trees and the shadows stretched long, Lena sat cross-legged under Shaw’s porch light while he swabbed the back of her neck with sterigel. Her sketchbook lay open across her knees, the pages adorned with her tattoo ideas clearly illuminated. The design she had settled on was a small, elegant trio of triangular knots, derived from an ancient symbol for a goddess of healing and metalsmithing. The inNet said it was something called a *Celtic triquetra*, something cyclical about smithing and maidens. Lena had arranged them in the shape of the mathematical symbol for *therefore*, one of the few things she remembered from a unit on formal logic in school. To her, it represented a simple declaration: *This is who I am, therefore, this is me*. Lena smiled to herself, happy with the small act of defiance it represented.

“You ready?” Shaw asked, snapping the cartridge back into his injector and shifting in his seat. The device was the same general make artists and others used for tattooing, drawing gracefully with a mix of permanent ink and engineered chromacytes. “You’ll be fine. I did a few practice runs on myself with fader ink, and it’s basically just a really fancy pointy pen.”

“Yeah, I think so,” Lena tried to suppress a quaver in her voice, hoping Shaw wouldn’t notice. “Go for it.” She dug her fingernails into her palms, fiddling with her anklet, and tried not to move as Shaw set the tip to her neck. Her hair stood on end, nervously anticipating the first stab, and her stomach felt unpleasantly hollow. Surprisingly, she barely felt it – if anything, the fact that she didn’t feel the needle was more unsettling than potential pain. An involuntary “Fuck,” slipped from between her lips, but Lena concentrated on the sketches in front of her and tried not

to think about what was happening. The gel numbed the area a bit, and the needle pulled at her skin as it marked curves into her flesh, settling as a dull ache beneath the skin. Shaw worked quickly, bending close with the light, and almost before Lena knew it he was done.

“There,” he said, and sat back with a sigh. “Here, take a look.” He held a flexmirror for Lena so she could see it clearly. She reached back with one hand and lifted the hair at the nape of her neck. The tattoo sat curled around the point of a vertebra, sand-white arcs light against her skin. The area surrounding it was slightly irritated and puffy, but not overly painful. She was shaking slightly — because of the cold, she told herself — and she arched her back in satisfaction, a small pleased escaping from her.

“Shaw, I . . . wow. Th-thank you.” She rose quickly, spinning to hug the surprised man as he tried to stand up. He patted her back affectionately, then turned her around to get another look. Shaw pulled a light sheet of elastic bandage from a medikit and applied it gently to her neck, then brushed a fringe of hair down to hide it. He spoke reassuringly as he worked, sounding very satisfied with himself.

“Heh, no problem, Lee — hope you enjoy it. Just, uh, try not to scratch it for a while. And maybe don’t tell your parents it was me?”

Lena laughed, a release of nervous energy as she grinned excitedly. “Totally. Mind if we go outside for a bit? I wanna work out the kinks after sitting like that.” Shaw nodded, dropping his equipment on the bench and opening the screen to the front yard. Lena padded back up the hallway, feeling electrified and buoyant as she retrieved her overshirt from her bike, then walked down the outside path to meet Shaw in the front.

The mountain air had started to chill, sun almost slipping below the horizon, and Lena’s feet swished through the overlong grass. Shaw sat up as she approached, lying almost concealed in the knee-high meadow that served as the Renard’s front yard. Lena stretched out beside him, the long stalks of fieldferns framing the sky as she looked up. A quiet chorus of rustling leaves, occasional whistlehawk calls, and the chirping of unseen insects gave the evening a sense of summer that seemed almost unreal. Arms behind her head, one knee lazily up and the other leg stretched

out, she enjoyed the soft feeling of dry fronds on her arms and legs. The sky had faded to deep purple, crisscrossed by the contrails of high-altitude airbreathers, with dark clouds to the east. The air was heavy with smells of sun-warmed dirt, late-summer pollen, and the wonderful sense of rain blowing on the wind. *Petrichor*, part of Lena's brain offered up unbidden, and she smiled, thinking of the sound of raindrops on splinetree needles. A sudden thought occurred to her, a clench of worry in her stomach, and she piped up.

"Shaw?"

"Yeah?" He answered, after a moment. He was almost invisible beside her, hidden by a screen of grass, and Lena turned her head to look at him.

"I know stuff's changing and all that, but I just... wanted you to know I'll be here. Go as things might, I don't wanna change too much. This is... well, you're my best friend, and I don't wanna give you up. Renard and Ward to the end, aye?"

Shaw murmured a soft assent, then said nothing for a while before he spoke up quietly, "Check this out." He raised his leg and swished it in a wide arc through the grass, sending yellow-green sparks of light twisting and fluttering into the air.

Lena gasped, then chuckled happily. *Luciflies*. Little bugs that shone when startled, they pinwheeled through the air, forming and breaking patterns until they winked out like embers, one by one. They lay in silence for a while more, Lena's mind slowly turning things over, until she spoke up again. "What do you think's gonna happen? Here on Verge, I mean?"

Shaw sucked at his teeth. "I don't know. Try not to worry about it, I guess. We're our own world, here before all this fighting, and we'll stay out of it. Stick to our forests and do what we've always done." She nodded to herself, then settled back in the grass. Feeling satisfied with the answer, Lena relaxed a bit, letting the evening slip lazily past. She chatted with Shaw about everything they had missed out on: gossip from around the area, family events or happenings at school, personal projects, and the girls they chased. They pointed out flyercalls to each other, laughing and drawing new constellations between the first stars to wink into view against the indigo vault overhead.

Lena's stomach grumbled uncooperatively as the toll of the day starting to burden her eyelids, and she levered herself up on one elbow as she broke the moment. "Heh, I... should probably get going back, actually. Dinner and all, sorry. I hate to run, but—" Shaw nodded, helped her up, and they walked together towards the road together. Lena stowed her things and started to walk the bike along the path, then paused and gestured to her borrowed clothes. "Do you mind if I...?"

Shaw waved her off. "Bring 'em back next time. One more reason to not be a stranger. See you soon?"

Lena laughed, hopping on the bike and pushing off. "Sooner than you think – autumn break's coming up, remember?" Shaw, standing at the edge of the forest near the driveway, waved goodbye as Lena made for the valley. He whistled their two-tone call in farewell, and Lena returned it, whooping to the forest as she rode away. She made good time down the mountain, coasting past the overlook just as the sky started to dim fast. It felt good to be on the move again, satchel thudding against her as she swooped down the roads. The wind picked up rapidly, whistling down from high up on Baumskopf, when something in the sky ahead caught her attention.

Lena's gaze flicked up, squinting against the silent flash to the west. She winced, wondering if she moved in such a way that Ancalagon slipped out from behind a peak, bright with evening glare. *No, that's more towards the...*

The Strand.

The silver thread crawled with blue-white lightning, an expanding lesion burning like St. Elmo's fire from some ancient myth. A whole section above the support rings, silhouetted in the evening light, writhed and flickered as if it were shaking itself apart. She narrowed her eyes, forgetting to brake as she was struck by a sick feeling of worry. *Oh, that's not supposed to—* A second flash burst like a sun from further down, sending multicolored streaks flashing across her vision before it expanded to incandescence and Lena flinched away, screaming in pain. The bike wobbled, gathering speed uncontrollably as Lena struggled to peel her arm away from where it instinctively cradled her face. She just started to wrestle the handlebars straight, swerving away

from the shoulder and trying to bleed off speed safely as tears leaked from her half-shut eyes, when wind like a hammer howled up the mountain. Lena gasped, slewing sideways and clenching the brakes tight. The bike hit something hard, jerking off the ground as everything seemed to hang lazily still. She only had a moment to watch the trees bow in a wave before the road slammed her into blackness.

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Lena awoke slowly, coming back to herself bit by confused bit. The first things she noticed were sporadic impacts, heavy and cold like marbles, and the stinging reek of copper in her mouth. The rest of her returned piecemeal, and she noted each new sensation with a sense of curious disinterest. She was... somewhere, and it was dark. Her head and arm hurt like they'd been split in two. *Oh, right*, she thought sluggishly. *S'cause my eyes are closed*. She dragged them open, mildly surprised that they obeyed her, and watched with confusion as red and black spots swam in her vision.

The ditch she was lying in was dark, lit by the barest hint of twilight, and pelted by fat raindrops. She had no idea how she'd gotten there, and for the moment, lying in a culvert seemed the most natural thing in the world. Lena tried to sit up, uncurling from where she was half-sprawled on one side, and yelped as she put weight on her arm. Something grated together, and white-hot pain lanced up her forearm. *AbhhhgGodd... notthatarm!* She collapsed again, chin numbly in the dirt, before gathering herself. She tried again. Favoring her right side, she slowly crawled out of the ditch and tried to take stock.

Her bike lay on the roadside behind her, mostly intact and upended. It was pouring rain, freezing sheets that drenched her clothes once more and left her shaking. Lena's head felt thick and fuzzy with pain, and she moaned as she tried to get up. She pressed a hand to her temple and it came away bloody, though she wasn't sure if that was from her head or from the scrapes and gouges on her hands and legs. She tried to walk, managing a few steps before she swayed and fell to her knees, barely noting the burn of gravel digging through her skin. A nagging sense of dread

pulled her gaze westward, towards the plains, and the little breath she had came out in a rush. *Oh god not here no please nonononono...*

The Strand was on fire.

The line to the sky had broken, fluttering to the ground in massive burning pieces. The Anchor itself was collapsed, blown apart like a bomb, strewn embers and debris for kilometers around where it had once stood. Lena sat in horror, trying to understand what she was seeing, stock-still and unfeeling, when a winged aircraft roared in over the slopes. It slewed to a hover several meters up, spinning slowly on a pair of searchlight legs that lit up the ground around her like daylight. The bright orange-and-white emergency flyer set down near her, its blade-like wings folding back, engines staying at full power.

A woman in uniform jumped out, throwing a heavy blanket around her, though Lena was too numb to do anything except stare. She was yelling something over the rotors, questions of some sort, but Lena couldn't understand her and the person's voice sounded like it was coming from underwater. There was an exchange between the flitter crew, and the woman took Lena by the waist and lifted her into the flyer, ignoring Lena's cry of pain as her arm was pressed against her ribs.

Fading in and out of awareness, she watched mutely as they gathered her satchel and a girl who looked very much like her, bundling them into the narrow bay of the flitter. Moments later, the engines roared to life again, and the jet sprang off the mountainside and took to the air, leaving her stomach far behind. Lena threw up: nothing but clear fluid, with retching heaves that left her hollow. They injected her with something, a hypo that made her feel like she was burning with fever but took some of the pain and blackness away, and wrapped her head and arm in stiff fabric. The woman slid a needle into the crook of her left arm and draped a bag around her neck, then gently touched her wrist, brushing her techband. Lena didn't watch.

"Lena? That's your name, right?" She glanced over sluggishly towards the voice, coming from the same blue-jumpsuited medic that picked her up. The woman's words were dull and came from somewhere too far away to be in the cabin. She was leaned in close to Lena's ear, talking

loudly over the engines. Lena tried to respond, but she stumbled over the sounds and nothing but slurring came out. “Are you okay, can you move okay?” She shook her head, wincing numbly as the medic shone a light in her eyes and pressed a hand to her wrist.

The crewmember turned to the pilot and another EMT sitting across from Lena. “She’s can’t give me anything, CRAFT. Concussed, but breathing and walking — we’ll have to hand her off somewhere. Can you get anything on the airwaves over this static? The man shook his head, replying as the conversation continued in earnest. “We gotta circle wide, can’t fly through the storm *or* that crap by the Strand.” Lena stopped paying attention. Instead, she stared out the bay window inches from her face, seeing how the burning plains were washed red and blue by the flitter’s lights on the rain-scoured glass.

After what felt like a few minutes or maybe six hours, Lena dully heard voices arguing in the cockpit, something about *hospital scratched off* and *too hot to land close*. “Are you serious? The one place we need to be, and it’s a crater!”

“Alright, here: these coordinates, about ten clicks west. IA’s setting some kinda triage up.” They turned again, Lena bracing herself against the rail as she fought back a sudden return of nausea. By the time she lifted her head again, there was a square of white far beneath them, at the bottom of an abyss lit fitfully by lightning. The flitter eventually flared in for a landing, touching down at the edge of a field. The area was marked off with temporary floodlights, bordered by armored trucks and a ragtag collection of civilian cars. The crew slid the door open and ushered her out into the chaos outside.

She was overwhelmed, pushed to and fro, only able to comprehend bits and pieces. Voices and sirens buzzed in the air, a cacophony that made her head want to burst as she pressed a hand to her ear. A few tarps and inflatable tents were set up, but most people milled around without purpose or direction. Fires burned in the distance, embers still falling, touching everything. Medics and soldiers tried to keep the dust off everyone, sluicing it away, handing out tablets for people to swallow. The air was full of something acrid like hot metal or burnt toast, and a strange sickening smell of charnel rose even through the pounding rain.

Lena curled up in a tight ball under a hastily-erected tarp cover, freezing even under the blanket. Her head pounded and she tried dearly to follow what the woman had said about not falling asleep. *Where's Shaw? Is he... but the mountain's in th'way. Did we... did they hit us? What even...?* She shook her head, struggling to piece the thoughts together. There were moans everywhere, babbling voices, and screams that would cut through them. Every once in a while an emergency klaxon rose above it all, and Lena counted them, absently. One siren, two. Three. Eight.

Fa eventually found her, sitting numb and forgotten. He lifted her up, among the throng of walking wounded and disorganized responders. His expression was ragged, relieved beyond words to see her, but broken. There was little hope left in his eyes, just grief. Lena tried to form words, lips clumsy, attempting to mouth something like *moo*. She had to know, it was incredibly urgent that she express that question, but she couldn't seem to remember why. *Where is she? Where's...?*

One way or another, he seemed to understand, and all the strength went out of him. Fa's chin quivered, and his face twisted in anguish. He pressed Lena's face into his shoulder, shaking his head helplessly. His heaving ribs matching her own choking sobs as he held her. Somewhere after that point, though she wasn't exactly sure where, Lena fell asleep. She didn't crawl out of that endless, fevered blackness until everything was long over.



“FLAG FORGOTTEN”



PART TWO



會 IKEJIME

0925 HOURS LOCAL

2 DECEMBER 2911 USC

MEDICAL COMPLEX IDA

NORTHREACH (SURTR-II)

It was these awkward periods of restless inactivity that Lena had always disliked, and it occurred to her as she sat half-naked on an examination table that this time was no different. They were still together at least, the five of them as they waited to be called to the surgical bays: Cassie, Timothy, Jiya, Alec, and herself. Her squad. Fenrir. They'd faced worse before and she knew they would go on to fight far worse in the future. It was almost like a mantra inside her head, spinning in fragmented circles over and over. *You'll be okay. You're gonna make it just fine, be okay just make it fine be okay beokaybeokay—*

A book about this moment, some dramatic biopic or overly-technical mil-fic adventure, would have them all together. The squad – the five ragged misfits who had spent the last thirty months fighting, training, and surviving together would all be here. They would be dressed in scrubs and prep gowns, laughing and giving thumbs-up as they looked at the incision vectors marked on their skins. The ordeal ahead would be just as painful, but she and her squad – *her* squad – would face it together. Truthfully, Lena would have wanted it that way herself.

The hollow tug of nausea in her insides, however, was a nagging reminder that this time would be different. Augmentation was not a battle her Fireteam could face together, and Lena wished with all her might that she had the hilt of her tackknife to grip tight. It was stupid, though: even if her fear was palpable enough to be cut with a blade, that did not mean it would part before her. Her eyes darted around uneasily, trying to find something to focus on that would ground her.

She ended up looking at a small display on the wall across from her, glowing gently with their names and information. *That's us, huh?* They were reduced to a tiny series of names and

service numbers, waiting for their turn in the abattoir. *We seem so small...* She trailed off, cocking her head, bemused by the unfamiliar formality of the list.

WARD, LENAR. > S.LT> S#7715849352-LRW/J201061 > FENRIR-1/"SPYGLASS"

MAUGATAI, JIYA O. > M.SGT > S#1548186475-JOM/J154884 > FENRIR-2/"NIGHTINGALE"

TIGAN, CASSANDRA N. > CWO> S#1349752197-CNT/J187598 > FENRIR-3/"CANVAS"

TOKAREV, ALEXEI J. > GY.SGT > S#9725428511-AJT/J259475 > FENRIR-4/"ROLAND"

HOLDEN, TIMOTHY G. > L.CPL > S#1458915461-TGH/J677548 > FENRIR-5/"RYE"

Lena glanced around herself, trying to take in what the others were doing – memorize their quirks, fix their faces and eyes in her mind. Jiya was perched lightly atop a stool, bright eyes darting back and forth under a fringe of black hair as she read, apparently studying some medical text studded with diagrams of false-color spinal columns and spider-like surgical armatures. Being the medic, she was probably more comfortable with the prospect of being cut into than any of them. Alec and Tim were sitting cross-legged in the middle of the room, gesturing and chattering to each other. From what she could hear, they were discussing a new shipment of weapons. Lena gathered that Tasrel Munitions had recently released a new advancement for a number of firearms, and Tim was hoping to spend his convalescence upgrading his beloved carbine. Jägers often developed personal preferences for certain manufacturers, and much of Lena's own kit was composed exclusively from Ausrüstungherstell Falke equipment.

Serving as Fenrir's deceptively-innocent scout and the youngest out of the group, Timothy was always antsy: hands moving or feet tapping. Right now, as their potentially-crippling surgery loomed like a thunderhead, he was literally twiddling his thumbs, twisting them dexterously in close circles. Tim was short, only a few centimeters taller than Lena, and swapped mannerisms unpredictably between meek reserve and a boisterous lack of self-awareness. A slight smile touched her lips, as she shook her head affectionately. *Kid might have graduated, but he's still such a goddamn FNG.*

And Cassie? Their good old dependable, fearless Chief was stepping staccato in one corner of the observation room, pacing out the points of a martial *kata*. Cassie's eyes were half-closed in

concentration as her hands weaved patterns without hesitation in the air, her shifting stances following a moment behind. Her short blonde hair was shaved at the temples as usual, pulled up into a loose bun, and despite her current state of undress she moved with the same jerky grace as always.

But the attempt at distraction didn't work. All she could see was them splayed open on tables like paralyzed fish, twitching spastically as the Whitecoats grafted carbon and metal to their spines. *Oh, fuck mich*, she thought, unconsciously slipping back into the Nordeutsch she had sometimes spoken back on Verge. *They're gonna gut us like...* Lena swallowed hard, shoving the thoughts away as she tried to ignore the lump in her throat, and broke the uneasy silence in an attempt to take her mind off it. She shot a quip at Alec's back, hoping nobody noticed the subtle quaver in her voice.

"Hey, uh, Alec... you know that orderly you tried hitting on earlier? It's a fucking military hospital, whaddya think was gonna happen? Hitting on a nurse – you are literally a walking stereotype."

The big man turned to face her with an air of slow, exaggerated patience. "I am comfortable with that." His composure broke, and he grinned at Lena

Cassie, not missing a beat, shot back with an acidic response. "Best keep Tim here away from the men. That way, at least some of the staff can remain unmolested, no?" Jiya stopped reading at that, shaking her head in disbelief. The others joined in, each betraying their unease in some small way as they took advantage of the opportunity to fill the quiet spaces of the room. Lena's attention drifted, studying her reflection in the brushed metal of one of the wall strips.

She looked healthy, if haggard-eyed and exhausted, but the marks from SEAR were almost healed. The woman looking back at her was as narrow-faced as ever, elfin chin marked by a fresh, almost delicate scar from a misplaced knife slash in CQC. Lena's hair was edged in gold and green, just starting to fade, and she brushed it out of her face with a touch of annoyance, then abruptly froze. *My—*

It suddenly struck her that this might be the last time she saw the silver-glinting irises she was born with, the last day she looked at anything with eyes that were truly her own. The eyes of the augmented Jägers were otherworldly, artificial-looking and artfully geometric. MacHale reassured her that they were natural-feeling, and their visual acuity seemed almost supernatural, but it had only recently occurred to Lena that she had never seen MacHale's real eyes. And now, nobody would ever know what hers had looked like either.

She almost laughed at that, such a small absurdity against the enormity of what they were about to do to her. A tiny voice of conscientious responsibility spoke deep inside her, murmuring something about how all of this was *going a bit far to defy her parents*. Lena pushed it away, absently rubbing the tattoo on her neck, the stubble at her nape prickly against her fingers. *You give up some things, chasing the Hawk*. When she closed her lids again, the images she saw in the dark were of somewhere far away and long removed.

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It had been two years – two long years since Farfarrow, since Firewood Watch, since that goddamn beautiful set of jumpship lights dropping in like the very hand of God. Just two brief years, and Lena could scarcely remember the ride back up in a bay lit red by lights and blood, barely recalled what she had said to the pathetic handful of walking wounded. In fact, she wasn't sure any of them had said anything at all. The bloodied Marines made it up to the fleet, and everything after that was a blur of confusion and aching numbness until weeks after the fact.

The survivors were snapped up quickly after that. The 39th Expeditionary was in fucking tatters, and the IA's arrogantly small deployment was in full retreat, with the Marine Corps licking its wounds after that disaster on Farfarrow. The Jäger Program needed new blades, Naval Special Operations was giving them free reign at long last, and the Marines sure as hell didn't care what they did with the scraps. So the Jägers requested a transfer, gave them another choice. It was a risky option to be sure, surrounded by superstition and offered by a division most knew next to nothing about.

But it was a choice, and they signed up. Most of them did, at least – so many of the Marines that made it out had nowhere else to go. After weeks of being abandoned in the snag-filled marshes and brambled forests of Farfarrow, most of the 39th Expeditionary felt that the Corps had never really come back for them at all. The Jägers took the four Lena found and forged into a unit, and a passel of others. They got reset and fought and trained and learned and bled for this. They had just graduated from the Program, made it through the SEAR exam. After two and a half years, they were truly tested, and neither the instructors nor the terrain gave ground or quarter. And they made it: individually and as a fireteam, Fenrir survived. They hauled their bleeding and broken bodies out of the muck and snow of that fucking rock. From that moment forward, they were Hunters.

And then the call went out: the Long Emergency was finished. The years of grueling anti-insurgent warfare during MANGONEL were over, and the Innies were almost on the ropes. The word amongst the scuttlebutts was that the IA, every branch of it, was gearing up for some sort of final offensive in the early months of the upcoming year. The phrase *Operation FINALIZER* was drifting in the collective breeze of the Marine rumor mill. One way or another, FARWAR Command had Fenrir and the other graduates fast-tracked, and Lena was left to ponder the question of exactly what she was prepared to sacrifice.

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A hand on her shoulder startled her out of her reverie, and Lena shook herself back to the present, head snapping up in alarm. It was Cassie, the others standing close behind her, flanked by doctors and security guards in full uniform. They shuffled awkwardly, and Cassie looked apologetic.

“It’s time, I think.”

Lena nodded and dropped lightly to her feet, right hand brushing her thigh automatically in search of a knife that wasn’t there. She tried to find something to say, wishing quietly that she had MacHale’s way with words – but she’d never been as eloquent as their mentor. She looked at each of their faces in turn, holding the gaze of her teammates until they nodded one by one.

“Fenrir, I...” she trailed off, uncertain, until a rush of conviction pushed her heart up against her ribcage. At that moment, she *knew*. They were her team, *hers*, and she loved them all. They were going to make it through. She grinned with resolve, shaky but sincere, and straightened to snap them a crisp salute. “Make it back to me, Wolfpack. *Step first!*” They returned the salutes, chanted the Jäger motto in return, and without looking back, turned as they were led towards their surgical bays.

As Lena was escorted down the sterile blue-and-white tiled corridor, soft white lights recessed overhead, she tried not to dwell on what they were going to do to her. They arrived at the end of the short hallways, and the orderly stepped to one side, gesturing for Lena to proceed. She stripped off the remainder of her clothes, submitted to the decon shower, and stood as the liquid was blasted off of her skin by a rush of lukewarm, acrid-smelling air. A scant few minutes later, she was sitting white-knuckled in a sealed, temperature-controlled operating theatre, entirely nude save for a light grey surgical gown – the end result of a rough attempt at sterilization. The air was cold to her bare skin, filled with the scent of biogel and antiseptic hypos and something like wet metal, alongside a teeth-gritting trace of copper. A technician worked nearby, fitting the last of the IVs and monitors, but she barely felt their presence or their touch. The many-jointed limbs of the surgical armature were submissively tucked away, but the technicians had started to wheel in carts and stands laden with the limp cybernetics.

Cassie and Tim and Jiya and Alec were already in their own operating bays, quarantined off and only barely visible. That small allowance was a kindness, a concession in medical procedure made only because isolated Jägers had a tendency to become violently uncooperative when kept out of contact with their fireteam. That was the thing that made her sick with worry, though – facing not knives and opponents, but scalpels and her own human mortality. Even after all the combat she’d seen, her general understanding of what the wetware installation and neurolink entailed deeply unsettled her. Lena had seen diagrams, heard stories, seen the interface guards and implants on MacHale and others, but it hadn’t seemed real.

She could scarcely comprehend what it would be like to have neuroaliasing conductors twisted around her spinal cord, or have ceramic scales like a metal ridge line her back along her vertebra. It wasn't just her back, either... hackware implants and accelerometers in her fingertips, sensory lacelinks adorning the hemispheres of her brain like a veil, voice pickups and optical hardlines burrowing through the gaps in her skull. Lena stared warily at the implants hanging on racks, trying to remember where each device would be implanted. She'd seen the diagrams, ceramic and composite and CNT wire spread into her body like spiderwebs, everywhere from her lungs to her wrists. These were new cybernetics, different standards – and it was an altogether more frightening prospect to suddenly realize that it would be *her* on the table next.

Lena felt her pulse spike even before the holotank pulsed in warning, and though she tried to crush it down, the primal terror would not go away. Skies, what was she thinking – wires and modules and ports inside her, under her skin – her spine, her *eyes*! Suddenly it wasn't at all okay. The walls were very close and she could imagine the spinal implant cord with its guards and inward-pointing spikes and hair-fine INAIT leads... feel the scalpel and the cauterizer and the sickening tingle of the medfoam, see the yawning gashes and sockets before they were plated over. She would watch as they wormed nanolace and wires into her fucking mind, pulled the delicate silver eyes from her head—

She clenched her fists as she felt the first cold touch of the IV solution in her veins, tried to shut everything out as the surgeon standing sedately next to her attempted to explain what she should expect. The patch on his breast read *Loftus*, and to his credit, the man seemed sympathetic. Other technicians were running gloved fingers over her skin, passing scanners and incision vectors across her bones while he spoke.

“You must understand... the procedures required for a full wetlink installation are extremely complex. Your neurology must remain active, even if unconscious. The pain – physical pain – we can suppress. But... the mind is not always so resilient. Linking with your nervous system on such a fundamental level can have... unintended side-effects. Synesthesia, flashbacks or hallucinations in a sort of fugue state, phantom pain, imagined sensations. None of what is seen or felt will be

real – except to you.” He paused, looking at her to gauge her reaction. “You’ll be just fine. There’s very little physical risk... Just another mission, Lieutenant, yes?”

Lena was trying not to listen. Her body was fighting the drugs, training rebelling against the soporific chill in her blood, but her mind had given up. Overwhelmed, she didn’t want to think about it anymore, just wanted to fall asleep so it would be over. She could only hope that the sedatives would take effect before too long, at least that way she wouldn’t really *be* here anymore. She lay down on the gurney, rested her head against the padded restraints, and crossed her arms. Alone and truly scared, with IV lines stretching like marionette strings to the stand beside her, Lena waited for the dawn.

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S#7715849352-LRW/J201061
NRO-SNPTC_PTRN/REF_STRNG#UNAVL
TIME/DATE:2DEC2911/LOC-STAMP#UNKWN
MARK_CTGRY:??/TYP-INTERREGNUM

There was no floating above the operating table, watching herself from far above – all of the supposed stories she had heard about peaceful lights and flashing lives seemed to be disappointingly absent. In fact, for the longest time, there was nothing at all. After a while, she started to feel things again, bits of her flesh waking back up one at a time, only to find that there was no breath in her body. She couldn’t move, couldn’t breathe, couldn’t even feel the reassuring thud-*thud* of her heartbeat. Whatever part of her brain was still working tried to hold onto something, no matter how small, but any sensation she clung to would slip away. Without the feeling of sheets under her back, or a brush of air across the tiny hairs on her skin, the boundaries of anything she could consider *herself* were vanishing like smoke in the trees.

Eventually, she gave up and relaxed, letting herself drift and scarcely stopping to consider the impossibility of relaxing without any body to let fall limp. Mostly she didn’t feel much, just snatches here and there: tingles that faded into aches, spurts of irresistible ticklishness, then jagged gouts of agony that felt like they were flaying her nerves strand by strand. There was pressure and

cold, and exhaustion as if she were dead and long turned to dust, and once or twice something ripped through her and she didn't ever want it to stop. It was hot and wet, like floating in water or having someone else's blood fill every space inside of her. She came, maybe, and the lizard at the base of her brain writhed in sympathetic orgasm.

It came and went, sometimes so strong she could feel muscles again, often accompanied by crackling arcs of colored pain, roiling like plasma and so bright they had a sound and a taste. Other times she had a vague awareness of something shaped like a body, but very far away, limbs run through and pinioned with iron barbs sinking straight through her. It didn't hurt too much, but the pinioning stiffness was still paralyzing. She had no sense of time in this state, and when the torment settled along her spine and inside her skull, she forgot if there ever really had been a time without the pain.

She remembered things, too. She remembered the first time she broke her arm, and the second time, but the second was the night that *they* brought the Strand down across her life, so she remembered that instead. She remembered the time she left Faridah and didn't say goodbye, remembered the first time she kissed anyone and the first time she kissed a girl, but those were the same times. She remembered enlisting alone on a hot April morning, and the haze-dusted dawn light when she met the others who would become Fenrir, become *hers*. She remembered being born, too, but that wasn't possible.

After a few hours, or perhaps a day or two, the confusion fled to the corners of her mind, something slamming her awake. Lena's eyes shot open and a strangled cry wrenching its way free of her throat. Muscles twitching in alarm, it took a series of terrifyingly long heartbeats before her body let her move again. She pushed herself upright, astounded beyond belief that her limbs responded. Her chest heaved, panting, and she struggled to focus her eyes only to find that the incision guides were no longer inked across her skin. All her scars were gone, in fact – the delicate web of cuts from insisting on practicing with live knives, the puckered streaks where a spray of thermite had cut through her BDU, even the tiny shrapnel mark she had gotten from a rock blowing up in Shaw's campfire.

She attempted to roll off the pallet, muscles quivering with strain. Half-expecting hands to force her back down, Lena let out a yelp of alarm and pain when her body tipped off the table and crashed unimpeded to the floor. Half-stunned and struggling to decide on what it was that was wrong, she gingerly pulled herself up by the table, looking around. The room was empty, door closed, lights dimmed. ...*Fenrir, where... th'others, are they*— Eyes darting around in alarm, she found them: Cassie and the rest were right where she had left them, closed off behind the translucent panes of the surgical bays.

They weren't alright, though. Of the two rooms she could see, one had blood all over it – pooled on the floor, dripping from the operating table, streaked like macabre warpaint on the limbs of the limp surgical armature. There was so much, red like crimson spalled across the theater. *Too* much. The doctor in the room was slumped, shoulders bowed as she pulled off her mask, hands shaking. Two assistants were wheeling a gurney from the room, and on it lay a figure, covered in a reddened sheet. Lena could not tell if they were alive or dead, or maybe somewhere horribly in between.

She spun around in a panic, throwing her shoulder against the red-lighted door, trying to get *out*, to run to her squad. *Oh god who was in that one... was it Cassie? I can't remem...* The surgical bay on the other side was still occupied, and she could see most of it through the semi-transparent glass. Timothy was in that one. His body had been wrenched into an impossible position, blood and viscera caking his skin. On his stomach, head thrown back and spine bent into an impossible bow, there were half-installed cybernetics protruding from his ribs and spine like a Crown-of-Thorns. She could see his mouth moving wordlessly, eyes closed as if in prayer. Lena stumbled forward with a scream, tripped and pounded her fists against the pane, and something shattered.

It was her, though, and time seemed to stop as she watched the cracks and grikes race up her arms and the flesh explode away. The world around her seemed to stretch and distort, then it ripped with a roar like a breached pressure hull as the tatters of vision disappeared at the corners of her eyes. Everything was blackness again and wrenching, tearing tugs at a body she did not possess, and she was very sure there had never been anything else.

Eventually, she stopped being able to remember if they were memories or dreams, so she dreamed instead. She dreamed about Cassie and her mother and about Shaw, and she dreamed about the first person she ever killed, except... he killed her this time, and he did not do what she had done. There was no startled look of astonishment, no scrabbling away on her rear in guilty desperation. Instead, his boot pressed into the small of her back and then lifted away, and he left her there to drown in blood and the hot, dry dust of Riser.

She dreamed about plummeting into a burning star and the fall lasted forever, until it turned into the first night of Basic when she made her first jump. Everything was pitch black outside, overcast and with the ground of Northreach kilometers beneath her. She and 24 others were clutching the bay rails of the dropship, and the jumpmaster made it very simple. *Jump or fail.* Lena hadn't so much jumped as been sucked out by the airblast, and the way down was the longest thing she had ever done. A little while later she dreamed about the last night of SEAR, freezing almost to death on the mountaintop. In this version of that night, though, the shivers that cracked her frame cracked off little icy pieces of herself, and when the weak, distant sun came, it melted her down and she flowed into the tiny cracks of the rock and through the dirt.

She dreamed about all the beautiful places she'd ever been, and a few she hadn't ever seen, even in holos. She saw the view from Baumskopf on Verge again, and the shallow tidepools on Trident, and the incredible wind-carved stone gardens they bivouacked under when they were deployed on Grannel. She dreamed about the tall spires and curved skyscraper facades in the distance, just visible in the distance from Cassie's hometown on Whippoorwill. For a while, she was crouched with the rest of Fenrir on the mossy rocks of Typhon, under the blood-hot, never-ending rain. They were watching those aliens from afar, hidden under thermoptic tarps and afraid to move. Every report said the dominant form of indigenous life was nonsentient, just like everywhere else, but there was just something about those things that she would have sworn to anyone screamed *thinking and knowing*. The way they walked on those blades they had for legs, ruffled and flared the spikes on their back, and oh God the noises they made... the constant, breathless wheeze of a creature with gills instead of lungs. Her team had heard it through the mics,

and sometimes she still heard it in her night terrors. She dreamed about the granite flagstone in the courtyard at Trondheim, and seeing all of the different Colonial flags lined up in a row against the towers of the Academy.

She dreamed about the second most wonderful thing she had ever seen, which was the time she was back on Verge, when she still had the strength for art. Late afternoon light slanting across the floor, the smell of fresh laundry and recent sex and hot soup filling the room. Even now, she could see the hologram that Faridah had made for her, watched the field lines arc like auroras overhead. It was all made of rainbows and warpfields, infinite in complexity yet simple as a fan of cards. It was so clear in her mind, and she was there once again stepping barefoot across the wooden boards in Faridah's room. Grinning broadly and nearly bursting with love, she spun to embrace the other girl, but there was nobody there.

Faridah was gone, like she had never been there, and Lena felt hollow with a loss she couldn't comprehend. The room shrank around her, and she fell through the universe. Puzzled, she tried to remember what had just happened, tried to hold on to the happiest memory she had. She was pretty sure it was a person, but their face was nothing more than light, and it all streamed away like water when she tried to touch them.

At the end of it all she thought she dreamed of flying, metal feathers armoring her back and neurolinked wings fanning off forever beside her. She was a wolf in the sky, and a hawk too, feathers and fur covering her limbs and enveloping her like a blanket of steel needles turned outwards. With her new machine eyes, she could see all the way back to Verge, could see every mistake she'd ever made. But at the end of it all, she was very sure it was just a dream after all.



“UNIFORM CODE”



PART THREE



荷 THE THINGS SHE CARRIED

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She carried a worn scarf decorated with embroidered symbols, a square of folded flimsi covered in scrawled poetry, and the brushed-metal hammer from the first handgun that had even been hers. She wore dye in her hair and a red stripe of paint on her sleeve, and had flags and blood type stitched onto her shoulders. She bore two and a half decades and 537 thousand lightyears around her neck, and her faraway eyes held all the distance she'd ever sighted through a rifle. She carried a name, rank, and service number, and too many memories of a birthplace that was no longer home.

She carried a pair of threadbare bracelets, fraying, knotted around her right wrist. One was a simple crosshatch of blue and white, made for her by a childhood friend the weekend before she enlisted. The other was a twist of red surveyor's twine, cut from the spiderweb that had marked out the landscaping project her father never had a chance to finish. On it were a collection of tiny charms and keepsakes, beads and an earring bent around the string, a plain brass ring. Habitually removed before suiting up, they had survived things that parts of her body didn't, and she still wore them hidden beneath the sleeve and dustguard of her uniform. She was creature of habit, oblivious to the impossible strangeness of tying decorative jewelry around a ceramic-armored combat prosthetic.

She carried her knife. It was her Survivor's Claw, her SSK, her tacblade, her Talionis – a reminder of the Jäger oath to exchange an eye for an eye, a life for a life. The unmistakable mark of a Frontier Team, it rarely left her the quickdraw sheath at her hip, save the rare private instances where it was removed for cleaning and repair. The handle and tang of the blade were marked and scored, the badges won in five long years of frontline service, earned and re-earned as components

wore out and were replaced. Only the blade, a 41-centimeter razor of superhardened carbon cermet, represented the original knife awarded to her all those years ago.

She carried approximately 3.5 micrograms of genehack charcoal ink in three different places. Many Frontier groups were fond of tattooing, marking out history and heraldry in an almost-ritualistic language of colors and patterns. She proudly wears an iridescent dragon's wing on her left shoulder, and an elegant black curl like a hawk's crest is half-visible behind the scar tissue above her right eye. The third was the weight of three dead squadmates, marked out across the inside of her left forearm. It took the form of four angular rhomboid-like tallymarks labeled II through V, three of which were crossed out. Were she to fall, it would never be completed. The numbers would be reduced to ashes, along with the rest of her body. There was once a fourth, her name in *kanji*: *signal fire*. It had sat on the inside of her right wrist, but it was lost along with the flesh.

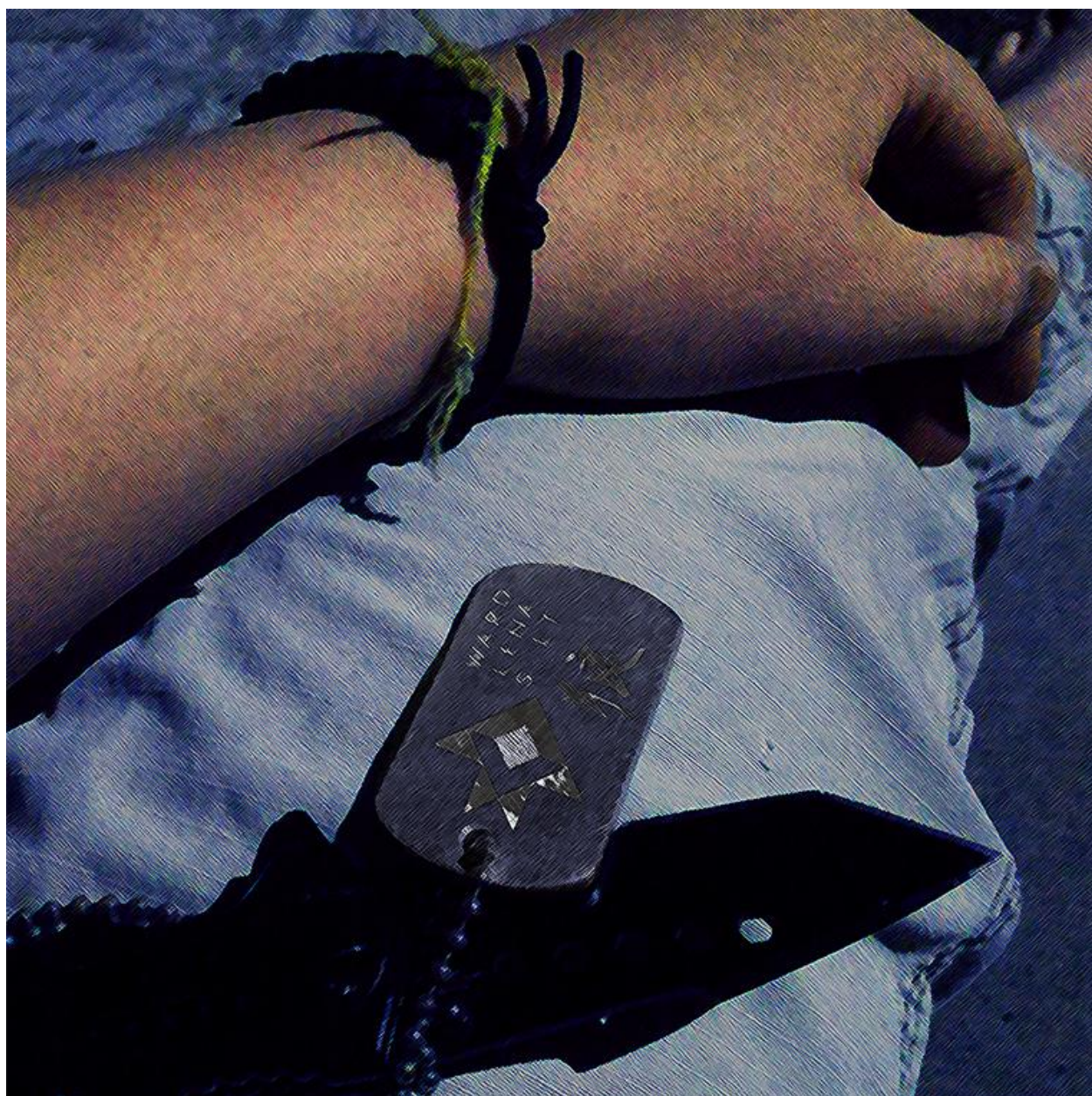
She carried three small metal tokens on her necklace, one her own dogtag, the other her mentor's, and the last a medical pin that was once her mother's. The tags hang on a metal chain, and are nearly indistinguishable – marked only with name, service number, and a dot-matrix code containing record information. The reverse side bears an engraved FARWAR symbol, and on the tag that is not her own, the Survivor's Flame has been scored by a crude X carved across the metal. The medical pin was once a winged staff of Asclepius, but some violent event had deformed and burnished the metal, leaving only a twisted curl of snakes and wood, with a single broken wing. A leather cord is threaded through a hole in the metal, the wing dangling from it and the rod bent alongside.

She carried the lines and creases born of the constant, low-level ache of her implants. Her fingertips are roughly a half-gram heavier, imperceptibly weighed by the accelerometers linked to her neural lace, but the surgical scars fanning out from her arm did little to hide the spars anchored in her chest. Her eyes might have been epimatched to the silver-slate color of the ones she was born with, but the synthetic lenses and raptor-DNA retina never felt quite the same. The vertebral guard along her spine concealed the delicate interface points for the armor, and the contoured

metal at the base of her neck was marked with a mathematical symbol. The tiny triangle of Celtic knots was a replacement for the tattoo that once sat there, engraved once more into the metal as a renewed promise of *therefore*.

She carried a picture, lithographed on a permaweave screen. Despite the tear-proof material, it was creased and scuffed, long kept folded in a pocket. Even years later, the camera that took the recording still imbues it with a measure of life: the smart ink lets the subjects move in a limited fashion, playing out a short snippet of the moment over and over. It is a photo of the members of Fireteam Fenrir, taken from across an armory. Timothy is in the foreground, face lit up in a laugh, drone remote on his cuff and fingers on the pad. The others look into the camera, arrayed in the background: Jiya's hand is planted on Tim's backwards hat as she pushes his head down playfully, Alec has his feet up on a crate and arms crossed lazily behind a head shaken in exasperation. Cassie is leaning against a support beam, face eternally caught in a shameless snicker as she gestures towards the last person in the image, mouth half-open to call to them. Lena is hunched over a holotable, brow slightly furrowed in concentration. She is just glancing up towards Cassie, looking bemused as a stray lock of hair falls into her eyes. Her hands are planted flat on the table, elbows turned awkwardly outward, interface markers rippling outwards from the relay implants in her fingers. There is nothing at all remarkable about the pale, freckled skin of her arms.

She kept all of these memories as reminders of what she had failed to protect.



“TAGLINE”



AFTERWORD

For the sake of implicating the otherwise-overwhelming and disorganized explanatory background that guided the creation of these characters and their universe, I will attempt to present here a small selection of the most relevant aspects. As the concepts involved stretch far beyond the bounds of what I was able to compress into a single document, this afterword should hopefully assist the reader in understanding the broader inclusions and implications from the expanded universe. This represents a condensed selection from more than 30,000 words of reference material and 99 pages of narrative, and I am constantly resisting the urge to add even more as I weigh brevity against comprehensiveness. Just as the foreword gave a small introduction to the world, the sections covered here comprise a body of knowledge with which to answer any remaining questions you might have. It is my hope as a writer and creator that these explanations prove useful to you in navigating Lena's story.

POLITICS

The broad sociopolitical split in this vision of the 30th century falls between two entrenched societies: the Coalition of Colonial Governments (CCG, or simply "the Coalition") and the Sovereign Protectorate. The Coalition represents the diminished remnants of a powerful empire which once comprised all of human territory; though sometimes inefficient and stagnating, it is still the strongest astropolitical presence. Political processes for the Coalition are a function of a parliamentary republic, similar in function to the European Union or the Icelandic Althing. Predominantly consisting of major Core colonies with large populations, the Coalition is highly developed and resource-reliant. The member colonies share a system of currency, an overarching institution of major laws, and have generally formed a commonwealth even if significant cultural differences remain.

In an attempt to prevent constant infighting and problematic levels of competition, both the military and economic auspices of the Coalition are split off into semi-independent "branches," referred to respectively as the Interstar Authority (IA) and CIRCA, the Colonial Industrial

Resource and Commerce Administration. Both of these organizations work with the Coalition Parliament and are able to exercise their authority without being fully subordinate or directly controlled by the Coalition. This collectivist approach to regulation and security is predominantly informed by the realities of interstellar travel: no one colony could possibly provide the resources for such an undertaking. Burbank and Cooper, writing on historical empires, suggest a similar scenario:

The Dutch state gave the company a charter and legitimized its exercise of functions usually associated with sovereignty – the use of force to capture entrepôts and later to extend territorial control, the governing and policing of those territories, and negotiation with foreign sovereigns. As it exercised these functions, the VOC began to look more and more like a state while remaining a profit-making enterprise (160).

The primary departure from this depiction is the use of military force by corporate interests: in *Diaspora*, such an effort is doomed to immediate failure by way of swift retribution from the IA. Aggressive annexation was more common in the decades immediately following the end of the Vigil, in a sort of spacefaring land grab, but the situation stabilized as interplanetary relations developed.

Making up the other half of the conflict is the Protectorate, a disparate alliance of smaller Frontier colonies banding together largely out of convenience. These independent worlds have few permanent political affiliations, and originally formed together in a sort of interplanetary collective bargaining during the Secession War. The Protectorate lacks representative seats in the Parliament, but is nonetheless to some degree subject to the authority of the IA Military's peacekeeping abilities. United by their shared isolation and mutual desire for freedom from the long arm of the Coalition, the Protectorate has existed in an uneasy peace since the signing of the Armistice Concordat marked the end of open hostilities in 2756.

TRAVEL

In the early concept stage for the setting as a whole, it occurred to me that an interstellar empire equipped with both instantaneous travel and communication would likely end up being very boring. With massive shows of force available for deployment without delay, any sort of rebellion or intrigue is likely to immediately vanish in the 30th-century equivalent of nuclear fire. Therefore, my overarching rule has been *it takes time*: messages are only as fast as the ships that carry them, and even the mightiest force still has to twiddle their thumbs for a while in a Higgs-Davis warpfield, then wait some more as they put the brakes on at their destination. Extremely limited instant quantum communication is possible, but nonetheless absurdly costly and limited in bandwidth. Therefore, the state of interplanetary travel and communication is akin to the Age of Steam rather than the globalized world of the 21st century – spaceships and space elevators are stand-ins for boats and ports, and they either carry mailbags or buy limited bandwidth on telegraph-esque entanglement channels (Stross 2010).

Faster-than-light travel in this setting is commonly referred to *Sylph*, a phonetic colloquialism based on the acronym for *super-luminal flight*. Passages between worlds are neither fast nor easy, and such a voyage requires significant preparation and resources. Simply put, the Higgs-Davis Stormdrives that Lena’s father worked with are warp engines. Through the manipulation of negative energy and the local topography of space-time, FTL-capable ships are able to streak their way at many times the speed of light, while avoiding the nastier consequences of extreme time dilation (Chung 2016). The warp field cannot be operated close to a planet (White 4): therefore, Sylph vessels have to take the slow way in and out of ports as they thrust for hours or days to reach open space. This limits travel speed, and Larry Niven notes that this allows for naval combat and confrontations that are not resolved instantly across lightyears (1976). Sylph transportation creates an economy based around trade, shipbuilding and fuel resources. The overall vision falls somewhere between cars and ocean liners: few people or corporations *own* an interstellar vessel, but the majority of the population can afford to arrange passage on one, and goods flow with relative freedom across vast distances.

Until approximately 200 years before the current date, humanity had been scattered to disparate worlds, and were unable to leave those worlds for almost four centuries until they independently redeveloped the potential for faster-than-light transportation. This period of isolation was called the *Vigil*, and the emergent interplanetary society that grew from it was dubbed the *Diaspora*. Though long-isolated from each other, the colonies of the Diaspora nonetheless originated from the same place: Earth. Some things have been forgotten or shifted, but generally speaking, the colonies retained the same technology and knowledge of history. Therefore, when the inhabitants of these colony worlds regained the potential for Sylph travel, they did so using only the resources available on their own planets. Instances such as the contemporary United States, where manufacturing and resource ownership has been outsourced unsustainably to foreign entities, are unheard of in the Diaspora.

The comparative necessity of an interstellar trade network is also informed by this scenario, in a number of ways. Interplanetary trade between self-sufficient worlds is important for profit, interaction, and influence. Much like the ancient Age of Sail, “The issue was control. Europe’s increasing involvement in long-distance maritime commerce was a quintessentially political story – about establishing and protecting one’s own linkages and interfering with, or destroying, those of others” (Burbank 153). Instead of a vast Earth-centric empire teetering on the brink of a pyramid-scheme economic collapse, the political-industrial landscape of the Diaspora is founded upon the self-sufficiency of each world. Trade is used to elevate the standard of living above a certain level of subsistence, but the inhabitants of the human Diaspora have learned well the lessons taught by the excesses of Old Earth and the Secession War. Essentially, many of the Protectorate worlds are matured versions of scenarios we see today, where otherwise-“underdeveloped” territories are catapulted to sudden wealth by the exploitation of abundant natural resources. Much as Brazil and other countries are coming into their own as economic powerhouses in their own right, the Protectorate knows what they have and are willing to leverage it.

THE MILITARY

Keen-eyed readers, such as those with military backgrounds or members of my committee, have noted several odd choices in the makeup of my military aspects, particularly the functioning of the Jäger Program. Their objections are correct: Jägers do not always act like members of a career military, they exhibit independence bordering on gross insubordination, and the cybernetics they receive are both invasive and prohibitively expensive. These traits, however, are archetypical of Special Forces operators, an elite cadre of which the Jägers represent the purest expression. They are not rank-and-file Marines destined for frontline combat, nor are they expected to serve in close proximity to civilian populations in the capacity of peacekeepers. Instead, the Jäger Program operates under the auspices of a branch dedicated to Frontier Advance Reconnaissance and Warfare (FARWAR): it is this specialized role for which Lena was selected, and it is their Survivor's Flame which heads each chapter. Jägers are explorers of uncharted worlds, long-duration scouts and pathfinders, and assassins. Their motto, *Incedo Prima*, translates to *go first*: they are the vanguard and the first step, and are often sent to environments far too inhospitable for any other force.

The Secession War, and by extension the insurgent activity that has plagued both the Coalition and the Protectorate in the decades since, is informed primarily by the harsh lessons learned in the Middle East during the past fifty years. Namely, it is a fictional exploration of the limitations of guerilla warfare against a superior force: not only is it nearly impossible for such a large and unwieldy power to be brought to bear, but the resistance is limited in what means with which they have to strike. Just as the United States attempted to use a strategy of “hearts and minds” to win popular support in Vietnam and elsewhere, insurgents have realized that doing just the opposite is quite effective. Even when limited to theatres of warfare like sabotage and misinformation, strategies and attacks that turn the overseer into a despot succeed in limiting the policy options available to even a vastly-superior authority (Scott 186-188). This has been demonstrated during imperial expansions and major conflicts alike, in theatres ranging from French-controlled Algiers to the insurgency in Iraq and Afghanistan. Much like the gunpowder

empires of the past, or the private military contractors of the 21st century, the IA has guaranteed its secure position of power by providing a necessary commodity: stability.

CULTURE

The presence of Japanese *kanji* accompanying each of the titles – and indeed, the thesis as a whole – is not incidental. Similarly to the importance of names, the difference in perspectives as framed by the usage of multiple languages is intended to be an important part of the theme. The reason for their inclusion was a desire to break the tired stereotype of English being the sole language of the future. Alongside numerous Colonial dialects, most places and objects have supplementary labels in *kanji* as well as the Latin alphabet. *Diaspora* is written alongside 演; *expanse of water*. “Wildfire Season” is combined with 移 and 幻, meaning *to shift or catch fire* and *phantasm or dream*. The partner *kanji* 會 for “Ikejime” means *to amputate or cut off*, and refers to a method for paralyzing fish wherein a spike is inserted into the hindbrain, resulting in immediate paralysis and brain death. Destruction of the spinal cord prevents reflexive action, and I chose such a reference very deliberately in relation to the invasive neural interfaces that the chapter describes. The title character for “The Things She Carried” is 荷, translating as *to bear a burden*. The *kanji* accompanying Lena’s squadmates names are simply translations, hewing as close to the original meaning of the name as I could manage.

The languages of the colonies, albeit drifted and changed over hundreds of years much as dialects are today, were preserved and intensified to a significant degree by the relative isolation of each world. Prior to their reconnection, the only real memory of Old Earth the settlers were able to hold on to was a pastiche of shared cultural elements. These aspects took on a life of their own over the centuries, the result being that each world has a unique and strong set of traditions all its own. For example, many aspects of IA military practice – particularly those of the expeditionary force FARWAR – are essentially formalized tributes to a constructed version of Viking honor and Northern European military history. In fact, Lena’s tattoo, which also serves as the chapter break

between the accounts, is indeed a Celtic *triquetra*, representing the cyclical nature of the maiden, mother, and crone.

The culture on Lena's homeworld, the planet Verge, is intended to be a mix of German and French elements. Most characters there speak English, with a smattering of German and French that has evolved into a mixed-pidgin dialect referred to as *Nordeutsch*. The convention of place names is similarly mixed, featuring clearly Germanic nouns like *Briefmarke* and *Baumskopf* with the French elements of *Verge* and *Sentier*. Even Lena Ward and Shaw Renard represent this intermixing: his given name is Irish-English, but his surname is French – and Ward is a case of linguistic convergent evolution, derived equally from Old French *garde*, Old English *weard*, and Proto-Germanic *wardaz*.

PSYCHOLOGY

Despite my endless passion for military science fiction and space operas, I am nonetheless at heart a psychology student, and *Diaspora* is steeped in psychological thought. In its simplest form, this is merely a story of one woman's life: an unsuspecting teenager who is thrown into circumstances beyond her control. Rather than studying the creation of a superhuman, *Diaspora* merely asks the question of what one has to do to a normal, healthy human being in order to make them willingly sacrifice body parts to become a better soldier. Instead of serving as a stoic hero destined to save the universe, Lena has destiny thrust upon her as a function of circumstance. She struggles with anger, depression, dissociation, and her own human frailty, and I believe it makes her character all the stronger for it.

As expressed by a frustrated geneticist in *Jurassic World*, "You cannot have an animal with exaggerated predator features without the corresponding behavioral traits." My own misgivings about the ethical and psychological practices of the military eventually led to a rationale for the existence of the Jäger Program that follows similar lines: *an individual cannot have exaggerated aggressive characteristics and combat abilities without the corresponding behavioral instabilities*. The modern military works incredibly hard to extinguish empathy and emotional connections to killing

in their warriors, because it is impossible to function effectively on the battlefield otherwise. The IA Military selects and unifies individuals with otherwise-problematic behavior patterns because these individuals make superlative soldiers. Antisocial personality traits, insular social characteristics, and reflexive squad loyalty are deliberately cultivated. The Jägers are indeed *hunters*, used to stalk, terrify, and assassinate their targets, and their perceptions and emotional responses are often chemically manipulated in combat. Consequences, of course, are inevitable – but in the Jäger Program, they are considered an acceptable loss, the rationale being that the flame that burns half as long burns twice as bright. This psychological manipulation and exploitation of otherwise-disqualifying behavior patterns is further explored in Eric Nylund’s novel *Ghosts of Onyx* (2006), where a military organization creates a unit made up entirely of war orphans.

The heavy toll exacted by cybernetic battle armor is also an area of serious psychological concern, and one I explored heavily in my concept work. After being deployed in the armor, Jäger operatives suffer a number of dangerous side effects: crippling headaches, exhaustion, minor but notable malnutrition, and a significant chance of developing serious dissociative symptoms. Jägers often demonstrate a sense of ownership over their hardware, a tendency the IA grudgingly allows, and Fireteams develop over time their own traditions of how best to recover from suit integration: usually a night of stimulation and binge-eating, eschewing the nutritionally-complete pastes intended for such a purpose. The armor is an extension of themselves, essentially bound into a single cybernetic organism, and utilizing that extension often results in learned patterns of addiction and an increased desire to remain connected to the armor.

Lena’s reference to the path of augmentation as “chasing the Hawk” bears deliberate similitude to the drug-addiction euphemism of *chasing the dragon*. Implants offer great power, and many people learn to desire that power to a dangerous extent. My personal stance is that cybernetics themselves would not cause psychological damage, but individuals with antisocial or dissociative tendencies might see these fractures widened significantly by their own *perceived* lack of humanity. However, the opposite is potentially true: someone with a slightly unstable sense of self may also be capable of receiving and integrating more extensive implants while achieving faster

recovery. Essentially, while negative outcomes and body image disruptions are possible, someone who treats the prosthetic as an extension of themselves is likely to experience more positive integration (Desmond 2002). This is supported by a number of medical perspectives: the distinction of “self vs. not self” is not based solely on physical parameters, and a person who touches or wears an object, such as a prosthetic, for long periods of time may eventually incorporate them into their physical sense of self (2002). The cybernetics technology in *Diaspora* is capable of providing force feedback and proprioceptive capability, which eliminates many of the limitations inherent in contemporary prosthetics.

TECHNOLOGY

Perhaps the first internal clue that this is not a story set in the present day, Lena’s genetic modifications are the eventual result of the various challenges posed by settling on other worlds. Even if temperature, oxygen, and humidity cooperate to create a planet where humans can survive, we’re still going to need help. In the *Diaspora* universe, in order to compensate for different environmental factors like ambient light level, atmospheric pressure, or local biochemistry, early colonists turned to genetic engineering. Much like current-day genetic modification, such alterations are both controversial and entirely ubiquitous. Utilizing retrovirus delivery vectors called *DNA origami*, they introduced new traits into the population wholesale. These genetically-modified individual (GMI) traits remain persistent and prone to spontaneous horizontal gene transfer. As a result, even hundreds of years after their introduction, many of these GMI strains are still being expressed in new populations, and have colloquial names similar to *Aspie* or *freak* in contemporary culture. As for the associated social effects, as demonstrated in the exchange between Lena and her teacher, genemods are just as prone to discrimination as other intrinsic characteristics are today. Attitudes towards GMIs are largely determined by how “recent or refined” the trait is, not whether they conform to the human baseline.

Lena’s explanation about the *tapetum lucidum* is indeed correct, and is responsible for the “eyeshine” often seen in cats, wolves, and other predators. The reflective layer increases the amount

of available light in darker conditions by approximately half, improving night vision but causing minor issues in brighter illuminations as well. Internal glare can interfere with focus, resulting in a loss of fine detail: the glasses Lena wears are selectively-polarized, not corrective in the classic sense, and cut down on incoming light without obscuring her vision. As for the effects on her irises, a few notes on that are also warranted – unusual eye colors are a popular marker for protagonist specialness, which I generally attempted to avoid. The color of human eyes is determined by melanin content at the back of the iris and the Tyndall scattering of light, not actual pigment. In order to produce the reflective retinal later, the Catseye genemod, however, incorporated nonhuman DNA sources from species such as avians that *do* feature striking pigmentation (Ehrlich 1988). This feature bled over slightly to the physical composition of the iris, and individuals with the Shiner trait often display slightly-metallic, glittering eye colors not dissimilar to the silver eyes of some hawks.

Writing the collapse of the space elevator in “Wildfire Season” required a surprising amount of effort in order to figure out exactly how to achieve it: after all, skyhooks are explicitly designed to *not* fail catastrophically. The end result was a two-pronged attack that focused on damaging the ground installation, rather than being directed against the orbital terminus. The Strand is a military structure, one that commonly shifts cargo like explosives and munitions, and it was a matter of comparative ease to sabotage an existing shipment instead of attempting to introduce a secret one. In order to prevent automatic detachment of the wounded section for the purpose of damage prevention, the terrorist group responsible for the attack detonated an electromagnetic pulse weapon several kilometers up the Strand. This rendered it vulnerable to a later, more explosive blast at the anchoring point. Space tethers are likely to be protected from weather, aircraft impacts, and similar damage by heavy support rings that would stretch from the ground to the edge of the troposphere. This superstructure is significantly more massive the comparatively-gossamer cable itself, and it is this armored sheathing that causes the devastation in the chapter when it is brought crashing down.

The Stormdrives that enable faster-than-light flight are of the breed known commonly as *Alcubierre Drives*, and utilize a manipulation of folded space-time in order to exceed the light barrier (White 2). The variant in *Diaspora* is powered by antimatter and black holes, taking advantage of the fact that the event horizon of a microsingularity is a potential – albeit somewhat problematic – source of the required negative energy (Chung 2016). Stormdrives take time to spin up, and must be activated with a proverbial running start. This means ships have to spend significant amounts of time in realspace near their origins and destinations, rendering them vulnerable. As a result, space travel is narratively more interesting than a page break, and military conflicts more complex than an instant's worth of teleporting nuclear weapons. These warp drives are a common compromise in fiction between millennia-long realspace slogs and the narrative nightmare of instant teleportation, and have been utilized by giants of science fiction like Gene Roddenberry and David Gerrold.

The cybernetic and neural interfaces used by the Jäger suits are beyond the realm of current technology to build, but are not altogether far-fetched. Rank-and-file Marines have very little in the way of cybernetics, and are only equipped with a tiny augmented reality lens in their eyes quite similar to an internal contact. Jägers, on the other hand, boast wholly-synthetic eyes with advanced lenses and adaptive corneas. This optical replacement has repercussions beyond those of bodily identity: retinal scans are the primary mode of identification. The surgery effectively strips Jägers of much of their public personhood, making them tools of the state and wholly anonymous in civilian society. They are trained and surgically augmented for the sole purpose of interfacing with hyper-advanced battle armor known as *Habrok sheathing*. These exosuits allow the wearer to significantly improve their strength, speed, sight, and other abilities: they link with every sense from tactile to proprioceptive, and are driven by neural impulses to prevent muscle fatigue. This is only possible through sensory deprivation of their own biological senses, and extensive implants along the spine are used to carry muscle impulses. Much of the other implants also contribute to this end, like alterations to support liquid breathing systems, or other interfaces to enhance suit synchronization. The powered armor itself is, like the bulk of all science fiction armor, ultimately

inspired by the Mobile Infantry from Heinlein's *Starship Troopers* (1959): the Habrok exoskeleton represents my best effort to bring that image up to date with the latest technological advances and theories.

SYMBOLISM

For me, one of the most interesting aspects of creating this world was the chance to consider and choose a particular cast of names. Rather than picking indiscriminately, the names I selected, first and last, serve in every instance to further characterize the individuals to which they are assigned. My own experience with examining and changing my own name as an aspect of my transition left me with an acute sensitivity towards the storied backgrounds and meanings of the words we use to identify ourselves. By stepping away from the familiar patterns of American English and the associated pool of melting-pot heritages, my objective with naming schemes was to assemble a diverse cast of characters that not only look but *sound* like they originate from a variety of different societies and worlds.

For example, the name of the protagonist is derived not from Hebrew or Russian, but from a Scandinavian background: Lena means *torch-bearer*. The characters surrounding her include *dweller by the wood* (Shaw), *beloved* (Cassie's surname Tigan), and *companion* (Machale). The Jäger branch of the military is comprised of *hunters*, and their Habrok armor translates to *best of eagles*. Unfortunately, the list of examples here is far from complete, as I have limited it only to those aspects described in the text. My inability to include here characters who do not appear in the chapters saddens me, but the process of building and naming a universe was fantastically interesting to me, both in a personal and academic sense.

As grand and storied as the tradition of using Biblical allusions and prototypical Christian figures in fiction may be – as done to great effect by J.R.R. Tolkien, C.S. Lewis, and others – I found myself particularly interested in Celtic and Norse mythology. Lena and her soldiers make up Fireteam Fenrir, a wolf of Eddaic infamy who was believed destined to devour Odin, thus bringing about the beginning of Ragnarok. Many aspects of the *Diaspora* universe are inspired by

Nordic elements: the names of places such as *Ida*, *Myrkvidr*, *Habrok*, and *Surtr*, the pastiche of military culture as mentioned above, and countless ships and weapons are taken from the Poetic Eddas.

One of the key pieces of iconography is the Celtic trefoil Lena receives as a tattoo, which also marks the breaks between chapters. As her culturally-drifted internet search reveals in “Wildfire Season,” it is indeed a cyclical symbol commonly used to represent triple goddesses such as the Morrigan. Several interpretations exist, such as it standing for the maiden, mother, and crone stages of life: innocence, nurturing, and communal wisdom. It may sometimes be a sign of the goddess Brigid, patron of poetry, healing, and metalcraft. Lena herself is more interested in the arrangement of the three knots in the conclusive formal logic sign for *therefore*, but it carries significant story importance as well. Her growth as a character mirrors the stages of the triquetra, beginning as a naïve maiden, growing older and serving as a surrogate mother to her squad, and far later in the plot arc, developing a broader concern for the human community at large.

PHOTOGRAPHS

Finally, the artistic elements placed at the end of the chapters are intended to be supplementary visualizations, not necessarily representative of any particular actual event. All of those included are composited from a photographic background and a digitally-manipulated sketch foreground, with the sketches being original art of my own design. The intent and meaning behind their creation is difficult to qualify objectively, but I will attempt to provide brief descriptions of them and their content.

The first, *Flag Forgotten*, accompanies “Wildfire Season.” It depicts a patch featuring the sovereign flag of Verge, lying discarded on the ground. I had designed the flag, with its flaming evergreen and starry ribbons in the sky, but couldn’t find a way to include it in this document in a manner that did not seem intrusive. The solution was to warp and filter the image like a piece of paper, blending it into the background. In essence, it represents the moment when Lena loses her home, discarding her allegiance to her birthplace and throwing herself headlong into the realm of

the military. Ultimately, it is a sad moment: it represents her loss of innocence, loss of a sense of belonging, a token of a time and place erased in the disaster that shattered her family and home.

The next is *Uniform Code*. Intended to be considered alongside “Ikejime,” it represents Lena in full military gear. The source for the basic figure itself was a character played by Anna Popplewell in the series *Forward Unto Dawn*, but the image was heavily modified with additions, filters, and other alterations. A full accounting of all the text and symbols would occupy an inordinate amount of space, but suffice it to say that the uniform is marked with a unit patch, name, rank pips, squad livery, and personal adornments. Of particular note is the Fenrir symbol, consisting of a wolf curled around a severed hand, in reference to the Norse hero Tyr, who gave his arm to bind Fenrisulfr. Their motto, *Teeth of Ragnarok*, is partially obscured. Lena has also scratched a pair of kanji into her squad leader’s stripe, which read *wolf* and *to guard*. Despite the subdued standards of dress, Jäger uniforms are also displays of what a person holds dear. These small acts of individualism, similar to her brightly-dyed hair in “Ikejime,” are symbolic of her fierce spirit and rebelliousness. In some ways she as an individual is being erased; yet in others, keeping her small surrogate family safe has seen Lena mature and come into her own.

“Tagline” is the final photograph, and is entirely my own creation. I mocked up Lena’s BDU pants, tackknife, and dogtag as best as I could with the things I had on hand. The tag bears her name, rank and branch, as well as “wolf” in the form of a *kanji*. The small textured diamond in the middle of the FARWAR logo is actually a dot-matrix code containing ID and medical information for Lena: much of her details were revealed in “Ikejime,” but other tidbits hidden here are religion (ostensibly Jewish), next of kin (N/A), bloodtype (O+), and burial preference (cremation). The composition of the image itself is deliberately contradictory – bare feet and bracelets contrasted against a combat knife and a dog tag on a chain. The freedom this implies is cropped close, constraining her to the narrow area in which she exists. It’s a study in paradox that I find fitting for Lena, as she is boundlessly creative and fiercely independent. Even among such sparse and harsh surroundings, she will always manage to carve out a space of her own.

After all, it’s who she is.

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