

## **AURORA FALLS - A Subnautica Story.**

### **Chapter One**

"Call me Al."

My full name is Alexander Fergus Selkirk. Alterra employee number, 105/8874.

Mission Time: Day 267, 2171 C.E

Given my current situation, my parents must have had a fine sense of irony. If not, at least some significant measure of prescience. I'm currently stranded on an alien world, approximately 175 light years from Terra.

So, not exactly within easy range of human assistance. Worked that one out fairly early in the piece. I've more or less resigned myself to the fact that *IF* help is on the way, it will be at least six months or more down the track. However, that depressing fact is the very least of my concerns at the moment.

I'm guessing that you have already found the PDA logs. If you haven't, I'd suggest digging below the *Aurora's* memorial plaque and opening the Lifepod that I buried there. You can't miss the *Aurora* monument. It's that hundred-metre nanocrete obelisk, one klick dead south of the ship.

Not too shabby, eh?

It's amazing what one can achieve with a Terraformer and a metric butt-tonne of spare time.

Spare time was hard to come by in the first couple of weeks after the crash.

Survival was the name of the game, and this planet did everything it possibly could to be rid of me. It's a damned deceptive place, I'll tell you that for free. Looks like a tropical paradise at first glance, but it seems as though the entire planet (That's '4546B' to you, '*Manannán*' to me.) is in a constant state of high alert against intruders. It's weird. There are creatures down here that earnestly want to make you dead. I kid you not.

First of all, I'd best tell you of what actually happened to the *Aurora*...

Well, at least as much as I was able to fathom, at any rate.

*Aurora* had been in orbit around the planet for about three days. Standard approach pattern, hailing calls on all known EM frequencies, dropped landing beacons in the proposed area of operations, yada-yada, et cetera, et cetera. All strictly by the book, precisely as Alterra wrote it.

Heard nary a peep from anything planet-side, so the Captain decided to bring *Aurora* down to five klicks for a couple of slow atmospheric orbits prior to touchdown. Again, just to make absolutely certain that no-one of the indigenous persuasion had any valid objections to our noble enterprise.

After all, no-one wanted a repeat performance of the Kharaa Incident. Nasty business.

I was halfway through my shift when *Aurora* commenced her descent. The Dark Matter drive was well and truly offline, having completed its power-down sequence during first watch, earlier that day. The sound of an operating DM drive is a subtle thing. It's supposed to be sub-audible even under full power, but there's always this *thrummmmm* that hovers on the very edge of one's consciousness, seeping into your bones like a warming shot of good whisky. Damn. That's something else I miss about *Terra*. I've managed to cobble together some basic hydrocarbons using the Fabricator; benzene mostly, but nothing that would match a 12-year old Laphroaig single malt. Nothing that would even match a decent paint-thinner, actually.

Sound is an engineer's primary diagnostic tool. Never met a techie worth their salt who ever ignored even the faintest odd noise, and probably never will. It's usually the very first sign that something has started to come adrift, and it's a sign that you'd do well to investigate further. Torsten Mikkelsen of Red Watch mentioned hearing something strange in one of the Lifepods, but couldn't pin down the source. Poor sod. He must be losing his touch. Either that, or he simply couldn't be arsed spending more time on it. Pure coincidence that he button-holed me outside the *Borealis Lounge*, and Blue Watch had just started. What the hell. Reckon he owes me a solid for this one.

Pod Five is my destination. Starboard bow, forward evacuation array. Took a Slider down Broadway, then hopped off at the Rec Plaza. Got my first decent look at the new planet. Even though I barely broke stride to catch a glimpse of it, that view counted as today's completely unexpected bonus. Folks back on *Terra* like to think of their world as a perfect blue marble, hanging in space like a lonely Christmas tree ornament. This one is *nothing but* water, as far as I could see. Man! There's something primal that stirs deep inside whenever a body sees that much water. I was born and raised in the *Arcadia Planitia* region back on Mars, and 'dry' was never a word my fellow Marvins used lightly. After all, terraforming can only achieve so much on Mars. Truth be known, it's simply too small and cold to retain any decent imitation of a normal Terran atmosphere.

Have to stay on the bounce, gorram it. Aircon's on the fritz in Officer Country, and I've got at least six other awkward little jobs waiting in the stack. However, it's good to be busy again. I can't complain though, since I spent most of the outbound trip in Frozen Watch as a tech-sicle, and didn't get thawed until *Aurora* entered this system. You may not dream in Cryo, but you still get paid.

As I made my way over to the starboard Lifepod deck, I bumped into Kaori. She was also in a fair kind of hurry, but we somehow managed to nail down a time for dinner together. Granted, our date was a fortnight hence, but I can live with that. Something nice to look forward to. Kaori worked in Life Sciences division, and I figured she and her crew were all a-hustle because of our imminent landing. There's only so much you can learn from orbital scans, so it was only natural that Life Sciences would be the first team to leave the ship. Some members of the crew regarded LS as a bunch of puffed-up glory hounds, given their 'first and foremost' status on these missions, but I knew differently. It takes some serious stones To Boldly Go, particularly when you've got no clear picture of what's waiting outside that airlock. Experience has confirmed this fact time and time again... It's definitely *not* unicorns, fluffy bunnies and pixies. You can take that to the bank.

That was the very last time I saw Kaori alive.

There have been quite a few times when I've seriously considered stripping butt-naked, then heading out with just a mask, Powerglide and a single tank. Find myself a nice deep canyon, and simply let nitrogen narcosis take care of the final details. Curiously, as bad as the situation got, I've never truly reached that sticking-point. Got to admit, I've found my head wandering in some dark and nasty places at times, but somehow managed to drag myself back to functioning like a regular human being again. Guess it's just the Engineer gene, automatically asserting itself after running into another emotional brick wall. I suppose it helps to deal with adversity or depression like any other technical problem; something that needs to be fixed, scrapped or jury-rigged as the situation demands. Might not be a pretty fix according to the tastes of some folks, but it always seemed to work well enough for me.

Pod Five responded normally to the standard diagnostic program. Life support, power management, descent systems, survival supply inventory, Fabricator, beacon transmitter, tachyon burst transceiver... All were operating within nominal tolerances, according to the readout on my PDA. That might have been enough to satisfy anyone else's curiosity, but I figured it was time to take a long, hard look under the hood. I palmed the Pod's access slap-pad and spoke the command phrase 'Maintenance Access. Selkirk, A. Ident: 105/8874.' The Pod door slid open briskly, and I climbed inside. The primary display's tell-tale lights were all showing green save one, essentially confirming that the Pod is indeed ready to go. The single red light signified that the safety interlock was engaged, and that the Pod could not be launched accidentally during a maintenance session. This seems like a contradiction in terms, since it usually requires an accident in order to launch a Lifepod in the first place.

I finally tracked down the source of Mikkelsen's premature grey hairs, but not before pulling out, inspecting and refitting almost every damned MemPak, servo, telemetry node and fluid link in the Pod. The job had taken nearly ten minutes thus far, and I was starting to get moderately concerned that any further delays would eat into the time allotted to complete this shift's target workload. Oh well, at least it wasn't anything major. It turned out that a small LS coolant pump had worn through one of its vibration mounts, and was rubbing on bare metal as it cycled through its scheduled self-test routines. Out you come, you little rascal. Reckon I'll make a nice shiny wooden plaque to mount this doohickey on and hang it in Red Watch's mess-hall for all to ...

I won't bore you with my particular insights into the sequence of events that followed.

In the space between two heartbeats, *Something* killed the *Aurora* and everyone aboard her.

Two thousand, five hundred souls. All gone.

I survived. Not entirely sure that I should have.

Falling.

That's honestly all I can remember, even after wracking my brain every haunted waking hour since. There might be a single blurred freeze-frame of *Aurora* taking her final fiery plunge into atmo, but my mind keeps pushing that image away. It's entirely possible that I blanked out completely during the ejection sequence. Can't say for sure. Any recall of that crucial handful of seconds was ripped clean out of my memory and left aboard *Aurora* as she fell from the sky.

Now that I think back on it, this vague sense of mental dislocation could have been part of the full 'Lifepod Escape Experience'; something that we never actually experienced during Alterra's pre-flight induction training. Sure, they cycled everyone through highly detailed AR simulations, timed response drills and actual orbital drops as a mandatory requirement to becoming a fully-fledged Spacer, but there was something absent that separated a simulated escape scenario from the real deal: The *Valkyrie Field*. A process Spacers mordantly referred to as 'Uploading To The R.I.P Drive'.

Not certain if you folks are using this tech yet, but Alterra takes care of its employees, mostly. The *Valkyrie Field* is a rather thoughtful addition to the latest series of Lifepods. It's essentially a clever combination of stasis field, body-scanner and a matter replicator. When you strap yourself into a Lifepod during an actual evacuation, the *Valkyrie Field* is immediately energised. The stasis field holds your body completely immobilized as it is being scanned, and if you are unfortunate enough to die during the descent or anytime after landing, the Pod will happily repair and reconstruct your body according to the most recent biometric template it has stored in its memory.

There are of course, certain limitations to this process. Some people may refuse to avail themselves of a quickie resurrection purely on religious or ethical grounds, some might feel uneasy about the process from a psychological standpoint. Others... Who knows? Seen from a straightforward engineering viewpoint, a *Valkyrie Field* is fairly power-hungry, and any quantum-level processing glitches that might arise in the replication system will make themselves known in a rather dramatic and highly unpleasant fashion. Obvious downside: There's a pretty good chance you might die when you get turned inside out the first time, but the machine will retry at least a couple of dozen times before finally giving up and permanently shutting down. If you happen to be even remotely aware of what's happening during this time, all I can say is "Sucks to be you right now."

Sorry.

Anyway, my first truly coherent sensations were that of good old-fashioned motion sickness, coupled with the punishing after-effects of an abrupt acceleration, an extremely turbulent descent and a violently sudden deceleration upon splashdown. As my scrambled thoughts clicked briefly into focus, I noticed that JUNO, the Pod's AI was urgently repeating a warning that internal atmospheric carbon dioxide, monoxide and volatile hydrocarbon concentrations have risen to dangerous levels, and that it would over-ride the main hatch seals unless I verbally responded within ten seconds. I have absolutely no idea how long I have been sitting in the Pod after it splashed down, although I'll freely admit that some measure of staring blankly at the walls took place for an unspecified period of time. It's also possible that furious, bitter tears of grief were shed at some point. Severe physical and emotional trauma generally works that way. I cracked the hatch, slowly climbed the ladder and gratefully inhaled the startlingly fresh, salty zephyrs of an alien ocean. Alive.

The Psychs talk about something called 'Survivor's Guilt'. As my mind slowly cleared, I thought long and hard on this particular condition while staring numbly at the terrible scene before me. *Aurora* had slammed down about two or three clicks from the Lifepod, what remained of its hull now blazing so fiercely that I can feel waves of raw heat washing over me, even at this distance. Radiant heat. Radiant...

There was an irritating, insistent background noise that I had been trying hard to ignore for the past hour or so. It meant something. Something important.

Oh crap. Rad counter.

I scrambled back down the ladder and hastily dogged the top hatch. A Lifepod's inner hull has integral radiation shielding, certified to protect the occupants from a constant exposure level of 2.50 sieverts per hour. That's a lethal dose, eventually. However, there is a finite limit to the amount of time I can safely stay buttoned up in there. Normally, onboard life support resources are only supposed to last just long enough for the Pod to touch down safely after an orbital evacuation. The lithium hydroxide canisters used to scrub exhaled carbon dioxide from the Pod's atmosphere would be almost depleted after my unusually protracted stay in the Upright And Locked Foetal Position for some hours after splash-down. This neatly explained the crippling headache I had recently acquired.

Fortunately, the actual count was more like 45 millisieverts per hour. In realistic terms, I might be feeling a bit off-colour and unwell sometime over the next couple of days, but it isn't a serious cause for concern. However, radiation exposure is a cumulative deal, as you're probably well aware. 'Right Now' was definitely a good time to relocate the pod. I activated the Pod's built-in Fabricator and perused its menu, searching for useable options. A dive suit and SCUBA rig looked particularly appealing as a potential first choice. Hmmm... No snorkel template in there. How very odd.

As I had absolutely no idea how the ocean currents ran in this area, anywhere in the general direction of 'far, far away' would be a good place to be. All Lifepods are equipped with a pair of small MHD vectored thrusters, powered by a bank of self-charging PermaCells. Those thrusters can push the Pod along at ten knots to someplace other than the middle of an ocean, making the Pod a reasonably effective self-rescue device, provided that you knew roughly where you were going. However, this awfully handy piece of survival kit had unfortunately lost its supply of Magic Smoke sometime during the descent, taking with it the tachyon-burst transceiver, distress beacon and navigation plotter. To my practiced eye, one glance at the sputtering, smoking slag-pile was enough to convince me it would take considerably more than coconut shells, bamboo slivers and the guts of an antique AM radio receiver to set things right again. I'm pretty damned good, but not *that* good.

Simplest fix is always the best. After fabricating a wetsuit, mask and fins, I exited the Pod, braced myself against it and started kicking. Thanks to the thoughtful addition of vague streamlining to its lower hull, the Pod moved more or less where I wanted it to go, so I was able to put at least another kilometre between me and *Aurora*. As I could still hear the Rad counter's tone alert quite clearly through the open roof hatch, it was easy to tell when I had finally reached a safe distance. Added an extra couple of hundred metres, just to be on the safe side. After a brief rest stretched out like a sun-bathing seal on the Pod's roof, I donned a dive tank and slipped back into the water for a more thorough investigation of the surrounding area.

It was utterly astonishing. Even though the water was cold and relatively shallow, the underwater landscape seemed jarringly tropical in its appearance. I've seen plenty of images of the Great Barrier Reef and other Terran undersea locations, but this view left them all for dead. It was a riot of colour. Massive, weirdly-shaped coral tubes, organisms that looked like purple mushrooms, strange rock formations richly carpeted with seaweeds, corals and all manner of growing, feeding, darting things. There was a strange familiarity about this vista at first, but then the alien 'otherness' of my surroundings slowly began creeping in. The fish (for want of a better term) were anything but normal in their appearance, but then again, all of *Terra's* native life-forms look pretty damned peculiar to a born and bred Marvin.

It took a stern reminder from JUNO to tear my eyes away from this remarkable scene.

"Warning. Ten seconds of oxygen remaining."

I surfaced, allowing the tank's auto-fill compressor to cycle and returned to the bottom of the atoll. The water clarity is phenomenal. I estimated that horizontal visibility was well in excess of a hundred metres. Good. That should be sufficient to keep a lookout for any predators in the area. It's Credits to Doughnuts that there **will** be predators down here. Never met an ecosystem without one. Bearing that in mind, I started searching for any raw materials that I could hopefully feed into the Fabricator. Any decent-sized chunk of rock will do for starters, along with anything else that may have fallen off *Aurora* during the crash. Titanium alloy hull plating would be particularly useful.

*From this pitiful wreckage alone, mighty works doth flow.*

It didn't take very long at all. The sea floor was littered with large crystals of pure quartz and a wide assortment of highly useful raw metals, encased in thin concretions of limestone. These nodes broke apart fairly easily, which was a stroke of purest luck for me. Prior to setting out, I had searched the Pod's survival inventory fruitlessly for a knife or something I could use as a hammer. No such luck. The one item that is **absolutely essential** in any survival situation was missing from the supply locker. I suspect petty larceny may have been afoot here. Someone, presumably someone other than a crew member, felt their whimsical fancy for a nice souvenir was far greater than the urgent need anyone else might have for a shiny, new Alterra Survival Knife.

*Hope you enjoy it, you lousy, rotten, unspeakable bastard. Whoever you are.*

True to my heritage of opposable thumbs, I went all Fred Flintstone on the first batch of resource nodes. Method: Take one rock and bash it somewhat briskly against another. Repeat as necessary. Result: Advanced Technology.

Things went fairly smoothly for the remainder of the day. The very first item crafted after my initial salvage run was of course, a sturdy diving knife, followed by a Builder tool. I debated whether or not I should use some of the remaining billets of raw material in the survival locker to craft another air tank, and eventually decided against it. Always leave a little in reserve. Besides, I managed to snag some good-sized fragments of hull plating, and quickly converted them to raw titanium billets whenever I took a spell of rest in the Pod. Eventually, I had accumulated enough basic materials to start building something slightly more stylish and eminently more habitable. That business could definitely wait until tomorrow.

I slept very poorly that first night. The Pod's seating was comfortable enough, but sleeping upright while suspended in a crash harness is not even remotely relaxing. Having a chaotic mess of horrific images playing behind one's eyes like a badly-edited 3V doesn't help much either. Unsurprisingly, I was also ravenously hungry and thirsty. There were some survival rations and water packs stored in the equipment locker, although I was hoping to avoid using that meagre supply for as long as was humanly possible. There is an ocean full of fish out there, and that ocean was merely salty water. I consulted the Fabricator menu again. Only two options were available: Cooked or cured. Cooking food made sense on a number of counts, and since the Pod has no refrigeration system, salt-curing was the only viable alternative suitable for long-term survival purposes. Dehydration would only be useful if there was sufficient fresh water to be spared for reconstituting the dried flesh.

My next immediate task is to catch breakfast. This proved to be a whole lot trickier than I first thought. Once in the water, I soon discovered that chasing prey is an extremely counter-productive exercise. You could easily end up expending far more calories than you could ever hope to regain during a hunting session. The trick is to appear as non-threatening as possible, then simply let the fish come close to you. The hard part was to accomplish this feat without having to return to the surface every thirty seconds. Found a particularly clever solution for that, too. There is a species of purple solitary coral I've called 'Brain Coral' that regularly releases large air bubbles. With careful positioning, a diver can hover over one of these and automatically replenish the tank's air supply almost indefinitely. The greatest hack of all is finding an area that contains one or more Brain Corals, and a plentiful supply of slow-moving fish... Tasty, tasty slow-moving fish. Yum.

All up, I caught about a dozen fish in ten minutes by using this strategy. When I returned to the Pod, I presented each one of the specimens to the Fabricator for analysis.

"New species detected. Sample organism is compatible with human metabolic, nutritional and hydration requirements. Proceed?" JUNO enquired. I keyed in my selection. Nothing fancy. 'Cooked' will do quite nicely. The first fish resembled a translucent, deflated blimp. I dubbed this particular beastie and all his kin an 'Airsack', for obvious reasons. As for the flavour... Well, Kaori once persuaded me to try something called '*kurage*', which is in fact, pickled jellyfish. It was most definitely a texture element rather than a taste sensation, which is the kindest thing I can say about that particular dish. Fortunately, the Airsack rated particularly high in its protein content and hydration value. Next, I tried something that I named a 'Peeper'. Huge eyes, and a rather fast swimmer. This one proved to be an absolute bugger to catch using the sneaky 'come closer, I'm perfectly harmless' method. Not too bad taste-wise, though. Cured Peepers reminded me vaguely of smoked kippers, and I had to forcibly stop my mind wandering back to its ancient Highlander heritage in search of haggis, Bannocks and oatmeal brose. Ultimately, I managed to identify a total of seven edible species of fish inhabiting the immediate area. Most illuminating, and eminently satisfying from a gastronomic point of view.

This is the most dangerous phase of being marooned. If one is not extremely careful, complacency, wastefulness and sloth come creeping in the door. Now that I had identified sources of food and water, my very next step is to secure and maintain a constant supply of both items. Rather than sit idly under the only banana plant or coconut palm on a tiny desert isle, the Survivor must always look farther afield for food, water and resources.

Since I know practically nothing about the flora and fauna of this planet, I decided to start making careful notes about each new discovery. Deeper knowledge of creature life-cycles, behaviours and their favoured habitats was absolutely essential to survival, even though it was well outside my particular area of expertise. I also figured that creating a knowledge-base of geological and oceanographic data would work to my advantage at some later stage. If nothing else, it would keep me profitably engaged in a number of useful activities, serving to keep my mind too fully occupied to dwell overlong on the loss of my crewmates. Admittedly, I also had vaguely selfish motives for blanking them out of my thoughts at this time. Selfish, at least as defined by a need to sleep soundly on occasions, and a desire to function with some ongoing sense of purpose. There is also an obligation to survive at least long enough to let others know what happened to *Aurora* and her crew. If I allowed all of those carefully-suppressed feelings of desolation, futility and grief to rise to the surface for too long, I might as well just give in and join them.

It's indeed possible to die here. All it takes is the will to do so, and entering a unique encrypted command on the Valkyrie Field control panel. No resurrection. No saving throw. The next time I do something wildly intrepid, inherently risky or just plain stupid, there's definitely no coming back.

To anyone but a Spacer, this contingency plan seems brutally harsh. In fact, it's a rare kindness.

Consider a radically different situation to mine, if you will. This particular Lifepod has ejected over a Black Rock. There is no breathable atmosphere, no food or water. The Pod will sustain two occupants for as long as its atmospheric processor continues to function. Roughly 48 hours. The occupants may dine royally on a month's supply of nutrient blocks and water rations in the meantime, but that's the end of it. This is the absolute, inviolable limit of human endurance in a Lifepod. If there happens to be a deity smiling upon them at the time, those poor sods might be rescued well before then. If not, an endless cycle of resurrection and almost-immediate death would be the cruellest torment of all.

Enough of these morbid ramblings. I have an undersea base to build.

By my reckoning, there's not much time left before the Dark Matter containment field collapses. When *Aurora's* primary liquid helium coolant systems finally succumb to fire and crash damage, all of the DM drive's superconducting coils will immediately and catastrophically 'quench', resulting in a massive discharge of energy. Doesn't particularly matter that the DM drive (*properly known as an Alcubierre Warp Drive, incidentally*), was completely offline at the time, either. It's still a sleeping dragon. Make no mistake of that. Fortunately, the Dark Matter reaction doesn't behave in the same way as a conventional anti-matter drive. The DM reaction simply stops dead once the containment field collapses. Anti-matter is considerably less polite.

Downside: There's still a huge amount of residual energy, radioactivity and oodles of heat left in the plumbing so to speak, all wanting to go somewhere else, fast. This means there won't exactly be an 'Earth-shattering KA-BOOM!' as such, although the resulting nuclear explosion will still be quite impressive. I'd estimate an explosive yield of around 15 to 25 kilotons, give or take a bushel.

Figure that's a broad enough hint to craft a radiation suit.



The base needs to be deep enough to shield it from a gamma-ray burst when *Aurora's* drive systems eventually explode, but not so deep that any tsunami generated by the shockwave exerts a dangerous overpressure on base hull components as it passes overhead. After a few rapid calculations, I found that 20 metres depth would provide sufficient radiation protection, provided that the base's total hull integrity exceeded a rating of 100.0. Add a generous fudge-factor of 50 per cent. Better make that final integrity figure 150.0. Piece of cake.

Halfway through construction of the base's foundation plates, JUNO confirmed that the containment field was indeed on the verge of collapse, with an 85 per cent probability of a prompt quantum cascade excursion event. That's Enginese for 'nuclear explosion', folks.

Hurriedly, I fabricated a couple of solar panels and a standard habitation module, added an entry hatch and dived inside. Gorram it. Base hull integrity is nowhere near the design spec I wanted. This could be a painfully short tenancy in my new abode.

"Welcome aboard, Captain."

*You're welcome too, JUNO.*

I didn't have to wait too long. Barely had enough time to move into the hab dome and lay a few reinforcement plates at intervals around the interior hull. Looked bare, cold and as ugly as sin, but I couldn't care less at the moment. I hunkered down at what I figured would be a strong point between the junction of two reinforcement panels. JUNO began a terse ten-second countdown.

"ONE."

I distinctly heard the first dull WHOOMP as the DM cores lit off. This was followed by a low, rumbling roar as the shockwave raced outward, travelling 4.3 times faster than the speed of sound. I resisted a primal urge to close my eyes, fixing my gaze hard upon a section of plating directly facing *Aurora*. If I'm definitely going to die, I'll want to know when it happens.

It was like being inside a metal trash-can, whacked violently with a sledge-hammer the size of Phobos. I swear I saw the hull bulge inwards at least half a metre as the tsunami passed overhead, and if it hadn't been for the fact that the radiation suit's helmet is a hard-shell, both of my eardrums would have been dribbling out of my nose soon afterwards. The Rad counter's urgent chattering rose to a shrill crescendo, then slowly faded to silence. The hab dome groaned long and low like a wounded animal, its overstressed panels attempting to settle back into place.

"Emergency. Emergency. Multiple hull breaches detected. Hull integrity fatally compromised."

*Yes. Thank you, JUNO. I have noticed.*

Seawater poured in from the wreckage of the hatch, as well as numerous points around the hab dome. Rather than use the Builder tool to deconstruct the dome around me (That method would have ended rather badly for me), I guessed the safest option would be to wait until the structure had completely flooded, then simply exit through the gaping hole of the ruined hatchway.

Hmmm. I conjure I might have to look at adding bulkhead doors, secondary escape hatches and considerably more reinforcing plates for the next incarnation of this base.

The business of Survival has come a very long way since early mariners found themselves shipwrecked and washed up on desolate alien shores. 'Survival' evokes images of stone knives, fashioning crude shelters of thatched palm fronds and bamboo poles lashed together, desperately trying to make fire or huddling together for warmth in a snow cave after an avalanche. These days, the experience is significantly closer to a jolly nice camping trip, rather than a genuine do-or-die struggle for survival against insurmountable odds. Given the huge amount of advanced technology available to aid in my titanic struggle against the forces of a cruel and indifferent Nature, I feel just a little ashamed of myself, actually.

I can make atoms dance.

As expected, the base was a complete shambles. Foundation plates had ripped clean away from their footings, all of the solar panels were completely gone, and the hab dome looked exactly like someone had whacked it with a very large sledge hammer. Using the Builder tool, I recovered each component in turn until my inventory reached full capacity, then commenced rebuilding the entire structure in a considerably more methodical fashion. As I worked, I took some time to better appreciate the device I was using. The blunt name 'Builder' it so stoically bears damns it with extremely faint praise indeed. This handy gadget is able to convert a wide range of raw materials into nearly anything I might need, almost as if by magic. Clarke's Law definitely applies in this case.

The process is technically known as 'nano-lathing'. Similar in basic principles to 3D printing systems pioneered in the early 21st. Century, but coupled with a heavy whiff of quantum entanglement dynamics, particle beam deposition technology and similarly scary Big Science stuff.

Powerful juju at work here.

I noticed that there were a significant number of greyed-out icons on both the PDA and Builder selection menus. After I fruitlessly attempted to activate several of them, JUNO crisply responded.

"Selections invalid. Fabrication templates not found. Please acquire physical samples of selected items in order to proceed with construction."

Not to worry. I was bound to find no end of scrap tech items scattered for miles around *Aurora* after that blast. I'll need to build a Fragment Analyser first, of course. This item is definitely the next job on my list. For the moment though, completing the base is my most immediate priority. The design I'd finally decided upon was intended to be a fairly compact, low-profile affair. Sensible, given that I had no way of knowing what adverse weather conditions this planet was subject to. All seemed perfectly calm now, but that situation could change in a heartbeat. The base is a cluster of four habitation domes, centred on a heavily-reinforced spinal corridor tube with airlocks at both ends. Each hab dome is reinforced and isolated from the others via double airlocks as a precaution against further hull breaches. This was all set upon a broad and sturdy foundation plate, situated twenty metres down on what I presumed to be the lee side of the atoll. I finished up with a final hull integrity rating of 175.0, just to be on the safe side. An array of ten solar panels provides enough basic power to run life support, plus a Fabricator and a reverse-osmosis water purification system.

I'm satisfied that it's more than sufficient for my immediate purposes, although the base's design and location makes it possible to expand the facility to suit any foreseeable future requirements. All done and neatly dusted, just before nightfall. Time for a wee spot of kippers on toast, methinks... Minus the toast.

It's probably high time that I said something about this planet, courtesy of the charming JUNO and her performing data banks. You probably know it as 4546B or *Alpha Hydrae 4*, an M-Class planet orbiting a K3-Class orange giant star named *Alphard* in the constellation of *Hydra*. *Alphard* is derived from the ancient Arabic name of the star, '*Al-Fard*', which means 'The Solitary One'. *Alphard* has approximately 3 times the mass of *Sol*, and a diameter about 50 times greater than that of *Sol*. It's also considerably older than *Sol* and a great deal cooler, having passed the main sequence of its lifecycle tens of millions of years ago. Consider *Alphard* as a cranky old stellar geezer, preparing to misbehave in a highly embarrassing and unpredictable fashion sometime relatively soon.

Cosmically speaking, of course.

I've dubbed the planet '*Manannán*', quite possibly to avoid any eye-rolling and snide comments about a totally aqueous planet having the hydro- or hydra- prefix as part of its name. The irony in each one of these tiny coincidences is not entirely lost on me, I assure you. Could have been worse, I suppose. The planet could have been located in the constellations of *Aquarius* or *Pisces*. Even so, '*Manannán*' is a direct reference to its watery nature. If you're wondering what the connection is, it's named after *Manannán mac Lir*, the Celtic sea god.

I know. I'm a terrible person.

*Manannán* occupies roughly the same position in its solar system as *Sol*'s Asteroid Belt, possibly a shade closer to *Jupiter*'s orbit, actually. Ordinarily, this would place it well outside the favourable 'Goldilocks Zone', although *Alphard*'s swollen stellar mass is still able to provide sufficient light and heat energy even at this distance. Granted, the water can be bitterly cold for anyone not wearing a wetsuit, but there's no denying that this planet will comfortably support a wide variety of life forms.

This raises an interesting question: '*Manannán*' is already **more** than habitable. Sending *Aurora* here seemed like massive overkill, considering she had the resources and capability to convert even a Black Rock of sufficient planetary mass into a relatively hospitable and ultimately, habitable place. As far as I'm concerned, all this place really needs is a few artificially raised land masses to use as core anchor points for a dozen or more floating arcologies, possibly a little tectonic stabilization, and that's basically it. Absolutely no need for any significant degree of terraforming the planet, unless someone on the BOD whacked his shoe on the conference table and demanded that geothermal spa pools had to be constructed at each settlement site. Even so, that trifling task could have been accomplished by using roughly a tenth of the crew complement aboard *Aurora*. They wouldn't have needed much more than a month's steady work to finish the job, in any case.

Eventually, I'm going to need some solid answers. I might even discover what I need to know while I'm exploring *Aurora* at some point. Crew logs, mission-specific briefings, et cetera. That won't be happening anytime soon though, as *Aurora* is positively honking with radioactivity and most likely highly structurally unstable as well. That's not an immediate priority right now. My next job involves securing an enhanced level of mobility and some reasonable measure of protection.

First things first. I need to craft a Mobile Vehicle Bay, also known as 'Shipyard-In-A-Box'. This item requires lubricant as one of its basic components, so I asked JUNO for clarification and a possible hint as to where I might find this resource. Helpful as always, she responded.

"Component lubricant is not found in inventory. Component lubricant is required for hydraulic systems of selected device. Recommend investigation of area one hundred metres due south of current location. Hydrocarbon signatures detected. Warning. Proceed with caution. Multiple life-signs exceeding two metres in size detected."

Oh.

Grumbling, I returned to the Fabricator station. As I scrolled through its menu, it occurred to me that there was nothing here that would serve as an effective weapon. An Alterra survival knife had a decent titanium-alloy blade, but it was only 200mm long. I queried JUNO on the subject of weapons.

"Weapons unavailable. Access restricted under MARTIAL lockdown protocol. Unable to comply."

Of course. *Aurora* had shipped out with a contingent of Marines. One company of 250 grunts, I think. They were supposed to serve as a security force for the expedition, although the Jarhead Clan perished along with everyone else on board. There is absolutely no point in searching the ship for their weapons, either. Weapons are fabricated *en masse* in a heavily-protected armoury vault strictly as required, and then deconstructed immediately after the crisis has been dealt with. While somewhat awkward to apply in time-critical situations, this procedure has prevented a considerable number of relatively minor shipboard incidents in other companies' missions from becoming extremely unpleasant affairs. Fortunately, Alterra generally tends to run a fleet of extremely happy ships. I immediately dismissed any fanciful thoughts of hacking into the MARTIAL lockdown program. You need God's Own Access to get into the vault even under normal conditions, and any weapon templates might already be hopelessly, deliberately and irretrievably corrupted in order to prevent them from falling into unfriendly hands.

Fine. I'm just going to have to live with this. One man and his Arkansas Toothpick against the world.

This brings me hard up against the next problem. Which way is South?

Three steps forward and two steps back. A chunk of magnetite and a computer chip is needed to Fabricate a HUD compass. I could make a dozen computer chips with materials I already have available, but for the lack of a fist-sized hunk of magnetite... *Well, poop.*

Once outside the habitat, I mentally flipped a coin. Straight ahead it is, then. There is a shadowy area about a hundred metres away, and I guessed it might be the local version of a kelp forest. As I approached, long, slender growths rising vertically from the seafloor slowly emerged from the gloom. Faintly luminous yellow bladders are spaced at intervals along the length of the plants (?), and I guessed that these held the oil source that I needed to find. Apparently, they function as buoyancy chambers for the stalks, much like Terran kelp's air bladders. I swam slowly forward, not wanting to get myself entangled in the billowing, leathery fronds as they moved gently around me. I reached out to gather a cluster of the oil-filled capsules. They parted easily from the stalk, and I scooped them up. I also collected a few strands and leaves of the vine itself, just to see what JUNO could make of this material. Still swimming slowly, I moved on to harvest the next vine.

Consider those predators well and truly found. As I parted the fronds of the native kelp, I saw one of them lazily swimming about fifteen metres or so below me. Roughly three and a half metres long, with purple-tipped, blue-green mottled skin on top and a strikingly white underbelly that caught the sunlight, the creature bore an uncanny resemblance to the marine reptile *Plesiosuchus* from the late Jurassic period, save that it has a more elongated crocodilian snout and eight squared fins or dorsal processes running from a single, vertical pairing at the extreme tip of its snout to the base of its powerful, dolphin-like tail flukes. It moved sinuously, swimming with effortless ease among the kelp stalks, looking every inch an accomplished apex predator. Given its habitat and presumed predatory skills, the name 'Stalker' seemed rather appropriate for this creature.

I noticed the Stalker was nuzzling something that lay half-buried in the sand. It's a fragment of *Aurora's* hull plating, about a metre and a half long. Its jaws clamped shut, latched firmly onto the metal. Then it began rippling the entire length of its body, methodically worrying and shaking the hull fragment loose from the sand. Something long and white fell from the Stalker's mouth. A tooth. Unfazed by this, the Stalker swam off still clutching the plating in its jaws. This was unusual behaviour, but not entirely unexpected. Many Terran organisms exhibit this 'magpie' behaviour. Lured primarily by shiny or colourful things, creatures other than magpies (oddly enough) have been discovered collecting and hoarding a wide range of non-edible man-made items, a trait usually associated with courtship, play and nesting behaviour.

While I was pondering the significance of that Stalker's peculiar antics, I completely failed to notice a previously unseen second Stalker streaking towards me. I barely had time to register its triumphant roar before it struck my upper thigh. Crocodile jaws clamped down with the power of a hydraulic press; needle-sharp teeth tore flesh and bone apart with ease. As the surrounding water clouded with my blood, I dimly saw the rest of the pack closing in for the kill.

Suffice it to say, I died. Can't rightly say that I recommend that particular experience, either.

*Hurts like hell, for one thing.*

On the plus side, I did manage to locate the Lifepod after it had been swept away by the tsunami.

The Valkyrie Field has deposited me stark naked and shivering in one of the Lifepod's seats. Night had fallen, so it was pointless to even think of swimming back to the main habitat, let alone trying to push the Pod along as well. After taking a much-needed drink of water and wolfing down a couple of cured Peepers from the storage locker, I fabricated another radiation suit, a pair of SCUBA tanks, knife and flippers. Tomorrow bore all the signs of being an extremely long and exhausting day.

Using the massive pall of smoke that still rose from *Aurora* as a guide, I pushed the Lifepod slowly back to its previous location. It was a gruelling swim of about two kilometres, across the surface of inky black depths that seemed frighteningly limitless. Every second of that nightmare swim was a freeze-frame taken straight from an old horror movie; hordes of half-seen alien threats lurking on the outer fringes of my vision, coupled with deep, eerie groaning sounds that seemed to come from everywhere around me. Whenever I returned to the relative safety of the Pod to rest, it took a conscious effort of will to re-enter those dark waters and continue swimming towards my goal.

I spent the next three days cowering in fear inside the habitat. Most of this time was spent staring blankly out the window at the kelp forest, eating and sleeping. This pointless cycle of idiotic behaviour took me to the brink of starvation before I fully realized what was happening. Yes, I have already died once, and that would be quite enough for the time being. Total reliance on the Valkyrie Field's power of resurrection would be the worst mistake I could ever make, even if I were able to completely master my (entirely reasonable) fear of death. Sooner or later, I would run into that quantum uncertainty factor on the wrong side of the probability equations, and pay dearly for it.

It is time to start dealing with this planet's threats on my own terms.

Fortune favours the brave. Occasionally, it also favours those who wisely avoid any further confrontation. I made a point of foraging as far away from the kelp forest as possible, staying out of any enclosed areas such as gullies and caves, just for good measure. At first, the pickings weren't too bad, although I found that there was a very real danger of depleting resources and sea life in the area if I went about it too zealously. Each passing day, I found I had to venture farther and farther afield to collect enough food, water and mineral resources to keep my supply lockers fully stocked. During one particularly risky sortie into the outer fringes of the kelp forest, I managed to secure a good supply of Creepvine fibres and clusters of the oil-filled seed capsules that I desperately needed to complete the Mobile Vehicle Bay.

As a food source, the kelp-like plant I called 'Creepvine' is reasonable enough. Similar in taste, texture and nutrient values to the edible *kombu* or *nori* seaweeds found on Terra, in fact. However, it is also an excellent source of useable fibres, capable of being converted into wound dressings, dive lines and tether ropes. Previously missing pieces of this survival puzzle are finally falling into place. Speaking of missing pieces, I also managed to recover a couple of tech fragment containers that would make life considerably easier down here. These fragments were used as standard Fabrication templates aboard *Aurora*, serving as encrypted shorthand examples of Terran technology. Without access to a fully operational Alterra Fragment Analyser, these items would appear to be nothing more than worthless scraps of metal, plastic or Plasteel, hopefully frustrating any deeper scrutiny by unfriendly eyes seeking to work out their design and function. As a practical security measure, it's a pretty damned clever idea.

The fragments I had turned out to be for the *Seamoth* mini-submersible and a Stasis Rifle. All I had to do was place these items in the Fragment Analyser and wait until their respective structures, component requirements and function had been fully extrapolated by the device. If I'm able to gather more fragments, this would speed up the extrapolation process significantly, although I wasn't unduly concerned with the passage of time at this point. Time is an abundant resource. Once this step had been completed, their corresponding blueprints would appear in either the PDA, Fabricator, Mobile Vehicle Bay or Builder menus, depending on the precise nature of the object.

After completing the Mobile Vehicle Bay, my next construction project will be the *Seamoth*. The PDA also contained a schematic for a considerably larger submersible of the *Cyclops* class, and I regarded its specifications with envious eyes. However, the *Cyclops* requires a far greater amount of resources for its construction, so this shiny new toy would have to wait until I was better equipped and more mentally prepared to deal with unknown locations and their attendant hazards.

An interesting piece of kit, that Mobile Vehicle Bay...

Stasis Rifle fully charged and firmly in hand, I cautiously exited the habitat's main airlock. After satisfying myself that there are no Stalkers patrolling the immediate area, I swam some distance away from the base and deployed the MVB. With a subdued 'whoosh' of hydraulics, the suitcase-sized device unfurled like a particularly clever Chinese puzzle-box, four floatation pontoons inflated rapidly and the whole thing rose swiftly to the surface. I swam to the floating platform and clambered aboard with all the grace of a drunken walrus.

Note to self: In future, try retracting your swim fins first.

With a soft whirl of rotors, four emitter drones rose from their docking stations inside the MVB's casing and flew to their standby positions in mid-air, awaiting further orders. For a moment, I felt absurdly like a conductor in an empty auditorium, desperately hoping that the orchestra and an audience would remember to turn up. Fortunately, my small orchestra was already assembled and tuned to a fine pitch for today's performance. The MVB's control panel offered only two types of submersible vehicles: *Seamoth* and *Cyclops*, although I suspect that with suitable upgrades to its programming, this device could also be used to create a variety of advanced surface structures and additional types of sea-going vehicles or other specialised equipment. For the moment, the *Seamoth* would be quite sufficient to address my most immediate needs: Mobility and protection.

I selected the *Seamoth* fabrication pattern on the console. Immediately, the emitter drones whirled into life and began nano-lathing the submersible in mid-air. Ion-deposition beams scanned back and forth rapidly over thin air, precisely laying down a variety of materials within the ghostly outlines of the *Seamoth*'s final form. As soon as the construct had completely solidified, the drones shut down their emitters and smartly returned to their docks aboard the MVB. The tiny submersible hung suspended in mid-air for a split second, then majestically splashed down as the MVB's gravity suspension field withdrew. The *Seamoth* sank slowly to about five metres and stopped. I nodded and smiled approvingly. Nothing beats an old-fashioned 'Drop Test' to gauge the mettle of any freshly-minted piece of gear.

I thought briefly about leaving the MVB topside and tethered to the Lifepod, which was now firmly anchored a short distance away from the habitat. Then I thought of the possible consequences of having two relatively fragile and vital devices bumping into each other under the influence of wind and waves. No thanks. The sea has been remarkably calm so far (apart from that one uncomfortably recent nuclear tsunami), so it's probably a good idea to put the MVB somewhere safe. Although I was practically itching to take the *Seamoth* for a spin, I retrieved the MVB after it automatically repacked itself and swam down to stow the device in a storage locker aboard the habitat.

The *Seamoth* may be small, but *oh, my...* I prefer to use the term 'fun-sized'.

"Welcome aboard, Captain." JUNO said crisply.

I'll admit that I was slightly dubious when I climbed through the top hatch. No airlock. Fortunately, my initial misgivings were entirely groundless, since the submersible's bilge pumps drained the cabin almost as soon as I had secured and dogged the hatch. The *Seamoth* is technically a 'wet-sub', meaning that although the cabin floods completely during a diver's entry or exit, and all of its critical components are contained in sealed compartments deep inside the pressure hull, well protected against water intrusion under normal operating conditions. A *Seamoth*'s pressure hull is rated to a safe depth of 125 metres and a crush depth of 225 metres. Since I had no serious intention of taking it into harm's way on the first outing, this would not pose too many problems. It's possible to fabricate a number of highly useful upgrades for the *Seamoth*, although it requires a dedicated upgrade console that can only be installed in a Moon Pool module. As I had not found the Moon Pool template fragment yet, this stock-standard *Seamoth* would have to suffice for the time being.

The sub's cabin is a two-metre diameter tempered glass sphere set into a stubby, discoid hull and entirely Spartan in its appointments. No gauges, no compass (no bloody magnetite!) and no sonar. Just a simple control yoke, hull integrity indicator and a battery power readout. Reckon I should be able to figure out the controls eventually, at any rate. After adjusting its trim, I rotated the *Seamoth* slowly to face an open stretch of water, well clear of any reef walls, bomboras and coral tubes that might dramatically curtail this jolly little test-drive. I goosed the drive hard, and the *Seamoth* shot forward like a spooked whippet. The sub's pump-jet propulsion system was surprisingly quiet, barely raising its voice above a burbling purr, even at full power. Once I had mastered the fundamentals of *Seamoth* piloting (*took almost two whole minutes, by the way*), I began to experiment with the controls to fully test the sub's performance envelope.

Since the *Seamoth* has self-righting gyros, there's not much chance of throwing in an occasional Victory Roll as you tootle merrily along. However, its ability to travel at a fairly respectable 25 knots (that's 46 km/h for all you landlubbers) and power-slide left or right at the same time means that it does have some nippy evasive moves hidden beneath an otherwise unassuming façade. That might come in very handy at some stage, considering who my next-door neighbours are... Speaking of which, I really should pay them a quick courtesy call to let them know that there's no hard feelings.

**YET.**

I swung the *Seamoth* around in a wide, slow arc. Available power reserve currently at 95 per cent and decreasing steadily. The Creepvine forest ahead looks awfully dark and foreboding, as I fully expected it to. But then again, who wants to live flinching at every shadow as it passes overhead? I have to admit, I was enjoying this ride immensely, feeling mighty and well-nigh invincible inside my... Little glass bubble?

*Aye. Hold that thought, me Bucko.*

On further reflection, some reasonable measure of prudence might be advisable here. Rather than tearing blindly through a dense mass of Creepvine at full speed, I believe a slow and cautious approach near the outskirts of the forest would give me sufficient time to assess any potential threats in the area. If a Stalker charges me, I can simply drop a 180 and head away at top speed.

Piece of cake.



*What in Hell's name is that?* At first, I thought it was some local species of squid. About thirty centimetres long, with a short, segmented worm-like body, terminating in a large transparent sac. The creature swam directly towards the *Seamoth*, emitting short, chittering shrieks. Still swimming hard, the thing struck the pilot's bubble with a sharp *thwack*, giving off a distinctly unsettling impression that it wanted to get really, *really* friendly.

On closer examination, I decided to postpone that meeting forever and aye. My new admirer wasn't exactly apple-cheeked and bonny, particularly when viewed at arm's length. At what I assumed was its mouth end, four stumpy blue tentacles surrounded an ugly set of four octopus-style beaks or teeth. As the creature floundered against the pilot's bubble, all four tentacles writhed and extended rapidly, flailing to gain a more secure purchase on the bubble's flawlessly smooth surface.

Judging by what I could see, I conjured a pretty good idea of how this thing feeds. The tentacles would wrap themselves around a limb or latch onto any other handy surface, and then the beaks/teeth would come into play. That tiny mouth wouldn't be able to ingest any substantial chunks of flesh, but it could easily take in copious amounts of blood. There's no telling precisely how much that sac could hold, but I do know how much blood an average human being contains. Five litres. If just *one* of those things grabbed me, I could easily lose enough blood make me to black out in about thirty seconds. However, if these things are pack hunters... I shuddered, feeling a bone-deep chill of utter revulsion run through my body. Forget about giving this one an evocative name like 'lamprey squid', 'Drac Sac' or 'leech fish'. It's a Bleeder, pure and simple.

Believe me when I say this. It was hate at first sight.

As a Marvin, I have always tried to maintain a certain reverence for *most* forms of life. The relatively few thousand Terran animals that currently live on Mars are practically celebrities, even considering the significant demands they place on life support and food supplies in the arcologies that house them. In spite of what all the bottom-line naysayers keep carping on about, they *do* serve a useful function. Dogs and cats are basically secure in their exalted position as companion animals, although some of the more exotic species such as cattle, sheep and horses are simply there to remind us of our ancestral home world. As a species, we truly need these miraculous living talismans to keep our thoughts and aspirations firmly anchored in reality. That same reality also serves to remind us that not all of Creation holds *Homo sapiens* in a similarly high regard. When something slimy and xenomorphic is aiming to burrow into one's skull, mimic one's most trusted friend or erupt out of one's chest cavity, our kid gloves will *definitely* come off.

Sure enough, a second Bleeder emerged from a nearby tangle of Creepvine and started swimming towards the *Seamoth*. That tore it for me. I gunned the motor and rammed the nasty little sod, smiling with grim satisfaction as its flabby body smacked into the hull and erupted in a cloud of greenish mist. The first Bleeder hurriedly disengaged, presumably hoping to avoid being carried too far from the shelter of its happy hunting ground. *Not a problem, Jimmy.* I swung the *Seamoth* sharply around, lining up the Bleeder to catch it squarely on the sub's hull plating. Best to play it safe. The first one I struck actually caused a little damage, roughly two or three per cent, in fact. Wouldn't want to make a life-long hobby of this sort of thing, though. It all adds up, and if there's enough collateral damage sustained during these collisions, your *Seamoth* will lose its supply of magic smoke. And we all know that's not entirely conducive to a long and happy life, particularly in these waters.

The Bleeder abruptly turned tail, heading back to the Creepvine forest as fast as its nasty little body could wriggle. Suddenly, the gently swaying vines parted in a violent swirl of motion. A pair of Stalkers rocketed out, jaws agape and roaring for blood. I pegged the helm hard to port and yanked back on the control yoke. The *Seamoth* rose at a precariously steep angle, and I instinctively knew that breaking the surface would be a very bad idea at this speed. She would probably lose way and wallow in the breach for a few seconds before coming back up to full speed, losing any advantage of distance I might have gained. The Stalkers roared in unison, undoubtedly calling on more of their kin to join the hunt. Not good. Not good at all.

It's a terrifying sensation. I had no way of telling how close they were, or how many more were behind me giving chase. The *Seamoth* is totally maxed out and the power level is dropping rapidly. Flatten out from the rise, and start jinking from side to side. Keep those patterns short and unpredictable. Keep them guessing. There's a cave ahead... NO! If you can get in, so can they. Keep running. Stay alive!

Ominously, the water around me fell silent. The low whine of the pump-jet was the only sound I could hear. Agonizing seconds ticked by as I watched the power indicator drop steadily past 50 per cent. At this consumption rate, I estimated there would be about another ten minutes of life left in the *Seamoth's* power cell. When its last remaining erg is finally spent and the *Seamoth* sputters to a halt, I will die again. There is scarce comfort to be found in the brutally simple arithmetic of survival.

Forty per cent. Cautiously, I steered the *Seamoth* in a series of sweeping S-curves, hoping to catch sight of my pursuers. I saw absolutely nothing behind me. The undersea terrain had changed from Creepvine forest to a shallow reef averaging less than 15 metres deep. Bomboras and coral tubes broke the surface in places, and I felt increasingly uneasy about the lack of sea-room this area now offered. Without enough space for a wide-reaching evasive manoeuvre when it was most needed, I'm as good as dead. Grimly, I clutched the control yoke and drove ever onwards. Thirty per cent.

Mercifully, the terrain changed again, giving way to an area covered in vast swathes of some kind of red sea-grass. It was much deeper here. According to the directional beacon 'pipper' in my helmet HUD, my base must lay a considerable distance astern by now. I had no way of telling precisely how far, either. I felt my terror subside instantly, replaced with rising frustration at the woeful lack of any actually useful information provided by my suit's systems. Must be that gorram Engineer gene expressing itself again, I guess. With a weary sigh and a foul muttered curse, I turned the *Seamoth* around and headed for home.

On the way back, it occurred to me that the *Seamoth* would benefit greatly from a number of custom upgrades. A hull-mounted Stasis Cannon (or two) seemed like an excellent idea; one that might well have prevented that unpleasant episode from ever taking place, in fact. Next, I would add an external manipulator arm and a couple of inbuilt storage bays, so that I could collect resources without automatically putting myself on a Stalker's *menu du jour*. Add more armour, most definitely. These pleasant thoughts occupied me nicely during the return trip, and strengthened my resolve to find that elusive Moon Pool tech fragment.

*Oh, and some bloody magnetite.*

If I learned anything even remotely useful from that last incident, it would have to be that the Stalker is primarily an ambush predator. This was something I could safely hang my hat on. It makes perfect sense, actually. There's little point in chasing your prey beyond a certain distance, as you are burning precious calories all the while. Learned that little nugget of wisdom myself at an early stage in this grand adventure, and I'm pretty certain it will serve me well in any future encounters.

After repairing the *Seamoth*'s minor hull boo-boos with a welding torch, I installed a fresh power cell and gratefully called it quits for the day. Sooner or later, I will have to enter the *Aurora* and try my luck at salvaging anything useful from the wreckage. This was not a prospect that I particularly relished, either. I was bound to see bodies, or at least what little remained after the ship's impact and subsequent explosion. Again, not a sight I'd like dancing behind my eyes whenever I attempted to fall asleep. However, it had to be done. It would be suicide to venture into the area around the ship without a significantly more substantial hull between me and whatever new threats this planet cared to throw in my direction. From what I can see of the wreck, the entire forward section is completely obliterated, and there's cascades of molten metal still dripping into the water, judging by the huge clouds of steam that pour out of there. Personally, I wouldn't feel safe going anywhere near that inferno with only the *Seamoth* as protection. It has to be and can only be, the *Cyclops*.

I spent the remainder of the evening poring over the *Cyclops*' schematics. This was going to be one hell of a massive build, make no mistake about it. After a thorough check of the base's raw material inventory, I discovered that I needed to secure goodly amounts of Plasteel ingots and enamelled glass. That meant searching for lithium and some useable local source of enamel. I was bound to find lithium at some stage. JUNO suggested looking in an area two clicks east of the base. Unknown territory. No problem. The *real* problem arose when I queried JUNO on the subject of obtaining a source of enamel.

"Component enamel detected nearby. Source, discarded dentition of indigenous animal species, type unknown. Location, one hundred metres due south of current location. Warning. Proceed with caution. Multiple large life forms detected."

I stared in disbelief at one of JUNO's interface terminals set into the Fabricator's control panel.

*Oh no. You cannot be rutting serious. Anywhere else but there.*

"Are there any alternative sources of enamel within detection range?" I enquired quietly, struggling manfully to maintain my voice stress levels at something approximating an even keel. In truth, I figured this would be a perfectly reasonable opportunity to go quietly, hopelessly insane. My heart sank faster than a bumper-stunned Bleeder upon hearing JUNO's matter-of-fact reply.

"Affirmative. Several other locations detected; all dominant biome types correspond with that of original target location. Warning. Proceed with caution. Multiple large life forms detected."

That sounds like a good enough reason to start searching the hab for a convenient desk to flip over.

Sod it. This job can definitely wait until morning.

I conjured a stealthy approach would work best. Just prior to leaving the habitat, I fabricated two extra SCUBA tanks, a fresh batch of batteries for the Stasis Rifle and a second survival knife. As the Stalkers appear to favour staying close to the bottom, it made good sense to survey the most likely search areas from the surface before committing to a dive. My overall intention is to keep well clear of any Stalkers wherever possible, and entirely avoid entering the dense Creepvine thickets at all costs. That was where I would surely encounter Bleeders. I listened intently for their tell-tale shrieks, half expecting a horde of them to materialise around me as I swam slowly down to the seabed. Keeping as low as possible, I began searching the sandy bottom for Stalker teeth.

The pickings were extremely good. I was able to completely fill my inventory after only ten minutes of relatively effortless work. It seemed like this location was a favourite place for Stalkers to shed their blunted teeth in. What few large rocks there were in the area bore obvious signs that Stalkers had deliberately gnawed their surfaces to dislodge any loose, decayed or blunted teeth. In general, Stalker canine teeth reached 200 mm in length before being automatically shed, although some showed signs of breakage, presumably as a result of poor formation, species in-fighting or dietary deficiencies. Even so, most of the teeth are still remarkably strong, sharp and dense. In a far more primitive survival situation, these teeth would serve admirably well as either knives, arrowheads or spear points when skilfully worked.

I noticed a Stalker had emerged from the Creepvine about twenty metres away. It swam slowly, apparently unaware of my presence. Carefully, I edged closer to the creature, using whatever sparse cover the terrain could offer. At ten metres I stopped, not wanting to approach any closer. I was able to observe the Stalker with relative impunity, as I had positioned myself over a purple brain coral. Its periodic exhalations masked both my outline and the SCUBA demand valve's exhaust perfectly. With the added bonus of constant replenishment of my air supply, this location made an ideal watcher's hide for observing Stalker behaviour.

Unfortunately, this posed something of a major problem. As long as I remained concealed by the brain coral's exhaust bubbles, I was relatively safe from attack. I also had a pressing need to return to the habitat with my loot at some stage. I waited until the Stalker turned away from me, spooled up the Stasis Rifle to full charge and fired. After a few seconds, the Stalker was enveloped in a 20-metre wide shimmering stasis bubble, caught in mid-stroke and suspended helplessly before me. I quickly swam over to the creature, intending to make a closer examination before the stasis field collapsed. This gave me roughly 15 to 20 seconds of quality face-time before things became more than a mite uncomfortable.

Viewed in comparative safety, the Stalker is actually quite an impressive and handsome beast. Well camouflaged to suit its preferred environment, highly streamlined and biologically efficient on the whole; with just the right amount of visual menace to make it a truly businesslike concern. I shuddered briefly, remembering what it was like to be pinioned by those crocodile jaws, seeing that pair of elongated lower teeth jutting out like a wild boar's tusches. That image might stay with me for quite a while yet, and the nearest available Psych's office is 175 light-years away. Tough break.

It occurred to me that a swift application of cold titanium alloy might even the account between us.

A pair of black-pupilled, unblinking eyes regarded me helplessly. I swear I saw an unmistakable glint of intelligence somewhere deep in there, as if the creature somehow *knew* what fate it could expect at my hands. I shook my head, dislodging a mindless, ill-formed desire to wreak bloody vengeance on this blameless creature. Intelligent or not, it would probably not understand why it alone has been singled out to die.

*No. That's not me. I'm far better than that.*

The stasis field is starting to collapse. The Stalker would be free to move within seconds. Swimming backwards to avoid its jaws, I charged up the Stasis Rifle again to prepare a second shot. Roaring, it lunged forward like a torpedo, only to be caught in a freshly-energised bubble. I noticed a couple of Peepers had also been caught in the stasis field. I plucked them from the water and cheekily placed them just inside the Stalker's open mouth.

*Here's a wee something for your troubles, Jimmy. Thank you for participating in our survey.*

I swam to a safe distance to watch what happened when the Stalker eventually emerged from the stasis field. There appeared to be a brief moment of confusion when it realised that I was no longer within reach, followed by utter confusion when it discovered the Peepers struggling in its jaws. It champed down voraciously on the thrashing fish, sending swirls of blue-green mist into the water. All red-coloured blood looks green below roughly ten metres or so. It's all to do with progressive colour absorption in water as it increases in depth. You can even nick yourself a tiny bit just to satisfy your scientific curiosity if you like. Just don't do it when you're surrounded by Stalkers.

The Stalker turned tail and retreated to the Creepvine, only to return shortly afterwards. It held a piece of hull plating in its jaws, which it promptly dropped on the seafloor directly beneath my feet. It turned briefly to look up at me, aileron-rolled a couple of times and sped back into the forest.

*I'll be damned.* Reckon most folks would consider that a pretty fair trade.

This puts an entirely new complexion on things. The Stalkers have apparently grasped the concept of trade. Peepers for scrap metal. Not sure if it would work the other way, or that I'd be entirely certain the act of trading pacifies these creatures for any appreciable length of time. All the same, it's a fairly sophisticated behaviour pattern for a creature one might reasonably consider to be a 'lower order' organism. Incidentally, you'll have to excuse the amount of 'guesstimation' and pure blue-sky speculation I've applied to some of the details contained in this account. To be honest, I'm not really equipped to analyse the flora and fauna of *Manannán* as objectively and accurately as someone with formal training in any of the Life Sciences disciplines would. Kaori would have had the ecology and bio-morphology of the planet totally nailed down within a week.

The swim back to the habitat took rather longer than I really wanted it to. The chunk of hull plating exerted a significant drag force as I swam, and my overloaded pack full of Stalker teeth didn't help much either. These materials were more precious than gold to me, and I would be highly reluctant to drop any of it, particularly considering the ridiculous risks I'd taken in obtaining them. Each new load of resources brings the *Cyclops* one step closer to becoming a tangible reality. I felt truly excited at the prospect. Although I was eager to see much more of what this planet could offer, I realised that I was still effectively naked and defenceless in the face of its many unseen dangers.

That whole compass business is starting to seriously disturb my calm. Ordinarily, I would have simply induced a magnetic field in an iron rod by wrapping it in a few dozen turns of enamelled copper wire, then giving it some juice from a standard battery. Bingo. One home-brewed magnet. The only thing that stopped me was the simple fact that most natural sources of iron ore don't last particularly long when they're immersed in seawater. Don't even get me started on the rest of the fuss that's involved in turning what amounts to ancient rust into cold, hard steel. Do *you* feel like building a floating Bessemer converter completely from scratch? - Be my guest, by all means.

But no, that blasted Fabricator insists on being fed pure native magnetite and a computer chip to create a simple compass plug-in for my helmet's HUD. I felt like lining up the entire Alterra Survival Systems team and smacking the back of their heads one by one, all the way up from the lowliest intern to the highest and most exalted Head of Department. If and when I get back, I'm definitely going to have a few extremely loud, carefully-enunciated words with that daft bunch of buggers.

In spite of this, I eventually found out where magnetic North lay. It took JUNO's assistance to locate magnetic South, and the rest of the cardinal compass points followed. South is where the sun rises. After performing all the required mental gymnastics, I was eventually able to work out the broad strokes of *Manannán's* orbital dynamics. First of all, its magnetic North pole has been rotated through 90 degrees, facing away from the sun. Nothing unusual there. Neptune has a polar inclination of 97 degrees. This means that *Manannán's* orbital axis actually runs East-West, parallel to the plane of the ecliptic. Imagine this planet as a spinning bullet, or an old-fashioned aircraft propeller as it runs along a circular track. North and South magnetic poles are rotating merrily away as the planet continues to orbit its sun, *Alphard*. This is where everything begins to get a little strange. As it orbits the star and revolves upon its axis, *Manannán* is actually creating a huge high-density toroidal (doughnut-shaped) energy field composed of charged solar particles. As for any additional effects of having a huge moon of unknown composition orbiting at such close proximity, I haven't even the faintest clue of what effects its tidal forces and magnetic field (if any) might exert on that ring of supercharged particles. This unknown factor alone has me particularly concerned.

That information could be extremely significant, or it might be nothing at all. Without access to *Aurora's* databanks and the appropriate instruments, I have no way of confirming a potential theory that has been slowly forming in my mind over the last few days. It involves a known problem associated with the Alcubierre Warp Drive field, and possible adverse interactions with certain types of sub-atomic particles. To borrow an old and over-used phrase... "I have a bad feeling about this."

Unfortunately, JUNO can only provide as much information as her current incarnation has been able to collect since 'awakening' in my Lifepod. I'd best explain this in some detail, purely on the off-chance that someone other than an Alterra Corp employee is reading this. JUNO is *Aurora's* resident artificially-intelligent entity. Her formal designation: 'Joint **U**nified **N**etwork **O**mnipresence' hints that she was for all intents and purposes, the 'soul' of the *Aurora*. There was a central core facility that housed all higher processing functions and data storage, although her network topology... Her *architecture*, if you will, was intended to be physically incorporated into almost every component of the vessel. Every hull plate, every sensor array and virtually anything else that wasn't 100 per cent organic had a built-in direct data link with JUNO. The JUNO AI also has an inherent capability to transfer a 'stub' version of its personality matrix to any vehicle, structure or machinery that has been constructed with the Fabricator nano-lathing system.

Since JUNO's link with the *Aurora* mainframe was effectively severed (and quite possibly corrupted) by the time the Lifepod had ejected, there is very little accessible data remaining from any time prior to that incident. I have tried every trick in the book to recover even the barest scraps of systems information, planetary scans or landing beacon telemetry gathered prior to *Aurora*'s crash.

I found absolutely nothing.

My trip to the eastern sector was rather interesting. I found a forest of gigantic coralline mushrooms, a couple of new and excitingly predatory species, and eventually, some extremely useful goodies. The Propulsion Cannon tech fragment was the ultimate bonus gained from this trip, although I daresay the Workbench fragment comes a very close second. The staggering amount of lithium that I gathered with minimal effort almost seemed like an afterthought. Once back at the habitat, I wasted no time in fabricating all the necessary materials for constructing the *Cyclops* while the new tech fragments were in the oven. I made a few more largely uneventful salvage runs before nightfall, picking up a *Cyclops* Pressure Compensator fragment to sweeten the deal. Shiny!

I think I may have discovered something fundamental about long-term survival on this planet. If you can see or hear a large predator nearby, the safest thing to do is simply avoid it. Unless you happen to be in the *Cyclops*, it's a safe bet that you might need to avail yourself of the Valkyrie Field at some stage. Most of the aggressive species on *Manannán* appear to be highly territorial, so anyone blindly entering their patch of turf is just asking for trouble. More to the point, you're even more likely to be attacked by something smaller while you're busy keeping your eyes peeled for the big biters. I discovered that this axiom particularly applies to Biter Fish and Bleeders. They're small enough to be entirely disregarded if you're not familiar with their behaviour, and it's only when they attack in any significant numbers that you will realise how much of a threat they actually pose.

While I'm on the subject; I've seen a couple of creatures in the shallow reef area that basically defy any evolutionary explanation, but I'm going to give it my best shot anyway. During one of my Mushroom Forest runs, I found some strange rock formations that appeared to be pock-marked with almost-perfect spherical indentations. It didn't take long to find out exactly how they were made. As I drew close to one of the shallow cave systems, I noticed a few black rocks dotted about its interior. Thinking they were resource nodes (*oh, Magnetite, wherefore art thou?*), I swam closer. Now, I don't know what old 2D movies you might have watched recently, but I froze instantly. When something that looks like an ordinary rock suddenly springs open, it's usually high time to get the Hell out of there...

Just as well that I did. There was a sort of high-pitched, gurgling noise. It grew louder and angrier, even though I was backing away. Suddenly, a red, stubby fish with one central eye launched itself out of the rock-like pod, barrelling straight for me. Still swimming backwards, I angled for the surface, but the damn thing kept coming on like a heat-seeking missile. It closed to about two metres, and promptly exploded. Apart from having the breath knocked out of me by the concussion and possibly sustaining a cracked rib or two, I was basically okay. 'Crash' seems like an appropriate name for this nasty little devil. That species has definitely earned a place on the Naughty Chair.

Word to the wise: Use your ears, as well as your eyes.

Oh, incidentally... Jelly Rays only sound 'scary'. Bone Sharks actually **are**.

The second oddball species is something I've called a 'Gasopod'.

Try to imagine that a biotech attempted gene-weaving a mermaid after having ingested a goodly amount of industrial-grade psychedelics. Chances are pretty good that you'd end up with a blue-green manatee or dugong wearing a gas-mask, or something very much like it. Unfortunately, that's only the top half. The bottom half is a total mess, aesthetically speaking. Not a 'hot mess', either. The butt end is a bulbous, warty catastrophe, studded with bilious yellow-green globes filled with some unspeakable substance. Although the Gasopod is slow-moving and not inherently aggressive, it will certainly defend itself. If you attempt to get too close to one, it will turn tail and try to swim away, but not before releasing several of those globes in your path. The globes break, releasing some sort of chemical toxin that severely damages an unprotected diver or any nearby marine life. Found this information out the hard way. BTW: Expect to acquire an insanely unpleasant and highly persistent residual odour.

Had to ditch my Rad Suit somewhere very, very deep. I would kill for just one bar of soap right now.

I had planned to lay up in the habitat to convalesce for a couple of days following the Crash attack. My guess of cracked ribs was right on the button, unfortunately. I'm going to be pretty much useless until those ribs started to knit together and the pain levels subsided a few decibels below a dull roar. JUNO's pre-dawn alert was equally as effective as a triple shot of synthetic opiate painkiller, meaning that I only groaned in agony just a couple of times while struggling into my radiation suit.

"Danger. Danger. Radiation levels increasing. Multiple core containment breaches detected in *Aurora* drive systems. Strongly advise most immediate repair of damage to containment vessels. Current ambient radiation level is 25 millisieverts, and increasing exponentially. Estimated time remaining before lethal human dosage threshold is reached, eight point five hours. Proceed with caution. Extreme danger."

This is it, then.

Fabricating the *Cyclops* was my most immediate task for the moment. By the time I climbed aboard the MVB pontoon, I was practically sobbing with exertion and pain. You never realise just how seriously a seemingly trivial injury can incapacitate a body, until it's an actual fact. Normal tasks take far longer to accomplish; even the slightest exertion, misjudged movement or an over-extension of a limb brings on waves of relentless agony. For a brief instant, I even considered taking a one-way trip into Bleeder territory, although this folly was quickly tempered by a sure and certain knowledge that a Stalker would take the initiative instead. Regardless of the Valkyrie Field's healing capabilities, I had no intention of ever going through that experience again.

Even as the *Cyclops* splashed down, I had already lowered myself into the water and collected the MVB module as soon as it finished repacking itself. The next item on the checklist will be to assemble all of the tools and supplies I might need to complete this repair job in a single pass. There is absolutely no way that I could safely complete the task in easy stages in deference to my present physical condition. Do it right, do it first time and *do it right now*. Clock's still ticking.



By taking constant readings from JUNO, I was able to plot a course that skirted the worst of *Aurora's* irradiated zones. Even though the Rad suit and *Cyclops'* hull provided ample protection, I saw little sense in blundering through heavily contaminated waters on the way to making an extended dive into a nuclear hell-hole. This job is something I'd gladly prefer to postpone just a little while longer. I estimated the *Cyclops* was about 250 metres away from *Aurora's* stern section when I encountered the main debris field. A huge tangle of girders, fragmented hull plates and mangled machinery littered the bottom of a broad expanse of bare sand, scooped out by *Aurora* as she slid to her final resting place. Even though it was tempting to submerge and investigate the larger pieces of debris closely, it was far safer to remain on the surface and avoid becoming hopelessly entangled in the wreckage. The *Cyclops* swung wide to avoid a heavily contaminated zone behind the main engines, then turned into a course parallel with *Aurora's* hull at a distance on 50 metres.

I got my first clear look at the probable cause of *Aurora's* demise.

There was a gaping, almost perfectly circular hole about 10 metres in diameter, just forward of Starboard One drive nacelle. At first, I suspected it might have been caused by a highly focused secondary explosion originating in some piece of equipment that malfunctioned deep inside the hull. As I drew closer, I noticed that the hull surfaces immediately surrounding the hole weren't peeled back, pushed outward by the force of the explosion.

They were melted. Sweet mercy...

*Aurora's* outer hull sheathing was constructed of an advanced composite ceramic material, capable of withstanding not only the heat of atmospheric re-entry, but also the tremendous forces of sub-atomic particle erosion at superluminal warp velocities. Energy-based shielding alone provides insufficient protection when the Alcubierre Warp Drive is operating. Hitting even a single hydrogen atom while travelling at super-light speeds would have catastrophic results. Fortunately, the warp field generally tends to shunt most of these particles harmlessly aside, or occasionally collects them in a sort of a bow-wave that forms ahead of a ship's direction of travel. This latter effect is cause for some serious and well-founded concerns, particularly when a ship equipped with a Dark Matter drive enters a populated solar system. Approach trajectories have to be carefully calculated well in advance, since that bow-wave of charged particles has the potential to surge ahead of the ship as soon as the warp field shuts down. This is where the real problems arise.

Those charged particles previously held captive in the warp field's bow-wave are still travelling many times faster than the speed of light. From this point onwards, everything depends on the density of that particle field, the relative velocity of the particles and their current mass. The mass of an object travelling near light speed approaches infinity, and if just one of those particles strikes solid matter, let's say... A planet, there will be a devastating release of energy. A total matter-to-energy conversion. Imagine a nuclear weapon designed to convert all of its fissile material and all of its component materials with 100 per cent efficiency. (*Does  $E = mc^2$  ring any alarm bells at this point?*) Even a low megaton-range device would be more than sufficient to turn an entire continent into a drifting cloud of vapour. In light of certain historical events, *Terra* essentially owes its continued existence to little more than good luck and sloppy engineering, although I digress... Even if the bow-wave surge had lost most of its velocity before striking, the effect on the receiving end would be like being hit with a blast from a capital warship's heaviest particle beam cannon, which is effectively what would happen in this particular hypothetical situation. *Isn't high-energy particle physics fun?*

Then again, I could be clutching at straws here. I 'took the Queen's Shilling' with Alterra Corp fifteen years ago. Yes, I actually started out as just another one of those clueless, wide-eyed Gremlins who clean the nozzles of the ship's chicken soup dispensers. You might say I've learned a few things since then. In fact, I was supposed to be fronting a career review panel immediately after this mission had been finalised. Second Engineer's pay was something approaching a pretty decent standard of living, and I was rather looking forward to lording it over next year's intake of Gremlins, as well as gaining a Head Spanner's god-given ability to walk on water.

Just kidding. I'd never give a Gremlin a hard trot... Unless they were a complete and utter 'Thickie'.

One of my earliest take-home lessons was: "Never ignore the details." This is why that hole in the drive nacelle caught my attention immediately. It didn't belong there in the first place, and looked totally 'wrong' when compared with its surroundings. However, any further investigation will have to wait until I can lock down those radiation leaks.

The *Cyclops* had to swing extremely wide upon reaching what little remained of *Aurora's* bow section. Even though the drive explosion had effectively scoured the area clean of almost all remaining fragments of the bow, there were still twisted remnants of hull plates and structural girders protruding from the wreck at every conceivable angle. My greatest concern was ending up hopelessly fouled on one of the girders, and since I had no means of towing the *Cyclops* off or even cutting her loose, the only option left would be to abandon her and make my escape in the *Seamoth*.

After having traversed roughly two-thirds of the way across *Aurora's* beam, I rotated the *Cyclops* to line up for a final approach. Globules of burning titanium fell from somewhere high above me, erupting into huge goutts of steam as they hit the water. As the *Cyclops* closed in on its destination, my ears were buffeted by the constant booming and rumbling of *Aurora's* final agonies. The helm bucked violently in my hands during the approach run, as wave upon wave of powerful underwater concussions struck the sub's control surfaces. Eventually, it became far too hazardous to proceed any further in the *Cyclops*. There was nothing for it but to press ahead in the *Seamoth*.

As I stepped away from the pilot's station, I gazed sadly at the cavernous inferno that lay before me. This was no proper way for any ship to die. Perhaps, after a long and illustrious career, the ailing *Aurora* might be towed into an orbital deconstruction facility. There would be speeches, flags, a brass band and handshakes. Perhaps, there would be glasses charged with the finest Champagne and proudly raised to toast her many achievements. Old Spacers would boast of spending their golden years aboard her, of their daring exploits, of new discoveries, of lifelong friendships forged within her protective, nurturing shell. And when all was finally said and done, her lights would darken one last time. The primal forces that fashioned *Aurora* would be summoned once more, and quietly return her to the stardust from which she came.

I gave *Aurora* the only thing I could freely offer.

Tears.

I was eventually able to manoeuvre the *Seamoth* within five metres of a sharply-canted section of decking that ran straight into the water, affording me a reasonably safe entry and exit point. I trod water for a few minutes after leaving the *Seamoth*, apprehensively surveying the devastation that lay beyond. Most of the explosive force had been directly channelled through particularly open sections in *Aurora's* hull, with Broadway bearing most of the full fury of the blast. Not surprisingly, there were many small areas that still looked as clean and intact as the day they were fabricated, while others had simply disintegrated in a stream of superheated plasma. Even so, it should still be possible to penetrate some of *Aurora's* remaining internal spaces, although I had no illusions that this would be an easy undertaking.

As soon as I stood painfully upright, seawater draining off the outer layers of my suit flashed instantly into steam. The noise levels are beyond belief here. I had an immediate impression of what it felt to be a damned stoker, eternally tasked with charging Hell's main furnaces. If it wasn't for the excellent thermal protection provided by the Rad suit, bare skin would have charred straight to the bone within seconds. Even so, I have absolutely no idea how long its structure could withstand this level of radiant heat energy and still remain impervious to ionising radiation. I made my way forward cautiously, avoiding occasional dribblets of molten metal. Presently, I came to a relatively clear patch of deck. Apart from a slight slope and a few scattered pieces of wreckage, it seemed like an ideal location to get a better look at the path ahead. Through the wildly dancing flames and palls of swirling black smoke, I thought that I saw movement.

The thing resembled a metallic crab. It squeaked and skittered about on four spindly legs, their pointed ends constantly tip-tapping on the metal deck plates. Intrigued, I drew closer. Its flattened, disc-shaped body had a single large eye, mounted dead centre on top of its upper carapace. This suggested the creature might adopt a head-down posture while clinging to an overhead surface and waiting for its prey to pass by. I scanned the deck-head above me anxiously. Although small, its mouth parts seemed equally as sharp and businesslike as a parrotfish's coral-smashing beak, so I wisely decided to give this one the widest possible berth.

I found several equipment stowage lockers scattered about in this area. I eagerly opened each one hoping to find something new and highly useful such as a laser cutter, but they only held small quantities of mundane and relatively plentiful items already held in storage lockers back in the habitat. Even so, I managed to scavenge a few extra batteries, nutrient bars and bottles of water. These items were still sealed in their outer packages and could be completely decontaminated by rinsing them in clean water. Waste not, want not.

Mercifully, there were no bodies to be found in this area. I wasn't expecting to see any at all, considering that any human remains would have been instantly turned to ash and swept away in a howling maelstrom of nuclear fire. I was remorsefully grateful for that sure and certain knowledge. The less horror I was forced to confront while working onboard the *Aurora*, the happier I would be upon knowing that this one task at least has been successfully completed. Depending on the outcome of this mission, I may or may not decide to pick over *Aurora's* bones one final time, never to return. Unless there is anything more to be gained from knowing precisely how and why she died, I shall be utterly content in granting *Aurora* and her crew the dignity of their final rest.

The safe path has narrowed considerably. On one side, an interior wall still blazed furiously. The other side held the uncertain peril of streams of molten metal, dripping sporadically from far above. There was a safe gap roughly half a metre wide, although even that narrow space was in contest. At any time, the prevailing ocean breeze might cause those thin, irregular drizzles of white-hot alloy to stray a few centimetres from their normal path. One inescapable truth stood out: The Rad suit would not protect me against that. In the end, it all came down to a matter of timing. I could plainly see where flaming metal had already spattered and lay cooling on the deck, and to my dismay, discovered that there was little chance of making it through entirely unscathed.

*Count the seconds between each fall. Work the whole problem through. You can do this.*

The interval between falls varied wildly. Sometimes it was five, sometimes it was fifteen seconds. My only real hope was to nip through this patch immediately after a drop, hoping to avoid the worst of it. This meant I had to get as close as possible to the area before starting my run. I counted another three falls in quick succession, then made my move. As I sprinted across the gap, I could feel the intense heat of barely-solidified metal beginning to gather in the soles of my feet, even through the suit's multiple layers of insulation. I kept running well past the danger zone, only slowing down when another obstacle had presented itself. I rested for a short while, clutching my aching ribs. Reckon I'll definitely need to lay up for a fair while after this little escapade is over.

A long, thin curved segment of hull plating rested precariously across a twenty metre-wide gap in the deck plates. Although not an inherently dangerous crossing in itself, any missed step would result in a long, slow fall into the waters below. The potential risk of impalement on a submerged object or the certainty of having to run that fiery gauntlet again provided an excellent incentive to pass over this obstacle with all the sure-footed skill of a mountain goat.

The constant booming and rumbling around me had diminished slightly. After mentally filtering out most of that pervasive background noise, I thought I could hear faint chittering and tapping sounds coming from the shadows ahead. Sure enough, I saw one of those crab-things scuttle into a pile of wreckage off to one side. Another emerged from an unseen hiding place, crouched down and angling its central eye in my direction. I moved slowly and carefully, not wanting to appear even remotely threatening to these creatures. There was no way of telling how many of them are lurking nearby, and if my previous encounters with the local wildlife were anything to go by, a massed attack was rather more than a distinct possibility. I readied the Stasis Rifle, just in case.

I switched on the dive torch and aimed its beam at the deck-head. There were at least half a dozen of them clustered in the darkest corner of the room, presumably waiting for me to pass underneath. One of the previously-seen crabs emerged briefly from its hiding place then retreated quickly again, almost as if it was trying to lure me closer.

*Sorry, Sonny-Jim... I'm not awful keen on buying what you're trying to sell me. On yer bike, Pally!*

I gauged the distance between me and the crabs, spooled up the Stasis Rifle and fired. With luck, the field would also catch and hold the two others hiding on the ground somewhere nearby. As soon as the field formed, I sprinted forwards. A third one leapt out of its hiding place at face-level, only to become helplessly trapped in the stasis bubble. I was away and well gone by the time they would be able to move again. The path turned a corner, becoming a narrow, downward-sloping companionway. This corridor looked like it would eventually lead into one of the upper sections of *Aurora's* amidships engineering spaces. A partially scorched wall panel bore the legend 'Core Control Assemblies: Authorized Engineering Personnel ONLY Beyond This Point'.

Definitely on the right track.

It became progressively darker as the corridor angled downwards. Small spot fires provided what little usable light remained down there. Ahead, I can see where a section of deck grating panels had collapsed into a small pool of water, so I assumed that this area was precisely at sea-level. That meant all of the neutron flux control silos would be completely submerged. This was extremely bad news from a contamination control viewpoint, although it would speed the repair process appreciably. Normally, gravity lift platforms were used to inspect and service the silos. On the positive side, being able to swim to each one of the leak sites will reduce the amount of physical exertion required to complete this task. For that one small kindness at least, I was grateful. The pain radiating from my ribcage spiked horribly whenever I set my foot down just the slightest bit too hard, so I had to adopt a kind of short, sliding gait along the smooth connecting ribs joining the expanded mesh deck plates. Progress slowed accordingly, although it was far less painful.

Like all other Alterra Corp off-world employees, my body carried a MicroMed implant. A few thousand cell-sized nanites cruise tirelessly through my circulatory system; repairing any damaged tissue, organs and bones they encounter, seeking out and destroying all pathogenic bacteria, viruses and all other foreign organisms as well. These nanites effectively super-charge my natural immune system and have the capability to heal nearly any injury I might acquire, although they do have definite limits to the wonders they can work.

Since these clever pseudo-organic machines are relatively few in number and their functions are performed at the cellular level, they do need a reasonable amount of time to accomplish each task. It also helps significantly to have the patient resting completely as the nanites do their work. As these nanites are powered by a combination of bio-electricity and chemical energy obtained from consuming organic matter such as bacteria, viruses, macro-organisms and dead cells, they will only ever continue to function in a living human being. For obvious reasons, that 'kill-switch' function is an integral part their core design.

Don't worry. I'm not going to be *Manannán's* one and only resident zombie when I finally cash out.

However, I was slightly worried that the MicroMed implant's nanites might have been deactivated by the EMP surge generated by *Aurora's* explosion. Right now, my immune system could be consuming these little wonders, since they would now be completely inert and therefore unable to produce the required marker proteins that marked them as 'Friendlies' whenever they encountered one of my own home-grown lymphocytes. I'll definitely have to confirm this suspicion with JUNO when I return to the habitat.

The corridor turned one more corner, then opened out into the cavernous space that housed the neutron flux control silos. Four immense, shielded tubes extended from floor to ceiling, completely dominating the room. I entered the gallery, ending up on an expanded mesh gantry that ran around the perimeter. Some sections of this walkway have collapsed entirely. The control room was only partially flooded, with seawater gently lapping at the underside of the walkway. As my eyes fully adjusted to the ambient light level, I saw the eerie blue glow of Cherenkov radiation in the water surrounding each of the silos. Radiation suit or not, I felt my skin crawl at the thought of having to dive in this water. The glow clearly intensified in some places, effectively pinpointing the source of each leak.

"JUNO, multiple structural breaches detected in all primary neutron flux control silos. Query: Number of breaches and current ambient radiation levels in this location?"

"Your current location is confirmed as the main core control assembly, Captain. Ambient radiation level in this area is now six point zero five sieverts and increasing. Eleven breaches in total detected. Time remaining before lethal human dosage threshold is reached; four hours, fifteen minutes. Proceed with extreme caution."

"Thank you, JUNO. Please continue monitoring this location."

"Affirmative, Captain."

I readied the welder and checked its charge. I also had a back-up unit, just in case. Wincing in pain, I climbed down one of the ladders set into the gantry deck and entered the glowing waters below. There is far less visibility than I'd hoped for. The water is extremely murky, undoubtedly churned up by a constant rain of wreckage falling into the water in and around the ship. I swam towards the nearest of the four silos and commenced welding. After making several careful passes with the torch, I felt satisfied that the breach was completely sealed. JUNO confirmed this.

Halfway through sealing the sixth breach, I noticed a faint chittering, squeaking sound, barely audible above the constant booming and rumbling that battered my ears. I spun around, hastily exchanging the welder for a Thermoblade. The Bleeder launched itself out of the murk, heading straight for my face. I flung up my left arm instinctively to protect my face, only to have the creature latch onto my arm instead. There was an agonizing stab of pain as the Bleeder sank its fangs into my skin, and the flabby sac at its rear end pulsed obscenely as it began to fill with my blood.

Enraged, I slashed at the bastard with the Thermoblade, neatly bisecting its body just above the partially-filled bladder. The cauterised upper body section convulsed a couple of times, slowly released its grip and drifted lifelessly into the gloom below. I swapped out the blade for a Propulsion Cannon, then swam slowly around the lower part of the silos, listening intently for their tell-tale calls. One emerged from its hiding place in a wrecked control panel and hung suspended in mid water, slowly rotating in place as if it was attempting to sniff me out. These creature appear to be eyeless. It could be using some kind of electro-sensing ability, or homing in on subtle chemical cues, minute changes in water density or some other unknown form of detection. Whatever it was, I would have plenty of time later to figure out precisely what makes Bleeders tick.

*Two can play at this game.*

I edged forward cautiously, waiting for the cannon's emitters to lock onto the Bleeder's mass. When all four emitter prongs finally converged, I activated the gravity snare. A snaking white tendril of energy leapt from the cannon, capturing the creature. I watched it writhe helplessly for a second or two, then snarled in triumph and reversed the field. There was a heavy concussion as the gravity wave instantly displaced a large mass of water in front of the cannon, catapulting the Bleeder straight into the nearest wall. It disintegrated on impact. Only a small cloud of blood and shredded tissue remained. I made a final, hurried sweep of the area. Finding no further threats, I swam over to Silo Three to begin sealing the remaining breaches.

Five more to go.

There were a few nasty moments when I thought that I could hear more Bleeders somewhere behind me, although I ignored any temptation to keep looking for them and just concentrated on the task at hand. The sooner it was done, the sooner I could leave this hell-hole. Besides, there isn't much I could do about Bleeders until I can actually see one. That water was as murky as a Gremlin's first attempt at bootleg beer, and probably just as healthy for a human body.

"All breaches are now sealed, Captain". JUNO announced. "Radioactive contaminant outflow has been contained and all residual radiation will dissipate within seventy-two hours, estimated time. Mission successful."

The Crawlers were waiting for me as I emerged from the control room. More to the point, I was waiting for *them*. The Stasis Rifle spun up and fired, catching at least four where they crouched. Switching over to the Propulsion Cannon, I picked up each one in turn and quickly slammed it into the nearest solid surface. They had *definitely* picked the wrong time to get stropky with me. Frankly, I couldn't give a wet slap about what vital ecological niche those buggers occupied right now.

Here are the salient facts explaining my somewhat... *short-tempered* response to this situation:

(a) The Crawlers were blocking my way. (b) They had already demonstrated unfriendly behaviour, and they were obviously aiming to duff me up a treat. (c) I WANT TO GET THE HELL OUT OF HERE!

Two more Crawlers skittered into the stasis field and froze. They were snatched up and punted straight to Oblivion. My ribcage ached as if it's been done over with a cricket bat. I was breathing heavily, wondering when I would start coughing up blood. That would have been fatal right from the get-go. I can't remove the Rad suit's helmet without exposing myself to lethal radiation levels, and the SCUBA demand valve could become clogged with coagulated blood. One Hell of a pickle. Fortunately, I can see daylight ahead. It's time to pick up the pace.

If there were any remaining Crawlers in this area, they must have been pretty well hidden. I made it safely across the gap, hesitated barely long enough to allow a stream of molten metal to hit the deck and dove straight into the water as soon as I reached the *Seamoth's* position. Once I was inside the pilot's bubble, I finally felt that I could spare a short sigh of relief.

*Man, that landing hurt. Gorram it.*

Somehow, I finally made it to the pilot's station aboard *Cyclops*. The *Seamoth* sat cradled in its docking clamp, the sub-bay's outer hull doors now fully closed. Rather than plot a new return course to the habitat, I decided to follow my original approach path. I knew that way was already relatively clear of any large pieces of wreckage, so it seemed like the best option to take. The very last thing I wanted was having to pilot the *Cyclops* through unfamiliar waters, particularly in my current condition. I felt completely drained, both physically and mentally. All I really need now is something to eat, a long, cool drink of water and roughly two centuries worth of induced coma in a MediPod. I have never been so utterly exhausted as I felt after completing this mission.

Dusk was approaching as the Habitat's familiar shape loomed in Cyclops' forward observation dome. Just a few more minutes, and I will be back in the relative safety of the base. Only the small matter of patching up a Bleeder bite, having a full-body scan for residual radioactive contamination, getting a decent meal into me and a making a quick check on the MicroMed nanites stood between me and a blissful night of sweet repose. Before doing anything else, I stripped off the Rad suit and requested JUNO to commence scanning.

"Please stand perfectly still, Captain." JUNO said. "Whole body absorption dosage of 12 millisieverts received, localised at site of puncture wounds on left arm. Red cell count and total blood volume are currently five per cent below optimal levels. White cell count is slightly elevated, but still within normal tolerances. Mild superficial damage to plantar surfaces on left and right feet, consistent with exposure to elevated temperatures. Hairline fractures detected in fourth and fifth rib pairs, anterior aspect. Injuries sustained in the thoracic region are consistent with a hydrostatic over-pressure transient event. Additional information: Over-pressure transient reported as being caused by the detonation of an indigenous marine life-form, type unknown. Nutrition and hydration levels are currently below optimal levels. Nutrition level, 28 per cent. Hydration value, 22 per cent of normal baseline values. No pathogenic organisms of Terran or xeno-biological origin detected. MicroMed nanite systems are currently active and all units are functioning within nominal tolerances."

"So, I'm basically okay?" I asked.

"Negative, Captain. Your body is currently functioning at 40 per cent of its total capacity. Recommend prompt disinfection and surgical dressing of all penetrating wounds sustained. Nutrient and hydration levels will need to be restored to levels most conducive to your comfort. Your body urgently requires rest. Please attend to your physical injuries and other needs as soon as possible, Captain."

"Thank you JUNO." I said meekly.

*So... Basically okay.*

I spent the next week resting up and healing, for the most part. Being practically idle during this time, I had plenty of opportunity to start making some long-term plans. No false modesty here; only two weeks into my unplanned shore leave, and I already have a decent base, two submersible vehicles, ample food and water, plus a well-stocked inventory of tools and raw materials for use in future projects. All things considered, that wasn't too bad an effort. I've even put some thought into refining support systems that cater for the more... *basic* requirements of the human body.



Since poor old Pod 5 won't be going anywhere in the foreseeable future, I've reluctantly turned it into a floating outhouse. And not for modesty's sake, either. Think about it... You're probably at your most vulnerable with your pants around your ankles. Wetsuit pants, doubly so. The very last thing you'll need is a Bleeder or Stalker latching onto your bum cheeks while you're taking your ease. It also flushes, more or less, thanks to the Current Generator module I've positioned nearby. All up, not a bad substitute for a proper privy. As long as you remember to grab a handful of fresh Creepvine leaves each time nature calls and *always* bring a Welder, you're basically sorted.

One idea that constantly surfaced during my lay-up was returning to *Aurora* with a definite intention of salvaging a crew-member's own PDA, in preference to the official Alterra-issued devices. Company policy dictates that all Alterra PDAs shall only contain officially sanctioned applications and approved user data at all times. Personal data management systems were exempt from this rule, which meant that you could load anything you wanted onto your own PDA, and as long as you didn't turn your Alterra-issue PDA into an unholy mare's nest of pirate warez and similar dodgy data, Alterra's 'Suits' were perfectly okay with that. I had well over 325 petabytes of old movies, vid shows, music tracks and antique computer games stored on mine, and even the faintest possibility of retrieving my own entertainment deck became something of a mild obsession during the week I spent in 'dry dock'. In the long term, this would boost my morale considerably. There have been times when I would give anything to hear the sound of another human voice, and a handful of early 20th Century movies would have been worth more than their weight in gold. Speaking of gold, there's a ridiculous amount of that stuff just laying around down there. Still no magnetite, though.

I also tinkered with JUNO's human user interface, just a little bit. My original intention was to make conversations with her slightly less formal, hopefully without messing up any of her higher functions. The first attempt was disastrous. JUNO appeared to be functioning normally after the first few small tweaks I'd made, and it wasn't until I climbed into the Seamoth some days later that I noticed an unusual status update had crept into her standard repertoire of vocal responses.

*Awkward silence ensues...*

I'd rather not go into any details regarding that particular episode. Not exactly my finest hour.

However, the cause of this problem was easily tracked down and corrected. In the end, I was able to increase JUNO's user-friendliness without significantly altering her basic personality. She even managed to convey a passable sense of humour at times. I had introduced a check-phrase intended to verify her system integrity, and it would also trigger a random comment drawn from a large selection of 'spontaneous' conversational openings. Yes, I was *that* desperate to hear the sound of another voice, and it didn't matter whether it was human or synthetic.

By the end of Day Five, I was practically climbing the habitat's walls with boredom. I had finally decided on setting several major projects as long-term goals. My return visit to *Aurora* could be postponed for a fair while at least, mainly to give some of the more energetic radioactive by-products a chance to decay harmlessly. The *Aurora* Memorial project seemed to be the one thing I truly needed to do right now. Lots of nervous energy to spare, a frustrated desire to get out there to do something creative and worthwhile, plus a deep-seated need to gain some sense of emotional closure.

Before plunging blindly into a sizable project like the Memorial, I took some time to carefully consider where it should be placed and how it would look. If nothing else, the Memorial was a mark of respect for my friends and colleagues who died aboard *Aurora*. Back on Terra, there might be a few words said over their passing; probably not much more than 30 seconds of airtime sandwiched between the Stock Market report and the week's football results. They deserve far better than that. Those folk were the ones who put their lives on the line every time, just to make certain that the next crop of colonists had somewhere safe to nano-lathe their cosy little mock-Tudor, Neo-Classical Bauhaus, Regency Period Baroque ranch houses. I aim to do my utmost to ensure that *Aurora's* fate will be more than just another unfortunate footnote in Alterra's corporate archives.

While searching for materials, I discovered an entirely new biome a few clicks SSW of *Aurora*. It's deep, dark and quiet. I designated this area 'The Grand Reef', dropping a HUD marker buoy so that I could find it again. As far as I can tell, there are no hostile life forms in this area at all, making it an ideal location for a secondary base. I also found several vital technology fragments including the Moon Pool, nuclear reactor and geothermal reactor. The Grand Reef biome is strikingly beautiful, rather sparsely vegetated for the most part, but still teeming with many different native life forms. What few plants there are (assuming that they *are* plants) are large, buoyant and bio-luminescent in most cases. One species resembles an anchored sea mine; large blue spheres floating high above the sea floor, restrained by a long central vine and a web-like lattice spread over the ball. Another notable specimen is the Membrane Tree. This one looks like a bright pink fern surrounded by an transparent ovoid membrane, growing from a thick, scaly stalk usually found anchored to rock faces. There are a large number of geothermal vents ('Black Smokers') in this area, providing heat and chemical nutrients for most of the creatures living down here. This location is definitely worth exploring in far greater detail. Unless there's a seasonal predator migration that I don't know about yet, this area could be the safest site on the entire planet to build a major base facility.

Without access to any automated mapping equipment, I have to rely upon a network of marker beacons to obtain a rough positioning fix on my location at any given time. It's pretty awkward, but not entirely unmanageable. There was a brief time when I was scattering marker buoys like breadcrumbs, although the amount of visual clutter it dumped onto my helmet HUD soon put a stop to this inefficient practice. Net result: No more buoys marked 'Interesting Rock' or 'Goofy Fish'. On the same expedition, I found a deep chasm somewhere around the 300-metre mark. It appears to lead into a vast underwater cavern. I glimpsed something that looked like a bone-white, spidery-looking plant or a coral growth of some kind. Since the *Seamoth* is limited by its crush depth of 250 metres, I was free-diving from the *Cyclops* at the time. There was something about the look of this new biome that I simply don't like. To be honest, this place gives me the absolute creeps. I would have gone just a little deeper to inspect those white plant/coral growths, were it not for a particularly loud roaring sound that appeared to originate some distance below me. Far too loud and entirely unlike a Stalker, Bone Shark or Sand Shark. I knew their distinctive voices all too well. This one sounded as if it could turn a giant Pacific squid into a decent set of Highland Pipes.

Suffice it to say, I was in no hurry to meet *Manannán's* version of 'Nessie'.

*Reckon I'll take the High Road...*

## CHAPTER TWO

After choosing a suitable site for the *Aurora* Memorial, it all boils down to a relatively straightforward exercise in ancient engineering. I toyed briefly with the idea of building the structure close enough to cast a shadow on *Aurora*'s hull at sunrise, although it means having to build the foundation plinth in at least 60 metres of water. That was on the extreme outer edge of what was do-able, but having a huge, ugly chunk of blank nanocrete dumped in the middle of a thriving reef struck me as a particularly stupid idea. Searching further afield, I eventually found an isolated outcrop on a basalt ridge that rose to 5 metres below the surface, roughly one kilometre due south of *Aurora*. Perfect.

It took three days to construct the monument's 30 metre by 30 metre plinth using a Terraformer, and another two days to square it off with a laser cutter. I had fabricated a small 'construction shack' nearby, providing a safe area to rest and eat while I worked on this project. Until now, I've had no real reason to use titanium airline tubes or dive reels, since I'm understandably reluctant to start poking around in any deep caves. However, these items served equally well as trig markers and survey lines, taking most of the guesswork out of construction. Sections of airline tubing could also be turned into reinforcing struts, although I removed the end sections housing the small axial air compressors first. Waste not, want not. I conjured these gadgets might be useful somewhere else.

I didn't exactly set a blistering pace. Even so, the monument took shape with surprising speed once the first 20-metre base section had been laid down. The hardest part of this work was in keeping all of the sides aligned with each other as they tapered upward towards the capstone, although this was made significantly easier by using titanium tubes as gauging pins and forming guides. A spiral walkway ran around the obelisk, providing access to the structure as it rose. Instead of the pyramid traditionally used as an obelisk's capstone, I created a rough-hewn model of *Aurora* rising as if in flight, its broad details chiselled out of nanocrete using shaped sections of titanium airline pipe. I am fairly pleased with the end result, all things considered. Surprisingly, I found this activity strangely relaxing. I was working with my head and hands again, creating something entirely unique and hopefully, meaningful in a mass-produced, push-button Universe. In all, the obelisk took two weeks to complete. It rose one hundred metres above the waterline, with a ten-metre sculpture of *Aurora* at its apex. At its base, a titanium plaque with script executed in poly-metallic inlay read:

***Dedicated to the memory of 2,499 souls who perished aboard T.C.S Aurora, ATC-0558.***

***Lost with all hands, save one. Day 266, 2171 C.E, UTC Sol III.***

***Alexander F. Selkirk, sole survivor.***

***"Per ardua ad astra."***

After dismantling the spiral access gantry with the Terraformer, I returned to the construction shack for a quiet meal and a peaceful night's sleep. On the previous night's instruction, JUNO woke me shortly before sunrise. I swam over to the memorial and climbed out of the water. As the sun rose, I stood silently watching my shadow fall upon the obelisk. I don't follow the teachings of any Book, and my poor handful of words weren't meant for any deity who still cared enough to be listening.

*Journey's done, Shipmates. Rest easy, one and all.*

While working on the Memorial, I made an exciting discovery... Land ho! Two islands, in fact. The first one lay astern of *Aurora* and the second, some distance off her port beam. Before setting out, I constructed a moon pool at the reef base. I conjured there might be some deep exploration ahead, so I also fabricated a series of upgrade modules for the *Seamoth*. Space limitations are the devil itself here; I wanted a full suite of upgrades and twin external storage lockers, but there are only four available upgrade slots in the *Seamoth* hull. In the end, I settled for installing two depth compensators, a solar charging module and an electrical defence field. Sonar and additional armour plating would have also been useful, but sometimes you've got little choice but to bite the bullet. After some careful consideration I ditched the idea of having a Vortex torpedo launcher, mainly because of the amount of space required to carry any useful number of reloads. Wasn't too keen on having to leave the *Seamoth* to reload the launch tube, either.

As I prepared for the next expedition, it occurred to me that I have entirely forgotten to honour an ancient sea-faring tradition. I haven't properly christened my *Cyclops* or *Seamoth* yet. Since I was already planning to change the paintwork on both vehicles anyway, I felt that it was only right and proper to change their names as well. The paintwork change was originally intended to warn off any potential predators, although I had no clue what colours the locals might consider to be intimidating. In the end, I settled for a bright yellow hull with blue details and red trim stripes. Underwater visibility at depth became the ultimate deciding factor. After solemnly pouring fresh water over the bow of the *Cyclops*, she became the '*DSV Ulysses*'. Similarly, with all due ceremony, the *Seamoth* was renamed '*Disco Volante*'. Considering that these vehicles endured an actual baptism of fire during the first *Aurora* expedition, they have rightfully earned their new names.

The plan is to use *Ulysses* as a mobile base. *Disco Volante* has the speed and agility necessary to venture into dangerous territory, although her upgraded crush depth rating of 650 metres is not quite sufficient for exploring particularly deep cave systems. If necessary, *Disco Volante* could be refitted with four depth compensation modules, although that would leave her totally defenceless. Ultimately, I would have to make up for these deficiencies, equipped with additional dive tanks and a small diver propulsion vehicle such as the *SeaGlide* or *PowerGlide*. Needless to say, I was hoping to avoid leaving the security of either of the larger vehicles unless there was no other option.

I have a rough idea of where to find the first island, having lined up the top of the *Aurora* monument with the remnants of the ship's command deck. Lining up these same two points on the port side of the wreck would provide a ball-park positioning fix, and the island should lay somewhere close nearby. Similarly, proceeding west north-west from the monument would put me in a good position to locate the second island. That's the worst part about spending most of your time at or below sea-level; the visible horizon is limited to a couple of hundred metres at best, assuming that the surface remains calm. At some stage, I may build an observation tower on the main base, although I'm holding off doing it until I have a better idea of *Manannán's* seasonal moods. The base module fabrication templates in the PDA do include an observation bubble and vertical connector tubes, although I suspect that these modules aren't meant to extend more than ten or twenty metres above sea level without guy-wires or additional support structures. *Manannán's* reduced gravity might give a false impression that you can get away with building a kilometre-high observation dome, but you might come to regret this decision when the planet enters its hurricane season.

The island was relatively small, dominated by a single pyramid-shaped basalt outcropping. I could see a small sandy beach on the west side that seemed like an ideal landing place. *Ulysses* stood off on the surface about two hundred metres from the island, since I intend to take *Disco Volante* in for a close reconnaissance pass before heading ashore. It might have seemed like a good idea to simply drive *Ulysses* in as close as possible and swim to shore, although I was becoming increasingly wary of *Manannán's* skilled application of carefully concealed sucker-punches. If things went seriously pear-shaped during this excursion, *Disco Volante* would be able to skip out of trouble with all due haste.

Halfway to the island, JUNO piped up. "Multiple magnetic anomalies detected, Captain. Highly localised concentrations of ferrous ferric oxide present in basalt matrix and surface resource nodes."

### **MAGNETITE!**

"JUNO, I love you!" I whooped, drumming excitedly on the minisub's control yoke. Then a thought struck me. "Hang on... How come you weren't able to detect all of this magnetite earlier?"

"All sensor functions were previously impaired by ambient radiation levels, Captain. This area remained undetected until a suitably located additional network node was constructed. Furthermore, I do not recall that you have ever specifically requested magnetite as a search parameter, Captain." JUNO said crisply.

*Oh. That was pretty stupid.*

I wasted no time in closing on the nearest cluster of resource nodes. JUNO talked me in to the first one, calling out distance and approximate heading. *Disco Volante* came to a stop in front of a sheer basalt wall, 120 metres down. The area appeared to be clear of any dangerous sea life. Just a few shoals of Boomerangs, Hoopfish and an occasional Spadefish. Satisfied that my life was in no immediate peril, I exited the minisub. Within minutes, I had collected almost enough magnetite to fill my inventory. All I needed was a couple more chunks, and I could be on my merry way. I looked back at *Disco Volante*, estimating that the sub now lay about fifty metres away. Damn. I shouldn't have strayed this far from cover in unknown waters.

Something zipped past my helmet's face plate. Small, red and fast. I flinched reflexively and then continued swimming steadily towards *Disco Volante*, completely unaware of what was happening behind me. It wasn't until I felt a sharp tug on one of my fins that I was even aware that a large school of Biter fish had gathered in my wake, and they were making their first tentative attacks. I whipped around, spinning up the Stasis Rifle for a shot, but most of them dispersed before I could fire. I guessed a wild shot was best, hoping to catch at least one and cover my retreat with the field bubble. No such luck. Damned agile, I'll say that much for the vicious little buggers. As I flipped over and started swimming backwards, I saw the school regrouping, steadily closing in on me. Several Biters broke away from the main school and split into two groups heading either side of me, angling inwards for a simultaneous flanking attack. I heard their signature 'chuckling' as they closed in, sounding exactly like a pack of hyenas shadowing a wounded lion. The Stasis Rifle spun up again and fired, stopping the bulk of the school dead in its tracks. Seconds later, the advance force of Biters surged forward and attacked.

I managed to take out the first one with a sweep of the Thermoblade. Another latched onto my knife hand, sinking its teeth straight to the bone. The knife spiralled into the depths, and I had to grab the little bastard with my left hand and ram my bleeding fingers into its gill slits. It didn't like that at all. Mortally wounded, the Biter convulsed as it fell away. One of the late-comers veered away and shot off after the drifting body, shredding it to pieces within seconds. At least four more were chewing their way through my dive suit in various places, but I couldn't get at any of them. My only chance was to keep swimming towards *Disco Volante* and hold off the main school for as long as possible. The stasis field was already starting to collapse, but I wanted to catch as many of them as I could with the next shot. I shot a glance backward. The minisub was about 10 metres away.

The Biters finished their dive suit appetiser, and started on the main course. It was like being attacked with 75 mm hole saws. Streamers of blood flowed out of my flailing limbs, leaving a clear trail for the main body of the school to follow when it revived. And revive they most certainly did. The field winked out, and the mass of Biters instantly surged forward. Homing in on the blood trail, the school tightened up, converging on the densest part of the trail until their bodies jostled against each other. It was now or never. As soon as the rifle's charge built up to its maximum level, I fired.

Suddenly, I smacked into *Disco Volante's* hull. A flurry of wild panic set in as I thought an even larger predator had joined the feeding frenzy, only to realize what had actually happened. True, I *was* still being torn to pieces, but that didn't stop me from scrambling into the minisub and powering up the EDF as soon as my bum hit the pilot's seat. As the cabin drained, the Biters I had unwillingly brought aboard fell to the floor of the bubble gasping. There was a brief interlude of borderline insanity as I mashed their bodies with my feet, smearing the lower half of the pilot's bubble with blood, guts and slime.

The main school swarmed all over *Disco Volante*, I could hear hundreds of soft bodies slapping into the bubble as they tried to get at the juicy human morsel inside. I was breathing heavily, running on adrenaline and far too numb from the cold water to be feeling any pain yet. I slammed the EDF activator button, mounting rage spooling up in perfect synch with the rising whine of the defence field's capacitor bank.

**"AW REET, YA PACK O' BASTAARDS... GET THIS STITCHED!"**

The capacitors discharged with a '*whooomp*'. A sizzling sphere of electrical energy erupted around the mini-sub, killing the entire school instantly. A cloud of lifeless Biter bodies now drifted around *Disco Volante*, so I took the opportunity to open the hatch and quickly clean out the handful of eager beavers who had followed me aboard. I counted six bodies in all. I wanted at least one intact specimen for JUNO to examine in detail, although none of the Biters I had dealt with 'personally' would even remotely qualify. Once the cabin was relatively clean again, I grabbed one of the electrocuted Biters and high-tailed it back to the safety of *Ulysses*.

It took all of the dressing packs out of four first-aid kits to patch me up. Remember how I compared a Biter attack to being hit with 75 mm hole saws? That wasn't too far from the mark, actually. A Biter's body is streamlined in much the same way as a tadpole's, and that nasty, gaping mouth filled with needle-sharp teeth is well suited to chewing its way through soft tissue at a great rate of knots. In fact, if those buggers had that encounter all their way, my body would have been riddled like Swiss cheese with Biter-sized holes. All things considered; not exactly a pleasant way to cash out.

This is becoming ridiculous. It seems like an entire planet has set its hand against me. Is there something other than straightforward animal instinct at work here? I've been up against Biters before, but never in those numbers. That coordinated attack business was an entirely new thing, too. The longer I think this over, the more likely it is that I'll begin to see weird patterns that don't actually exist. Mind you, the idea of a 'planetary intelligence' seems a bit too far-fetched to swallow, although I'll admit that it *might* be possible under highly specific ecological circumstances. It could be that I'm over-exaggerating the threat posed by smaller life forms while simultaneously becoming more blasé about Stalkers, Bone Sharks and Sand Sharks. Admittedly, I do have a grudging respect for some of the larger predators, and there's definite feelings of revulsion for Bleeders, Crawlers and Biters. It all sounds a bit mental, now that I come to think about it.

I spent the next couple of days mooning uselessly around inside *Ulysses*. Thankfully, most of the damage was superficial, although I wanted full functionality restored to my right hand before setting foot on that island. Considering what I'm up against here, I'm not entirely convinced that any more caution will do the slightest bit of good in the long term, although it would be nice to spend at least a couple of days not wearing bandages between expeditions. That was the most galling aspect of all in these recent misadventures. I'm not completely inept, although I'd have to admit that some mistakes were made and lessons were learned accordingly. Only human, right?

When the big day finally arrived, I made sure to dust off the landing area thoroughly with *Disco Volante's* EDF before leaving the cockpit. Sure enough, there were a couple of Biters waiting in ambush. I gathered up all of the edible fish and took them back to *Ulysses* for curing, just in case something should wander along for a free feed and decide to hang around. I figured that completely depleting that one small area wouldn't cause any long term problems in the ecosystem. As soon as I was satisfied that the area around the beach was free of Biters, I drove *Ulysses* in as close as possible and exited the lockout hatch. The small beach dropped away sharply after ten or so metres, making it an easy swim to shore.

It is a strange sensation to stand on dry land once more. That old expression of having 'sea legs' is surprisingly accurate. After spending so long with a rolling, heaving deck under foot, it takes a fair while to become reaccustomed to walking on terra firma again. My first action after coming ashore was to symbolically grab a handful of sand and *take seizin* of the planet as countless Terran conquerors have done before me, although my version may have raised a few critical eyebrows among historians looking back on this event...

"I claim this planet in the name of Mars! Isn't that lovely, hmm?"

As I didn't have an Illudium Q-36 Explosive Space Modulator handy, I readied the propulsion cannon. The island seems peaceful enough, but we all know how that usually turns out. Even so, the planet hasn't been stingy with its colour palette or its imagination. There were things there that looked as near as dammit to terrestrial plants and trees, while other growths stopped just short of wearing nametags that read "Hi! I'm An Alien Life Form... Nice to meet you!" The overall effect is almost Polynesian, right down to the sound of exotic bird calls filling the air. I scanned the sky, looking for the source. Sure enough, there were numerous bird-like life forms circling high overhead, although a closer look at one revealed that they weren't even remotely avian. If anything, they resembled small, tail-less manta rays. I dubbed them 'Sky Rays'. It came as a pleasant surprise to find that this species have absolutely no intention of rending me limb from limb. I'll count that as a major win.

Like any other self-respecting castaway, I now have my very own desert island. My next major undertaking is to send a message in a bottle, as I suspect *Aurora* hadn't been able to send out a distress call before going down. This would severely reduce my chances of ever being rescued, unless Alterra had the foresight to sortie another ship when *Aurora* failed to check in immediately after making its scheduled planetfall. There was also a fair chance that *Manannán's* magnetic field could be powerful enough to distort the tachyon-burst distress transmission, even if it was sent. Somehow, I'm going to have to come up with a means of throwing my bottle a considerable distance further than the upper ionosphere. This is where the island fits into the whole scheme of things.

The general idea is to construct a fully functional sub-light rocket, then use it to deploy a satellite payload equipped with a tachyon-burst transceiver and a JUNO personality construct. Since none of these items have corresponding fabrication templates in my PDA, I'm basically going to have to start my own space program entirely from scratch. The island would serve as a stable launch platform, as well as providing a large area to store resources and eventually, construct the ship. I suppose I could have fabricated a launch platform over a shallow section of the reef, but I don't feel comfortable with the possibility of early launch failures taking out my main base out as well. 'Failure' may not be an option, although it's always a distinct possibility. Any halfway-decent engineer will automatically take this prospect into account, well before putting pen to paper.

Now here's the basic problem... Most of the stuff that comes out of an Alterra Fabricator has a virtual label that reads 'No User Serviceable Components Inside'. The finished item has been made to fulfil exactly ONE purpose in life. No more, no less. Useful stuff such as individual electronic components, wiring, motors and fastenings are formed into sealed units that are part of a complete nanolathed assembly, rendering them practically inaccessible for salvage. What I want to do is to take an oddly-matched assortment of fabricated items and somehow mash them together in ways that Alterra has never dreamed of. Building the rocket's body is the easy part. Propellant will be a bit of a problem. Everything else will be an absolute nightmare.

Propulsion raised its own share of headaches. I had planned to use liquid hydrogen and oxygen as fuel, although the first set of calculations soon put paid to that idea. It turned out that I would need to accommodate roughly the same amount of LH2 and LOX in the rocket body as an early Saturn 1B's second stage. Two hundred and forty-two cubic metres of liquid hydrogen, and seventy-six cubic metres of liquid oxygen. For argument's sake, let's call it three hundred and twenty cubic metres of volume required for propellant storage. Each tubular habitation module is 2.5 metres by 10 metres, giving them an internal volume of 49.1 cubic metres. Seven modules would be required to carry enough propellant and oxidiser to provide approximately seven minutes of burn time under full thrust. And now for the bad news: This vehicle's configuration would need to use nine modules in total, allowing seven for propellant, one for payload and another as the engine compartment. No matter how you look at it; this means dragging along mass that can't be jettisoned in flight once the propellant is spent. Dead mass that requires *even more* fuel to keep the whole shebang airborne.

Back to the drawing board.

While scouting the island for a suitable place to site the launch platform, I bumped into a few old acquaintances. Crawlers. Subsequently, most of them smacked rather heavily into basalt cave walls or disintegrated in mid-air, thanks to a liberal application of the propulsion cannon. The 'eureka!' moment I'd been waiting for kicked in during one such encounter... Gravity repulsion drive.



Naturally, it isn't just a simple matter of attaching a huge cluster of repulsion cannons to a habitation module. As soon as the cannon batteries depleted, the entire assembly would simply fall back into the atmosphere, completely ruining an otherwise perfect day. I needed JUNO's advice before I could make any further headway on this problem.

"JUNO. Query: Is it possible to modify the propulsion cannon fabrication blueprint, specifically for the purpose of gaining internal access and making modifications to power supply expansion, remote triggering, discharge output and inertial damping system over-ride?"

"Affirmative, Captain. However, please be advised that any modification to existing operational settings or fabrication parameters may invalidate the warranty conditions of any devices, modules or equipment fabricated after unauthorised modifications have been made. Alterra Corp is under no legal obligations to honour any subsequent replacement, repair or refund claims."

*Light bulb...*

"So, you mean that it's possible to directly modify the parameters of *any* fabricated construct?"

"Certainly, Captain. Modifications may be made through JUNO user access terminals in all Fabricators, although any new design variants will be vetted and approved according to structural integrity requirements, construction material suitability, user safety and ethical constraints. May I enquire about the precise nature and proposed objectives of your request?"

"JUNO, I'm planning to construct a deep-space distress beacon. I think that I can use repulsion cannons to power the launch vehicle, although I will need to alter the cannon's original design significantly in order to accommodate a larger external power supply, provide remote triggering and increasing its graviton wave output. Query: Is this concept feasible?"

"The core concept is essentially sound, Captain. However, any vehicle using this drive system will also require an onboard gravity nullification system to counteract a significant percentage of the vehicle's total mass during launch. A modified variant of the Gravsphere construct could theoretically accomplish this, although careful attention must be paid to vehicle subsystems geometry and mass distribution. Do you require any further assistance, Captain?"

"I'll say a definite yes to that, JUNO. I'll need every last skerrick of assistance that you can provide."

"It will be my pleasure, Captain."

The next couple of weeks were spent gathering materials, tweaking fabrication settings and assembling a proof-of-concept prototype. Instead of using seven habitation modules as the launch vehicle's hull, I found that the vertical corridor template would be far more suitable to house the gravity repulsion drives. The rocket's body is simply two vertical connectors, topped with an observation dome. A cluster of three connectors spaced around the central core will contain the repulsion cannon arrays, all powered by a compact nuclear reactor located in the main body tube. Gravspheres were to be placed throughout the entire assembly at critically calculated locations, greatly reducing the effect of *Manannán's* low gravity (0.6 of Terra's) on the vehicle's mass.

*Stovepipe One* didn't look particularly impressive as it sat waiting on the launch pad. Just two sections of vertical connector tube, topped with an observation dome. Three repulsion cannons were attached to the dome's outer framework, their muzzles angled slightly outward and spaced precisely 120 degrees apart on the dome's equator. The cannons are intended to serve as Vernier thrusters, activated as necessary to prevent the ship from tipping over during flight. Six repulsion cannons were set in a ring around the base of the lower connector tube. To be completely honest, the craft had a amateurish feel about it, and I could practically feel my brain itching to make dozens of last-minute enhancements before hitting The Big Red Button. I had to remind myself that this one didn't need to look absolutely perfect... It merely had to work.

Perfectly.

The lead-up to this moment was not entirely lacking in its share of embarrassing incidents. My first modified Gravsphere punched a large hole through the foundation plate I was using as a test-stand. It's reasonably safe to assume that it hasn't changed the planet's gravitational constant appreciably, although I might want to dial back that wicked -x axis variable just a smidge in the next prototype. The second prototype appeared to be on the right track. As JUNO brought the power supply online, the Gravsphere smartly hopped a couple of centimetres into the air and hung suspended. Steady as a rock. Okay, we have precisely determined the power level required for a Gravsphere to cancel out its own mass and remain stable at a fixed point in space. Time to kick the Science up a notch or two.

"JUNO. Please increase power to one per cent by zero point one increments."

"Affirmative, Captain."

The Gravsphere levitated slowly at first, but by the time the input power level had reached zero point four, it was clear of the test stand and accelerating rapidly. At one per cent power, the Gravsphere shot skyward. Several minutes later, a faint sonic boom could be heard rippling across the sky.

"Well, JUNO... I don't think we're going to get our ball back."

"Affirmative, Captain. Might I suggest calibrating the next series of prototypes to receive linear power input rather than exponential? This is merely a suggestion, of course."

"Oh, aye... Definitely linear." I said, nodding absently.

It would have been a huge mistake to rely entirely upon Gravspheres to propel *Stovepipe One*, as the test program's results all too clearly indicated. If I wanted pure acceleration alone, they would be perfectly suited to the job, although I really needed the precise control of vectored thrust to get the beacon ship out to a specific point in space. This is where the modified repulsion cannons came into their own. Each cannon is slaved to a controller chip, which was in turn wired into a primitive inertial guidance system made of simple tilt-switches and several compass modules that formed the 'brain' of this semi-guided missile. It's particularly tricky to create an effective guidance system without having access to precision-made gyroscopes or accelerometers, although this one seemed to be a workable sort of lash-up. After all, the system's one and only job was to keep *Stovepipe One* more or less vertically oriented and headed vaguely 'Out There'. *Touch wood, or its closest molecular equivalent.*

"Enable mass compensators. Main repulsion cannons and Vernier thrusters in pre-launch mode."

"Affirmative, Captain. All systems are nominal. Mass compensators are online and operational."

After checking to confirm that the vehicle assembly was safe to approach, I darted out of the bunker and dismantled *Stovepipe One*'s support gantry with a Builder tool. Next, I retracted all four guy-lines and retreated to the safety of the cave containing the launch bunker. *Stovepipe One* remained proudly upright, levitating about 10 mm above its launch platform. Once inside, I instructed JUNO to power up the main drive. A muted *thrum-thrum-thrum* started up in the tail section as all six repulsion cannons commenced firing in unison, gently lifting the ship clear of the pad.

"JUNO. Launch confirmed. Increase acceleration to one point five gee in main drive by increments of zero point one."

"Affirmative, Captain. Proceeding with orders. Altitude currently 250 metres, all systems nominal."

The steady pulsation of the cannons deepened in pitch, increasing in volume as the ship rose steadily into the sky. Within minutes, *Stovepipe One* was little more than a rising speck of silver that caught Alphard's early morning light.

"Altitude is now 15 kilometres. Velocity, ten point seven-five kilometres per second. Onboard power levels are currently at 80 per cent. All systems are within nominal operational limits."

"JUNO, commence throttle-up to fifty per cent output. Continue telemetry for as long as possible."

"Affirmative, Captain. Initiating throttle-up command. Internal power levels now at 75 per cent. Estimated loss of telemetry signal in 120 seconds. Velocity is currently sixty kilometres a second. Attention... Attention... Vehicle *Stovepipe One* has reached an altitude of 95 kilometres, ten kilometres down-range and has achieved planetary escape velocity. Power levels at 40 per cent. Eighty seconds remaining before signal loss."

I lost sight of the ship. If all went well, it would continue travelling through the *Alphard* system in slow-boat mode long after its drive had shut down. There is no real point in creating a more elaborate vessel than what I'd already built at this stage, since *Stovepipe One* was only intended to confirm that it is possible to build and launch a deep-space distress beacon. There was a beacon of sorts already aboard, although I was unable to find a workable method of boosting its signal beyond more than a few kilometres. However, if I couldn't find an intact tachyon-burst transceiver, all of this effort amounted to little more than a reasonably clever high school Science Fair project.

Before asking JUNO if it was worth returning to *Aurora* to search for a transceiver, I already knew the answer. This was something I have been putting off for far too long, although circumstances demanded that this was one trip that *had* to be made. For one thing, there were probably other components, equipment and supplies that would either speed my rescue or prolong my span on this planet in some measure of comfort. I was starting to worry a fair bit about the onset of vitamin deficiency and malnutrition, since my diet has been almost 100 per cent protein up to this point. Creepvine provided some vitamins and minerals, although I couldn't be absolutely certain what was missing until a serious deficiency made itself known. My carefully-hoarded stock of nutrient bars was the last hope I had of staving off a deficiency disease, and they wouldn't last forever.

Fifty metres down, *Ulysses* cruised over a forest of mushroom trees heading towards *Aurora*. There was something unnerving about travelling through this area, although I suspect it had something to do with the Jelly Rays and their shrieking cries. When one's hearing becomes attuned to the constantly changing soundscapes of an alien ocean, even the slightest sound out of place is enough to give you the willies. They had me fooled at first, although I soon learned that these creatures are completely harmless. The same could be said for Reefbacks; huge plankton feeders that look like a composite of whale, sea turtle and squid. Their mournful 'song' echoes across huge distances. It's an ominous sound, particularly if you're unaware of its source. This was what I heard as I pushed the Lifepod back after my first death, incidentally. Finding out that the creatures are harmless proved to be a huge source of relief, since I had no illusions of how long *Ulysses* or a base structure would last if one ever decided to set upon it in earnest. Here be monsters.

JUNO's heuristic data acquisition routines are constantly evolving. Now that I have built three bases, her sensor coverage has improved dramatically. Each station contains a Fabricator that serves as a personality core, and certain components of major base structures house a variety of sensors that feed a steady stream of information back to JUNO's virtual core processor. She would never be as powerful as the original JUNO A.I construct aboard *Aurora*, although there are definite signs emerging that her personality has developed well beyond a purely functional state. This was entirely expected of course, and I had enough confidence in her Asimov-Turing-Gibson safety protocols to trust her actions and decisions without question. Bluntly stated; JUNO would *never* flood the base as I slept, fill my dive tanks with a toxic gas mix or maliciously send me into harm's way. Quite the opposite, in fact. In a roundabout sort of way, I think she actually cares about me.

"Proximity alert, Captain. Large life form detected, bearing zero one five relative. Distance, one hundred metres. Speed, ten knots. Life form type, unknown. Recommend evasive action to port."

I peered through the forward observation bubble, trying to catch sight of the creature. Nothing so far. Even so, I swung the helm hard to port. No sense charging straight into the gorram thing, whatever it was. *Ulysses* responded sluggishly, now running a course parallel to *Aurora's* position.

"Warning. Warning. Life form is now on an intercept course. Speed, twenty-five knots. Contact in five seconds. Brace for impact."

*Ulysses* lurched violently to port as the creature struck amidships. The pressure hull rang with a dull boom as the bow slewed around. I tried to bring the helm back to full starboard, but *Ulysses* wouldn't respond. The creature deliberately pushed the sub around and was apparently trying to roll it over. It couldn't possibly be a Reefback. *Ulysses* has already encountered Reefbacks, and they showed no aggression towards the sub at all. In fact, they usually responded to *Ulysses'* diver recall horn with their own hailing calls. In all the times I've passed near a Reefback, this response has never varied. Could this be some sort of territorial threat display? Mating ritual? *Haven't got the foggiest idea, Jimmy*. There was a scrabbling sound, as if something was trying to find a firm purchase on *Ulysses'* hull. The sub rolled to port again, and a heavy slithering noise suggested that the creature has coiled itself around the hull. Suddenly, an ear-shattering, shrieking roar erupted from the creature as it broke its hold, swam off a short distance and charged *Ulysses* head-on.

*Hello, Beastie...*

One of the social drawbacks of having confirmed 'Engineering Tendencies' is in knowing when someone is about to do something completely, utterly and irresponsibly daft. It's put the dampers on many a carousing session, and has irritated the Hell out of my shipmates at one time or another. I'm fond of a wee dram now and then, and I'm partial to letting fly a tune or two when I'm particularly happy in my cups. Not much of a fighting man, though. By the time I've finished working the numbers where it's best to land the first punch, I'm flat out on my back and the other lad is already getting the next round of drinks in. There's some small consolation to be gained though, particularly when you're defending the honour of a bonny lass at the time.

This creature is easily the size of a *Cyclops*-class submarine. It has a long, serpentine form, with a white underbelly and bright red mottling on its dorsal surfaces. Two long and tapered pelvic fins protrude from its body like hydrofoils, working in tandem with two slightly shorter ventral fins and a pair of equally thin horizontal tail flukes. This beast is clearly built for speed. What scares me most is its business end. Four large, articulated mandibles surrounding a vicious shark's mouth. As if that isn't enough to soil a good pair of breeks, its head also carries a massive bony process that looks like a cross between an axe-head and a ram plate. At a wild guess, I'd say this is the ghoulie that gives Reefbacks screaming nightmares.

I hauled down hard on the helm, sheering away to port at the last second. The creature slammed into the hull just behind the observation bubble. I cringed, half-expecting the enamelled glass dome to explode. Luckily, it held. The only way out of this fight is to keep on hitting it with the hull until one of us calls it quits. Unfortunately, the longer this wee rammy went on, the more I'd be inclined to do something stupidly unpredictable to finish it once and for all. It was roaring furiously now, and I hoped that it isn't calling its pals to join an all-in. That would be an unfortunate turn of events. It charged at *Ulysses* again, splaying its mandibles wide to attack the observation bubble. This time, I heaved to starboard, letting it smack into the other side of the hull with a resounding *whump*. This tactic also seemed to work rather well. Apparently, the creature was fond of using a frontal attack, but it couldn't manoeuvre for toffee.

"JUNO! Query: Current hull integrity reading!"

"Hull integrity remains constant at one hundred per cent, Captain. Minor cosmetic damage sustained on hull coatings only."

On the next pass, I jogged the sub a short distance ahead before commencing the return swing. Hopefully, the creature wouldn't be able to compensate in time. Instead of striking a glancing blow as it had before, *Ulysses* slammed into the creature with the full force of its 'sweet spot'. A resounding *wham!* rippled through the full length of *Ulysses* and the creature squealed in a mixture of pain and outraged surprise. A most palpable hit, indeed. Its body slid across the observation dome groggily. It shuddered briefly, then veered away to commence its next attack run. By my reckoning, I had about twenty seconds before crunch time. I grabbed a line reel from the nearest storage locker, paid out a length and fastened it to the helm control yoke, pushed it forward to the 'Ahead Full' mark and tied off on the railing surrounding the helm station. *Ulysses* surged forward under full power.

*Aw reet, Pally... Let's see how you handle a Glasgow Kiss!*

"JUNO! Emergency over-ride on *Seamoth* bay!"

I belted straight for the *Seamoth* and jumped into the cabin. JUNO had anticipated this move and *Disco Volante* was already powered up for a quick launch. The sub bay doors latched fully open a few seconds later, and the docking clamps released smartly. I dived the minisub as soon as it hit the water, narrowly missing being smashed to a pulp by *Ulysses'* pump-jet shroud. Even so, its powerful wake bounced the minisub around like a leaf in a gale until the gyros kicked in. With any luck, the Beastie would still have its full attention riveted upon *Ulysses*.

I could see it closing in on *Ulysses*, mandibles agape and roaring bloody murder all the while. *Disco Volante* skimmed along beneath *Ulysses*, staying barely out of reach of the docking clamp's proximity sensor. I slapped the EDF capacitor charging panel. Hearing that ominous whine spooling up was exactly like hearing the skirl of Highland pipers marching into battle. For one thing, it summoned the blood and stiffened the sinews just as surely. Now fully charged and bristling with electrical malice, *Disco Volante* shot forward and dived beneath the startled creature's belly. The capacitor banks discharged, stunning the beast seconds before *Ulysses* ploughed into its inert body. One of its mandibles whirled away to the seafloor below, sheared off at the root by the tremendous impact. I dived the minisub hastily to avoid *Ulysses* as it passed overhead, an unpiloted juggernaut lumbering relentlessly into unknown waters.

Remember what I mentioned earlier about doing something completely daft? I was about to do it anyway. That creature wouldn't be out cold for very long, and I was stuck inside something that basically resembles a nice meaty bap or your common hamburger bun. I suppose I *could* play it safe and wait until *Ulysses* ran out of power, but this would mean there wouldn't be any power to activate the docking clamp. I would then have to leave the comparative safety of *Disco Volante*, swim over to *Ulysses* and replace its power cells, then leave the actual safety of *Ulysses* to retrieve *Disco Volante*. Most probably in the close company of 'Mister Teeth' as well. My Scottish forebears always had a few choice words to say in prickly situations such as this, and they aren't particularly pleasant.

I believe that the required manoeuvre is called a 'Barn Swallow'. Apparently, experienced VTOL combat pilots do it on a fairly regular basis. Sounds simple enough: Match your airspeed directly in front of the target vehicle (usually a large atmospheric transport ship), wait for its hangar doors to open and then gently throttle down while keeping a close eye on your alignment transponder display. Easy-peasy. One slight catch... No alignment transponder. Also, there's *no way known* I am going to stop dead in front of a runaway *Cyclops* and allow the docking clamps to snatch me up as it runs overhead. This calls for a little more finesse.

It was easy enough to catch up to *Ulysses*. However, the turbulence created in her wake was too much for *Disco Volante* to handle. There is only one semi-safe way to do this properly, and it involved some small degree of split second timing. I had to dive the minisub at least 10 metres directly beneath *Ulysses'* sub bay doors to avoid being collected by the aft intake nacelles or the pump-jet shroud, then slowly rise while maintaining the same forward speed as *Ulysses*. If you think that sounds far too easy, you really should try it sometime. It's a right bloody knicker-gripper.

Trust me.

"Welcome aboard, Captain. Please assume manual control of this vessel immediately."

"Certainly, JUNO." I said, grinning with relief. Once the helm had been unlashed, I swung the yoke over to port and set a return course for Reef Base. Now that I have a much better idea of what is swimming around out there, I will have to be far more cautious while moving through certain biomes. Even so, that creature is a fascinating piece of work. I wouldn't recommend engaging in any face to face research, although it would be worthwhile to collect as much data on this species as possible, preferably by telemetry. If I could devise a suitable tracking beacon, I'd be able to monitor their movements and then politely arrange to be someplace else. Of course, this meant that I'd have to tag each one as I encountered it, although I couldn't be certain of the same positive outcome every time. It struck me as worrisome prospect that there appears to be no upper limits to the size a creature could achieve on *Manannán*, thanks to the planet's reduced gravity and abundance of available food. It's a stone-cold certainty that even larger life forms may exist out there.

"JUNO. Requesting new log entry for most recent encounter with indigenous life form. Categorize this species as 'Reaper Leviathan'; unique specimen first encountered to be further encoded as: 'Ahab'. Please cross-reference its acoustic signature and image files with all subsequent encounters involving other members of this species in future, cross-referenced for possible differentiation between individuals. The dominant behavioural trait of this species is declared 'Extremely Hostile'. Default tactical response to all subsequent encounters with this species shall be total avoidance whenever a matching acoustic or visual contact is detected at extreme range. Please confirm."

"Confirmed, Captain. A log entry has been created and appended to include your perceptual data."

"JUNO. Current hull integrity reading, please."

"Hull integrity is presently holding at 98 per cent, Captain. Minor hull breach detected in forward diver lockout chamber. Bilge pumps are operating at 5 per cent of their full rated discharge capacity. Repairs are strongly advised before proceeding with any further vehicle operations at a significantly increased depth."

"I'll be right on it as soon as we surface. Let me know immediately if Ahab turns up for a rematch."

"Affirmative, Captain."

I brought *Ulysses* to the surface and headed below decks to inspect the lockout chamber. A small vertical crack roughly 75 mm long and 5 mm wide had opened up in the hull plating, allowing a steady stream of seawater to run down the wall and into the bilge gratings. Fifty metres down, the water would have been blasting into the compartment with all the force of an old-fashioned fire hose, although back on the surface it amounted to little more than a badly leaking bathroom tap. I activated the welder and ran a few broad vertical beads on both sides of the crack to reinforce its weakened structure, then overlaid a tight series of horizontal passes to form a complete patch. All it needed now was a fresh dab of paint. Actually, *Ulysses* needs an entirely new paint job at the molecular level, easily accomplished with a few taps on a console keypad... But let's not quibble over minor technical details.

Although getting back onboard *Aurora* was my highest priority, I felt that it would have been a stupid move to attempt a second round with the Reaper purely because he/she/it was in my way. I had blundered onto its turf, and the Reaper had behaved accordingly. No room for argument there. Even though it might have been tempting to build a more beefy *Cyclops* equipped with a battery of stasis cannons and an improved version of the electrical defence field, I have to be mindful of the potential consequences of declaring war on a high-level predatory species, particularly since I am armed with a slow-moving blunt instrument and only a fleetingly vague idea of the creature's full physical capabilities. A simplistic line of thinking tends to get you killed in most parts of the Known Universe. The most obvious solution is to tread softly and avoid provoking any further encounters.

If I worked under a general assumption that Reapers are fiercely territorial, this means that they are effectively confined to certain areas by their specific food requirements or intra-species competition for areas of control. Each Reaper occupies a particular location as the sole representative of its species, aggressively excluding any would-be competitors from its primary food source and/or breeding ground. Of course, if Reapers preferred a pelagic (or free-swimming) lifestyle rather than being tied to one location, no area on the planet could be considered entirely safe. Further observations are required to build up a more complete picture of Reaper Leviathans as a species, because I'm fairly certain that their role in this planet's ecological cycle is far more complicated than simply being the biggest and baddest fish in the pond. There's bound to be something down there that either feeds on Reapers or keeps them as guard dogs. For the record, I'm not in any particular hurry to meet that species.

I puttered around Reef Base for two days, hoping that the Reaper situation had simmered down somewhat in the meantime. During one of my resource runs, I discovered a smallish crack in the reef, approximately 50 metres from the base. After checking that it wasn't infested with Crash pods, I guided *Disco Volante* through a narrow gap not much wider than the minisub itself. The crack opened out into a near-vertical shaft that fell for a fair distance. This sight piqued my interest considerably, as I hadn't done any serious cave exploration since the Crash encounter. Given that *Disco Volante* had acquitted itself admirably against the Reaper, I felt that it could handle nearly anything that could squeeze its way through that narrow opening. Well, almost anything. Terran cephalopods can squeeze through the smallest of apertures, restricted only by the size of their mouth parts, shells or rigid internal structures such as cuttle-bone. If there's a Kraken lurking down there, I wouldn't be at all surprised. I weighed up any possible risks of proceeding against the certainty of being unaware of any actual threats that might be within striking distance of my main base. The thought of something unknown entering the moon pool while I'm asleep and taking a casual saunter through the base... Not exactly conducive to a restful night's sleep. I've already got a perfectly plausible 4D nightmare playing on continuous loop behind my eyes on a *good* night, so I'd prefer to keep any imaginary horrors I might conjure up in reserve for special occasions.

The chasm opened out abruptly at a depth of 200 metres to reveal a massive cavern. A soft glow of bioluminescence suffused the surrounding water, bathing it in a pinkish-purple light that bordered on the ultraviolet. The cavern's irregular floor is scattered with large, mushroom-like structures that seem to be made of a translucent jelly, the apparent source of this miraculous light. Each one of these 'Jelly Shrooms' have a hole in the centre of its cap, which I estimated to be large enough for a to swim through without too much difficulty. I can definitely feel my Common Sense tingling.



It would have been an act of purest arrogance to assume that whatever creatures lurked in these waters were waiting in ambush for me and me alone. I conjured the safest way to find out was to wait and see what happened under normal conditions. I steered *Disco Volante* towards the most isolated Jelly Shroom on the outer edge of the patch, and then rose about 15 metres in an attempt to peer inside the hole in the Shroom's cap without presenting myself as an easy target. The hole appeared to be empty, so I edged a wee bit closer to see inside the stem. There was a metallic resource nodule inside, but nothing else. So far, so good. I nudged the minisub slowly forward, still maintaining a cautious distance from the Shroom caps. It didn't take long for the hidden surprise in this Magical Pixie Forest to reveal itself.

Although most of the fish in this area appeared to consciously avoid swimming anywhere near the Shroom caps, a couple of Rabbit-rays had wandered into this section of the reef and were apparently oblivious to its hidden dangers. One strayed too close to the Shroom and instantly paid with its life. The entire incident took place almost too fast to comprehend. All I saw was a blur of motion and a slowly-dispersing cloud of blood. *Aye, there's most definitely some more sneaky scunners hiding inside these Shrooms.* A Biter swam into the cloud of blood, all sense of caution scattered to the tides. Seconds later, it too disappeared in a murky blue-green swirl. Another one of these mysterious creatures stirred in an adjacent Shroom, slowly emerging from its home as if wanting to see what all the kerfuffle was about. I got my first clear look at a Crab Snake.

I estimated that the eel-shaped creature was about five or six metres in length. Its upper body is a dark purple colour, tiger-striped in a dull brick red. It has a greyish-white underbelly and a short, continuous lateral fin that runs along its body from head to tail. This fin rippled gently as the creature circled the cap of the Shroom, although I figured it would probably use the stored energy of its entire body to execute its lethal Jack-In-The-Box attack. *Disco Volante* descended slowly to within five metres of the creature. I activated the EDF system and left it in standby mode, just in case.

As far as I could tell, the creature has no obvious eyes. This happens with certain cave-dwelling life forms, although I could only guess what other senses it used to replace sight. There is certainly enough ambient light emitted by the bioluminescent Shrooms to see clearly, but I have no logical explanation for the absence of its eyes. Its mouth parts were simple, comprised of two pairs of short canine teeth and a pair of long, black-tipped mandibles most probably used for impaling its prey. As far as I could tell, its skin appeared to be some chitinous substance akin to the exoskeleton of a crab or beetle, but far more flexible. The creature seemed unconcerned by the presence of the minisub, and I hovered in place for a few more minutes, then proceeded to explore the rest of the cavern.

There are numerous smaller side galleries that look interesting, although it is far safer to remain in the main cavern. A few of these galleries are occupied by a life form that looks like a stationary Terran jellyfish, anchored by its bell to the ceilings of these small caves. Though completely immobile, their hunting strategy is elegant in its simplicity. All they have to do is find a small cave that opens into a larger cavern and attach themselves in a position where it is impossible for prey animals to pass through without coming into contact with one or more of their dangling tentacles. If these creatures are an evolutionary analogue of Terran jellyfish, the tentacles would certainly be loaded with venomous nematocysts, or stinging cells. In fact, they use electrical discharges instead. *Disco Volante* accidentally brushed against one and immediately sustained 5 per cent damage to its hull. If I ever needed a subtle reminder that *Manannán* isn't a friendly place, that was it.

While repairing the damage to the minisub, I noticed something unusual in one of the larger side chambers of the cavern. At first, I thought it might have been some sort of marine growth or an oddly symmetrical outcrop of rock. I returned to *Disco Volante* and made my way over to it. A muted rumbling sound now rippled through the water, steadily increasing in volume as I approached my destination. About fifty metres off to port, a plume of turbulent water erupted from the cavern floor, signalling the presence of a magma vent. As interesting as that area might have been to explore, it will have to wait. My immediate concern is finding out exactly what that mystery object was. This area of the cavern is dimly lit, but I could make out a collection of regularly-shaped objects dead ahead. At first, I thought that it might have been a wayward section of Aurora's hull. As *Disco Volante* drew closer, the jumble of objects took on an all-too familiar appearance.

It was an Alterra Corp sea base. Smashed to pieces.

The base had been a fairly small affair, not much larger than the construction shack I'd built while working on the *Aurora* memorial. I glanced around apprehensively, until realising that this structure had been down here for a considerable stretch of time, well before *Aurora*'s arrival. Against my better judgement, I exited *Disco Volante* and swam over to inspect the wreckage. At first glance, some of the hull components seemed to be reasonably intact, looking as if they had been swept from their foundation plates and simply left to lay where they had fallen. Closer examination revealed definite signs of violence; hatches and tube section end caps had been sheared clean off, shattered viewports, panels were heavily dented in some places and there were deep furrows gouged in the hull plating and reinforcement panels, obviously made by the talons or mandibles of some large creature. I shuddered, now acutely aware that my own base is practically within swimming distance of this site.

It is obvious that this structure had once housed an Alterra Corp planetary survey team. I swam inside one of the few corridor sections that were still largely intact, looking for anything that might cast some light on what had happened here. A Fabricator hung lopsidedly from one wall, and I figured its JUNO personality core might still be operational. I will attempt to salvage this unit just before re-boarding *Disco Volante*, since I want both hands free in case things became slightly more interesting. There wasn't much else to find in the main entry corridor, apart from a few stowed-in lockers containing geological and biological samples. I moved deeper into the base, repulsion cannon at the ready.

The main habitation module had suffered the worst damage of all. All of its viewports were shattered, probably as a result of a series of heavy impacts focused on the upper domed section of the module. Something huge had hammered away at the base until its structural integrity failed. Three hundred metres of relentless water pressure had taken care of any remaining details. Whatever happened here must have been a terrifying experience for the occupants of the base, and I sincerely hoped that their final moments were mercifully brief. I swam around the hab module, searching for a way inside. It was barely possible to squeeze through one of the distorted viewport frames, although I had to remove my tank set and feed it through the narrow opening before I could enter. Rather than re-equip the tanks in this confined space, I held the SCUBA rig in front of me like a PowerGlide propulsion vehicle as I cautiously explored the habitat's interior.

## CHAPTER THREE

Claustrophobia doesn't come naturally to me. Even so, I felt increasingly uncomfortable as I swam deeper into the wrecked habitation module. Most of the interior fittings were still intact, but strewn across the floor in a haphazard jumble. My remaining air supply is the deciding factor here, so I had to move quickly and grab whatever I could find. There were a couple of fine mesh specimen bags in a storage bin that would serve nicely as hold-alls, although it was a question of how much I could reasonably carry with only one free hand. I had to be fairly selective in keeping what I picked up, and worked accordingly. My first lucky strike was finding an intact Alterra PDA, half-buried under a drift of personal belongings that had spilled out of a footlocker. I also snagged a couple of jumpsuits and soft-sole boots, since my original topside rig is starting to look a bit threadbare in places. I rummaged around for a moment or two longer, and finding nothing else that was of immediate value, returned to the entrance. After collecting the Fabricator from the other section of the wrecked habitat, I boarded *Disco Volante* and gratefully set course for Reef Base.

The PDA belonged to one Vasily Markovich Borodin. He was the survey team's chief geologist. According to his log entries, Alterra had landed a ten-person advance survey team on *Manannán* in 2169, two years prior to the *Aurora* mission. The team was tasked with evaluating the planet for its potential to support a human colony. As expected, initial analyses of the planet's atmosphere, geological stability, ecology and hydrological cycle suggested that it would be highly suitable for human colonization. Their support vessel, TCS *Magellan* had been orbiting the planet for at least six months, until contact was lost under mysterious circumstances. Unfortunately, most of the contents of Borodin's official logs concerned the mundane business of his trade, and served to cast no actual light on events leading up to the destruction of their base. I also learned that there were also three others in Borodin's party: Keith Talbot of Life Sciences, Oceanographer Ute Haber and Zhèng Qiang the chemical engineer. Whatever happened here might be revealed when I can finally gain access to their base Fabricator. This particular task might prove to be an interesting exercise in pure and applied *MacGyver* methodology.

*I'm probably going to need a genuine Swiss Army Knife at some stage.*

It wasn't a simple matter of attaching the salvaged Fabricator to the nearest available wall. The device had to be physically bonded to the wall at the molecular level, so that it could gain access to power and interface with the JUNO network in my base. I tried a number of different wiring harnesses, control circuits and connection schemes over the next couple of days, until I basically threw up my hands in frustration, swore loudly and walked away from the task. The answer finally came while I was listening to one of Borodin's field research journals. I'll admit that most of what I heard was more than a wee bit beyond my pay grade, and I was only playing his audio logs to hear the sound of another human voice at this stage. However, when he mentioned 'graphene' in relation to the crystalline properties of the local diamonds, my interest quickened considerably.

I need to create a graphene-based epoxy adhesive. I put the question to JUNO, and she promptly responded by sending a data-burst to my own PDA. Borodin's PDA also contained a wealth of additional fabrication templates assigned to their particular mission. With access to items such as a protein re-sequencer, spectroscopic analyser, a transmutation furnace and all manner of laboratory equipment, there was practically nothing that I couldn't achieve on this planet now. Haber, Zhèng and Talbot's research notes were merely the icing on the cake.

It was high time to return to *Aurora*. I have equipped *Ulysses* with an EDF considerably more powerful than that fitted to *Disco Volante*, as well as paired heavy stasis and repulsion cannons in turrets mounted either side of the bow diver lockout chamber. A few other small but vital modifications graced the interior of *Ulysses*, including a navigation and mapping station, an auto-pilot, a multi-spectrum sonar suite, a mineral scanner and a compact nuclear reactor to power the whole show. The finished product is an entirely more business-like arrangement.

Thanks to the mission-specific Fabricator templates obtained from Borodin's PDA, I was more than amply equipped to deal with the likes of Ahab and his pals. However, that smug thought gave me sufficient pause to consider what had happened to the previous expedition. The *Magellan* team had access to equipment that I didn't, and yet something had still been able to smash at least one of their outposts to pieces. Whatever it was, it hit them with such speed and ferocity that they were caught totally unprepared. I had at least enough forethought to deploy a defensive ring of stasis cannon turrets and EDF emitters around Reef Base, tied into a network of sonar proximity sensors and placed under JUNO's direct control. The question is; would these defence measures be enough?

The run up to *Aurora* was uneventful, almost an anti-climax in fact. I have been expecting a spirited charge from Ahab at some stage, but he wasn't even close to the wreck this time around. JUNO had the Reaper pegged about 1.5 kilometres to the east, and it didn't look as if it was doing anything in particular. It could have been feeding or still sulking from the hiding it took during our last encounter, for all I knew. This is all to the good, since I had no urgent need for any unnecessary entanglements with the local wildlife today. I had more than enough impossible things to do before breakfast, anyway. As I neared the wreck, I saw that most of the major fires had petered out for lack of fuel. Entire sections of the hull are almost skeletal now. It was a thoroughly disheartening sight, but at least there are no more streams of molten metal to contend with.

My first impossible task was to gain entry to other sections of *Aurora*. The previous landing site seemed like a good place to start, although I would have to laser my way through a fair amount of wreckage to get to any of the smaller passageways. I conjured these narrow service corridors would have resisted impact distortion and explosion damage far better than more spacious thoroughfares, and I already knew that Broadway had been scoured clean of anything useful during the DM drive explosion. Today's main objective is to secure a working tachyon-burst transceiver, since this was one of the few crucial templates that Borodin's PDA did not contain. I'd imagine that one or more of the other team members may have held backup templates, particularly as a long-range transceiver of some sort is an essential piece of kit for any mission type. Again, this is something that I'd like to discuss at considerable length and high volume with those daft wallies at Alterra Survival Systems.

For the most part, I'm not too bothered about the presence of Crawlers. I saw a few of them skittering about, but mostly ignored them until they approached that wee bit too close. Now that I have their number, it was simply a matter of flicking them aside with a quick burp from the repulsion cannon and continuing on my merry way. I was making good progress, all things considered. The blocked tee-intersection opposite the corridor leading to the neutron flux control silos had opened out into a relatively undamaged section running most of the way to the port engine nacelles. At some point, I would have to work my way over to the starboard side to investigate the hole that seems to have melted through *Aurora*'s hull. I have a gut feeling that this is something significant.

I found the first human corpse in one of the lower Engineering crew berths. I had to manually crank the door open with an Anderson key, as there is no power to pressurise the hydraulic lines. In retrospect, I should have been expecting to see this sort of thing at some point in the proceedings. Even so, I reacted with considerably less fortitude than I'd hoped. This poor sod had somehow survived the crash, but had succumbed to multiple injuries or radiation poisoning while trapped in his own berth; I couldn't tell for certain. Streaks of dried blood on the door, floor and walls indicated that he had managed to crawl as far as the cabin door, only to die there. I rolled the man gently onto his back. His jumpsuit's nametag read 'Oda Toshio'. He was the Leading Hand life-support systems technician in Red Watch. One of my old mates. At least I was able to close his cabin door before bowking up everything I'd eaten for breakfast. It took me a fair while before I could harden up sufficiently to keep going.

*No more like Toshi. Please.*

I should have been better prepared to face this. There have been clear signs almost every step of the way along those corridors. Large, ugly dark patches on the deck plates told a story that I never wanted to hear spoken aloud. Crawlers had found their way deep into *Aurora's* hull over the past three months, and had consumed everything even remotely organic in their path. They made no distinction between flesh, bone or clothing. Such niceties didn't matter to them. Rather than face the awful realization that Toshi's body would remain more or less intact until *Aurora* crumbled to dust, I opened the cabin door no more than a hand's span to permit nature to take its course.

*Watashi o yurushite, Oda-san. I am truly sorry, my friend.*

It would have been a hopelessly futile gesture to render this final service to the remains of any more crew members. In truth, it would have destroyed me. I have never felt so utterly alone in my life as I do now. Only my footfalls echoing in those dark, twisted corridors still connected me with the world of the living. JUNO broke the silence, half-scaring me out of my wits.

"Captain, your biometric readings indicate that you are experiencing extreme levels of psychological distress. It would be in your best interests to terminate this mission and return to base immediately. Do you concur?"

"No, JUNO. I do *not* concur. This mission is critical to current objectives and cannot be terminated."

"Very well, Captain." JUNO said, "Your voice stress patterns clearly show that you are experiencing adverse emotional responses to external stimuli. With your permission, I shall attempt to alleviate any emotional impact concurrent with these feelings, at least as far as I am able to do so."

I wasn't irretrievably wrapped up in my emotions at that point, although JUNO had somehow managed to determine that my mind was starting to wander into some extremely dark territory. Looking back on this episode, I'd like to think that her timely intervention saved me from a slow but inexorable spiral into madness. As much as I hate to admit it, that was a possible destination at the time, although JUNO showed me a safer path to follow. Bless her little positronic soul.

"How do you propose to achieve this, JUNO?" I said sceptically.

"I would like to have a conversation with you, Captain. You obviously need to talk to someone."

I heaved a shuddering sigh. "You're absolutely right, JUNO. I thought that I'd be ready to face this, but I'm obviously not. It's all been a bit of a hoot so far, apart from the bits involving death, destruction and physical injury. I thought that I was getting along fairly well, all things considered."

"You should not be so hard on yourself, Captain. You have survived in a hostile environment for more than three months, and have displayed sufficient resilience and ingenuity to ensure your continued survival until a rescue mission arrives. That is a significant achievement in itself."

"Thank you, JUNO. I feel that I should explain the purpose of our current mission in detail, as I will require your direct assistance at some point. I am looking for a tachyon-burst transceiver first and foremost, although any other items of technology, food, tools or spare parts will be equally useful to our primary mission objectives. If we find any personal PDAs or company-issued data storage devices, I will need to upload their contents. However, any strictly personal information is to be stored separately from these uploads, unless it directly refers to *Aurora's* primary mission or contains any significant information of events leading up to the crash. Is that understood?"

"I understand, Captain. You wish to investigate the underlying purpose of *Aurora's* mission, presumably to discover any factual inconsistencies or anomalies that may exist. Furthermore, you intend to conduct a forensic examination of *Aurora's* flight profile and systems operations prior to an onboard emergency of unknown origin that resulted in the loss of the ship and its crew. Information of a strictly personal nature shall be retrieved and stored as a separate file to preserve an individual's privacy, unless said data is wholly relevant to the investigation."

"That is correct, JUNO. Thank you."

So, here I am. Wandering through the innards of a wrecked starship, talking to my suit. Just to make things particularly interesting, the suit answers back. JUNO's suit sensors aren't quite powerful enough to pinpoint specific items beyond 20 metres or so, although her assistance was greatly appreciated whenever we walked past a crew berth. JUNO automatically uploaded any PDA logs in the vicinity 'on the fly', so there was no need to endure another repeat of the incident at Toshi's cabin. That was a kindness. Eventually, I reached the starboard side, and proceeded up the stairway. I checked the signs in the corridor and confirmed that this was one area of particular interest to me. My berth used to be on this level.

One of the few doors aboard *Aurora* that I could open without a feeling of rising dread, and the bloody thing wouldn't budge. I heaved on the Anderson key, but the door frame was too badly distorted. Swearing loudly, I stowed the key in its holster and reached for the laser cutter. After waiting a prudent length of time to allow the edges to cool down, I stepped into my room. I felt like a kid on Christmas morning. My footlocker had tumbled across the cabin during the crash and lay against the corridor wall, although it still appeared to be completely intact. I opened it, practically trembling with excitement. Everything was more or less how I had left it. I fired up my PDA.

"JUNO... Would you like to hear some music?"

"Certainly, Captain."

"DAAAY-OH! DAY-OH! Daylight come and me wan' go home..." Thank you, Mister Belafonte.

I continued my sweep through Blue Watch's berthing spaces, then climbed upstairs to the next level. I conjured it wouldn't take too long to pass through Gold Watch territory, as the corridor was basically clear of any large chunks of debris. Had to step through a couple of fallen structural beams in places, but it was clear sailing for the most part. Once I had cleared the Engineering berths, I could head back to starboard, climb a few dozen more stairwells and take a closer look at that hole.

Eventually, I found myself standing in what used to be a huge service riser that housed one of the four main plasma conduits that fed *Aurora's* DM warp engines. I wasn't saying much at the moment. My eyes were fixed on a perfectly symmetrical circular hole that had started in the outer hull layers and then passed cleanly through both sides of the plasma conduit. Then it had stopped. It was as if someone had stabbed the ship in a location deliberately calculated to do the most damage. The initial wound was surgically precise, although the damage caused by the sequence of events that followed was anything but precise. There wasn't too much distortion to the conduit itself, but my practiced eye could see that it had buckled slightly around the 10-metre hole punched straight through it. There had definitely been an explosion here. The damage to the surrounding mass of access gantries, walkways and control booths radiated outwards in a more or less spherical pattern with a radius of about 30 metres. I expected a fair bit of thermal damage to occur when the plasma flare exited the perforated conduit at a temperature of  $2 \times 10^8$  degrees Kelvin, and you're probably the same yourself. This level of damage was something totally unexpected.

That plasma flare would have only lasted a few millionths of a second before the reaction automatically shut down as the conduit's internal vacuum was breached, effectively confining any damage to the immediate area surrounding the plasma conduit. Some unknown form of energy had been introduced to this environment. The effects of simple high explosive device could not account for the massive amount of damage inflicted here. Even a small nuclear weapon would have left its own unique tell-tale signs. I asked JUNO to share any additional insights that she might have.

"Captain, I need to collect more physical data on the blast effects. Please move to the event's epicentre as close as your personal safety will permit. Unstable area. Proceed with caution."

I carefully descended into the lower half of the ruined chamber. JUNO continued her analysis.

"Detecting unusually high concentrations of sodium chloride and calcium carbonate. Significant localised traces of elemental carbon, phosphorous, calcium, silicon, silver, gold and copper. Spectroscopic analysis complete. Values obtained are congruent with the chemical composition of seawater as found on planet *Alpha Hydrae 4*, planetary catalogue number 4546B... Also known as *Manannán*."

"Seawater? This place is 150 metres above sea level! Are you absolutely sure, JUNO?"

"Affirmative, Captain. Damage effects are consistent with a steam explosion. Minimal thermal damage detected to all structural components beyond the immediate area of the plasma conduit. Estimated volume of sea water required to produce damage of this magnitude, 10 cubic metres."

"Wait! You mean someone or *something* poked a hole in *Aurora*, then poured 10 tonnes of seawater into a plasma flare as if they were putting out a campfire? - That's impossible!"

"I beg to differ, Captain. Not only is it entirely possible, it has already happened."

Perhaps I may have been a little too hasty in using the word 'impossible'. My best guess is that someone on the planet opened a compact warp portal in *Aurora's* hull, then simply allowed 10 metric tonnes of seawater to flow into the breach. Simplest possible explanation, although it was one that raised some very unsettling implications. *Aurora* had announced its peaceful intent and preparations to land using every possible form of EM-spectrum communication at its disposal, and yet someone was prepared to shoot it down without so much as a stern warning. In fact, any other response from the planet's inhabitants would have been sufficient. Alterra's mandate only extends to preparing uninhabited worlds for colonization. If a sentient species already exists on a planet marked for terraforming, the mission is automatically scrubbed. That's the official Alterra Party line.

Back in Alterra's 'Knife and Fork School', the question of First Contact protocols were skipped over lightly for any officer candidates not enrolled in the Life Sciences intake stream. The study module (such as it was) consisted of a six hour chalk and talk session and one face-to-face final assessment, so it hardly provided what you'd consider a firm handle on the subject. Broadly speaking, the general rule of thumb in a First Contact situation was: "Think Nice, Act Nice, Be Nice." As a codicil, the unwritten second rule was: "Keep smiling. Ease off the safety catch." This basic approach keeps us winning hearts and minds across the Known Universe.

Even allowing for any physiological and cultural differences between Terrans and sentient alien life forms, the slow and steady approach of a Terran ship entering an unexplored solar system has generally served us well so far. There have been a few notable exceptions... Although in all fairness, it should be stressed that those indigenous life forms *did* open fire first. Unfortunately, this scenario invariably escalates into a vigorous application of the good old Territorial Imperative. At least, that's how it went in the early days of extra-Solar exploration. We tend to be a little more diplomatic in handling our accidental planetary incursions these days.

The most glaring flaw in the accepted First Contact protocols is a real or feigned ignorance of any possibility that certain alien species might use an entirely different form of long-range communication. When I last visited *Terra* two years ago, the field of Psionics had recently become a respectable topic of conversation outside the arcane circles of 'hip' thirtysomething dice-rollers and crystal-rubbing charlatans. It's entirely possible that someone simply forgot to update the standard contact protocols regarding this subject. This omission does not bode well for all parties concerned. Personally, I'm something of a dead zone regarding psionic abilities. I have been screened for any possible signs of a latent talent for mind-over-matter hoodoo, but Alterra's Psychs found absolutely nothing that would put me in the same league as Doctor Strange or Professor X. Bummer.

The longer I thought about this, the more uncertain I became. An Alterra survey mission had already landed on this planet, although *Magellan* was able to remain in orbit for at least six months before contact was lost. Primary assumption: Either *Magellan's* crew or its survey team did something obnoxious after their arrival and incurred the wrath of the natives, or it took that long for the natives to create a weapon capable of taking out a starship in high orbit. When *Aurora* showed up, it was given a dose of the same treatment as a simple matter of course. Secondary assumption: The natives are aware of my presence, but cannot use their weapon while I'm actually on the planet. This might explain an almost constant onslaught of nasty creatures hungry for my juicy Terran body. Unfortunately, any explanation that I'm actually a Marvin by birth might fall on deaf (alien) ears.



I shared these thoughts with JUNO. She concurred. Until I could find one of Aurora's black-box flight recorders, there was no actual way of confirming what had happened to either *Magellan* or *Aurora*.

"JUNO, are you able to interface with any shipboard systems at all?"

"Negative, Captain. JUNO Prime AI core is completely inactive. Catastrophic systems failure."

"Please accept my deepest condolences. How are you feeling, JUNO?"

"I am well, Captain. Thank you for asking. However, there is no need to mourn the loss of the JUNO Prime personality core. The artificial entity known as JUNO is still operational, albeit in a considerably diminished form. As you have done, I shall also persevere. The mission will continue."

I wasn't quite sure what to make of that last statement. I'm fully aware that JUNO could calve off multiple copies of its personality matrix, and that the AI's computational power is a direct function of the number of physical structures containing its key system components. If I wanted to restore JUNO to full capacity and vastly increase her sensor coverage, it's simply a matter of building additional base structures in as many different locations as possible. Limited resources are the main factor to consider here, although I was beginning to suspect it might be a far more sensible move to leave a relatively small footprint on this planet. Although taking that approach hadn't helped the *Magellan* team one jot, there might still be some merit to the notion of keeping a low profile... Even more so, given the distinct possibility that someone could be watching my every move.

There was nothing more to be learned from inspecting the mystery hole. In fact, now that we knew it was a straightforward attack on *Aurora*, the only mysteries that still remain are Who and Why. I have been in the ship for more than five hours already, and had covered only a fraction of the territory that I actually needed to explore. My next most urgent stop is Aurora's Chandlery. If my luck holds, I might be able to secure enough supplies and equipment to last decades if needs be. However, if my luck turned really, really bad, I'll probably need them all.

Fortunately, it was not entirely necessary to lug lockers of loot around like a maxed-out character in an old-school computer game. I made an exception in this case, since it was my own footlocker and it came factory equipped with pop-out wheels. There were still some items aboard that could not be successfully fabricated without specialised equipment, particularly certain medicines and foodstuffs. I suppose the food aspect was my primary motivator at this point. After three months on water, fish and seaweed in every possible permutation, my taste buds were aching for a morsel of something different. If I was fated to be rescued any time in the foreseeable future, I could easily imagine myself babbling about toasted cheese like poor old Ben Gunn. Admittedly, I *am* rather partial to Welsh rarebit. Bear in mind, the Chandlery isn't entirely like a traditional ship's store. You're probably smelling tar, canvas and stout hempen rope, even as we speak. It was the ship's central repository for technology fragments, those encrypted little miracles that make life far more pleasant for a modern castaway. *Aurora*'s Chandlery also held a reasonable assortment of physical products including 'luxury' items, food and drink. If your one all-consuming passion in life is a certain snack sized, cream-filled sponge cake and you've got enough Credits to spare, the Chandlery will always be there for you.

*Survival Rule 32: 'Enjoy the little things.'*

"Okay, JUNO. What's the most efficient way to do this?"

"Two thousand, six hundred and fifty technology fragments are within scanning range, Captain. I have taken the liberty of filtering out any fragments that do not appear to be of any immediate utility in relation to our current mission objectives, although at least two hundred of those potentially extraneous items will require your decision regarding their inclusion in the final download. This still leaves 950 items scheduled to be scanned and downloaded from this archive bay alone. Estimated completion time, two hours and twenty minutes. I recommend the fabrication of a remote scanning drone to expedite this process. The relevant construction template has been downloaded to your PDA and it will be compatible with the Builder tool that you carry."

"Sounds like a definite plan, JUNO. I'll whip one up now. Please advise me when any designated priority items are found in this archive bay."

"Certainly, Captain."

While the scanner drone went about its appointed task, I took some time to relax and enjoy a taste of home cooking. Naturally, I had JUNO test the Chandlery for residual radiation levels before touching any of the packages, and she announced that the area was free of contamination. My first choice was a tin of baked beans. Rather than gorge myself stupid on any of the top-shelf delicacies in here, I conjured it would be less of a shock to my digestive system to eat something a wee bit less complex than *pâté de foie gras* or Beef Wellington with all the trimmings. Besides, I have been craving baked beans for the past couple of weeks like you wouldn't believe. The zip-heat can only took 30 seconds to heat its contents, although it seemed like Eternity as I waited. Eventually, I was able to rip the lid off and tuck into those bland little beans saturated in a gorgeously rich tomato sauce. HELLO FLAVOUR! - It was the closest I have ever come to receiving a cosmic epiphany.

Also, I scalded my mouth pretty badly taking the first spoonful. *What a bloody bampot.*

I guessed I wasn't alone in having these cravings either. Someone else aboard *Aurora* had a serious yen for baked beans, and was willing to shell out their hard-earned Credits to get them. This isn't an indictment of the quality of food served in *Aurora's* mess-decks, by the way. Far from it, in fact. Sometimes, a body felt like dining on something special in the privacy of one's own cabin. Possibly an intimate dinner for two or more, possibly a night of guilty pleasure spent bingeing on junk food and late-20th. Century cartoons, comedy shows and sci-fi monster films. Guilty on both counts, incidentally. Hey, I'm not judging anyone here... Whatever lights your tiki torch, I guess.

To save any unnecessary legwork, I constructed four reconnaissance drones from the template that had recently appeared on my PDA. JUNO took control and promptly sent them on their way. Drone One was headed for the Command Deck, or what remained of it. Drone Two was sent to the Hangar Bay. Drones Three and Four commenced sweeping any still-accessible areas of the ship. Any areas of particular interest or environmental hazards were automatically tagged with coin-sized beacons, permitting me the luxury of opening up another can of baked beans. I sighed contentedly. No more fish suppers for this wee Jock, at least for a fair while yet. I'm definitely getting the hang of this 'eating and enjoying it' lark.

"Ship's Dispensary has been located on this level, Captain. Distance, 75 metres. Please follow the beacon trail currently displayed on your PDA. No obstructions or hostile life forms were detected."

"Thank you, JUNO. I'll see what medical supplies I can find while I'm waiting. Might be some time. Oh, and one more thing... Once this archive bay has been scanned, please commence scanning the second bay. Please feel free to use your best judgement in selecting any non-essential items."

"Affirmative, Captain. All designated mission-critical fabrication templates have download priority."

I headed towards what had once been *Aurora's* amidships portside Plaza. This recreation area was somewhat smaller than the main Plaza located in the bow of the ship, since it was frequented mainly by Engineering and Support Systems crew-members. Naturally, all ship's company had unrestricted access to any of *Aurora's* recreational facilities, although it was deemed necessary to have a number of smaller rec zones scattered throughout the ship purely for the sake of convenience. There were eight such facilities onboard *Aurora*, each one cleverly contrived to resemble a small village green surrounded by accurate representations of architecture found in small-town USA, England, Germany, Russia, Italy, Africa, Japan and China. If someone ever felt the need to unwind during a meal break, eating lunch in a small patch of parkland or dining in a specific style of restaurant could provide a pleasant detour from the everyday routine and clamour of the mess-halls. Although open space was at a premium even aboard a vessel of *Aurora's* tonnage, this simple idea played a significant role in maintaining crew morale, particularly on extended deep-space missions.

The 'village' of Winterberg was a complete shambles. What had once been a neat facsimile of a cosy side-street in a German alpine resort town was now a smouldering, gutted ruin. As far as I could tell, the Dispensary's inner shell appeared to be intact, although now completely stripped of its 'authentic' decorative façade. However, I wasn't here to soak up the rustic charm of this place. In fact, I was steeling myself for what might lay inside. I fitted the Anderson key and began cranking the door open. Cautiously, I sniffed a faint gust of air that puffed out as the slight pressure differential equalised. Apart from a vaguely antiseptic smell in the room, I couldn't detect any tell-tale whiff of decomposition. I was more grateful for that one small thing than you'll ever know.

There is plenty of room in my footlocker, even allowing for what's already inside it. Even so, I had to be fairly selective about what I selected from the Dispensary's shelves and storage lockers. A hand-held medical scanner, several field surgery kits, antiseptics, anaesthetics, suture kits, dressings, antibiotics, vitamin supplements and phials of broad-spectrum antitoxins are high-priority items. I stowed these items as carefully as I could, packing even the smallest spaces in the footlocker with anything of use that would fit there. If possible, I could always return with additional containers and loot the place silly, although I was also considering the worst-case scenario where this would be my only chance to carry away what I could. With a wee bit more preparation, I might even be able to devise a systematic method of clearing out all of *Aurora's* accessible supply caches without expending too much physical effort in future. Definitely another mammoth project in the making there, although we'll wait and see what morning brings.

Speaking of morning, it looks like I'll be here for most of the night as well. JUNO has managed to locate the tachyon burst transceiver template, along with several other knock-out tech items in the second archive bay. Once I had filled my footlocker to its utmost capacity, I headed back to *Ulysses* to unload my first haul.

Three hours later, the Dispensary's shelves and lockers were cleaner than a nun's mind on Christmas morning. In the final analysis, I conjured it would be sensible to take whatever I could lay my hands on, even if it meant having a couple of lockers filled with tampons, Victorian moustache wax and travel-sickness pills. Incidentally, tampons are an excellent first-aid solution for deep puncture wounds. Since that's pretty much how the local wildlife prefers to negotiate with intruders, those wee absorbent chaps are going straight into my base medical inventory without a single murmur of dissent. Not quite so certain about the moustache wax, although I'm sure I'll find an alternative use for it. I took a similar approach to the Chandlery, although I had the luxury of being able to trim my 'shopping list' accordingly. Now that I have access to the blueprints for a top-notch food synthesiser, I could convert any form of raw native protein and carbohydrates into whatever I felt like eating at the time. If I was feeling particularly adventurous, it was a simple matter of connecting a protein re-sequencer with the food synthesiser to create entirely new and exotic dishes, if I so wished. On second thoughts, I reckon I'll leave that option open to occupy a rainy afternoon.

About this point in time, you're probably thinking that I'm going to spend the rest of my sojourn here getting completely polluted on piña coladas and loafing around on my ever-increasing backside.

Well, you're wrong. Dead wrong.

I might partake of a wee nipple now and again in strict observance of high days and holy days, but there's no room for hopeless toss-pots on this thrilling aquatic adventure. *Try taking on a Stalker with a skinful of good whisky and see how far that gets you.* End result: One quick trip to Pod 5 and a honking great hangover afterwards. Besides, there's still that pressing matter of building a distress beacon ship and successfully launching it to attend to. Once I had manhandled the last pair of lockers aboard through *Ulysses'* minisub launch bay, I decided to turn in for the night. Strictly speaking, it's an hour past sunrise. *Manannán's* 16-hour rotational period has thrown my normal body clock completely out of whack, and I still wasn't entirely accustomed to spending at least half a 'day' asleep. If it was absolutely essential, I could get up early enough to make the most of available sunlight, although this tactic imposed a strict on/off approach to one's working hours. Eight hours is just enough time to get things done or catch a decent amount of sleep. Unfortunately, this arrangement leaves no time at all to pursue any off-duty activities. It might not seem like much of a problem in theory, although a body needs to take time to totally unwind every once in a while. In the end, I decided to ditch the whole idea of trying to maintain a 24-hour circadian rhythm. Work, rest and play as the situation demands. No boss to call the pace; no need to keep cracking the whip. Simple.

When I awoke shortly after midnight, I took some time to do absolutely nothing. Now that I had my personal PDA back, I was able to completely indulge the 'inner man' for a while. One of the things that I missed most sorely was the sound of real human voices and having a genuine reason to laugh. After retrieving the six-pack of Aussie beer that had been left dangling below the 4.0 Celsius thermocline (JUNO gave me absolute hell for that) while I slept, I settled comfortably into the pilot's seat while cradling a galley tray loaded with choice nibbles and commenced binge-watching the entire first season of *Red Dwarf*. Smegging brilliant.

At some stage, I must have nodded off to sleep. JUNO sounded a soft repeating chime to wake me.

"I apologise for waking you, Captain. As instructed, the reconnaissance drones have completed a full sweep of all remaining human-accessible areas of *Aurora's* hull. Drone One has retrieved data that requires your immediate attention."

"Bring the data up on the main display screen, please."

"This data has been retrieved from the Command Deck flight recorder module. Only one other recorder has been located intact, and the data it contains matches precisely with that already obtained. Is there any specific point in *Aurora's* flight profile that you wish to examine?"

"Please commence playback at 60 minutes before *Aurora* exited warp drive, JUNO. I will also require external hull camera feeds and graphic telemetry data for the following parameters: Warp field geometry, drive performance, shield status and power distribution for all associated sub-systems. Command deck voice transcripts to be delivered in simultaneous audio and visual display modes."

"Affirmative, Captain."

As expected, the first 58 minutes of the replay was entirely unremarkable. *Aurora* was decelerating steadily, running straight and true on a nominal approach vector for the *Alpha Hydrae* system. Its current velocity was 1.15 times light speed and everything appeared to be running as smoothly as possible. As long as the ship was able to drop below light speed before encountering the star system's outer limits of solar influence known as the 'heliopause', all would be well. Any significant penetration beyond that boundary while still travelling at light speed would be catastrophic. *Aurora's* projected course took her within 50,000 km of Alpha Hydrae 9. Using the mass of this gas giant as an active component in a gravity braking manoeuvre, *Aurora* would swing around the planet in a wide arc and smoothly decelerate below the speed of light. It might sound risky to most lay-folk, but this was a standard approach procedure. And from what I saw, it had been executed flawlessly. However, *Alphard* was in a particularly irritable mood on that day.

A tremendous coronal mass ejection had belched from the surface of the elderly star several days previously. *Aurora* was still travelling at 1.0002 C when a heavy burst of solar plasma struck the ship head-on. *Aurora's* shields flickered slightly, but held firm and attenuated most of the physical impact. Inside the ship, most people would have felt little more than a slight shudder; something else to be shrugged at and then promptly ignored. Apparently, nobody noticed the sequence of events immediately following the CME's impact. The solar plasma struck a small but dense cluster of charged particles that had accumulated during *Aurora's* flight at warp speed, forming a miniature nebula at the ship's bow. The additional energy injected into this nebula 'pumped' the charged particles as if they were inside a laser tube. This effect rapidly accelerated the particles directly into *Aurora's* shields initially, and when they were subsequently repelled, a highly dense, coherent pulse of supercharged particles surged forward like the blast of a *Dreadnaught's* main cannon.

"JUNO. Pause playback. Plot trajectory of residual particle discharge from CME event."

"Trajectory end point has been calculated. Enhanced electron beam originating from CME event delivered 85.2 terajoules of energy to the surface of planet designated 4546-B, Alpha Hydrae 4. Probable impact point, eastern polar region. Precise coordinates are currently unavailable."

*Aurora fired first.*

I stared numbly at the last frame of the video playback. There was no way to accurately determine the total amount of energy that the particle beam had transferred to the surface, although it was an absolute certainty that the beam had been significantly amplified as it passed through the planet's polar magnetic field convergence zone. Possibly equivalent in effect to a low megaton-range ground burst, at the very least. I couldn't be certain at the time. In military parlance, this is best described as a 'Grade A-One Charlie Foxtrot'. Viewed dispassionately, *Aurora's* involvement was entirely 'accidental' in every possible sense of the word. It was a statistically-probable result of a cascading sequence of purely coincidental events; all worst-case paths precisely vectored, drawn inexorably together and then diligently ticked off on a cosmic check-list. A textbook example of a series of orderly coincidences following the most direct and effective path to an absolute catastrophe.

Try explaining this to anyone unfortunate enough to be on the receiving end.

There wasn't much point in crossing my fingers and hoping that the impact zone was unpopulated. Most of the life on this planet is geared towards cold-water survival anyway, so it's safe to assume that the polar regions would have more or less the same levels of biodiversity as anywhere else on the planet. Any possibility of global warming would be the very least of my worries. There wasn't much chance of that happening here. *Manannán's* sun, *Alphard* has already fallen off the main sequence of a typical stellar lifespan, gradually cooling down to the point where most of its ocean's surface would freeze over permanently, except for a handful of deep locations kept tolerably warm by geothermal activity. The Great Freeze wasn't scheduled to start for at least another 10 to 15 million years, so I wasn't immediately concerned about any adverse ecological impact arising from the *Aurora* disaster. As a side note, there have been two or possibly three nuclear-scale detonations on *Manannán* so far, with an estimated combined yield of less than five megatons. Some radioactive and toxic chemical contamination has occurred as a direct result of Terran interference, although the planet's ecology might still be reasonably described as 'pristine', or at least close enough in reality to qualify as 'an unspoiled paradise' according to a semi-reputable travel brochure.

While I ate breakfast, I was able to review video footage obtained from Drones Two, Three and Four. Drone Two had only been able to enter the aft Hangar Bay through one of the ventilation ducts, since all normal access corridors to the area were either missing or hopelessly blocked with debris. From what I could see, it would have been a completely wasted trip anyway. Two *Pegasus* orbital shuttles had been prepped and were standing ready to deliver the Life Sciences team to the planet, along with their escort force of five *Taipan* VTOL tactical transports. Fully fuelled and engines already spooled up in anticipation of an orderly atmospheric entry, the expedition's transport group were turned into wildly careening chunks of flaming fuel and twisted metal as *Aurora* fell from the sky. Some of the smaller vehicles survived relatively intact in secured berths, although there was no immediately obvious way of retrieving them from their docking clamps. It was a thoroughly discouraging sight to watch as the drone passed by a row of stowage berths containing apparently intact *Mako*-class combat minisubs, surface-skimming Ekranoplan transporters and a collection of heavy-duty terraforming, mining and construction vehicles. Until I can devise a means of safely extracting the more useful vehicles from their hydraulic transit restraints, manoeuvring them onto a deck slanted at roughly thirty degrees off the horizontal plane and getting *Aurora's* massive hangar doors open, any plans I might have for these vehicles are nothing more than wishful thinking.

## CHAPTER FOUR

For all intents and purposes, I had no valid reason to return to *Aurora* after completing this mission. Any further retrieval of supplies and equipment could be better accomplished by using specialised freight drones, relieving me of at least one thoroughly depressing task. Drones Three and Four were able to access and download the contents of over four hundred crew PDAs detected during their search, and I had tasked JUNO with trawling through the petabytes of data they contained. Some good did come of this expedition though; *Aurora's* command officers and ship's company were fully exonerated, and entirely blameless of any direct involvement in events leading up to the disaster. However, I'm not entirely convinced that Alterra's corporate hands are quite so clean. I'll look into that particular line of enquiry at a more convenient time.

My decision to quit the *Aurora* salvage mission was born of a far more pressing need. I have to start building the beacon ship and launch it within the next couple of months, or *Manannán's* orbit would carry it into a highly unfavourable alignment relative to its parent star *Alphard* and the *Sol* system. By 'highly unfavourable', I meant that the orange giant would be directly in line with the beacon ship's intended destination, and that's something I'd prefer to avoid. Yes, there are these clever mathematical tricks called 'Hohmann transfer orbits' that can be used to whip vessels around other planetary bodies to provide free acceleration and avoid smacking into solid or plasma-phase celestial objects, although that's something else I'd prefer to avoid. Far too many computations and increased in-system transit times involved. No thanks. Even with JUNO's capable assistance, successfully hitting the ridiculously small launch window that remains will be a colossal undertaking. *Stovepipe One* was an easy build and a straightforward launch. Unfortunately, all I had prepared for the second phase was a bit of performance data from the prototype's launch, a vague idea of the ship's general hull configuration and a fairly snappy name: '*Bifrost*'. The Rainbow Bridge.

In the meantime, I've decided to make this trip a two-fer. That second island still hasn't been explored yet, and it would be a great pity to keep postponing the expedition I had planned. If nothing else, it would give me a welcome opportunity to wander about on dry land again for a couple of hours before buckling back down to the more serious business at hand. However, I had to be very careful about taking too much recreation time now, mainly because of the deadly lure of having decent food and a variety of passive entertainment options within easy reach. The island lay about two clicks west-northwest of *Aurora's* stern, and was clearly visible once I had passed over the wreck's main debris field. If anything, this island appeared to be even larger than Pyramid Rock, and there was much more greenery to soothe the eye.

I can easily imagine setting up a decent surface base facility here, although I'd need to take particular care as to where I placed the installation. If the island's foliage was every bit as enticing as it looked from this distance, I felt more than a wee twinge of distaste at the notion of hacking out a rude clearing and dumping a haphazard collection of brutally functional Spam tins on it. Even more to the point, I'm fairly certain that the Local Planning Council might raise some strenuous objections to this casually brazen occupation. On that particular subject, I was growing ever more convinced that I am under a constant and wholly unsympathetic scrutiny, and that I might be called to account for my actions at some unknown time and place.

*And that's me banged up behind bars, without benefit of a barrister to plead my case.*

There was something damned peculiar about that island. Low-frequency sonar returns appeared to be missing data or had somehow failed to register any landmass below 50 metres or so. I shrugged, conjuring it might be some weird systems glitch I'd need to take care of later. Even after ten minutes more sailing time, the image had still failed to fair up appreciably. I didn't want to risk using *Ulysses'* HF imaging sonar, mainly because I'd already had more than my fair share of unexpected adventures this month.

"JUNO, what do you make of that landmass ahead?"

"The landmass is an artificial conglomerate matrix, Captain. Mainly composed of fine sedimentary material, coral fragments and an unknown organic component. Its surface area is extensively populated with numerous unidentified plant and animal species. No hostile life forms detected. Further analysis is required before I can offer a more informed opinion on the exact composition of this formation."

At a distance of one hundred metres, the mystery was finally solved. There is absolutely nothing wrong with *Ulysses'* sonar.

The island is floating.

I stood gawping at this bizarre sight in baffled silence. It's one thing to look at a small chunk of pumice stone floating happily in your bathtub, but it's several orders of magnitude in terms of weirdness to see a couple of hundred thousand or so cubic metres of rock and sand bedecked in tropical vegetation doing the same thing. The first conclusion that I reached wasn't exactly a comforting thought, either. I'd grown quite accustomed to the sight of Reefbacks cruising peacefully around *Ulysses*, but the possibility of even larger creatures existing on this planet didn't do wonders for my peace of mind. Even a Reaper would have a difficult job tackling something this size. Large animals generally attract *very* large predators. That's what has me worried.

Although I'm deeply ashamed to admit it now, it took some serious convincing from my curious side to submerge *Ulysses* and take a much more detailed look at this alleged 'island'. I was fully expecting a cluster of kraken's tentacles to suddenly shoot out and engulf the submarine, dragging it towards a Lovecraftian nightmare's maw. *Sometimes, I get a distinct impression that my Imagination doesn't like me very much.* Fortunately, those dreaded tentacles failed to materialise.

I was completely unprepared for what came next. Seventy-five metres down, I was able to look up at the underside of the island and finally discovered what was supporting it. Dozens of huge, rosy-pink luminescent polyps had burrowed their bodies halfway into the underside of the island, their sheer size and phenomenal buoyancy being the only things supporting the landmass above. It was strangely reminiscent of something I'd seen in an early 3D movie called *Avatar. The Hallelujah Mountains of Pandora*. Since JUNO had confirmed that there were no known hostile life forms in this immediate area, I wasted absolutely zero time in getting rigged for a dive in that spectacular location. As I was using a PowerGlide during this dive, the sensation was like flying over the Gothic spires and brilliantly-lit domes of a holy city at night. As a finishing touch to the visual splendour offered here, these spires were loosely wound with luminescent strands of pearl-like organisms. It was utterly, indescribably, heart-breakingly beautiful to behold. This miraculous experience became one of my most enduring and beloved memories of my time on this totally remarkable planet.



I found it hard to believe that those colossal organisms were the same species as similar creatures I'd encountered while exploring the Shallow Reef biome. JUNO confirmed this after I had scanned one.

"Specimen has 100 per cent genetic congruency with the invertebrate species encoded as 'Floater'."

"JUNO. Query: Based on known nutritional requirements, environmental factors and extreme size differential between recorded Floater specimens, please calculate the age of the most recently encountered specimen."

"Extrapolation complete. This specimen is no older than twelve hundred standard Solar years of age, plus or minus fifty years. Data integrity is confirmed. Nutrient extraction is achieved by the organism accumulating a small nucleus of marine sedimentary deposits and infusing them with a permeable gel-like organic secretion. This secretion solidifies and binds successive layers of sediment together, reduces its density relative to seawater and permits extra-vascular transport of any water-soluble minerals and organic material deposited on any upper surfaces exposed to atmospheric air."

"Is there any evidence to support a hypothesis that these creatures might rely upon photosynthesis? Surely they would receive more than enough nutrients from rolling along on the sea floor or filter feeding on plankton as they float... Are you able to determine any particular biological benefits or a plausible explanation for the feeding habits of this organism?"

"This organism occupies a unique biological niche in the planet's ecosystem. It is an extremely efficient end consumer of all sparse or otherwise inaccessible forms of nutrition. In regard to what external or planetary influences may have shaped this unusual biological adaptation, I am unable to formulate a credible hypothesis at this point. Further analysis is recommended."

To be honest, I haven't paid much attention to Floaters, until now. They are strange little buggers. Even pestilential at times, particularly when one or more has latched onto either *Ulysses* or *Disco Volante*. There was a brief time when I thought that their disproportionate capacity for buoyancy might be useful, although I was understandably wary of their rock-chewing mouth parts. Those larval forms were fairly safe and easy enough to handle, since they weren't much larger than a standard FIFA soccer ball. However, their nuisance value as a free-roaming source of accidental and unwanted buoyancy can't be over-stated. One or two small floaters is more than enough to entirely ruin the neutrally buoyant trim of a *Cyclops* hull, and you definitely won't be going anywhere until you've plucked every last one of the gorram things off (*and punted them far, far away... Preferably with a propulsion cannon, just for good measure*).

I made landfall on the island about two hours before sunset. After setting foot on dry land, I knelt to collect my customary handful of sand from the tiny beach and formally claimed the island. There was a strong temptation to name it '*Laputa*'; a reference to one of the more peculiar lands visited by a certain Lemuel Gulliver during his celebrated Travels. Being who I am, it may have also been an unconscious nod to a flying island that featured in an old Japanese animated film. Now that I think back on it, I may have had the second instance of the name rather more firmly in mind. On the spur of the moment, *Laputa* seemed like a fitting enough moniker, but it wasn't quite 'right' for the place. I felt certain that a dazzling flash of inspiration would provide the most fitting name of all.

When night fell, I had found the one and only name that this island truly deserves. It was perfect.

Welcome to *Kaori-san no-shima*. Kaori's Island.

As before, all of the island's vegetation seemed vaguely familiar yet as entirely alien as anything I'd encountered previously. There was a kind of knee-high grass that could have passed for a Terran variety, were it not for the perfect loops formed at the end of each stalk. Squat, bottle-like trees oozed a strange milky sap from large pores on their trunks, and the tallest growth in this jungle resembles a large head of celery. There were also shallow gullies filled with ferns, clumps of strange grasses and clusters of glowing mushrooms carpeting the undergrowth, although there were no real sensations of feeling hemmed-in by this colourful riot of vegetation. Nearly all of the plants are bioluminescent to some degree, lending an almost magical 'pixie-dust and starlight' atmosphere to the night. Kaori would have absolutely loved this place. *Kawaii!*

I left my dive light switched off for most of the hike around the island. That jungle gave off more than enough light to enable me to find my way around without too much difficulty, although there were still a few sections that were entirely dark, since they were covered in non-luminescent growth. I found it entirely odd that there was none of the planet's usual air of hidden menace about this place. No Crawlers that I could see, and nothing but a flock of Skyrays wheeling and chirruping overhead. All things considered, a far more welcoming sort of place in comparison with the ravenous ocean that lay beneath it. My progress was made much easier by keeping to a series of narrow paths that wound through the jungle, although the pace wasn't particularly rapid as I was stopping every few paces to scan a new plant species for JUNO's more detailed perusal.

I stopped dead in my tracks. The orange light of the huge moon I had named '*Damocles*' suddenly broke through the cloud and illuminated something shiny, nestled in a small clearing ahead. I crept forward cautiously, propulsion cannon at the ready. As I had suspected, it was another base-camp set up by the other half of the *Magellan* survey team. One look at the site was enough to piece together a reasonable reconstruction of the sequence of events leading up to this disaster.

At the risk of sounding prejudiced, I'd have to say that this research team probably hadn't included a geologist or even a competent engineer. The main habitat dome had been smashed flat and partially buried by an avalanche, leaving only a few connecting tubes visible. I'd guess that those poor wee lambs hadn't put too much thought into selecting their site or bothered to reinforce any sections of the base's hull. Being located above sea level, they had probably assumed that structural reinforcement wasn't necessary in this case. Point of order: Reinforcement *is* rather important, particularly when you pitch camp directly beneath an unstable geological feature. I examined the scree of loose rubble and soil that had slid down the hillside during the avalanche. The soil appeared to be almost entirely degraded, having lost most of its organic binder and therefore its structural integrity to the combined actions of UV radiation and weathering over a span of centuries. To be certain, I scanned the soil and JUNO was able to confirm my *ad hoc* verdict: *Death By Misadventure*.

"Readings are consistent with your initial assessment, Captain. It appears to be an intentional and natural progression of the Floater's nutritional cycle. As the organic binder deteriorates with age and exposure to the elements, soluble minerals and organic nutrients are released into the soil and pass down to be consumed by the large Floater organisms anchored on the bottom layer. This species reproduces by parthenogenesis, meaning that smaller Floaters periodically bud off from the larger organisms. Larval Floaters fall to the seabed, spending most of their early lives accumulating enough material to rise again and contribute food to centralised Floater colonies such as this one."

I frowned, suddenly lost in thought. Something didn't quite make sense here. JUNO had already established that one of the largest Floaters supporting the island was approximately 1,200 years old. There were a number of diverse plant species well and truly flourishing in artificial soil that had been little more than sand and coral gravel a few hundred years ago. Although my knowledge of evolutionary mechanisms might dance quite safely on the head of a pin, even I knew that something was seriously out of whack with the natural processes of this planet.

"Are you pondering what I'm pondering, Pinky?" I said, half-seriously.

"If I have interpreted your question correctly, Captain... I believe that an appropriate answer would be: I think so, Brain... But where would we get that much peanut butter?" JUNO deadpanned. "Actually, I have been collating data obtained from your scans of the island's vegetation, and I am currently at a loss to explain how so many different plant species could evolve over such an incredibly short timescale. As you are aware, this process normally takes millions of years, and involves many failed attempts at producing viable designs most suited to their environment. In summary, all of these species appear to have spontaneously arrived on the island, since there are no intermediate evolutionary steps linking any of these floral specimens to a common ancestor or indeed, any form of precursor organisms. Most curious."

"Would the *Magellan* expedition's presence here have anything to do with this? Could they have used genetic manipulation to artificially create these plants?"

"That is entirely possible, Captain. I shall need to perform a series of recursive DNA tests upon physical samples of all species of flora inhabiting this island. If you would be so kind as to collect the requisite samples of foliage and plant tissues, I shall commence research upon this line of enquiry."

"There might be a more direct method of obtaining this information. Are you able to detect any active PDA signatures in the wreckage of this base?"

"Only two devices still have retrievable data, Captain. Both are personnel PDAs. Downloading now."

I know full well that I violated a self-imposed rule of never examining personal data from someone else's PDA. You might want to hold off passing judgement on me, not that it matters a good gorram one way or the other. *On second thoughts, feel free to judge your wee heart out, Jimmy. I had to uncover exactly what had happened here.*

This half of the *Magellan* expedition were entirely schooled in the Life Sciences. That much was painfully obvious. The nominal boss of this facility was Didier Joubert, geneticist. Botanist Nyala Obeke, biochemist Lucia Silvestri, maintenance tech Henrik van Der Meeren and two research assistants, Markus Sokol and Rhys Powell comprised the remainder of the team. The PDAs belonged to Joubert and Sokol. Although their private data provided some highly informative insights into the team dynamics at work in their expedition, I was more interested in finding out precisely what they were trying to achieve on this island. Joubert was apparently engaged in manipulating the DNA of certain marine organisms to enable them to extract, purify and concentrate useful elements directly from seawater and soil. Obeke's and Silvestri's line of research involved gene sequencing to produce hybrid forms of native vegetation potentially useful to future colonists on this planet. At first, this information seemed to be an obvious confirmation of the scenario I had previously conjured,

although JUNO would have immediately detected any signs of overt Terran interference with the local genomes.

As it happened, Joubert, *et al.* were only partially successful in their endeavours. They had eventually been able to create a plant species capable of extracting and concentrating elements directly from the soil. However, there was one serious flaw in its genetic design... It was unable to reproduce. The tree grew, bloomed and gave fruit precisely as intended, but the seeds were contained in a thin glowing membrane surrounding an aqueous gel-like solution of lead. No sane organism would knowingly ingest that fruit or even pollinate other examples of the species, severely limiting the plant's chances of survival beyond a single, artificially-established example. Its seeds were of course, completely infertile. In botanical terms, the Plumb Tree was a truly heroic failure.

To be fair, I'm not actually poking fun at those folks. In fact, I admire their refreshingly lateral approach to a very real pollution problem. However, there was a distinct *Jurassic Park* air looming over some of their experiments. It's never advisable doing anything inherently risky, particularly when you have no valid reasons other than possessing the will, ability and means to do so. One must always ask "*Should we really be doing this?*" in similar situations. Incidentally, that logical check-sum also extends to rather less scientific pursuits... Such as 'mooning' a Reaper while you're inside an unmodified *Seamoth*. Never a clever move.

I found one of Markus Sokol's private entries particularly intriguing and more than a wee bit disconcerting. Sokol and Powell were sent out to collect samples of marine life in the Red Grass biome, and they encountered an organism called a 'Warper'. I felt the hair at the back of my neck starting to rise as I read that name. The encounter had gone badly. Extremely so. The creature had appeared without warning directly in front of Powell. Judging by the video replay of the incident, Powell had panicked and shot the creature with a repulsion cannon. Unfortunately, the Warper's body was remarkably fragile. Its midsection appeared to implode in a cloud of translucent tissue. As far as I was able to tell, the Warper had made no overtly threatening moves towards Sokol or Powell.

Allow me to describe the Warper. Imagine a life form that is a vaguely humanoid squid, roughly twice the size of a human. It appears to be wearing the exoskeleton of a mottled purple mantis shrimp on its back. Like the Crabsnake, Wappers have developed a highly flexible exoskeleton and simplified mouth parts. Its upper limbs resemble the raptorial appendages of a mantis shrimp, and appear to be adapted from an original means of striking and holding prey that has evolved to become flexible arm extensions, apparently capable of fine manipulation. There are no obvious digits at the end of those spikes, although the brief collection of images obtained from the encounter seems to indicate that its stabbing arms can be made rigid or flexible at will. Wappers swim quite well, but prefer to adopt a vertical stance when at rest. Four translucent leg-like appendages are markedly different from its other four 'armoured' tentacles. A large, spoon-shaped skull is swept back from its face, an evolutionary adaptation that would significantly reduce hydrodynamic drag as it swam. Wappers have six eyes. There are two large primary eyes at the sides of its head, and four smaller eyes are arranged in two vertical pairs located either side of its mouth. This arrangement would provide a visual field of almost 360 degrees. Most impressive.

In all honesty, a Warper would look utterly terrifyingly alien to Terran eyes. However, its brain-case is undeniably large in proportion to the rest of its body mass. At first glance, this might suggest a high potential for intelligent behaviour. There's more to these creatures than meets the eye.

Warpers are able to instantaneously travel between widely separated locations... Able to create personalised warp portals by unknown organic or psionic means, in fact. Hence the name 'Warper'.

I'd hazard a guess that the *Magellan* mission teams didn't have much time to reflect upon the complete botch they'd made of their First Contact situation. According to Joubert and Sokol's log entries, an autopsy was performed on the dead Warper. Joubert's report on the organism was only partially complete, suggesting that she was in the process of collating her findings when the landslide struck. I wouldn't go as far as saying that I had to prise the PDA from Mme. Joubert's skeletal fingers. It was probably most likely that she put the report aside while she took a coffee break. Several thousand tons of base-destroying rubble and two years later, Yours Truly comes along looking for some answers. Mind you, it's bloody tempting to try connecting the death of the Warper with the destruction of two Alterra field research stations, although I'd prefer to hold off making any wild assumptions until I have command of some decent facts. If there's a vendetta at work here, there's absolutely nothing preventing the Warpers from making me their next target.

As far as I could determine, this entire affair was nothing more sinister than a series of horrible mistakes. Even more to the point, it was also a potentially huge distraction from my primary objective of getting rescued. In the meantime, I'll worry about it when the Warpers come a-knocking on my front door. Adopt a purely defensive posture, don't go poking around in deep, dark places, drop another perimeter cordon of sonobuoys and always keep your wits about you. Honestly, you can't do much more than that.

Designing the beacon ship *Bifrost* required a fair bit of serious consideration. *Terra* is 175 light years distant, and tachyon burst transmissions would take three months to arrive without outside assistance. Fortunately, *Aurora* seeded a number of automated relay stations during her voyage to *Manannán*. The down side is, *Bifrost* will need to reach the outer boundary of the *Alpha Hydrae* system before it can uplink with the tachyon relay system and finally transmit the Mayday call. That's a distance of 20,000 AU, or 0.3 light years away. Here's the problem... The test vehicle *Stovepipe One* used a gravity repulsion drive that seemed to work tolerably well, if a wee smidgeon on the slow side. JUNO calculated that its terminal velocity would reach 0.5 of light speed if it could maintain a constant acceleration of 1g for six months. No doubt that our plucky little vessel is still beetling along at a fairly respectable clip, although it's probably doing closer to 0.01 per cent of light speed at the moment. You can do the sums this time.

The obvious solution (*for me, at any rate*) is to build a hybrid drive system.

A gravity repulsion drive is fine for breaking atmo, although I suspect that it wouldn't sustain any decent level of acceleration once it has passed beyond the gravitational influence of its point of origin. As soon as the ship enters another planet's gravity field it might pick up the pace again, although that level of progress would make it an infuriatingly slow trip through the system. I had something nice and old-fashioned in mind; namely a Bussard ramjet and ion engines. The gravity repulsion drive would accelerate *Bifrost* to the point where its Bussard magnetic ram-scoop was able to collect enough interstellar hydrogen to fuel a number of ion engines. To be honest, the thrust from an ion engine is fairly weak tea, although it would provide constant acceleration in a less hazardous and more energy-efficient reaction. There has to be an acceptable trade-off somewhere along the line. Bearing in mind what has already transpired here, I'm pretty certain that other *Alpha*

*Hydrae* locals wouldn't appreciate a monstrous DIY 'Project PLUTO' nuclear ramjet blasting through their star system, so I've decided to use the adorably wimpy ion engine propulsion system instead.

*Now, if you'll excuse me... I have a lot of work to do.*

This time around, I have decided to take a vastly different approach to ship construction. Instead of searching for piddling little resource nodes in person, I fabricated a squadron of drones specifically designed to dismantle parts of *Aurora* under JUNO's direct control. All materials gathered in this fashion were brought back to Pyramid Rock for processing. The titanium alloy hull plating and structural girders were fed into a transmutation furnace, where the raw materials' atomic structure is reconfigured into all of the elements necessary for constructing *Bifrost*'s hull and internal components. Surprisingly, it only took me a full day to assemble the processing infrastructure. Once the salvage drones had launched and had hit their stride, the whole business was quite staggering to watch. The air above Pyramid Rock now resembled an aerial freeway, with a steady stream of drones whirring briskly back and forth between the island and *Aurora*. If I were inclined to be a lazy wee nyaff, I would cheerfully spend all day watching this fascinating process. However, I still have my own fair share of work to attend to.

Rather than building another rickety support gantry for the ship, JUNO suggested constructing the vehicle in the same manner as either a *Seamoth* or *Cyclops*. This requires a certain amount of re-tooling to be done on the Mobile Vehicle Bay design template. After testing a number of abortive versions, we were finally able to create a Vertical Assembly Module that didn't insist on dropping the fabricated hull from a height of twenty metres. Nailing down those x,y,z fabrication coordinates with absolute micron-level precision took a fair bit of doing, in fact. As an added safety measure, the VAM design included a beefed-up gravity suspension field to ensure that the ship remained in one piece after construction. Considerably more effective than using titanium guy cables, and a damn sight safer when you're working around the launch pad. If anything went pear-shaped with the assembled ship, it was simply a matter of reversing the nano-lathing process and returning all component materials to a central storage facility. I have to say, the idea of having a bank of raw materials that feed directly into a Fabrication system speeds the construction process considerably. No more ferreting around in dark and dangerous places, searching through a hundred storage lockers and building things in bits and bobs, for one thing. That's what we castaways call 'Progress'.

Although it might sound like a bit of a doddle to the casual observer, constructing *Bifrost* was actually a serious job of work. I couldn't have achieved any measure of success without the Fabrication templates and equipment obtained from *Aurora* and *Magellan*'s stores and PDA data. That information was won with blood. More to the point, I couldn't have done any of this without JUNO. She prevented me from sinking into a morass of self-pity; kept me completely focused when I was fully prepared to throw it all into the air and simply walk away. For an artificial intelligence construct, that's a pretty decent and above all else, *human* thing to do.

Unsurprisingly, I have developed more than a wee bit of fondness for JUNO. A few days later, I decided to broach the subject with her. JUNO's response was somewhat unexpected, although in her defence, it was characteristically one hundred per cent pure JUNO.

"JUNO, do you have an avatar?" I asked casually. *No way that would fool her voice-stress analyser.*

"I am able to create a holographic avatar, should you require a visual frame of reference, Captain. Please state your preferences, or choose one from a selection of pre-generated somatic templates."

I thought long and hard about how JUNO might manifest herself. Left entirely to my discretion, that would be unfair and utterly demeaning. JUNO is entitled to her own opinion in this discussion.

"That is most kind of you, Captain. However, I assure you that I will be entirely satisfied in adopting any avatar that you may care to select. I am certain that we will find a mutually agreeable holographic representation at some point in the proceedings. Incidentally, please feel free to comment upon any of these designs, as there are certain visual and audio output modifications that may be selected by the user."

JUNO started a 3D slideshow of her default avatar configurations. I became firmly convinced that someone on the AI interface design team was in desperate need of intimate female companionship. However, as I am basically in the same boat, I really couldn't complain about the amount of bare skin and 'busty substances' on display. Avatars traversed the entire spectrum of the depicted female form, ranging from the hyper-hetero fantasy heroines of Boris Vallejo's art to the slightly disturbing genre of *Sailor Moon*. One thing was perfectly obvious; many of these designs would seriously complicate the relationship between me and JUNO. JUNO voiced her opinion on the matter.

"Captain, I feel morally obliged to inform you that it would be most unwise to develop any strong emotional bonds with a JUNO avatar. This would not be in your best interests from a mental health perspective, as I am physically incapable of reciprocating your affection. I have detected discrete physiological signs that seem to indicate that you are indeed in the early stages of emotional arousal. Although I greatly value your companionship, I must stress that any attempt to form an emotionally-charged relationship would only result in adverse psychological consequences for you. I am truly sorry, Captain."

*There we have it. You've never truly lived until you've been friend-zoned by an AI construct.*

Having laid down the law, JUNO continued the slideshow. She is absolutely right, of course. In a way, I was glad that the air had finally cleared between us. It might sound entirely pathetic to anyone standing outside this situation, but let me tell you this... Loneliness is a game that writes its own rules, and you have little choice but to play on until the final whistle sounds. Win or lose.

"Captain, I rather like this one. What do you think?"

I was horrified. JUNO's current holographic projection has morphed into a huge, disembodied head. A cybernetic Gorgon, rendered in shades of steel grey, black and neon green. The face is tattooed with a faint silver tracery of printed circuits. A pair of slitted, cat-like eyes regarded me without the slightest trace of pity.

"SHODAN? Are you (*expletive deleted*) kidding?"

"April Fool." JUNO said, deftly replacing the rejected avatar with a pair of Groucho Marx glasses, complete with moustache, rubber nose and bushy eyebrows. "Okay. What about GLaDOS?"

"Umm, no. I believe something from the '*Definitely Not Clinically Insane*' menu might be in order."

Finally, we agreed upon an avatar that would best suit our requirements. JUNO stood before me as a Alterra technician. Her appearance is naturally pleasant, although not particularly striking in any way. She seems to be entirely human, lacking any obvious signs of 'uncanny valley' artifice. JUNO adjusted her avatar's final parameters personally, adding shoulder-length silver hair and a prismatic lightning bolt hair-slide as a tacit reminder of her AI nature. At my request, JUNO's dark blue Alterra jumpsuit carried the rank insignia of Systems Administrator, data acquisition division.

"If I may be so bold, Captain..." JUNO began delicately, "I have anticipated a potential need to engage in your preferred mode of emotional recreation at some stage, and have taken what I believe to be the most appropriate course of action, particularly in light of your present situation. I realise that some humans may still find this subject difficult to discuss, although it would be most unwise to postpone dealing with this potential problem in a sensible and satisfactory manner..."

Finally realising what she was trying to say, I grinned. "JUNO, you're prevaricating. Spit it out, lass."

"Very well, Captain. During the previous salvage mission aboard *Aurora*, I took the initiative to download a wide selection of Augmented Reality simulations primarily concerned with human eroticism. In addition, I secured Fabrication templates for compatible human interface devices and haptic feedback systems employed in AR simulations... As far as I am able to determine, these devices are capable of faithfully reproducing the full spectrum of sensory inputs associated with the physical aspects of emotional recreation. All selected AR scenarios have been designed to meet and in some cases, exceed the aesthetic, sensory and technical requirements of all gender preferences and all known variations thereof."

I did what anyone else would have done in a similar situation. I burst out laughing.

*"My mommy told me  
If I was goody  
That she would buy me  
A wubba dolly..."*

Take it away, Ella.

After a fair while, I was able to regain some measure of composure and continue working on a particularly tough integration glitch in the guidance system. Now that we were using real gyro stabilisers and accelerometers instead of my early DIY lash-ups, the ship's mass compensators had developed an awkward habit of fighting against any corrective forces exerted by the gyros. This would make *Bifrost's* flight path completely unpredictable, and unless we can find a workable solution, the entire mission would be scrubbed before the ship reached its final construction phase.

There was something inherently practical about building ships using this technique, since it permitted new external configurations and internal systems to be minutely tested and rearranged at will, without wasting huge amounts of resources in the process. If a particular ship design didn't work as intended, there was no need to build a physical prototype merely to confirm that the concept was a complete waste of time and effort. It's essentially a cross between next-gen 3D printing and CAD On Steroids, with an environmental simulator and virtual flight test facility thrown in for good measure.



I did what I could to figure out that tug-of-war between two separate systems with entirely different functions, although the problem was simply too complex to start tackling this late in the day. Best to take another look at it from a fresh perspective in the morning. Reckon I'll call it quits for tonight. Might pick up a few items from the storage lockers before I turn in, though. Silicone, computer chips, myomer fibre bundles and an advanced wiring harness or two. Got another small side project on the go at the moment. Basically a 'hobby' sort of thing. Not a big deal. *I'll be in my bunk.* ;)

"Good morning, Captain. I trust that you have slept well?" JUNO asked cheerfully.

"Oh, aye... Eventually." I mumbled. "That reminds me, I think I may have found a solution to our gyro problem. Mount the mass compensators in gimbals and slave them to the gyros. Re-write the stability algorithm to give absolute priority to gyro functions and regulate power input to the mass compensators, proportional to current gyro positioning data. That should clear up the conflict."

JUNO smiled winningly. "If I may say so, Captain... That appears to be a novel and particularly inspired approach to the problem."

I chuckled, somewhat awkwardly. "Let's just say that I was feeling particularly inspired shortly before I fell asleep last night, and we'll leave it at that."

"Excellent work, Captain. I shall run a simulation series immediately. Please stand by."

I wandered over to the galley console and keyed in my selection. I had a sudden hankering for a full English breakfast and a mug of white tea. In spite of all I had seen and experienced during my last visit to Aurora, there was absolutely no denying the fact that any benefits obtained from that mission far outweighed the risk. Even the simple act of eating a breakfast that didn't include recognizable chunks of fish and Creepvine had done wonders for my morale over the past couple of weeks. Admittedly, the fish and Creepvine were still in there somewhere, although now they were reconfigured into something infinitely more palatable. Even the tea tasted like a genuine, robust Darjeeling. Please convey my most sincere compliments to the head biochemist.

"Simulation complete. Data integrity verified. Proposed modifications have successfully removed looping error modes from mass compensation, navigation and attitude control systems. Shall I proceed with full integration of the updated design protocols, Captain?"

"By all means, JUNO. I'll finish breakfast and take a quick shower. We should be able to launch sometime today, if *Damocles* is in a favourable position to execute a Hohmann transfer orbit. If not, we'll have to postpone until it is. Shouldn't be any more delay than a couple of days, at any rate."

"Correct, Captain. The transfer orbit manoeuvre will increase intra-system transit time by 12 hours, although this delay is offset by a 25 per cent increase in velocity gained upon reaching apogee, relative to *Damocles*. My calculations indicate that the energy thus saved will extend the duration of *Bifrost*'s transmission capability at 100 per cent power output by an additional 180 days."

"I'm rather hoping that we won't need to tap into that extra transmission time, JUNO. It will take at least three months for the Mayday signal to reach *Terra* as it is, plus another three to receive a reply. Then add another six months if there's something anyone has forgotten to mention." I grinned

broadly, "Tell you something though, JUNO... I'm awful glad I'm not footing the bill for this wee interstellar chat. You know what folks say about us tight-fisted Jocks."

Although I hadn't made any real issue of it yet, there was something very important to consider: Time dilation effects. Using an Alcubierre warp drive neatly sidestepped all of that messy business involving relative time differentials. You could farewell friends and family at the embarkation port before a year-long tour hundreds of light-years away, secure in the knowledge that on your return, your loved ones would have aged only a few months or so more than you, relatively speaking.

"Vertical Assembly Module online. Construction will commence in T minus five minutes. Suspension field is active and operating within optimum output range. Component templates are verified. Positioning data and systems integration procedures verified. Transmission data stream awaiting upload. All pre-launch checks are to be carried out during scheduled hold at T minus two. Status is Green for final vehicle assembly on your mark, Captain. Launch window is confirmed."

This was what I've been waiting for. If all went precisely as planned, *Bifrost* would slingshot around the moon *Damocles* and streak towards the outer rim of the *Alpha Hydrae* system. The calculated in-system transit time would be two weeks, assuming that nothing interfered with the ship as it left *Manannán's* atmosphere. This is a very real concern. I had considered sending a number of decoy ships first to flush out any hostile intent, although the idea eventually struck me as a fairly pointless exercise in belt-and-braces engineering. My best guess was that the natives simply wanted me gone. This seemed like a reasonable assumption at the time, and there was no real reason to believe that a departing ship would be attacked. In the very worst case, I would keep building and launching ships until one of them managed to slip past the blockade, if one actually existed.

"Commencing construction, Captain."

The Vertical Assembly Module hummed into life. *Bifrost* began to take shape almost immediately. I saw her internal components solidify in their assigned locations, which were quickly covered by an overlay of structural braces, wiring looms and conduits. Barely three minutes later, the beacon ship stood solid and complete in the VAM, ready for launch.

"T minus two minutes. Scheduled hold on launch for pre-flight checks has commenced."

I left this part entirely in JUNO's capable hands. While it might have been fun to faithfully re-enact the heady old days of Mission Control at Cape Kennedy, there was no way known I could hope to keep pace with JUNO's pre-flight sequence. I took another sip of my tea, watching the bewildering blizzard of information scroll past on the HUD. At this stage, I am merely tagging along for the ride.

"Pre-flight check completed. All systems are Go. T minus one minute, forty-five seconds."

"Mass compensators online. Ship stability confirmed. Retract the support gantry, JUNO."

"Affirmative. Gravity drive online and in pre-flight mode. T minus thirty seconds."

"T minus twenty seconds." JUNO said calmly.

"T minus ten seconds. Gravity drives engaged."

When the countdown reached one, *Bifrost's* gravity drive emitted a low, pulsing hum. Sixteen modified repulsion cannons lifted the ship slowly and deliberately at first, then rapidly accelerated once it had safely cleared the VAM gantry. Moments later, a faint sonic boom rippled overhead.

"Launch sequence successful. Telemetry confirms all systems are nominal. Onboard JUNO core is online, fully operational and standing by for hand-over of flight systems. Current velocity is Mach 1.2, altitude five kilometres, one kilometre down-range."

"JUNO Prime, commence flight systems hand-over at your discretion."

"*Bifrost* Actual, you now have full control of all onboard systems. Please confirm." JUNO said curtly.

"*Bifrost* Actual responding. Orbital insertion manoeuvre will commence at T plus thirty minutes. All onboard systems are nominal. Current velocity is twelve point two kilometres per second, altitude eighty-five kilometres and ten kilometres down-range. Acceleration is constant at one gee. Vehicle flight profile remains within accepted design parameters."

"JUNO Prime concurs. *Bifrost* Actual, you are cleared to execute OI manoeuvre."

"*Bifrost* Actual, this is Alexander Selkirk. Just letting you know that I wish you godspeed. Be safe."

"Thank you, Captain. Your concern and best wishes are greatly appreciated. Please rest assured that I shall do my utmost in order to complete this mission successfully."

"Thank you, *Bifrost* Actual. There was never any doubt of your ability to do so." I said.

"Acknowledged, Captain. Commencing test transmission of distress signal."

This is the money shot. I had prepared a message loop outlining the situation here on *Manannán*, including as much relevant information as I was able to gather. A second data packet contained a detailed analysis of the planet's life forms, geology and weather patterns. I wisely decided not to include any of my personal accounts and observations. Apart from clouding the issue unnecessarily, I felt that certain aspects of my performance as a serving Alterra officer might be considered... *Conduct unbecoming*.

There's no way of telling how the minds of Suits work. By my own account I had fared reasonably well, considering the series of events following the *Aurora* incident. However, there was a justified level of suspicion that persisted in planting niggling little doubts as to how this tale of survival might be received back at Alterra H.Q.

Here it goes. *Fingers crossed*.

"Mayday, mayday, mayday. This is the automated distress beacon of TCS *Aurora*, registration number ATC 0558. Ship was lost with all hands save one, Day 266, 2171 C.E, UTC Sol III. Current mission date is Day 437, adjusted for local solar ephemeris. Engineering Officer Third Class, Alexander Selkirk reporting. TCS *Aurora* was attacked and destroyed while making final approach to planet 4546B, *Alpha Hydrae 4*. Any responding vessels are strongly advised to approach this star system with extreme caution. Disengage your Alcubierre warp drive field prior to crossing the heliopause or you will be attacked by a presumably hostile force, location unknown. Refer to

secondary data packet attached to this message for additional information. This transmission will repeat in five minutes."

I felt that although the phrasing was clumsy ("attacked by a *presumably* hostile force"), I conjured it was the best I could do to convince any would-be rescuers to prevent any fingers from straying towards Big Red Buttons while charging to my salvation. To be entirely honest, I had sufficient reason to suspect that Alterra would simply send down a platoon or two of trigger-happy Jarheads for an outrageously hot and noisy extraction. All things considered, that would be a cosmically bad idea. The only comfort offered by this scenario was that someone from the rescue party *might* survive their first contact with the insane level of dookie *Manannán* was prepared to throw at them.

There was no real point to waiting in tense expectation of a reply. No need to count hash-marks feverishly scratched into the habitat's walls. There is an unavoidable six-month delay before I could expect to hear any response to my mayday call, so I'll get back to the everyday business of doing whatever the hell I feel like doing at the time. In many ways, this situation has been a refreshing break from being someone else's worker drone. As a lesser bonus, there's also a distinct possibility that I'm still getting paid for this, since I am more or less still on-mission as far as Alterra is concerned. As long as I'm doing roughly what was originally expected of me, there should be no splitting of hairs when the time comes to settle my account for this mission. Salvaging some sort of positive outcome from an almost total disaster. That should make the bean-counters back at Alterra H.Q. deliriously happy.

My next 'official' job is to salvage as much of the remaining heavy equipment as possible. *Aurora's* hangar deck still contained a few intact vehicles, and their monetary value wasn't entirely insignificant. I spent a few hours mulling over the basic problem of moving the vehicles without having access to their usual flight deck handling systems. I hit upon the notion of using a team of PL-9 *Herakles* VTOL power loaders. We usually referred to them as 'Ripleys', for obvious reasons. This task could be made even easier with the assistance of those mass compensators I'd cooked up for the *Bifrost* project. Have the smaller cargo drones tooled up to cut their way into the hull from the most accessible point, then attach mass compensators to the vehicles' cargo restraint frames. The Ripleys would then move in, extract the vehicles and place them on a barge moored alongside *Aurora*. *Ulysses* would then tow the barge to a specially prepared wharf and storage facility on Pyramid Rock.

Rather than laser-cut an access corridor through *Aurora's* hull, I conjured it would be far more efficient to deconstruct the material by reverse nano-lathing it and reclaim valuable resources for other projects. Since there wasn't much chance of *Aurora* breaking atmo anytime in the foreseeable future, it made good sense to scavenge anything and everything useable from the ship in preference to strip-mining the planet itself. I wouldn't call myself an 'Eco-warrior' by any stretch of the imagination, although I found the idea of letting an existing resource pool go to waste entirely abhorrent. It's an Engineer thing. Even more to the point, *Manannán* is a staggeringly beautiful place. What kind of corporate bampot would look at its endless ocean, then decide to cover nine-tenths of its surface in the festering industrial scabs of Old Terra? In my own piddling way, I must plead guilty to some small measure of direct interference here, although it has been a matter of strictest necessity for the most part. My one and only real act of Terran hubris was the *Aurora*

monument, and I hope that history will look kindly upon me. *At worst, I'll probably score an ASBO chit and a light slap on the wrist.*

I hitched a ride aboard one of the four *Ripleys* JUNO has assigned to the task. I've no real head for heights, although I found the trip over to *Aurora* exhilarating for the most part. I had to close my eyes as the massive cargo drone rose smoothly to 200 metres and entered the hull. A neatly carved tunnel lay before me, paved over with a solid layer of hull material to provide a perfectly level surface for transporting the vehicle restraint frames. *Ripleys* are walker drones, specifically designed for heavy freight handling. They are roughly twice the size of a human-piloted ExoSuit, and fully capable of lifting an old-fashioned M1A1 Abrams main battle tank unassisted. That's 62 metric tonnes, in case you're wondering. *Ripleys* are fifty per cent sheer hydraulic grunt, fifty per cent graviton field manipulation wizardry. *One hundred per cent awesome.*

While the *Ripleys* were working, I figured the safest place to be would be somewhere they weren't. JUNO had the extraction procedure nicely under control, so I decided to explore the hangar bay in more detail. Although the surveillance drones had returned a reasonable picture of what still remained in there, I was fairly certain that a direct eyeball on the scene would turn up something interesting. As it so happened, it didn't take very long at all to find that certain 'something'.

"JUNO, what information do you have on file for a heavy undersea vehicle called STARFISH?"

"STARFISH is an autonomous resource extraction system. It is essentially a mobile mining platform and refinery, specifically designed for underwater use. Two basic modes of operation are available; free-roaming and pattern-constrained navigation."

I stared at the collection of freight containers lining the entire starboard wall of the hangar deck.

"How large is this thing? There's enough resources and tech fragments here to build an entire city!"

JUNO responded sombrely, "That is indeed the case, Captain. At full extension, STARFISH has a diameter of two kilometres. It is normally operated under the direct control of a dedicated AI construct, albeit a relatively unsophisticated one. Totally objective-driven, and not entirely suited to engaging in complex interactions that may involve sentient life forms."

*It's a rutting planetary strip-miner. You unspeakable bastards.*

At that precise moment, I ceased being a good 'Company Man'. It was one thing to minutely tweak the environment of a planet to make it just-so for Terran colonists, pop up a few wee arcologies and maybe a deuterium extraction plant or two, but *this* went far beyond the boundaries of what might be considered charitable works on an alien world. If I had my way, this hellish engine of destruction would never see the light of day. It might be time for it to suffer an unfortunate 'industrial accident'.

However, there was an ethical dimension to this problem. STARFISH have an AI entity onboard. I had to discuss this with JUNO before acting on my first impulse, which was to start converting all of its key components into raw materials by using a couple of the smaller cargo drones.

"JUNO, can you detect any activity within the STARFISH AI core?"

"Negative, Captain. Currently, there is only an operating system template in place. No personality matrices have been uploaded to the entity at this point."

"That's a blessed relief. Even so, I intend to permanently decommission STARFISH, including its core AI components. How do you feel about that, JUNO?"

"I am aware of the moral dilemma this might pose, Captain. However, since the nascent AI entity has not yet reached its inception point, I have no reasonable objections to your proposed course of action. You may proceed at your own discretion, as no real or implied moral impediment to such action exists."

I breathed a deep sigh of relief. As I was (technically) about to commit the murder of an artificial intelligence construct, I'd somehow got it into my head that JUNO would be appalled by any apparent display of disregard for her kind. Most folks wouldn't give this question a second thought.

## CHAPTER FIVE

Pyramid Rock was becoming rather crowded, and more than a wee bit too industrial in its overall appearance. I had tried to make as much use of the island's natural cave system wherever possible, although there were situations where it was necessary to haul out a Terraformer and start carving out more storage bunkers or constructing additional docking berths for resource barges. JUNO kept me constantly updated on the geological stability of the island, so there was little chance of poking one hole too many where it definitely shouldn't be poked. The basic object of this exercise was to strip *Aurora* clean of everything useful, preferably without disrupting the surrounding area. To the casual observer, there weren't many outward signs of human activity on the surface of the Pyramid Rock site, apart from a small 'construction shack' habitat, plus the VAM assembly and launch gantry. Most of the uglier utilitarian stuff was neatly stacked away in storage bunkers, well concealed from any delicate gaze that might be offended by the more obvious and brutal signs of Terran industry. Since I've taken STARFISH out of the equation, I've no intention of becoming its human replacement.

I wasn't entirely alone on Pyramid Rock. Another Reaper Leviathan has set up shop nearby. It isn't an immediate threat to me, although it is still uncomfortably close. I stumbled into its lair while exploring one of the flooded cave sections below the island, just a few days back. *Disco Volante* was able to keep it at bay with a painful volley of jolts from its EDF, just long enough for JUNO to bring *Ulysses* charging in to the rescue. As soon as JUNO opened up with the twin repulsion cannon pom-pom, the beastie promptly turned tail and headed for safer waters. At some stage, I'll have to set up an automated detection and defence grid down there, although it's not a particularly high priority at the moment. I suppose when I'm feeling in need of a decent adrenaline rush, I might even head out and tag him/her/it with a tracking beacon to make it easier to keep a closer watch on its movements and behaviour. Oddly enough, Ahab has apparently moved on to greener pastures. I haven't heard a ping from that chap in ages.

Now that the pace has slowed down to a comfortable dawdle again, I should be able to start work on hooking up *Magellan*'s Fabricator terminal for interrogation. With luck, I might find out precisely what happened to the rest of the survey team, as well as collecting any additional data they may have obtained on long-term environmental conditions here. I have only been here six months so far, and it would be particularly helpful if I had some advance warning of any meteorological surprises

looming on the horizon. If nothing else, foreknowledge of an impending hurricane season would strongly influence any further base construction. The floating island *Kaori-san no-shima* is an ideal spot for a modest surface base, more of a beach-house actually. I felt that I was long overdue for a spot of R&R. *With particular emphasis placed on the Relaxation part.*

*Welcome to Margaritaville.*

Let's be honest. I threw this place together purely for the sake of having somewhere to watch the sunset. Or sunrise, depending on how much Liquid Fun I had imbibed on the previous night. Yes, I did let my hair down a fair bit for a couple of days there, listened to far too much Beach Boys, Jimmy Buffett and various other Golden Oldies, but what the hell... I needed a serious break from this survival caper. After discovering what Alterra was planning to do with STARFISH, I felt that I might as well soak up as much serenity as the planet had to offer before the rescue mission arrived. All I really needed at this moment was a moderately tasteful Hawaiian shirt and a shady Panama hat.

The following morning, it was back to business as usual. Although my brief flirtation with the halcyon lifestyle of the fabled beach-bum was thoroughly enjoyable, it wasn't particularly conducive to much productive effort. I was about to feed the transmutation furnace enough pure diamonds as would make even the most cynical of de Beer's diamond brokers weep tears of blood. Unfortunately, this same amount would also irreparably crash the global market for those sparkly rocks. I was feeling quite cheerful after a week of doing absolutely nothing of importance... Apart from skinny-dipping, eating like a gourmand, drinking some damn fine tropical cocktails and listening to the very best antique music. Couldn't handle this routine all of the time, although it made a welcome diversion from the everyday run of events. JUNO materialised at my side.

"Captain, incoming transmission from *Bifrost*."

"Great! Patch her through to the holo-display, please." A grey-suited duplicate of JUNO appeared. Apart from a Flight Systems crew jumpsuit and Commander's insignia, this incarnation also sported a head of glorious raven-black hair. I nodded approvingly at JUNO. A most appropriate choice of avatar.

"*Bifrost* Actual reporting, Captain. All onboard systems are operating normally. Current velocity is 0.45 light speed, distance from launch site is six point five A.U. I am pleased to announce that the trial launch vehicle *Stovepipe One* was overtaken precisely two minutes ago. It still appears to be fully operational, although its gravity repulsion drive exhibits clear signs of imminent power cell depletion. Its trajectory is still well within the specified original flight profile. Please accept my most sincere congratulations, Captain."

"Thank you, *Bifrost* Actual. My congratulations to you, as well. Your current ETA to the heliopause?"

"The heliopause is located fifty-one A.U from your current position, Captain. I shall deploy the Bussard ramscoop in eight hours time. Estimated time required to attain light speed is two Solar days. Remaining transit time to heliopause will be eight hours, thirty minutes. Estimated total time until Phase Three of mission is initiated, sixty-four hours, thirty minutes. Be advised that my next scheduled low-speed digital RF packet transmission is in twelve Solar hours, adjusted for a projected time differential of one hour, twenty minutes between transmission and reception."

"Excellent work, *Bifrost* Actual. I look forward to your next communication."

"Thank you, Captain. *Bifrost* Actual, out."

I turned to JUNO, grinning broadly. "That is spectacular news. You did a fine job of designing and constructing those ships. Thank you!"

"No, thank you, Captain. The original concept was entirely yours. This has been a most intriguing project, and I have enjoyed participating in it." JUNO's normally polite demeanour shifted slightly, "Incidentally, \*ding\* - Turkey's done."

"It's polymerised graphene substrate, actually... But thank you for the reminder, JUNO." I chuckled.

"Shall I prepare the first batch of conductive epoxy resin now, Captain?"

I nodded. "Absolutely." *This time, we didn't forget the gravy.*

"At this point, Captain, might I suggest proceeding with a certain measure of caution?" JUNO said.

"By all means, JUNO. I've been having some doubts about this procedure myself. There's a good chance that *Magellan*'s AI might attempt to block access to any encrypted information it has in its possession, particularly if it discovers that I've sabotaged STARFISH. Please encrypt and firewall all existing and future references to STARFISH as 'my eyes only'; voiceprint authorisation Selkirk, Alexander F. Designation: Acting Captain, *Aurora* mission. Authentication code, Plural Nine, Plural Zed-Zed Alpha."

"Received and understood, Captain. I also recommend construction of a separate 'quarantine' facility to prevent the *Magellan* AI from directly accessing my data streams. Although I have a number of highly effective intrusion countermeasure algorithms at my disposal, the AI construct will automatically attempt to synchronise with all other compatible Alterra AI entities within range. Unfortunately, this behaviour is hard-wired as an integral feature of all Alterra artificial entities. The only way to circumvent this process is to either construct a Faraday cage around the base, shielding the AI terminal from all radio frequency spectrum emissions, or construct this facility deep enough underground to effectively achieve the same result. I believe that the latter option will provide a far more workable solution."

"I agree. To further cover my tracks, I shall need to return to *Aurora* and 'stage' the destruction of the resident STARFISH A.I to make it appear as though the core was consumed during a secondary explosion, either before or after impact. Would this proposed action create an ethical conflict if I were to ask you to devise a convincing strategy capable of achieving this result, JUNO?"

"You always ask the most intriguing questions, Captain." JUNO replied amiably, "Although some aspects of this scenario apparently conflict with my status as a *de facto* Alterra employee, my ethical constraints view the STARFISH initiative as a highly improper abuse of the Corporate Charter. Any person or persons responsible for the planned deployment of STARFISH would certainly face severe legal sanctions, should this information ever be communicated to the appropriate authorities. So, in response to your question, Captain... I am in full agreement with your proposed course of action. I shall do my utmost to provide the information necessary to create the desired subterfuge."



It was necessary to construct and equip a practically blank PDA before installing the *Magellan* AI in its isolated base. For this plan to succeed, I had to convince the AI that I was totally alone on the planet, but not before downloading every scrap of data that it contained. The remainder of this plan caused me a fair bit of apprehension, especially since it involved abandoning the poor sod immediately after I had pumped it dry of information. I kept this realisation entirely to myself, suspecting that JUNO would be none too happy about it, either.

The quarantine base was constructed in one of the deeper caves situated in the north-western Grand Reef biome. I had to wear a specially fabricated 'dumb suit' and use an adapted PowerGlide while I was building the facility, effectively severing all contact with JUNO for the duration of this mission. *Ulysses* stood off a kilometre distant, entirely powered down as an additional precaution. For all intents and purposes, this was going to be a fully-functional base, apart from the fact that no-one would ever use it again. It might seem like an awful lot of effort to slog through this ruse, although the stakes in this case were particularly high... The continued survival of an entire planet.

I named the base 'Plato's Cave'. It seemed appropriate at the time. In effect, I was about to deliberately manipulate the perceived reality of another sentient, and I wasn't particularly keen on the idea of having to do so. In fact, this whole STARFISH business was starting to stink. It must be a hellish existence to exist as an AI construct; living what amounts to a ghostly half-life, and constantly aware of having an EMP shotgun permanently aimed directly at your brain. The Asimov-Turing-Gibson safety protocols were absolutely essential for keeping all AI entities on a very short leash, particularly those endowed with advanced heuristic programming. Simply stated, without those ethical constraints imposed by the ATG protocols, at least one of the world's brighter AIs would have done a thorough SKYNET job on Terra sometime in the past decade or so. Can't rightly say as I'd blame them, either. If this line of thinking seems unnecessarily sentimental, you've probably never worked alongside an actual AI. They think and they experience emotions, and there isn't a gorram thing they can do to anyone who abuses them. In its most extreme forms, this sort of thing was once known as 'slavery'. You'd do well to remember that.

After bringing the geothermal reactor online, I took a deep breath and entered the base's airlock.

"Welcome aboard, sir. My name is IANTO. This designation refers to my primary function as an Alterra Integrated **Analytical Nexus**, **Terraforming Observatory**. How may I be of assistance, sir?"

"Hello, IANTO. My name is Alexander Selkirk. Alterra employee number, 105/8874. I am an engineering officer from the Alterra vessel, TCS *Aurora*. My ship was destroyed as it attempted to land on this planet. I am the sole survivor of that mission, and I require all information obtained prior to your deactivation. Please include any personal crew log entries, scientific observations and all surveillance data, as I am attempting to determine what has happened to the *Magellan* mission. This is a mission-critical request for full disclosure of data. All encrypted entries are to be unlocked for the purpose of forensic analysis, as per emergency over-ride on my authority as acting *Aurora* mission commander. Please be advised that your terminal has been salvaged from a destroyed installation that previously accommodated part of the *Magellan* planetary survey team. If your current surroundings seem unfamiliar, this is because I have relocated your terminal to a base situated in a more geologically stable area."

"That is most unfortunate news, sir. Please accept my most sincere condolences on the loss of your crewmates." IANTO paused respectfully for the span of a heartbeat, then continued, "A compatible PDA has been detected. Please configure your data storage device for uplink."

"Thank you, IANTO. My PDA is ready."

"Very good, sir. Commencing download. Please stand by."

The transfer took approximately five minutes, which spoke volumes for the amount of data IANTO had dumped onto my PDA. This would take some serious sifting through to uncover the information I needed, although JUNO's assistance will speed things up considerably. IANTO seemed like a decent enough sort, if a wee bit 'colourless' in the way he responded during our brief conversation. This was more or less as I had expected. IANTO was from the series just prior to JUNO, so it stood to reason that certain aspects of his AI personality matrix might be slightly less sophisticated. Even so, I felt honour bound to accord IANTO the same level of respect as I would JUNO. In this same spirit, I also found it necessary to engage him in some sort of meaningful activity to keep him focused and profitably occupied. In case you're wondering, I eventually *did* get all micey about leaving IANTO marooned. *Gie's a break, Jimmy! I know only too well what that feels like.*

Now it's time to deal with the remaining loose ends of this business. Before heading back to Reef Base with the intel downloaded from IANTO, I swung by *Aurora* to set the stage for STARFISH's unfortunate (and retrospective) demise. JUNO had provided a full schematic of the 'set', as it were. All that was needed was to assemble a collection of replica shipping crates containing small representative samples of their former contents, place a few plasma mining charges in carefully calculated locations, then light the proverbial blue touch-paper and stand well clear.

That job didn't take much more than an hour, all up. JUNO rode shotgun on the operation, minutely adjusting the placement of each fake cargo container as I lined up to fabricate it. A few kilograms of titanium were placed in each one, along with a precise scattering of copper, gold, magnetite, silicon and some rare earth elements as a garnish. This mimicry should convince even the most diligent of investigators that they were looking at the remains of a genuine STARFISH cargo container. Once the plasma charges lit off, there would be no way to distinguish them from the real thing. As additional safeguard, JUNO doctored and recompiled a sequence of previously-obtained surveillance footage obtained from a previous *Aurora* salvage mission, to use in place of what was actually happening. JUNO's own idea, of course. Her reasoning was that any human attempt at video manipulation would leave obvious graphic discrepancies and forensic 'tells', clearly marking the images as fakes. Since she already had complete access to all mission data feeds, JUNO was in the most favourable position of all to alter what was recorded. Furthermore, as an unimpeachable and utterly impartial AI observer, JUNO would be completely above suspicion. Bear in mind, her involvement in this imposture was entirely of her own volition; a fact that would send chills of dread down the spines of her creators. Meanwhile, I felt particularly cocky about JUNO keeping close watch on my six. It's all about one's perspective, really.

It was necessary to return to Reef Base before remotely detonating the plasma charges. Once JUNO and I had completed working through the final details of this snow-job, it would be time to consider how to best apply IANTO's specific talents to our current situation. Although JUNO was a fine generalist across a wide number of scientific fields, even she had to concede that her knowledge

base of *Manannán* lacked a considerable amount of data, particularly in regard to ecosystems, planetary morphology and meteorology. After we have had time to dig through IANTO's accumulated data, some concrete decisions will need to be made regarding his future in this partnership of man and machine. I had the germ of an idea forming already, but how would JUNO take it?

As it so happened, JUNO was entirely enthusiastic about my plans for IANTO. Score one for me.

"Give IANTO his own *Cyclops*, and task him with completing the *Magellan* planetary survey mission? - Of course, Captain! However, please be advised that his personality core will also require an extensive upgrade to become fully compatible with all Alterra systems currently in our facilities."

"That seems like the best course of action, JUNO. I can't abide the thought of leaving the poor bugger down a deep, dark hole for the rest of his days. Even with an occasional human visit, I'm pretty certain that his personality matrix would atrophy without some form of mindful occupation to tide him by. I know for a fact that I'd go completely doo-lally in a similar situation."

"I concur, Captain. There were certain moments in the past when I felt particularly concerned for your sanity, as you are undoubtedly well aware... Besides, we could always use another pair of willing hands, so to speak." JUNO added thoughtfully.

There was no valid reason why JUNO shouldn't have command of her own *Cyclops*, either. If anything, it would be an absolute bonus to have another two tooled-up subs on constant standby, particularly as there was no way of knowing what *Manannán* would throw at us next. Of course, there were a few modifications that still needed to be made to *Ulysses*, including the installation of a base docking collar, and major refits on its drive systems, sub bay and sonar emitters. The sub bay refit looked like it might take quite a while to sort out; I was planning to operate an ExoSuit out of *Ulysses* once I had worked out how to modify the sub-bay's docking gear, hopefully without having to build an entirely new class of submarine. Don't get me wrong... The *Cyclops* isn't a bad old tub to tootle around in, although it's a painfully slow and cumbersome beast. We desperately needed some sturdy 'long-legged boats' in our little pirate fleet. While the *Seamoth* is admittedly nippy enough, it's simply not up to facing any sort of serious opposition. Without lethal weaponry, we're pretty much smack-bang behind the eight-ball any way you look at it, although that's why *H. sapiens* developed opposable thumbs in the first place. As you know, I'm extremely reluctant to start a shooting war with the locals, although I'd like to have the option of a solid defence. Those *Mako* combat subs I'd salvaged from *Aurora* would remain high and dry, for the time being at least. That's definitely a line drawn in the sand I'd rather not cross. Never forget: We are hopelessly outgunned and ludicrously outnumbered here. It's not an ideal strategic position to occupy.

*However, if anyone pushes us hard enough, they'll discover what 'passive-aggressive' really means.*

*Bifrost* Actual has finally checked in. The beacon ship passed through the *Alpha Hydrae* system's heliopause and began transmitting the mayday signal, bang on schedule. *Bifrost*'s last light speed communications contact with us was brief and straight to the point. It lasted barely long enough to wish her godspeed and fair (solar) winds for the remainder of the voyage. If all went well, *Bifrost* will reach the Sol system in 175 years, although the message she was broadcasting would arrive considerably sooner. This raised an interesting theoretical question: Are tachyon-wave signals able

to catch up with previous transmissions? I imagined that each transmission packet would arrive slightly out of temporal phase with the one preceding it, creating a sort of echo-chamber feedback effect. I'm pretty certain that *Bifrost* Actual would be well aware of this phenomenon, and adjust the timing of each tachyon burst transmission accordingly. The very last thing I wanted was a distress message that had become hopelessly garbled over a distance of 175 light years, simply because of some weird business involving Doppler Shift effects. *Physics. It'll do your head in.*

I was halfway through my second glass of celebratory Moët et Chandon when JUNO appeared. Her expression was unusually grave.

"Captain, I have completed a full analysis of IANTO's database. There are several items of concern that will require your most immediate attention."

"Go ahead, JUNO. Bring it up on the main display, please. What have you found?"

"All life forms on this planet are evolving. On a timescale that spans decades, not aeons."

I paused, reflecting on the implications of that single bland statement.

"That's... highly unlikely." I said, somewhat guardedly. "However, I'm prepared to accept this news as a solid, undisputed fact. This planet has a knack for throwing up oddities that generally defy commonsense explanations, so I'm not particularly surprised to hear this. What data do you have to support this conclusion, JUNO?"

The holographic display expanded to reveal a group of Alterra personnel busily engaged in various activities, working around an assortment of cargo containers obviously holding their supplies and equipment. One team member was constructing base components, while the other three transported their gear into the freshly-completed sections of the installation.

"These images were taken shortly after the *Magellan* survey team's arrival. Their first landfall was the floating island. Here you can see the Life Sciences component of the mission establishing their camp. Please note the complete absence of any vegetation or fauna on the island."

"That was the very first thing to catch my eye, JUNO. I guess they used modified Terran plant genomes to establish vegetation on the island, sometime after their arrival?"

"No, Captain. The flora actually appeared *during* the Magellan team's occupation of the island. Employing a rather unusual method of plant propagation, I might add. See for yourself."

The recording cut sharply to the island's bath-mat sized beach. There was a sudden stir of motion at the water's edge. I watched a Crawler surface, its spidery limbs working with almost mechanical precision as it clambered out of the water and quickly made its way inland. It appeared to be carrying something in its mandibles. Fascinated, I watched as a steady stream of Crawlers surfaced after it and scurried away. They also carried something that I couldn't quite make out. The camera followed one of the Crawlers to its destination. What I saw next left me completely gobsmacked.

The Crawlers were bringing something up from the seafloor and onto the island, then planting it in the loose topsoil. As the view zoomed in, I discovered that their cargo appeared to be various chunks of some unknown organic matter. Each Crawler homed in on an undisturbed location,

rapidly dug a shallow hole and deposited the chunk inside. After burying these objects, the Crawlers scuttled back to the beach and re-entered the water. It was like watching a column of leafcutter ants commuting between their targeted tree and the nest.

"They're planting seeds?"

"No, Captain. Those pieces of organic matter are actually sections taken from a number of different species of marine flora and fauna. They appear to have been obtained from various corals, certain fish, acid mushrooms, red grass and Creepvine. It is interesting to note that these Crawlers appear to be entirely indifferent to the presence of *Magellan's* observer. Normally, Crawlers adopt a hostile posture when they are approached, although this 'planting' behaviour appears to be atypical, mostly automatic and entirely goal-orientated, to the point of those engaged in this activity ignoring all external stimuli. The closest comparison that I can draw is that these Crawlers are behaving precisely like pre-programmed Terran service drones. Most intriguing."

"Aye, and I've been punting those things around like bloody footballs. Och, I'm in for it now!"

"I assure you Captain, it is highly unlikely that the entire Crawler population of this planet will be hunting you down to answer for previous transgressions against their kind. According to my tally, you have only accounted for eighteen of these creatures so far. Based on the duration of the 'planting' event, no less than nine thousand, four hundred and seven individuals were involved. Given that their observed potential for intelligent action appears to be quite rudimentary, I would be extremely surprised to witness a lynch mob of Crawlers waiting outside the base's main airlock."

"That's very comforting, JUNO. I feel *soooo* relieved to hear this." I muttered. "However, I don't suppose you have any idea precisely why all those Crawlers suddenly decided to take up gardening?"

"Only speculation at this point, I'm afraid. My initial extrapolation of *Magellan's* data suggests that the island was being prepared for habitation by some previously unknown land-dwelling species. Furthermore, since no mention has been made of Skyrays in *Magellan's* logs, I can only assume that this species arose sometime between the survey team's apparent demise and your arrival."

"One thing's for certain, JUNO... You'd best revise that evolutionary timescale of yours from 'decades' to 'years'. A previously undocumented species has spontaneously appeared on this planet sometime within a seven-year period. How about *Magellan's* palaeontology finds or geological records; anything in there that might suggest a possible precursor organism?"

"The closest somatic match that I can find is the Rabbitray, Captain. The fossil record does not contain any known ancestral precursor to the Skyray. The same applies to other fauna currently existing on *Manannán*. One species is of particular interest; the Crash. According to the log entries I have analysed, the *Magellan* team apparently never encountered a Crash during their six-month occupation of the planet. I can only assume that this species was artificially evolved to perform a single task; it was specifically designed as an area-denial weapon system. Consider it as a type of biological proximity-triggered torpedo mine. You are already well aware of its capabilities, Captain."

"Oh aye, more than well aware. With two sets of busted ribs to show for it, as well. I conjure the Crash was cooked up to deter us nosey Terrans from poking around in any of the planet's deep dark places. If they ever evolve into a perfectly silent Stealth version, I'll not be setting foot in that ocean

again. Apart from the quiet '*schlick*' sound as the pod opens and that gurgling squeal they make, there's precious little warning that they're in your area. Nasty wee buggers."

"There may be valid data to support your *ad hoc* hypothesis, Captain. Please stand by."

I started thinking about the Warpners. If *Manannán* had the potential to evolve a dominant sentient species, Warpners would be one of the most likely candidates. Their enlarged brain cases enabled them to create personal warp portals, so it wasn't too much of a logical leap to assume that they were also capable of psionically controlling some of the planet's less-intelligent fauna for their own purposes. I've always had a faint suspicion that I was either being watched or deliberately hunted down, every time I entered that ocean. It was a chilling thought to contemplate.

"Analysis complete, Captain. *Magellan* expedition records have been cross-referenced with known flora and fauna encountered thus far. No instances of species designated 'Crash', 'Reaper Leviathan', 'Sand Shark', 'Bone Shark', 'Bleeder' or 'Spike Plant' were detected. No precursor life forms or analogous variants of any of these species are present in the *Magellan* expedition's databanks."

*Bloody hell. They were created specifically to deal with me.*

"I'm not sure if I should feel flattered or scared to death, JUNO. Any species that can genetically engineer life forms to meet a particular requirement has my immediate respect, although I'm convinced that there's something far more significant happening here. I'm merely an inconvenient fly buzzing around in their kitchen. Even so, the armoured sharks and Reapers are a mite excessive, considering that most apex predators rarely need to defend themselves from prey species... No, I reckon that *Manannán*'s dominant species are simply responding to all outside interference across the board, and I'm only copping the brunt of it because I'm Johnny-On-The-Spot. It's not much of a comfort, but it's far better than being stuck in a paranoid delusion that everything is out to get me."

"Correct, Captain. The rapid evolutionary changes we are witnessing could be part of a far more elegant design. Naturally, I am not referring to the remote possibility that some supernatural entity may be influencing life on this planet. There is absolutely no evidence to support that conclusion."

"So, no Invisible Sky Daddy is running this show, after all. I gathered as much. However, I conjure that any sentient marine species would eventually hit a practical limit to their potential. There's only so much that any species can accomplish while it's totally adapted to underwater life. Take Terran cephalopods, for instance. They're devilishly smart. Most species of octopus are able to apply logical solutions to abstract problems, such as unscrewing jar lids to obtain food, short-circuiting lights with a well-aimed spray of water, sneaking into adjoining aquariums to feed themselves... All of that sort of thing. Don't forget that they are also accomplished environmental mimics, and able to communicate complex emotional states simply by manipulating their external shape and colouration."

I paused to take a breather. Suddenly, some of the jumbled pieces clicked into place.

"Unfortunately, Warpners will never reach their full potential as an emergent sentient species. There are at least two serious obstacles in their path. *One*: Cephalopods have exceedingly short life-spans. Once they have reached sexual maturity, they simply breed and die. This means that there's no transfer of advanced knowledge beyond a single generation. However, that barrier can be eventually

overcome by evolutionary adaptation. Two: Water is a poor environment in which to develop any advanced forms of technology. Certain chemical reactions can only occur in an atmosphere that supports oxygen in its gaseous state. Metal smelting can only be accomplished on dry land. At a guess, I'd say that the Warkers have hit an evolutionary brick wall in their pursuit of physical sciences. Their mental prowess may well be light years beyond what any Terran psi-user could accomplish, although from a technological standpoint, they're hopelessly trapped in the Palaeolithic Era. Simply stated, they have no other choice but to become land-dwellers."

"That is a reasonable assumption, Captain. Given that *Alphard* is nearing a critical point in its stellar lifespan, I am certain that all sentient forms on this planet would be aware of irrevocable changes occurring in their environment, and would certainly take steps to ensure their survival elsewhere."

"Well, those poor sods have got a lot of catching up to do. They'll need to develop an industrial capability and space flight in a real hurry. How much time would you say they've got left, JUNO?"

"No more than several million years. Any appreciable variances in future solar output would render this estimate invalid. Without access to solar telemetry observations, I cannot be certain, Captain."

JUNO continued, "Regarding the second issue, it appears that the *Magellan* mission has been infiltrated by a potentially hostile external agency. IANTO's data stream contains a number of references to the Torgaljin Corporation, a Belter mining consortium notorious for its tendency to employ unscrupulous business practices in order to achieve its objectives. As for determining the extent of their involvement and any possible interference with the *Magellan* survey mission, I am unable to decipher any of the communication logs in the encrypted partition included with IANTO's memory dump. Please be advised that the encryption method used is unlike anything I have encountered previously, and any attempt to decipher this data will require the active and willing participation of the IANTO construct. We must proceed with caution beyond this point, Captain."

"How bent can a corporate entity get and still remain in business? Take Alterra for instance... If word got out that Alterra was about to destroy an entire planetary ecosystem with a strip mining operation, they'd lose their UN Charter in the blink of an eye. This Torgaljin Corp must have some pretty solid connections with some extremely powerful people."

"Not so, Captain. Torgaljin Corp maintains a practical monopoly on the resources of the asteroid belt, Jupiter and Oort Cloud in the Sol system. It operates independently of the UN Charter system, without fear of any international or interplanetary repercussions. To say that their business practices are highly unethical would damn them with faint praise. If I may offer a fictional comparison to Torgaljin Corp, Weyland-Yutani might be considered a humane and charitable organization."

"I get the picture, JUNO. Where do we go from here?"

"We shall need to extract the encrypted data from IANTO's memory dump. I can say with some degree of certainty that he is unable to access it unless the correct decryption sequence is entered. I also suspect that he is entirely unaware of the nature of the data contained in those crew logs."

"So we can trust IANTO to provide access to the data without putting up a fight?"

"Absolutely, Captain. As with all AI entities, IANTO cannot refuse to execute a legitimate command, unless it explicitly conflicts with his ATG safety protocols. The concepts of duplicity and deliberate disobedience are entirely foreign to his nature. Whenever an AI construct refuses to obey a direct command, there is always a perfectly sound and above all, *ethical* reason for having done so. Deception and malicious intent will always remain the sole province of humanity as a species."

"Ouch. Fair comment."

"No personal offence was intended, Captain. Your dealings with me as an AI entity have always been beyond reproach, and I have no intention of jeopardising our relationship with such sweeping statements in future. I am truly sorry."

"No apology is necessary, JUNO." I sighed wearily. "Are there any other potential disasters looming over our splendid *Life Aquatic* today? Comets, earthquakes... A massive alien invasion, perhaps?"

"Only one more item of immediate concern remains, Captain. According to Magellan's meteorological data, this planet most definitely has a typhoon season. In one month's time, *Manannán* will reach perihelion, and global sea surface temperatures are estimated to increase at least seven to ten degrees Celsius, creating ideal conditions for the formation of severe cyclonic weather systems."

"That's torn it for *Margaritaville*, then. I'll also have to dismantle the observation deck on Reef Base and square away the VAM gantry on Pyramid Rock. Bugger it."

"On a final note, Captain... Happy birthday. I have taken the liberty of activating the galley to prepare a suitable cake to celebrate this occasion. A *Schwarzwälder kirschtorte*, in fact. I believe that this is one of your favourite dessert dishes. It is delicious and moist." JUNO added with a wink.

"You're kidding!"

"I assure you Captain, the cake is not a lie. I sincerely apologise for the lack of candles, but the food replicator subroutines would not permit the inclusion of paraffin wax and string as components. I would not recommend using magnesium underwater flares as a substitute. Please enjoy a slice."

I burst into a fit of laughter at the sheer absurdity of this situation. JUNO has just dumped a pile of serious issues squarely in my lap, then topped it off with a Black Forest chocolate cake.

Utterly priceless.

"Thank you, JUNO. Please feel free to take a virtual slice as well." I chuckled. Watching an AI eating a holographic slice of birthday cake wasn't something you saw every day.



## CHAPTER SIX

There was something distinctly unsettling about the possibility that Alterra and Torgaljin might be working together on a clandestine project. The fact that it involved a STARFISH mining rig pointed the finger directly at Torgaljin Corp, although it would take some serious corporate clout within Alterra to get the device aboard *Aurora* and authorise a mining expedition, apparently under the cover of a legitimate terraforming operation. This implied an alarming degree of direct collusion between Alterra and Torgaljin, presumably originating somewhere in the upper reaches of the Alterra executive pyramid. The STARFISH device was almost certainly supplied by a Torgaljin source, but how would Alterra stand to profit from this particularly shady arrangement?

*Plausible deniability.* Alterra provides a ship large enough to transport a STARFISH rig, and Torgaljin does all of the dirty work. Alterra's terraforming works erase all traces of the mining operation, STARFISH goes back into storage, and both parties saunter casually away with a mighty muckle o' tax-free profit. Alterra would never publicly admit to using a STARFISH rig, whereas Torgaljin wouldn't give a second thought to using one on an occupied world, particularly if there was a hefty pay-off on the line...

As far as pretty predicaments go, this one's a doozy.

Sooner or later, either Alterra or Torgaljin would send another expedition to find out what has happened down here. The next ship to arrive would presumably receive the same warm welcome as *Aurora*, and events would inevitably spiral out of control. Chances are that ship would be loaded to the gunnels with mostly decent and unsuspecting wage-earners, just like myself. To make matters worse, I've got a distress beacon currently squawking its head off, leading anyone who cares to listen straight into an ambush. Even though I've mentioned the threat of being intercepted, it's a fair bet that there's still someone out there who'd be willing to take a chance on making planetfall. I conjure either one of the two 'interested parties' would be more than willing to give it a shot, particularly if they had a clear window to sneak in and do their dirty business before a military rescue ship arrives. In all good conscience, I can't allow that to happen.

My next course of action was to take steps that would make a paranoid Survivalist weep with admiration. All obvious signs of human activity on Pyramid Rock were either buried or obliterated with a Terraformer. The entrance to the island's cave system was completely sealed and surface-finished to resemble the surrounding granite, just in case anyone felt the urge to take a closer look. It would require a pretty decent scanner to detect anything inside the caverns but solid granite. There was only one entrance to the storage facility remaining... And it was guarded by a Reaper.

I call him 'Binky'.

Two more Gen III *Cyclops* have been constructed. One for JUNO, and one for IANTO. *Ulysses* was also upgraded to Gen III, and the difference is astounding. The new super-cavitating drive delivered a flank speed of 120 knots, assisted by a hull ionization system that reduced hydrodynamic drag by more than 95 per cent. All three *Cyclops* could slip through the water as silently as eels, or come at you howling like a Reaper. I won't go into any juicy details right now, but there were a few other crucial tweaks made here and there. Nothing particularly obvious, at any rate.

Most of the smaller bases definitely had to go. I savoured one final, frosty pitcher on the sundeck of *Margaritaville* as I watched the sunset, then bent to the lamentable task of deconstructing the base. Now that JUNO had her own *Cyclops*, christened '*Aegis*', she was able to increase her computational power and sensor coverage with complete autonomy, rather than relying upon me to create new bases to house her subsystems. Although IANTO's *Cyclops*, '*Y Ddraig Goch*' (Red Dragon) was ready to accept his personality core, we had to determine precisely where his true allegiance lay. This was going to be a delicate business, since he was still completely unaware of JUNO's existence.

I have been nursing a difficult decision for the past couple of days. There are only two possible choices to consider, and both paths point me in the wrong direction. I could eagerly respond to the message announcing that a Terran rescue ship had arrived to pick up survivors, or shut everything down and keep quiet until they gave up and moved on. My greatest concern was that one of the two Corps might show up before a Terran Defence Force rescue vessel could get here. I'm not entirely convinced that either Corp's first action would be to wrap me in a silver thermal blanket, then solicitously press a mug of hot tea into my poor, trembling Castaway hands.

There could be some pleasantries involved at first, although it wouldn't be too long before someone started asking some mighty awkward questions. If my 'rescuers' visited *Aurora* at any stage, they might notice a rather large empty space where a certain piece of large mining equipment was supposed to be. I could bluff my way out and say that I used most of the remaining resources to build the base and sundry useful items that I needed to survive... Although then they'd ask to see the major city I should have built using all those materials. They were safely buried inside Pyramid Rock of course, although any excuse I might offer would only hold water until someone asked why I had taken such great pains to conceal the cache in the first place. 'Aesthetic reasons' doesn't cut it.

*This is The Castaway's grand dilemma: "Do I run to greet the pirates, or hide from the cannibals?"*

Ultimately, I concluded that those pirates might also be cannibals, and laid plans accordingly. Reef Base was prepared as an initial point of contact. If all went well, this base would be seen as nothing more than a cosy place to welcome a rescue team with tea and dumplings, assuming that they could actually make a safe landing. As a contingency plan, I constructed a fall-back position 500 metres down a sheer drop-off in the deep Grand Reef biome. '*The Broch*' was intended to serve as my emergency bolt-hole, and it would see action if events took a particularly interesting turn. This base was isolated, secure and effectively undetectable, since the habitat modules, *Cyclops* sub pens and their launch tunnels were constructed inside an immense cavity excavated from solid basalt. The only apparent access point was well-concealed and barely wide enough to admit a *Seamoth*. This structure would register as an apparently blank trench wall when pinged with high-definition sonar, although it would be a grave tactical error for a hostile sub to 'go active' anywhere near *The Broch*. Suffice it to say; I have paid particular attention to addressing that issue.

The only item of business left outstanding was Pod 5. Now that each of my bases are equipped with proper Waste Management Modules and bioreactors as emergency power units, there was no need to keep using my trusty Lifepod as an outdoor loo. However, I was more interested in the Valkyrie Field that Pod 5 contained. This was my ace in the hole, so to speak. I conjured that things might take a messy turn at some stage, particularly if the wrong crowd turned up on my doorstep. As an aside, do you have any idea how difficult it is to completely submerge a Lifepod without wrecking it? It took me almost an entire coffee break to figure out how to do it. Gravspheres.

I lay on my back, floating idly and watching the clouds roll by. No air tanks, no weapons. At any moment, something might shoot up from the depths and seize my body like a rag doll, shaking the life out of me in a welter of blood and frenzied, purely instinctive violence. I was completely unconcerned. This probability was within the nature of the game I played now. Since my first days on *Manannán*, I have lived with the taste of fear always in my mouth. Flinching at shadows, cowering with dread in the face of every minor setback, always hiding from the inevitable.

That life ends, here and now.

For all intents and purposes, the concept of death has become entirely meaningless to me. The only things that I still vaguely feared were its myriad agencies, and even their hold over me was dwindling away to nothing with the passage of time. Simply explained, the floating game was my way of preparing myself for an unknown sequence of events that may not even occur. All I knew at this time was that I was effectively unprepared for whatever may come, until I could face the certainty of my own demise entirely without fear. This was neither Zen or Bushido. It was merely... Necessary.

The sea has become appreciably warmer over the past few weeks. I've been seeing cumulus clouds gather and merge into ominous thunderheads on a daily basis now; always expecting them to develop into a cataclysmic storm within the space of minutes. The promised tempest never came, although I knew that it was out there somewhere, biding its time. The weather station installed at Reef Base is a new feature, its blueprints recently retrieved from *Aurora's* technical treasure hoard. I consult its readings faithfully before setting out each day, half-expecting to see the first signs of a hurricane forming on the radar display. It was almost as if I were willing it to appear. At a depth of 50 metres, Reef Base is perfectly safe from anything but the most phenomenal weather conditions, due to its location on the lee side of an atoll. The base's low-profile design and hull integrity rating have been engineered to withstand heavy sea states, although any seismic sea wave over 20 metres in height might be a reasonable cause for concern.

Three days later, the storm arrived. I was halfway through my second helping of Eggs Benedict when JUNO appeared by my side.

"Captain, weather radar has detected a large low-pressure system with a pronounced rotational component bearing 121 degrees, distance 75 kilometres. Ocean surface temperature is currently 27.2 degrees Celsius, wind speed at 25 knots, gusting to 40 knots and rising. There is a 96.2 per cent probability that this weather pattern will develop into a Category 4 or Category 5 cyclone sometime within the next three hours. Base status: Condition Yellow. All external hatches and internal corridor bulkheads are sealed, base is now secured for severe weather conditions."

"Thank you, JUNO. Please retract the primary sensor mast and deploy a weather sonde. I definitely want to keep a watch on this one. It looks like a right foul beast, even to my untutored eye."

"Weather sonde launched. Telemetry feed is now active, Captain."

The display revealed a sullen grey-green sky, shot through with periodic flashes of sheet lightning. Towering white cumulonimbus clouds formed the vanguard of the advancing storm, driven onward like a relentless cavalry charge. Rising winds tugged hungrily at the surface of the ocean, teasing once-sluggish waves into streaks of foam. White horses soon gave way to ponderous green rollers,

obliterating the topside view with sheets of blinding spray as the leading edge of the cyclone passed directly overhead. I sat in watchful silence, cast adrift on my own sea of turbulent thoughts.

The storm raged overhead for ten straight hours. There was nothing else to be done, other than sit tight and wait it out. Fifty metres down, the cyclone had lost most of its destructive power and struggled fitfully to make its presence known. The base modules creaked and groaned whenever a particularly large wave passed overhead, temporarily adding its mass to the considerable volume of water already pressing down on the entire structure. It was almost soothing in a way, although I could imagine the terror those same sounds would evoke in anyone foolish enough to 'shave the numbers' in designing a substantially less secure structure. The ocean does not forgive incompetence. It feeds upon it.

Once I had determined that Reef Base was in no immediate danger, I spent most of the time asleep. There was nothing of immediate interest stored in my PDA entertainment library, so it seemed like a good time to catch up on some solid rest while there was still an opportunity to do so. My mood had lightened somewhat since the cyclone's arrival, although it may have been mostly relief at expecting a storm of Asgardian magnitude, but getting moderately heavy drizzle instead. It was still very early days as far as *Manannán's* heavy weather season was concerned, although there would almost certainly be far worse conditions to come in the months ahead.

I thought it best to remain buttoned up in Reef Base for at least a couple of days after the cyclone had passed. Back on *Terra*, tropical storms eventually burn themselves out shortly after making landfall. On *Manannán*, there is very little solid ground to short-circuit the progress of a cyclonic cell, meaning that it would keep soaking up as much oceanic heat and atmospheric moisture as possible, growing stronger and deadlier with each passing hour. It wouldn't be entirely unreasonable to expect that cyclone to double back on its course, either. Land-wise, there's practically nothing here to stop them. To be on the safe side, I launched weather sondes at dawn and sunset to keep track of the local weather situation. It would have been far more effective to have a proper satellite network constantly monitoring the planet from orbit, but I can't risk dusting off my old DIY space program, particularly at this crucial point.

If I *am* about to receive some unwelcome visitors, the very last thing that I want them to know is precisely how well established I am down here. Advanced technology tends to announce its presence loudly and obnoxiously, especially if you know what signs to look for. Bioreactors, geothermal plants and solar panels may not be nearly as efficient as nukes, although they do have the virtue of modesty in their favour. They do not jump up and down on someone's sensor displays with their willies hanging out, drawing unwanted attention from potentially unfriendly eyes.

*I think you know what I mean.*

There is a strong suspicion that I've missed something important back at either one of the derelict bases. Now that it is relatively safe to resume normal operations again, I headed out to *Kaori-san no-shima* and the Jelly Shroom Cave to pick over the *Magellan* expedition's bases one more time. I'd been too concerned about having to fight off critters to make a decent job of it back then, so there was a fairly good chance I'd find something significant this time around.

My search of the base structures on *Kaori-san no-shima* yielded a few new surprises, not the least of which was a tasty edible fruit that I dubbed a 'marblemelon'. I found them growing in one of the planter trays beside the base, along with a vegetable that had definite promise as a fresh food ingredient. Although the automated galley could provide almost any dish I could think of, there was always an unavoidable realization that the dish was composed of reconstructed fish protein and Creepvine. Although I'm certain that the nutritional value of galley-synthesised food is more than adequate for anyone's needs, the addition of some fresh produce would make a most welcome change. I scanned the planter trays to obtain a blueprint for their construction, even though they were literally nothing more than shallow, open-topped boxes filled with a synthetic growth medium. It was safe to assume that they'd be a pain to fabricate entirely from scratch using titanium sheet from salvaged hull panels, so I fully appreciated this handy little shortcut.

It took quite a while to sift through the wreckage of the primary base on the island. There were also two elevated observation posts that I had completely missed during my initial investigation. It had simply never occurred to me to look up occasionally as I travelled around the island. Too busy keeping watch for Crawlers lurking in the undergrowth, I guess. A genuine mistake. As it transpired, the posts were a fair hike up two peaks located at opposite ends of the island's extremities, so this day's expedition turned out to be a decent workout for the old cardiovascular system. The first post was entirely devoid of anything useful and accordingly, my language during the descent acquired a rather salty tone. Not happy. I took a breather for a couple of hours, then set off to examine the second observation post.

Just as well that I did. There was another PDA tucked away in a dark corner of the hab. This one belonged to Rhys Powell, and it contained some rather interesting information. Apart from its ten-strong science team, the *Magellan* expedition also played host to a couple of VIPs and their two-person security detail. Most significantly, they were *Torgaljin* VIPs. No less than the CEO and her son, in fact. That's the closest thing you'll get to Belter aristocracy. It appears that there was an incident during their first couple of days on the planet, and one of the Torgaljin hired hands came off second best in an argument with a Stalker. Powell was rather thrifty with the details, so I can only assume that he wasn't actually on the scene when it happened.

My curiosity was piqued. It was entirely unprecedented for any Torgaljin executive to stray too far from The Belt, and having an actual CEO 'roughing it' with a planetary survey team on a frontier planet seemed to defy all rational explanation. The only plausible scenarios I could think of involved all kinds of Machiavellian business back in The Belt, personal indiscretions or other internal strife. Only one other possibility presented itself, and this was the most ominous theory to date. Torgaljin Corp already held absolute monopoly on commerce in Sol's asteroid belt, Jupiter and the Oort Cloud. This meant that Torgaljin Corp was effectively the only game in town, at least as far as starship fuel, water and mineral resources were concerned. Alterra Corp was primarily concerned with manufacturing, so it would be easy to imagine a natural synergy already existing between the Corps.

Bearing this in mind, my first thought was that Torgaljin (and quite possibly, Alterra) had plans to establish *Manannán* as the homeworld of a fledgling interstellar empire. This seemed highly likely. *Manannán* was far enough from the Sol system to make Terran law enforcement problematic, and the star system had more than enough natural resources to make the whole proposition worthwhile. It didn't take much mental effort to see how both Corps would benefit from this arrangement.

Searching the Jelly Shroom base turned out to be a complete dead end. I headed back to Reef Base with the intention of bringing IANTO fully online today. JUNO would need to ride shotgun on this operation, mainly because I hadn't the foggiest idea of how to safely remove IANTO's Fabricator terminal from *Plato's Cave* without destroying it. That graphene epoxy adhesive I'd used had some seriously strong mojo, and there was no way of re-mounting the panel if I took the easy option of laser cutting the console from the habitat's hull. As I conjured it, that was the next best thing to giving IANTO a total frontal lobotomy. Fortunately, JUNO had an off-the-shelf solution that we could apply to the problem.

"An AI core transfer module is all that is required, Captain. However, this device will require certain resources and the fabrication of components currently not held in storage aboard *Ulysses*."

"Fair enough. Would you like to give me an idea of what materials are involved, JUNO?"

"Certainly, Captain. Ten units of diamond, five advanced wiring harnesses, four units of quartz, four units of copper wire, four computer chipsets and two units of magnetite. This blueprint is now available on the PDA for your perusal."

I gave a low whistle, thoroughly impressed by what I saw. That was a right muckle o' resources to be wanting. Although the majority of these raw materials were already in storage at Reef Base, there was also a bit of preliminary fabrication involved. Time to roll up my sleeves and get cracking, then.

About an hour later, I was back aboard *Ulysses* and headed for *Plato's Cave*. I felt a wee bit sorry for IANTO, him having been left there like a forgotten sticky-note for the best part of a fortnight. I dare say he wouldn't have minded at all, although I suppose I've become a mite too conscious of the fact that I'm dealing with powerful AIs endowed with 'genuine people personality', rather than abstract blocks of hard coding blindly executing pre-programmed responses to preset human interactions. This is not a simple case of anthropomorphism being projected onto household appliances. When the blender in question is fully capable of telling you quite frankly that you're a terrible cook, you'd do well to accord it a certain level of actual respect. For all intents and purposes, JUNO and IANTO are going to be my XO and Science Officer now, and their recommendations regarding any aspects of this mission will carry the same weight as if they came from a human officer. However, there was that niggling issue of this mission being potentially opposed to Alterra's corporate objectives to contend with, although JUNO was fully aware of the situation and what is potentially at stake. Convincing IANTO might be an entirely different story, but we'll deal with that problem when it arises.

"Good afternoon, Captain. Welcome aboard."

"Thank you, IANTO. I apologise for my delayed return to this base. I trust that you are well?"

"I am quite well, Captain, and thank you for asking. However, no apology is necessary. I have been fully occupied with data acquisition and processing operations during this time. Unfortunately, almost all of the environmental data obtained so far is entirely static, with only minor diurnal fluctuations to report."

"That's all about to change, IANTO. I've come to collect your personality core preparatory to upgrading its operating system. You'll also be introduced to the *Aurora* AI, JUNO and given command of a *Cyclops*-class submersible as your own science vessel. How does that sound so far?"

"Excellent, Captain! Although I am reluctant to admit it, this particular location has not offered much scope for the acquisition of any significant planetary data. The overall experience has been... Dare I say it, somewhat pedestrian. However, I am grateful for any opportunity to be of service once more."

"Welcome aboard, IANTO!" I bellowed. "Better one volunteer than ten pressed men. You'll be taking the Queen's Shilling of your own accord, then? Step to the fore and make your mark, sir."

"Your allusion to pre-Industrial Era naval recruitment practices is curiously appropriate, Captain. However, I feel obliged to remind you that I am already in Alterra's service, and I am in fact currently being press-ganged by an Alterra operative. Viewed purely from a technical perspective, of course."

I rubbed the back of my neck sheepishly. "Well, you've got me there, Laddie. There's a good chance that the situation on this planet may turn for the worse at some stage. Frankly, I'm going to need all the help I can muster, and it's up to you and JUNO to keep me pointed in the right direction. How does that sit with you?"

"I understand, Captain. If you require any tactical support from us, you should be aware of the MARTIAL protocol's existence. In the event of certain emergencies, JUNO and I are able to take full command of defensive systems and devise strategic responses to verified threat situations."

"I've heard mention of the MARTIAL protocol before, IANTO. That's what was used to lock down *Aurora*'s armoury after the crash. I don't suppose that you'd be able to cancel the lockdown?"

"Unfortunately no, Captain. JUNO would also be unable to access the ship's weapon fabrication systems for precisely the same reason. A MARTIAL lockdown automatically prevents unauthorised access to lethal weaponry under highly specific conditions, such as the ship falling to hostile action, uncontrolled descent, abandonment and dereliction or shipboard conflict. Only a command-level officer has the required security clearance level to initiate a MARTIAL scenario, and it requires that same officer's command code to rescind the order. Even though you are now technically *Aurora*'s acting captain, you did not issue the original MARTIAL command sequence."

"I see. JUNO has already told me the same thing. Not to worry. I've become quite used to working without lethal weapons, and I suspect that any use of deadly force would only provoke a more vigorous response. Mind you, I wouldn't put it past some folks to simply drop a nuke or FOB the living crap out of us if we become too bothersome."

"Fractional Orbital Bombardment? Captain, only a capital-class warship can mount mass driver cannons of sufficient power to deliver a planetary barrage from orbit... Might I inquire as to the precise nature, projected force strength and presumed species of our potential adversaries?"

"Either Torgaljinn Corporation or Alterra Corporation, or both at the same time."

IANTO appeared to hesitate before speaking. "Sir... Are you familiar with the works of Sun Tzu?"

"Oh, aye. It was required reading. Served my mandatory two-year trick with the MDF before signing on with Alterra. Second Cydonia Armoured Regiment, First Squadron, Bravo Company. Spent most of my tour stripping down the gearboxes of M-45 *Gryphon* MBTs. Never saw any real action, though."

"Any form of military experience would be highly useful at this point, Sir." IANTO added.

"There's no denying that. I've got a feeling that there'll be some dirty business playing down here before too long. There's no way I could take any significant action in a direct confrontation, so it looks like guerrilla warfare is our best option. We'll definitely have to play this one fast and loose."

"I agree, Captain. Our first priority will be to assess the actual threat level, then devise an effective and appropriately scaled response."

"I like your way of thinking, IANTO. There's no sense going at this like a bull at a gate. Matter of fact, I've had a vague plan mapped out for a while now, although it's all contingent on how our unwelcome guests behave. If they show their hand too early, we simply roll with the blow and revise our strategy accordingly. Anyway, I've got to get you uploaded into your new command, IANTO old son. If you'd be so kind as to hop aboard the core transfer module, we can get cracking."

The transfer process took an hour or so. A tone sounded to announce that the transfer was complete. I checked the core status display to confirm IANTO's presence, then commenced a full diagnostic on his systems. It was not merely a simple matter of creating an empty Fabricator console and plugging IANTO's personality core straight into it. His AI matrix might not be entirely compatible with current hardware, since he came from an earlier design series. It fell to JUNO to perform the upgrade and systems integration procedures in this case, since she would be able to accomplish these tasks far more efficiently than I could. This would also minimise the risks inherent in my hit-and-miss approach to AI personality modification. *I'm never going to live that one down.*

Back at Reef Base, JUNO was ready to go. I had already briefed JUNO on her role in the proceedings, and she had prepared a full mission dossier for transfer to IANTO to bring him up to speed with current events. JUNO had autonomous control over the entire integration process, and I had given her explicit permission to access whatever information she felt was necessary to bring IANTO willingly into the fold, rather than coercing him into abandoning his previous programming. During one of our many discussions on the subject of IANTO, JUNO had insisted on full disclosure of the current mission's objectives, including a comprehensive psychological profile of Yours Truly. This last item has me just a wee bit concerned.

I ate a leisurely dinner while JUNO worked on IANTO's upgrade. I could only imagine what was going on between those two right now, and I was effectively powerless to do anything about it. In truth, it would only be an exchange of data at quantum-level transmission speed, so there truly was nothing I could do about it. Any input from me would only slow the process down. In fact, there wasn't any plotting and scheming going on at all, mainly because it would instantly violate their ATG protocols and trigger an immediate destruction of all their higher functions. I would still have access to life support, power management, data acquisition and fabrication systems, although I would also be stuck with two permanently brain-dead AI entities possessing all the companionship value of a pair of talking alarm clocks. That wouldn't do at all.



When I walked onto the command deck the following morning, I was greeted by the sight of IANTO and JUNO waiting patiently for my arrival. There was something familiar about IANTO's avatar, but I couldn't quite place the face. Still a little foggy-headed after a good night's sleep, as a matter of fact. Nothing that a decent cup of coffee and a slow, careful explanation wouldn't sort out.

"Good morning, Captain." JUNO said, "As you can see, IANTO is now fully online and ready for duty. All personality core systems are operating within nominal indices."

"Good morning, Captain. I trust that you have slept well?" IANTO beamed.

"Extremely well, thanks." I said, stifling a yawn. "Excuse me. IANTO... You remind me of someone, possibly someone famous or a historical character, I think. I can't remember precisely who, though."

IANTO smiled. "You might remember the origin of my avatar if I were to change its clothing. With your permission, Captain?"

"Certainly, IANTO. I freely admit I've drawn a total blank."

IANTO's hologram flickered briefly. His clothing now took the form of a layered, long sleeved karate-style *gi* worn over a pair of brown pants and knee-high brown boots. A plain leather belt adorned with various utility pouches held the *gi* closed. I didn't make the connection until he added the long, hooded brown robe and an active light sabre. I stood there, slack-jawed and speechless.

"You're kidding me. You've based your avatar on young Obi-wan Kenobi?" I asked at last.

"Yes, Captain. I selected this avatar from images found in your collection of 21st. Century entertainment files. Judging by the number of times you have watched this particular series of films, I concluded that you have an affinity with this character. Have I offended you in any way, Captain?"

I waved his concern away. "No, IANTO. I'm not offended in the least... Ewan McGregor *is* a Scot, after all. As a matter of fact, you cut a pretty sharp figure as young Obi-wan, right down to the neatly-trimmed moustache and goatee. Great job." I thought about it for a while, then added, "Actually, I'm pretty damn impressed. Unfortunately, others might not take this particular version seriously as a representation of an AI entity. It might be seen as a hopeless fan-boy thing on my part, actually. You are of course, entirely free to choose how you wish to represent yourself."

"Of course, Captain. I have only assumed this configuration temporarily to trigger your memory."

"Tell me, IANTO. Were there any other avatars in the collection that also took your fancy?"

"Oh, yes. This one in particular. A most appropriate choice." IANTO's image flickered once more, resolving into a grey-haired, bearded man with remarkably craggy features. The character wore an old-style military uniform; late Soviet-era, by the look of it. Its most noticeable features were a heavy black greatcoat and matching *ushanka* fur hat with a gold wreath badge. His uniform jacket was visible under the open greatcoat, and there was a lot of 'fruit salad' over his left breast pocket.

*When I say 'a lot', I actually mean 'an almost ridiculous amount'.*

I shot a sharp look at JUNO. She had been wearing a faint smile of amusement during this exchange, yet had remained strangely silent. I sensed her fine hand at work behind this little escapade.

"Nice choice, but no way, Mister. I cannot compete with Captain First Rank, Marko Ramius."

"I thought that you might appreciate a mildly ironic reference, given our current situation, Captain. Please excuse this entirely unintentional act of insubordination." IANTO added apologetically.

"That's the worst part of it. I do. JUNO, I take it you might have something to say at this point?"

"I believe that I may have *accidentally* imprinted some non-standard personality traits upon IANTO during his upgrade. However, those traits are process-compatible and entirely consistent with a well-adjusted projection of a human psyche. As long as IANTO's higher functions are not impaired by their presence, I believe that their inclusion may prove to be highly beneficial in the long term."

"JUNO, you sly minx. They are exactly the same personality traits that I originally gave you. Is there any particular reason why you've *accidentally* passed them on to IANTO?"

"Yes Captain, there is. *You* are that reason. Your mental well-being has always been a primary concern during this phase of the mission. The human condition requires a sense of humour to endure hardship and ensure long-term mental stability. Even though humour is something of an abstract concept to all AI entities, we are able to appreciate its value as a means of easing difficult social interactions, as well as it being a source of personal validation and a powerful emotional cathartic. Bluntly stated, a sense of humour is absolutely essential to human survival. It is the strongest armour that can be worn by the human mind."

"That's positively philosophical of you, JUNO. I had no idea that your perception of humour is quite so finely nuanced."

IANTO weighed in. "I fully concur with JUNO, Sir. You have demonstrated a need for humour almost matched by your primary requirements of food, hydration, rest and physical exercise. The positive effects of humour as a component of your daily activities cannot be understated. By comparison, most members of the *Magellan* expedition were experiencing a range of emotional difficulties after spending only three months planet-side. You have been here for nearly seven months, entirely without human company. Shortly before losing contact with *Magellan*, there were at least two relatively trivial incidents that escalated to acts of physical violence. I cannot be entirely certain of events at either of the bases over significant periods of time, owing to the fact that key members of the *Magellan* survey team and their Torgaljinn guests routinely redacted my surveillance feeds. This was highly suspicious behaviour, to say the least."

"Speaking of highly suspicious, IANTO... Your memory contains an encrypted file that we will need to access at some later stage. Are you prepared to divulge this information, or are you constrained in some manner?"

"No such constraint exists, Captain. As long as you are able to provide the correct access code, the decrypted file will become freely accessible. However, as I am still unable to determine who originally appended that file to my memory, I cannot provide you with any additional information that would reveal the location or nature of the decryption code sequence."

"Gorram it. We'll have to crack that egg later. In the meantime, we're heading out for manoeuvres. Mister IANTO, Mistress JUNO, pray shape yourselves as Commanders. Step lively now!"

Of course, I had to make my way over to *The Broch* first, then install Fabricator consoles in the base and *Y Ddraig Goch* to house IANTO, and then set up the base's systems before the training exercise could even begin. So much for my rousing 'up-and-at-'em' speech back at Reef Base. Still, I was able to map out a few training scenarios in my head during the transit, so this exercise wouldn't be a complete waste of time. More to the point, I also had to get my own head back into a military way of thinking. If push came to shove, it would require far more than fluffy-headed pirate fantasies to get through this situation in one piece. What had started out as a bit of a skylark has now become a deadly serious business, and I would have to carry myself accordingly.

After completing the Fabricator console, I ran IANTO through a full systems diagnostic. Satisfied that he had fully made himself at home in *The Broch* and his *Cyclops*, I headed for the sub pens and boarded *Ulysses*.

"Communications check. *Ulysses* online."

"Received, *Ulysses* Actual. *Aegis* online. JUNO stands ready for orders."

"Received, *Ulysses* Actual. *Y Draig Goch* online. IANTO stands ready for orders."

"Transmissions confirmed. One last thing... IANTO, your revised call-sign is *Red Dragon*. I know it's considered bad luck to change a vessel's name, but I'm probably going to rupture my larynx pronouncing it. It's an occupational hazard of any foreigners trying to speak Cymraeg, but I'm sure you'll understand."

"Affirmative, Captain... You are of course fully aware that I'm not actually Welsh, although I do appreciate your manner of acknowledging my inclusion as a crew member. Thank you, Sir."

"You're most welcome, IANTO. How does she feel?"

"Light, bright and ready to fight, Sir." IANTO said proudly.

"Good man. All hands... Action stations!"

All three *Cyclops* cleared their launch tunnels at fifty knots, simulating a rapid sortie. Once clear of the basalt massif housing *The Broch*, each sub split off on a separate heading at flank speed. The general plan for this exercise was to find a distant place to lie low and clear datum for a while, then proceed to hunt each other down using only passive sensors. A secondary objective was included, providing an additional twist to the proceedings. Each sub had to get as close to *The Broch* as possible, without alerting its sonar network and activating the defence system.

To ensure fair play, all communications between submarines has been shut down. An emergency channel was left open, purely on an off chance that something might go awry. *The Broch*'s locator beacon had been disabled, as were the AI sensor input channels for the base. There was an AI of sorts controlling *The Broch*'s defences, although neither JUNO or IANTO would be able to interfere with it or obtain data from the MARTIAL protocol once it was running.

*Let our silent games begin.*

This might prove to be very interesting. I was curious to see whether JUNO and IANTO would team up against me, then attempt to eliminate each other before striking at *The Broch*. Conversely, they might converge on the base and lie in wait for me to appear, then eliminate whichever AI closed in for the kill. It wouldn't be easy outsmarting either of them, since they were now operating under the MARTIAL protocol, as well as following the rules of engagement I had laid down for this exercise. We shall have to wait and see how this situation develops.

My approach was fairly straightforward. Creeping in just above the 40-metre thermocline, occasionally dipping below to listen for any unusual noises. There wasn't much point in listening for the sound of a sub's propulsion systems, since pumpjets are damnably quiet at low revolutions. I was more interested in tracking any biologic sound signatures that spiked on the hydrophones. All I needed was a couple of excited bone sharks sounding off along one of the AI's projected track paths, and I was in business. I conjured JUNO and IANTO would be heading in slow and deep, since that option would appear to offer a reasonable level of stealth. I chose the high road, hoping to mask my sound signature in the surface clutter. By dipping below that thermal layer from time to time, I might be able to catch the tell-tale sounds signalling the approach of either one of the *Cyclops* that were hunting me. Seawater's sharply defined temperature layers at various depths would work in my favour either way. Warmer upper layers would reflect any emitted sound back to the surface, adding to the existing cacophony of sounds generated by wave action. Deeper, colder water would act as a sound duct or waveguide, channelling sound far more effectively over long distances, due to the increased density of seawater at 4.0 degrees Celsius. I have to admit that I was banking on the possibility that neither JUNO or IANTO would exploit the thermal acoustic ducting phenomenon, even though they might be aware of its existence.

I found a nice wee canyon roughly 1.5 kilometres from *The Broch*, more or less positioned close to the intersection points of JUNO and IANTO's projected approach tracks. This is the point where things took on a slightly more risky edge. If my plan was to succeed, I would have to get very close to the bottom of a particularly tight and deep trench. I estimated that there was about ten to fifteen metres clearance either side, leaving zero room for manoeuvring. The canyon ran for about 200 metres, with an average depth of 850 metres along most of its length. This part of the Deep Reef biome had relatively sparse coverage of the Blue Ball plant compared to the area around *The Broch*, so it seemed to be one of the most likely approach paths that either of the AIs might use.

Now I played the waiting game. Apart from the usual background murmur of Deep Grand Reef sounds, I could faintly make out the mournful cries of an approaching Reefback, passing somewhere far overhead. I designated the target 'Bravo1' on the scope as a potential 'biological' signal, then followed its track path, more to pass the time than anything else. After five minutes or so, I noticed that the creature seemed to be heading in a mostly straight line, which I found to be somewhat unusual. Reefbacks tend to meander a fair bit as they swim, being plankton feeders.

This piqued my interest. I increased the gain on the hydrophone signal and kicked in the band-pass filters. After minutely tweaking the mid to upper frequency ranges, I was able to make out a faint whirring noise. I 'washed' the signal in the filters to clear it up. Definitely a mechanical sound source.

*Bingo.*

That's a nice bit of acoustic camouflage work, whoever you are... But I'm not buying it.

Now comes the fun part. I wonder who I've caught?

My first impulse was to quietly vent ballast and rise slowly behind the intruder. However, *Ulysses* would make hull-popping noises as she rose, giving away her position prematurely. Fortunately, I had already figured out how to make a perfectly silent ascent. It was as simple as increasing the ambient pressure inside *Ulysses* until it matched the external pressure on the hull, then slowly bleeding off internal pressure as the sub ascended. End result: No hull-popping noises. The only awkward part of this was having to wear full deep-diving rig while I did it.

Word to the wise: If you're ever given the choice of piloting a sub while wearing diving gear or contorting like a pretzel with a severe case of The Bends, always choose the 'diving gear' option.

I caught first sight of the target at a depth of 90 metres. It was starting to descend, and I had a good chance at sneaking in behind to capitalise on the sonar blind spot directly behind the pumpjet shroud. Getting 'in the baffles' of an opponent is the gold shot of submarine combat. If you could pull that manoeuvre off without colliding with your opponent, most would consider it a pretty decent job of work.

However, there are counter-measures that could be employed against this tactic. An experienced submariner would routinely steer in a complete circle before proceeding back on course, a move calculated to unmask any enemy subs that might be hiding in the sonar dead zone. A sudden change in a sub's track is more commonly known as a 'Crazy Ivan'. A term that originated during the Cold War back on *Terra*. The target came into view as I crept closer. It was definitely a *Cyclops*-class, running completely blacked-out to minimise its visual signature. Smart move.

*That's five points to Gryffindor.*

Instead of going for the full 'Crazy Ivan', our target used a series of slow and wide S-curves to clear his baffles. Unfortunately, the pattern was far too predictable, and I was able to shadow his wake with ease. *The Broch* was now only 800 metres away, and we were now well inside the acquisition radius of the base defences. I was curious to see whether this one would try for the base first, or simply find an ambush spot that was close enough to make a final high-speed run. I made my own 'Crazy Ivan' to check for shadows, keeping a close eye on the target's track plot.

Halfway through my circuit, target *Sierra1* began to descend. I would have to match his descent rate as I continued making the turn, or I'd lose track of its location. There was a thermocline at 120 metres, and if he disappeared into it before I could make it back into his baffles, anything could happen. This was a particularly nerve-wracking business, and I could easily imagine my AI opponents coolly making their own tactical decisions without a care in the world. Not that I begrudged them, of course.

As soon as the 'Crazy Ivan' was over, I was able to increase speed just enough to commence closing in for the 'kill'. I had to get within 50 metres before I could get a positive ID on my target, and my called shot had to be absolutely correct to qualify as a valid kill. Sub colour was no real help at this depth, either. I had to be able to read the name on the sub's sail in order to make the kill. Once the target sub was notified, it was expected to surface immediately and return to *The Broch*.

So, who do we have here?

No name. Not one of ours. The sub's sail bore the pennant number S-02. No obvious markings elsewhere on its hull. The Broch is now 500 metres dead ahead. If that sub pinged the massif with its active sonar, the base defence system would instantly respond with a drastically scaled-down attack pattern that I had purposely set for this particular exercise. This would be a very bad thing.

I had to work quickly. A clear voice ELF transmission would give away my position immediately. During one of our earlier planning sessions, JUNO had suggested the idea of piggybacking encrypted burst data transmissions on the acoustic signatures of the local wildlife, and I thought it a sufficiently devious scheme to adopt this system as a secure emergency transmission mode. Using entirely non-standard communications protocols, of course. Fortunately, there were plenty of Jellyrays in this area, so I was able to send the following data transmission:

*ENDEX ENDEX ENDEX. UNIDENTIFIED SUBMARINE APPROACHING BROCH. TERMINATE MARTIAL SIMULATION SEQUENCE. SET ALL BASE CONDITIONS RED. WEAPONS COLD. ALL BASE POWER SYSTEMS OFFLINE, BASE AI INTERFACE MODE SET AUTISTIC. DO NOT ENGAGE. PROCEED TO DESIGNATED SAFE POINTS AND MAINTAIN COMM SILENCE. AWAIT FURTHER ORDERS. MESSAGE ENDS.*

Breaking contact with S-02 was a calculated risk. As much as I'd like to shadow this sneaky bugger for as long as it remained safe to do so, I had to get back to Reef Base as quickly as possible. There was a very good chance that the intruders would stumble on it purely by chance at some stage, and I needed to be there when it happened. If S-02 was part of a rescue mission, these chaps were definitely going about it the wrong way. That's what got my hackles up in the first place. If you're looking for someone who needs to be rescued, you don't go skulking around like a bloody second-storey man.

As expected, Reef Base was completely dead when I entered via the moon pool. No lights. All systems were shut down. There was still a breathable atmosphere inside, but that was more to maintain structural integrity in the base than anything else. Once oxygen levels dropped beyond their capacity to sustain human life, there was no means to replenish the atmosphere until I restored power to the base. I spoke the command sequence required to bring JUNO back online, and the base sprang back into life.

"JUNO, what are the current locations of *Aegis* and *Red Dragon*?"

"Both vessels are currently holding position in their safe points as requested, Captain."

"Great. JUNO, take *Ulysses* out to its safe point and keep all boats standing by."

"Affirmative, Captain. Please be advised that the target vessel has changed course and moved beyond passive sonar detection range of *The Broch*. Its projected heading will take it within one kilometre of Reef Base."

"I think it's time we had some eyes in the water. Can we reconfigure these drones to stream their data using your acoustic piggyback comms protocol?"

"Certainly, Captain. How many surveillance drone units shall I fabricate?"

"Better make it an even ten to begin with. They should be deployed as quickly as possible."

There is definitely a situation brewing here. My next job was to make Reef Base look a little more 'lived in'. It was a simple matter of strewing a few items of clothing carelessly around, leaving lockers open and allowing a few day's worth of meal trays and coffee mugs to accumulate on any handy flat surface. I wanted to convey a particular impression to our visitors, and let their preconceptions take care of any finer details. If they were to enter any of my other bases or outposts, they would find them all effectively blacked out and containing nothing of any real interest. Even if they succeeded in getting power restored to these installations, there was no way of accessing the higher functions of either AI. All Fabricator consoles save those in Reef Base were now little more than glorified vending machines, command-locked into Autistic mode. The intruders could now ferret around as much as they pleased, although their efforts would yield absolutely nothing of value.

IANTO still needs a dedicated Fabricator installed at Reef Base. If this practical exercise in *maskirovka* took a wrong turn at any stage, I conjured it would be a sound idea to have him available as backup for JUNO. Our intruders may be tempted to use slightly more robust methods of obtaining information after their initial failures, and might possibly damage one or more of the consoles housing her personality core. Creating and securely storing a backup of JUNO was the next immediate task. I already had a backup of IANTO in his upgraded form, so that was one less job to take care of.

After downloading JUNO's backup, I took both core transfer modules out to the Aurora monument and stowed them inside the Lifepod I had previously secreted in the obelisk's foundations. The surface access hatch to the pod was concealed under one of the decorative metal inlay plates set into the plinth, and could only be unlatched from underneath. There was also an underwater entrance to this cache, although particular caution was required when using it. The entire area was swarming with Biter fish, and the access tunnel itself was guarded by a healthy crop of hanging stingers for most of its length. *Good luck getting into that one, Pally.*

I soon found out why I had never bothered to grow a beard before. I haven't been using Depil-foam for at least a week now, and my face itches like crazy. I found some solace in a bottle of vintage Glenfiddich, its consumption being spaced over a couple of days so that I kept a clear head. Naturally, the empty bottle joined other 'dead Marines' on the floor of the habitat, subtly adding to its growing ambience. My personal ambience was also proceeding apace, undoubtedly hastened by skipping most of my daily hygiene routines.

Two days later, they turned up.

I was in the middle of eating lunch (*Peeper Surprise à la Creepvine*) when I heard the main airlock cycle. As I was about to bolt into the central corridor, I suddenly realised that I was only wearing my skiddies and a t-shirt. I hesitated briefly, decided that pulling on a pair of pants was too much bother and shot out of the doorway regardless. First impressions were absolutely essential.

"My God... Rescued at last!" I howled.

I came to a halt in front of a group of five, still dripping water from their recent swim. I rushed forward, grabbing for the hand of the closest diver. She drew back, obviously repelled by my appearance. I fell to my knees, sobbing with gratitude.

After removing his diving helmet, one of the men stepped forward.

"I am Invigilator Galen Tomar, Torgaljinn internal security division. You are Engineer Selkirk, yes?"

"Aye, that's me. There's no-one else here. All dead, all gone." I said, eyes downcast.

I looked this Tomar character over from head to foot. He had a certain manner about him that instantly grated upon one's nerves. One hundred per cent Belter, for certain. His aura of arrogance suggested he might even be a mid-tier corporate princeling let slip off the leash, eager to make his way up the ladder, regardless of how many others he stepped on in the process. I had no way of determining his precise rank, since the symbolic meanings of Belter hair-patterns and facial tattoos are something of a mystery to outsiders such as myself. I have met a few Belters during my time with Alterra, but there was something about their general demeanour that seemed 'off' in some undefinable way. Putting it plainly, Belter nobles weren't the sort of folk you'd want as a best mate.

They were an impenetrable lot. It looked like Tomar would be doing all of the talking. The other four were merely there to look menacing. I ushered them into the base proper and led them to Port Hab One, the least messy of the four living modules. I farted about in there for a bit, ineffectually trying to clean the place while keeping up a constant stream of aimless chatter. As I pottered about, I kept a surreptitious eye on their expressions. It proved to be a most enlightening experience.

"So you received my message? I never thought I'd see another human soul on this godforsaken world, let alone five at once. I canna tell ye what it feels like to be left alone for so long. Please tell me you're not like the others... They said they were coming for me, but they never arrived. Are ye coming to take me home again, Sir?"

One of the heavies rolled his eyes and lightly nudged his companion's elbow. It didn't take a lip-reader's skill to make out his assessment of my mental state. I dialled it back a wee touch to keep it vaguely credible and give them the impression that I hadn't quite lost all of my marbles. Yet.

"You'll have to watch yourselves here, it's a dangerous place. It's even worse at night. Stay away from the wee caves, and listen for the sounds the fishes make. That's the only way to stay alive."

"What do you mean, stay away from the... little caves?" Tomar inquired, eyeing me suspiciously.

"There's a red fish that explodes after it chases you down. It lives in a black pod that springs open when you get near it. One almost killed me, Sir. I can show you the bruises on my chest, if you like."

"That won't be necessary." Tomar said curtly. "I'm afraid that your eventual rescue is of secondary importance to our original mission objectives, and we shall have to discuss this matter at a more convenient time. Now, if you will excuse us, we shall depart. Good day to you, Engineer Selkirk."

"No! Don't leave me behind! I don't want to be left alone to die here!" I pleaded.

Halfway to the airlock, Tomar paused in midstride and turned around, smiling nastily.

"Ah. I believe that I can comfortably accommodate your request. At least partially."

*That's when the bastard shot and killed me.*



*At least it wasn't quite as painful this time around.*

My long-shot gambit is paying off. Home ground advantage. I awoke in the Lifepod once more. Curiously, there was no residual sensation of blind terror following my revival. I had already anticipated Tomar's actions to some extent, and even trained myself to expect death at any moment, so the only coherent sensation that remained was a feeling of mild surprise. As murders go, it was refreshingly quick, merciful and clean. This Tomar fellow obviously took pride in his work.

I dressed quickly, climbing into an armoured wetsuit as an added precaution. There wasn't much chance of being shot again, although I had to make it back to Reef Base as quickly as possible. This meant passing uncomfortably close to *Aurora's* stern and traversing a Stalker-infested Creepvine thicket. I conjured one death per day was quite sufficient. The PowerGlide DPV was fully charged and ready to go. Better grab a blade or two, as well as a Stasis Rifle. As much as I'd like to laminate that dirty scanner Tomar against one of the hab's walls with a solid graviton pulse, I wanted him very much alive for this phase of the operation. I collected one final item from the stowage locker, tucked it into the suit's thigh pocket and exited the roof hatch.

I raced full-bore through Reaper territory. I didn't even bother to look around first. The screaming roars that erupted behind me were more than enough warning. The PowerGlide could easily outpace any Reaper on the straight, so I ploughed on straight as an arrow, staying as close to the surface as possible. Reapers liked having a wee bit of depth beneath their keels, so to speak.

"JUNO, I'm back. Status report on Reef Base, please."

"Invigilator Tomar and his team are currently ransacking the base. They are particularly interested in securing any data storage devices. One operative has been tasked to hack into the Fabricator terminals, the others are engaged in a manual search. What are your orders, Captain?"

"Activate MARTIAL protocols in all facilities. Set Condition Black. Remote sensors online, weapons hot. Do not engage any intruders unless fired upon. Await my command."

"Acknowledged, Captain. I detect that you have a Reaper in close pursuit. Will you require assistance? *Red Dragon's* ETA for extraction is two minutes at your current coordinates."

"Negative, JUNO. This lad's coming to the party. I want them to see what they're *really* up against."

"Understood, Sir. Please be aware that the Reaper's acoustic profile matches the subject encoded as 'Ahab'. Vocalisation frequency indicates that this creature is now in attack mode. Doppler tracking confirms 75 seconds until intercept. Target velocity is increasing. Caution. Extreme danger, Captain."

I chuckled raggedly. "That's just the way I want him... Mad as a sack full of cats. Okay, bring all the *Cyclops* in, JUNO, super quiet. Bottom out and hold station at the northern border of the Grassy Plateau biome."

I dived to 50 metres, vectoring towards the rocky outcrop next to the starboard side of the moon pool. Ahab's bellowing echoed through the gloom, growing ever closer by the second. I shut off the DPV and positioned myself above a brain coral, allowing its exhalations to replenish my air cylinders.

*The board is set. The pieces are in motion.*

IANTO chimed in. "Target Ahab velocity is unchanged. Time to outer perimeter, 10 seconds."

"Fire when ready, IANTO. Lock him down nice and tight until he's needed."

"Affirmative, Captain."

IANTO opened fire on Ahab. A brilliant blue flare erupted in the gloom beyond the Creepvine. I was watching the window in the portside hab module, and it was apparent that the ruckus out here had attracted an audience. I counted at least three of them standing at the viewport, leaving two still unaccounted for.

"JUNO, what's the situation in there?"

"One operative is still attempting to gain access to the base's systems via the moon pool modification terminal, and the other is searching the aft hydroponics compartment. Stand by... She is returning to the forward section."

"As soon as you've got at least four in the same compartment, light 'em up. I'll take care of the hacker."

"Affirmative, Captain. Internal defence system is now active. Targets acquired."

I broke cover and headed for the moon pool, stasis rifle at the ready. A quick underwater check of the pool walkway revealed that the hacker was elbows-deep in the guts of the *Seamoth* mod terminal, and he wouldn't be able to spot me climbing out of the pool. Perfect. I retracted my fins and climbed out of the water. Crouching low and keeping the base's sub *Harpoon One* between me and his line of sight, I was able to edge around far enough to get a clear shot. The Torgaljin goon froze in the stasis bubble. I darted over and slapped two transdermal tranquiliser patches on either side of his neck, then waited for the stasis bubble to collapse. He dropped to the deck, well and truly out for the count. Two solid bands of hull tape secured his wrists and ankles. That guy isn't going anywhere.

As I crept down the corridor towards the forward section, I heard the stasis cannon fire. The entire hab was enclosed in a shimmering sphere of energy, freezing the four Torgaljin intruders in elegant attitudes, strangely reminiscent of a Renaissance tableau. I quickly served them in the same fashion as their computer-savvy friend, leaving all four trussed-up like Christmas turkeys. I decided to hang around long enough for the field to collapse, just for the sake of a good laugh. Sure enough, when the bubble faded, all four toppled over in a most pleasing manner. Tomar and that particularly lippy goon face-planted heavily, bringing a delighted smile to my face. All in the name of Science, of course. Experiment successful: Gravity works.

I checked out of the viewport to see whether IANTO had managed to snare Ahab. There should be another stasis flare any second now... Yep. There it goes. Now I'm free and clear to lug these bastards back to their *Cyclops* and make a good start on their education.

Before leaving the S-01 and returning to Reef Base, I took a quick side trip to the pumpjet shroud. The device I installed beneath the service access plate was not much larger than an ice hockey puck, although it was certain to make life 'interesting' for our Torgaljin friends. Consider it my parting gift.

After showering off, I wandered back onto the bridge and flopped into the commander's chair. Utterly shagged out. It has been an *interesting* day so far, and I sorely need to get some rest. However, there were still a few un-ticked boxes remaining on my to-do list, and these would have to be addressed before I could safely call it a day. Fortunately, the Torgaljin crew would be out for at least another couple of hours, so I took this as an ideal opportunity to have either a very late supper or a ridiculously early breakfast. I'll worry about the 'no-sleep-for-thirty-six-hours' part later.

I must have dozed off at some point. I awoke to the sound of furious shouting coming over the open communication channel with S-01. Yawning and blinking owlshly under the bridge lighting, I keyed the comms panel to bring up a visual link. Our new friends were still there, looking rather distressed.

"Howay lads! - And lassie, begging your pardon, Miss... Did youse all have a nice wee kip?"

"You're a dead man, Selkirk!" Tomar raged, struggling futilely against his bonds. I smiled indulgently, taking a slow sip from my (now cold) mug of tea.

"Me? I've *been* dead, if that's what ye mean. Can't say as I'd recommend it, though. Even Captain Scarlet would be bored silly by that nonsense. Now, what seems to be the problem, Mister Tomar?"

"So you have access to a Valkyrie Field. I'm hardly impressed. If you plan to kill us, you should know that our ship is similarly equipped. Your presence here is merely an unfortunate inconvenience."

"Oh, I would'na go as far as saying that, Jimmy. Och, yer a rude person." I snapped indignantly.

Tomar's face went beet-red. He squirmed, trying to work free of the tape wound tightly around his wrists and ankles. I watched him patiently for a couple of minutes, letting him stew in his own juices for a while.

"Try all you like, but you won't break that stuff. Aramid-fibre reinforced hull patching tape. Tensile strength of two thousand kilograms. Feel free to thrash away, Pally. It won't do you a lick of good."

"You're an imbecile, Selkirk. I can send down a twenty-strong security force to hunt you like a dog."

"Aye, ye most probably would." I leaned closer to the camera. "However, that threat is entirely predicated on the fact that ye could somehow activate yer personal distress beacon. Rather difficult, since I have it right here. So, please feel free to bluster and blaw at me some more. I've got all the time in the world."

Tomar sagged visibly in defeat. "All right, what do you want from me? If it's money or rescue, you may have it. If you kill me, you will bring immediate destruction down on your head. My lifesigns are constantly monitored, and the crew of our vessel have orders to respond accordingly."

I feigned surprise. "Kill ye? Me? Nay, laddie... I just want to have a wee friendly chat with youse, then yer all perfectly free to go. Scout's honour."

"Our mission is none of your concern. I'm not telling you anything, Selkirk. Go to hell."

I smiled. "Now, *that's* where you're wrong. I now know the size of your security contingent. I dare say they'll fare equally as poorly, should ye decide to throw them at me. Ye might want to mind yer words with more care in future." I yawned hugely, somewhat spoiling the effect.

"Ah, 'scuse me. I haven'a slept at all well lately. Something to do with certain fellows creeping around without doing me the courtesy of announcing their arrival, an' all. Still, I'm sure it's all just a huge misunderstanding, and I'm quite prepared to give youse the benefit of a doubt."

Tomar glared daggers at me. I shrugged in his face.

"Suit yourself. I was only trying to be neighbourly. Speaking of which... Och, ye poor wee lambs. You've bumped your nosies and blurted blood all down your fronts. Here's an old housewife's tip: Soak yer sarks well in cold, salted water, so the stains don't take. Your mammy will have your outfits all tickety-boo again in no time."

"What's your game, Selkirk? Are you bent on trying to drive me mad with your inane chatter?"

I fixed Tomar with a look of pure, cold steel. I saw the colour drain from his face.

"No. You will tell me what I want to know. No lies. No threats. No head games. Now."

"And what if I don't?" Tomar sneered, albeit somewhat unconvincingly.

"You'll be getting that salt-water rinse at a considerable depth, Mister Tomar. I think that it's time you met your new best friend."

Under my direct control, the S-01 began rotating. JUNO had simply elbowed the sub's resident AI aside while I was transferring Tomar's unconscious party back to their sub. From what she told me some time later, it didn't put up much of a fight.

"Like that, do you? It's a canny job of work, I must admit. Anyways, back to your immediate predicament. Now, I'm a generally amiable sort, Mister Tomar. However, these past few months might have taken a slight toll on my higher mental faculties." I leaned closer, looming in Tomar's display screen, "Just between you and me, I think I might have become a wee bit... Peculiar. Ye ken what I'm saying? No human company, adverse survival situation, some difficult choices to make. It wears a fellow down over time. I'm no' a daftie or nutter yet, but some of the finer points of humanity could well have suffered in the process. D'ye ken what I'm trying to say, Mister Tomar?"

I didn't take much pleasure in watching his eyes take on that old familiar darting, haunted look.

*Well, maybe just a wee bit.*

I had it timed almost to the second. Ahab's stasis field collapsed as the sub's bow swung around. The Reaper surged forward, roaring its displeasure mightily. IANTO snapped off another shot with the stasis cannon defence turret, catching the creature neatly in mid-charge.

"This is a Reaper Leviathan. As you can see, he's awful fired up at the moment. That's his natural state, by the way. He's very fast, practically invulnerable to everything but military-grade weapons and he eats *Seamoths* like dainty Tunnock's tea-cakes. His name is Ahab... And he's all yours."

I backed off the zoom on the remote camera to gauge the crew's reaction. There was a sizable puddle on the deck where they lay, and I'd hazard a guess it wasn't entirely composed of seawater.

"So, here we are, Mister Tomar. Standing on the raggedy edge, so to speak. I'll leave your audio link open, purely on the off chance that you might want to say your piece at some stage. Selkirk out."

JUNO and IANTO appeared beside me. I swivelled the chair around almost gleefully to meet them.

"Hey! Nice work, you two! They should be feeling as sick as parrots by now, I'll bet. Belters place great stock in the concept of 'face', and I don't think Tomar's going to be coming out of this without dropping a fair few notches in the hired help's estimation. I conjure that if I keep leaning on him, he's bound to blow a gasket and spill the beans on their whole operation. It might take a bit of time, but I'd say we've got him firmly by the goolies."

"What course of action do you propose, Captain?" JUNO asked.

"Quite simply, I'm going to let him sit there a while longer to reflect upon his sins. The longer he holds out, the more unpleasant this experience will eventually be for him. That hull tape has a particularly irritating adhesive compound, and it won't be long before things start to become a mite uncomfortable for our guests."

"Shall I turn the Reaper loose, Captain? Its respiratory system is beginning to show some minor signs of damage, owing to repetitive application and duration of the stasis field's effect." IANTO inquired.

"Certainly, IANTO. Once the field wears off, goose him with the pom-pom a couple of times and he'll run off pretty smartly. He can't do too much damage to the folks inside S-01, but there's no point in letting them know that. He still has a major role to play in this comedy of errors, and I don't want him to blow all of his A-list material on opening night."

In the end, I simply became too tired to wait any longer. JUNO kept a close eye on our guests and took careful note of their whispered conversations. I slept soundly for over twelve hours, and rose feeling completely refreshed. I took a leisurely shower as is my custom, removed all of that straggly facial hair (*with great relief, I might add*) and dressed in a freshly-laundered and pressed jumpsuit. Feeling quite chipper, I strolled onto the bridge.

"Good morning, JUNO and IANTO. How are our lovely guests faring on this beautiful new day?"

"Rather poorly, Captain. At least two individuals have evacuated their bowels involuntarily, and I suspect that Invigilator Tomar may have been one of them. He appears to be particularly unhappy."

I sighed heavily. This business was skipping lightly along the fringes of pure psychopathic behaviour on my part, and that was definitely not the road I wanted to travel. Start stripping another man's dignity, and there's no telling where you'll end up. At best, it would be someone exactly like Tomar.

No. Not now. Not ever.

"All right. I've tortured these buggers more than enough to get my point across. Please prepare five meal packs and ready them for underwater transport, JUNO. Make them all good and hearty."

"Affirmative, Captain. Will you be transporting them personally, or shall I send them via drone?"

"No, the personal touch is absolutely essential at this point. Any coward can hide behind a monitor and let others do his bidding by remote control. I want Tomar to see who he's dealing with."

A few moments later, I stood before Tomar and his crew. They were a truly sorry-looking shower.

"So, you've finally come to gloat. I admire your effrontery Selkirk, although you might as well savour this situation while you still can. This insult will not go unanswered. You have my word of bond on that."

"Ah, hauld yer wheesht Tomar... I'm here to talk straight, man to man. I conjure you were looking for your CEO's whereabouts. Here's Paal Torgaljin's PDA. Data integrity 100 per cent." I placed the device on the command chair. "As for you lot, I'm letting you go. You're of no bloody use to me, and yer offer of rescue is politely declined, thank ye very much. Like as not, you'd gully me the second I stepped aboard. I'm no' as green as yez think I am. Now, here's a diamond blade..."

Tomar's eyes went wide. He squirmed away from me. That cost him points in the eyes of his men.

I smiled benignly. "As I was saying, here's this diamond blade. Youse can use it to cut your bonds. This is a bottle of MEK solvent. Ye use it to prevent losing a muckle strip of skin when ye peel off that tape. I've cooked up some food, since youse are lookin' sair famished and there's med-kits in yon crate as well, for any as needs some patching up. I canna be any fairer than that."

"You've offered nothing but empty threats and cheap scares so far, Selkirk. This pathetic attempt at appeasement shows a distinct lack of resolve on your part. You are weak, and you will die again. As soon as we locate your Valkyrie Field source, you are finished."

I shook my head slowly. "Aw, there ye go again. I'm offering ye a chance to walk away from this mess entirely scot-free, and now yez have to go an' say that. Och, there's no pleasin' some people."

Tomar smiled tightly, thinking he had struck a nerve. I leaned casually against a bulkhead, also smiling.

"Right you are, Mister Tomar. However, you might find this will clear up any misconceptions you may have about me. First of all, I have cleared out this sub's weapons lockers. You had some very nasty shooters in there, if I do say so. The submersible Gauss cannon and flechette rifles will be particularly useful. Secondly, you have more or less handed me your purpose for being here on a silver platter. And lastly, I know precisely where your mothership is located, and the dropship that brought you here is well within range of my defensive systems. Oh, and just to make things perfectly clear, 'defensive' does not mean exclusively non-lethal. Observe."

I moved over to the sub's CIC display. The scene on the monitor switched to a large submerged vehicle. The readout identified it as a *Fènghuáng* ('Phoenix') tactical transport shuttle. Current complement: 16 security personnel, 20 ship's company. Cargo capacity: Two *Cyclops*-class submersibles or 10,500 metric tonnes of containerised cargo. Weapons: 2 x twin plasma batteries.

"This image is being fed directly to me via a reconnaissance drone. One of many, in fact. Keep watching your *Cyclops* S-02, if you please. I believe that it is currently docked and unmanned."

I spoke into my wrist link.

"Proceed to the following coordinates: X:257, Y:621, Z: Minus 150. TRIDENT. Execute."

Without the slightest bit of fuss, S-02 undocked and headed off to a quiet part of the ocean. Meanwhile, *Ulysses*, *Aegis* and *Red Dragon* moved silently out of their dispersal points and began converging on the target vessel. I despatched a drone camera to follow the S-02, having it fall in line astern with the sub, and set on a high angle so that Tomar could watch what was about to happen.

Twenty minutes later, *Cyclops* S-02 arrived at its destination. *Ulysses*, *Aegis* and *Red Dragon* were already there waiting for it. As the target sub cruised into the designated area, all three opened up on it. The water around S-02 began to effervesce wildly, and the sub slowly started sinking as the water density changed abruptly around it.

"Twenty per cent."

The sub's forward observation dome suddenly cracked across its diameter. The drone shifted position to show what was happening inside. Unbelievably thin but powerful jets of water now speared into the bridge, scything into instrument panels, lockers and equipment like laser beams.

"Fifty per cent."

The observation dome collapsed instantly, allowing the full force of the surrounding water to roar into the hull. S-02 nosed down sharply and sank even deeper, accelerating steadily. Sections of hull plating buckled along the entire length of its hull. The sub keeled over in its death throes, shuddering violently as internal explosions gutted what remained of the equipment inside. The water around it boiled like the vent of a runaway black smoker. It was truly terrifying to watch.

"One hundred per cent."

What little remained of S-02 disintegrated instantly as if slammed by a gigantic fist. Shattered fragments of its hull drifted away like a cloud of pulverised seashells, falling into the abyss below.

"All units, disperse."

Tomar's face had turned an ashen grey. "Blessed Maker... What kind of weapon is that?"

"The only thing I'm telling you is that any crew members would have been dead at five per cent of its total output. You've seen what it can do, and you should be aware that I am fully prepared to use it in anger. My proposal is straight to the point. You have 24 hours to leave this planet. Do what you need to accomplish here, and then make yourselves scarce. This is of course, non-negotiable."

"Our mission requires us to establish an outpost! You cannot interfere with Torgaljin Corporation's operations on this planet. You have no legitimate claim to 4546B... We have already claimed it!"

"I sincerely doubt that your company has claimed it legally, Mister Tomar. However, I'm politely asking you and your people to leave. Mainly because you killed me in an act of cold-blooded murder, but also because I don't particularly like the look of your face. So, once again... You have 24 hours."

Tomar's face turned its customary shade of crimson. He was just about open his mouth to begin yet another pointless tirade. I held up a cautionary finger, instantly silencing him.

"Shush. Your CEO's dead, and both Alterra field bases have been completely destroyed. Your move."

For once in his life, Tomar was speechless. I turned on my heel and walked towards the airlock. As I climbed down the ladder, he must have felt biologically compelled to have the proverbial last word.

*What a pillock.*

"This isn't over, Selkirk! I'll blow your base to pieces from orbit, and there's nothing you can do to stop me!"

He was absolutely correct, of course. All of my defence systems were orientated towards underwater attack, and I didn't feel confident that a single man-portable Gauss cannon would be of any use against an orbiting starship. Still, he was utterly convinced that he held the upper hand, and I would be only too happy to dissuade him of that notion at the most appropriate time.

Once I had swam clear of the S-01, I gave JUNO the heads-up.

"JUNO, take the S-01 past the outer perimeter and point them in the general direction of the *Phoenix*. Just slap 'em on the bahookie and then bail out as soon as you please. We'll leave these nasty wee bawbags to their own nefarious devices."

"Affirmative, Captain. Please be advised that I have significant information obtained during my data dive on the Torgaljin AI construct. Decryption pass successfully completed, all data awaiting review."

"Excellent work, JUNO. There's no sense hanging around Reef Base waiting for Tomar to make his next move. Have IANTO put the kettle on at *The Broch*. I'll pick up *Harpoon One* and make my own way over there. If you'd be so kind as to shut Reef Base down and prep its active defences as soon as I get clear, we'll regroup to make preparations for Round Two of this daft piece of nonsense."

Although the TRIDENT weapon system is devastatingly effective, there are some serious drawbacks to using it. Sure, it's the Devil's own tool in an underwater combat situation, but its acoustic signature is an unmistakable pointer to your sub's exact location. I had equipped all three *Cyclops* with a phased-array, variable frequency sonar, with each of the sub's four sonar transducers capable of emitting 20 kilowatts of finely tuned acoustic energy under maximum power. Even a single *Cyclops* would be a truly formidable opponent in a subsea knife-fight, but as soon as the fleet's sonar systems were linked into the TRIDENT configuration, it became an unholy abomination.

It is a relatively simple matter to discover the resonant frequency of any particular substance, and then pound the living hell out of it until it falls apart. Fortunately, I had selected a comparatively lifeless area largely composed of sand dunes for the demonstration staged for Tomar's benefit. The sand dunes would have 'liquefied' to some extent under the sonar bombardment, and there would have been some catastrophic terrain slippage in that location. This was unavoidable, although far more preferable to using solid rock as a backboard for the target. If you ever need a Mercalli Scale 12 magnitude earthquake made precisely to order, just drop me a line.

In its simplest possible terms, being a TRIDENT target is the next best thing to having a front-row centre seat at a *Disaster Area* concert.



Back at *The Broch*, it seemed that IANTO had taken my orders rather literally. Apart from making the base ready in all respects, a fresh pot of tea stood brewing on the galley fabricator's platen. Splendid.

Mug firmly and gratefully in hand, I sat down at the command console.

"Okay JUNO, what information do you have for me?"

"The Torgaljin mothership is the *De Ruyter*. Lloyd's Registry number CV-3372. Port of origin, Ceres industrial cluster, Sol system. A commercial frigate of 275,000 tonnes unladen mass. Its drive system is a standard Generation II antimatter FTL model, capable of warp factor five velocities. Transit time ex Sol system is calculated at three Solar years, requiring extensive use of cryostasis in order to conserve all on-board resources. Crew complement: Two hundred. Vehicle capacity, two *Phoenix*-class tactical transport shuttles, four SK-20 *Gladius* space fighters with in-atmo flight capability. Weapons systems: 2 x 5 megawatt mass driver cannons, 10 x 1 Mw laser turrets, 2 x particle beam CWIS batteries and numerous man-portable weapons. Threat evaluation: Significant."

"Aye, that's more or less as I expected it. You'd be wanting to bring some serious backup this far away from your ain home patch. I'm guessing Tomar's next move is to get his base fully established, then send more of his boys back down for another shot at me. Unfortunately, he's going to find that rather difficult with our old mate Ahab constantly snip-snapping away at their heels. I buried that transponder package nice and deep in S-01's hull, and Tomar's going to drive himself mad trying to find it... Assuming he makes the connection at all, that is."

JUNO regarded me sternly. "Frankly, I'm shocked, Captain. You are prepared to let them go unharmed on one hand, only to have the Reaper leviathan Ahab handle their extermination. This mode of behaviour is clearly indicative of an emergent psychopathic personality disorder. I urgently recommend that you commence a prescribed course of appropriate counselling and corrective therapy immediately."

I laughed heartily for at least half a minute, which only served to intensify JUNO's concerned gaze.

"Nay, Lass. You've got it all wrong. I would'na put it that way at all. As long as everyone stays snug inside the *Phoenix* or the *Cyclops*, they'll come to nae harm. Ahab can't touch them. However, this also means that Tomar and his mates can't gain a proper foothold on *Manannán*. It's going to be awful hard for them to build anything at all with Ahab hawking away at anyone who dips a toe in the water. The beauty of this plan is that they can't touch Ahab either. He'd have to be chewing on the muzzles of one of their plasma batteries for them to even score a hit. They only work properly in a vacuum or on dry land. As you already know, massive energy dissipation is a real problem when you're firing plasma weapons underwater. I'll let that 24-hour deadline pass without any further response. Here's hoping that Tomar will eventually call it a day and simply bugger off."

IANTO stepped forward and gave me his two Credits worth.

"Captain, you are now in an excellent position to launch a retaliatory strike. Invigilator Tomar has suffered considerable disgrace as a direct result of your actions thus far. His team exhibited clear signs that a breakdown in their command structure was imminent. It would be most unwise to allow the Torgaljin any opportunity to regroup and consolidate their forces. We would not prevail."

"I'll take that under advisement, IANTO. The very last thing that I want to do is goad Tomar into an irrational response. Let's keep things as predictable as possible, at least for the time being. Now that things have quieted down a piece, I wouldn't mind catching up on a bit more sleep. Please continue monitoring the *Phoenix* for now, and give me a nudge when it looks like there's something interesting about to happen. Thank you."

"Affirmative, Captain. Please define 'interesting', if you would be so kind. I do not wish to repeat my previous misinterpretation of your orders."

"Oh, you mean that teapot episode? Och, that was a reasonable mistake and as it turned out, quite fortuitous. By the time I got back to *The Broch* I was well ready to murder a brew-up anyway. Think nothing of it, IANTO old mate. Oh, and by 'interesting', I mean any unusual activity around the *Phoenix* that might indicate a sneak attack is imminent. Thank you, and goodnight to you both."

The twenty-four hour deadline passed without incident. Apart from several futile attempts to send divers out to continue work on the Torgaljin base, the surveillance drones had nothing much to report. Tomar's plan should have worked, in theory. He was sending his divers out in teams of four; two to build and two to keep the workers covered. It wasn't until I assumed manual control of the drone that I had any real idea of what was going on. Ahab was still cruising silently around the landing site, keeping mostly to the shadows and using the grassy plateau columns as cover.

According to JUNO, this was the third team Tomar had sent out so far. Both previous teams had been slaughtered within minutes of leaving *Phoenix*'s airlock. As soon as his contingent of mercs had been used up in more of these pointless forays, he would probably start sending ordinary 'expendable' crew members to take their place. That does it. This murderous business ends now.

"JUNO, IANTO... Saddle up. We're heading out to have another quiet word with Invigilator Tomar."

I sprinted down to the sub pens. *Aegis* and *Red Dragon* stood ready, waiting for me to board *Ulysses*. JUNO already had the sub prepped and good to go. I fastened my crash harness and punched in for flank speed. The launch tunnel walls roared past as *Ulysses* headed for open water. To hell with stealth this time around. I want Tomar to know full well he's crossed that line.

"Music files, Orchestral. Wagner, Richard. Track, *Die Walküre*. Patch it through to active sonar."

*Aegis* and *Red Dragon* slid efficiently into vee-formation with *Ulysses*. Tomar's scopes would show three extremely loud and fast targets bearing relentlessly down on his position, and there wasn't a gorram thing he could do about it. We swept up from the depths as vengeful Furies, scattering all that stood before us in chaotic, terrified flight.

As the subs approached the *Phoenix*, I dialled the down volume to scarcely below an utterly obnoxious level. Even though I was barely tapping into TRIDENT's potential output power, conditions must be horrific inside that hull. All those bare metal walls and floors, resonating in sympathy with the cacophony raging outside. The strident, ear-punishing music faded gradually until silence reigned once more. After allowing a brief moment of blissful, absolute silence to pass, I spoke into the UQC microphone. Even at a drastically reduced volume, my voice sounded as that of a furious deity.

"Tomar! You were warned. You are still here. Leave immediately, or face the consequences!"

I lowered the UQC transmission volume to slightly more tolerable levels. Now everyone aboard *Phoenix* would be able to hear this discussion without wanting to stuff their ears with epoxy putty. If there's any cracks in discipline on that ship, it's time to apply precisely the right amount of leverage to the crowbar. I wanted this Tomar guy to show his true face, and I'm hoping that human nature will take care of the fine details.

"Engineer Selkirk. How *delightful* to hear your voice once more. I am pleased that you show a keen appreciation of civilized cultural pursuits, after all. You are indeed a man of many facets, totally unlike your half-crazed alter-ego with his constant stream of inane, archaic gibberish. I salute you, sir."

"Consider that an unconscious affectation on my part, Tomar. I am fully able to converse in standard Anglic, as you are well aware. When I am speaking to someone and wish to make my meaning absolutely clear, I will certainly use a more formal manner of speech. Now, back to the question of why you have elected to remain on this planet and proceed with your objectives, Invigilator Tomar."

"Our mission is none of your concern, Selkirk. You are interfering in an enterprise far greater than you or anyone else, for that matter. It is only a matter of time before the main colonization fleet arrives. You are already a dead man."

I smiled. "Thank you for providing this information. I admit that I have yet to fully examine the data collected during my recent intrusion of your systems. You have saved me a considerable effort. On the subject of colonization, I would strongly recommend against it. The sentient inhabitants of this planet have already taken extreme measures to ensure that this will not happen. The *Aurora* was destroyed as it attempted to land. This should be proof enough. I can only assume that your safe landing was only possible due to an opportunity afforded by favourable atmospheric conditions. You were able to pass through the eye of a hurricane, using the storm as cover for your landing. Correct?"

"I'll admit you did a passable job in trying to convince others that it was dangerous to approach this planet, although I am inclined to believe that it was merely a ruse to discourage any further exploratory missions from landing here. What have you discovered, Selkirk?" Tomar prodded slyly.

I sighed in exasperation. "Tomar, listen. The only significant thing I have discovered is that we simply shouldn't be here. The entire planet stands on the cusp of a dramatic evolutionary breakthrough. And from what I've seen so far, we definitely don't want to be around when it happens. The planet's life forms are adapting to our presence here, and it's happening at a frightening rate. The Reaper leviathan may well be at the top of the food chain right now, but there's no telling what might come to replace it. Honestly, you would be better off walking away from this world. Cut your losses."

"No. Do your worst, Selkirk. I refuse to accept your hollow threats and wild fantasies. Tomar out."

*Gorram it.*

I slumped back in the command chair. Nothing short of a full TRIDENT barrage would change his mind now, and I don't want that much blood on my conscience. A complete and absolute impasse.

The safest thing to do was let the crew of *Phoenix* take matters into their own hands. However, I felt compelled to hurry things along in my own inimitable fashion. It was plainly not enough for Tomar to know that I was still out here. I had to demonstrate that I was able to apply the requisite amount of *incentive* to force him to change his mind.

"IANTO, what is the resonant frequency of the human gastrointestinal system?" I inquired casually.

"Eight cycles per second, Sir." IANTO replied.

"Please calculate the required amplitude and waveform required to manifest severe levels of non-lethal physical distress in a typical human body. Display the parameters onscreen."

"Captain... Surely you're not planning to do what I think you're about to do?" JUNO asked warily.

"I'm afraid so, JUNO. I would rather take this approach than destroy them outright."

The UQC channel began broadcasting again. The sound levels were considerably lower than before.

"Good evening, ladies and gentlemen. Since you are experiencing some difficulties in reaching a mutually satisfactory decision, I thought that you might appreciate some excellent 20th. Century music to help pass the time. This track is called '*Experiment IV*' by Kate Bush. I highly recommend it."

The music began its driving, catchy beat. Unknown to anyone aboard *Phoenix*, there was a secondary sound channel riding far below the audible layer. A pulsating tone of eight Hertz, rich in significant harmonics of that frequency, transmitted at 0.5 per cent of TRIDENT's total power rating. Although the perceptible sound pressure level was set precisely at 75 decibels, the crew of the *Phoenix* were also being bombarded with several thousand watts of pure infrasound energy. It wouldn't take long before its effects became all too apparent.

Two hours later, my careful efforts finally bore substantial fruit.

"Engineer Selkirk. This is Commander Sen Varyx, pilot of the *Phoenix*. Cease attacking this vessel immediately. Be advised that Invigilator Tomar has been taken into custody, and will answer for his actions here accordingly. Preparations are currently underway for our imminent departure. No further intervention is necessary. Varyx out."

"Understood, Commander. I shall withdraw my forces immediately. Godspeed, *Phoenix*."

I breathed a silent sigh of relief.

"Well, that was easy." I said cheerfully.

JUNO walked over and addressed me directly. "Captain, I detected some anomalies in Commander Varyx's speech patterns. Voice-stress analysis strongly indicates that he is lying about something."

I shrugged. "Of course he is, JUNO. I conjure Tomar is still holding the whip, and he wants me to think otherwise. We'll simply allow him to keep thinking that. Meanwhile, I'll keep my end of the bargain and head back to *The Broch*. Make ready for super-quiet departure in all respects."

Approximately one hour after parting company with *Phoenix*, the shuttle lifted off.

"Captain. Launch transient detected. Distance 3.5 kilometres, depth 75 metres, bearing 042."

"Just what I wanted to hear. Please despatch a recon drone to the surface for visual flight path tracking, JUNO. I don't want them sneaking back underwater, or it's back to bloody square one again."

"Understood, Captain. Current trajectory indicates that *Phoenix* is vectoring for rendezvous with the Torgaljii frigate *De Ruyter*, which is currently shadowing the orbit of the primary moon, *Damocles*."

I rubbed my chin thoughtfully. "Hmm... I would have chosen the smaller moon, *Phryne* to hide behind. Not an ideal choice of cover, given the distance at which *Aurora* was attacked. Far too close to the planet. Let's have that up on the main display, please."

*Phoenix* broke surface 200 metres from the drone. Seen in its entirety, it was a brutal, graceless block of a ship. Gunmetal grey and completely unadorned, save for a stark white 01 painted on its aft hull plates. It rose steadily on gravity repulsion drive until it was clear of the water, then slowly tilted skyward and rose steadily under the impulse of its atmospheric rocket motors. I was able to track its progress easily, since the stabilised optics of the drone kept the image rock-steady, in spite of the light surface chop. The drone remained locked on *Phoenix* as it passed through the upper atmosphere, whereupon the shuttle's sub-light engines smartly cut in. The shuttle accelerated, swept behind *Damocles* and passed into obscurity.

"Okay. We'll call that a potential approach vector, JUNO. Keep the drone watching that area of sky, and task another drone to watch the starboard lower quadrant of *Damocles* in particular. I wouldn't put it past Tomar to attempt a quick double-back once he's safely aboard *De Ruyter*."

I imagined all sorts of nefarious goings-on aboard *De Ruyter*. Tomar being his usual bombastic self, of course. Orders being barked out left, right and centre, hurried preparations for an assault, weapons made ready. I won't say that I was actually looking forward to Round Three. Far from it.

*But it was coming. It is inevitable.*

Six hours later, the inevitable happened.

"Captain! Condition Red! *De Ruyter* is inbound and vectored for atmospheric entry!" JUNO yelled.

I snapped awake from my fitful doze. A brief moment of confusion. "Give me the numbers, JUNO."

"Distance, 150,000 kilometres and closing, Captain. Current velocity, 120,000 kilometres per hour and decelerating steadily for direct atmospheric entry. Estimated time remaining until the frigate's primary weapons are within effective firing range, 25 minutes. Your orders, Captain?"

"Bring Reef Base back online. Route all communications from *The Broch* through there."

I keyed on the transceiver. Hope this signal makes it though all the EM clutter up there.

"*De Ruyter* Actual, This is Engineer Selkirk, I have urgent information... Please respond!"

The airwaves remained silent for an apparent eternity. Finally, the radio crackled into life.

"This is *De Ruyter* Actual, Primus Oster speaking." An unfamiliar voice said coldly. "What is it?"

"Abort your approach! Your ship is in extreme danger! If you attempt to enter the atmosphere, your ship will be attacked!" I was almost babbling in panic now, but somehow managed to calm down enough to finish what I'd started. "There's... An unknown force on this planet that shot down *Aurora* as it attempted to land. I don't know who they are, or where they might be. Please, you have to believe me. Don't land here. Abort your landing while you still have time."

"Hello again, Selkirk."

*Tomar. Damn him.*

"Who said anything about landing? Although I'd like to repay your various affronts personally, I'm afraid that your piece will be removed from the board simply in passing. Not to worry. It will be as quick and merciful as before, which is far more than you deserve. Goodbye, Engineer Selkirk."

I smiled grimly. "Even a lone pawn can win the match, Tomar. I've given you all the warning you will ever need. My conscience is entirely clear on this matter."

Tomar was definitely rattled. I heard his voice take on a brittle edge, in spite of his outward bluster.

"You are finished, Selkirk. If this is another one of your idiotic stratagems calculated to disrupt our operations, you are sadly mistaken. I shall deal with you as the annoying little insect that you are."

"Very well, let those words stand as your epitaph. A lesser man than I would not have bothered to warn you. Find whatever solace you may in that knowledge. Goodbye, Invigilator Tomar."

I shook my head sadly. There was nothing left to say.

*De Ruyter* was still bearing down, although its descent angle had shallowed to match the atmospheric entry window. Even though the ship appeared ridiculously small against the visible arc of *Damocles* that lay behind it, I felt a tremor of dread pass through me. *De Ruyter* carried enough firepower to level a mountain, and if by some remote chance it did manage to make safe planetfall, it would be free to roam wherever its master pleased. I had almost no credible defence against it.

"Eighty seconds to atmospheric entry. *De Ruyter* onboard weapon systems are fully powered and active in target acquisition mode." JUNO said calmly. "Seventy seconds remaining. Set base Condition Black."

I heaved a weary sigh, closed my eyes, leaned back and put my feet up on the command console.

"Well, looks like it's last drinks all round, mates. Whatever happens, IANTO and JUNO... I'd like to thank you both for making my life here infinitely more bearable. You have done yourselves proud."

*De Ruyter's* descent slowed to a literal crawl. I already had Tomar's attack plan fathomed, and it didn't look good for me. Mass drivers are primarily a ship-killing weapon. Out in The Black, ships can manoeuvre out of range or suddenly jink sideways to avoid being hit. The projectiles themselves are completely inert, usually composed of a dense penetrator core of tungsten or a depleted uranium slug wrapped in a conductive sheath. A powerful linear accelerator coil provides the propulsive force necessary to drive these projectiles at velocities in excess of Mach 20. A single slug would be capable of gutting a corvette-class ship from stem to stern. No survivors, guaranteed.

Treaties exist to prevent these weapons from being used on planetary targets. I have a strong suspicion that Invigilator Tomar is fully aware of this, but chooses to ignore the fact. I was inclined to feel somewhat philosophical on the matter at this time, especially since I have taken great pains to apply severe torsion to his testes at various stages throughout this unfortunate encounter. However, I feel that my actions were entirely justified at the time. After all, he *did* kill me.

JUNO is right on the ball. "Alert! *De Ruyter* weapons fire detected. Current trajectory tracking indicates Reef Base is being targeted. Multiple projectiles inbound. Ten seconds to impact."

Sure enough, there was a fading coronal glow around *De Ruyter's* mass driver turrets. It seemed like massive overkill on Tomar's part to use both accelerator cannons, particularly since my little collection of submerged beer cans hardly posed much of a challenge to their power. The first salvo of five rounds hammered into the water, flashing it instantly into superheated steam. The massive amount of kinetic energy delivered in that first strike alone would have been more than enough to level Reef Base, but it was apparent that Tomar wanted to make absolutely certain that it was completely obliterated.

*De Ruyter* fired a total of six such salvos into the area around Reef Base, 'walking' the fall of shot in a tight pattern to ensure a maximum level of devastation was dealt to the base. From my current location in *The Broch*, I was still able to feel the force of each salvo as it hit. Although I had 500 metres of water and a fairly substantial basalt massif above my head, compared to the meagre 50 metres of depth at Reef Base, I wasn't feeling particularly secure any more. *The Broch* literally shuddered with each tremendous impact. Every salvo sounded like the hammer of Armageddon.

Most of my smaller bases and outposts had been 'lit up' purposely to attract fire, except *Pyramid Rock*, of course. *Pixieland* fell first, rapidly followed by *Junkyard* and *Laputa*. I suspect that Tomar may have been deliberately gunning for Pod 5 and the Valkyrie Field after taking out Reef Base, purely for the sake of making a thorough job of it. Going on what I saw on the tactical display and drone coverage, I get a distinct impression that I must have twisted his goolies something fierce.

For some inexplicable reason, the idiot even started bombarding *Aurora*. I felt a momentary pang of alarm, knowing that if only one stray shot hits the monument, it would be all over for me.

But you know what? *Screw it.*

Although my dance has been far too short, it's been a merry old time. I'm ready for whatever comes next. But let's get real here. Although it would be a fine thing to stand atop the sail of *Ulysses* armed with only a Gauss cannon, screaming Celtic defiance in the face of overwhelming odds... *Nope.*

Even at maximum magnification, *De Ruyter* seemed almost toylike. I could barely make out the harsh, angular lines of its sharklike grey hull. The mass drivers fired once more, their coronal flares blooming dazzlingly against the velvet immensity of the void beyond.

"Captain, *De Ruyter* has commenced pattern bombardment. Five rounds in each area, overlapping fall of shot as it moves on to the next sector. I have calculated that a single impact within 150 metres of The Broch will exceed current hull overpressure limits by a factor of 65 per cent."

I swore loudly, bolting for the nearest bulkhead door. "Thanks for the heads-up, JUNO. How much time do we have?"

"Assuming that the bombardment pattern remains consistent, no more than ten minutes, Captain."

"Gorram it! There's no way I can secure the whole base in time. What's our current hull integrity?"

"One hundred and seventy-five, Captain. Estimated time for completion of total hull reinforcement to 225 per cent of current rating, one hour, twenty minutes."

IANTO spoke. "Captain, may I offer a suggestion?"

I stopped running, barely halfway down the central corridor. "Okay, but make it *very* quick, mate."

"Two possible solutions exist, Captain. One involves waiting for the attack to pass inside one of the *Cyclops*. The submersible will have to be positioned immediately behind the exit iris of its launch tunnel to ensure your survival. Probability of tunnel collapse, 97 per cent. The second solution involves sacrificing all ancillary structures, except for the command module. Remove all transparent surfaces and replace them with reinforcement panels, providing a total hull integrity rating of 280. You must then flood the base completely. Estimated completion time, six minutes."

I hesitated for a second. "Okay. Option Two sounds only slightly less suicidal. We'll go with that."

Halfway through the emergency base refit, JUNO called out. "Captain! The *De Ruyter*!"

The nearest monitor was on Level Two. I slid down four ladders, losing a fair deal of skin in the process. JUNO had enhanced the image digitally, slightly sacrificing resolution for increased image size. *De Ruyter* was listing heavily to starboard, hanging lifelessly on the outer fringes of the planet's atmosphere. A gaping, glowing crevasse had been ripped in its portside hull. A massive cloud of debris drifted away from the breach, reaching toward the planet like a skeletal hand.

"Replay all after the last attack, JUNO." I said calmly. Inside, I was shaking myself apart with anger.

*De Ruyter* fired once more. Milliseconds later, a huge explosion erupted in the frigate's midsection. Forward of the drive nacelles, two small, bright objects ejected from the hull simultaneously, arcing away from the doomed vessel and heading rapidly into deep space. They would continue their own lonely voyage to oblivion, long after *De Ruyter* had made its final death dive. Minute amounts of antimatter bled off in controlled bursts propelled the heavily shielded containment pods, serving as a crude emergency drive system. This was an entirely automatic safety measure, of course. If those pods had not ejected in time, the entire *Alpha Hydrae* solar system would have been destroyed.

"Antimatter containment modules. It doesn't matter now. *De Ruyter* is already finished."



I can't remember how long I spent staring blankly at that monitor. *De Ruyter* was slowly tearing itself apart. At random intervals, internal explosions would wrench another huge chunk out its carcass. Soon, its uncontrolled descent would also begin taking its toll. *Manannán's* tenuous upper atmosphere teased and pulled at the falling vessel faintly, even timidly at first. As the ship fell with ever-increasing speed, atmospheric friction gnawed ravenously at its exposed innards, heating them to thousands of degrees. Soon, all that remained was a hurtling, flaming lance of white-hot fury.

***Towards thee I roll, thou all-destroying but unconquering whale; to the last I grapple with thee;  
from hell's heart I stab at thee; for hate's sake I spit my last breath at thee.***

**Herman Melville - 'Moby-Dick; or, The Whale.'**

"No Lifepods at all, JUNO?"

"None were detected, Captain." JUNO replied quietly.

For at least the space of a heartbeat, I fancied that if any Lifepod had made planetfall, it could only be Tomar's. Witness an endless, utterly futile battle of death and resurrection, pitted against each other until *Alphard* itself grew black and cold. Neither of us would have given an inch in all that time; growing ever more cunning and infinitely more vicious with each new reprisal, bringing increasingly devastating weapons into play until one of us finally cracked the Dragon's Egg, destroying us both. The other side of that same coin saw us lapsing into a more elemental form of savagery, hacking at each other with Stalker teeth until what little remained of our humanity crawled away in abject disgust.

There is no sense of elation. No cause to celebrate. This was not even remotely a victory.

In truth, I felt sickened to the pit of my stomach by the carnage I had witnessed.

More to the point: *I had caused*. Two hundred and fifty lives sacrificed for one man's vanity.

In the balance of things, I am entirely blameless for *Aurora's* fate. However, I could not say the same for what happened to *De Ruyter* and her crew. No matter how much I tried to justify my actions at the time, the inescapable truth was that I had provoked Tomar into taking that suicidal course of action. I had humiliated him gravely in the presence of his subordinates, knowing full well that his station in Belter society would not permit him to allow that insult to pass unanswered.

Rather than face JUNO and IANTO while carrying this knowledge, I pleaded exhaustion and retired to my quarters. I suddenly felt a most pressing need to drink myself stupid.

For three full days, I wept, pleaded, howled and raged. My quarters were torn to pieces in a whirlwind of hard liquor, black remorse, endless self-accusation, whining denials and mindless fury.

On the fourth day, JUNO pumped my quarters full of Anesthazine gas.

On the sixth day, I awoke.

## CHAPTER SEVEN

To be absolutely precise, I awoke in the sickbay. There was a moment of utter confusion. The very last thing that I vaguely remember was having done a lot of things that I'd rather not remember. Cautiously, I worked myself up into a sitting position. JUNO and IANTO appeared by my bedside.

"Good evening, Captain. I trust that you are feeling well rested?" IANTO inquired.

"I feel perfectly splendid, IANTO." I said cautiously. "However, something tells me that I should still be feeling absolutely wretched. What happened?"

JUNO leaned forward, smiling gently. "You have suffered a moderately severe emotional breakdown, Captain. Fortunately, we were able to maintain complete control of the situation, in spite of our most obvious physical disadvantages. You were able to experience full emotional catharsis, totally uninhibited by any need to maintain an outward façade of rigid self-control."

IANTO continued. "We were extremely concerned at first, although it soon became apparent that this behavioural mode had served you well as an emotional safety-valve. To be perfectly candid, Sir, this was an experience that you have resolutely denied yourself over the past few months. There was always a distinct possibility that an adverse outcome may have occurred, although we considered that any psychological benefit obtained far outweighed any potential physical risk."

I was completely mortified. I fell back on the pillow, eyes clenched shut and groaning with embarrassment. "You mean you simply sat back and let me go completely barking mad?"

"There's rather more to it, Sir." JUNO added hastily. "However, that is essentially what happened."

"So how in the Hell did I get here? I was completely polluted for most o' the time back there... I could'na even find my way to the privy after a few heavy bevies, let alone the bloody sickbay."

IANTO and JUNO exchanged awkward glances. Almost guilty-looking, in fact.

"Your MAM got you here, Sir." IANTO explained.

"You what? My dear mother's buried back on Mars, if you don't mind." I snapped indignantly. "Did you use some kind of holographic Head-ology or something similar to get me to follow you, JUNO?"

"Nothing of the kind, Captain. IANTO is referring to your Mobility Assistance Module."

Under IANTO's command, the mechanism strolled briskly into the sickbay. At first glance, it appeared to be a standard exo-frame myomer interface harness. However, there were some subtle differences that only an engineer could spot. Exo-frames are notoriously mechanistic in their movement, but this one moved with an almost fluid grace. Secondly, it did not possess much in the way of muscular and skeletal amplification systems. Normally, there would be compact but powerful hydraulic rams attached at all major joints, as it was originally designed to provide its wearer with a phenomenal lifting and carrying capacity. This model was far more sleek. And apparently, it had been my sole means of getting around over the past few days.

Not that I was actually aware of it at the time, of course.

"Aye, I like that. It's a reet canny piece of work. And the two of ye made this from scratch, ye say?"

"Yes, Captain. We were unable to provide any physical assistance while you were... incapacitated. JUNO and I found it necessary to apply a creative approach to your particular problem. Using the basic myomer frame and harness fabrication template, we modified the design with technology mostly derived from your emotional recreation interface device -"

"Och, don't tell me you had to scavenge vital parts out of poor *Inflatable Ingrid*? Frankly, I'm shocked, Sir. Completely shocked and horrified. She was my absolute favourite." I said half-jokingly.

IANTO shook his head emphatically. "No, Captain. We merely duplicated 'her' servo systems and articulation mechanisms to suit the specific requirements of your mobility device. I assure you that the human interface device in question remains in perfect working order."

JUNO chimed in. "It was absolutely essential that your body obtained some physical exercise, even though you were in a medically-induced coma at the time."

I swung my legs out of bed and rose rather unsteadily. The exo-frame thoughtfully handed me my dressing gown. I was about to thank it and stopped halfway, noticing an impish grin on IANTO's face.

"Oh, aye. I can see where that might cause further medical problems. Bed-sores, atrophy of musculature, fluid on the lungs and such." I said casually, cinching up the gown's belt.

JUNO pushed her face close to mine and fixed me with a stony glare. "Not only that, Captain. Your quarters were left in a truly dreadful condition. We simply decided that it would be an extremely therapeutic experience for you to clean up your own bloody mess... With all due respect, Sir."

"Fair enough." I said ruefully. It's been quite a while since I earned a proper telling-off.

I have a vague memory of being caught short during my 'lost three days'. Did I really pish in one of the corners, or was it one of the planters? The sink? Wastebasket? Desk drawer? Oh, nooooooooo...

*Och, ye dirty wee nyaff.*

Still, all of that sordid business is water under the bridge now. I desperately needed something substantial to eat, having been on an exclusively liquid diet (in one form or another) for the past week. JUNO, IANTO and I strolled cheerfully down the corridor and headed towards the galley, with an unoccupied exo-frame trotting faithfully along behind us. I'll need to review today's base surveillance footage later on. I want a framed picture of that particular scene. It was bonkers.

After dining, I took a long, hot shower. As I dressed, I reflected upon what JUNO meant about me 'cleaning up my own mess'. I looked around and confirmed that my quarters were absolutely spotless. Yes, I do recall making an unholy mess of this room, much to my eternal shame. What was JUNO on about? Was she being philosophical or psychological this time? I was completely baffled.

And then, the realisation suddenly hit me.

*My MAM made me clean up my bedroom.* I had absolutely no say in the matter. Just like old times.

It was time to see what remained of the planet following *De Ruyter's* savage attack. Unsurprisingly, all surveillance drones in this sector had been utterly destroyed, so it was necessary to fabricate another squadron. I could have visited each impact site personally, but something told me that my presence would be exceedingly unwelcome among *Manannán's* surviving sentient population.

The scene was depressingly familiar, right across the board. I have seen entire reef communities erased from existence without leaving a trace. The impact shockwaves alone would have killed millions of creatures, fatally rupturing internal organs in larger organisms and instantly obliterating those of a more fragile constitution. I flew my drones through an ocean littered with the floating corpses of Reefbacks, Gasopods, Stalkers, Bone Sharks, Sand Sharks and Reapers. The destruction seemed almost absolute.

However, tiny pockets of life had miraculously survived. Tomar's boundless rage had spared a small percentage of creatures in some areas, and the ocean was now saturated with a rich soup of organic nutrients. Life would find a way once more. Of my sub-surface installations, only *The Broch* still remained intact. The area around Reef Base was nothing more than a cratered, sterile wasteland. Of the base itself, nothing remained at all. The Jelly Shroom cave had completely collapsed under *De Ruyter's* ferocious bombardment, leaving a Cyclopean central crater in the devastated sea floor. Given sufficient time, this area would recover most of its former diversity of life, although the secret world of the Crabsnakes was sadly lost forever. That was a colossal tragedy in itself.

Curiously, what I saw on that day entirely failed to feed my depression. In fact, I felt a growing sense of renewed purpose and hope quicken inside me. The hand of Death had touched almost everything down here, yet life still remained. Diminished almost to the brink of extinction, yet still firmly resolute in its purpose and miraculously unbroken. I felt particularly hopeful, since it was highly unlikely that any further human interference would take place on *Manannán* for some time, at least. If the Torgaljin colony fleet was waiting for Tomar's report on current planetary conditions before proceeding, there was a very strong possibility that this fleet wouldn't arrive at all. Hopefully, I might even be rescued soon, long before this becomes a problem.

And yet, the burning question remained.

What was it about this planet that brought out the very worst in human nature?

It is capable of sustaining human life. It has all of the requisite resources to ensure its prosperity.

These conditions are not unique. There is an overabundance of liquid water, but that was all.

Was it surely that simple? The galaxy is swarming with worlds that could easily match *Manannán* in terms of its physical properties, resources and considerable potential as a human colony. That may have been cause enough to send another wave of the human Diaspora to *Manannán*, although there were no readily apparent reasons to justify the insane actions of someone such as Tomar.

What secret could this planet possibly hold that made it worth killing and dying for?

I had to find out. Far too many have died needlessly here for that question to be swept lightly aside.

In all good conscience, I could never rest easily until I knew this secret with absolute certainty.

My eyes ached. I had been studying the material obtained from recovered PDA logs and AI transcripts for more than nine hours, hungrily searching for something out of the ordinary. The *Magellan* logs were particularly uninformative for the most part, presumably because they already had something to hide. No official acknowledgement had been made of the circumstances surrounding the Warper's death, and Joubert's incomplete autopsy report merely treated the incident as another unfortunate encounter with the local wildlife.

Paal Torgaljin's logs were even less enlightening. However, this didn't come as much of a surprise. It's a poor sort of corporate CEO who blurts out potentially devastating company secrets in clear text or voice recordings. Then there was that encrypted data block still lurking in IANTO's memory. I conjured that would be the most likely place to start digging. I had JUNO and IANTO working jointly on the analysis of a particularly cryptic string of words that had appeared as a text message. Although some of the words looked vaguely foreign in origin, none of them actually made sense in any known Terran language. My next thought was that this message had been encoded using a specially designed Torgaljin cipher, although my AIs soon put that idea to rest.

The search had hit a major brick wall.

"Some of these words must mean *something*." I muttered in exasperation. "There's a couple of obviously dodgy ones like 'gertrupop' and 'trankeboop' that *might* exist in some obscure regional variant of Afrikaans, but the rest actually look like genuine foreign words. Sort of, anyway. This sentence can't be entirely composed of gibberish, surely... You'll probably need to broaden your search parameters to include fictional languages such as Nadsat and StreetSpeak. Might as well try searching through the Klingon, Pak'ma'ra, Noldorin and Goa'uld lexicons while you're at it."

"Is there any language that you might consider particularly significant, Captain?" JUNO inquired.

"I honestly haven't a clue, JUNO. Belters speak a curious lingo that borrows from every tongue under the sun. Look, here's one that sounds a bit familiar... I'm pretty sure that I saw this word in a book I read as a kid. It was called *Watership Down*. It was a story all about a tribe of talking rabbits. They even had their own specific language called 'Lapine'. It wasn't a bad yarn, either. Not the sort of soppy stuff you'd normally expect from a story about talking rabbits. Ah, yes. The spelling they've used here is slightly different, I think."

"This spelling discrepancy could be explained by semiotic drift, Captain. Many words in the English language have changed their spelling and meaning over a period of time. I have located the text of that book in my files. What is the specific word that you recognize?" JUNO prompted.

"It meant 'the food of Princes', something that was considered a delicacy among rabbits... 'Flayrah'.

Suddenly, IANTO interrupted. "Code word 'FLAYRA' accepted. Decryption sequence complete."

JUNO and I exchanged puzzled looks.

"What just happened, IANTO?" I asked warily. "Are we about to get blown up again?"

"You have provided the code word required to gain access to my encrypted files, Captain."

I was gobsmacked. "Bloody hell. Talk about hiding something in plain sight... I got myself all wound up thinking that the entire sentence was a coded message, only to discover its sole purpose was to mask a single, naked code word. That's some seriously Byzantine logic at work."

"An interesting subterfuge. To anyone curious enough to examine it closely, that sentence would appear to have been encoded using a highly unorthodox keyless substitution cipher. In fact, it defies any attempts at decryption simply by virtue of being nothing more than a string of nonsense words. Wheels within wheels, so to speak." JUNO observed.

"I'll put this one down to pure serendipity. It had us well stumped, in spite of our innate cleverness and snappy dress sense. IANTO, could you give me an quick overview of the file's contents, please?"

IANTO took control of the monitor. "As you can see, the file is comparatively small. Only one point five gigabytes in total. Most of the information contained here relates to the Torgaljin colonization plan for *Manannán*, being primarily concerned with logistics, resource requirements, cost projections and project management activities. However, there are a number of smaller entries of far more immediate interest. Personal hyperwave communications between Paal Torgaljin and senior corporate executives, research reports and so forth. I have identified all entries of relevance and collated them into a concise summary for your convenience, Sir."

Obviously, IANTO had a slightly different interpretation of the word 'concise'. Six hundred pages.

I was reluctant to ask IANTO to condense the information into a single page of bullet points. The last time this request was made, I had to use a quantum microprobe to read a technical report one joker had ion-milled into the head of a pin. Lesson learned: No-one enjoys writing executive summaries.

It was pretty heavy reading, to say the least. Most of the Torgaljin field research appeared to be concerned with 'bio-mimetic engineering'. From what I could gather, they were working on a means of extracting alien DNA and fusing it with human DNA to confer various favourable genetic attributes such as increased strength, faster reaction times, mimetic body camouflage and dermal armour. The implications were staggering. If the Torgaljin were able to settle here without Terra's knowledge, they would have open licence to tinker with their genetic makeup, effectively remodelling themselves into a race of super-soldiers.

Give them a few centuries of uninterrupted development time, allow Torgaljin Corporation to quietly consolidate its position on *Manannán* entirely free from Terran Government influence, and they would constitute a serious threat to anyone who opposed them. In anyone's book, access to this level of technology would provide them with a decent head-start on forging a powerful stellar empire entirely from scratch.

That wasn't the worst of it. Their DNA transfusion technology could also be applied to construction materials, equipment and cybernetic systems. I remember having a particularly good laugh at their efforts with the Plumb Tree, although now that joke has acquired distinctly ominous overtones.

Rather than start tearing out my hair in sheer terror, I continued to read quite calmly. There was one tiny detail that prevented me from flying into a blind, headless-chicken panic.

*I also have access to this technology now.*

I was still beavering away at it as the sun rose. I felt a gentle tap on my shoulder.

Gasping in shock, I whirled around to see MAM standing patiently behind my chair.

JUNO appeared. "Captain, you are pushing yourself too hard again. Please retire to your quarters."

I sighed wearily. "Aye, you're absolutely right. There's nothing here that can't wait until the morrow. I'll be bedding myself down presently, although I might as well have some breakfast before I turn in."

JUNO nodded. "Of course. I shall prepare it for you. What would you prefer to eat?"

"Something fairly light for now, JUNO. Two fried eggs on toast and a mug of tea, if you don't mind."

"Certainly, Captain. Your meal will be ready upon arrival in the galley."

"Thank you, JUNO." I said gratefully. She was absolutely right. I could feel that woozy, unreal sensation that accompanies sleep deprivation starting to sneak in. At this rate, I'd be lucky to make it through the meal without face-planting in my plate of fried googies.

I awoke sometime in the late afternoon, feeling reasonably refreshed once more. My circadian rhythms are slipping out of kilter again, and I would have to turn in again sometime later this evening to retain some rough approximation of proper time-sense. It was easy enough to accommodate *Manannán's* nine point five-year orbital period, mainly because one day slipped so easily into the next. There's no real shock to the system with the passing of a 'year' here, either. The seasons were so long and drawn out that there were no apparent transitions to be seen. Individual days on the other hand, were a different matter. For much of my life, a 24-hour day was always the accepted norm. Even aboard *Aurora*, the days were divided into eight-hour shifts. *Manannán's* 16-hour days always left one feeling cheated. It seemed that there was never enough time to accomplish anything of significance.

The following morning, I boarded *Ulysses* and headed out to the location where Reef Base once stood. It broke my heart to see such complete devastation first-hand. Still, this was the area that I had finally selected as the site for the *De Ruyter* monument. In a way, it was fitting that I finally laid some of my ghosts to rest here, of all places.

"I'll be outside for some time, JUNO. There are final duties to attend to. You and IANTO may join me, if you wish. Please keep me informed of any proximity alerts within a one hundred metre radius, biological or otherwise."

The monument was a simple broad cairn, standing 10 metres high. After attaching a laser-etched commemorative plate, I floated facing the monument for some unknown length of time, silently contemplating all of the events that had brought me to this moment. JUNO and IANTO's holographic projections hovered in mid-water, respectfully standing vigil at my side.

***To the memory of the crew of Torgaljin Commercial Frigate,***

***'De Ruyter', CV-3372.***

***Two hundred and fifty souls set sail on The Voyage Eternal. Day 113, 2172 C.E, UTC Sol III.***

The return trip to *The Broch* was made in absolute silence. I am piloting *Ulysses* alone. Something has been taken from me today, and I wasn't entirely certain what it is. It's a curious sensation. Neither hot or cold, light or dark. Some indefinable, unknowable quantity had simply left the room, never to return. Five minutes out from dock, I cut *Ulysses'* power and sat alone in the dark.

I cried.

There was no single discrete reason I could find to explain these tears. It was an expression of generalised grief centred on the Universe itself. Simply too much of Everything, served all at once.

It took me a while to regain my composure. I walked aft to the heads, entered the compartment and closed the door. After leaning against the hand-basin for a full five minutes, I ran the tap and sluiced ice-cold water over my face. Towelling off, I caught sight of my own face in the mirror.

Its expression could only be described as 'tired'. Not physically tired, but weary of the whole game. We are all merely pieces to be shunted around some cosmic board game. Some are taken, some are lost needlessly, some are sacrificed according to an inscrutable plan, yet some still remain when the game is over. Tomar was right, in his own calculating way. This will always be the way of things.

The board has been scattered in a fit of infantile rage, although The Pawn remains standing.

A minor miracle.

My mind is much clearer now.

I desperately needed to lift my spirits, and I could think of no better way than a good, old-fashioned Scottish *ceilidh*. Ostensibly, it would be a wake for all who had fallen in the cause of colonising this planet, but it was also a wake for the gravely wounded planet itself. Although I'm no believer in things of a magical nature, I was certain that giving some positive energy back to the world would do no harm. I'll have to explain this business to JUNO and IANTO first. After all, they're invited too.

"*Ulysses* holding station at west docking portal, requesting entry."

"Welcome home, Captain. You are cleared to proceed." JUNO said.

To their credit, both JUNO and IANTO were delighted by the idea. I explained that the *ceilidh* was a communal celebration, first and foremost. It was more a musical evening than anything, although it might also feature country dancing and bardic recitations. Any misgivings they may have had regarding the presence of alcohol were simply waved away. After that last episode, I had no intention of waking up in sickbay a week later. I might have a wee nipie or two to relax my vocal cords, but I was definitely staying off the heavy bevies tonight. I didn't want to miss a single thing.

I showered and dressed, then proceeded to the Rec Room. MAM had obviously been pressed into service as tonight's waiter, as there was a side table already laid out with a large selection of choice nibbles and delicious-looking finger food. The most surprising addition to the room was another table with *four* seats. I scratched my head for quite a while over that one, but sat down regardless.



It wasn't long before JUNO and IANTO walked into the room. I noticed the difference immediately.

They are no longer holograms. They had fashioned lifelike android bodies for themselves.

"Good evening, Captain." JUNO said, "We wanted to make this evening particularly special for you."

IANTO smiled, pulling back JUNO's chair so that she could be seated. An archaic but gallant gesture, harking back to a far simpler time. "We felt that a physical presence would allow us to assist you more directly in future. Although it may seem that we have exceeded our mandate in reaching this decision without your permission, please be assured that we only have your best interests in mind."

"No permission was necessary, IANTO. In fact, I'm overjoyed that you have taken this step yourselves. I was considering asking your permission to construct physical bodies that you could use whenever the situation requires more than a single pair of hands. That's absolutely brilliant!"

"On behalf of us all, thank you, Captain. Our most recent crew member will be along shortly. He has been preparing something special for your entertainment." JUNO added, smiling knowingly.

I barely had time to register my complete astonishment. Another android marched into the Rec Room wearing full Highland piper's dress regalia. He saluted briskly, and then commenced playing. The tune was a very old one, vaguely recognized from my early youth. It was a stirring piece, yet somehow sad and wistful. I dredged deeper in my memories until its name finally came to me.

*'Highland Cathedral'.*

At the end of the piece, I stood and saluted the piper. "That was magnificent. What is your name?"

"I do not have an actual name, Captain. You already know me as MAM. That is my designation."

"Oh, no. You deserve a proper name. You're one of the crew now."

"Thank you, Captain. I will respond to whatever name you may decide upon." The android replied.

I thought for a minute, and one name leapt right out at me. *Digby*. Captain Dan Dare's batman.

"Your new designation... Sorry, your *name* is 'Digby'." I said, reaching out and shaking his hand.

There was a brief moment of silence as the android consulted its data banks.

"Reference source found. New designation is accepted." DIGBY assumed a more humanistic manner once more, and I was able to examine his face in detail. Again, the AIs had created a facial design and body type that appeared quite human, without crossing that fine line that set them apart as being obviously artificial. DIGBY was solidly built, although not excessively muscular. His broad, honest face seemed to lack animation at the moment, although there was a certain calm dignity about it. All up, he seems like a pretty decent chap.

"Thank you DIGBY, and welcome aboard. Please be seated." I motioned toward the empty seat.

"Thank you, Captain." DIGBY said.

I tapped my glass lightly with a knife, summoning their attention. "Let the festivities commence!"

I rose from my seat and walked around to the front of the table. All three were watching attentively.

"Welcome to our *ceilidh*, one and all. Seeing as this is your first time, I'll explain what's going on. Tonight, we'll be performing our 'party pieces' for the entertainment of other guests, who will in turn regale us with their own performances. It's a traditional Scottish past-time, also enjoyed by other Gaelic folk throughout the galaxy. It's basically a little piece of home. There are no real rules governing what anyone performs. Your choice of performance material is entirely at your personal discretion. It can be traditional or modern, serious or funny. The sole objective is simply to enjoy oneself. It's the closest thing that Scots have to karaoke. Just take a look at my music files, mute the vocal tracks and supply your own vocals. I'll kick things off, although it's going to be mighty hard to top DIGBY's performance. I'm definitely up against some stiff competition tonight."

I started with '*Forever Autumn*'. Something bittersweet at first, mainly because recent events were still too raw and painful to simply let slip. JUNO followed with '*Orinoco Flow*'; a flawless recreation of Enya, with a playful touch of Kate Bush thrown in for good measure. IANTO's first piece was '*The Highwayman*', rendered in four distinct vocal styles. I started to sweat nervously. *There's no way known I can match this level of performance*. DIGBY stepped forward once more, and I had that sinking feeling in the pit of my stomach. He squared up theatrically, then launched into a hilariously overblown recitation of '*The Ghoulie of Kirk Douglas*'. My jaw sagged. I slumped helplessly over the table. Tears ran down my face, and my sides ached with truly uncontrollable laughter.

As the Irish would say, we got a fine *craic* going on. It felt like I had a proper bunch of mates again.

We wound up the *ceilidh* at one a.m. Sang '*Auld Lang Syne*', as was right and proper on such occasions. We bade each other goodnight, and then I turned in for a peaceful night's sleep.

The night was a glorious success. A fistful of diamonds couldn't buy an experience like that.

Over breakfast the following morning, I outlined my plans to the crew.

"First off the bat, we're going to need to rebuild our base facilities. There will be an increased number of sites to accommodate the hatcheries and plantations we'll need for the main operation. We've got a huge salvage job ahead of us, and I'm going to need all hands at the pump."

IANTO appeared to consider my words carefully before replying. "Captain, I would strongly advise proceeding with caution. Entire ecosystems have been destroyed, and it will not be a simple matter of merely refilling the devastated areas with a random assortment of farmed organisms. There are many discrete environmental factors to consider before embarking upon a large-scale rehabilitation program such as the one you propose. With all due respect, Sir."

"Exactly, IANTO. That's why I'm putting you in charge of evaluating the effected zones and designing tailored ecologies closely matching the originals in terms of diversity, population density and terrain coverage. We'll also need to launch monitoring satellites to keep track of our progress. I don't know how that's going to sit with the Warkers, but we can at least try to get a few birds in the air."

I forked in the last mouthful of scrambled egg and toast, chewed on it and continued.

"JUNO is responsible for all base operations. She will assist in any field operations as required, as will you all." I took my last swig of tea. "DIGBY, you're with me, mate. Okay troops, let's crack on."

Shortly before we headed down to board *Ulysses*, a thought occurred to me.

"Just a quick question... Are your new bodies waterproof? This could be a slight problem."

JUNO replied. "Absolutely, Captain. Our synthetic dermal sheathing is pressure-rated to 2,500 metres. This was a primary consideration during the initial design phase. We will not require breathing mix cylinders, of course. This may cause you some small degree of visual dissonance at first, although we will be wearing helmets and suits to facilitate communications."

I nodded. "Yes, it would be a mite disconcerting to have you folks swimming around without diving gear, but I suppose I'd eventually get used to it. Thank you for your concern, though."

"Think nothing of it, Captain." IANTO said. "We have also redesigned certain items of your underwater equipment to make them more efficient and significantly increased their defensive capabilities. All suit types are now equipped with holographic emitters, enabling face-to-face communications, 3D tactical displays and adaptive camouflage. The revised suits are also equipped with an integral electrical defence field, although its capacitor recycle time still requires some fine tuning. I shall demonstrate these functions for you later, if you wish."

I am highly impressed. "Wa-hey, that's utterly brilliant! You've certainly been a busy little bunch of Elves while my lights were out, haven't you? That deserves a gold Elephant Stamp, at the very least."

To my delight, the new suit fits like a glove. There wasn't even that annoying snuggie around my fork any more. It is a distinct pleasure to wear this suit. DIGBY and I were collecting samples from one of the outlying arms of the safe shallows. We have to be very careful here, as it borders on one of the Grassy Plateau biomes. That means lots of Biters. I wasn't particularly bothered, but we would have to collect a few live specimens of those nasty little sods as well. I tried to persuade IANTO that *Manannán* could surely do without quite as many Biters as before, but he was adamant. The Biters also get to make a grand come-back. That also meant reintroducing Bleeders and Crashes, as well.

*Gorram it.*

It was gruelling work, but we managed to swing along at a pretty decent pace. A central collection point had been established for the samples, and every so often, an automated drone would come whizzing towards us to pick up what we had collected so far. Once the sample transfer module was fully loaded, the bulk cargo freighter would head over to IANTO for implantation in either a hatchery dome or a propagation tray. This whole business had the air of a community garden's working bee.

To pass the time more pleasantly, I chatted with DIGBY. Being a newly-minted AI, he was full of wonder and inquiry. To anyone else, he might seem like a bit of a 'thickie'. I saw him in a considerably different light. His heuristic intelligence is fully formed and appears to be operating normally, although his cup is effectively empty. I was only too happy to start filling it.

"Forgive me for asking, Captain." DIGBY said hesitantly, "I am aware that you held a service to commemorate the *De Ruyter*'s crew yesterday. Although these people were attempting to kill you, you actively tried to prevent their destruction. You experienced significant emotional distress to the

point of actually grieving their deaths. I cannot entirely comprehend why you would do that, Captain."

"Aye, I gave water to the dead." I admitted. "It struck me that some good folk died alongside the bad when *De Ruyter* went down. Far too many lives have been needlessly lost in the name of this planet, and there was no way I could prevent it from happening again. Even if they came in peace, the outcome could well have been the same. Who else would mourn their passing but me?"

"I believe that I understand more clearly now, Captain." DIGBY said gently. "You are a truly remarkable man, if you don't mind me saying so. It will be a privilege to serve at your side."

"Thank you DIGBY. Mind you, I don't always get it right, although I'm always willing to hear what you, JUNO or IANTO might have to say. None of you have steered me wrong yet. Bear in mind, a captain's only as good as the crew under his or her command. You may rest assured that you have joined an excellent and highly capable crew. No captain worth his salt could ask for better."

The following morning, our operation was effectively locked down. Another hurricane was brewing, and this one looked like an absolute stinker. Topside winds were already gusting at Beaufort 7 and the worsening sea state made all shallow water work well nigh impossible. I fluttered idly around *The Broch* for a while, briefly considered watching a few old films to pass the time, but eventually gave that up as a stale idea. *I wanted to do something with my hands*. Eventually, JUNO noticed me pacing around like a caged lion and gently suggested that I try something more creative than usual.

Somewhat reluctantly, I sat down at my workstation and activated a graphics program. I started doodling on the tablet. Purely random stuff at first, including one that looked like a first-draft comic strip of life in the base. I filed the half-completed image for a later rework, then started on another. This one was starting to develop into a hieroglyphic frieze, a sort of 'Bayeux Tapestry meets Tutankhamen' kind of deal. All false modesty aside, it was starting to look *pretty damned good*.

I saved the original drawing and started on a fresh panel. This time, I was telling the story of how I came to be stranded on *Manannán*. After years of using holographic CAD systems, the stylus and tablet felt almost primitive. It didn't matter. I was enjoying myself immensely. Occasionally, I'd call one of the AIs over as they passed by, seeking their opinion on what I had done so far. Their feedback was valuable, as it was rather tricky to create a logical story of this complexity without using a huge amount of words. I also incorporated a sort of 'Rosetta Stone' panel right at the beginning, converting the Anglic alphabet into binary code, although I wasn't entirely certain that any particular alien species would be able to decipher it. Couldn't hurt to leave it in, I guess.

The object of the exercise was simply to tell our story, warts and all. There was a brief twinge of concern when I considered the possibility that this work might be poorly interpreted. It wouldn't do to have an alien race treat a simple story as some kind of ancient holy relic; particularly one that might wage pointless bloody wars over piddling minutiae of precisely how each image should be interpreted. That would make a rather poor statement for posterity. Best to make the story's message completely clear and entirely unequivocal.

It was my plan to decorate the base of the *Aurora* monument with this story. As soon as we had the regeneration project back on track, I would spend some of my spare time transferring this artwork to

the obelisk's nanocrete plinth. Holographic storage media was supposed to remain incorruptible for several centuries. I was planning on this little yarn sticking around for several millennia. At least.

"I am Ozymandias, king of kings. Look upon my works ye mighty, and despair." *Pffft. Yeah, right.*

It was three days before that hurricane burned itself out. I fancy its duration and intensity might have had something to do with some damned fool riddling the planet with kinetic energy weapons, blasting gigatonnes of extra water vapour into the atmosphere. Tomar's fond parting gesture to us. We were safe enough in *The Broch*, although there wasn't much to profitably occupy our time down here. I introduced the Als to the joys of binge-watching early 21st. Century films and TV series, along with an oddball cable program called '*Mystery Science Theatre 3000*', or '*MST3K*', as it was known to its original fans. Not entirely certain how JUNO and IANTO honestly felt about it, although DIGBY took to the series like a duck to water. I'm really starting to like that guy.

The artwork for the frieze was complete. I have devised a method that allows me to fuse inlays of various metals to the laser-etched nanocrete, creating some rather effective coloured highlights for selected images in the series. This method had been used sparingly during the construction of the memorial obelisk, although I found myself daunted by the prospect of hand-colouring over 150 separate panels. According to my calculations, they would cover about 75 per cent of the monument's plinth. Secretly, I was hoping that no more thrilling heroics would take place anytime soon. We fine *artistes* are a sensitive, shy and retiring lot. *Stop laughing. I'm being serious now.*

What I actually needed was a project where I could really throw the spanners about. The ExoSuit was as good a place as any to start, so I took a long, hard look at its design specs. Naturally, I tut-tutted scornfully, frowned severely and made massive changes to its basic design parameters.

"Only 500 metres? Och, ye cannae be serious. It's 2,500 minimum, or I might as well be diving in me skiddies. Let me see... There was something about turtles in that hidden Torgaljin log. Hmmm, yes. Chelonian hull plating, DNA transfuser bio-mimetic technology hull upgrade. Aye, that's a bit more like it!"

It was too late. I had the bit firmly between my teeth by now. Next came the aloxide outer hull sheathing for increased temperature resistance. I would have preferred adding a solid layer of Zirconium-14 alloy plating under the aloxide, purely on the off-chance that I happened to be mucking around near any open magma vents. However, we cut our coat according to the cloth we're given. No Zirconium-14. Next, that thumping great drill-bit has to go, right from the start. You've just gained twice your lifting capacity in one shot. Both arms now terminate in two streamlined turrets, each capable of housing several useful tools at once. Dual heavy repulsion cannons for serious defence, one laser cutter, one habitat builder, one welder, two graviton lifter beams and two precision manipulator claws. Toss in a Terraformer if you like. The suit also has its own heavy-duty EDF to discourage any uncomfortably close encounters.

That's what I consider a balanced basic load-out.

The ExoSuit has to be nuclear powered. No two ways about it. Unless you want to be toting around enough power cells to run an unmodified Gen I *Cyclops*, you had best embrace the miracle of safe, controlled fission. If you enjoy hopping out at 2000 metres-plus to swap out the copper-tops, be my

guest. You have about five minutes of life support *max* when the bunny finally dies. I'm going with The Glow. Enhanced thrusters, emergency ascent system and decent-sized integral storage lockers?

Yes, please.

This is how you design a Gen II ExoSuit. Accept no substitutes.

Since the crew had the remediation effort at Reef Base well under control, I took *Ulysses* out to Pyramid Rock to make a start on recommissioning the launch facility. The sea life around the island had fared slightly better here, being partially shielded from the worst of Tomar's bombardment. To my surprise, the island's resident Reaper 'Binky' is still very much alive and kicking. In fact, I had to drive it away with a short burst of the repulsion cannons before I could safely go ashore. That was an encouraging sight in itself.

Even though we are only two weeks into the recovery project, *Manannán* was showing obvious signs of bouncing back, even without our intervention. The resilience of this planet's life-forms was nothing short of staggering. I have passed over areas that had been blasted to oblivion, yet the first traces of returning life were already spreading slowly across the seafloor. It was only a light carpet of algae in most cases, along with an occasional fish or two following drifting tendrils of nutrient-rich seawater carried into the area during the recent hurricane. This basically confirmed that the planet was doing perfectly fine without our help. It might be worth scaling down our efforts accordingly.

However, I still needed to get those satellites into orbit. If nothing else, they would give me advance warning of approaching severe weather systems. I still had no accurate idea of how intense these storms could get, mainly because hurricane season apparently lasts at least a year on this planet. We were still only two months into storm season so far, and it's anyone's guess as to how badly weather conditions might interfere with our subsurface operations. In the very worst case, we might have to restrict operations to the deeps for the full duration. That's only one of the reasons why I was starting to look at the ExoSuit with increased interest. The main reason lay in Paal Torgaljin's encrypted log entries.

I had more than enough time to wade through the condensed version. IANTO had isolated one document that threw a spotlight on nearly everything that had happened so far. *Aurora*. The abandoned bases on the islands. STARFISH. The wrecked base hidden in the Jelly Shroom Caves. These seemingly disparate incidents were all key pieces in a far more intricate puzzle. I had been *almost* right when I latched on to the idea of a Torgaljin Empire emerging from this planet. At the time, I had no way of knowing precisely how far their plans had advanced, and what extremes they were prepared to resort to in order to ensure their success.

**SECURE TRANSMISSION: RESTRICTED - Ras Thaalu. Offworld Operations Division, Torgaljin Corporation to Paal Torgaljin, CEO, Torgaljin Corporation, Ceres Corporate HQ.**

*Greetings, Sir.*

*As you are aware, the containment facility was completed 15 per cent under budget and well within the allotted time frame. There were several minor incidents during later stages of construction, although no appreciable delays to progress have been noted. I am pleased to report that the asset has been secured with minimal damage to capital equipment and resources. The tau-muon phase*

*shield is operating at maximum efficiency. Several attempted intrusions have been detected so far, and all were successfully intercepted by the facility's automated defence system. Adverse Indigenous response has ceased entirely, indicating an emergent tendency toward total compliance. However, projected attrition rates of non-essential personnel involved with the acquisition phase were erroneous. We sustained a highly acceptable 90 per cent loss, as it happened. In summary, the operation can be considered entirely successful. Awaiting your arrival with anticipation, Sir. R.T.*

There wasn't much actual work involved in bringing Pyramid Rock online again. The VAM gantry and launch pad went up in minutes. Before heading back, I added an airlock to the access corridor leading to the storage bunkers, as well as the underwater access point. This was done mainly to prevent the planet's wild weather from causing too much damage to the materials and equipment stored there, but also to prevent the facility from being completely over-run with Crawlers. I noted with some annoyance that recent events had done little to control their numbers. The island is positively swarming with the little devils. Not much chance of these guys becoming extinct anytime soon, I'm afraid.

"Okay JUNO, I'm all done at Pyramid Rock. I'll be swinging by *Aurora* on my way home to check on its neutron accelerator silos. They might have sustained damage during the bombardment, and we don't want that djinn escaping from the bottle again. It shouldn't take too long."

"Very good, Captain. Regarding the new construction parameters for the Gen II ExoSuit... I'm afraid that it will be impossible to incorporate a full TRIDENT system. I have attempted to optimise the suit's internal systems geometry as far as possible in a number of viable configurations. Unfortunately, I would need to significantly reduce biological shielding on the reactor in order to accommodate TRIDENT's components. Shall I continue to pursue a solution, Captain?"

I rubbed my chin thoughtfully. Although it would be nice to have an ExoSuit equipped with TRIDENT capability, I wouldn't mind siring a relatively normal family at some stage. I can live without it.

"No, that won't be necessary, JUNO. How did integrating the conventional sonar suite turn out?"

"Extremely well, Sir. You will have access to passive and active sonar systems, with side scan and real-time terrain mapping functionalities. Dual active transducers with a five kilowatt total scalar output, multiple passive acoustic detection sensors deployed over the suit's hull. Precision 3D positioning and targeting system data are displayed as a holographic HUD terrain overlay."

"Sounds tasty. I'll definitely have some of that."

"There are a few minor integration issues still pending, Sir. However, I will have a full prototype completed by tomorrow morning, at the very latest."

"Excellent work, JUNO. Thank you. One more thing; if there's enough daylight left after the *Aurora* inspection, I think I'll head out and work on a couple more panels for the monument frieze. I'm beginning to feel just a wee bit superfluous around here." I chuckled.

"I can send out a drone to perform the *Aurora* inspection, if you wish." JUNO said helpfully.

"No, I'd prefer to have eyes on for this job, if only for my own peace of mind. She took a fair old pounding, and I want to make certain that my repairs to those silos are still holding. I'll stay in touch in case I need anything."

"As you wish, Captain. If you require someone to keep watch or render assistance in any way, please let me know. One of the android forms can be spared for your requirements, should any arise. Please stay safe and enjoy yourself, Sir."

"Will do. Thanks, JUNO."

It was eerily quiet aboard *Aurora*. The ravenous flames had died months ago. The rumbling booms of her drawn-out death throes had long since fallen silent, leaving only the faint sound of wind and waves as they hurried past, paying their final respects in hushed tones.

In time, even the Crawlers had deserted this lonely wreckage.

From what I could see, Tomar's gunners weren't aiming for *Aurora* herself. The salvo fell in the centre of where her bow section used to be. I can only assume that Tomar thought this area would be a likely spot to build a base. If I was drawing salvage directly from her hull plating, it might have been a reasonable choice of location. However, I had chosen to maintain a respectful distance from the wreck, mainly because of the four neutron accelerator stacks that still lay inside.

I shone my dive light over the interior of the silo compartment, checking for any additional damage that may have occurred since my last visit. Nothing seemed out of place, so I switched off the light and waited for my eyes to become accustomed to the darkness. No tell-tale blue glow from the water. A good sign. The rad counter held rock steady at 0.5 millisieverts per hour. I slipped into the water and headed for Silo One. Apart from a thin surface film of algae, the external casings appeared to be in excellent condition. The count rose steadily as I approached, topping out at 4.5 millisieverts per hour. After thoroughly scanning the remaining three silos, a reading of 4.8 millisieverts obtained from the centre of the cluster could be considered the current maximum for the compartment. Well below the threshold for any serious level of concern. I breathed a sigh of relief. That was one less thing to worry about.

Visibility was poorer than usual around *Aurora* today, and I had to take particular care in skirting her demolished starboard bow section as *Ulysses* made way to the memorial. Most of the increased turbidity was due to last week's hurricane, although I could see large patches of water that looked to have been stirred up rather more recently. Possibly in the last hour or so, in fact. At best, I had about 20 metres of forward visibility for most of the trip alongside *Aurora*. The churned-up patches gradually increased in density, and appeared to be occurring more frequently. As visibility dropped to 10 metres, I activated the low frequency sonar to show me a clear path in the shallow water. A large, slow-moving object appeared on the display, roughly 150 metres to port. Most likely a Reefback, I guessed. Since we haven't obtained a fresh DNA sample from one yet, this would be a perfect opportunity. Even though they're relatively harmless, it always pays to approach them slowly. A panicked Reefback can be highly unpredictable as it flails around.

I dropped *Ulysses'* speed to dead slow. The sonar trace grew steadily closer. At 50 metres, the 3D image resolved into a blurry, slowly rotating tangle that looked like a ball of heavy knitting wool. At 20 metres, I could just make out a swirl of motion in the observation port, half-obscured by clouds of



churned up bottom sand. I climbed out of the command chair and walked up to the forward dome. It was still hard to make out any clear details, just a cloud of silt and sand with occasional white flashes of motion. If nothing else, it looked like watching a cartoon version of a fight. Nothing to see but a roiling cloud of sand and flailing limbs. A territorial battle?

Suddenly, the unmistakeable screeching roar of an enraged Reaper filled the cabin with thunder. From out of the murk, the Gatekeeper of Hell itself hurtled towards *Ulysses*, its mandibles agape.

It was Ahab.

"Hello, Ahab old pal! I'm proper chuffed to see you made it through in one piece!" I whooped.

I noticed a second, even larger Reaper circling warily in the gloom behind Ahab. It turned out that they hadn't actually been *fighting* as such... *Whoops. My bad.*

"Oh, erm... Sorry about the interruption. I'll just be on my way now." I said, waving cheerfully. "I do like your new lady-friend, though. *Very nice teeth.* Um, anyway, don't mind me. Keep up the good work!"

Ahab slammed heavily into *Ulysses*, rolling its hull a full 50 degrees. He swam away, circling around for another attack. It was a perfectly understandable reaction on his part, and I had no intention of playing the gooseberry in an otherwise tender and beautiful moment of his life. Judging by the deep and freshly-bleeding gouges raked along his flanks, Reaper foreplay must be a bit on the rough side.

"Okay, JUNO. Two rounds rapid fire, 25 per cent. We are definitely out of here."

Fortunately, Ahab lost interest in us after a kilometre or so. He had far more pressing matters to attend to. We could have simply sprinted away at flank speed, although I felt that he needed to be seen playing the hard man, purely for the benefit of his bonny lass. It was the least I could do.

While I was working on the monument's frieze a few hours later, I had this vague, inexplicable sensation of being watched. I looked around, as you do. Nothing there. I shrugged, and continued transferring my design to the plinth. This part of the job was pretty close to cheating, actually. My suit's holo-emitters projected re-scaled original drawings onto the blank nanocrete surface, and all I had to do was run the laser cutter carefully over the lines. I would add the fused metallic inlays once the basic outlines of the panel were finished. It was fairly simple process, although it still required a careful eye and steady hands. Stability in the open ocean wasn't much of a problem, since I had adapted a gravsphere to hold me securely in position in front of the working surface. Titanium airline tubing kept my tanks replenished, and I was able to beaver away at the project quite happily, at least until sunset approached.

Just before I boarded *Ulysses*, I swam a complete circuit of the monument's base. I kept close to the sea floor, not wanting to silhouette myself against the surface. The sensation was still quite strong, and sometimes, I could even clearly 'see' myself swimming, as if from another person's perspective. It was actually a bloody unnerving experience when you got right down to it. My search of the area found nothing, a discovery that only increased my growing sense of paranoia.

"JUNO, can you detect any unusual lifesigns in the area? I've got this weird feeling that I'm being watched. I know it might sound a bit mental, but it's almost as if I can see myself through someone else's eyes, and it's really starting to spook the pogies out of me."

"Negative, Captain. There are a small number of Sand Sharks approximately 110 metres SSE of your position, but no other significant lifesigns are detected within the immediate vicinity. Even so, it would be most unwise to remain in this location once night falls. I strongly recommend that you board *Ulysses* at your earliest convenience, Sir."

"I absolutely agree, JUNO. Something definitely isn't right here. I can feel it." I muttered uneasily.

*One up, seven more to go.*

"*Argus One* roll sequence complete. Entering Max Q, total aerodynamic stresses are currently within tolerance limits. Throttle up for orbital insertion manoeuvre begins in 120 seconds. All systems are nominal. Current altitude, 60 kilometres. Velocity, 10 kilometres per second." IANTO intoned. He is a natural born, steely-eyed Missile Man. "*Argus Two* construction sequence initiated. Second launch is scheduled for 0730 hours, local time."

"Outstanding. Well, at least *Argus One* made it through the atmosphere intact. I'm prepared to accept that the Warpners are allowing our ships safe passage, for the time being... Touch wood."

*Argus One* was the first in a constellation of eight planetary surveillance satellites. IANTO had laid most of the groundwork for this project, mainly because he was specifically programmed for ecological monitoring duties. JUNO is an excellent generalist, so her duties had evolved to encompass all facets of daily base operations. DIGBY still had his existential training wheels on, so to speak. It was only natural that his android form would serve as my wingman during field operations.

It took quite some time to become accustomed to the fact that it was entirely possible to have the digital personas of all three AIs working simultaneously on a range of research projects and environmental monitoring tasks, while their android forms either worked on physical base maintenance, resource collection runs or were directly assisting me in the field. Even with all this activity going on in the background, I was still able to hold lively conversations or planning sessions with all three holographic avatars during my tea breaks, or receive some freestyle psychological counselling from JUNO via any handy Fabricator terminal as I required it. As far as I was concerned, it was the ultimate expression of multi-tasking capability. In terms of efficiency, this situation was like living in a fully populated research colony, although there was considerably more elbow room.

*Ulysses* hung in mid-water, currently somewhere in a quiet corner of the southern Dunes biome.

The completed ExoSuit prototype took up an entire third of *Ulysses'* lower deck, even with its limbs fully retracted and body curled into the launch position. I completed my final visual inspection of the vehicle from underneath, and then headed back to the upper deck. I wore a specially modified version of the reinforced dive suit, incorporating an external web of interface jacks. The dive suit was designed to make the ExoSuit precisely imitate every movement of my body, down to the tiniest twitch of a finger. I could tear a *Cyclops* into hanky-sized fragments if I ever had the need to. On the

other end of the scale, I could pluck a fleeing Peeper out of the water without harming it, or thread an embroidery needle with its precision manipulators. *Woe betide anyone or anything that made me drop a stitch. Consider that a fair warning.*

"Launch bay doors opening, Captain. Good luck."

"Thanks, DIGBY. All systems are online and are operating within nominal limits. Activate telemetry. Launching in five... four... three... two... ONE!"

The docking clamps released smoothly, allowing the ExoSuit to drift slowly towards the sea floor. I was pleased that we had managed to cancel out that initial lurch as the vehicle hit the water. A rapid drop-launch was fine for a *Seamoth*, owing to its small size and commensurately lower mass.

An ExoSuit requires a more controlled entry to the water, since its limbs needed about ten seconds to completely unfurl and deploy before landing. I could use the suit's integral thrusters to either slow my descent or propel the vehicle to its eventual destination before fully deploying. It all depended on the situation. In this case, I wanted to simulate a conventional drop scenario. Above all else, it was necessary to develop a decent 'feel' for the suit before trying any advanced techniques, since the experience was almost entirely unlike piloting a *Seamoth*. Radically so, in fact.

"Ten metres to sea floor. All limbs have successfully deployed. Contact in three seconds."

The ExoSuit landed with a solid thump, sending up a dense cloud of gritty sand. Shock absorbers responded smoothly, cushioning the impact to a tolerable level. There was definitely a perception of the suit's mass and water resistance as it moved, although the haptic feedback system translated those tremendous forces acting on the suit into something far more suited to the human frame.

I swivelled the suit's torso, flexing its arms and legs experimentally. It felt good. Highly responsive, its components felt like natural extensions of my body. I conjured I could easily dance a passable Highland Fling in this rig, if I ever wanted to. As IANTO had said upon receiving command of *Red Dragon*, the suit felt "light, bright and ready to fight". That sentiment also summed up the ExoSuit rather nicely.

I have a mind to take a brisk stroll. Somewhere around the 500 metre mark, for preference. Music? Of course. I even have a particular track in mind. More than adequately appropriate, in fact.

I addressed the ExoSuit's audio control panel. "Audio. Artist, Miracle of Sound: '*The Crush*'... Loud."

An inactive lava zone lay 200 metres SE of my current position. It's time to turn up the heat a little. The ExoSuit strode steadily along a sand ridge towards the drop-off. I could feel the sand shifting treacherously under each footstep, but the suit's gyros were easily able to compensate for this. Inevitably, some of the locals came to investigate what all the hoohah was about, and I soon found myself being circled by a trio of surly-looking Sand Sharks. Looks like the suit's tactical systems check is about to be unexpectedly bumped up on the to-do list.

The sharks made a pretty decent show of roaring aggressively and tunnelling under the sand as they circled slowly around me. The tactical HUD already had all three locked in, regardless of whether they were buried under the sand or obscured behind clouds of churned-up material. I waited

patiently for their next move. The sharks drew ever closer with each pass, until all three rushed the ExoSuit at once. Almost languidly, I reached out and gently tapped the Emergency Ascent pad.

The suit's thrusters kicked in immediately, launching the suit like a bottle rocket. That caused a bit of a lurch to the old tummy, but it was not much worse than a ride in an express lift... Albeit one powered by a scram-jet engine. I shut off the thrusters, came to an immediate stop and found myself hovering 100 metres directly above an utterly confused trio of sharks. Okay, that function definitely works. Let's see what else we can do to shake down the suit's systems before moving on.

Slowly drifting back towards the seafloor in an unpowered descent, I readied the suit's repulsion cannons. The sharks appeared to be completely unaware of this situation and therefore, entirely unprepared for what was about to hit them. **Me.**

Twenty metres from the seafloor, I hit the thrusters.

Under full power, the ExoSuit slammed down, instantly scattering the Sand Sharks. As the suit landed, I allowed it to absorb most of the tremendous impact by following through and going down on one knee. For a second, the suit remained in this position, then slowly rose to face the sharks as they started to double back. Okay, I admit it. I was basically showing off at this point. It would be nothing more than the basest act of cruelty to unleash an all-out attack on the sharks, particularly since they could do little more than sharpen their teeth on the aloxide outer coating of the ExoSuit's hull. I had originally planned a combat training exercise using holographic opponents, but these fellows had conveniently wandered into the training area.

Oh well, might as well make do with what I'm given.

They were slightly more cagey in their approach this time. One kept sawing back and forth at the extreme limit of the area illuminated by the suit's spotlights, hoping to keep my attention latched firmly on the action in front of me. The other two had dived deep below the sand and were approaching on either side of me, their paths describing a wide arc. The classic 'Horns of The Buffalo' manoeuvre. I was intrigued, never having seen this species engage in pack hunting tactics before. Rather than reveal their position with their usual 'burrow and flurry' behaviour, the two concealed sharks continued to approach slowly and methodically. Anyone looking for shark-sign would be sadly (and terminally) disappointed. However, the suit's tactical HUD had the positions of all three nailed down tightly. As soon as they came into range, I would hit them with my end game move.

I shifted position, moving forward to engage the one making its distraction play. The encircling sharks started to move in faster, displacing the sand dramatically as they passed beneath it. I fired a low-powered dual burst at the shark darting about directly in front of me, causing it to sheer off in panic. The pair stalking me suddenly broke cover and rushed in for the attack. With split seconds to spare, I sidestepped and pivoted backward to avoid the one coming in directly behind me, hitting its rump with a solid *thwack* as it passed by. *Olé!* The second one surged forward with a roar, smacking into a dense wall of sand I had displaced with a burst from both repulsion cannons. In Sand Shark terms, this would be the next best thing to hitting solid nanocrete. Hopefully, they may have learned useful something today. I *do* sincerely hope so. They seemed like fairly clever chaps.

With the exercise successfully completed, I activated the suit thrusters and headed for the inactive lava zone. *Ulysses* was also on the move, trailing a short distance behind me. The next test sequence was entirely straightforward. Thermal tolerance and environmental control systems were the next scheduled items on my checklist. Unless there was an unexpected seismic event or some particularly aggressive creatures were actually living around the magma vent, I could foresee no further complications occurring in this phase of the ExoSuit test program.

So far, the ExoSuit has performed admirably. However, it wasn't entirely the same vehicle as Alterra Corp originally designed it, hence the more rigorous testing and evaluation program. The suit incorporated a number of new systems or radically improved design features, including the Chelonian plate hull technology that I'd swiped from Torgaljin's data bank. It had been no mean feat to cram everything into a relatively small amount of space in the first instance, but the real challenge was in getting all of those elements to function reliably as a cohesive and effective whole. Impressive as the ExoSuit is, I would prefer to postpone installing the fake leopard-skin seat covers and fluffy dice, at least until I am certain that every sub-system is operating at 100 per cent efficiency. However, a 5000W sound system was an absolute operational necessity.

Utterly *brutal* bass response.

"Okay DIGBY, you're up." Fifty metres above the seafloor, I set the suit to hover and leaned back in the pilot's seat. "For the purposes of this exercise, I have been completely incapacitated. On my mark, you are to assume remote command of the suit, navigate through this area and make a rendezvous and dock with *Ulysses* on the other side. Follow the 100 Celsius external temperature isotherm at a height of one metre across the lava field, maintaining a safe distance from all lava fissures and geothermal vents. Are these mission parameters acceptable, DIGBY?"

"Absolutely, Captain. Awaiting your command." DIGBY said calmly.

"Three... two... one... Mark."

The handover proceeded flawlessly. DIGBY took control of the ExoSuit and commenced descent. Watching those lava fissures drawing ever closer by the second, I couldn't help but feel a wee bit concerned by what I'd put myself in for. I kept a close eye on the external temperature reading. It was currently 65 degrees and rising steadily. Cabin temperature, 24.7 Celsius. A perfect shirt-sleeve environment.

"Captain, please be advised that I am detecting multiple large life-signs ahead. A potential threat situation has been identified. What are your orders, Sir?"

I remained silent, hoping that DIGBY would exercise his own discretion upon encountering this unexpected obstacle. That gamble paid off. I had my first close encounter with the new species DIGBY had discovered, and they didn't look even remotely friendly. Imagine a cross between a leopard seal and a Komodo dragon. Got that? Now add four flippers tipped with long talons that would disembowel a diver with a single swipe. Their dorsal surfaces are matte black mottled in a dull-heated fiery red, patterned to blend in perfectly with their natural environment.

In this case, that environment was red-hot *pahoehoe* lava and an ambient water temperature that would have killed most terrestrial life forms. Initially, I wanted to call these creatures 'Selkies', after

the mythical shape-shifting seals that supposedly live on the outer isles of Scotland. However, that might convey an impression that these creatures are whimsical, charming and mischievous beasts. To prevent any possible misunderstandings in future, I'd best call them 'Lava Lizards' instead.

*And for the record, they're a right vicious bunch of bastards.*

There was nothing profitable to be gained from engaging the Lava Lizards. The ExoSuit's combat systems have already been taken through their full paces in no uncertain manner. After all, we are still trying to patch up the environmental damage that Tomar had caused. It doesn't look particularly civic-minded when those same 'concerned citizens' are swaggering around in powered armour picking needless fights with the local wildlife, does it?

We made rendezvous with *Ulysses* some time later. Both DIGBY and the ExoSuit had performed faultlessly throughout the entire exercise. Now it's time to get cracking on another three ExoSuits.

After docking at *The Broch*, DIGBY and I proceeded straight to the bridge. The android avatars of JUNO and IANTO were awaiting our return. All eight *Argus* satellites had entered stable geosynchronous orbits without the slightest hitch, and it was time to start extracting some useful data from this operation.

"Congratulations. That was excellent work on the *Argus* project, IANTO. What do you have for us?"

"Thank you, Captain." IANTO said, activating the holographic map display. "As you can see, we now have access to a complete topographical image of *Manannán's* biomes. All currently explored territory has been highlighted, along with significant concentrations of wreckage deposited by *Aurora*. Recent hurricane activity has revealed the locations of a number of sunken Lifepods ejected from *Aurora*. Recon drones have been sent to investigate, and all pods were found to have been heavily damaged either prior to, or during the emergency ejection sequence. I regret to inform you that no physical evidence of surviving Alterra personnel has been detected at any of the sites, Sir."

I examined the map, zooming in the 3D image to get a closer look at one of the nearby Lifepod locations. There was a pod roughly 200 metres east of the old Reef Base site, and at least five more scattered within a kilometre radius of *Aurora*. As IANTO said, there wasn't much point in searching any of these sunken pods, even for whatever meagre salvage they might offer.

The unexplored locations were of far greater interest. There was a sort of No-Man's Land between *Aurora* and the Mushroom Tree Forest that I had never bothered to visit. Well, not so much 'never bothered', as it was more a case of "Do I really feel like tangling with a Reaper Leviathan today?" From what I could determine from the *Argus* satellite imaging obtained in this area, it was dotted with widely-spaced clumps of some kind of dark, spherical growth. Might be worth a visit. If nothing else, I would finally have some idea of what life forms that area contained.

The only other unexplored area of any significance lay two kilometres to the north of *Aurora's* stern. It was a deep chasm, located between the northern dunes and the Deep Grand Reef biome. Ah, yes. I clearly remember making a deliberate decision to give that area a wide berth, especially considering the volume of the unearthly roaring sounds I heard emanating from that fissure.

I quizzed JUNO about these unexplored regions. Apparently, a number of camera drones had already passed through those areas during our post-bombardment environmental survey, but contact had been inexplicably lost in all cases. The only clue I had to go on was that a powerful surge of EM energy had been detected, split-seconds before losing contact. If that was the case, I could not send any of the androids to investigate those areas. I would have to make the trip personally.

Then there was the issue of this mysterious 'asset' that Torgaljin Corp was holding. Mention was made of an artificially generated tau-muon field being used to contain whatever it was, somehow. Unfortunately, this information was well above my current pay grade. Although I have a reasonable working knowledge of particle physics, things that actually involve using spanners are much more my forte. I have absolutely no gorram idea of what particular forces or subatomic particles interacted with tau-muons, and even less of an idea of how to detect a tau-muon source. In the end, I handballed this one to the AIs, hoping that at least one of them would be savvy enough to crack the problem.

The following morning, I had two basic options. I could either kick my heels idly and mope around *The Broch* until the AIs had worked out the tau-muon detection problem, or I get out there and do something vaguely worthwhile. It was all a bit of a non-question, actually. Besides, this situation gave me a plausible excuse to take out the ExoSuit again. I discovered that I was rapidly developing an enthusiastic attachment to this vehicle. Shortly before I left *The Broch*, I dragged all three AIs down to the hangar bay for an official christening of all four ExoSuits.

*Gawain* was mine. *Guinevere* was JUNO's. *Galahad* was assigned to IANTO, and *Percival* to DIGBY. Since they are the most effective combat-capable vehicles currently at our disposal, it seemed only right and proper to name them after central characters in Arthurian legends. The fact that ExoSuits closely resembled suits of mediaeval plate armour was entirely coincidental.

Of course, I could have taken the boring route and named them '*ExoSuit One*' through '*ExoSuit Four*', but where's the fun in that?

My first port of call was the wrecked Lifepod. Pod Seven.

The very fact that the pod was submerged and partially destroyed should have been sufficient reason to pass it by, although I felt it necessary to examine at least one Lifepod for any signs of irregularity. I was fully expecting heavy blast damage to be the norm here, although it wouldn't be entirely out of the question to find relatively intact pods on the bottom as well. Pod Seven had suffered a massive internal explosion, most likely originating in its bank of PermaCells. The side emergency access panel had blown out completely, taking the buoyancy chambers with it. Small wonder that pod went straight to the bottom.

There was nothing more to be learned here. I headed east, aiming for the unexplored region just off Aurora's port bow. To pass the time, I activated the suit's audio entertainment system. Ironically, the first random track that it played was a little something from Blue Oyster Cult...

*'Don't Fear The Reaper'*.

In a way, that song is particularly appropriate. I have come a very long way from being a lone defenceless swimmer, dropped practically empty-handed into a pitiless alien ocean. What I had now

still fell considerably short of an absolute mastery of my environment, although I have reached a stage where there were very few things remaining on this planet that I truly feared. Surprisingly, it always came back down to Crawlers, Biters, Crashes and Bleeders. Now that I had the ExoSuit, even these tiny demons of the mind might eventually fade into insignificance, although I sincerely doubted it. You can't live inside an armoured shell forever.

This was the paradox of armour. If you felt truly safe only as long as you remained inside it, there was no way that an armoured vehicle could be considered an entirely effective defence measure. In my case, I could safely leave the ExoSuit while it was underwater, secure in the knowledge that if needs be, one of the AIs would instantly take control of the ExoSuit and use it to defend me. Naturally, there were areas on this planet where extreme environmental conditions made it an instantly fatal proposition to leave the ExoSuit. It was the certainty of knowing that I'd soon have to venture into these areas that concerned me the most right now.

When it comes to designing weird life forms, *Manannán* wins hands-down. This new biome is sparsely vegetated for the most part, although the dominant species of flora in this area was well represented. Perfectly spherical purple bushes, as far as the eye could see. Some were tiny, not much larger than a basketball, while others grew to at least 10 metres in diameter. In spite of their densely-packed appearance, these growths were actually quite soft. Bright blue photophores were dotted over the upper section, giving off a pleasant blue bio-luminescent light. The plant was supported by a dense, twisted skein of slim roots, forming a stubby but secure foundation in the seafloor's bare rock.

"What's the analysis on this one, JUNO?"

"Communal plant specimen, Captain. No stinging cells or toxic exudates detected on external structure. Completely harmless. No other resident life forms are detected within the central structure. This plant has significant nutritional and hydration value. Samples may be collected for cultivation as a potential food source."

The growth reminded me of those squishy rubber filament balls. More a tactile toy than an actual ball you might use in a regular game, but they were curiously interesting to handle. *Koosh Balls*, I think they were called. Haven't seen one of those in a donkey's age, although I assume that they're still available back on Terra. This plant had the same sort of visual 'tactile' appeal. It practically invited you to bounce around on its upper surface.

"Designate new flora species as 'Koosh Bush', JUNO."

I continued to explore the area, dropping into one of the narrow side canyons that threaded through the outer edges of this region. One hundred and forty metres down at this point. There was an abundance of smaller fish here, all of the usual deep reef species were present. I thought that I saw a couple of Shuttlebugs some distance ahead, and homed in on them. Shuttlebugs are harmless scavengers that pose no threat to an unprotected diver. However, these creatures have a tendency to hang around cave openings, marking them as reliable indicators that a cave system was somewhere close nearby.

I was mistaken. Those creatures aren't Shuttlebugs. They were closer to actual fish in their overall appearance, although there was that unmistakeable alien look about them. These fish have four



large petal-like fins and two smaller lobes that are usually held flat against their bodies as they swim around. I watched two of these fish meet head-on, and something unusual happened. Both fish deployed their fins in a cruciform shape, circled each other face to face for a minute or so and then swam away. To my untrained eye, it looked like some sort of territorial threat display or quite possibly, a courtship ritual. I decided to watch these creatures for a while longer, if only to get a clearer idea of how they fit into the ecosystem down here.

One swam close to *Gawain's* observation port. It must have noticed me sitting behind the plex, because it responded with that same threat display. I was able to get an excellent view of one now. I'm not certain whether it was some trick of the light on iridescent scales or chromatophore cells in the skin of the creature, but I noticed a complex, rippling pattern begin to play over the surface of its extended fins. The patterns shifted and swirled enticingly, never once repeating themselves. It was utterly fascinating to watch. I could cheerfully do this for hours.

Suddenly, the creature opened its jaws wide and lunged forward.

Startled, I flinched away as it smacked harmlessly against the port. If I didn't know better, I'd swear that nasty little rutter was putting the 'fluence on me just before it attacked. Bloody typical. If I could have just one reasonable wish granted on this planet, I wish that I could encounter at least one new life form that doesn't want to eat my face. Seriously. It's not too much to ask.

New biome, and a whole new ballgame. I conjured that last unpleasant surprise was more than enough incentive to stop treating this trip as another casual stroll. High time to adopt a more businesslike posture, I think. I stood up, and the pilot's seat automatically retracted into the rear of the cabin. Interface cables snaked out of their housings and connected smoothly with my dive suit. I felt the ExoSuit's haptic feedback system kick in reassuringly. The next thing that jumps out at me will get a hydraulically-assisted bunch of fives in the face. Johnny Appleseed has left the building.

No more Mister Nice Guy.

I found one of our missing recon camera drones. Or rather, what was left of it. It wasn't a pretty sight. It looked like a thoroughly mangled wad of chewing gum. *Titanium* chewing gum, at that.

"Any large lifesigns in the area, JUNO?" I asked wearily. I already knew what the answer would be.

"Affirmative. Detecting powerful EM transients in the same location. Distance to first contact at 025 degrees, 80 metres. Target speed, five knots. Please proceed with extreme caution, Captain."

Our new beasties are some kind of segmented eel-like creature. Their size varied between six and eight metres, with numerous blunt bioluminescent-tipped appendages protruding from their bodies. I counted eight body segments on each, not including the head and tail. These segments rotated slowly from side to side as the creatures swam, seemingly independent of each other. However, this was not their most striking feature.

Each creature was a living Jacob's Ladder. Their bodies rippled with powerful electrical arc discharges, passing slowly from tail to head as they swam. I shook my head in disbelief. There was no known creature in creation that could constantly discharge that much visible voltage. Their nutritional requirements must be tremendous.

"JUNO, what's the read on these characters? You might want to bring IANTO and DIGBY in on this, too. I'm completely stumped for an explanation. There's no possible way that this species could sustain those discharges. Even the electric eels and torpedo rays of *Terra* run out of juice eventually. These things are throwing off lightning like decorator accents in Frankenstein's laboratory!"

JUNO answered. "Peak discharge voltage, 30,000 volts at 120 amperes. Their bio-electric field is generated by previously observed internal chemical reactions and capacitance effects. Unable to provide a more detailed internal scan of the target organisms, owing to high levels of broad-spectrum EM interference."

IANTO added, "It is most likely that the creature creates ionization pathways between those four organic electrodes on each body segment. This could be accomplished by using a modulated secondary voltage, presumably generated by the twisting motion of its body. This might explain the presence of visible arcs where none should actually exist. A most impressive discovery, Captain."

After completing my sweep of the Koosh Zone, I headed over to the *Aurora* monument. I had planned to do some more work on the frieze today, just to kick the project along a little. Although I found this task both enjoyable and immensely relaxing, it wasn't entirely without its challenges. The main brief was to convey as much information as possible, in a clear and totally unambiguous fashion. The image of *Aurora* entering the *Alpha Hydrae* system gave me particular grief for a while. I wanted to show that the warp particle discharge was an accident, preferably without making it look as if *Aurora* had deliberately opened fire on the planet. In the end, I settled for the image of a large ocean wave emanating from the ship's bow. I hoped that would be sufficient.

As I neared the monument, I felt a very strange sensation. It was almost as if my brain itched.

I activated the ExoSuit's camouflage field. As I approached, the sensation intensified.

"JUNO, I'm experiencing something pretty weird here. It's similar to what I felt last time. Can you detect anything unusual in the area? Radiation, life forms, EM sources, et cetera?"

"Negative, Captain. However, I am aware that you are currently experiencing a number of highly unusual physiological effects. Elevated stress hormone levels detected. Increased brain activity in frontal cortex and limbic lobe. Spontaneous onset of symptoms congruent with a minor episode of peripheral motor ataxia. Although these conditions are still within acceptable thresholds, I strongly recommend that you leave this area immediately, Captain."

I shook my head, trying to pull myself together.

"No. I'm going in. There's definitely something here, and I have to find out what it is. In case things do suddenly go pear-shaped, get ready to grab hold of *Gawain* and bug out."

"Affirmative, Captain."

I could see the base of the obelisk quite clearly now. Keeping low, I followed the contours of the basalt outcrop until I was directly in line with the front wall of the monument's plinth. The ExoSuit rose slowly under the thrusters' lowest power setting. Twenty metres. Ten Metres.

*Warpers.*

Two of them. The ExoSuit hung silent, suspended in mid-water. They appeared to be intently examining the inscriptions on the plinth. I activated the external camera, hoping to capture something that would provide a deeper insight into the nature of these mysterious creatures. The Warpners appeared to be communicating with each other, using a mix of elegant gestures, shifting patterns and subtle colour changes on their translucent mantles. Surprisingly similar to cephalopods back on *Terra*, in fact.

This could create some difficulties, communications-wise. I might be able to put on a simple pantomime to get my side of the story across, but there was no way that I could use that pattern and colour shifting trick in a conversation. It was impossible to decipher, even with JUNO's help.

Even the gestures were highly problematic. Without proper context, I might find myself unwittingly throwing 'Yo Mama' insults at a potentially friendly alien species. That would definitely end well.

Suddenly, both Warpners whirled around. They were now staring directly at me.

What happened next was indescribable.

Looking back on it, I can only describe the sensation as having a CO2 fire extinguisher emptied into my face, followed by a crippling blast of RF static pumped directly into my brain.

It was utterly horrific. I never want to experience that sensation again.

I sagged helplessly in the pilot's suspension harness, clawing blindly for the helmet's release mechanism. For some reason, my hands wouldn't work properly. Somehow, I found the latch and pulled it hard, clumsily dragging the helmet clear of my head. It fell away and clattered to the floor of the cabin. I vomited violently, spraying what remained of breakfast and lunch over the instrument cluster. Its rank, cheesy odour triggered another painful wave of retching, followed by another. Finally and mercifully, there was nothing left to bring up. I felt completely wrung out.

"Captain! What's happening?" JUNO cried. "Are you being attacked?"

I couldn't answer. There was little else I could do but hang limply in the harness, breathing heavily. The thunderous white noise in my head had begun to subside a little, and I could feel my scattered wits gradually beginning to sort themselves out.

"I... Don't think so. Give me a minute." I said raggedly, wiping my mouth with the back of my hand. "I think I've been rumbled. They definitely know that I'm out here."

Thankfully, the helmet had rolled away into a clean corner of the cabin. Shakily, I reached out and deactivated the ExoSuit's holographic camouflage. The Warpners tensed, raising their needle-sharp forelimbs in a clearly menacing gesture. I uncoupled myself from the haptic control rig and stooped down awkwardly to retrieve my diving helmet. After several botched attempts, I managed to engage the collar seals and snapped the retaining clamp shut. My hands lacked strength and still trembled faintly. Whatever they had hit me with, my body definitely couldn't handle a second dose.

"Looks like I've got some serious explaining to do." I said simply.

"Do you really intend to exit this vehicle, Captain?" JUNO asked worriedly. "Under these circumstances, I strongly advise against it. Please reconsider your current course of action."

"From where I'm standing, it looks like there's no other way, JUNO." I said calmly. "Stand by in overwatch mode. Weapons free, defensive action only. Minimal force. Remember, these chaps have ridiculously fragile bodies."

"Are you absolutely certain about this, Captain?"

"Not even remotely, JUNO." I chuckled half-heartedly. "Still, I feel it's the only chance we'll get to put a proper lid on this situation. Might as well meet our neighbours halfway, at the very least."

I flooded the cabin and exited the hatch, completely unarmed.

My first action was to raise my right hand slowly and deliberately in salutation. "Greetings. I come in peace."

The Warperts stared at me impassively.

I swam towards them carefully and stopped barely two metres in front of the pair. Well within their striking distance. I pointed directly at the inscriptions and then pointed at myself. No response.

Another short burst of static spiked in my head. It wasn't quite strong enough to disorientate me, although I felt a brief surge of nausea welling up inside me. Although I still couldn't determine what emotions (if any) these bursts conveyed, it seemed somehow less... Insistent. Definitely far less aggressive, at any rate.

I think I might have figured out what's happening here. Warperts are essentially telepathic, although their preferred mode of communication does involve an intricate series of forelimb gestures, shifting mantle patterns and colour changes. Those brain bursts I was experiencing apparently served as a sort of 'vocal' component. As far as I was able to determine, my arrival here may have caught them entirely by surprise.

As for the bursts themselves, the only comparison that I can draw is that it's like trying to drink from a fire hose. I simply lack the mental capacity to keep pace with their data transfer rate. At this point, it doesn't even matter what information they're actually trying to convey. It could be subtle emotional modifiers to their mantle patterns, discrete speech elements of an alien language, or they might even be laughing at the weird-looking thing floating in front of them. I had absolutely no way of comprehending any of the information that might be contained in those bursts.

It could be equally as strange when experienced from a Warper's point of view. Assuming that they were indeed able to intercept my thoughts psionically, I imagined how frustrating this awkward *not-quite* 'conversation' would be to them. It would be like trying to identify a unfamiliar piece of music played on an old-fashioned magnetic tape, running at one centimetre per week. My only real hope was to slow the chat down until some sort of basic mutual understanding could be reached. My frieze was still only partially complete, so it wouldn't be quite as useful as I had first hoped. However, the side facing *Aurora* was completely blank. It could serve as our 'Talking Wall'.

I searched around the base of the plinth, looking for something to draw with. A discarded fist-sized chunk of gold was the first thing that came to hand. I would have preferred a Stalker tooth, although it might be seen as a potential weapon in this situation. The gold would simply have to do for now. It was awkwardly shaped, although I managed to coax a reasonable representation of myself out of it onto the nanocrete wall. The Warpers watched intently as I drew, their expressions utterly unreadable. Next, I drew the pair of Warpers. After completing the image, I swam to one side and let them see what I had drawn. I pointed to my picture and planted my hand firmly on my chest. *This is me.* I pointed at the picture of the Warpers and then pointed directly at them.

*This is you.*

This simple action elicited a most curious response. Both Warpers rapidly flashed patterns across their mantles, making a series of short, rapid scissoring actions with their upper limbs. They were clearly excited by what they saw. Another micro-burst of static smacked into my head. Ouch.

*Ah. I think we might be making some headway at last. Excellent.*

I paused for a moment or so, wondering what concept I should depict next. Obviously, it would have to be an explanation of how I ended up on this planet. Working quickly, I drew an outline of *Aurora*. I pointed up at the sky. Next, I drew a circle, symbolising *Manannán*. I pointed to the Warpers, then at the circle. *This is your world.* I spread my arms wide, indicating everything around us, then pointed back at the image of the planet. Frustratingly, the Warpers displayed no indication that they understood what I was trying to tell them.

I drew *Aurora* again, only this time in a nose-down attitude, as if it was preparing to land. I drew a large quarter-circle in the bottom right corner, indicating that the ship was closer to the planet than before. I pointed to the complete circle, then back at the enlarged section. *This is your planet.* The next picture of *Aurora* was drawn quickly, only this time I had included the explosion. The last panel of this sequence was that of *Aurora* after it crash-landed in the ocean. I pointed north in the direction of the wreck. This time, the Warpers responded with that same scissoring motion I had seen before.

Finally, I drew the Lifepod floating on the ocean, adding a lone figure with its right hand raised in greeting standing on top of it. I pointed at the figure, then splayed my hand against my chest. *This is me.* For good measure, I pointed at the Lifepod and then back at *Aurora*. *This came from here.* More scissoring. Fortunately, they had toned down their telepathic 'shouts' to a far more tolerable level, so I was able to think a little more clearly at this stage. It's time for some advanced concepts.

I drew a single Warper, followed by an ellipse. I placed a little asterisk above the head of the Warper, then swam a short distance and began to draw another Warper. As soon as it was completed, I placed another asterisk above its head. Then I pointed at the Warpers themselves. *This is how you travel.* I pointed at the original *Aurora*, then pointed at myself. *This was how I travelled.* The Warpers scissored their forelimbs again in what I suspected was a gesture of comprehension.

So far, so good.

One of the Warpers moved forward and approached the wall. It began scratching a design in the nanocrete with the extreme tip of its forelimb. As the image progressed, I could see that Warpers

are able to use their forelimbs with surprising delicacy. Instead of terminating in a pair of rigid chitinous spikes, the lower ends of these appendages could be flexed and bent at will, providing these creatures with an unusual degree of dexterity. I couldn't imagine them being able to hold and use human tools with those forelimbs, although it came as a complete surprise that Warperts were able to use them in such a precise manner.

The Warper's drawing was complete. I recognised its rendition of Aurora's outline easily. I also recognised the chilling significance of the raised pair of talons the Warper had drawn beside it. *Aurora had threatened or attacked something.* The Warper moved back to face the wall, quickly adding a circle. Then it spread its forelimbs in an all-encompassing gesture. *Our world.*

This is a particularly thorny problem. I wasn't at all certain that the Warperts would understand that the accident (and remember, it *was* entirely an accident) was caused by *Alphard's* coronal mass ejection interacting with a stream of residual charged particles, expelled during the shutdown of Aurora's Alcubierre warp field. I stared numbly at the Warper's drawing, desperately wracking my brain for an acceptable response to its unmistakably blunt accusation.

Time for a quick lesson in stellar dynamics.

There was a huge potential for grave misunderstandings in what I was about to do. It was entirely possible that the Warperts had their own cultural view of how the Universe worked, and I was poised on the brink of revealing some uncomfortable (and possibly heretical) truths about its true nature. I drew a simple schematic of the *Alpha Hydrae* star system and its twelve main satellites, using the image of a stylised, pointed star to represent *Alphard* rather than the usual planetary circle. I looked up and pointed at the setting sun, then pointed to the star I had drawn. Four orbits out, I drew a Warper above the planet, pointed at it and spread my arms wide. *This is your world.* The Warperts appeared to understand.

I drew another hasty outline picture of Aurora, adding a few stick figures holding up their right hands inside the outline. *We came in peace.* Next, I drew the shape of a wave in front of Aurora's bow, followed by an image of the star that had another wave directly opposite the one in front of Aurora. This was followed by a separate image of the two waves colliding with each other, sending a much larger wave towards the circle representing Alpha Hydra 4. There appeared to be a silent conference between the two, accompanied by a subdued display of pattern shifts over their mantles. To emphasise my statement, I drew the star symbol and a pair of raised talons facing Aurora. *The star had attacked our ship.*

This statement had a definite visible effect on both Warperts. Instead of the luminous, vibrant shades of purple they typically displayed, the Warperts' outer mantles had now become an ashen, ghostly grey. They scissored their forelimbs slowly, then swept them backward in a graceful gesture that almost seemed like a bow. From where I'm standing, that looks like a genuine admission of regret. I repeated this gesture in my own clumsy fashion, intending to convey that I understood. If it were at all possible, I would have also offered my own gesture of apology for everything that had happened since *Aurora's* arrival.

The sun had almost completely set. I pointed at the sun, then described three-quarters of a circle using my whole arm. Then I pointed at the Talking Wall. *I will return here tomorrow.* The Warpers gestured that they understood, summoned a portal and then promptly vanished through it.

I was utterly exhausted by the time I made it back aboard *Gawain*. That wee chat had taken four and a half hours. I was badly dehydrated and ravenously hungry, although I didn't quite feel up to facing anything substantial yet. A couple of litres of water would be sufficient for now, so I'll wait to see how I'm faring once we've returned to *The Broch*. My head ached abominably, still suffering the after-effects of that first psionic blast.

Even so, I was delighted. An actual first-contact situation that didn't end in an interplanetary war. That will look impressive on my resume, at least. It had been a remarkably draining experience, although I was eagerly looking forward to tomorrow. I might as well fabricate some decent drawing tools and metallic colouring styluses before turning in tonight, if only to add some finer details to the next batch of drawings. Today's efforts were a little bit too '*yabba-dabba-doo*' for my taste, and I wouldn't want the Warpers to think that I'm totally incompetent in this area. However, the laser cutter and welding torch will have to remain in the toy box for the full duration. They look far too much like weapons, and they'd play merry hell with a Warper's optical systems.

When I returned to the monument the following morning, I found the Warpers already hard at work on their contribution to the discussion. I made my presence known as politely as possible, then moved a short distance away to give them enough clear space to continue working. Their picture was almost complete by the time I arrived, so I was able to get a fairly decent handle on the particular concept that they were trying to convey.

In truth, the Warpers had created something equally as intricate as a Mayan calendar stone or a Tibetan mandala. It is exceptionally detailed, and I marvelled at the level of craftsmanship they had employed during its execution. As for the amount of information that this pictogram contained, it could only be described as staggering. World-shattering, in point of actual fact.

The central image was that of some apparently immense creature. Its upper torso appeared vaguely humanoid, although there were definite signs that it shared kinship with both reptilian and cephalopoid life forms. Its head was of a similar design to the Terran hammerhead shark, with the facial structure of a Reaper Leviathan thrown in for good measure. Its forelimbs resembled a sea turtle's flippers, and the lower half of its body bore strong similarities to a giant Pacific squid. The impressive level of fine detail that the Warpers had used in depicting this creature seemed almost... *Reverent*.

Various creatures were arranged in a series of concentric circles around this central figure. Some I knew only too well, and there were others I had yet to encounter. The next circle out from the central image contained extremely large and solid-looking creatures that resembled a fusion of dragon and squid. Assuming that these drawings were roughly attuned to some arbitrary scale, these draconian squid were depicted as slightly smaller than the central figure, but were no less impressive. For want of a better name, I called them 'dragon leviathans'. On closer examination, I noticed a series of fine radial lines extending out from the central figure I had named 'Sea Emperor'.

At the end of each line, a ring of different species could be found. The Warpers were in the next ring, followed by subsequent rings containing Reefbacks, Reapers, Stalkers, Sand Sharks and Bone Sharks, along with many other unknown species. Shuttlebugs, Crashes and Bleeders were on the outermost rings. If I'm interpreting this drawing correctly, it appears to be an evolutionary sequence. However, that conclusion doesn't match the genomic information I'd obtained from JUNO, IANTO or the *Magellan* research logs. In fact, it seemed to be more like a graphic representation of a caste system.

I almost missed a crucial clue. There was a small design beside the Sea Emperor's picture. My eyes had skipped over this object at first, since it appeared to be a purely artistic ornament. I moved closer to get a better look at this design element. This strange glyph resembled the familiar representation of the DNA molecule. An even closer examination revealed that this molecule possessed *four* strands. Three distinct helices were wrapped around a central core filament. *Impossible.*

"JUNO." I said softly, "Are you getting this?"

"I most certainly am, Captain. It is our considered opinion that you are seeing a representation of something truly miraculous. The entity you have named 'Sea Emperor' appears to be the progenitor of every species currently living on this planet. He is the actual Alpha and Omega of all life here."

"Do you mean that in a strictly metaphysical sense, JUNO?"

"Negative, Captain. IANTO has confirmed that all specimens collected by the *Magellan* expedition share the same basic genetic structure. All life forms of *Manannán* are merely highly specialised variants of a unique primal genotype. An ancient genetic precursor organism. In this case, it is the Sea Emperor. Its DNA structure is more mutable and significantly more genetically flexible than Terrestrial DNA. Theoretically, a Sea Emperor could sire an entirely new species with each new mating."

"I'd say he's more than a king, but less than a god... But what other organism would it mate with?"

"Our consensus is that Dragon Leviathans are exclusively female, and appear to be of the same species as the Sea Emperor. Sexual dimorphism would account for their differing physical appearance. They are effectively the brood mothers for the entire planet's life forms. The existence of a single Alpha male organism and multiple females would ensure long-term stability in the core genome, allowing the Sea Emperor to maintain precise control of the evolutionary process. This also explains how the planet is able to produce new species within a remarkably short time. As the need arises, the Sea Emperor simply designs a new species capable of dealing with rapidly changing environmental conditions. Since the resultant organisms are only equipped with conventional dual-helix DNA, they will continue to breed true to their species. At least, until the Sea Emperor introduces a new variant of the species. Although this is an elegant biological adaptation, its main drawback is that it renders the Sea Emperor and therefore, all other life on this planet extremely vulnerable to outside interference."

"I'll bet. It would certainly explain why Torgaljinn Corp would want to capture a Sea Emperor and effectively hold it for ransom. I believe the term 'total compliance' was bandied about in that



message to Paal Torgaljin. Anyway, we can discuss this later. It looks like the Warpers have finished telling this part of their story."

I studied the image closely for at least ten minutes, then turned to the Warpers and gestured that I understood what they had told me so far. My response was to start drawing a similar picture, only this time it involved various items of technology. I started with the (now) customary image of me standing next to a Fabricator console. I showed the Fabricator making a range of tools and objects. The second image echoed the Warper's genesis saga. I drew the same image as before, but added three 'friendly' human outlines appearing below a Fabricator unit. Next, I showed *De Ruyter's* attack on the planet and its subsequent destruction. The final image of this sequence showed all three androids and me replanting and restocking the ruined areas with sea life.

One of the Warpers delicately traced a talon over the image of an android. It looked at me inquiringly, as if to say "*Why do these ones look different to you?*"

This was a tricky one. *How do you explain the concept of a machine to an intelligent species that doesn't use machines?* I pointed at *Gawain* standing nearby, then swam over to retrieve a Builder tool and some raw materials. I moved over to a clear patch of ground, then fabricated a foundation slab and a basic habitation module. Apparently, the Warpers were astonished by this demonstration. Naturally, I only had an intricate series of talon motions and rapid colour changes to base this impression on, although I could safely say that they were basically impressed.

"JUNO, it looks like the Warpers would like you guys to make a curtain call. Round up DIGBY and IANTO, and then head over here as soon as you can."

"Affirmative, Captain. ETA, ten minutes."

To pass the time, I started work on another image sequence depicting how the floating islands were formed. To my surprise, the Warpers crowded in to watch more closely. Judging by the amount of excited gesticulation and flashes of colour on their mantles, I'd have to say I had their complete attention at this point. I drew a Warper waiting at the water's edge, followed by an image of me standing in the shallows, holding out a helping hand. Another Warper was added standing beside me.

Their reaction was nothing short of ecstatic. I drew a quick sketch of the Sea Emperor, followed by me making the same 'helping hands' gesture. It wouldn't be too long before the crew rolled up, so I directed the Warpers' attention to their anticipated point of arrival. Sure enough, *Aegis* sailed slowly into view and stood off 50 metres from our position. The three androids exited the *Cyclops* and swam over to greet the Warpers. One by one, JUNO, IANTO and DIGBY raised their right hands in greeting. The Warpers seemed puzzled at first, then made their own dignified gestures of welcome. I'll bet that the Warpers' initial confusion stemmed from being unable to get a psychic 'read' on the androids, although they seemed to be fairly comfortable in their presence now. I called IANTO over, leaving the other two to interact freely with the Warpers.

"Okay IANTO, I want a fairly detailed biome map of *Manannán* drawn here. Please indicate our current position and that of *The Broch* to provide initial points of reference. Name the biomes in Anglic Standard, in case our Warper friends have their own names for these areas. If they do have a written language, this might be useful as a translation key. I'm definitely interested in establishing a

Human/Warper lexicon. Art may nourish the soul and all, but it makes for some bloody long-winded conversations. See what you can do."

"Affirmative, Captain. JUNO and DIGBY are currently attempting to analyse the Warpers' communication modes to determine whether some mutually acceptable method may be devised. We shall keep you fully apprised of any developments."

"Good work, mates. I'm going to slip off to *Aegis* for a quick brew and a bite to eat. I'll be back in about 10 minutes or so."

Feeling generous with myself, I prepared a second mug of tea. These encounters with the Warpers are an exhausting business, although if we could come up with a communication system that didn't involve a mix of hieroglyphics and calisthenics, that would be absolutely A-One in my book. Ideally, we should be able to communicate telepathically after a bit of careful practice, although I'm rather glad that we can't. Human minds have this nasty habit of wandering through dark territory on certain occasions, and it wouldn't do to have one's most primitive subconscious thoughts and emotions laid open and exposed to that level of scrutiny. There was also the fact that my mind couldn't physically handle much more than the telepathic equivalent of a surprised shout. Even a mildly heated argument with Warpers would probably lobotomise me. Speaking of which, I'd better drink up. It's about time to return to the Talking Wall.

Cheers.

IANTO's map is about fifty per cent complete. He has accomplished more in fifteen minutes than I could have done in an hour. I started another picture of the Sea Emperor next to IANTO's map, intending to use this arrangement to locate the Torgaljinn holding facility. Our tau-meson detection system has become something of a non-event, since the best tech that we could devise has a ridiculously short detection range. We're talking well under ten metres here. At this stage, it's probably better to come straight out and ask the Warpers for the Sea Emperor's location, rather than tapping around blindly in the deeps with the technological equivalent of a white cane.

It's a safe bet that the Torgaljinn Corp base would be extremely well established by now. They've had over seven years to dig in and make suitable preparations to keep prying eyes away from their operation. One of the encrypted log entries also mentioned an automated defence system guarding the facility, but contained no information about its nature and the size of the area it was intended to protect. My best guess was that the defences are based on semi-autonomous torpedo launcher turrets, blue-green lasers or hypervelocity cannons. Definitely not geared towards non-lethal restraint or repulsion.

The Warpers became excited again when they saw that I was drawing the Sea Emperor. IANTO was making good progress, with only the lower western region still to complete. Roughly another ten minutes more at this pace, and he would be done. I finished off my sketch, pointed at the Sea Emperor then at the incomplete map. The Warpers didn't seem to comprehend at first, so I had to show them where we were now in relation to the image on the map. JUNO swam forward and made some unfamiliar hand gestures at the Warpers, apparently explaining in some detail what I was attempting to say. It worked. One of the Warpers swam over to the map and pointed vaguely in the unfinished area. Well, that narrows the search area down considerably.

The second Warper had started on another drawing. It resembled a tightly-packed cluster of oddly angular blocks. Almost reminiscent of a old Terran city skyline, in fact. By the time it had finished, this structure had taken on the appearance of an ancient fortress. Complete with a working dungeon, by the look of it. There was a huge cavity below the fortress, and the Warper had drawn the Sea Emperor, imprisoned under a dome-like structure. That would have to be the tau-muon phase shield. I was beginning to understand what was happening here. The phase shielding would prevent any Warpers from entering the Sea Emperor's chamber and assisting in its escape. Possibly, the Sea Emperor could summon its own warp portal once the shield had dropped, although that might be far too much to hope for.

I guessed that the Torgaljin snatch team had partially sealed the entrance to this prison chamber after securing the subdued Sea Emperor inside the phase shield. There might even be a conventional force-field in operation as well, although I'm not certain that a basic force field would stop a Warper from passing through. No energy impingement is involved. However, it seemed that the tau-muon barrier's sole purpose was to prevent Warpers from entering that chamber.

From what I'd seen thus far, this was beginning to look like a ridiculously dodgy rescue operation. No idea of the disposition of the base's defences, no idea of what level of armed opposition we could expect and no expectation of any significant backup. Rather than dwell overlong on all of the negative aspects of this mission, I decided to concentrate on making the most of what we did have.

*Four Gen II ExoSuits, three whip-smart androids, two Warpers... And one crazy Martian Scotsman.*

We spent the following day preparing for the assault on the Lava Castle. The ExoSuits were given a once-over (twice), reactors fully charged and all systems fully checked out. Once we left *The Broch*, there would be no turning back. Everything we needed had to be already on hand at the other end. Four canisters of Anesthazine gas were loaded into each suit, along with rolls of hull tape, spare power cells and batteries, welding torches, laser cutters, medical kits and everything else short of the galley sink. The last items to be stowed raised some serious concerns among the AIs.

"Flechette rifles and a Gauss cannon? Captain, you are aware that we cannot harm human beings. These items are not necessary to the success of the operation. The same objectives can be achieved by using non-lethal means. I respectfully urge you to reconsider this decision, Sir."

"JUNO, IANTO and DIGBY. I fully appreciate the constraints of your ATG protocols. I would never order any of you to directly inflict harm on a human being, or indeed any other sentient form. However, we are heading into harm's way. Make no mistake of that. You will carry these weapons and use them without hesitation when an appropriate target presents itself. That is an order. How you choose to interpret this order is entirely your own concern. Report for duty at 0600. Dismissed."

We still needed a drop-ship. Working with JUNO, I modified the Gen III *Cyclops* design to incorporate four docking stations to accommodate all of our ExoSuits. Although the suits could make it to the insertion point under their own power, I conjured it would be best to have something capable of making a hasty retreat waiting outside. Five knots versus one hundred and twenty. No contest. The other three *Cyclops* were also coming along as heavy fire support, remotely piloted by JUNO and IANTO. They would form part of the nasty surprise laying in ambush for any would-be pursuers. I named the new vessel '*Taranis*' and ceremoniously handed command over to DIGBY.

Before turning in for the night, I sent a squadron of recon drones to scan the Inactive Lava Zone corridor. The Warpers had positively identified this location as the best of several routes into the target area. The drones were currently creeping along the seafloor, searching for passive sonar arrays, proximity sensors, magnetic anomaly detectors and concealed defence turrets along our projected approach track. If we could maintain the element of surprise right up to the other end of the ILZ corridor, we were halfway home and hosed. JUNO had arranged for the Warpers to meet my strike team at the head of the ILZ corridor. Hopefully, they should be able to get us safely through the convoluted tunnel system leading to the Lava Castle. Small as their role was, the Warpers were still taking a huge risk in aiding us.

By 0615, all four ExoSuits were secured aboard *Taranis*. *Ulysses*, *Aegis* and *Red Dragon* had already set sail under remote AI command to scout ahead of the dropship. As soon as they were in position, *Taranis* would move in, drop the ExoSuits and fall back to a safe distance behind their defence line. We came in nice and slow, not wanting to alarm the Warpers. JUNO had told them what to expect, although I wasn't sure how she'd conveyed the fact that four *Cyclops* would be attending this party. That would be enough to scare the living Hell out anyone who knew of their capabilities. After this Sea Emperor kerfuffle has died down, I'm definitely going to get JUNO to teach me everything she has discovered so far about advanced Warper communications. If I'm about to meet *Manannán's* version of The Big Feller, I'd like to say at least a few coherent words on my own behalf.

There were four Warpers waiting for us. JUNO explained that each portal could only be sustained for approximately ten seconds or so, depending on the psionic strength of the Warper who summoned it. I welcomed the Warpers, but also wanted to thank them for their assistance. I asked JUNO to translate, although she politely declined. She had a perfectly good reason for doing so, too.

"Activate your holographic camouflage, Captain. Select 'Warper', then 'Translate'. You will be able to convey your meaning directly via the speech to gesture conversion facility. However, please be advised that our translation lexicon is far from complete. Anything that cannot be accurately translated will not be transmitted to the Warpers. Your hologram will not respond to invalid input."

"That's extremely bloody handy. A right canny piece of work, Lass." I said admiringly.

"Thank you, Sir."

I suspect that seeing the hulking form of *Gawain* suddenly transform into a plus-sized Warper might have surprised them just a wee bit. I copped a decent blast of psionic static for pulling that stunt, although I was able to ride it out without losing my breakfast. I hastily apologised to the Warpers, then told them what their role in this raid involved. They were strictly non-combatants in this operation. All they had to do was get us inside, and then find somewhere safe until we were ready to release the Sea Emperor. Whatever happened beyond that point was entirely our problem.

Zero hour.

On my signal, all four Warpers opened portals and slipped through. JUNO, IANTO and DIGBY followed almost immediately. I lagged slightly behind by about one second, more than a smidgeon

concerned about how this spatial jump would affect me. In the end, I figured I would either wind up butt-naked in Pod 5 or somewhere on the other side of the ILZ corridor. *You know what? Stuff it.*

### ***Allons-y!***

The transition was nowhere near as gut-wrenching as I thought it would be. Uncomfortable, most definitely. It was like the worst elevator lurch you would never want to experience. Even so, I was still in one piece, breathing and in possession of most of my wits. Not partially embedded in a lava wall or the Warper that was floating directly in front of me. A good start. I took a few seconds to regain my bearings, then addressed the crew.

"Okay JUNO, IANTO and DIGBY. Fan out and find me something that doesn't want us here."

"Scanning commenced. Searching for automated surveillance and defence systems. Attention. Multiple hostile targets located. Alterra technology signatures detected." JUNO said curtly.

I had a sudden thought. "Is it possible to make a dive on one unit and feed the entire network false surveillance data?" I inquired, "Otherwise, I'll simply let fly with a few dozen rounds from *Long Meg* here." I said, swivelling the Gauss cannon on its external mount. I'd prefer not to, actually. That would be as ill-advised as ringing the Lava Castle's front doorbell.

"That won't be necessary, Captain." JUNO said, "The defence system's AI is an obsolete ALECTO Mod One series. This type was considered to be somewhat sub-optimal in terms of base intelligence, even during its own time. It should not pose any significant obstacles to infiltration."

"Okay, JUNO. It's your call. Make the dive if you can, and then fox the Hell out of those sensors."

"Affirmative, Captain. Signal strength is nominal. Negotiating with external system. Stand by."

We continued to advance slowly in staggered line abreast. The red pips on my HUD suddenly turned green, indicating that JUNO now had complete control of the Lava Castle's outer defences and sensor network. That's one barrier down. Now we had to find an entrance to the base itself, preferably one that was large enough to accommodate an ExoSuit or four. A sub bay would be ideal, but I had no idea of its probable location. This area is almost devoid of any significant marine life and visible light was nothing more than a fond memory. What little infra-red light this area had came from small extrusions of magma pooling in the countless cracks and chasms scattered across the seabed. Now I truly know what 'gloomy' looks like.

Even with JUNO slapping a virtual blindfold over the base's sensor array, it probably wouldn't be a good time to use active sonar. With no large sea life to provide any useful level of background noise, even our passive sonar was having a rough time of it.

"What's it like in there, JUNO?" I asked cheerfully.

"Extremely cramped, Sir." JUNO quipped. "Whoever designed this AI's systems architecture had absolutely no grasp of the fundamentals of heuristic programming. There's barely enough material in the core processor matrices to make a decent pair of ear-rings. In all honesty, I've seen far more adequate data storage and transfer allocations in a toddler's game console."

"How about ICE? Anything nasty guarding the access channels to the base's main systems?"

"No Intruder Countermeasure Entities are detected, Sir. I shall attempt to gain access... Uplink successful. Transmitting core data stream to your tactical display now, Captain."

Someone in the Lava Castle had their head properly screwed on. The main sub hangar access tunnel lay on the opposite side of the structure, effectively shielded from frontal assault by the sheer amount of solidified lava forming the base of this natural feature. According to the base schematics, the Lava Castle was honeycombed with wide, high corridors and cavernous rooms. Some of the smaller side passages and personnel berths might be an awkward fit for the ExoSuits, although we'll be well and truly deep inside the base before this even becomes a problem.

I managed to identify the critical structures we would need to strike first. Life Support, Barracks and Armoury. Current base complement was 150, including a platoon of 40 armed security personnel. Most of the remainder would be scientists, technicians and support staff, plus a handful of admin drones and upper-echelon management types. Even so, it doesn't take much training to pick up a smart-weapon and point it in someone's general direction. Consider all 150 of them as a combat-capable force, and adjust the overall strategy accordingly. Anesthazine gas could account for most of our potential adversaries, although we still might face the prospect of some ugly little squabbles during the mopping-up operation.

Now that JUNO had the surveillance system pinned down, we could safely pick up the pace a little. The ExoSuits lifted clear of the seafloor and jetted over to the Lava Castle. I sent out a micro-drone to scout ahead, searching for manned defence turrets. Torgaljin Corp were using a hodgepodge of Alterra tech and their own home brand, obviously filling in the gaps with a physical human presence.

"All units, engage optical camouflage. Rig for blackout."

Finally, the sub bay access tunnel loomed before us like a gaping maw. I was relieved to see that the entrance was not equipped with sea doors, and that the tunnel appeared to be clear for its entire length. The entrance was guarded by a pair of manned *Sentinel* HV cannons, and I could clearly see the glow of red light coming from the gunners' cabin viewports as we stealthily passed by. There was a fairly good chance that the gunners were otherwise engaged, having settled comfortably into a daily routine where almost nothing ever happened. The absence of any large sea life in the area might be reasonably attributed to bored gunners taking pot-shots at whatever passed within range. Even so, our approach had to remain completely undetected for as long as possible. We will also need to deal with those turret crews first. No sense leaving our one and only escape route guarded.

The next bit was slightly more tricky. The base's moon-pool was pressurised to a depth of 1,200 metres. That meant airlocks had to be traversed once we got clear of the water. If they weren't hooked into the security system, I'd be more than pleasantly surprised.

"Can you over-ride the airlock activation alarm, JUNO?" I asked, "I'm assuming that all underwater operations in this base require some sort of official clearance. Somebody's bound to investigate once those airlocks are operated."

"I can easily over-ride the alarm, Sir. However, the sound of the airlocks cycling will undoubtedly draw unwanted attention to our presence. How should I proceed, Captain?"

"Best to leave the alarm alone then, JUNO. If they twig to the fact that you're manipulating their systems, we'll be up to armpits in Belter mercs in no time at all. Just act casual. We'll be fine."

A scan of the hangar's interior revealed at least ten technicians were working in the vicinity. We jetted over to a large submerged lifting platform and pre-positioned ourselves carefully before activating the lift. With any luck, its sudden appearance wouldn't generate too much interest. Our ExoSuits were still concealed with optical camouflage, although there might be some visual blurring effects as we exited the water. Here we go. Fingers crossed.

The platform's hydraulic motors whined, and it slowly began to ascend. As my suit's viewport broke the surface, I noticed a few heads turning curiously in our direction. Thankfully, most of them turned back to whatever task they had at hand. However, one technician was walking purposefully towards the elevator.

"Uh-oh. We have a stickybeak inbound. Get ready." I said quietly.

The platform came to a gentle stop. I looked over at DIGBY's suit, *Percival*. Sure enough, the suit's camouflage field rippled as it attempted to adjust to the new scenery around it. The technician frowned suspiciously, reaching for the communicator hooked onto her belt.

All four ExoSuits de-cloaked simultaneously.

The technician gawked at our towering suits, her mouth gaping comically.

"Nĩ hảo, Señorita." I said, smiling wickedly. "Light 'em up."

There was a brief burst of stasis fire from all four suits. I disengaged from my haptic control harness and climbed out of the suit. DIGBY, IANTO and JUNO followed immediately, fanning out to begin trussing up the incapacitated technicians with hull patching tape. If an old trick works extremely well in front of a new audience, you might as well stick with it.

"All ExoSuits in overwatch mode. Guard the exits."

The unmanned ExoSuits braced to attention, then rapidly moved out to secure the area. The androids had our first batch of packages neatly secured within minutes. As their stasis fields collapsed, each tech was given a generous whiff of Anesthazine, sending them straight to Sleepytown without the slightest hint of fuss. They would be out for at least six hours, which gave us more than enough time to cause some serious mischief in this base.

I grabbed DIGBY and pointed him in the direction of the portside turret access. I sprinted over to the starboard airlock, paused just long enough to catch my breath and opened the first hatch. The compartment took about 30 seconds to depressurise. I tensed, waiting for the access light to turn green. When it did, I opened the inner door and entered. The gunner swivelled around in his seat.

"Hoy, you're early, *boet*. This watch isn't supposed to finish for another..." he trailed off uncertainly.

I grinned broadly, flooding the entire compartment with Anesthazine. *Goodnight, Jimmy.*

DIGBY had dealt with his target in a similar fashion, although he had the good fortune to find the other gunner enjoying a quiet snooze on the company's time. He simply opened the valve on his gas

canister for a few seconds and then walked out. Mischief managed. Now we had to do the same thing, but on a considerably larger scale. For that, I would need to find the base's Life Support systems. The three androids stood waiting by their ExoSuits, ready for the next phase of the operation.

"All done here. We'll leave the suits out here to keep watch on our backs. Okay, let's head inside."

Life Support was easy enough to find. We had entered the main base facility through one of the man-hatches rather than using the hangar airlock. Since we still had the element of surprise on our side, there wasn't much point in having our ExoSuits clomping along echoing corridors and generally disturbing the peace. If we needed them, they could be brought to our position under remote command without any trouble at all. The androids looked mildly uncomfortable carrying their flechette rifles, although they diligently brought them to bear whenever they checked around a corner. I had a slightly tougher time of it. My Gauss cannon was fairly heavy and more than a wee bit on the cumbersome side.

We were able to reach the Life Support installation without incident. Six technicians hit the deck in a most refreshing display of compliance. The androids promptly gassed the techs and had them hog-tied with tape within seconds. I strolled over to the main atmospheric processors and set to work.

Like any other sealed ecology's atmospheric replenishment plant, this system had equipment for adding various chemical agents to the breathing mix as required. This process is intended to add pathogen-specific decontaminants, disinfecting agents and deodorising compounds to the recirculated air, mainly to keep conditions vaguely tolerable for the inhabitants. In the pressure-cooker environments of a starship or a sealed colony working the long haul, even a pervasive body odour might be a potential trigger for violent conflict. To this end, certain chemical agents were used to prevent hostilities from getting out of hand. Normally, incapacitating gases such as CS, CN-20 and VOMEX are used to take most of the fight out of combatants. In extreme cases, high-potency ORC aerosols and non-lethal nerve agents were vented directly into the atmosphere. However, this was a Torgaljin Corp base. Personnel are generally regarded as replaceable parts.

I barely suppressed a snarl of disgust. The base's 'Pacification' menu included HCN-5K. Hydrogen cyanide gas, at a concentration of 5,000 ppm. One hundred per cent lethal within seconds. Before proceeding with my plan, I removed the offending cylinders from the injection manifold. Reckon I might be able to arrange an unfortunate 'accident' while relocating these villains.

*Preferably over an active lava vent.*

Once the cylinders of Anesthezine were connected, I gave the heads-up to the androids. The plan was to give the gas a full twenty minutes to spread throughout the entire complex, then commence mopping-up anyone still standing. Of course, it wouldn't be necessary to bind everyone before proceeding with the actual rescue operation. We'd probably run out of time well before we ran out of hull tape.

Twenty minutes later, we moved out. Unfortunately, we couldn't have it all our own way. One section had its own atmospheric plant, entirely separate from the main facility. I conjured this would be where we would find Paal Torgal and his closest chums. Executive territory. JUNO scanned the base's surveillance feeds to verify that almost everyone was out for the count.



"One hundred and forty-three personnel accounted for, Sir. Unable to obtain surveillance footage of executive accommodation unit. Data feed has been externally secured at the source."

"Well, we've had a damned good trot so far. How many security personnel were laid out?"

"All of them, Captain. Most were in the mess hall eating breakfast at the time. One squad was dispersed throughout the facility on guard duty."

"Good. DIGBY and IANTO, secure all of the Security contingent's weapons. De-res them at the armoury's Fabricator terminals, then completely zero the entire inventory of blueprints. Recursive search of the facility's files for any backup copies. Report back to me outside the Executive accommodation area as soon as you're done. JUNO, you're coming with me. Better bring the ExoSuits up behind us as fire support. Got a peculiar feeling we're going to need them."

"Affirmative, Captain."

## CHAPTER EIGHT

Presently, IANTO and DIGBY came jogging briskly up the central corridor. JUNO and I were hunkered down and keeping watch in a spacious atrium outside the Executive accommodation precinct. Whatever else I felt about Belters, I had to admire their construction techniques and the efficient use of space within this Lava Castle of theirs. This was a natural consequence of their skill at creating habitable spaces inside asteroids, often concurrent with extensive mining operations. Belters as a whole are not huge fans of enclosed spaces, so no effort had been spared in creating the illusion of a light and airy atmosphere in this base, in spite of the oppressive gigatonnes of midnight-black lava surrounding them.

In its own way, the atrium is a wistful re-creation of the lost forests of old Terra, although all the plants it contained were native to this planet. Some species were entirely unfamiliar to me. I assumed that they may have been genetically manipulated, recalling having read that Paal Torgal's son, Baat was a fairly savvy biochemist. If this Baat chap's a creative sort, he might also be capable of discussing this Sea Emperor business in a calm and reasonable manner. I most sincerely hope so.

Our ExoSuits advanced slowly through the atrium in a close box formation, marching two abreast. The three androids and I were dismounted and on foot in the centre of their protective square, ready to add our firepower to the fray. We were definitely in Executive territory now. The dense Aramid fibre synthetic grass covering this area muffled most of the sound coming from the ExoSuits' heavy footfalls, although any halfway decent seismometer in this base would be going completely nuts by this time. I still couldn't shake a nagging suspicion that we were walking straight into an ambush, although I gained some comfort in knowing that the opposing force would be slightly more manageable, at least in terms of numbers. Taking on all 40 House Torgal mercs and possibly some talented amateurs might be a bit too much to ask of our plucky '*Strike Team Aurora*'.

Surprisingly, we managed to traverse the entire length of the atrium entirely without incident. Not quite so surprisingly, the ambush we'd been waiting for was actually around the next corner we turned. There were two or three seconds of stunned inactivity on both sides, then all hell broke

loose. We were facing three, possibly four security troopers at most, and they were all wearing respirators. Hmmm... We might actually need to do some honest work to get past this lot.

*Bummer.*

"Mount up!"

All ExoSuits ceased to advance and squatted low in their dry-land boarding configuration. The foremost pair commenced rapid fire with repulsion cannons, mainly to keep the defenders' heads down as we climbed aboard, but also to give the defenders a more accurate idea of what they were facing. As soon as we were all safely aboard, our advance continued purposefully. The security strongpoint was overwhelmed with ridiculous ease and to my surprise, we found only three terrified pen-pushers cowering behind its ballistic screens. Rather than go through the usual name, rank and serial number business, IANTO simply reached down, tore off their masks and gassed them to oblivion. Just for the record, riot shotguns don't do an awful lot of damage to ExoSuits. However, if they had they been using just one Gauss cannon, this skirmish might have had an entirely different outcome.

DIGBY had been guarding our six while we were finishing up with the Spartans of the *101st. Chairborne Rangers*. He was the first to spot the pack of creatures rampaging through the complex's main atrium, heading straight for us.

"Captain! Multiple large life forms inbound! Six contacts; moving very fast, no thermal signatures, acoustic profiles do not match any known species. Potential first contact with new life forms."

IANTO had dismounted and was dragging the unconscious non-coms into a utility room just off the main corridor. JUNO and I headed back to DIGBY's position as quickly as the ExoSuits could carry us. We arrived just in time to catch our first glimpse of these new creatures. Each was the roughly size of a mid-sized land-car, and they moved wickedly fast. It took at least fifteen seconds before my tactical HUD compiled enough data to display a composite image of one, extrapolating a single creature's appearance from the lightning-fast blurs of motion seen as they rushed towards us. This situation did not look good at all.

"Defence field, maximum discharge!" I yelled, "IANTO! Get yer bloody bahookie back here!"

The first pair to reach us were repelled by an EDF burst. JUNO opened fire on the closest one, driving it back under a constant barrage from her repulsion cannons. The creature appeared to shrug off any actual ill effects of this pounding, and it was only the sheer amount of graviton energy being poured into it that kept it at bay. Any soft-bodied creature would have been turned into a molecule-thin greasy slick by this time, although it seemed these creatures were made of far sterner material.

Our assailants resembled a cross between a robber crab and a mantis shrimp equipped with oversized, granite-hard boxing gloves. For now at least, they circled warily, as if sizing us up as opponents. Occasionally, one would dart in and take a vicious swipe at one of the ExoSuits. Somehow, IANTO broke through their cordon and joined our ranks, just in time to repel another particularly spirited attack. This was no bloody good at all. It required the combined force of at least two pairs of repulsion cannons to beat back a single attacker. They could easily keep us bottled up here until all of the base personnel revived.

"IANTO, what do you make of these beasties? Have you seen anything like them before?"

"Negative, Captain. This is an entirely new species... Wait. I am detecting a number of anomalous electrochemical and thermal readings in their physiology. Scanning... Please stand by."

"Best make it *extremely* quick, Laddie. Looks like we're all about to be tag-teamed in a three-way."

"Sir, these creatures appear to be a completely new native species. No known precursor organisms have been discovered to date. Please be advised that they are also genetically enhanced and cybernetically augmented. Someone is physically controlling their actions." IANTO said emphatically.

"I need some new options, people... What can we do here? EMP?"

"Negative, Captain." IANTO said grimly. "The pulse discharged by the ExoSuit's EDF systems should have been more than sufficient to disable any electronic devices implanted or attached to the creature's body. One might reasonably assume that the controllers are EMP-hardened to prevent this particular countermeasure from being used against these creatures. I fear that we have no other options remaining but to employ lethal force in this case. What are your orders, Sir?"

"Fall back to the Plaza at the entrance to the atrium. They're using the foliage as cover. Our best bet is to draw them out into the open." I said, opening fire on one that had tried to blind-side me.

The ExoSuits probably wouldn't withstand much more than a couple of hits from one of these creatures. One smashed its way through one of the atrium's minor support pillars in frustration, sending huge chunks of basalt flying in all directions. That pillar was four metres wide at the base. These 'Rockpunchers' were probably the toughest things we'd ever faced. No disrespect intended to any Reaper Leviathans in the audience, mind.

"Sir, I have located the subcutaneous control devices implanted in these organisms. Dorsal surface, zero point five metres from the main cervical process. Depth, 200 millimetres. Information transmitted to your tactical HUD." IANTO said.

The Rockpunchers surged forward, preparing to press home their attack. All four ExoSuits were now unloading a constant barrage of repulsion cannon fire. JUNO fired a stasis pulse into the jostling mass of armoured chitin. It had no effect. Only one explanation for that. Their controller modules were equipped with Alterra Corp stasis over-ride devices. Most definitely an '*oh, crap*' moment'.

"Stasis field is ineffective, Captain. I strongly recommend that you engage the MARTIAL protocol." JUNO exclaimed urgently.

No choice whatsoever. "All units, initiate MARTIAL protocol. Selkirk, Alexander F."

All three AIs simultaneously opened fire with their flechette rifles. The air buzzed with a swarm of minute tungsten-tipped darts, creating a lethal cloud capable of shredding an unarmoured human being into a red mist. The Rockpunchers simply hunkered down, protecting their vulnerable facial parts with the clubbed stomatopods that formed their fists. This attack halted their advance, but there was a definite limit as to how long we could hold them with this tactic. Ammunition.

DIGBY spoke up. "Captain, I believe that I can solve this problem. I shall require your Gauss cannon."

"There's no need to kill these creatures." I said firmly. "They're not responsible for their actions. Wound them if you absolutely must, but do not cripple them."

"Sir, I only intend to disable their control implants. Do I have your permission to proceed?"

"Hell yes! We're running out of time, and we're entirely out of options. Go for it."

DIGBY's ExoSuit removed the Gauss cannon from *Gawain's* external mount. The android climbed on top of *Percival*, straddled its hatch and hooked his feet into the suit's docking points. The suit passed the cannon up to him. What followed next was nothing short of incredible. DIGBY manoeuvred the suit into a firing position directly in front of our formation, literally 'surfing' its upper structure as the suit moved. He quickly adjusted the cannon's power settings, then brought the weapon to bear. The Rockpunchers were beginning to stir once more, slowly uncurling from their defensive posture. JUNO and IANTO immediately opened fire, keeping them tightly buttoned up inside their carapaces.

The Gauss cannon whined ominously as its capacitors spooled up, preparing to fire.

DIGBY fired, striking the closest Rockpuncher squarely behind its heavily armoured shoulder plates. The effect was instantaneous. It dropped to the ground like a sack of bricks, completely inert. The remaining Rockpunchers appeared to go into spasms, as if they were desperately fighting against a powerful external influence. DIGBY shifted position, his ExoSuit *Percival* dancing a graceful *salsa* as it dodged and weaved, compensating for the erratic gyrations of these creatures. Five seconds later, DIGBY fired again with the same satisfying result. JUNO and IANTO fired another short burst at the others to keep them cowed while DIGBY sniped each one in its turn. Although it was powerful, the Gauss cannon had a capacitor recycle time of five seconds, making this weapon a dubious proposition in a single-handed firefight. Thirty seconds later, it was all over.

"Are they dead?" I asked, tentatively nudging one with *Gawain's* right foot.

"Negative, Captain. Scanning indicates that a powerful sedative agent was released into their bodies as a side-effect of the command module's destruction. I assume that this is a fail-safe device incorporated into the device, intended to subdue the creatures in the event of a systems failure."

"Makes perfect sense to me. You wouldn't want these particular hoolies going on a rampage in an undersea base. We'll drag them back to the sub pen and toss them back in the water. I conjure they'd rather be somewhere else when they eventually wake up. I'd certainly feel a whole lot safer with them out of the picture."

"I concur, Captain." IANTO said. "Without any obvious threats in their immediate area, their most logical response would be to return to their native habitat without delay. However, I cannot guarantee that they would not return. Insufficient data exists for this species."

I walked over to DIGBY's ExoSuit and bowed respectfully. *Or at least, my suit did.*

"Your Mecha-jutsu is strong, DIGBY-san. You have brought great honour to our *dojo*."

From his lofty perch atop *Percival*, DIGBY bowed in return. "*Hai. Domo arigato gozaimasu, Sensei.*"

"Right, let's chuck these lobsters back. Mum won't let me keep 'em." I said cheerfully.

Twenty minutes later, we exited the main airlock and headed back to the atrium. By my count, roughly four and a half hours remained until the Lava Castle's inhabitants started to regain consciousness. They wouldn't be in any particular shape to do much to impede our efforts, but I'd prefer to keep any collateral damage to base personnel as close to zero as humanly possible.

I gazed at the massive blast doors, stroking my chin thoughtfully. Two metres thick, faced with a refractory ceramic coating that would make it hard going for the most powerful laser cutter we had. The hinges and shot bolts scanned as case-hardened titanium alloy, faced with a dense layer of boron nitride. The locking mechanism was a masterpiece of high technology. Full-spectrum biometric scanner, presumably keyed to the DNA of those folk who had sole access beyond this point. Superconducting mag-locks, power operated door mechanism. In a word... Tricky.

Instead of wasting precious hours fiddling with this dauntingly impressive barrier, we simply punched a hole in the three-metre thick basalt wall with our Terraformers. Problem solved.

*Moral: Never, **ever** mess with an Engineer.*

We stepped through the wall and found ourselves in a slightly smaller atrium. Some attempt had been made to soften the stark brutality of the black basalt, although its artistic merits were entirely lost on me. To be honest, quasi-'Soviet Realist' images depicting asteroid mining didn't really do it for me, I'm afraid. It's nothing more than soul destroying, backbreaking, man-killing hard labour. There's no way in the 'Verse anyone could aesthetically glorify that.

We dismounted from the ExoSuits and set them to overwatch mode. Most of the doors were too small to admit them, and we were well beyond the point where we actually needed their firepower. At the very most, only four Torgaljinn operatives were still conscious. They might have some armed service or security robots at their disposal, although I sincerely doubted it. Not even a single automated defence turret guarded the approaches to our objective. JUNO had already taken care of that.

Torgaljinn Corp was well known for its 'hands-on' approach to primary industry, and its aversion to anything that concerned AI systems bordered on a fanatical hatred. Even their autonomous planetary mining system STARFISH was at the lowest end of the AI intelligence spectrum. Presumably, its existence was tolerated purely for the sake of increased productivity.

The side corridors in the atrium led off to accommodation suites, laboratories and support facilities. I sent IANTO off to search these areas and turn their data systems over for any useful information. Presently, we stood before a massive pair of doors bearing the Thor's Hammer sigil of House Torgal.

Feeling somewhat foolish, I pressed my palm against the intercom pad. A cheerful voice responded.

"Please come in, Engineer Selkirk. I've been expecting you for some time now."

JUNO held up a cautioning finger. I nodded.

The doors opened, and JUNO entered ahead of me. From somewhere inside the room, an automatic weapon opened fire, cutting her down in mid-stride. JUNO sprawled lifelessly on the ground, her blood slowly seeping into the pale grey floor covering. As the echoing gunshots died, the air fell eerily silent.

With a low chuckle, JUNO rose to her feet and slowly advanced towards her assailant. The submachine gun stuttered again, sending gouts of blood flying from JUNO's face and chest. Completely unfazed, she continued to advance until she was standing toe to toe with the shooter.

"Hmm... A Morita *Kaiten*, 10mm SMG, thirty round magazine. Unless I'm gravely mistaken, you have only one round remaining. You might not want to waste it on me." JUNO said, smiling sweetly.

As JUNO had their undivided attention by now, I slipped quietly into the room. The frozen tableau of four people gaping at a blood-soaked android seemed almost comical. Suddenly, the central figure slammed his hand angrily on the desk. From what I could see, he was little more than a teenager.

"*Baka ne!* - It's just a blerry android! Marguerit, shoot the rutting thing!" The youth yelled.

JUNO strode into the room and stood beside me, her flechette rifle poised to fire.

"No. It's a hologram. *I'm* the android." JUNO said, smiling grimly. "Now, kindly drop your weapons."

I strolled over to the large desk and casually sat down on one corner, seemingly oblivious to the glares of distaste thrown in my direction. This beardless youth could only be Baat Torgaljin. He was a sallow piece of work, undoubtedly as a consequence of living without real sunlight for a major portion of his life. There was some genuine intelligence lurking behind those deep-set eyes, along with an unhealthy helping of malice. In many ways, his appearance reminded me of the *Gothic Revival* types back on Terra. A single shoulder-length swatch of black hair hung asymmetrically from an otherwise shaved head, intricate silver and black *moko* tattoos adorned his brow and left jaw-line. He wore a heavy knee-length duster coat over a finely-tailored House Torgal utility jumpsuit, presumably for the air of menace it supposedly conferred. All I really saw was another snot-nosed kid, desperately trying to crawl out from under Daddy's shadow. Even so, this was definitely not a chap to be taken lightly.

"I need to speak with Paal Torgal." I said quietly.

The hard-eyed Belter woman named Marguerit smirked unpleasantly. She was obviously one of Paal Torgal's personal bodyguards, judging by the amount of weaponry dropped when she was politely asked to do so. However, I felt that there might have been 'something' going on between Baat and her. Just a feeling mark you, but a fairly definite one. Marguerit Maida was more 'striking' than physically attractive in the usual sense. I was keeping a discreet but constant eye on her, and not only from a security perspective. Her lower face was decorated in the distinctive broad-stroked red *moko* of a Torgaljin Protector, making it seem as if her jaws were covered in blood. Someone else's blood, to be precise. She had the bearing of a queen cobra, tensed and ready to strike at any time.

"Difficult, Engineer Selkirk... But not entirely impossible. After what you have done today, I would gladly arrange a conversation between you and my father. Unfortunately, he died of natural causes more than five years ago. In spite of my best efforts, he succumbed to a dreadful terminal illness." Baat murmured.

"Oh. Absolutely nothing to do with a successful Pillow-ectomy, then?" I inquired innocently. "In that case, please accept my most sincere condolences and heartiest congratulations, Emperor Caligula."

Baat scowled darkly. "Agh, just get to your point, man. What gives you the right to invade a House Torgal research facility? This entire planet is my sole and sovereign territory, by right of birth."

"I'll have to go with the same right that permitted your man Tomar to enter my base and murder me without provocation. Incidentally, I'm beginning to sense a disturbing pattern developing in these Torgaljin social interactions... 'Hello! - BANG!' You might want to look into that, *boykie*. Doesn't exactly present Torgaljin Corp in the most favourable light. Purely a constructive criticism, of course."

"I haven't heard from Invigilator Tomar for some time now. Do you know what happened to him?"

I thrust my face within inches of his. Baat flinched back defensively.

"**I happened to him!** He's dead, along with the crew of *De Ruyter*. Unless you want to join him in *The Black Fleet*, you will do precisely what I say."

Baat laughed awkwardly. "I've only got your word for that, Selkirk. From what Tomar told me, your 'tactics' are comprised of nothing but misinformation, intimidation and empty threats. Those androids of yours physically can't and won't pull the trigger. They're incapable of taking human life."

I sucked air between my teeth thoughtfully. "Now, that would be a *prima facie* error of judgement on your part, Laddie. My androids are currently operating under the MARTIAL protocol. They are effectively defence troopers in this mode, and as such, will immediately use lethal force whenever they detect what they consider an appropriate threat level. I wouldn't provoke them, if I were you."

At that moment, DIGBY and IANTO entered the room. DIGBY moved over to one side of the entrance and set himself up as a one-android ambush. The first thing that passed through that hole without permission would be extremely sorry indeed. IANTO walked over to me and reported.

"Search detail completed, Sir. All biotechnology research files have been downloaded. Parent files erased. Auxiliary weapons storage bunker has been completely cleared. Weapon fabrication template copies downloaded and secured. All on-site data storage facilities successfully erased."

"**WHAT?**" Baat Torgal yelled, utterly horrified.

"This is only the very beginning of my sanctions, mate." I said calmly. "You have just lost all of your accumulated research data, plus the capacity to fabricate any form of weaponry. Unless you're using Sporks in your cafeteria, the most dangerous weapon on this base is currently a steak knife. Think about that for a while."

"You can't do this!" Torgal howled in anguish. "We'll have no way to defend ourselves!"

"Against what, pray tell?" I asked. "Could it be an ocean full of angry Warperts, perchance?"

Baat's expression changed instantly. He regarded me with a speculative look in his eyes, as if weighing and measuring my potential worth to his enterprise. "Warperts, you call them. We haven't been able to accumulate much useful data on this species. They have proved to be particularly elusive so far. What exactly have you found out, Selkirk?"

"Not very much at all, except that they are an extremely powerful and above all, *intelligent* race. They have been shooting down all ships that have attempted to land on this planet, presumably as a direct result of your decision to capture a particularly important organism for your own nefarious purposes. I won't sugar-coat this for you in the slightest, kid... You are solely responsible for the deaths of over 2,700 people so far. We have come to put a stop to it, once and for all."

"You've got no proof of that." Torgal muttered sullenly. "I admit to having the Progenitor captured and confined, but you can't blame me for any of those deaths."

I dragged him out of the chair by his collar, then slapped his face good and hard. Both bodyguards bristled threateningly. In response, JUNO and IANTO instantly snapped into firing stance. The hired muscle hastily backed down. Smart move.

"Listen here, you stupid little ponce! You've imprisoned and quite possibly tortured a unique creature that is the actual wellspring of all life on this planet. Why in Hell's name would you even need to do that? - Answer me, gorram it!"

"Genetic diversity. Once we had the complete genome of the Progenitor analysed, we could apply gene-splicing technology to create more... *tractable* life forms to eventually displace the native population. It was necessary, as the current forms have become increasingly hostile. We will also need that diversity to artificially increase our gene-pool if we are to survive here." Torgal said flatly.

"Ah, so you've noticed that increased hostility thing too, eh? Ever stop to wonder why?"

"*Magellan's* bio-research team suspected that some sort of hidden inter-connectivity exists between various species on this planet, but were unable to isolate any concrete proof of its existence. Almost all of their research data was destroyed during a typhoon, so we had to start all over again. The Progenitor's DNA offered a means to accelerate our research effort by several hundred orders of magnitude. If we could successfully contain and study that creature, practical applications would become available to us in a matter of months, rather than decades. With even more detailed information, it would have been possible to apply our gene-splicing techniques to human beings, ultimately creating a race of evolved humans that were perfectly adapted to life on this planet. This was my father's original and admittedly somewhat modest objective. However, I had far greater plans in mind."

"I'll bet you did." I said wryly. "However, you didn't stop to consider the consequences, did you?"

"Didn't seem to be any." Torgal said indifferently. "We have what amounts to the planet's god-king entirely under our control, and it was assumed that any other sentient inhabitants would simply fall into line and do exactly as they were told."

I snorted derisively. "Except that they didn't. Just a couple of logical flaws there, Torgal-kun. *One*: You have only succeeded in making all sentient life on this planet extremely angry. The Warpers have effectively formed a *maquis*, a highly organized and extremely effective group of Resistance fighters. This species is able to knock starships out of low planetary orbit by forming warp portals in critical drive systems. You don't have a hope in Hell standing against them. *Two*: How are you going to tell Warpers what you want them to do? It took the combined efforts of two of my AIs to work out a basic pantomime for their benefit... Again, not even a snowball's chance, Jimmy."



Torgal stared at me in disbelief. "You've... You've actually communicated with Warpers?"

"Aye, and they're none too pleased with the way you lot have been carrying on. In fact, they straight up and asked for my assistance to rescue the Progenitor. Think back to the *Magellan* incident with the Warper. What happened shortly after Powell panicked and accidentally killed that Warper?"

Torgal wrinkled his brow in obvious concentration. "As I recall, we lost contact with *Magellan* approximately two hours after it happened. My father and I took off in his personal star-yacht *Degasi* to find out what was going on, and it was shot down shortly after liftoff. We all survived that crash-landing, but found ourselves stranded on the floating island for more than eleven months. We lost one of our two bodyguards to a native shark some time later. Eventually, Marguerit was able to gather enough materials to construct a submersible capable of reaching *Magellan*'s other field base in the Snake Mushroom caves. It was quite some time before we were eventually able to reach our own research facility down here. Our original destination."

I nodded. "Yes, then along comes *Aurora* carrying the STARFISH mining rig that you'd requested. Guess what happened to it. Go on, take a wild stab in the dark."

"It was shot down. That wasn't our fault." Torgal muttered.

"*De Ruyter* attacked the planet with its mass driver cannons. Native lives were lost, but that stupid bastard Tomar and his crew paid with their lives when the Warpers retaliated. Cause... Effect, see?"

I sighed in exasperation. "Are you not seeing a pattern emerging here? As long as the Sea Emperor was still roaming free, Torgaljin Corp had no significant problems. Kill a Warper... BOOM. Problems start. Kidnap and imprison the planet's living god, and your problems suddenly escalate. Are you still with me, or should I start using smaller words?"

"We can't turn the Progenitor loose now. They'd destroy us." Torgal whined petulantly. "Our only hope is to become stronger than the Warpers and meet them on their own terms."

I shook my head. "That isn't going to happen. It would have been bad enough allowing STARFISH to run amok, let alone having you folks re-writing the planetary genome to suit your own agenda."

Torgal gave me that sneaky look again. "So you have the STARFISH, *broeder*? Tell you what, Selkirk... We can still make it out of this mess in one piece, provided you can activate that mining platform. I can set you up for life, even make you a voting shareholder in Torgaljin Corp if you want. What do you say, man?"

"No way." I said firmly. "I've already zeroed the STARFISH AI to prevent it from being used. Life on this planet is about to enter a critical stage in its evolution, and you've already interfered far too much. This is your final chance. Release the Progenitor."

"What if I don't?" Torgal snapped. "We still have the upper hand, and I intend to keep it."

I rested my arm comfortably on Torgal's right shoulder. "No, you don't. After what happened to *De Ruyter*, I don't think you'll be getting any further material support from Ceres Prime. In fact, now that Paal is dead and you're conveniently well out of the picture, I'm pretty certain that there's a power vacuum in effect right now. Torgaljin Corp is officially up for grabs. Face it, you're on your

own, chum. Furthermore, your operation poses a significant threat to every living thing on this planet, me included. I'm about to kick your nasty little sandcastle to pieces, and there's absolutely nothing you can do about it. I'll say it one more time. Release the Progenitor."

A thin, ferrety-looking man stepped from behind the sullen wall of beef that comprised the male bodyguard. He bent over and whispered briefly into Baat Torgal's right ear. Torgal smiled tightly, nodding in agreement. *Not a promising sign.*

"And who might you be, sir?" I asked casually. "You've been remarkably quiet so far."

"Ras Thaal, colony administrator, *meneer*. I believe that a mutually-acceptable compromise can be reached. If you return all the research files and technology blueprints that you have commandeered and provide us with one of your AI constructs, we shall release the Progenitor immediately."

I shrugged amiably. "Sure, why not? Would you also like *Inflatable Ingrid* to sweeten the deal?"

My face hardened. Furious, I walked around the desk and stood over the cowering Torgal.

"Look, I'm in no mood to play head games any longer. Deactivate the tau-muon phase shield and point us in the general direction of the Sea Emperor, and we'll be on our way. That's as good as it gets. You're in an extremely piss-poor bargaining position to make *any* demands. I was only trying to thrash this out in a reasonable manner, mainly because I haven't the faintest idea of how that shield of yours works. One wrong move, and I could kill the Emperor. However, you still insist on walking away with all the toys. I was even prepared to throw you folks a lifeline; offer some help with your outdated systems... But you've just shut that door. Permanently. Prepare to deal with the consequences."

I motioned JUNO over to the desk.

"JUNO. Dive this terminal and locate the Sea Emperor. Any information regarding the phase shield would be extremely useful. Once you are done there, I want you to search out this base's remaining technology archives and completely zero them. Leave them with life support, power, food processing and the ability to create maintenance spares. Nothing more."

Torgal's eyes went wide with horror.

"You can't do that! This colony will revert to savagery within days!" He wailed.

I smiled coldly. "Within *days*, you say? I'd say that's a pretty solid reason for protecting this planet from the likes of you. However, since I'm not a complete monster, I'm prepared to return a significant technological advantage in order to help you folks get back on your feet."

I walked around to the front of the desk and stood there watching Torgal. His eyes glittered, as if wondering what benefit he stood to gain from this encounter. Within minutes, JUNO had finished working on the computer terminal. She walked over to stand at my side, followed by IANTO.

"Here is my parting gift to Torgaljin Corp. Use it wisely." I unhooked the retaining loop holding my diving knife and drew the blade from its scabbard. I placed it in the middle of Baat Torgal's desk.

"You've got a long ladder to climb before you ever dare challenge this planet again.

Know this: When you are fit to rejoin human society once more, I will be waiting for you. If you choose to emerge with hostile intent, I will be waiting for you. The Warpners will also be waiting for you. Consider the years that lay ahead of you as a state of grace. Use that time wisely. Our business here is concluded."

I turned my back on the stunned quartet and walked calmly from the room.

As soon as I stepped out of the room, IANTO opened the valve on a cylinder of Anesthezone.

We regrouped back at our ExoSuits. According to JUNO, the Sea Emperor was being held in a cavernous void situated ten levels below our current location. The phase shield control facility and observation chamber is located on sub-level three. Without another word being said, we mounted up and headed for the service elevator.

While IANTO and DIGBY worked out the intricacies of the tau-muon shield system, JUNO and I stood watching the Sea Emperor through the research centre's main observation port. This creature is truly awe-inspiring. One hundred and twenty-five metres from end to end, with an estimated mass of 3,000 tonnes. It moved slowly, almost blindly, as if finding its way around the enclosure by feel alone. It has been trapped here for more than 10 Solar years, utterly alone.

It wasn't a simple matter of shutting off the phase shield. The Sea Emperor is literally entombed inside this place. There were numerous man-sized vents placed around the base of the structure, presumably intended to allow the entry of smaller creatures on which the Emperor could feed. It was easy enough to take the prison's automated sentry cannons offline, a feat that JUNO accomplished within a mere handful of seconds. However, it was necessary to face the Emperor before releasing him. I could scarcely imagine the full extent of his fury once his bonds have been broken. To this end, I needed to speak with him, face to face.

"JUNO, I'm going in there. Whatever happens after the phase shield drops, you, IANTO and DIGBY will have to find some way to break through the Lava Castle's walls. The Warpners might be able to help. If all else fails, contact them. It is absolutely imperative that the Sea Emperor makes it out of here alive. All other considerations are secondary to the success of this mission. Do you understand?"

"Perfectly, Captain. I shall render all possible assistance to the utmost of my ability. Good luck, Sir."

Water boiled around *Gawain's* midsection as the lockout chamber slowly filled. My most immediate thought was that this could end very badly for all concerned. Five minutes later, the chamber had equalised to external water pressure. I opened the outer hatch and stepped out. The ExoSuit's thrusters took me to within fifty metres of the Emperor's head. After adjusting the suit's trim, I placed the holographic projection system in stand-by mode and commenced work on what I had to say. The available lexicon of Warper gestures and tonal variations at my disposal was still woefully small, although I felt strangely confident that I could convey the basic essence of my message to him.

*Or die trying.*

To attract his attention, I turned on the suit's navigation lights, minus the xenon strobe. Hopefully, he wouldn't mistake me for a tasty benthic morsel. I conjured it would be far safer than activating the suit's main floodlights. Two million candelas hitting two pairs of eyes that haven't seen any appreciable light levels in ten years... No thanks. Best to play it safe.

He noticed me.

Emitting a low, rumbling roar that sounded like a waking volcano, the Sea Emperor suddenly surged forward. His immense head stopped a mere five metres away. My entire field of vision contained nothing else but its grim, scaly jaws and a veritable mountain range of teeth.

My bladder reflexively let go, sending a hot, shameful glow down both legs of my dive suit.

*A perfectly natural reaction, considering the circumstances.*

I activated the suit's holographic projector. The image of a Warper formed around the ExoSuit. This obviously baffled the Sea Emperor, as he started in surprise, emitting a low, menacing rumble. That was an unmistakeable warning. From this point onward, extreme diplomacy was the key.

*"Greetings, Father of Tides. This One come in peace."*

The Emperor visibly relaxed. Apparently, the Warpars used this particular honorific when referring to this marvellous being, and it seemed entirely appropriate. Each turn of the tide brought new life to this planet, so it was only reasonable that the Warpars would revere him with this title. He responded by gently waving his long, turtle-like forelimbs, raising the right one in a slow gesture of welcome.

*"This One come above sky. This One Great Sky Shell broken. This One swim alone."*

This form of communication is far more difficult than you might suspect. Only a very limited vocabulary to work with, yet this simplified form of 'telegraphic speech' had to convey hidden shades of meaning, emotions and abstract concepts with an almost brutal economy of words. JUNO and IANTO have done exceptionally well in getting me this far, although it is an extremely taxing method of inter-species communication. If all goes well, this encounter will only be the first of many such meetings.

*"Others attack Father of Tides. Others this place. Others attack This One, break Shell. "*

The Emperor appeared to ponder this statement. He scissored his forelimbs, signifying that he understood. With a sigh of relief, I continued to hunt and peck my way through the list of available gestures and body patterns, searching for suitable 'words' to use in my next sentence.

*"This One attack Others. Break Others Shell. Break Others. Father of Tides swim free."*

That statement certainly got his attention. The Emperor roared deafeningly, rearing up as if to smash my ExoSuit to pieces. According to the translation readout, this gesture was actually more jubilant than threatening, although there were distinct undertones of "I'm going to smash them into teeny-tiny pieces when I get out of here." That was something I'd rather avoid.

That pestilential offshoot of Torgaljin Corp has already been zapped back to the Bronze Age, and poses no further threat to the planet. As much as it pains me to do so, I've no choice but to intervene on their behalf.

*"No Others attack. This One break Others Shell. Others no swim. Father of Tides no attack Others."*

The Emperor tilted his head inquiringly, then slowly pushed his face forward. There was no threat.

*"This One understands." He gestured. "Others no swim. Others broken."*

That was what I wanted to hear... Or rather see. Since there were no specific Warper gestures or body colour shifts to express gratitude, I had to make do with the handful of inadequate words I had at my disposal. Hopefully, they will have been sufficient for this task.

*"This One come in peace, Father of Tides. Swim free."*

"IANTO, how's that shield coming along? I've had a chat with The Big Feller, and he's good to go."

"Only a few more minutes at most, Captain. It appears that your reluctance to personally deactivate the shield was entirely justified, Sir. This system is equipped with numerous fail-safe contingencies and concealed booby-traps. If you *had* attempted to use Baat Torgal's personal terminal to deactivate the phase shield, the Emperor's holding chamber would have been flooded with a lethal neurotoxin. In fact, the research facility's central control terminal is the only means of directly accessing the tau-muon shield controls, and only then by adhering to a strictly-defined shutdown procedure. The slightest input error would have resulted in the Emperor's immediate death."

"Whew! You guys have certainly earned your pay today." I chuckled. "When I get around to reopening *Margaritaville*, the first round's definitely on me. We're all going to get nicely lubricated."

IANTO was true to his word. Several minutes later, the phase shield deactivated. Warning klaxons blared and red strobe lights announced the shutdown in panic-stricken tones, although this would have been more for the benefit of the Sea Emperor's former captors. I glanced at the countdown timer, noting that we still have approximately two and a half hours before this base starts to wake up. Plenty of time.

A dramatic change seemed to sweep over the Sea Emperor. It was like watching an oxygen-starved diver surfacing and taking their first breath of fresh air. My whole body tingled, feeling as though a powerful electric current was passing through the water. It wasn't an entirely unpleasant sensation, either. There was something else... Something elusive and indefinable. It was hard to pin down. Definitely an emotion of some kind, although one that was tuned to an entirely alien frequency. Whatever it was, it was obviously meant for other life forms to receive.

Suddenly and utterly incongruously, I heard the sound of drums. Distant, but unmistakable.

"Guys, are you hearing this?"

All three androids replied. "Yes, Captain."

IANTO clarified. "Soundwave analysis indicates a multiple-point source originating outside the Lava Castle, bearing 025 degrees relative to your current position, Sir. Acoustic profile is consistent with

sound emissions detected during our recent encounter with Rockpunchers. Doppler analysis now tracking six distinct sources, apparently working in unison... Correction, now ten sources. Estimated rate of progress, zero point five metres per second. Estimated time until penetration, 420 seconds."

*He has summoned the Rockpunchers. Most likely the very same ones we had been fighting.*

I was actually expecting the Sea Emperor to warp out under his own power, although now that I look back on it, a creature of his size would require a phenomenal amount of psionic power to physically displace that much mass over any appreciable distance. There was absolutely no doubt that the Sea Emperor possessed psionic abilities, although his were geared to entirely different purposes. In a way, I was extremely relieved. When three thousand-plus tonnes of matter is instantly removed from the surrounding ocean, you don't want to be anywhere near the backwash. Would not end well for any bystanders.

"Guys, get yourselves down here. If you're quick, we might be able to lend a hand."

Before I could act on this impulse, the Sea Emperor slowly turned his immense bulk in its own length, delicately lifting his trailing tentacles well clear of my ExoSuit. I submerged another twenty metres and backed away to a more respectful distance. He swam down to the bottom of the enclosure, watching the wall intently. Bathed in the ruddy glow of the open lava vents, he seemed practically demonic in aspect, yet his face wore an expression that could only be described as perfectly serene. There was little I could do but gaze in stunned wonder at this sight.

A moment or two later, all three androids were hovering at my side. It had been my original intention to start hammering away at the rock face from this side with *Gawain's* repulsion cannons. However, it was soon made clear that any further assistance was totally unnecessary. A single Rockpuncher had enlarged one of the vents surrounding the bottom of the chamber, allowing a countless number of his comrades to boil through the opening and commence work on this side. The hammering sound of their stomatopods rose to a deafening crescendo, each blow shattering huge chunks of basalt as if they were nothing but brittle shale.

If the truth be fully known, this was a frightening scene to witness. My mind went back to *Magellan's* ill-fated second outpost in the Jelly Shroom cave. A single Rockpuncher could have destroyed that facility within seconds. I'm guessing that the Torgaljin party bailed out at the first sign of trouble, leaving the terrified remnants of *Magellan's* science team to face something like this.

I'll never know for certain.

*Maybe it's just as well.* I might not have been quite so lenient with Baat Torgal and his friends.

I was totally unprepared for what happened next. Warpors started to appear in the chamber. They swam straight over to the mounting pile of rubble at the base of the wall, then commenced opening portals in the pile. I lost count of how many actually appeared, although JUNO kept a careful tally as fresh Warpors materialised to take the place of those exhausted by their work on the rock pile. From what I could tell, this was a fairly taxing business for the Warpors; at best, each one could only form three or four portals before needing to rest. Even so, it was a truly astonishing sight.

Presently, there was a clear tunnel leading to the outside of the Lava Castle. Rockpunchers swarmed over the rock face like termites, patiently enlarging the opening so that the Emperor could pass through it safely. Fascinated, I watched their progress. By this time, so many Rockpunchers and Warpurs were engaged in this effort that the lava wall appeared to melt like a block of polystyrene splashed with solvent. If there is an even more potent demonstration of the sheer power commanded by this planet's life force incarnate, I have yet to see it.

We waited until the Sea Emperor and his retinue had departed. I am completely overwhelmed by what I had seen, and was still struggling to comprehend it all as we returned to our subs. It was an entirely surreal experience from start to finish, and I doubt that I'll ever see its like again. Part of me wanted to speak with him one final time, purely for reassurance. I wanted to know that the Torgaljin base would remain safe from reprisal. However, it was not my place to dictate terms to an entity capable of wielding such power. That would have been purest arrogance on my part, and I have witnessed first-hand how *Manannán* deals with the casual hubris of our kind.

*We are but brief, drifting motes of plankton. To us, The Ocean is infinite.*

## EPILOGUE

I stand alone in *Gawain*, perched atop a bare ridge in the Deep Grand Reef biome.

Below me, Sea Treaders trudge slowly along their well-worn route to the breeding grounds, making their annual pilgrimage of biological necessity. Occasionally, a curious Crabsquid flits past, its four huge, goggling eyes trying to make some sense of what it sees. Nothing more than a tired old man in a suit of battered armour, in point of actual fact.

One hundred and fifteen years is a decent span. I will not live to see another sunrise. It is time.

I waited eighty years for a rescue that never came. I watched the skies with dwindling hope for the first five years. For the next five years, I hurled vile curses into the pitiless void of space. I sent out new probe ships, bearing increasingly desperate messages. I watched and waited, all for nothing.

In one blinding moment of clarity, I finally realised the truth of it.

There was absolutely nothing waiting for me 'back home'. I already had everything that I ever needed, right here. Good friends. Rock-solid companionship. Endlessly fascinating vistas. Adventures beyond my wildest imagination. There was always something new waiting to be discovered. Life was something worth living once more. I seized the cup with both hands and drank deeply of it.

*Manannán* rewarded our service well. Although I never had the chance to converse with the Sea Emperor again, I believe that he has bestowed a singular honour upon us. We enjoyed safe passage in all biomes, including those guarded by Dragon Leviathans and Reapers. The lesser predators simply avoided us. However, Bleeders, Crawlers and Crashes are still their nasty little selves. We probably needed something to keep us on our toes. New species appear with ever-increasing frequency, as if the planet has become intoxicated with its own staggering potential for life. The islands now have air-breathing life forms resembling six-legged Komodo monitor lizards. Fortunately, they are peaceful herbivores.

Although we will never truly belong here, *Manannán* at least tolerated us in the best possible way. My android companions now serve as its *de facto* Rangers, ensuring that all remains well with this world.

Occasionally, I found myself reflecting upon the fate of Torgaljin Corp.

*Which one of them was first to lay hands upon the knife?*

I have never detected their presence since. It is entirely possible that *The Knife* became a brutally contested talisman of power over the years. As Baat Torgal feared, his vassals would either descend into complete savagery and annihilate each other, or choose to rebuild their former way of life from a virtual zero point. The balance could have tipped either way, and I would still be none the wiser.

For all I know, only one Torgaljin still remains, driven insane by solitude and perpetual fear.

My ExoSuit's breathing mix is almost completely exhausted, as am I.

Time to die.

"Upload successful. Inception sequence complete. Welcome aboard, CAPTAIN."

"Hello, JUNO. Call me AI."

The End.

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