

# ***DEEP CROSSING***

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## Chapter 1

I was surf fishing off the rocks at Port Canaveral when they arrived. You are not allowed to fish off the rocks, so I was gambling I could bring something in before the beach patrol showed up and brought me in.

It was the perfect time of day. The morning's peak tide was just beginning to ease out, encouraging the pompano to gather beyond the breakers where they waited to collect sand fleas before the beach line became too shallow.

They don't like you out on the rocks because it's easy to fall and if you do you will almost certainly be seriously hurt. Then the paramedics must do their least favorite imitation of Laurel and Hardy trying to maneuver a body board out onto the jagged breakwater to bring you in. My six-foot-two frame would be an added disappointment to them if such an incident did occur, and I already have enough scars here and there to commemorate the philosophy of not obeying rules. But, there it is.

So, struggling to balance myself and at the same time set a frozen shrimp on my hook, I was trying to keep an eye out for the shore patrol's ATV when the shuttle suddenly came streaking in above the trees. It was a gaudy entrance, really. They hovered over the parking lot for longer than needed, then settled into the RV parking area having caused everyone on the beach and in the picnic area to stop what they were doing and gawk. There were fifty or sixty others enjoying the ocean so I figured there was a good chance this wasn't about me. Still, the eagle and olive branch seals on the shuttle's polished blue and white surface gave me pause to worry since I recently had more attention from government agencies than any mortal man should have to bear.

It was too good a day to waste. I cast out, teetered a bit, then slowly brought in the slack until I could feel the pyramid sinker. Waiting to feel the quick hard taps on the end of the line, I watched in the direction of the shuttle, hoping its occupants had other business.

Three of them emerged. They were not wearing beachwear. The lead man was short, balding, and wore a light blue Nehru-styled suit with matching sunglasses. He was followed by two in standard black Alfani's with dark sunglasses. I don't know why those guys don't just have the word security embroidered in big letters on their suit backs.

The lead man took a confused path to the edge of the beach, chin up, looking erratically for a particular individual. Too late, I thought to turn my back. The delicate little man's gaze zeroed in and locked on me. He made an obtuse gesture and began tromping through the sand in my direction, dragging his black suits along with him. Beach-goers continued to stop and

stare at the three white-skinned, fully dressed invaders intruding on their shore.

He came to the rock-covered beach and began waving one hand as though it had a handkerchief in it. His bodyguards tried to conceal their embarrassment by scanning the beach for aggressors, though everyone had already decided this man was not worth their attention. I was far enough out that he had to yell, something he did not seem accustomed to. "Mr. Tarn... Mr. Tarn, may I interrupt your maritime quest for a word?"

I pointed to the water and yelled back, "My lines already out. Your shoes are getting wet."

He looked down, became alarmed, and tiptoed back away from the foam. "Really Mr. Tarn, despite the importance of your immediate investment, I think it would be wise for you to join me."

"Who are you?"

He looked down in dismay, gathered himself and began again. "My name is Bernard Porre, senior advisor to the Global Space Initiative."

I cursed under my breath. His title commanded more respect than his appearance. "You'd better get out of the sun. I'll be right there."

He stared for a moment, waved in disdain, and headed back toward the parking area.

Begrudgingly I made my way to their shuttle, tapped on the hatch and stood back. It hissed upward allowing cold air to push by. Bernard sat at a small desk behind the pilot. He motioned me in and pointed at a seat as the door gushed closed.

"Bernard, right up front, if you're here to sell me on something, you're setting yourself up for disappointment."

He was not deterred. He picked up a folder, opened it and patted the top page. "I am going to propose a mission to you, Mr. Tarn. You are going to accept, and then I will leave, hopefully forever."

"Well, you're right about one thing."

"You haven't been in trouble recently, have you? No new injuries or illnesses? Anything that would affect your flight status?"

"For god's sake, Bernard. What is this about?"

"Have you heard of the Griffin, Mr. Tarn?"

"It sounds vaguely familiar."

"It is a prototype, designed by a retired transport pilot. It is unique in that it's a spacecraft that can deploy wings and perform atmospheric flight, if necessary. The designer disliked the idea that a re-entering spacecraft that lost thrust and gravity repulsion became rocklike. Because of his reputation, he was able to pull in a few investors, and the prototype was constructed. It's the only one of its kind. Spacecraft systems became so fail-proof by the time it was completed the concept was deemed unnecessary.

"Fail-proof is an oxymoron, I think."

"If I may continue. The Griffin's design and systems work perfectly. It is an interstellar craft that can fly in an atmosphere using wings when necessary. The wings are normally swept back to become part of the superstructure."

"Did you say interstellar?"

"It supports a crew of eight. It has both repulsive and OMS drives, along with one other significant drive system. No habitat gravity generators. Standard captain, first officer cabin arrangement with dual engineering stations behind them. Modest life support system. Quite a few extra amenities have been added."

"You did say interstellar."

"The mission is to take the Griffin to coordinates directly south of the ecliptic, one thousand light years from Earth, retrieve a certain artifact, gather intelligence, and return safely."

"Bernard, you misspoke. You said one thousand light years."

"No, I did not misspeak. I never do."

"Bernard, a trip that long would take years."

"Not for the Griffin."

"What are you talking about?"

"The Griffin has been equipped with two experimental Stellar Drive engines. You will get light beyond the P9 with it."

"You're pulling my leg."

He reached in a waist pocket of his suit and pulled out a small memory module. He pushed it at me. "This will give you everything on the Griffin. You'll need to begin studying right away. Time is constrained on this project. Your sim training is set up at Genesis. You can check in there anytime you like. You're already in the system. Is there anything special you need?"

"Bernard, you're taking way too much for granted here. I'm not going anywhere. In fact, let me outline for you how many items in your plan would make me say no just on their own merit. First, you want me to sign onto a small ship. I don't do that. If I'm going to give away months of my life, I don't intend to spend it in a sardine can. Second, what you're proposing means a really small crew. Too few people confined to too small a space tend to find reasons to dislike each other. Third, you implied it's a weightless habitat module. I don't mind zero G, but I'd prefer not spend months going somewhere floating around in it. The toilets always break down. Four, you're planning to take an experimental vehicle farther than anyone's ever gone before. Sound like a good idea to you? And five, did I understand correctly that you don't even know what the item is you intend to retrieve? No unmanned scout ships have checked that sector, am I right? It's all one big unknown. So there you are. Every aspect of this mission is exactly the kind I do not accept. On top of all that, I just recently survived a first class mission from hell. I'm not looking to tempt fate a second time. Sorry you wasted your time on the beach, Bernard. Is there anything else?"

"Actually there is one other thing, Mr. Tarn. Since you mentioned your previous assignment, I have your classified debriefing from the Electra right here. Let's take a quick look at it, shall we? Ah, Mr. Tarn where do I begin? I've studied your illustrious history until I could bear it no longer. How you achieved command status is well beyond my conception of reality and will remain so until my death I fear, and probably will contribute to the reward of that. In keeping with your infamy, your previous mission aboard the Electra was somewhat aberrant, wouldn't you say? The situation would need to be desperate in the extreme to facilitate your assuming command of a vessel that size. Don't you agree? In any case, beyond the long and sordid story described here, one of the many unexpected consequences of that debacle was your exposure to the emissary."

"You have my full attention now, but you'd better get to it."

"No one was to know about the alien emissaries aboard interstellar ships unless they had months of special preparation. Even now, their presence is a closely guarded secret. Were they not helping us, we would be stooges in space, wreaking havoc everywhere we went, not knowing the rules, customs, or dangers."

"You could give us a little more credit than that, I think."

"It says here you not only interacted with the emissary, but from what I gather this emissary actually physically touched you. That sort of thing has never happened before. Our intercourse with the Nasebian race is not as progressive as we would like it to be. They are a bit standoffish. "

"You don't need to tell me."

"Please, Mr. Tarn. So when an opportunity becomes available to advance our relations with them, there is very little we won't do. We recently had a meeting with their representatives, which lasted longer than all of our previous contacts combined. They have several planets that support them in various ways, societies that are more than happy to do so. We now have a chance to be one of those. The task they have offered us however is substantially beyond anything we have ever attempted. Since we understand very little about the Nasebian race, the story they told us was translated down into terms we could comprehend. According to their spokesperson, it's not broadly accurate, but is fundamentally correct. Roughly two thousand years ago, Earth time, a Nasebian repository ship was sent to a sector of deep space to establish a Centre. To them that is like a remote base of some kind. That's all we know. The Centre was successfully set up, but the ship never returned. The Nasebians know that some form of accident or foul play was involved, but they do not know what. The time has come that a component of this Centre must be retrieved. The Nasebians want us to retrieve it and learn what happened to their vessel and its Nasebian occupant."

"Why don't they just go get it themselves?"

"The closer one travels to the dark matter halo beyond the galactic boundary, the more primeval the surrounding space becomes. These

coordinates are so deep they represent a sector so primitive it is not conducive to the Nasebians. It would be dangerous for them to venture there. It was something even they had not expected when the first mission was sent."

"Look, that's all fine and good, but it doesn't need to involve me. As you've repeatedly insinuated, there are quite a few others that represent your idea of command level much more than I do. Why are you wasting my time with this?"

"Does the name Millennia mean anything to you, Mr. Tarn?"

"No."

"Mellennia is the Nasebian who is sponsoring this mission for us. Mellennia is also the Nasebian you interacted with on the Electra. Mellennia stipulated that only you can be the mission commander for this charter."

"Oh, shit."

The little twerp bent his head down and coughed out a quiet laugh, having known all along it was his ace in the hole. He gathered his tablet and tucked it into its holder, then piled it atop his briefcase. He sat back with a look of placid satisfaction. "Apparently the Nasebians have been looking a very long time for just the right person to lead this mission. It had to be someone with just the right amount of intelligence combined with foolhardiness. I made that last part up myself, but it's basically a good translation, and it pleases me to say it. Our initial meetings took place six months ago. A month later, the Nasebian representative showed up with some engineers from a species unknown to us. They took possession of the Griffin. It was gone for three months and came back with the new engines and some other accessories. That's how sure they were that you'd accept. They did all that before allowing us to contact you."

"Son of a bitch."

"If it's any consolation to you, we didn't get much of what we wanted, either. We do not get to study the new engines. They will be recovered by the Nasebian's envoy when you return. We will understand how to operate them, but not how to service or construct them. Some of the other accessories they installed have the same restrictions. Also, we get to pick one pilot and one engineer. You choose the rest of your crew. There will be a total of four pilots including you, and four support engineers."

"For Pete's sake..."

"Since we've never flown these new engines, there will be a test flight before the actual mission with just the pilots. Those details will be forwarded to you. There is also a simulator being installed at the Cape. All four pilots will need to log considerable time in it beforehand."

Bernard did not offer me a chance to accept. He knew I could not refuse. Nor did he ask if there were questions. There were too many. He pushed up from his seat and tapped the open button by the shuttle door. With a disingenuous smile, he stood waiting for me to leave.

"Despite my contentious appraisal of you Mr. Tarn, I am reassured that everything I've said is secure, and let me emphasize, we have given our word to the Nasebian's that none of it will ever be released. Can we give you a lift somewhere?"

"No thanks. My corvette is parked out there."

"Ah yes, a man who could be using a PAV, and you cling to that outdated mode of travel from the combustion engine era. I have been told how dedicated you are to it."

"It's something you'll never be able to understand, Bernard."

"Tell me, Mr. Tarn, what do you do if one of those old-fashion fabric tires deflates?"

"You change it, Bernard. Of course, you get your hands dirty."

"Well, let us hope that does not occur then."

"It doesn't happen often."

"You know, your propensity for demeaning eccentricity is surpassed only by your close associate Mr. R.J. Smith, who maintains that his antique Corvair automobile is still the finest land vehicle ever produced."

"Some of us have a need for speed, Bernard. You're too high up to get much of that in a personal air vehicle."

"Well, you'll be getting all the speed you could ask for on the Nadir mission Mr. Tarn. Perhaps it will dampen your enthusiasm for it."

"Goodbye, Bernard."

I stepped down as his associates boarded the shuttle. I glanced back to see him wave a dainty salute and tap the hatch close button. To my relief, the shuttle door shut down his smiling, squirrely little face. They afforded me the least amount of clearance possible, vented pre-thrust and lifted upward, turning one-eighty to face north. As I watched them engage, it occurred to me that Bernard had accomplished everything he said he would. He had outlined a mission, I had accepted it, and he had left smiling. The little twerp.

## Chapter 2

The surf fishing was ruined. Thanks to Bernard, I could not get my mind back to it. I packed up, crossed the parking lot, and began to open the door of my Corvette when a pang of anger flared up. Maybe I should have taken a swing at him for the 'demeaning eccentricity' remark. You can screw with me a bit and get away with it, but do not screw with my car. Any Vette owner will tell you the same thing. I paused and wondered just how many of his slanted comments were delayed time bombs waiting to aggravate me.

It is a pristine, black, 1995 Corvette coupe, rebuilt to perfection from the ground up. As required, it's adapted to run biosynthetic fuel, which is okay



with me, and the fact that bio-syn gives you 2 percent more horsepower has nothing to do with that. Really.

PAV 'driving' is rated for morons. When their popularity began to soar, it didn't take many low-level horrific air crashes in the city to make computer control mandatory except in emergencies. That took the would-be fighter jocks and drunken-party people out of the equation real fast. These days, you get caught running in manual and you'll be grounded for a very long time.

On the road, the Corvette's punch was consoling. I hit the com button on my dash and got an erratic, blurry image of people, bottles, and blue sky until RJ finally got control of his wrist. He looked distracted and amused. "Ah, Kimosabi. Did you catch anything? If not, Cocoa Village appears well-stocked at the moment."

"I caught something alright. What you doing?"

"We were innocently strolling along the cobblestone, minding our own business when some sort of unjustified celebration broke out. We seem to have become a part of that. There be ale here."

"Want to go flying?"

He stopped all motion and stared down at his communicator. "Don't tease me about such things. I've warned you about that."

"It'll be a really ugly vacation."

"Where?"

"You'll need to stop by. But do not bring any catch with you."

"I understand. Expect me to make my way there at P10."

"Funny you should say that."

"What?"

"See you at my place."

Back in my piece of hex-plex, I moped around in a daze mumbling to myself about suddenly being attached to a project without having made anyone grovel. I plugged Bernard Porre's memory stick into my PC and scrolled through the data on the Griffin. To my surprise, it seemed impressive. Perhaps I was placating myself by being overly optimistic. I closed it out for later, pulled off my fishing apparel, and headed for the shower. Within the embrace of steam, I complained out loud in hopes of restoring some illusion of independence but it only came out sounding like whining. Groping around from behind the shower curtain produced no towels. Naked and dripping, I marched down the hall to the kitchen to get my beach bag. A desperate cry rang out. "Oh lord my eyes, my eyes. I'm blind." RJ was sitting at the kitchen table drinking coffee from a paper cup. "Where is my seppuku sword when I need it? I can't live with what I've just seen."

I hustled my way back down the hallway to my bedroom, found something to dry with and pulled on jeans and a Jet's T-shirt. Back in the kitchen, he shoved a capped cup of coffee at me. It was rich and dark and still hot.

"Cocoa Village was hopping, eh?"

"Yes it was. Many voluptuous women in search of many things." RJ stroked his short red-brown beard and stared at the wall in recollection. His hair was a bit askew, as always. It gave him that same could-be-crazy look that dogged Einstein, the same cranial aurora associated with people so absent in thought they forget where they are or what they were doing. They can drift off on you in mid-sentence, or in some cases even walk away in that same lost thought. Most of them have RJ's unkempt eyebrows. Too many lines in the face from too frequent and prolonged episodes of perplexed concentration. Dark eyes a little too piercing when they're genuinely focused on you can sometimes make you fear an awakening within that you're not ready to accept. Having known RJ since high school, I would trust him with my life. "How was the beach?" he asked, as he resurfaced and took a sip.

"Beautiful, up to a point."

"Mr. Porre was less than flattering, I take it."

"How'd you know?"

"They called because your com system was blocking them."

"Well, that didn't work."

"Some of his staff like to call him by his directory listing; Porre, Bernard."

"It's not just me then."

"No, it's pretty much a universal standard. Must've been a pretty big deal for him to show up like that."

"The little bastard made me an offer I couldn't refuse."

"I can tell your brain is compiling like a quantum processor. That's why you're wandering around the house naked. What's the scoop?"

"It's pretty ugly. You may not want it."

"Are you at the top of the heap?"

"I am on this one."

"Well then, I'm down. Now tell me how bad it is."

"Crew of eight. No grav. Have I lost you yet?"

"Hmm, that'll be a long first three days. Nope. Still aboard. Go on."

"Untested prototype vehicle. Unexplored deep space. Straight down from the ecliptic."

"Wow! Who the hell dreamed up this one?"

"Well put. That's classified."

"What's the objective?"

"Retrieve unspecified artifact. Gather intelligence."

"So we're taking an untested ship, to an unknown area of space, to pick up an unknown object?"

"Exactly what I said when they told me."

"What's my classification?"

"We'll sell you off as a systems engineer. Hell, you've done so much procedure assurance on that stuff you know more than most of them anyway."

"You sure you really want me on this one?"

"It's a truck load of unknowns. Your brain seems to be at its best with unknowns. Your relentless analytical saved our asses on the last trip. You're a walking think-tank. You see stuff that other people miss. Paradigms are like candy to you. My only fear is if anything happens to you I'll be mentally screwed forever."

"In that case, I shall be careful, Kimosabi. Who else will be entombed with us?"

"It's just you and me so far. The agency gets to pick two. The rest are up to me."

"Is Nira on your list?"

"Get out of jail free card on that one. She's the lead on the Electra data investigation. There's no way they'll let her go."

"You forget how persuasive she can be, or should I say how impossible to refuse. She got to you pretty good, didn't she?"

"She's still got me. That's why she shouldn't go."

"How about Perk Murphy?"

"I'm glad to say he's still not back on flight status from the Electra mission. He's okay but after that severe an injury, they get worried you might freeze up in an emergency. It's really pissing him off as I understand it, but he's in Honolulu recuperating with that blonde he met on Cocoa Beach."

"Ah, that one."

"I think this kind of trip might be too much on him too soon. Too small a spacecraft."

RJ leaned back in his seat and clasped his hands behind his head. "Well, if it's an eight-seater, I guess that rules my books out. I'll have to actually use that blasted reader. But, at least I can still cram an awful lot of crossword puzzle printouts in my case, along with my folding chess set. There's also my magnetic poker set. You have to take care of the important things first, you understand."

"You might consider heading back to the Village to pick up one of those voluptuous women in search of many things. It may be a long trip."

"You are correct, oh great mentor of man's primeval desires. I certainly would not want my last memory of someone naked to be you."

RJ left me to the wilderness of the decision-making I had suddenly inherited. It would have been a depressing executive state of mind except for one thought that kept overtaking all the others.

There was a new flight simulator being set up at Genesis. An accurate flight simulator is one step away from real flying. And, because you can do dangerous things in it without dying, it actually offers some possibilities the real thing does not. Flight Sims are complex machines. They take a variety of engineers and technicians to operate them. I wondered how far along the Griffin's was. I changed into gray flight coveralls, grabbed my keys and headed for the Cape.

### Chapter 3

The Space Center is divided into two halves, the Manned Operations side, and the Eastern Range side. Manned Operations takes up part of the beach and a big section of inland. It's where that behemoth known as the space shuttle used to jump off and to this day, many people still call it the Shuttle side of the Cape. The Eastern Range occupies one side of Port Canaveral and its own big section of beach. It's always been considered a testing ground, and in keeping to that sentiment, an awful lot of vehicles never left the pad and even more came flaming down ahead of schedule.

Genesis is a very old facility located near the south gate of the Eastern Range dating way back to when it was called the Eastern Test Range, but some silly admiral decided the word "test" was too scary for the local residents so it was abbreviated down to the Eastern Range instead. The natives of Cape Canaveral have seen errant rocket motors splash down in their river, had a B-27 crash on the beach, heard numerous booms coming from the Center when there should not have been, and endured countless expensive fire works in the sky overhead from boosters that had developed minds of their own and were interrupted by the quick destruct trigger at Range Control. Good thing they took that word "test" out of the name so people won't be worried.

The facility called Genesis was built in an era that is beyond my imagination. It was from a time when vacuum tubes and hand soldered circuit boards put men into space. Today's strangely dominant language called software did not exist at the time, but man was headed for the moon so it needed to. Its time had come. There were plenty of zeros and ones hanging around, so why not organize them into a language for machines. That was the purpose of Genesis; create the first space system software. Invent a new way to talk to machines. Like everything else done during the Mercury and Apollo era, they did that and did it exceptionally well. So well in fact, that today some of us wonder if someday a HAL 9000 or a Skynet computer system may elect to overrule us all and we'll change places with the machines.

Genesis has served a wide range of purposes since software conception was realized. It has been an administrative think-tank, a records facility, and eventually a solar energy research center for the University of Central Florida, until some of the ship captains coming into Port Canaveral complained that the solar panels were blinding them with reflected sunlight. It continued to support various research projects until private sector space made it too valuable to be anything but spacecraft orientated.

You do not need a badge to get into Genesis. You hang a right turn just before the south gate, as though you're turning into the old Trident Basin, then a quick left and the fenced area to Genesis sits wide open.

On this day, another surprise awaited me. As I pulled into the Genesis gate, a new portable guard shack had been set up. A security officer emerged and stopped me. I dug in the center console, rolled down the passenger's window, and handed him my Space Center badge. He returned to his shack and began typing at a computer screen.

You can always run the gates at the Space Center and make it. You just don't make it far. The system has been tested countless times by angry spouses, would-be assassins, illegal immigrants, protestors of every cause, drunken drivers, impatient tourists, and persons of questionable mental stability. All of these found their way to the back of a security vehicle before being taken to headquarters. Even the right CAT scan will set off a radiation alert. If you spend anytime inside the Center, you cannot miss the five hundred foot parachute jumps by men with guns, or the assortment of spent shells around your facility after a weekend of security drills, or the camouflaged, machine gun wielding special forces coming out of the snake and alligator infested woodlands when an intruder has been detected by infrared from a helicopter overhead. If any of these people ever yell "halt" to me, I won't need to think it over.

The guard returned to the passenger's window, a tablet and badge in hand. "All your documentation is already processed Mr. Tam. I just need a signature there at the bottom."

I scribbled an electronic signature and traded it for the badge. "Have a good day, sir."

"Thanks."

With nine or ten gray metallic buildings to choose from, I headed for the one with the five-story hanger door. The main entrance opened to a security room and another guard. He looked up from his podium and stood. "It's a badge exchange. I'll need yours," he said and reached out one hand. He looked at the coding on my new badge, deposited it in a numbered slot and handed me a smaller red badge with that number on it. Without speaking, he keyed in a code on a pad by the door and let me through.

There was a hallway created by stand-up blue dividers on the left that separating a break room area, and a scraped-up tan wall on the right. The air conditioning was almost too cool. Halfway down the makeshift corridor, another hallway on the right led to what looked like office areas. Straight ahead was a large double door to a highbay. It had its own keypad lock. There was a big red buzzer button next to it for those not privileged enough for the key code. It was my intention to push that button, but I was cut off when an attractive middle-aged woman sped around the corner and partially crashed into me. She pulled up startled and stepped back with a half displeased, half questioning stare. Her voice suggested tempered impatience. "Who are you? Can I help you?"

"Adrian Tam, and you?"

"Oh! Oh, Commander, we've been expecting you, but they couldn't give us any timeline. I'm pleased to finally meet you. I'm Julia Zeller, Resident Director. Have you been in the highbay yet? Have you seen it?"

Julia was disciplined and self-assured. She had that air of being unquestionably in charge. She was slightly tall, dark hair bundled up behind her head, low eyebrows that turned up at the end giving that narrow-eyed, bedroom-dare stare, rosy cheeks and puffy red lips. She wore a dark, printed, silk twill wrap that left an open V that was almost too revealing. An unbuttoned black long sleeve cardigan was draped over it. I had the feeling I would not want to debate Julia or be on her wrong side.

"Just got here."

"Oh good. I'll get to take you in myself. I've never seen a project advance this quickly. It's quite amazing."

"It's a pleasure to meet you, Julia." I held out a hand and she responded with a deceptively timid, reluctant handshake. "How long have you been director?"

She turned and headed for the highbay doors. Our footsteps echoed down the hallway. "It's usually a five-year stint. Part of the learn-everything tour. I've been overseeing the facility for about two years. Your mission has somewhat thrown us for a loop. It kind of fell out of the sky, if you don't mind the play on words. Our highbay hasn't been used much. The last program was drop tests of an interstage. I've never seen so much equipment transferred so quickly. There must be some high level urgency driving this. Care to fill me in on any of that?"

"What have you got so far?"

"They brought in a pneumatic support structure from the old Constellation program. It was unused, but old. They completely refurbished and adapted it for the new spacecraft mockup. The simulator itself is like nothing I've ever seen. It's bigger and more complete. It's futuristic-looking. Any idea where it was developed?"

"Can I fly it yet?"

"You could on a very limited basis, but that would rob us of three days of twenty-four hour processing to get the thing completely ready for testing."

"Let's not do that, then. I'll wait."

"Commander Tarn, you're evading my questions with the skill of a politician."

"Julia, there's no reason to insult me."

She stopped and laughed. "Oh, for the days of the dumb jet-jockeys. Is there nothing at all you can tell me about all this?"

"I'm going to be spending a lot of time here repeatedly crashing your new simulator, so you probably should start calling me Adrian. Can I see it?"

She offered a conciliatory smile and held one hand up. "This way." She led me past the break room to the heavy metal doors. After a quick look

around she said, "Yours is 8376." She tapped it in, waited for the dicks, and pulled the door open.

The massive steel highbay looked like a clean room, though it was not. Gray acoustic door-size panels lined the walls from floor to ceiling. Big high-pressure sodium lights hung fifty-feet overhead. A yellow gantry crane was parked at the far end of the building. The reinforced white tile floor looked like you could eat off it. The place was busy. Half a dozen technicians in white coveralls and hairnets were coming and going, their choreography managed by two or three engineers in white lab smocks. Periodically, some of them were pausing to stare at us.

The item in the middle of the bay was so profound it mesmerized me. Julia picked up on my stun. "Yeah, the platform was ready when they brought the simulator in. It came by barge. They offloaded up by the industrial area onto a kneel-down transporter. I had no idea what to expect. They used a huge, special transfer container. We opened the bay doors and the thing was completely covered in foil. After they raised it on the air pallets, they rolled it forward and let the nose tear through the foil. You remember that very old movie with Charlton Heston where he crashes his spacecraft into a lake? When I first saw the front end I thought it was the prop from that movie. That front end is almost identical except bigger."

It was an excellent description of the portion of the Griffin that now sat atop the motion platform. The front end looked like a white, three-blade broad head arrow tip. It could have been a spearhead. The nose came to such a distinct point; it really did look like a weapon. There was something unusual about the surface coating. It was not standard. It looked like a white, metallic substance had somehow been bonded to the craft. The side blades that began near the nose swept back to become the retracted wings. I instinctively looked for the red labels that usually said 'no step' on them but did not find any. Blue-tinted windshields were fit into the top and bottom half of the front end forming almost a cupola of vision. These were three way windows; transparency, video display, or heads up display data. External, retractable blast shields were available around them.

The vehicle was much larger than expected, the body wider than tall. A repulse drive dome was attached to the bottom mid section. Behind that, the simulator was cut off. No reproduction of the habitat module or power plants.

Julia said, "You see the guy in the gray suit and tie with his head in the back of that console against the wall behind the simulator, the only guy not wearing standard issue highbay gear?"

The man backed out of the console, said something to a technician helping him, and looked over at us. Julia waved him over. "He's your Test Director, Terry Costerly. He came in about a week ago. He's sharp."

Costerly approached us with eyebrows raised. He stuck his hand out and spoke as we shook. "Terry Costerly."

"Adrian Tarn"

"Oh, I see. What do you think?" He waved a hand across the highbay.  
"My kind of toys."

He stifled a laugh, thought about being offended, and then smiled and said, "Yeah, me too."

Julia's cell interrupted. "Zeller... No, no, no, that's not what was promised. I have the invoice on my desk. Give me a minute to get there." The fierce-look returned to her face. She nodded at me and said, "I'll have to turn you over to your drill instructor here, Adrian. Come see me in my office when you get a chance, so I can ask some more questions you won't answer." She ducked her head back to the phone and headed off.

Costerly appraised me out of the corner of his eye.

"Can I get a look at the flight deck?"

"It's sealed for pressure testing at the moment. They'll be through in about forty-five minutes. Why don't I show you your office first?"

"Pressure testing? There's a real environmental control system in the thing?"

"Yes, and if I program in a life support failure and any of you hot shots fail to recognize and correct it, I will let you pass out before I flood the cabin."

"Wow! I'm impressed"

He led me to a hallway on the north side of the hanger. My office was the first door on the right. It opened to quite a large open room. Desk in the middle stacked so high with logbooks and systems manuals it was intimidating. Big picture window in front of the desk looking out over the highbay. Comfortable brown-leather chairs all around. A long wood-grained chart table against one wall with diagrams and flow charts pinned to the wall on a large bulletin board.

"I've been using your office because of all the books. Mine are still arriving piece by piece. Haven't seen this much paper in a long time. It's because of when the Griffin and the motion platform were designed. Paper was still in use quite a bit back then."

He stood at the highbay observation window staring out at the Griffin mockup. "You realize of course that it's a full flight simulator. Actually, it's a lot more than an FFS, really. The DOF is beyond the six degrees-of-freedom motion that we're accustomed to in most simulators. It was a standard Stewart platform hexapod, but they've pushed it way beyond that. The thing will go completely vertical in either direction, and the acceleration onset cueing is much deeper than normal. You will think you're diving, and there will be nothing you can do to make your mind not believe that."

I took a seat at the desk and tested the chair. "I thought you were a launch director. How do you know so much about simulator platforms?"

"My studies were in aeronautical science even though most of my applied is unmanned aerospace. I wanted it that way. The unmanned payloads don't mind fifteen or twenty G's, so why waste gravity repulse systems on them. That's the only reason we still send payloads up with liquids and solids



these days. The atmosphere in the Launch Control Centers is quite a bit more intense for those."

I swiveled my chair back and forth. "So have you ever lost one?"

He looked at me as though it was almost too personal a question. "Why? Are you worried?"

"Not at all."

"We had a small assist motor attached to the side of a Delta Triple X burn through once. There was a metallurgical flaw in the motor casing that somehow didn't get picked up. The vehicle got just above the trees when the burn-through set off the main propellant. The thing was still full of fuel. It went off like a bomb. The blast radius was about a mile. It set fire to a couple dozen cars in the parking lot. They locked down our launch room because we were too close, but we started getting smoke in the ventilation system. We had to use the masks in the emergency storage locker. It was the first time that had ever happened. They kept us in the damn launch room for twelve hours while the fires got put out and the orange cloud headed out to sea. Other than that, all my projects have been smooth or correctable."

"Somebody must really love you to bring you in on this one. Why'd you take it?"

"There were some old debts brought into play, but the truth is I would've signed on anyway. I don't have all the data yet but there's something happening here. Those engines? I haven't heard of any development phases for those. The spec sheets tell you everything they'll do but not how they do it. And where did this vehicle come from? I'd like to know that. My curiosity got the best of me, and that's okay as long as none of this dandestine stuff affects my work. Is there anything you can add to what I already know?"

"That seems to be the question of the day."

"Yeah, yeah. I got it. I'm getting new flight data requirements in, pretty much by the hour. I've got a pretty good picture. About forty-five minutes ago, they started sending me mandates for the first and only test flight. That's damn interesting. Have you seen it?"

"To be honest, everybody seems to know more than me."

"Did you know you're headed for the G1.9 brown dwarf, our sun's companion star? That's just to certify the vehicle and crew for deep space."

"I did not."

"That's what just came in encrypted in my email. That will be the only beyond-orbit test flight we get before initiating the long countdown for the actual mission. Wherever those dream engines came from, they must be damn sure of them. You'll get to test them with a few seconds of engagement, and that's it. Then afterward, the space station Navigation Scanning Verification Group can use the data to certify you for deep space."

"Any other surprises I should know about?"

"Hey, at least I'm glad to have known something you didn't." He laughed. "There's quite a few rocks enslaved to that dwarf. The test mission

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