The Next Frontier

by JakeGrey

Summary

The Kerbal Space Program has come a long way in the thirty years since their first manned launch. Permanent settlements on Duna, extensive asteroid mining operations, an orbital habitat in the works... Not too shabby for something that began with a bunch of enthusiastic amateurs building sounding rockets out of scrap metal.

But for the Kerbin Space Agency, there's no such thing as a final frontier. Their scientists have probed the depths of the mysterious space-time distortion known as the Deep-Space Kraken and learned the secret of faster-than-light travel, and now the five brave Kerbals of the starship Starfarer 1 are setting out on their people's first mission to another star system...

And boy, are they going to be surprised when they get there!

Notes

See the end of the work for notes

http://archiveofourown.org/works/1069433
Chapter 1

Note: All dates have been converted to their approximate Earth equivalents for reader convenience.

Welcome To The Captain's Blog!

Posted by: Jeb

July 20th, 2522

Mood: Chipper

Okay, before we go any further I'd like to make it clear that the name of this thing was *not* my idea. If my taste in puns was that bad, my list of accomplishments in the field of kerballed spaceflight would be much shorter and end with "first astronaut to be murdered in space".

Anyhow. My name is Jebediah Kerman and I'll be regularly updating Kerbalkind on the progress of our first ever interstellar voyage through these blog entries. Why blog entries, I hear you ask? (Because Lord knows I did when the suits told me about it.) Well, turns out that designing, testing and building an Alkerbierre Drive and a Quantum Entanglement Communications System costs a lot of money and we had to lay off our entire Public Relations office, so for once our perenially inadequate budget is working in our favour...

I kid, I kid! Supposedly this is supposed to be more personal, intimate and Kerbal than pre-digested press releases and staged video interviews. I guess I'll have to let you all be the judge of whether it works.

Anyway, I'm writing this from the *Starfarer 1* in a standard 100km equatorial parking orbit, currently passing over the Great Tranquil Sea. We're waiting for favourable orbital conditions for the transfer to Jool, which we'll be using for a gravity-assist to take us well clear of the system before we fire up the hyperdrive...

Damn. I've been in this business nigh-on thirty years, watched the space programme grow from my first sub-orbital flight strapped to a glorified firecracker to flags and footprints on every solid body in the system and permanent settlements on two of them, and I still can't quite believe we've got an honest-to-Kerweh *faster-than-light drive* on this ship. And yes, I know it's not technically FTL because it bends or compresses space-time or something -don't ask me how that works- but anything that gets us to our nearest stellar neighbour in eight months where light takes as many *years* is close enough in my book.

Oh, yeah, that reminds me. Technical questions about how the Alkerbierre Drive actually works should be directed to Mission Specialist Scott Kerbley -see the "About the Crew" page for his email address- because I really don't know much more than what I read in Science Quarterly; my degree's in aerospace engineering, not quantum physics. Questions about that Quantum Entanglement Communications System I mentioned earlier should be directed to Kurt MacKerjel, our *other* mission specialist. I doubt he'll be able to tell you a whole lot though, because it's on loan from the Air Force -as is Kurt, incidentally- and most of the details are classified.

And since it's already been leaked to the media I might just as well confirm that yes, Kurt is also our Weapons Systems Officer because no, we are not going out into a completely unknown and unknowable situation without some means of self-defence. I know lots of people are unhappy about
it; hell, I'm not exactly thrilled with the prospect either, and I hope and pray we don't need the shotgun and the game rifles in the surface excursion gear, much less the ship-to-ship mass driver or the point-defence lasers. But better to have 'em and not need 'em than the other way round, I say, and I'm the one flying this thing.

And no, the lander will not fit down the barrel. I already tried.

Anyway, I'm going to have to wrap this up now, because we're running an RCS test as soon as the last supply container's locked down. I think Stratus Inc's logistics people are running a livestream; time permitting I'll put the address up here. Adios for now!

Comments:

Sat Jul 20 02:41

And no, the lander will not fit down the barrel. I already tried.

Don't ever change, Jeb!

-Wehrner

Sat Jul 20 02:46

Damn it Jeb! What part of "neither confirm nor deny" wasn't I clear to you about?

-Hanford at KSC

Sat Jul 20 02:47

How 'bout the part where we're still keeping that up after the new guy rammed an ammo canister with a forklift and scattered 150mm railgun slugs all over VAB 4 while you were stood there spouting soundbites for the TV news crew? "Zero-G bocce tournament in Jool orbit" was a good one-liner but a lousy cover story. Now get your sorry keister in here and help me with the accident report, I've got about five government agencies wanting an explanation for the mess in there.

-Gene

Events at KSC

Posted by: Jeb

July 21st, 2522

Mood: Nostalgic

Finally got to see the news clip. (RCS test went fine, by the way, after we shifted some stores around to correctly position the centre of gravity.) Man, we haven't burned down a Vehicle Assembly Building in a while. Kinda brings back the good old days!
Since a couple of people have been asking, the stuff that got spilled? Chlorine trifluoride, which we use for recycling the cores of the LV-Ns and never, ever under any circumstances load onboard a rocket. That was not an optical illusion, the bucket of sand someone emptied over the spill really did catch on fire. It's about the most powerful oxidising agent known to science. We did look into the stuff as a propellant once, just after we got federalised into the KSA. I think the details are still classified, but suffice it to say that the stuff was responsible for some of the Propellant Research Complex's more memorable explosions before we gave up on it as too damn dangerous.

And no, I don't know what it was doing in VAB 4 either, but I don't envy whoever put it there when Gene gets his hands on them. I don't think I generated that much paperwork after the RT-5 Incident!

Comments:

July 21st, 22:47

Not quite, but it was a close-run thing. I'm still mad at you.

- Gene

July 21st, 22:50

The owner of that yacht was looking for a good tax write-off anyway, we found Bob in the end, the trailer really wasn't all that badly damaged and I bought you another car with my own money. Will you let it go already?

- Jeb

July 21st, 22:54

Remind me again why I'm flying with this maniac? Anyway, the chlorine trifloride figures actually have been declassified and are available at the KSA document archives. I won't bore lay readers with the math, but we could have easily got single stage to Munar orbit out of that witch's brew if we'd found anyone willing to fly it. Yes, amazingly enough, there are depths of suicidal idiocy that even Jeb refuses to plumb. At least when he's sober.

- Bill

July 21st, 23:01

To elaborate a little on Jeb's account, we spent three months experimenting with chlorine trifluoride - against my better judgement, I might add!- after a rumour reached our ears that Rockamax was testing it for a Probodyne Prize attempt on Duna. (I never did find out if they were or not, but I sincerely doubt it.) It never progressed past the static test stage... No, actually it's more accurate to say it never progressed past the "flying very fast in a hundred different directions at once the second we turned it on" stage, and it was a good day when we got as far as pressing the start button before something went boom: Just storing the stuff presented no end of logistical challenges, because it reacts violently on contact with just about everything up to and including glass. Steel and copper turned out to work best, because it reacts to form a thin protective layer on top of the metal, much like aluminium when it comes into contact with the atmosphere. You still have to pour extremely carefully though, because if that layer doesn't have time to form properly or gets knocked off... Well. Ever seen a steel drum burn like magnesium? I have, and I never want to again.
The final straw was actually the most successful test, which achieved about a quarter-second of actual thrust before it blew up... which was enough to tear the prototype motor from its cradle and launch it right out of the testing area and into an adjoining field. Then it blew up, to the great detriment of a nearby barn and a couple acres of previously arable land. (Did I mention chlorine trifluoride's horribly toxic as well as explosive?) The insurance company put their foot down afterwards, and they hadn't then the lab assistants and most of the saner engineers were all set to come out on strike if we didn't get rid of the stuff, so that was the end of that. And a good thing too!

- Wehrner

**On the Selection Process**

Posted by: *Jeb*

July 25th, 01:18

Mood: unspecified

So, a major newspaper who shall remain nameless published a column this morning criticising the lack of female representation on the Starfarer mission. I'm going to reproduce my response in the comments section here:

"Holly: I'm not going to disagree with you that it's a damn shame, but I want to be clear on something. The Kerbal Space Agency does not, never as and as long as I have any say in the matter it never will have 'diversity quotas'. I want us to recruit, assign and promote on merit and merit alone.

"What we do instead, because I'm sad to report that some of our senior people are too ornery to change their minds but too good at their jobs to simply pension off, is remove any personally identifying information from resumes on arrival. Age, gender, ethnicity and even the candidate's name is only revealed after the selection committee decides to hire them. It's almost certainly possible to circumvent this system, but we haven't caught anyone trying yet, and if we ever do they'll be clearing out their desk the same day.

"I've been told, by the way, that one of the shortlisted candidates for Mission Specialist was a woman known to Scott Kerbley, the successful candidate. I won't name her here, but I do have a message for her. Candidate 276, if you're reading this then let it be known that you are an excellent astronaut and I think you'll go far in the spaceflight business, whether it's with the KSA or the private sector. The one and only reason you were not selected is that you have fewer hours in space than Scott and aren't yet command-certified. Experience is paramount on this kind of mission, and we have almost no margin for error."

I hope that clears up any misconceptions.

Comments

July 25th, 01:52

Mr Kerman, you flatter me! And no hard feelings, even I have to admit Scott's the better pilot.

- Candidate 276

July 25th, 01:56
You dodged a bullet, lady. Jeb's got enough cheesy pickup lines to last the whole two-year mission!

- Bill

July 25th: 02:10

And yet I've still had more sex than you...

- Jeb

July 25th, 02:16

*sigh* We didn't even make it out of Kerbin orbit this time. Is that a new record?

- Bob

"So, what's it like being an astronaut?" And Other Frequently-Asked Questions

Posted by: Jeb

July 28th, 18:37

Mood: Amused

So the five of us up here and a bunch of other KSA flight crew were having this big conference call a day or two earlier, and we ended up comparing lists of questions members of the public have asked us. Some of them were amusing - "What happens if the astronauts fall off the space station when they're outside?" was my favourite- many of them were inane and some of them were unfit to reproduce in an all-ages environment like this blog.

Though for the benefit of that one guy Geofley met in a bar a couple of years ago, doing that with a vacuum cleaner and doing it with a hole drilled into the hull would not be remotely similar except for the "serious and lasting injury" part. (I hope I don't have to draw you all a picture.)

But nevertheless, it inspired me to open up a sort of Q&A session. Post your questions in the comments section and tomorrow afternoon I'll have a shot at answering some of them.

Geneny Kerman

Posted by: Kurt

July 29th, 01:02

Mood: unspecified

I guess you'll all have heard by now that Gene collapsed at the Space Centre a couple of hours ago. We don't have many more details than the media at this point, but it's serious.

Jeb, Bill and Bob are on the surface right now, and so's Scott; he didn't think any of them ought to be flying a spaceship on their own right now, and I can't blame him.
I know your thoughts and prayers are with Gene, his family and friends right now, but I'd like to ask well-wishers to refrain from attending the hospital in person right now. We appreciate the sentiment, but it's making it difficult for the medical staff to do their jobs.

If there's any further news, good or bad, I'll pass it on as soon as I hear it.

Comments

July 29th, 18:46

He's gonna be okay. Docs saoid it wasn'y as bad as it looked at first but if he hadn'y come in when he did it coulda been much worse.

Tired. can't see to type right. gonna craSH NOW, VALL YOU IN THE MORNING.

- JEB

Farewell To Gene, And Responses To The Q&A

Posted by: Jeb

July 31st, 00:06

Mood: Misty-eyed

Got some sad news, folks, though not nearly as sad as the news I thought I'd be breaking this time the day before yesterday. After that little health scare, Gene Kerman has made the decision to take his well-deserved retirement.

No words of mine can even begin to describe his contribution to the Kerbin Interplanetary Society, the Kerbin Space Agency and the whole field of spaceflight. Bob and I flew the rockets, Bill told us where the hell we were, Wehrner designed 'em... And Gene made sure everything was paid for. He organised the meetings and fundraisers, negotiated the sponsorship deals and made sure we didn't blow the rent-money on rocket fuel. Maybe it wasn't glamorous, but if it wasn't for him we would literally never have got off the ground.

As Operations Director at Mission Control, he never once lost a Kerbal on his watch; he never panicked, he never lost hope and he always found a way to bring us home safely. As Chief Executive of the KIS, he was a brilliant negotiator and an outstanding manager. The interoperability agreement with Rockamax, the merger with C7 and Probodobodyne, the huge operational freedom granted to us after we were federalised into the Kerbin Space Agency? All his doing.

Enjoy your retirement, old friend, because Kerweh knows you've earned it. The space program won't be the same without you.

Anyhow, I guess I ought to take care of the questions everyone asked. First up is someone calling themselves "Scotius":


Dear Jeb. What is inside the compartment labeled as "Not Food"?

Oh, now you're taking me back! For the doubtless depressingly high percentage of readers too young to remember, our correspondent is referring to this infamous publicity shot of me and a couple of rookies sitting in the first production Hitchhiker Crew Module:

Those labels were a practical joke by someone working in the VAB -we never did find out who- and were stuck down so thoroughly with Superglue that they were still there when the Vanguard station was decommissioned. I think that module ended up as part of Munbase Two.

Anyway. To answer your question, so far as I can remember from when I was on Vanguard, that cupboard normally held crockery and eating utensils. Though we did occasionally stuff some of the more unpleasant ration packs in there as a form of protest!

Next up is a twofer from "Kirk Kerman":

Dear Jeb, I would like your, shall we say expert, opinion on something. I'm sure all of us are familiar with the theoretical "Orion Project". Tell us, and settle a bet; how
effective a form of propulsion system would it actually be? And, personal curiosity here, why a single habitat ring rather than two contra-rotating ones?

We'll do these in order. As far as Project Orion goes, there isn't really a straight answer to that. in theory it had an absolutely astounding thrust-to-weight ratio and could have made the trip to the Mun in a matter of hours, but there was one big problem; getting the parts into orbit. The pusher plate alone would have massed as much as a complete and fully fuelled Pioneer-C launch system, and we couldn't spread that mass out over a few dozen conventional launches because it has to be completely seamless in order to withstand the blast. There's a proposal for manufacturing it in orbit that is the single most awesome piece of aerospace engineering I've ever heard of; it entails pumping a few thousand tons of liquid steel into orbit, letting it coloalesce into a sphere naturally and then using two specially-designed spacecraft as a giant hammer and anvil. Unfortunately, the necessary infrastructure is generations away, and now that we have VASIMR engines at the ground-testing stage the whole concept is likely to remain an interesting might-have-been.

As far as your second question goes, there's a couple of reasons. The first and simplest is that the Starfarer 1 is a refitted Dres Prospector-class factory ship, which was the largest craft available to buy secondhand when the mission was green-lit; as I've alluded to elsewhere in the blog, the Alkerbierre Drive was staggeringly expensive to develop and the budget didn't stretch to anything newer. It's probably for the best, though. Nearly all modern long-haul ships use the newer system these days because it eliminates the need to de-spin the ship in order to change course, but the older technology has the advantage of being a lot simpler mechanically; no need to worry about the rings getting out of sync, forcing you to hit the emergency stop and limp to your destination in zero-G so you don't snap her in half. It doesn't happen often these days, but we don't want to take the risk on a mission where there's no repair facilities waiting for us at our destination.

Reader "KSK" has one about the warp drive:

Dear Jeb, although I guess this one's for Scott really. The Alkerbierre Drive sounds like it uses a lot of energy. Is there any truth to the rumour that it's powered by the crew treadmill in the physhab module? If not, how is it actually powered?

Scott hasn't stopped laughing yet, so I'd better tackle this one. The crew treadmill in the physhab module being wired into the power grid was a serious proposal at one point, because we're not going to have much solar energy to collect en route and every way we can economise on electrical power will help, but it was eventually ruled out as involving too much complication for too little gain. As for the Alkerbierre Drive, its primary power source is technically a military secret, but a number of eminent scientists and a lot of science fiction fans already guessed correctly. I'm not going to tell you which ones though!

And I'm about to hit the character limit, so I'll tackle some more in a day or so.

Comments

July 31st, 17:57

Minor correction. That module was actually integrated into Munbase Three, and is still in use as a break-room for the astronomy team. Not only are the labels still there, the compartment labelled "Board Games" actually has board games in it!
- Dodgee the Munar Janitor

July 31st, 18:04

Jeb, if you keep playing fast and loose with classified information on this thing I'm going to tell Kurt to start censoring it. Last warning!

- Hanfrod at KSC

July 31st, 18:06

Jeb already ran it by me and I okayed it. Lighten up.

- Kurt

July 31st, 18:09

I swore to keep this a secret until my retirement, but I guess medical leave with a view to same is close enough, so here goes.

I put the labels there.

- Gene

Our Destination

August 1st, 00:00

Posted by: Bill

Mood: unspecified

Jeb's going to be off the air for a bit thanks to an EVA accident; nothing serious, just a sprained wrist. In the meantime, I'll be taking up his duties as primary blogger.

I'd like to talk a little about the system we're hoping to reach, Zyrix. Depending which astronomer you ask it's either an unusually large red giant or an unusually small red supergiant, with two gas giants and at least four planets in the same size range as Kerbin or Duna. It's only the third closest star to us after Cherint Prime and Proxima Cherint respectively, but it has one important distinction; we have evidence for intelligent life there. Tenuous evidence, but evidence nonetheless.

You've all heard the rumours about "The Bleep", I'm sure. The papers blew it some way out of proportion; it's impossible to even be certain it was an intentional transmission, much less clean it up into anything we could decypher. But it's a lead, the first lead the Search for Extra-Kerbin Life's radio-telescopes have ever found. And having listened to the clearest version we can get with current technology, I'm satisfied in my own mind that it's no pulsar or other natural emission.

You want my hypothesis? Maybe it's wishful thinking, but I reckon someone out there is looking at the same issue we are: We can broadcast all we like, but nothing we have -nothing that's reckoned to be even theoretically possible with conventional radio, in fact- can travel more than a few dozen light-hours before it degrades into a garbled mess. Even prime numbers or something might not
work. But a long burst of a single repeating tone, or a modulation like we use in distress radiobeacons? Those can be identified at much, much greater distances than anything else, even simple stuff like letter-codes. It can't convey any message more complex than "Hey, over here!", but if it reaches a civilisation with the same technology we've got plumbed into this ship, that's all you really need.

Like I said, maybe it's wishful thinking. But the only way to know for sure is to go there and find out. And that's what we're going to do...

Forgive me if this sounds like a terrible cliche, but this is the moment I have been waiting for since I was a ten year-old boy staring up at the stars. Thirty years of flying rockets, from a prototype we literally built out of scrap in a tin shed behind a junkyard to a ten million kero spaceplane, have been building towards this moment. Thirty years of wrangling with government committees, spending weeks at a time in a tin can the size of a handicap stall and worst of all, putting up with Jeb's driving. And it's all going to be totally worth it.

I won't even care that much if we don't find life out there, much less another civilisation. What matters is that we dared to dream of this day, and we made it happen. Not just the five of us. Not even just the dozens of engineers and scientists, both at the KSA and many universities and private companies alike, who've worked to build this ship and its technology. You, the ordinary Kerbal on the street, you cared enough to send us out there to take a look for ourselves. And for that, I can never thank you enough.

Comments

August 1st, 00:02

You're welcome, buddy. Good luck.

- Nisa320

August 1st, 00:04

That was beautiful, man. But I'm still gonna kick your ass!

- Jeb, dictated to Kurt.

It's Go Time!

Posted by: Bill

August 4th, 19:42

Mood: Indescribable

We commence the transfer burn to Jool at the top of the hour. Approximately three months later, we'll make a brief stopover at Laythe to pick up fuel and then use Jool for a gravity-assist in the direction of Zyrix. Once we clear its SOI, we're firing up the hyperdrive.

I'm about to ruin my image as a perenially stoic, level-headed kind of guy now, but I don't care.

Yeeeeeehaaaaaaaaaw!
Oh, by the way. "Mallock Kerman"? I like your theory a lot.

Comments

August 5th, 11:10

Huh. Speech-recognition software really has advanced by leaps and bounds. Must remember that when I get around to dictating my memoirs.

- Gene

August 5th, 21:50

Don't do it, Gene. That's a slippery slope all the way down to long cigarette holders and a wardrobe full of black turtlenecks!

(Can you tell we already watched most of the good movies in the onboard library?)

- Bob

Under Weigh

Posted by: Jeb

August 9th, 00:42

Mood: Restless

You know, a much younger and stupider Jeb Kerman would have been truly shocked to discover that his future self was bored during a flight to another world. But it's true. The actual "getting from place to place" part of interplanetary travel is honestly kind of dull, long periods of waiting punctuated by short bursts of complicated math. It's got better in some ways as technology advances but worse in others. Take Pioneer 3, for example; on the one hand, I had a reasonable amount of stuff to do what with the need to take position data at regular intervals with nothing but a sextant, a pad of paper and an onboard computer that was roughly on a par with a modern graphing calculator. On the other, I had a grand total of 20kg of space for personal effects, and I had to fit everything in there. Books to read, shaving kit and toiletries, clean underwear... If Mission Control hadn't taken pity on me and plugged an FM radio into the comm system so I could listen to it on the backup transceiver I might have gone nuts.

Here on the Starfarer 1, I still have all of 20kg for personal effects. One-twentieth of it is taken up by a laptop as powerful as the refrigerator-sized mainframe we used for trajectory calcs during the early Moho launches, which was admittedly years out of date at the time and sold to us for its scrap value, and an external hard drive with so much assorted entertainment media that the books alone would have needed their own mission to get to the Mun with me. No, really: I have about 57GB of them. A typical book takes up about 1MB of disk space in most common ebook formats and weighs... Well, I don't have a set of scales or a Kerbin-equivalent gravity well handy so for the sake of argument, call it 250g in paperback. I'll leave the math as an exercise for the reader.

But conversely, we've considerably increased the level of automation. Position fixes are taken with an array of onboard cameras, and as for computer support? Like I said, I'm typing this blog entry on
something more powerful than what we had to work with in the early days. It's more fuel-efficient and a hell of a lot safer to let the automated systems handle everything under normal circumstances, but it does tend to leave us crewmembers feeling more like ballast than an important part of the mission. And it's still not very exciting day-to-day until you reach your destination.

Wanna experience a taste of it for yourself? Buy a copy of Buzz Kerman's Race Into Space (I'd give you the usual spiel about how other space-program simulators are available if I could think of any), install the "Mechanical Buzz" mod and set up a mission to one of the outer planets. Without turning on time-compression. Oh, and you can't leave the house or access the Internet until you reach your destination unless you're reenacting a mission from the last five years, in which case you can have a 25kb/s dial-up connection for the duration of your trip. Say, did anyone mod in QECs yet now they've been declassified? Must check the forums later.

Anyway, if you still think I have the awesomest job in the world after doing all that, I suggest either checking out the "Careers" link at the bottom of the page or seeking professional help.

All the same, I have to admit the food's got better since I started out in this business. And the view out the window? Man, that never gets old...

Anyhow, a correspondent by the handle of "Needley Kerman" brings up a pretty good question.

"To the entire crew:

I have a question about relationships within the mission. Who are all of you more/less friendly with? Also, do the recent upgrades to the KSC change anything about the mission?"

Hah. Well, Bill and Bob and I have been doing this long enough that we're almost at the point of finishing each other's sentences. We weren't always on such friendly terms -Bill and I in particular hated each other with a passion at first- but I guess you kind of get used to the two faces who've been around more or less consistently for three decades, so we get invited to each other's family barbecues and go out drinking together occasionally even if we don't see all that much of each other when we're planetside. (I don't see much of anybody when I'm planetside these days, truth be told, not since I finally saved up enough for a real boat.)

The new guys are... well, we're still getting to know one another, and I hope the three of us aren't too cliqueish. Scott's a nice guy, almost permanently cheerful and one of the very few guys I've ever known who can get Bill to laugh in company, which almost entirely makes up for his inexplicable fondness for shepherdball* and his complete inability to make coffee** that anyone but an engineer can drink without heart palpitations. I also suspect he may dabble in Mad Science in his free time, but hey, who am I to judge?

Kurt was a little standoffish at first, but he fit in pretty well; you might think a military guy seconded to a civilian crew would have a bad case of culture shock, but in reality the Air Force work a lot like we do: Everyone knows who's in charge and what our jobs are, but rank and ceremony stays on the ground. I do wish he wouldn't wear those augmented-reality glasses of his when he's in the crew lounge, though, I can never shake the feeling he's not really listening.

Or maybe that's because I've developed a tendency to ramble in my old age. Whose idea was this blog thing again? Is anyone even still reading this?

* Expletive Deleted
I don't know who turned off comments on that last blog entry without telling me, but if I find out I will personally see to it that he or she is fired. Into orbit, while duct-taped to a booster stage.

I was saving that whiskey, too... And forget what I said about Scott being a nice guy!

Comments

Whoever provided the relevant mouse-clicks, the decision was ratified by the entire Press Office. You really should quit calling them "REMFs" behind their backs, dude.

- Anonymous

August 9th, 21:53

You're a mean drunk, Jeb, you know that?

*sigh* Alright, alright, I'm sorry I laughed at you. Now let me back in, I need to pee.

Scott, posted by mobile

August 9th, 22:00

Laythe

November 21st, 11:23

Posted by: Jeb

Mood: Excited

Sorry about the long silence, folks. There hasn't been a great deal to blog about until now, although you'll be pleased to know that I accepted Scott's apology before his air supply gave out, and my mid-life crisis has been put on hold for the duration of the mission... Unless we find a planet of pink-skinned space babes with [details redacted for the benefit of human readers who'd probably rather not know that much about Kerbal anatomy] or something. Hey, you never know your luck, right?

As I type, we're about three hours from entering orbit around Laythe, where we'll be taking on extra reaction mass kindly donated by the Laythe Colonisation Cooperative. (Disclosure: I'm a non-voting honourary member of their board of trustees.) The orbital fuel depot and the ground station are currently unmanned, but the first colony flight is pencilled in for August 4th three years from now. Homesteading rights on land are three hundred keros a square metre plus passage while stocks last, and houseboat berths available for the low, low rate of two hundred keros! (Houseboat sold separately, of course.)

Yeah, yeah, I know. No product placement. It is pretty exciting, though; the first off-Kerbin colony
to be totally organised and financed by the prospective colonists!

You know, in its way, that's almost more exciting than the thought of travelling to another star system. See, for the last couple of decades, space travel has been largely the preserve of either government agencies like us or corporations like Rockamax and Davon Logistics. We've achieved a hell of a lot, don't get me wrong, both directly and as a result of spin-off technologies ranging from satellite communications to personal computers to non-stick cookware. But much of it's been top-down, filtered through grants committees and risk assessments and red tape until the process of putting Kerbals on another planet got to be about as exciting as securing planning permission for a suburban housing development. I don't mind the cost-benefit evaluation process so much -if I learned nothing else from the Interplanetary Society days, I learned the virtue of getting maximum effect out of limited resources!- but something of the joy and wonder of spaceflight was lost when we moved on from being a group of like-minded amateurs getting together to do something that had never been done before, for no better reason than because they could and they wanted to.

And that's precisely what a couple of hundred ordinary men and women from all walks of life are doing now. They're pooling their money and their knowhow and they're making plans to achieve a first in Kerbal history, namely building a fully self-sufficient colony on another body. Because they can, and because they want to.

Sometimes, when I'm visiting other nations and tribes looking to send one of their own into space, their people ask me what it might take to build a space program of their own. I always say they're half-way there just by being willing to ask the question. You don't need to roll your own rockets and launch 'em from your own facilities; I won't stand in your way if you wanna try, but there's no shame in buying off the shelf. What matters is having the ambition, the persistence and the courage to dream of doing something awesome when you get there.

Comments

You're developing a sentimental streak in your old age, Jeb. You're right, though, the Laythe Colony folks remind me a lot of us old hands when we were still having our planning meetings in a bar and using a rented warehouse for a VAB. Very little cash, not much of a clue what the hell they're doing, but big dreams and lots of moxie.

Heh heh heh. Guess I finally get to pull off a first in kerballed spaceflight all of my own: First beach bar on Laythe! I've got this great little spot picked out near Geofley's Cove. There's a beer on the house with your name on it any time you boys can come visit!

- Gene

November 21st, 23:53

Now that's a real rocket man's retirement! Can't wait to come visit you there, old buddy.

- Jeb

November 21st 23:58

You know, I should be mad at you for shilling your side projects on company time. But you know what? I don't care. That was friggin' beautiful.

- Hanfred at KSC
Chapter 2

Interstellar space, some months later.

I've blogged previously about how space travel can be kind of boring, Jeb wrote. And it turns out, perhaps not altogether surprisingly, that hyperspace travel isn't very eventful either. And lacks the redeeming feature of a beautiful view.

He stared out of the centimetre-thick reinforced glass of the cupola where he was sitting, set into the hull like an old-fashined bay window. The Starfarer 1's lights reflected off the uniform, featureless expanse of grey that comprised the interior of the warp bubble.

That's the most disappointing part, I think. The warp bubble, as Scott describes it, is just so... so damn dull! No fantastic lightshow of Dopplered, red- and blue-shifted stars, no indescribable void so far beyond anything the Kerbal mind can comprehend that to stare into it is to be stricken blind or go gibbering mad, just... grey. The exact same shade as my TV screen back home if I flip it to a dead channel by mistake, in fact. I mean, why? Had Kerweh's special effects budget run out by the time he got to this part or something?

He thought about that for a moment, then added: It's not that I particularly wanted to be stricken blind or go gibbering mad the first time I looked out of the window, mind you. But it would at least have created a certain sense of occasion.

"Jeb, we're going faster than the speed of light. How much more sense of occasion do we need?" Bill remarked, handing Jeb a mug of a liquid it is convenient to call coffee.

"See, this is why I get all the speaking engagements and interviews. You've got no flair for the dramatic at all, have you?"

"And this is why I hate your driving. You've got too much of it."

"My flair for the dramatic impresses the people who get our decide our budget."

"They weren't riding shotgun when you got the genius idea of 'catching vaccuum' in a rover."

"There they go again," Kurt muttered. "Were they this bad when it was just the three of you in a Mk2 capsule?"

Bob glanced up from behind his laptop, revealing a pair of very large and powerful-looking stereo headphones. "Eh?"

"Hah! Never mind."

"Jeb's got a point, though," Scott added, looking up from whatever mysterious electronics hobby-project he was working on. "That picture of him jumping the rover over the Mun lander was probably what got me into this business."

Kurt gave his colleague a sidelong look. "I'm beginning to see why my old Engineering professor used to say rocket scientists are just mad scientists who get laid."

"I'm not going to comment on the getting laid part, but there is a certain amount of demographic overlap. I think it's the combination of extreme geekiness and complete disregard for one's own safety, along with the likelihood of massive explosions. Biggest difference is that for rocket scientists, the explosions are a consolation prize; for mad scientists, they're the desired end result."

"You've put more thought into this issue than I consider entirely healthy."

Scott shrugged. "I'm in the high-energy physics business. I've had to work with both."

"So which one are you?"

"Ah, I'm more an engineer than a scientist. Pretty sure I'm not mad though, or they wouldn't trust me with the keys to the antimatter."
"On the other hand, you volunteered to work with the antimatter."

Scott pondered this. "There is that, I suppose. You can't have Mad Engineering, though. Mad Science is one thing, but-"

A loud electronic chime sounded, interrupting their conversation and startling Bob into yanking his headphones off. "Attention, attention," a recorded female voice said in calm, measured tones. "Deceleration in T minus five minutes. All personnel report to duty stations."

"All right!" Jeb launched himself to his feet. "Showtime, boys!"

The cockpit -it wasn't big enough to merit being called a bridge- was in the bow of the ship, partly because it was traditional but mainly because the main docking port was also located in the bow and the crew needed to be able to see what they were doing. Pilot and copilot sat at narrow consoles on either side of the hatch, with the Navigation/Sensor Officer and the Mission Specialist (Comms and Weapons) directly behind them. It wasn't a particularly comfortable working environment and the crumple zone between the outer hatch and the crew's knees was minimal, which was one reason the Starfarer 1 had been so cheap, but Jeb and the boys had worked with worse.

Still, they were fully suited up save for the Emergency Pressure Hoods, which could be pulled up and sealed in a matter of seconds. In the event of a collision, they'd be on their emergency air supply in under a minute.

Not that there was much danger of colliding with anything this far out, or so they hoped. The Starfarer 1 was scheduled to drop out of warp* on the outer fringes of the Zyrix system's sphere of influence, or at least their best estimate of where it began based on observations taken when they'd dropped briefly into normal space a week earlier. From that point on it was conventional rocket motors all the way; shutting the drive down launched a sort of omnidirectional particle beam as space dust caught up in the bubble was released, a phenomenon the KSA had long suspected but which was definitively and spectacularly confirmed by an unmanned test flight, which also forced them to go public with their warp drive program a bit earlier than planned after people started asking where Eeloo was. Further, much more cautious experimentation had established a minimum safe distance of roughly twenty-five million kilometres, and the phenomenon had been filed under "Useful To Know About" by the military and "Things We're Never Letting Jeb Try" by the KSA.

"Transition in sixty seconds."

"Roger that. De-spinning in three, two, one, mark. Hope you all remembered to stow your valuables, fellas."

"Very funny, Jeb. Attitude control check."

"Roger. We'll start with the reaction wheels. RCS to OFF, please."

"RCS to OFF."

Jeb worked his manual control joysticks to test pitch, roll and yaw. It was sluggish, but that was normal; reaction wheels were only really included aboard a ship this size as a backup. "Everything checks out. RCS to ON."

"RCS to ON."

Jeb repeated the process. "All looks good. Ready when you are, Scott."

"Understood boss," Scott replied somewhat tinnyly over the intercom. "Shutdown in three, two, one..."

The transition back to normal space was anticlimatic when viewed from the inside, a dull thud and a brief flash of light and then the dull grey of "hyperspace"** was replaced by a regular starfield. "Well, we made it," Jeb said after a moment. "Starfarer 1 to KSA Barkton. Comms check, over."

"Starfarer 1, this is KSA Barkton. Read you five by five. Sitrep, over." The voice sounded like it was coming down a very bad telephone line, to the point where Jeb couldn't even tell who it was on the other end, but it was there.

"Starfarer 1 is at our arrival point. Position fix, uh... Stand by, over. Bill?"
"Working on it." Bill input a couple of commands and waited for a moment. "Right on the nose! Half a million kilometres short of Zyrix capture, position error's below the measurement threshold." Said measurement threshold was approximately the volume of Jool, position data in deep space being what it is, but with a distance between position fixes that was measured in lightyears that was the next best thing to a bullseye.

"You hear that, Scott? Nice work. Starfarer 1 to KSA. Position is nominal, proceeding to injection burn. No further information yet, over."

"Understood, Starfarer 1. You're on live TV all over Kerbin and most of the rest of the system, folks. Anything you wanna say, over?"

There was an awkward silence. "Well don't look at me," Jeb grumbled. "I thought I'd get to blog something later. I mean, geez, what do you even say 'bout a moment like this?"

"You managed alright when you landed on the Mun," Bob pointed out.

"I had three days and not a whole lot else to do but think of a good speech!" Jeb protested.

"Guys, we're on the air!" Kurt warned.

"Don't worry about it, Starfarer 1, the TV guys say this is ratings gold. I think Hanfrod just facepalmed so hard he gave himself a black eye though, over."

Bill gently banged his head on the console in front of him. "And we're off to a great start..."

A short burst from the main engines put the Starfarer 1 in a loose elliptical orbit around Zyrix, and Bob and Kurt turned their various instruments on the inner system. "We're not going to get much at this distance," Jeb explained to a reporter back on Kerbin, having recovered some of his usual eloquence. "Mostly we're hoping we'll get some idea of the orbital periods and inclinations of the planets in the system so we can rendezvous with them when we're ready, or at least not have to burn a lot of fuel to avoid unplanned lithobraking." That got a polite chuckle. "Joking aside, that's a real problem right now; we're working with..." he checked his watch, "... A little over an hour and a half of observations where we'd normally have literally centuries of accumulated data to work with. However exciting it is to be here, that's not a very comfortable feeling."

"I guess not. Anyway, Jeb, I guess the biggest question our viewers and listeners want to know the answer to is this: Are you hopeful that you'll meet aliens on this or future missions? And if you do, how will you greet them?"

"Oh, that's a doozy. Right now, I'm cautiously optimistic. Kurt, can you tell the folks back home what you've been able to find out?"

"Sure. Shortly after we arrived in-system, I pointed the high-gain antenna in the general direction of Zyrix and scanned back and forth a few degrees. We're too far out for any realistic chance of picking up a recognisable transmission, at this distance you'd need a radio-telescope array bigger than this whole ship and a supercomputer in the low exaflop range. But what I was looking for was high levels of static in the UHF and VHF radio bands, the same ones we use for communications. The reason for this is simple; physics are universal. Unless they've got some weird technobabble-powered telepathic hivemind going on or whatever, aliens are probably going to use technology that works on the same fundamental principles as ours, because they have to solve the same problems."

"And guess what? There's a noticeably elevated level of static in those same bands compared to normal emissions from Kerbin. Now don't get too excited, because Zyrix is a whole different type of star to Kerbin and we've never seen one this close before, so this could be a totally natural phenomenon. But like Jeb said, it's definitely grounds to be cautiously optimistic."

"Thanks Kurt. As for what I'll say if we do meet some aliens, well, I have absolutely no idea," Jeb replied. "Especially if they really are pink-skinned space babes..."

"But if it ends up being 'Take us to your leader!' we're making him walk home!" Bill chipped in. Jeb made a rude gesture at him.

"Thank you Bill. Any other questions?"

"Sure. A listener calling themselves 'Zero from Kerbwick' just emailed in with this: 'What happens if something goes wrong? How soon can a resupply or backup ship come to pick you up?' That's a
good question, given that we know there's at least one other ship fitted with an Alkerbierre Drive."

"A while," Jeb replied. "It took us three months and change to achieve Kerbol escape, and even if
we took the fastest route instead of the most fuel-efficient, I doubt we could have shaved much off
that; someone at the Space Centre could probably give you a precise figure, but we'd be doing well if
we could save more than thirty percent. Then there's the eight months it took to get this close to
Zyrix, and probably another three months to get into the system proper where we're headed now.
That's not to say it couldn't be done; we've got enough food to last us about three years if we're
cautious, and our air and water should last almost indefinitely as long as the reprocessor doesn't pack
up. But really, really hope we don't have to try!

"Us neither, Jeb. Oh, yeah, one other question. Do you guys have a still set up yet?"
Jeb snorted. "Not that I'm aware of. Guys?"
"Bill's too uptight, Kurt and I wouldn't know how, and Scott wouldn't tell us if he had because Jeb
locked him outside for two hours when he was drunk that one time."
"Hey! He laughed at me 'cause I thought everyone was tuning me out!"
"It was funny!"
"For the love of... Guys, we are live on worldwide television!"
"Don't worry, I got this." With the nonchalance of many years of practice, Bob placed one hand
on the back of Bill's head, one on the back of Jeb's and brought them together with just enough force
to startle them into shutting up without doing any actual damage.

"Ow!"
"Hey!"
"Oh, so that's his secret," Kurt sighed.
"Did he do what I think he did?"
"Yes."
"You're co-starring in the world's most expensive sitcom, do you know that?"
"Yes," Kurt said, in haunted tones. "Yes, I do."

***

* Look, don't blame me. Miguel Alcubierre got the whole idea from watching Star Trek the first
place!
** Anyone complaining that Star Trek calls it "subspace" can Google that word with Safe Search
turned off and see if they can keep a straight face next time they hear it.

***

Intelligent Life

August 24th 2523, 23:45

Posted by: Jeb

Mood: Contemplative

Regular correspondent "Needley Kerman" wrote in the other day with this:

Have you started to rev up any "Intelligent Life Detection Tools" of a sort on your ship,
now that you're close enough to Zyrix? Also, did you find the dumplings which I
packaged into Food-Container G1F7 yet? A bag of 10 for each of you. Trust me, I'm sure you'll like them. Just need to be steamed (they're frozen and compact right now).

Not yet, we're still on Row F at the moment, but thanks buddy! Anyway... Intelligent Life Detection Tools? Hah! If only it were that simple.

To be perfectly blunt, there is no 100% reliable method of detecting intelligent life. I did read a novel once that proposed scanning for the specific electromagnetic patterns created by brain activity back when I was in college; I forget the title now, but the idea stuck with me to the point where I asked around at the university SF&F Society, and a fellow member who was studying to be a radiography technician actually ended up writing a paper on it. Unfortunately, her conclusion was that it's a fascinating theory, but detecting anything at inter-planetary ranges would take an MRI scanner roughly the size of Minmus.

So much for that, then. But surely finding evidence of technological civilisation should be a lot easier?

Well, theoretically, yes. Radio is one obvious sign, but as Kurt pointed out in last week's interview with KBS, we didn't pack a full radiotelescope array: We'll have to be no more than a couple of AUs from an inhabited planet before there's much chance our antennae will pick up anything we can unambiguously identify as comms traffic.

The other big one is drive plumes. This was the method everyone was talking about a few years back, when we thought anyone who made it to space would have to be content with accelerating massive generation ships - or sleeper ships if we ever got cryogenics to work- to a fraction of $c$ and putting up with multi-decade journeys to neighbouring star systems. That approach might have worked, and indeed might still work if we're lucky, but the very existence of this ship calls it into question. Maybe not everyone is fortunate enough to have a weird wrinkle in space-time near the orbit of one of the more interesting bodies in their home system to give them a head-start, but the ol' Deep-Space Kraken only fleshed out a lot of stuff we already suspected.

Of course, there are supposedly ways of detecting warp bubbles as well, so who kn

"What the...? Guys, you'd better come take a look at this!" Bob called out.

_Starfarer I's_ radar and scientific instruments could be controlled from any computer connected to the ship's intranet, including the crew's own laptops if they chose to plug them in. Bob had taken to working in the rec-room, citing the workflow benefits of having the coffee machine in easy reach instead of having to walk and/or float to and from the cockpit all the time.* Jeb, Bill and Kurt crowded around the table beside him so they could see the screen.

"Whoa. I think we'd better add a zero to our estimates on the number of planets," Jeb remarked. "I count what, ten?"

"Eleven, I think; I'm still figuring out which ones are planets and which are moons. But while I was doing that, I tied the main scope into the spectrometer. And it found this." He tapped a key, and each fuzzy sphere was overlaid by a false-colour display. An _identical_ false-colour display, showing a distinctive greenish-blue that wasn't quite turquoise.

"Does that mean what I think it means?" Kurt said slowly.

"Oxygen and water vapour," Jeb replied. "Anything over about fifteen percent of each always shows up that colour when light reflects off it, just like you're on the ground looking up. It's a bit greener 'cause the spectrograph's more sensitive than our eyes, I think."

"Something like that," Bob agreed.
"And the odds of eleven separate bodies in a single solar system just happening to develop an oxygen atmosphere are?" Kurt continued, suspecting he already knew the answer to this one.

"Miniscule," Bill replied. "Like, win the lottery twice in two weeks miniscule. Hell, having two's a big lucky break."**

"So much for insurmountable logistical challenges," said Jeb, half to himself. "Now there's a method of detecting intelligent life we didn't think of, huh? O...kay. Bill, extra-solar planets are your hobby, you'd better give Bob a hand. Kurt, get Barkton on the line and tell them to set up a conference call with the Council of Twelve, then warm up the high-gain antenna. Is Scott done fixing the intercom?"

"No idea," Bill replied.

"Never mind, I'll go get him. We're gonna have to circularise a whole lot further out than planned, I wanna double-check the numbers."

Their mission hadn't really changed much, Jeb reflected as he descended the ladder from the habitat ring to the main body of the ship. Orbit at a safe distance, listen out and learn what they could before committing themselves to making landfall... "Scott? Scott, you in here?"

The engine room, like most of the working areas of the ship, was large but crowded. Extra electrical cabling and coolant pipes had been bolted rather haphazardly to the bulkheads, deck and overhead, cutting into the already limited space to float between machinery Jeb could only vaguely identify. The reactor control room wasn't much roomier, its total space roughly the size of an ordinary suburban living room but its actual floor space -for want of a better word- closer to an office cubicle, the rest taken up with banks of monitoring equipment and metal tool cabinets. Scott had attempted to brighten the place up a bit with posters; not pin-ups, surprisingly, but reproductions of Wykebin Kermilt's famous Duna landscape paintings and a couple of similar Mun oils that Jeb didn't recognise.

The distinctive sound of the zero-g head flushing startled Jeb out of his contemplation of this hitherto unsuspected aspect of Scott's character. The man himself emerged from the washroom off one end of the control room a moment later. "Oh, hi boss. Something up?"

"You might say that. " Jeb condensed their situation into a few terse sentences.

"Bloody hell," Scott concluded. "I'm glad you came to me when you did, I just found out Primary Tank One's level indicator's on the blink. We should still be within projections but I'm going to have to go EVA and check it manually."

Jeb nodded. "Get it squared away ASAP, then prep the ice-mining gear as soon as you're done. We might as well tank off now to be on the safe side."

"We've got a nice big debris belt at about five AU's, about two degrees off our current inclination," Bob reported. "If I can find us a big enough rock to orbit we'll disappear into the background noise."

"Try and pick one that doesn't have much worth mining in it," Jeb replied. "If they've got this many terraformed worlds then the odds are good they've got asteroid mining craft out there. Speaking of which, see if you can locate one with some ice. This next burn's gonna drop us below the fifty percent mark."

"Got a couple good candidates already marked on the chart. One of them's big enough to use as cover."

"Two birds with one stone. Nice going Bill. Scott?"

"Mining rig's prepped and mounted on the lander, boss. Are you sure you want to handle this solo?"

Jeb shrugged. "I'm the only one without a completely irreplaceable skill, unless you count blogging."

The Kerman-Steadler "Homesteader" general-purpose lander was a derivative of the Pioneer series, and externally very similar: A Mk 1 Mod 5 capsule atop a tall FLT-800 fuel tank body, with
four landing legs and a small LV-9 series engine. The design had been superceded by larger multi-
crew vessels for exploration, so Kerman Aerospace Engineering (formerly Jebediah Kerman's
Junkyard and Spaceship Parts Company) adapted it as a short-range tug and utility craft, fitting a
small docking clamp in place of the braking parachute and adding a bank of RCS thrusters and
modular attachment points for external stores. Optional extras included a winch with three hundred
metres of cable, a refuelling hose to enable the lander to act as a buddy-tanker, radial drogue chutes
for emergency landings and leather seats for rich idiots to impress other rich idiots with.****

Jeb settled into the pilot's seat, shoving a duffel bag containing his laptop and a packed lunch into
an overhead locker. Then he looked up again, to confirm that yes, he really had just seen that.
"Scott? Are these fuzzy d20s yours?"

"Oh, yeah, meant to tell you. Can you take a picture of 'em at some point? They're from my mates
at uni, we've got a contest going to see who can have their dice photographed in the most exotic
locations."

Jeb chuckled. "Yeah, sure. What's the prize?"

"This year? Bottle of plonk and a hundred keros in gift vouchers."

"Well, I'd love to see your buddies try and top this location. Preflight checks complete, decoupling."

The asteroid was some four kilometres long by two wide, a vaguely lozenge-shaped lump of grey-
brown rock with a large patch of dirty ice near the equator. "I'll grab some samples for the lab, but in
the meantime, my semi-educated guess would be that it got T-boned by a comet a few million years
back," Jeb remarked, watching the radar altimeter. "One minute to braking burn."

"Copy that. We're right behind you."

"Oh, that's reassuring," Jeb muttered.

The refuelling operation was conceptually quite simple. Jeb would bore a shaft about thirty metres
deep with the drilling rig, then lower a unidirectional microwave emitter to the bottom and lock one
end of the refuelling hose onto the mouth of the shaft. When he threw the switch, the microwaves
would melt the ice and the water would be pumped aboard the Starfarer 1 to be filtered.

The main complicating factor was that Starfarer 1 only had five hundred metres of refuelling hose,
which sounds like a reassuringly generous station-keeping distance until you realise that relative to
Jeb's position, the ship would be directly overhead. They could manufacture more hosereel if they
had to, but the raw materials were in limited supply and synthesising more on-site was beyond the
capabilities of their equipment. Extremely careful ship-handling was going to be called for, especially
since they'd retracted every radiator that wasn't on the direct opposite side of the ship from the
refuelling port and would therefore have to use a gentle hand on the throttle.

"Braking burn in three, two, one... Mark." Jeb throttled up to just above ten percent. He also
needed to use a gentle hand on the throttle, because while their equipment was up to synthesising the
gasoline/kerosene mix that the lander and spaceplane used for fuel, it took a hell of a lot of power
and production averaged five litres a week. Not that something this size needed a lot of thrust to set
down on; the gravity was so slight he could land and take off with nothing but RCS thrusters in a
pinch.

The lander touched down a bit harder than Jeb would have liked, tilting slightly as the gear settled
into the ground. "Surface is kinda loose," he remarked, as much to fill the sudden silence as anything
else.

"Nothing the drilling rig can't handle. We're on station, ready when you are."

"Understood. Preparing for EVA." He'd suited up before boarding, so all he needed to do was
seal the helmet and pump the air in the cabin back into the tanks. Five minutes later, he was stepping
off the ladder.

Stepping onto any newly discovered orbiting body for the first time should have been an exciting moment, but unfortunately, once you have stood upon the face of one asteroid you have to a great extent stood upon them all. "Nothing out of the ordinary to report, at least so far," Jeb reported. Then he sighed. "I'm the first Kerbal, maybe the first sentient being, to ever set foot on this rock and nothing's out of the ordinary. Maybe I really am getting too old for this."

"Eh, asteroids are asteroids. If you're still feeling this way when we hit one of the inhabited worlds then you've got a problem," Bill replied cheerfully.

"Point. Alright, let's get this done." Jeb carefully picked his way towards the storage container bolted to the Homsteader's outer hull, mindful of his footing; in this gravity he could end up putting himself in orbit if he wasn't careful, and the others would be laughing at him for weeks if he didn't slam into a hill and break his neck-

"Holy shit!" Bill yelled. Jeb all but jumped clean out of his skin and grabbed one of the Homesteader's landing legs to prevent himself taking off like a rocket. "Sitrep!" he barked, once he'd got his breathing and heart-rate under enough control to speak. "What's going on up there, people?" Whatever it was, if Bill of all people was resorting to foul language then it was serious.

"Something just lit us up on radar," Kurt replied, speaking like he was afraid of being overheard. "Can't tell where it is without powering up. Not sure if we've been picked up or not."

"Son of a bitch," Jeb breathed.

A million kilometres away, the Longbow-class "Patrol Cruiser" -what the Kerbals and most human surface navies would call a frigate- IAV Fredricksson adjusted its course slightly to avoid what its crew thought was a wholly unremarkable asteroid.

The bridge was uncomfortably silent. It had been communicated to the crew rather bluntly that the fugitives they were seeking had personally embarrassed a number of senior elected officials... and worse, regular campaign contributors to senior elected officials, so failure to carry out their assigned task would be a career-limiting experience.

At last, the sensor officer spoke up. "Radar contact at extreme range, bearing zero-six-zero degrees, inclination positive seven. No transponder."

"Any chance it's our Firefly?" the captain replied, sounding almost painfully hopeful.

"Not certain yet sir. Trying to get a visual fix now." The young officer bent to her console for a few moments, then swore softly. "Negative. Damned if I can tell what it is, in fact."

"Punch it up on my screen." The captain examined the blurry but recognisable outlines of a long and boxy vessel sporting what looked like a gravity wheel. "Huh. That's gotta be Exodus-era at least. Derelict?"

"Checking now, sir." The sensor officer tapped a few keys. "Infrared's unusually low for a ship that size, but... Whoa. Radiation levels are extreme."

The captain's hand hovered over the General Quarters alarm. "No core containment?"

"Way past that level, sir. I'm having trouble getting an accurate number at this range, but the computer's estimating twelve sieverts at one kilometre. That's got to be a major reactor accident."

"Any sign of a distress beacon?"

The communications officer shook his head. "Nothing, sir. Odds are we'd have picked it up long before we got close enough for a radar paint anyway."

The captain sighed. "Log its position. There's nothing we can do for those people now but notify the next of kin, if we can find any."

* * *

"We dodged a bullet there," said Scott. "Maybe literally if that thing was a warship. I don't know
how they didn't see us."
"We're only half a klick from the surface of the asteroid," Kurt pointed out. "They'd have to have really lousy radar firmware to miss us at that range, but it's possible."
"Infrared cameras wouldn't have told 'em much at this range either," Bob added. "We had everything but RCS, passive scanners and the radar altimeter shut down. I don't know about the locals, but if they're around the same level we're at back on Kerbin you'd need some pretty specialist gear to pick us up, bulky as well as expensive."
"The other possibility is, they did see us but didn't have the delta-V to investigate at the time," Jeb replied. "If we're lucky, they figured we're local asteroid miners with a bad transponder, but you all know my views on trusting anything to luck. As soon as we're done tanking off I want us rigged for silent running. Full EMCON, everything non-essential offline. We'll run the instruments in shifts for now, but as soon as we get a solid radio signal that takes priority; we can probably get better numbers just by asking the locals once we can understand each other."
"Better break out the thermal underwear then," Scott sighed.

This is one of the things the movies nearly always got wrong when I was younger, Jeb wrote in his blog a couple of days later, huddled in several blankets over almost every potentially warming item of clothing he'd packed. I think one of our space program's most under-appreciated achievements is forcing science-fiction filmmakers to raise their game when it comes to doing the research.

He took a long, warming swig of coffee. And yet here I am, wrapped in about four layers and slowly losing sensation in several small but very important bits of me. Ain't that a kick in the head? The reason is simple, of course. The onboard radiators are designed to maintain a pleasant twenty-four Celsius in the ship's interior when we're running a 400MW nuclear reactor, a small university's worth of advanced scientific instruments, a modest server farm and five nuclear-thermal rocket motors. At time of writing we're down to one server and the high-gain antenna, but the cooling system's still running at about 80% of max. I can't tell you an exact temperature at the moment, mostly because finding out would entail getting out from under the covers, but Scott actually had to throttle the pumps down from full power a while ago because he found ice in the toilet. Glamorous job this astronaut malarkey...

* * *

The captain of the IAV Fredricksson had just given up on professionalism and started reading an ebook on his console when the sensor officer smacked her forehead and cursed under her breath. "Captain? I just took another look at the sensor data on that old ship we thought was a derelict. The radiation levels weren't as high as I thought... Or rather they were, but not all over the ship."
"How do you mean?"
"I just checked the raw feed from the gamma-ray camera. Take a look, sir."
The captain examined the false-colour image, with five fuzzy blobs representing radioactive hot-spots. "Nuclear-thermal rockets. My God, that thing really is Exodus-era, nobody's used those on anything bigger than a cargo pusher or a waste-disposal drone for eighty years or more." He shook his head in wonder. "Don't worry about it, lieutenant. I should've thought of that too. Nothing we can do about it now anyway, we haven't got the fuel to double back. Besides, if they knew anything useful I doubt they would have told us; nobody else this far out but fundie whackjobs, wanted felons and Browncoat bitter-enders."
"And Reavers," the navigator muttered darkly. The captain gave him a sharp look, but didn't make an issue of it.

After all, the man did have a point.

* * *
Anyway, onto the questions. Reader "K9 The First" writes:

Hey Jeb! What was it like when you realized the Eve Mission rocket wasn't attached mid-launch?

Oh, yeah. Our first, and in all probability last, manned Eve mission. I might've known somebody would bring that clusterfuck up sooner or later.

Anyway, for the benefit of anyone too young to remember this all going down on live TV, at about the time we were preparing to execute our gravity turn we discovered that the control linkage to the Number Three engine had failed. That meant no throttle control, no thrust vectoring and worst of all, no idea if the booster was still physically attached.

Well, the launch escape system was off the table; with no way to cut the throttle there was a pretty good chance the damaged booster would either slam into us or melt the capsule with its exhaust. We could either blow the bolts on the hatch and try to bail out manually, hoping our emergency thruster packs could carry us clear of the rocket exhausts, or we could hold on tight and try to nurse the ship up past the tropopause for an Abort to Orbit.

What was it like? Terrifying, that's what. For the first time in my whole career I really thought, "We're not going to make it home this time." I like to think I did an okay job of hiding it; the habits of highly effective airline pilots and all that.

The intercom panel bleeped. Jeb set his laptop aside and reluctantly crawled out from beneath the nest of blankets to grab the handset. "Yeah?"

"Kurt here. You'd better come down to the messroom, skipper, I've got a signal!"

"On my way!"

"We just came into its line of sight," Kurt explained. "Directional microwave in the Ku-band, pretty wide-angled so it's not a direct ship-to-shore comms beam. Probably multiple installations on the inner edge of the asteroid belt receiving transmissions from the same uplink station. I can't tell you much about the content without a lot of mainframe time, but I don't think it's military or government comms traffic; they'd use tight-beam links for anything confidential and it wouldn't be continuous. My working hypothesis right now is satellite TV."

Jeb grinned. "Jackpot. Warm up the rest of the servers, but zip up as much of the raw data as you can to send home, Barkton'll want to turn the backroom boys on it as well."

"That's going to push our heat signature up a lot, boss," Scott warned, though he didn't sound all that unhappy about it.

"We'll have to take that risk. That line-of-sight won't last forever, and this is our best chance to learn something about the locals before they find us."

Aliens pirating cable TV to learn about another, pre-First Contact culture is one of those tropes that's reached cliche status in spite -or perhaps because- of the fact it makes a good deal of sense. If you can intercept the signal (which is harder than it sounds if you're not dealing with a truly spacefaring civilisation like the Kerbals or post-Exodus humanity) then you can learn just about anything about their society. Languages, culture, religious and political beliefs; probably just about every facet of a sentient race's psychological makeup can be extrapolated from their broadcast media.
This is one of the many, many reasons why Bob Kerman is a staunch advocate of public funding for television and radio programming.

* * *

* Jeb had taken the opportunity to calculate Bob's daily caffeine intake, and the results had explained quite a bit.

** Laythe's inexplicably habitable status was the subject of much bafflement to the Kerbals until the third probe fly-by proved conclusively that it had a magnetosphere and thus a partially-liquid iron core, rare for a body of its size and speculatively attributed to high concentrations of fissile materials forming a natural nuclear reactor.

*** Yet another approximate translation, because the Kerbal equivalent of an Astronomical Unit is approximately 10% shorter than ours.

**** Nobody in Marketing had realised Jeb had been kidding about that last one, but by the time he pointed this out they'd had five clients request it.

* * *

Admiral Mang Liu, officer commanding the Alliance Navy's Fifth Fleet, was on his eighth report and his third antacid when his adjutant (the admiral refused to describe himself as having a secretary) tapped on the door.

"Lieutenant Commander Derek Tarrant to see you, sir."

"Tarrant...? Oh, yeah, the Fredicksson's captain. Send him in, chief."

"Sir."

Derek Tarrant was tall and lean, with a riot of naturally curly brown hair. He would have been good-looking if it wasn't for the haunted look in his eyes and the dark smudges under them. "You wanted to see me, sir?" he said slowly.

"Come on in, captain. I saw your report. There was nothing more you could have done for those colonists, and those abominations will never be a threat to anyone else again."

"I know sir. It doesn't stop the bad dreams. And we took out one ship, out of how many?" He sighed. "Well, we're not denying the Reavers even exist anymore, I guess that's a start."

"Quite. Anyway, what I wanted to talk to you about was that unidentified Exodus-era derelict that wasn't so derelict after all."

"Sir?"

"It piqued my curiosity," the Admiral admitted, "so I had the photo-recon team at Naval Intelligence take a look at your sensor records and see if they could identify it. They put it through every image-enhancement algorithm they'd got, and came back with this." He handed Tarrant a print-out showing two pictures, a grainy, high-contrast version of a still frame from the Fredricksson's long-range optics and an "artist's impression" sketch that was rather clearer. It looked pretty much how he'd expected; a stubby cylinder with several thick spokes radiating outwards to a wheel at the centreline; remove the solar panels and radiators tagged with question-marks, presumably to indicate that their number and configuration were guesswork, and it resembled nothing so much as the front wheel of the tricycle he'd owned in fourth grade.

"I don't know how good a ship-spotter you are," Admiral Liu continued, "but my first posting out of the academy was manning the harbour telescope at Osiris Station. They beat visual recognition techniques into our heads there after an Independent cruiser squawking false codes pasted a bunch of ground installations, never forgot it. That thing's not in any of the books. In fact, if the backroom boys are right then Exodus-era might be lowballing its age; shipbuilders went over to two contra-rotating grav wheels to even out the torque pretty early on."

"So it was a clunker pulled out of mothballs because the governments back on Earth-That-Was needed everything even half-way spaceworthy that they could lay hold of for Operation Seed Corn."
Tarrant tried, not entirely successfully, to keep a note of irritation out of his tone. "Sir, may I ask precisely where you're going with this?"

"I'm not entirely sure," the Admiral admitted. "But the fact is, captain, you've presented me with a mystery. A mystery in an orbit that takes it uncomfortably close to several populated worlds. I think it bears further investigation, and I want you to check it out as soon as your ship returns to the belt." He smiled wryly. "Besides, they might know where the Tam siblings are."

Captain Tarrant's expression might have been described as a smile, but only if you were feeling charitable. His feelings towards his political leadership had been ambivalent trending towards negative for some time, and his most recent cruise out in the Belt had not improved them at all. "Understood, sir."

* * *

"What we're using today," Jeb said into his lapel mic as he floated along the racks of computer hardware, "is a variant of something called the Von Gruhn process. It's named for a software engineer and data security consultant by the name of Melzer Von Gruhn -no relation to our own Wehrner, by the way- who came up with a method of reading the screen of a computer from a distance. The principle is fairly simple, actually; every TV screen emits a tiny amount of electromagnetic radiation in the RF band... Or sometimes a not-so-tiny one, as computer enthusiasts of my generation and older might remember. Get yourself a sensitive enough receiver to listen in at a long distance, apply a fairly moderate amount of processor power by today's standards, and you can theoretically perform screen-captures from several hundred yards away.

"Von Gruhn never got his prototype apparatus working well enough to be any use for espionage, and it's pretty easy to shield electronics against that kind of signal leakage anyway, but he did discover that the process works equally well in reverse. Given enough time, our software can tell us exactly what kind of equipment this signal's intended to be displayed on, and even convert it into something comprehensible on our screens."

"It can't help us with anything that requires an encryption key, however," Kurt added. "In fact, we're not actually going to attempt any codebreaking if we can avoid it; being caught snooping on encrypted communications would not get our relationship with the locals off to a good start, even if all we were doing was pirating premium-rate cable."

"Which is a shame, really, because I've always thought you can learn a great deal about a culture from its... ahem, premium-rate cable, quote unquote," Jeb quipped.

"Can you tell we've been away from home for a very long time?" Kurt sighed. "I'm just glad we learned from the mistakes of early explorers and agreed not to name anything officially until we get home."

"I still say that crater on that dwarf planet looked exactly like a girl's... Well, I can't say that word on television, so use your imagination."*

"Thank you, Jeb. Anyway, we expect to have some results by the morning, so we'll tape another segment as and when we have something noteworthy. This is Kurt Mc Kerjel and Jeb Kerman for KBS News, signing off."

"Well, that was an easy twenty keros," Bob remarked, turning off the handheld camera. Due to a technicality in the relevant employment laws, any content they recorded for the news networks by themselves had to be paid for at the same piece-rate a freelance journalist would receive. Strictly speaking this only applied if they were in front of the camera, but they'd agreed to split it between the five of them.

"So long as they air it," Kurt agreed, shooting Jeb a weary look. "Well, you guys might want to go get some coffee or something. This is gonna take a while."

"Alright. You want some?"

"Great Kerm yes!"

He had a long and not very comfortable wait ahead of him, strapped into a seat at the server farm's
workstation rather than moving to the relative comfort of the gravity wheel because the ship’s intranet couldn’t handle large video files. The first phase was down to the computer, sifting through the raw signal looking for patterns. After a few minutes of watching an hourglass turn over on the screen**, he plugged the base unit of his smartglasses into the terminal and accessed the book he'd been reading; using the glasses and a regular monitor both at once gave him eyestrain.

About an hour later, a plastic bottle of coffee drifted into his field of view. He caught it expertly and looked up to see Jeb at the door. "Thanks buddy. You timed that right, we've got definite progress." He brought up a window on his screen that resembled a mosaic of abstract art pictures. "Definitely an analogue transmission, with eighty-six separate channels. One of which has been broadcasting the exact same thing the whole time we've been recording."

"Test pattern?" Jeb guessed.

"That's what my money's on. Right now the computer's trying different combinations of scan-lines and colour palettes looking for something coherent. It's kind of a brute-force method but it should get us something eventually."

"Good. Keep me informed."

* * *

Blue Sun Inquiry Chairperson Named As Reagan Tam Makes Impassioned Appeal For Her Children's Return

The long-awaited public inquiry into the activities undertaken by the Blue Sun Corporation and elements of Alliance Military Intelligence is to be chaired by former Justice Secretary Edward Lee, a Parliamentary spokesman annoued today. Mr Lee was unavailable for interview, but released the following written statement:

_The people of the Alliance will no doubt be aware that I have argued strongly for the actions of Blue Sun and their cohorts within our government to be immediately subjected to a criminal investigation by the Federal Marshals. My opinion has not changed, but in the spirit of compromise I have consented to chair a full Parliamentary Inquiry with representatives of all parties. The selection process for the board is currently ongoing and I would prefer not to comment on possible candidates until they have had an opportunity to respond._

_And to the families of the victims I make only one promise. When I graduated from the police academy I swore an oath to God that I would respect and uphold the law in letter and in spirit. I have upheld that vow to the best of my ability, first as an officer of the law and later as a member of the legislature, and I do not intend to break it now. I will see justice done._

Relatives of the children who attended the Blue Sun Academy welcomed the sentiments, but it remains to be seen whether Mr Lee can fit the deed to the word.

Meanwhile, Mrs Reagan Tam made a tearful public appearance on ANN News earlier this morning imploring her children to contact her. "I realise they both have many good reasons to be angry," she told the Morning Team, "but I hope they will at least let me tell them to their faces that I am sorry."

* * *

* We're not getting into the nitty-gritty of Kerbal reproductive biology in this story, but it didn't look remotely like anything a human reader is thinking of. Make of that what you will.

** There's a finite number of feasible visual metaphors for "this may take some time", so it might actually be more surprising to find an alien species that hasn't hit on this one.
"It looks like a cross between a snowstorm and a kaleidoscope."
"The locals watch stuff like this for fun?"
"Well, it could be a documentary on avant-garde graphic design or something."
"I told you, it's a test pattern. And unless their taste in art is really weird, it's also a test pattern that needs to be decompressed before it'll show properly... Aha!" An over-saturated, somewhat grainy but still quite recognisable image came up on the big screen.
"Son of a bitch. They really are pink-skinned space babes!" Jeb laughed.
"Maybe when they grow up. Assuming that the one on the left is the actual alien..."
"I think that's a safe assumption. That said, they do look remarkably similar to us; bipedal, two eyes, opposable thumb... One extra finger, I think. Is that writing on that board, d'you reckon?"
"Maybe. Could be some kind of game like linethree."
"Either way, we've got eighty-five channels, so let's come back to this." Kurt tapped a key, and the picture was replaced by... Well, it took a moment to figure out what they were looking at.
"Is this what I think it is?" Bob said slowly, tilting his head slightly to get a better view.
"Yes. Yes, it is."
"Oh. Well, that's... different."
"No pouches?"
"Looks like. I'm guessing they nurse externally. Male equivalents are vestigial, maybe?"
"More pigment variation than us too."
"Hmmm. A certain amount of creativity might be required, but I don't see any insurmountable compatibility issues so far. That's worth knowing."
"You haven't been laid in far too long, have you?"
"Moving on!" Kurt said firmly. "Hmmm. That one seems to be shut off for the night, so does that one..."
"Say. If we can figure out what those numbers mean -I think they're numbers, anyway- we might have a clue which planet's their homeworld," Bill pointed out.
"If we're lucky, we'll find a children's TV network on here so we can just ask them a few months down the line."
"Wonder how many languages they've got, anyway?"
Kurt peered at the screen. "Well, from looking at what I'm assuming is a 'This Channel Will Return At 9AM' message, I reckon there's a minimum of three commonly spoken ones." He flipped channels again. "Huh. Looks like they do rolling news too." Apart from the language being spoken and the race of the newsreader, it looked so similar in concept and presentation that it would have been fairly unremarkable on a Kerbin cable network, although the locals apparently preferred a horizontally-scrolling headline ticker along the bottom rather than a column down the left-hand side as was the fashion back home. A panel of four local worthies -it wasn't clear if they were politicians, academics or some other form of celebrity- were debating back-and-forth with great apparent passion, while a fifth who appeared to be a studio employee attempted to mediate.
Just at the point where a fight appeared to be breaking out the camera rather abruptly cut to the anchor, then to a whatever-they-called-themselves interest report on what appeared to be an amateur sports team.
"Well, they do say it's a sign of a healthy democracy," Scott remarked. "Hey, that looks a bit like shepherdball."
"You mean there's two races in the universe willing to play that game? Dear Kerweh..."
"Oi!"

* * *

Captain Derek Tarrant had never been the most even-tempered of men. He had enough self-
discipline to keep it from being a career-limiting issue, with one or two unfortunate lapses over the years that had largely been smoothed over thanks to his prior service record, but he definitely had a short fuse. And the presence of a small and noticeably unmarked ship of uncertain design currently keeping station a kilometre off his command's starboard bow was about to light it.

"Admiral," he said in the blandly inquiring tone he normally used as his opening gambit against a subordinate brought before him on Captain's Defaulters, "what is that ship doing here?"

Admiral Liu had the decency to look embarrassed. "Civilian specialists attached to the taskforce courtesy of Blue Sun Corporation. They claim to have assets that can assist us in locating the fugitives."

Comprehension dawned. "You mean an Academy graduate."

"They wouldn't give me a straight answer on that, which probably means yes."

You could almost hear the match being struck. "Sir," Captain Tarrant said coldly, "do you mean to tell me that one of the children who had their brains butchered by those sociopaths is-?"

"I don't like it either," the admiral replied. "Orders came in from on high, and between you and me it was strongly hinted that if I wouldn't stand for it then I'd be replaced by a taskforce commander who would."

"I see. Please excuse me, Admiral, I have something to attend to. Mister Peterson, you have the conn." Captain Tarrant spun on his heel and strode into his ready-room, a small office just off the Combat Information Centre that he fondly imagined was soundproof. There was a tremendous crash, followed by the Captain yelling every swearword in every language he knew. Him being a career naval officer, this was quite a lengthy process.

"Still working on his anger management, hmmm?" remarked Admiral Liu, who'd been on the promotion board that appointed Tarrant to the Fredricksson and knew all about his short fuse.

"Oh, I wouldn't say that, sir," the Executive Officer remarked loyally. "I think he's managing it pretty well right now." There was another crash. "Quartermaster might not agree though."

"Someone should really tell him we can hear him out here, you know."

"Might be so, sir. But unless you make it an order, it sure as hell ain't gonna be one of us does it. Maybe not even if you do make it an order, truth be told."

"Well, since I'm not in the business of ordering my subordinates to do things I wouldn't do myself, let us never speak of this again."

"Aye sir."

The small and rather motley taskforce departed as soon as favourable orbit conditions permitted. The Fredricksson was the only capital ship; between anti-Reaver operations on the frontier and steadily increasing civil unrest the Navy was stretched thin. Six Davis-class patrol boats and a single Victoria-class corvette were all that could be spared, along with a Fleet tanker and logistics ship taken up from the Naval Reserve... and the civilian vessel, which lacked any exterior markings and was painted a shade of matte black that blended in so perfectly with the Black-with-a-capital-B, one swiftly began to doubt that it was a paint job at all. A couple of ratings on lookout duty swore up and down they'd glimpsed a star shining through it, and when one of the gun crews tried to use it to check the calibration of their laser rangefinder the targeting computer consistently spat out an error message, even after they took the whole system apart and inspected every last component for wear or damage. Nobody was quite brave enough to see what would happen if they turned a searchlight on it.

The practical upshot of all this was that by the time some of its crew- or passengers; it wasn't really clear what they did over there- deigned to come aboard the IAV Fredricksson for consultation, Captain Tarrant was thoroughly creeped out as well as righteously pissed off. The Blue Sun corporation's representatives did very little to improve his opinion of them.

They were so nondescript it was unnerving, their conservatively cut grey suits and slicked-back hair almost pathologically neat and their accents lacking anything that might hint at their place of origin. The only splash of colour anywhere on them was the inexplicable blue latex gloves. Captain
Tarrant was sure there was a reason for those, and equally sure he didn't ever want to find out what that reason was.

This was going to be a long meeting.

The two... executives? Security Service agents? T-850 infiltration androids? God only knew... played a video file of a teenage girl rather brutally taking down several much larger and older men on the screen in the conference room. "This is the typical combat performance of an Academy graduate," said the one who'd introduced himself as Mr Brown. "Those men are from the Pathfinder Company of the Army Rangers, all handpicked for their unarmed combat prowess."

"Very impressive," replied Captain Tarrant, not bothering to sound even slightly impressed.

"They had to be," replied the one who'd introduced himself as Mr Green, "if they were to have a chance against the Reavers."

"So to fight one set of monsters that they created by accident, Blue Sun decided the best solution was to create another set of monsters on purpose. Right," Tarrant sighed. "Have I mentioned how glad I am that I don't own any shares in your company?"

"The children of the Academy were originally going to be trained for combating more... conventional threats to the stability of the Alliance," replied Brown, either genuinely not recognising the scathing tone or choosing to ignore it. "When we realised that the Miranda experiment had fallen afoul of unintended consequences, we had to use whatever we had available."

"And 'had' available is the operative word thanks to Captain Reynolds and his associates," Green continued. "This isn't just about the property damage and the theft of corporate assets," by which he meant teenage children placed in indentured servitude through deception and horribly tortured and experimented on, "it places every Alliance citizen at increased risk from the Reavers and conventional subversives. Those children represent the most powerful force for security and order that the Alliance has ever had."

You had to credit the bastards with honesty, Tarrant reflected, with a mixture of abject horror and extremely grudging respect. No sugar-coating, no euphemisms like "peace" or "rule of law" or even "public safety", no self-righteous rationalisations: Nothing but the naked, unvarnished and terrible truth. The regime will be preserved at all costs. Dissent cannot be permitted.

They aren't even going to stop at blanket electronic surveillance anymore, he thought to himself, thinking of laws established long before the Exodus and more honoured in the breach even then. They'll have those poor kids scanning people's gorram brains to root out anyone getting funny ideas. Mother of God, IngSoc'd be jealous as hell.

"So you've created an exceptionally powerful weapon and then lost control of it. We get it. Now how in the hell do you suggest we get it back?" Admiral Liu said coldly.

"Bluntly, Admiral? You can't. The subliminal command-codes we implanted have almost certainly started breaking down by now, and even if River Tam's brother knows about them it's unlikely he'd be pragmatic enough to reinforce them; more likely he'd try to get rid of them completely. You might be able to subdue her with less-lethal weapons, but she's been conditioned to resist sonic stun weapons and her pain-tolerance has been raised to the point where baton rounds would have seriously diminished effectiveness." A tiny hint of a smile broke through Green's poker face. "Our employers were extremely thorough."

The water glass Captain Tarrant happened to be raising to his lips at that moment shattered abruptly. "Ow! Son of a bitch!" Tarrant grabbed a napkin and tried to stem the sudden flow of blood from the ball of his thumb. "Excuse me, please?"

The two Academy employees shared a worried look. "I'm not certain of that man's reliability, Admiral," said Brown. "You may wish to make contingency plans in case he becomes unstable. Or more unstable, anyway."
"Quite," Liu replied, through his teeth. "Will that be all, gentlemen...? Hmmm. One further question. If your Academy graduates were all scattered across the 'Verse when their campus got trashed, precisely what assets are you contributing to this mission?"

"I'm sorry," replied Green, "but that's both a trade secret and covered by the Official Secrets Act. All information is on a strict need-to-know basis."

"I had a feeling you'd say that."

He found Tarrant in the sickbay, his hand wrapped in bandages. "CMO had to put a stitch in it," he explained. "And he kept giving me this look. Maybe I should go to that anger-management class when I get some shore leave."

"Don't sweat it, son, those two could make the Buddha's piss boil. Pity the tape was a bust." The admiral removed an elderly and probably quite valuable microcassette recorder of early 21st century manufacture from an inside pocket. Tarrant had no idea where he'd got hold of the thing, much less a modern replica tape, but it was a damn good idea; anyone scanning his body for electronic devices probably wouldn't have known what it was, so the odds were good that the Men in Grey didn't know they were being recorded.

Which didn't mean they didn't suspect it, it seemed. "Nothing we can use so far," Liu declared as he played it back. "They've gotta figure we don't like having wiseass civilians telling us what to do, maybe they even did their homework and figured you or I wouldn't swallow their 'stability and order' crap like good little citizens. Wuh de tyen ah, I hope we find that poor kid. I'll bet my bottom dollar she can pick those two out of a lineup, they're too gorram sure of themselves for new hires."

"We still have to take her down without killing her first, sir," Tarrant pointed out. "They ain't got much reason to lie about how hard that'd be."

"You leave that to me," the admiral replied.

Asteroid K-78356-Jessenstein was a small and largely unremarkable asteroid, listed on the charts as having little or no valuable mineral content but a moderate amount of ice. "No formal claims, no known landings. If I really wanted to get out someplace I'd probably never see another human being again, this rock'd be perfect, sirs," the navigation officer reported. "With a reasonably efficient recycler there's enough water to last that boat's maximum probable crew a dozen lifetimes."

Admiral Liu nodded. "Chances are that if that ship is still operational, the crew call that rock their home port."

"Got a visual, sir!" called out the sensor officer. "Infrared's noticeably higher. Distance from the moon... four kilometres."

"Well, that settles that," said Captain Tarrant. "Try and raise them."

"Aye sir." The comms officer picked up his handset. "Unidentified vessel, this is the frigate IAV Fredricksson. You are not transmitting IFF, please identify yourselves and prepare for a safety inspection, over."

* * *

"Well, this is it boys. Sure hope this works..." Jeb took a deep breath. "Greetings, warship of the Union of Allied Planets. This is the starship Starfarer 1 of the Kerbin Space Agency."

It's truly amazing what can be accomplished in less than a year when every university on two planets large enough to support a Linguistics department is prepared to clear the decks for you. The software was off-the-shelf, a combination of a mechanical translator and a speech-recognition program, programmed with every word and grammar rule they could make out in the English language.

Unfortunately, this was still something of a work in progress.
"Greetings from the planetary Union warships. This is the Kerbin space agency spaceship Starfarer 1."

"Uh... say again, Starfarer 1? Last transmission garbled, over."

Captain Tarrant snorted. "Low bidder much, guys?" He scrutinised the ship on the screen next to his console. It looked pretty much like the sketch the intelligence people had come up with, though it had a lot more radiators than a ship that size should really need. Originally designed for transporting perishable goods, maybe? he mused.

Then he noticed another detail, and his eyes narrowed. "Does that look like a railgun port to anyone else?"

"Could be a cargo mass driver," Admiral Liu replied. "She don't look like a pirate boat."

"Sir, if you were inclined to take up piracy, would you be dumb enough to do it in a ship that looked the part? Yeah, me neither." Captain Tarrant turned to the Principal Warfare Officer. "Get a firing solution ready. Warning shot first, disabling fire if we need it."

"Aye sir."

"Well uh... Starfarer 1 say again? Over the last transmission garbled characters."

"That doesn't sound right. Did you install the new patch they sent yesterday?"

"What new patch?"

"I emailed you about it."

"I get over three hundred emails a day, I cannot and do not read them all, and there are five of us on a ship barely bigger than my dad's vacation home. You couldn't just tell me these things?"

"Guys, we just got pinged with what looked like gun-laying radar," Bill interjected. "I don't think they're hostile but this is a good time to not be screwing around."

"Oh, for..." Jeb sighed. "Alright, alright. One communication problem at a time. You got it on yours?"

"Sure. Hold up... There."

"Do you recognise that language, lieutenant?" Captain Tarrant said slowly.

The communications officer, who was fluent in the three most common languages in the 'Verse and could speak a few phrases in several more, listened thoughtfully. "No, sir. It's... I've never heard anything like it before. Same goes for their exterior markings; I don't even recognise the alphabet they're using, much less the language."

Tarrant and Admiral Liu exchanged uneasy looks. This was taking a distinct turn for the bizarre.

The faintly mechanical-sounding baritone returned. "Alliance warship, this is the Starfarer 1. Sorry about that, new software. Please repeat your original message, over?"

"Something's not right here. Let me talk to them," Captain Tarrant picked up a handset of his own. 

"Starfarer 1, this is the Alliance warship IAV Fredricksson. You are not transmitting an IFF signal and your vessel appears to be considerably beyond its spaceworthy lifespan. Under the provisions of the Aerospace Safety Act we will be conducting a full inspection, prepare to be boarded, over."

There was a muffled exchange in its crew's own language. "Alliance warship," the voice said, and Tarrant fancied he could just make out someone speaking under it in their own tongue, "we're not entirely sure of the letter of local law regarding your jurisdiction, but I think you'd better take a look at our video feed. It's probably simpler than trying to explain, over."

Captain Tarrant exchanged another look with the Admiral, who shrugged, then turned to the
comms officer. "You getting it?"

"Aye sir. It's non-standard as all hell, but it's coming through okaaaay oh fuck me running," he finished in a very small voice. Without waiting for an order, he brought the video feed up on the biggest flatscreen display in the CIC.

Captain Tarrant stared at the screen. The five... oh sweet merciful mother of the Flying Spaghetti Monster they really were aliens... stared back. One of them smiled awkwardly, or so it seemed, and gave him a little wave.

Captain Tarrant slowly turned around, his expression curiously neutral except for a pronounced twitch under one eye. "XO," he said calmly, "you have the conn."

And then, quietly and without any particular fuss, Captain Tarrant fell face-down on the deck in a dead faint.

"Yep," Jeb sighed, "that went well."
When Captain Tarrant next became aware of anything, he was lying on the bunk in his ready-room while a corpsman was taking his pulse. "Take it easy, Captain, you might've hit your head. Hold still for a second, I need to check your pupil reaction." A penlight was shone in one eye, then the other. "All looks normal, sir. I'll need to run a few more tests to be certain, but it looks like you just had a vasovagal attack."

"A what now?" Tarrant tried to sit up, then decided against it as his head swam.

"You fainted, sir," the medic replied. "It's a stress reaction, basically your brain hitting the emergency shutdown button."

"Oh." Tarrant very carefully turned his head. As he had suspected, Admiral Liu was standing nearby. "I'm terribly sorry about this, Admiral. It appears I've finally gotten around to going off the deep end."

"Would you feel better if I told you you didn't hallucinate the aliens?"

Captain Tarrant's head thumped back onto the pillow. "Not... particularly," he groaned. "The situation's under control. Consider yourself temporarily relieved of duty due to ill health and let the medics take you down to sickbay."

Captain Tarrant briefly considered objecting, as the Admiral wasn't technically empowered to do that without the Chief Medical Officer's endorsement, and something must have shown in his expression. "It's not an order," the Admiral assured him, "but it will be if you walk back out there and faceplant again."

He had a point, Tarrant decided. If nothing else, collapsing on the bridge in front of everyone had been embarrassing enough the first time. "Aye sir," he said resignedly.

* * *

"Is he going to be alright?" asked Jeb.

"Nothing a long vacation won't fix," replied Admiral Liu. "Not your fault, he's just had a rough couple months; it's kind of an eventful time to be in the Navy."

"So we gathered," Bill said dryly. "We've been watching your TV whenever we're in line-of-sight. The news channels have been... instructive."

Liu smiled wryly. "I'm sure my political leadership will be truly overjoyed to hear that."

Jeb decided he liked the admiral. He'd been impressively level-headed about the whole First Contact business so far, and appeared to have both a sense of humour and a robust intolerance of bullshit. Maybe that was why he was posted to what Jeb gathered was the remote and unfashionable end of the Zyrix system.

Which didn't appear to have any other name, incidentally; much like the Kerbals, the locals just
referred to it as "the sun" in ordinary conversation. That was something the anthropologists had asked him to make inquiries about, along with a few more details about this mysterious Earth-That-Was they'd heard mentioned a few times, because despite all of Bill and Bob's dilligent efforts they'd yet to figure out where exactly it was; its orbital period didn't coincide with any of the planets they'd located so far, which admittedly couldn't have been even a third of the total in this system if their information was anything to go by, and the local equivalent of an Astronomical Unit seemed to put it well outside the habitable bracket of the local star. Jeb had a theory about that, one that he hadn't yet worked up the nerve to voice aloud.

"I've been asked to deliver a letter of introduction signed by the leaders of most of our governments back on Kerbin by hand," Jeb explained. "I'd like to request permission for myself and Kurt here to come aboard. We'll wear pressure suits and submit to any biohazard decontamination process you deem necessary."

"That can be arranged. I'll consult with our chief medical officer and get back to you with the arrangements."

"Do you really think that's necessary?" Jeb said warily, watching Kurt struggle to strap a gun-belt on over his suit.

"Better to have it and not need it, boss. I mean, can you imagine what'll happen to my promotion prospects if I let you get kidnapped and dissected by aliens on my watch?" He finally got the catch done up, then reached into the arms locker for his pistol. It was a space-service weapon, small enough in calibre and muzzle velocity that its recoil was manageable in zero-gravity and the rounds weren't capable of puncturing anything vital inside a spacecraft. They weren't capable of puncturing anything vital inside a kerbal who was wearing even the most rudimentary body armour either, but one had to make certain compromises in extreme environments.

"You want to take one too?" he asked, slipping four twenty-round magazines loaded with hollowpoint ammunition into his suit's pockets.

"Best not. We can pass you off as my security detail but I'm technically a diplomat. Besides, I barely even qualified with the damn things, remember?"

"Alright." Kurt slipped a fifth and final magazine into the gun and holstered it, leaving the chamber empty; regulations and good sense forbade loaded weapons in cockpits. He thought long and hard for a moment, then grabbed a second, even smaller pistol and a couple of magazines for it and stuffed them in his flight-bag. He didn't honestly think there was much danger, but it'd still be good to have something to arm the boss with in the event of things going sour.

The Mk1 Mod 5 capsule had much better and more compact electronics than its ancestor, leaving room for a passenger seat and a couple of small storage lockers. It was still crowded as all hell, with about as much leg and elbow room as a compact car, and the laptop and its bulky comms interface attachment weren't helping.

"Are you sure this was a good idea?" Kurt said worriedly, as a nearby corvette spun lazily to track their course with its forward guns.

"What are they gonna do, torture us for information to help them plot the invasion of Kerbin?" Jeb laughed derisively. "They've got enough to do keeping their own people in line, and the only FTL drive within several light-years is on our ship."

"That's what worries me," Kurt replied. He hadn't just been watching the news broadcasts, although those had been worrying enough. One of the channels they'd identified specialised in historical
documentaries, for a given value of the word 'historical', and Kurt had gravitated towards it out of professional curiosity when the anniversary of a recent armed conflict had come up. It had been highly informative in ways the network had probably not intended.

Jeb shrugged. "I don't trust the Union of Ostensibly Allied Planets all that far, but this Admiral Liu guy seems to be on the level. If he's not, well..." He opened the manilla envelope containing a print-out of every non-classified detail of the Alkerbierre Drive's operating principles and held up a photograph of what was left of Eeloo. "Think this'll get their attention?"

Kurt laughed out loud. "That will do nicely," he declared, with some satisfaction.

"IAV Fredricksson, this is... Uh, we never picked a callsign so let's go with Homesteader One. On approach, requesting docking instructions, over."

"Homesteader One, this is Approach Control. You're cleared inbound for the main landing bay, indicated by four flashing yellow lights. Be advised, our grav-envelope starts approximately two metres inside the outer airlock door. Some minor nausea and dizziness are normal during transition, over."

"Copy that, Approach Control." Jeb shook his head. "That's gonna take some getting used to."

The revelation that their neighbours had artificial gravity had caused no small amount of consternation back home. They'd seen it on local television a couple of times, but only in the context of programmes that were obviously fictional, and had written it off as one of those technobabble-powered handwaves that even determinedly hard-SF series had to resort to sometimes; renting a spacecraft or orbital facility for location shoots wasn't cheap, and wire-work and bluescreening generally went so far.

Captain Tarrant had obligingly and rather dramatically disproved that particular notion, throwing much of their anthropological analysis into disarray and forcing some drastic reevaluation of the Alliance's estimated tech-base. They still didn't seem to have FTL yet, but it seemed they might be closer than the kerbals had previously realised.

This was doubly unfortunate given everything else the Kerbals had been learning from human television. Jeb had always been a proud and vocal member of the share-and-share-alike camp when it came to the distribution of knowledge, but even he was starting to have doubts about the wisdom of placing everything they knew about the human race in the public domain. The public mood had swung from excitement to alarm rather quickly once they'd pieced together what G23 paxilon hydrochlorate was intended to do as opposed to what it had actually done, and in some cases it was hardening into anger. The fact that a large faction of the local government was less than pleased about what had been going on behind their backs was helping only moderately, and the usual suspects were still working up a good head of righteous indignation and demanding that Something Be Done. Nobody seemed to have a clear idea what that something should be, but when had that ever mattered?

* * *

The landing bay was bigger than he'd imagined; apparently a few nuances had escaped the translation team and the Fredricksson was a pocket carrier rather than what Jeb had first thought of when he'd heard her described as a cruiser. A bright red line was painted on the deck; judging by the fact that a pressure-suited figure carrying a pair of lighted batons was standing quite normally on the other side of it, it indicated the edge of the gravity field.
"Hoo boy. Approach Control, this is Homesteader One. Request guidance on crossing the gravity threshold without denting your deck, over."

"Homesteader One, Approach Control. Normal practice is to touch down short and taxi on thrusters. And don't feel bad if you scuff the paint some, everyone does the first couple of times, over."

Jeb chuckled. "Copy that, Approach Control."

Homesteaders weren't really designed for taxiing, but on occasions when they had to be moved around after landing but the local gravity was too high to hover on RCS thrusters alone the landing skids could have wheeled trolleys strapped to the underside. They were remarkably similar in size and shape to a skateboard, and had therefore probably caused more injuries and property damage than any other piece of equipment in the history of Kerballed spaceflight.

"It might be easier to get out and push," Kurt remarked. Jeb gave him a Look, not bothering to dignify that with a response, and engaged the lateral thrusters.

And then promptly regretted it as they crossed the threshold, making his head spin and his stomach lurch both at once as having half his body in freefall and half in 115% of Kerbin standard gravity sent his autonomic nervous system into a kernel panic. The loud and urgent squawking from the instrument panel suggested the autopilot hadn't fared much better.

"Minor nausea and dizziness, the man says," Jeb muttered. "You okay?"

"I'll live."

Jeb hit the RESET button for the SAS unit to shut the alarm up, making a mental note to turn it off before entering or leaving a grav-envelope in future, and took a look out of the window to see a couple of ground crew and some sort of towing vehicle approaching the capsule. "Valet parking service, huh? Better get buttoned up."

"Can you hear us okay in there?" someone broke in over the radio.

"Loud and clear. We're suiting up now. Uh, is this gonna take long? The computer doing the translating is air-cooled, it's only rated for ten minutes in hard vacuum."

"No problem. We'll be done in less than five."

"Great. Stand clear." Jeb pulled a lever next to the hatch, opening a valve to equalise pressure. There was a faint pop instead of the drawn-out hiss he'd been expecting, and Jeb somewhat belatedly realised the airlock had closed behind them at some point while he was busy trying not to be sick. Feeling slightly silly, he opened the hatch and climbed out.

Four humans were waiting for him. Two of them were unarmed, unless something that looked vaguely like a pressure-washer and a handheld searchlight counted as weapons. The others had some sort of carbines or sub-machine guns and the look of a security detail; apparently not everyone as as relaxed about this situation as Admiral Liu. Their eyes locked onto Kurt's gunbelt, and while they didn't raise their weapons, their sudden change in posture suggested it was a possibility.

"If you guys are on the radio circuit, I'm going to take my sidearm out of its holster and lay it on the deck," Kurt told them. "The chamber is empty but it's loaded."

The two humans exchanged surprised looks. "What were you expecting, a death-ray?" Jeb quipped.

"Now you mention it..." one of them replied.
The resulting laugh broke the tension, and the guards both slung their weapons. One of them picked up Kurt's pistol and examined it with interest, then turned a dial on his suit's wrist and spoke for a moment on a channel the kerbals couldn't hear, presumably asking for further instructions. Apparently satisfied, he switched back and handed the gun over to Kurt. "My superiors say you can keep your weapon, sir."

"Thanks." Kurt made to holster it, but hesitated. "This thing probably needs to go through decon procedures."

"We'll take care of it." The crewman with the handheld spotlight thing stepped forward. "We're going to use a combination of UV and an antiseptic wash. You have protective visors on those helmets?"

"Sure do." Jeb slid his into place. "Let's get this done."

The process was fast and not terribly dignified, involving every inch of their suits being blasted with a mixture of water and industrial bleach at several hundred psi to eliminate anything the UV lamps hadn't got rid of. Once it was complete, one of the deck crew gestured to someone behind a control room window overlooking the airlock. "We're going to dump the atmosphere in here and repressurise, just to be on the safe side," he explained.

"That's not going to cut into your safety margin, is it?" Jeb asked, rather worried; it was a pretty big airlock and they were a long way from their home port.

One of the humans gave him a slightly odd look. "No, we're fine, it's standard procedure for chemical or biowarfare defence. Some nasty stuff got thrown around in the Unification war."

Jeb saw Kurt's eyes narrow at that, and made a mental note to ask him just which side was the first to start throwing those chemical and biological weapons around back then.

"It doesn't make sense," Captain Tarrant muttered, staring at the CCTV feed from the airlock. "Their technology's barely in the 21st century. How the hell did they jump straight to FTL before they even got grav-envelope technology?"

"I wouldn't extrapolate too much from that one ship," Admiral Liu pointed out. "Nuclear-thermal's rugged as all hell, got a fifth as many moving parts as even the simplest laser-fusion drives and it'll run on plain tap water in a pinch. And that grav-wheel? Hell, it's got between zero and one moving parts depending how you look at it. Now, if you were going to be so far out in the Black that your nearest approved spare parts dealer was a couple years away at best speed..."

"Point taken," Tarrant admitted. "But-"

Whatever he was going to say was forgotten as a Marine looked in through the conference room door. "They're here, sirs."

The two aliens entered the conference room a moment later. They were a little shorter than a human on average, the taller of the pair coming to about five feet six by Captain Tarrant's reckoning. Their heads were taller and more cylindrical, and their hands had only four fingers, but otherwise their similarity to *homo sapiens* was just close enough that with a bit of stage makeup they could pass for human at a distance. Tarrant wasn't sure if that made him feel better or worse.

Their spacesuits, on the other hand, couldn't have passed for human unless they were kept in a museum. Either their internal biology was significantly different, accounting for the much bulkier and heavier suits, or their materials science was about a century behind humanity's. He wondered what
that might mean about their society; did they simply have different research priorities, or had they reverse-engineered their FTL drive from some third party?

"Good morning, gentlemen," said one of them. "Apologies for the shock we gave you, Captain Tarrant. We'd intended to get in touch by radio once our colleagues back home perfected our translation software, but you happened to be in the neighbourhood."

Tarrant smiled awkwardly. "Quite alright, Mr... uh..."

"I'm Jeb and this is Kurt. We don't use secondary names quite the way you do; I think there's maybe twenty different ones total, all representing a different ethnicity. And yes, it does get confusing sometimes," he added with what looked like a faint smile.

"Your knowledge of human culture is pretty impressive; have you been studying us long?" Tarrant replied, with a note of suspicion that was not lost on the Kerbals.

"Not especially. We arrived about a year and a half ago by your calendar, and once we realised this system was inhabited we decided to maintain a low profile until we knew what we were getting into. A few weeks later we managed to pick up some satellite TV transmissions; that's how we got the translation software working."

"Just like in the movies," Admiral Liu quipped.

"Yep. Our movies too, funnily enough. Anyway, I have some official communiques from the various nations of our home system here..." He fumbled in a plastic document folder and handed over a sheaf of paper. Tarrant skimmed the first page; apart from the occasional phonetic spelling, it was indistinguishable from the dry official boilerplate of government communications everywhere, which was at once vaguely reassuring and moderately surreal. He put it to one side for more detailed perusal later.

"I'm sure you have a lot of questions," Jeb continued, "but there's something I really have to ask. We've had our optical and gravimetric sensors searching around the clock for nearly a month, but for the life of us we can't figure out where your homeworld is."

There was an awkward silence as Captain Tarrant and Admiral Liu exchanged looks. "That's... complicated," Liu replied. "And kind of embarrassing."

* * *

"You're kidding."

"Bill, you've been my favourite prank target since we were building sounding rockets out of scrap metal. Is this my usual MO?"

Bill sighed. "No. But come on, Jeb. Doesn't it strike you as just a tiny bit implausible that they could go from a handful of jury-rigged colony-ships to a full-on interplanetary empire in what, a century and a half?"

"More than a handful from what they're telling me; they basically took their whole space infrastructure with 'em, including two decent-sized habitats. Besides, even if Captain Tarrant is a ridiculously good actor, what do they stand to gain by making up a huge elaborate cover story? They could just as easily tell us 'Earth' was on a weird orbit way off the elliptical."
"I guess," Bill admitted. "Still, I wouldn't trust their version of events all that far. Any progress on getting those I/O specs?"

"Everything useful in their onboard library's coming back with me in hard-copy, but it's not much; they sent a request back to headquarters for something more detailed. Admiral Liu estimated two local days, maybe less."

"Nothing like First Contact to cut through the red tape, huh?"

"That's exactly what he said. Anyway, printout's done now, see you in ten minutes."

"Copy that." Bill cut the connection and returned to the guest blogpost he was working on.

**The Core Worlds**

Posted by: **Bill**

March 18th, 2525

Mood: World-weary

So, we know a little more about the system our new neighbours live in now. The subject of their mysterious homeworld of 'Earth', aka 'Earth-that-was' is something Jeb will probably want to tackle himself when he gets back from the conference aboard the *Fredricksson* (and no, I can't pronounce that either), but our hosts have helpfully given us some navigation data.

I also had the debateably good fortune to speak directly with an Alliance Naval officer who hailed from one of these 'Core' worlds, and... Well, let's just say I discovered another thing our two races have in common: The tendency for wealthy urbanites to lapse into provincialism, condescending snobbery and unpleasant stereotypes involving sexual congress with animals when discussing people from remote rural districts.

Now, I'd be happy to write this off as an isolated case of someone being a jerk if it wasn't for something I heard on one of the local news channels. No, not the Miranda thing, though that was bad enough. Something about a protest against voter "registration requirements" for Rim worlds. (Rim worlds being defined as anyplace whose economy is too small to support any fashionable wine bars, from the sound of it.)

Yeah.

I think the post-First Contact honeymoon period was over before it really began.

Don't misunderstand me. I have absolutely nothing against our neighbours as people; most of the humans I've interacted with so far have been nothing but friendly and courteous. But what little I've learned about their government leaves me with a very bad taste in

The console made an urgent beeping, and Bill set his tablet aside and brought up the radar display. Two fuzzy blips at long range, on an intercept course. "What the...?" He nudged the attitude controls to bring *Starfarer I*'s bow to face the contacts and switched over to the optical sensor feed. "Oh, hell."
Aboard the Fredricksson, the bridge crew were doing much the same. "Reavers," Captain Tarrant breathed. "Sound general quarters!" he barked, slamming one hand down on the button to set off the alarm while grabbing for his respirator pack with the other.

A five-second blast of deafening noise echoed throughout the ship, followed by the voice of the bosun over the PA system. "General quarters, general quarters, all hands man your battle stations. Down and aft on the portside, up and for'ard on starboard side. This is not a drill."

Jeb was halfway through the prelaunch checklist when the klaxon went off, and looked out of the Homesteader's tiny window to see a crew chief frantically gesturing to him. He popped the hatch and stuck his head out, gesturing to the laptop and the radio antenna sticking out of one side. The human caught the hint and grabbed the handheld radio off her belt. "Sir, we need you to clear the launch bay and proceed to the safe zone!"

"Where the hell's that?"

"Oh," the translation program emitted a burst of gibberish followed by an error noise as the human swore in Chinese, "didn't anyone bother telling you? Three decks down and follow the green line on the wall!"

"But what about my ship?"

"Your first officer's going to have to handle things, sir, we need the launch bay clear right now!"

Jeb swore under his breath but nodded. "Alright. Kurt, grab the spare O2 bottles." He pulled a medical kit from the bracket on the bulkhead. "We can make ourselves useful here, at least."

"Twelve contacts, all running with no core containment. Four Trans-U's, one Packard-class armed merchantman, remainder unidentified at this time. Estimated time to weapons range, nine minutes."

Tarrant nodded. "Understood. I want a full missile salvo as soon as they're in range. Target four at the Packard, hit the rest with one missile each."

"Aye sir."

"Captain, I want the taskforce in Formation Echo, or as close as we can get with this few hulls," said Admiral Liu. "We'd better try to screen off our visitors, that Packard's got two missile tubes and they might still be working. And keep that Blue Sun ship where we can keep an eye on 'em."

"Aye sir. Starfarer 1, this is the IAV Fredricksson. We are moving to a defensive formation, please maintain current course and speed, over."

"Copy that, Fredricksson. Be advised, I have not yet received cleared-hot but my Rules of Engagement permit returning fire in the event of a missile launch. Please ask your colleagues in the gunships to stay clear of my field of fire, over."

"Roger that, will do. Fredricksson out." Tarrant shared a look with the admiral. "Someone's a little eager over there."

"We're engaging Reavers. Who the hell ain't? Anyhow, signal the Davis boats to give our new neighbours a clear shot, I wanna see what that boat's capable of."
Formation Echo was a fairly simplistic one, a roughly circular wall of ships with the larger and less agile vessels concentrated towards the centre and smaller, more manoeuvrable ones spread out on the edges. The theory was that the larger ships would then have overlapping fields of point-defence fire to make up for their limited handling while the smaller ones would have greater freedom to use the full extent of their speed and acceleration without fear of colliding with one another. In an open-space engagement like this one it was pretty effective on paper, but Captain Tarrant wasn't a particular fan of it as it necessarily had all ships facing the same way; a few enemy warships running full emission-control or using a convenient moon or planetoid to block line-of-sight could find themselves with a window of several seconds to line up a shot before they were noticed.

Still, on this occasion it was a non-issue: The nearest orbiting body was a good twelve light-seconds out, and the odds that the Reavers had spotted them early enough to detach a few ships to run cold and quiet towards the flanks were pretty low.

"Any idea if they've seen us?" Tarrant asked the sensors officer.

"Hard to say sir," he replied. "The Packard class's sensor suite is pretty good for a Fleet Auxillary; in fact, theoretically they could've seen us as soon as we saw them. But there's no way to know what kind of condition it's in or how competent the operator is. What I can say for sure is there's no sign of a course change yet."

Tarrant stared at the tactical display, frowning heavily. The second scariest thing about Reavers, after the whole deranged cannibal part, was that they were so thrice-damned unpredictable. Most would just charge headlong into battle without a care for the odds, but some groups showed signs of much more intelligent direction, using proper tactics -often right out of the Alliance Navy playbook- and declining battle if the odds were against them.

Nobody really understood the fine details of Reaver neuropathology, but it was certain that at least some of them retained skills and knowledge they'd acquired before the Pax or else they'd never have made it off-planet in the first place. And a number of Alliance military personnel had been on Miranda, either assigned to the tiny picket force or choosing to settle with their families. It wasn't hard to infer the rest.

"They're changing course sir! The Packard's taking the lead, the smaller ships are pulling back and... Jesus! Positive ID on another vessel, type confirmed as Longbow-class!"

"A what?" Tarrant couldn't quite hold back a heartfelt groan. "Please for the love of all that's holy let it be a civvy model..."

"Sorry, sir. Got a definite visual on the dorsal turret. I think she might be the Lafayette; she's missing her whole portside radiator array, that tallies with the bulletin from Intelligence."

"Shiny, just damn shiny. Time to missile range?"

"Four minutes, sir."

Tarrant exchanged looks with Admiral Liu. "Orders, sir?"

"Concentrate fire on that Packard and the little ships, ignore the frigate for now. I've read the bulletin on the Lafayette," he added, seeing Tarrant's expression. "She was pounded to hell and gone before her crew abandoned ship, probably a write-off even if we could've got her back to drydock. Only thing she could be good for is a decoy."

"Course changes! The smaller vessels are breaking formation, sir!"
"Called it," Liu declared with grim satisfaction. "The big fat important-looking target comes in dumb while the small fry move around to bite us in the ass when we're not looking."

"Missile range in sixty seconds!" the weapons officer called out.

"Fire when ready. Tubes one through four engage the small craft, five and six take out that frigate." Couldn't hurt to hedge their bets, Tarrant reflected, even if the admiral was probably right- "Missile launches from the frigate!" Yep, definitely a good idea to err on the side of caution there.

"Mission Control, I don't want to rush you or anything..."

"Sorry, Bill. Our intel guys are reviewing the downlink feed now, we have to be absolutely sure of this one. Continue weapons-hold unless fired upon-"

The console made a loud and urgent noise. "Never mind! Missile launches detected. Enemy craft confirmed hostile, engaging!" Bill called out. He flipped the MASTER ARM switch to the on position and let the fire-control computer crunch the numbers while the first shell was loaded. A long moment later, the system chimed happily as the word 'SHOOT' flashed on the screen. He jabbed his thumb down on the fire button. "On the way!!"

"Railgun fire detected from Starfarer 1," the sensors officer observed.

"Calibre looks about even with one of our main guns, sir," the weapons officer added. "Velocity's approximately one-third our... Huh, now would you look at that." The single slow-moving radar contact suddenly winked out, replaced by a fuzzy cloud.

"Canister shot," Tarrant realised.

"Looks that way sir. Useless against anything better-armoured than a revenue cutter, but it'll really do a number on those missiles. Second shot fired, same trajectory."

"Buck and ball," Liu added. "Same tactic the Independents used to use. We ditched canister shot because point-defence lasers kill missiles just as fast and don't take up magazine space, but they never had the industrial base for good solid-state laser systems."

"Maybe these guys are as far behind the curve as they look, at least when it comes to weapons tech," Tarrant replied, with a touch of bitterness. What did that say about humanity as a species?

A moment later the inbound missiles met the expanding cloud of canister shot. A handful of brief, strobing flashes punctuated the Black as most -but not all- of them took hits and detonated. "Four leakers still inbound," the weapons officer reported. "Thirty seconds to effective laser range- Reaver ships deploying decoys!"

"Did this pack hit a fleet logistics ship or something?" Tarrant growled. "Damn it, not only are they getting smarter, they're getting better equipped. Reload all tubes with heatseeking missiles."

"Aye sir."

Seconds later, the Alliance taskforce's own missiles reached their targets. Perhaps half locked onto radar ghosts from chaff clouds or active decoy emitters, but those that found their mark had a gratifying effect. Fully half the Reaver ships were blown apart completely, and the looted frigate was left spinning uncontrollably in space with a gaping hole in her side. A few seconds later, Starfarer 1's railgun round impacted midships and blew her clean in half.

"Hell of a bang for that velocity," Liu remarked. "Guess that shell was packing a warhead." The Alliance had gone over to hypervelocity pure-kinetic rounds some time ago, but Tarrant was vaguely
aware that slower rounds with explosive payloads had some advantages; reduced wear and tear on
the rails, less electrical power needed or heat generated and not as much recoil to compensate for
with engines. That last one would be a big deal for the Kerbals, as between their old-fashioned
nuclear motors and their probably rather poor thrust-to-weight ratio they couldn't easily write off six
kilometres of delta-v a shot.

The commander or alpha male or whatever the hell you called the one who did all the complicated
thinking must have survived the first salvo, because the survivors immediately executed a
simultaneous course change to move them out of effective weapons range as soon as possible.
Captain Tarrant allowed himself a moment of grudging professional admiration for anyone who
could coax an orderly retreat out of Reavers, but nevertheless ordered a second salvo while there was
still time. It wasn't quite as effective, the Reavers were changing course too fast for accurate
shooting, but another small ship vanished in a brilliant flash of light and the Packard began to tumble
out of control.

"Do we pursue, sir?" he asked the admiral.

Liu shook his head. "We'd have to split the fleet, and if they're smart enough to think of using that
cruiser as bait then they're sure as hell smart enough to have some buddies waiting just out of
detection range. Let 'em go this time."

"Aye sir. Stand down from General Quarters and resume course."

* * *

"Lieutenant McKerjel, reporting as ordered, Colonel." Part of him felt like he should be standing
attention, even though he knew there was no video link.

"Thank you, Lieutenant. Your report has been received, but I'd appreciate if you could summarise
your impressions of the Alliance's military readiness, and that of these 'Reavers' they created."

"Certainly, sir. I regret to report that my direct observations are somewhat limited as I was confined
to an assembly area for noncombatant personnel for the duration of the engagement, but I do have
Starfarer I's sensor records from the moment First Officer Bill Kerman armed the railgun as per
standard operating procedure. Going by the time-stamps, we spotted the Reavers at approximately
the same time the Alliance warships did..."

Kurt briefly outlined the sequence of events. "Their manoeuvres were unremarkable; what I'm told
they call 'Formation Echo' is functionally identical to our Defence Formation Six and serves the same
purpose. As we suspected, the Fredricksson's fighters were not deployed for a ship-to-ship
engagement. While it's probable they can mount some anti-capital ship missiles when necessary, their
primary function appears to be engaging surface targets.

"Alliance weapon systems appear to be similar in general operating principles to ours but
significantly more advanced in design. They used missiles even against what we'd deem low-value
targets, from which I tentatively infer that they have looser Rules of Engagement, a larger budget or
both." That earned him a small laugh.

"Lucky sons of bitches. Any idea what their weapons are capable of compared to ours?"

"Hard to say, sir. I haven't been able to independently verify any of the information provided by the
Alliance sailors, but if their accounts are to be believed then we being attacked by repurposed civilian
spacecraft and two commandeered warships that were severely damaged before being abandoned.
What I can say for sure is that their point-defence lasers are significantly more powerful: If we assume the enemy missiles were equivalent in mass and materials to one of our heavy ship-killers, they delivered at least one-third more energy per second than a Sunbeam 5. And that's probably an optimistic estimate.

"Likewise, I haven't had the opportunity for any direct observations regarding the capabilities of Alliance armour-plating. The ship Starfarer 1 killed was already severely damaged and none of the Alliance Navy vessels took a hit. That wrecked warship probably offers the best potential source of intelligence, but that may have to wait until the return leg of our journey."

"Thank you, Lieutenant McKerjel. Keep up the good work. That'll be all." The voice connection terminated.

"You ready to head back?" said Jeb, poking his head around the door. "Because you're not going to believe what just came in from Barkton..."

Kurt and the Fredricksson's communications officer hadn't yet managed to jury-rig a method of transmitting video from a kerbal laptop to an Alliance video screen, so Kurt had brought a projector and screen along with him. Admiral Liu, Captain Tarrant and the two Blue Sun employees watched as a large group of kerbals gathered in front of a large and impressive civic building, watched over by a small cordon of police. Tarrant couldn't read the placards, but the expressions and the handful of Independent flags were pretty instructive by themselves.

"That's the Meeting Hall of the Council of Twelve Pillars," Jeb elaborated, somehow pronouncing the capital letters. "The nearest equivalent in your culture would be the old United Nations of Earth-That-Was, though they have somewhat more legislative power." Behind him on the screen, a kerbal stepped forward with a flag bearing the Blue Sun Corporation logo on a long pole, followed by another who was ostentatiously holding up a burning taper. "You will notice, I hope, that we are making a clear distinction between the actions of Blue Sun Corporation and the actions of the human race as a whole," Jeb continued. "However, the citizens of Kerbin you see here also came to deliver a petition to the Council of Twelve requesting that the transfer of FTL technology be contingent on the outcome of the public inquiry into Blue Sun's actions. They needn't have bothered, as a motion to that effect was being voted on the same day. It passed all but unanimously."

"It seems we aren't the only government with an information security problem," remarked one of the Men In Grey; Jeb thought it was the one who called himself 'Mr Green'.

"Actually, we haven't had a serious security breach in quite a while," he replied with a smile that didn't quite reach his eyes. "It's one of the advantages to being selective about what information we classify as secret."

"And having laws against abusing national security rules to conceal evidence of criminal activity," Kurt added pointedly.

"So everything you know about humanity so far...?" Captain Tarrant began in doom-laden tones.

"All over the media."

"Oh."

"Anyway," Jeb continued breezily, "I'll make sure to have a copy of this recording transmitted so you can forward it to your political leadership. You gentlemen may want to take a copy as well; I can't imagine your Board of Directors would be happy if the first they heard of it was from the press package we'll be passing out once we arrive at Greenstone."
That, at long last, got an overt emotional reaction from the Blue Sun employees. "The what now?" exclaimed the one Jeb thought was 'Mr Brown'. "You cannot seriously expect us to let you go down there and just hold a gorram press conference! Are you crazy? There'll be panic! Mass hysteria! This information has to be-"

"Has to be buried under twenty layers of security classification?" Jeb retorted testily. "We are trying to preserve public order and stability here, Mr Kerman."

"Yeah, and an absolutely fantastic job you're doing so far!" Jeb snapped. He forced himself to take a couple of deep, calming breaths. "This is pointless. You can't keep this under wraps anyway. Even if every sailor in this fleet keeps their mouths shut, the minute our ship comes within visual range of a civilian vessel or installation then someone's going to put two and two together."

"Eyewitness accounts are unverifiable and photos are easily faked. At worst there'll be wild rumours, the disruption would be minimal."

"Just what are you afraid of?" Jeb demanded. "You must have studied every inch of our spacecraft with every sensor you have by now, so you must realise we're no real military threat unless we point the bow at a planet and set the warp drive to 'Ramming Speed', and if we were inclined to do that then the first you'd have known about our very existence was when five-ton wrecking balls started hitting your populated planets at thirty times the speed of light. But we haven't done that, although I dare say there was a non-negligible body of opinion calling for it when we got that poor brave Navy lieutenant's last words translated. Oh, yeah, that's something else I was supposed to let you know." He turned to Admiral Liu and Captain Tarrant. "The Astronomical Institute of Kerbin would like to contact her next of kin to ask permission to name a star after her."

"I'll see that the request is forwarded to her parents," Admiral Liu replied solemnly. "And on behalf of the Navy, they have my thanks for their kind gesture."

One of the Blue Sun representatives looked like he was about to say something, but apparently -and probably wisely- decided not to.

"Anyway," Admiral Liu continued, "while I agree that trying to conceal the arrival of our guests is impractical and probably counterproductive, I think it'd be a good idea to hold off on a press conference until after you've met with the President and the Council of Ministers. Just out of diplomatic courtesy, you understand."

Jeb nodded. "That's perfectly reasonable, Admiral. Agreed. Now, unless you have any further questions, I have a meeting scheduled with Lieutenant Mitchell."

"Mitchell's one of our engineering officers," Tarrant explained. "He's also an amateur historian specialising in early human spaceflight."

And on that note, the meeting broke up. Captain Tarrant stayed seated, deep in thought. They could obliterate our entire species at a stroke and there'd be nothing we could do to stop them, he reflected gloomily. And they turned up just in time to see ample evidence we deserve it.

"Captain?" He looked up to see Jeb standing by the door, laptop still under his arm. "Am I right in guessing you're a little concerned by how your people are viewed back on Kerbin?"

"You could put it like that."

Jeb perched on the edge of the conference table. "Well, I can't speak for all of them, but personally, I'm pretty damned impressed. It took great courage and ingenuity to even reach this solar system,
much less accomplish everything you have since you arrived. And sure, I don't like what happened on Miranda; I don't like what I've pieced together about the Unification War, for that matter. But do you think my people have never known war, or tyrants, or atrocities? We aren't so different, Captain Tarrant. My people were just luckier."

"How so?" Tarrant wondered.

"It'll be in Mitchell's report. Speaking of, I have to run. Thank you, Captain."

Tarrant nodded absently, and made a mental note to question Lieutenant Mitchell rather thoroughly at the earliest opportunity.

All the same, he did feel somewhat better.

---

**Are You Kidding Me?**

Posted by: *Jeb*

March 29th, 2525

Mood: Indescribable

(I'm sure you can guess which editorial I'm referring to here.)

"Cultural imperialism"? Seriously?

Let's get something straight here. The revelations about the Miranda Message in the news? Those are not "part of the local culture". The local culture has a term for the forcible administering of mind-altering chemicals en masse, and that term is "crimes against humanity". We don't have a direct equivalent, thank all that's holy, but that's the charge preferred hereabouts for such blatant and systematic violations of medical ethics and the sanctity of sentient life that the only fitting penalty is *death*.

You may argue that we shouldn't be taking sides when it comes to a matter of internal security; I disagree, but I'll admit it's a defensible position. But who thinks we're being condescendingly crypto-racist for siding with the faction of the Alliance government -and voting public, I might add- that wants to enforce the letter and the spirit of its own laws is cordially invited to go and criminally molest a gronnek.³

"Lieutenant Mitchell, reporting as ordered, sir."

"At ease. So, lieutenant, I'm sure you can guess why I called you in."

"Indeed, sir," Mitchell replied. "There's a detailed report in your inbox along with a copy of the reference materials furnished by our guests, but I'll summarise what I've learned so far." He twisted his cap in his hands nervously. "I obviously can't verify any of this independently, but the documents Jeb gave me were very elaborate and detailed. If it's deliberate disinformation, someone went to a hell of a lot of trouble.

"Anyway... The long and the short of it is, the Kerbals are at pre-Exodus levels of technology.
They've only been in space about forty of our years, most of their space infrastructure runs on nuclear-thermal motors and they're not even close to gravity field tech. The FTL drive was a lucky accident."

"Lucky how?" Tarrant asked. "Did they reverse-engineer it off of someone else?"

"Not exactly, sir. This is where it gets a little weird. According to Jeb, there's some kind of space-time anomaly in the vicinity of their star system. Maybe a wormhole, maybe something else; they're still firing probes into it to try and find out. But the practical upshot of all this is, they managed to kludge together a working FTL drive as a result of the observed behaviour of some of those probes."

Tarrant nodded. "I've suspected something along those lines for a while. I don't suppose he let slip any details of how the damn thing works, by any chance?"

"Not much, sir. He did give me a translated copy of an article from his homeworld's scientific press, but it was light on specifics; in fact, it openly states they don't have a complete picture of the physics themselves. You'll find the text attached to my report."

"I see." Tarrant sat back in his chair, looking thoughtful. "I wish we could verify some of this. Did Chief Ling get to take a look at their shuttle yet?"

"He's down in the hangar with Jeb as we speak, sir. I'll bring him up here as soon as he's done."

"Good. That'll be all, lieutenant."

Mitchell returned a little over an hour later with Chief Petty Officer Ling in tow. "Easier than we dared hope, sir," he reported. "I got total access, and Jeb even removed a couple of non-critical parts for us to examine as long as we stuck to non-destructive tests. Apparently that tin can's pure COTS."

It took Captain Tarrant a moment to parse the acronym for "commercial off-the-shelf". "As for the tech itself... Well, it's gorrarn ancient, sir. Chemical fuel all the way, hydrogen peroxide for the attitude thrusters and liquid oxygen combined with a petroleum derivative for the main engine. I haven't gotten the chemical analysis of the fuel sample back yet, but going by smell alone it's mostly kerosene, probably mixed with something to lower the ignition temperature. Computers looked pretty basic too, but then for something that small and simple I guess you wouldn't need much."

"Crude but rugged, then?"

"You can say that again, sir. I got a pretty good look at most of the parts; they're nearly all steel and copper with a few ceramics, and the tolerances are loose enough that any back-street metalwork shop out on the Rim could probably run off replacements, and the fuel's not that much harder to make. If the late great Mr Kalashnikov had gotten a job with the space program then I reckon his rocketships would look a lot like this one under the hood, sir."

"Planning to buy one, Chief?" Tarrant joked.

"You know what, sir? If my wife wouldn't have a conniption over it then I just might. They ain't all that practical anywhere terraformed 'cause they can't take off through an atmosphere, but damned if they don't look fun to fly."

Lieutenant Mitchell had helpfully included a timeline comparing the list of human and Kerbal achievements in spaceflight. For the first couple of decades, they were largely comparable: The Kerbals had put a space station in orbit some time before a manned lunar landing, but otherwise the major milestones lined up almost perfectly. But then the human timeline began to grow sparser; no more manned missions outside of low orbit, then no more manned missions at all for a while.
Meanwhile, the Kerbals were forging ahead with the colonisation of 'Duna', which Mitchell's annotations helpfully explained was a mid-sized rocky planet with a thin atmosphere of mostly CO2. *Prime terraforming candidate if they ever figure out the tech.* Tarrant mused.

But what the hell motivated a race to go hell-for-leather settling a barren rock that had nothing worth breathing in the atmosphere with first-generation nuclear motors for their main propulsion system? It must've taken them most of a year to get there even when orbital conditions were ideal.

Just how fast did Kerbals reproduce, anyway? It hadn't occurred to him to ask. Better find out though, before some of the more histirionic elements in Parliament thought to wonder about it themselves; someone might decide an interstellar invasion threat made a combined excuse and smokescreen for even more constitutionally dubious goings-on.

And he supposed he ought to at least consider the possibility that said invasion threat wasn't completely ludicrous, even if it was hard to imagine what the Kerbals would stand to gain from it. If they wanted *lebensraum* or some natural resource they were short of back home then they'd be better off finding it in other nearby star systems without current tenants, and if they were covetous of mankind's technology then they could simply buy some, although the provisional exchange rate (based on the relative market values of platinum and a lot of educated guesswork) wasn't currently in their favour.

But then again, when was starting a war of aggression ever the rational course of action? That certainly hadn't stopped humanity over the years. Who was to say the Kerbals were any different? Tarrant thought of the crowd of protestors in the video footage from Kerbin. Lots of high-minded righteous anger (and why shouldn't there be? Plenty of Alliance citizens felt the same way) to provide a motive for the Council of Twelve, or one or more individual nations, to take it upon themselves to wade in with the best of intentions and no thought for the consequences.

And if the Kerbals were savvy enough to link up with the dissident local factions... Well, there were all sorts of rumours about Independent warships falsely listed as lost in action and making a run for the Deep Black. Rumours that probably had a grain of truth to them according to Naval Intelligence. With logistical and technical support from a rear area that was essentially impenetrable until and unless the Alliance cobbled together a working FTL drive of their own, that might not be a fight they could win...

Captain Tarrant looked up at the clock hanging from the ready-room wall, and was mildly shocked to realise he'd been lost in thought for over half an hour. He'd better get some of this down in writing for the Admiralty.

There was one bright side though, he mused, pulling up the text editor on his console. This development ought to be a tremendous incentive to take Blue Sun to the bloody cleaners.

* * *

"Great Kerm above, that's real? Not some sort of mock-up, or a really weird practical joke?" Scott shook his head in wonder. "I'm not sure if I'm horrified it got past the planning stage or impressed they actually got the bloody thing to work."

"Impressive cargo and passenger capacity though," Bill remarked. "Up to six passengers and twenty-four tons of cargo to low orbit? Not bad for a conventional launch system, especially a majority-reusable one."

"For a very broad definition of 'conventional'. Look at that axis of thrust! I can see what they were
trying to do, there's no way you'd soft-land a rocket stage that big, but I'm afraid to ask where the centre of mass is. You'd be fighting to stop the bastard somersaulting all the way to orbit."

"Might be easier to work with it, let it push the ship into a gravity turn naturally."

"That'd work, I guess. But can you imagine trying to fly it manually in an emergency? It wouldn't be a glide so much as a controlled plummet."

"As opposed to an uncontrolled one by capsule," Bill pointed out reasonably.

In his cabin, Bob shifted uneasily in his sleep.

"I tell you, though, nobody on the design team ever got any flight time, even in a simulator."

"You're right there. The team back home's only translated the first half-dozen chapters, but these folks were government-funded from Day One. Military pilots, engineers who used to be making missiles for the losing side in the huge-ass war they just got done with... A World War, they called it. Imagine the Age of Strife with only two sides and condensed into one big six year throwdown."

Scott shuddered. "I'd rather not, thanks." He took a long swig of coffee. "You've got to admire these people," he remarked, half to himself. "They've been through such a cataclysmic catalogue of awful shit they're practically a whole race of unsympathetic sitcom protagonists, a fair bit of which they've done to themselves I might add. But not only are they still here, they've built themselves a thriving interplanetary empire! And an empire that hasn't destroyed itself in an orgy of blood, violence and fire despite apparently being run by a committee stuffed with cartoon supervillains, opportunistic plunderers and total cretins. I don't know how they do it!"

"I'm pretty sure that was a little bit racist."

"I dare say. But that doesn't mean it's not true."

Bill raised his eyes heavenwards, and cued up another image on the screen of his laptop. "Well, anyway... This is what they tell me the space agency who came up with that Shuttle thing eventually replaced it with."

Bob moaned and rolled over, breathing heavily.

"Oh, come on," Scott massaged his temples. "Someone has got to be taking the piss. Reality television, really?"

"Is it really any weirder than Jeb doing those commercials, or Bob releasing an album to pay for Munbase One's new rec-dome?"

"Considering it involved stranding a bunch of egomaniac nurnties on the next planet over with the bare minimum of actual training and putting the edited highlights on pay-per-view? Yes! And it just gets better; did you read as far as what happened when the ratings dropped?"

"Uh, now you mention it..."

"Well, it's not pretty."

There was a long silence as Bill read on a few pages, followed by another, longer one as it sank in. "Oh," he said, eloquently.

"Yeah."
"But in all fairness, this was what, four centuries ago? Or one and three-quarters if we discount the time they all spent in cryosleep?"

"True. Still makes you wonder, though."


Sorry about that.

"Wha-a...?" Bob leapt to his feet, grabbing a heavy ornament from his desk.

Hey! Take it easy! I'm not in the room. I'm not even on your ship.

"Then where the spaffing hell are you?" Bob hissed angrily. "In my head?"

Not... exactly. Look, I don't have a lot of time before these Blue Sun goons stuff me back in the Faraday cage, but I could really use some help. And you don't have to talk out loud, by the way.

Bob put several pieces together. The Academy, he said in his head. You're one of those kids they...

You saw the edited highlights. Now can you please have someone get me the fuck out of here?

Alright, alright. I'll do what I can. Bob took several deep, calming breaths. Tell me about the ship you're on.

What are you going to do?

I don't know yet, but I'm damn sure I can't just call Admiral Liu over on the flagship and tell him I got a psychic distress call.

He'd probably believe you; I heard my handlers bitching about him earlier.

Maybe, but how'd that look on a search warrant?

Point. Damn, they're coming back. Not sure when I'll be back in touch.

Call me ASAP. Maybe I'll have a plan by then.

Bob sat back on his bunk, massaging his temples, and reached into his desk drawer for the remains of a bottle of strong and expensive liquor and a tumbler. He poured himself a couple of fingers of it and downed them in one, then sat down at his desk, reached for a notepad and a pen and tried to think.

* * *

"I thought you'd ask eventually," said Jeb. "The politicians back home worried about an invasion of land-hungry aliens?"

"Not yet, but they might be when they read my report," Captain Tarrant replied.
"Well, it's kind of complicated." Jeb took a sip of water, the one thing on this ship that he could drink without getting ill. "It wasn't us Kerbals who were facing an overpopulation problem," he said. "It was the other sentient lifeform on Kerbin."

He briefly outlined the role of Kerm trees in kerbal society; their symbiotic relationship with the villages that grew up around them, offering detailed information about soil conditions and highly nutritious fruit in exchange for the Kermol tribespeople helping to spread their seeds, and the vital role they played in kerbal reproductive biology.

"One Kerm tree is barely smarter than an insect, but their roots form some kind of neural network and as a network of Groves gets bigger, the Kerm gets smarter. At thirty-seven it's pre-sapient, on a level with certain..." The translation program on his laptop glitched out. "I guess that doesn't translate well, but I'm told they're analogous to Earth primates like chimpanzees. Go over thirty-seven, and the Kerm crosses the sapience threshold... and it's extremely traumatic and almost guaranteed to kill every tree in the network and any kerbal who happens to be communing with them at the time, at least without an enormous amount of preparation beforehand."

"Communing?" Tarrant asked.

"Best way to describe it in your language is 'contact telepathy'; the Kerm extrudes a lot of thin roots or tendrils or something that enter through the skull and permit a direct brain interface. Our neuroscientists are still some way from a complete picture of how it works.

"So anyway, this all started coming to light around the time our first long-term mission in near-Kerbin orbit was ongoing, and the first proper mapping satellite we ever launched was tasked with finding out the scale of the problem. At that time we didn't know whether it was possible to nurse a Kerm over the sapience threshold at all, and a lot of people -me included, when I got to hear of it- were pretty damn scared of what it might mean. So we took what appeared to be our only chance and threw all the resources we could spare at getting a viable off-world colony going.

"What we didn't learn until we had the first settlement on Duna pretty well-established was that two Kerms that have passed over the sapience threshold don't need anywhere near as big a buffer zone to prevent turf wars; they can coexist about as well as any two random kerbals or humans living next door to each other. Pre-sapients -and especially newly-planted seeds- still need a lot of space and some careful handling, but we've got a good century before Kerbin approaches the saturation point."

Captain Tarrant smiled humourlessly. "That's... not wholly reassuring, but better than I was afraid of."

"Oh, come on," Jeb retorted irritably. "Even supposing that we could narrow the technology gap enough to put our space forces on an even footing hull-for-hull, and somehow compensate for the fact we haven't had a real war in two generations, how the hell are we supposed to fight a war of conquest against a polity with three hundred settled bodies and nearly two and a half times our population?"

"I know, I know," Tarrant sighed. "But there's going to be people who won't let a little thing like logistical reality get in the way of a good panic, either because they don't know better or because it suits their own agenda."

"Hah! Oh, I know the type," Jeb snorted. "I guess politics is still politics whatever your species. Still, I do have some news that might reassure everyone that we're on the level. The governing council of Duna has requested that I pass on an invitation to tender for terraforming contractors." He passed over a sheaf of paper, which Tarrant paged through until he found a detailed breakdown of the numbers. Numbers with an impressive number of zeroes.
"That... will be very well-received," he declared. Terraforming corporations had some pretty serious lobbying clout, and given that the good candidates in this system were being rapidly exhausted they'd have powerful commercial incentives to keep Alliance-Kerbin relations cordial. Things were definitely looking up-

The intercom buzzed. "Yes?"

"Sorry to bother you, Captain, but there's a call for Mr Jeb and his first officer's demanding a patch-through. He says it's urgent."

"Bill isn't given to using words like 'urgent' lightly," Jeb added. "I'm sorry, Captain, I'd better take this."

"Alright. Put him on."

"Jeb, we have a situation here! Bob's unaccounted for, and wherever he's gone he took an EVA suit and a lot of guns!"

Jeb opened and closed his mouth a couple of times with no sound coming out. "What," he said at last, too stunned to add a question mark.

Captain Tarrant felt a sudden, urgent and entirely rational need to be in another line of employment.

A short while earlier...

Bob tapped a six-digit code into the keypad, and the door to the weapon locker opened with a muted click that nevertheless made him wince slightly.

You worry too much, remarked his new friend, who'd introduced himself as Christopher. So Jeb is always telling me.

Bob briefly considered a rifle in a calibre that would defeat most large predators, but decided against as it was heavy and unwieldy at close quarters. He picked up a shotgun instead, placed it in his holdall and began stuffing cartridges into a bandolier when suddenly he noticed something much more useful.

"Now we're talking," he said to himself, picking up a sub-machine gun. He hadn't known they had any of these onboard; must've been issued to Kurt. It was a squat, blocky and extremely mean-looking weapon with no stock and only a canvas strap for a foregrip, and he'd a hazy idea this model was pretty wildly inaccurate outside of knife-fighting range. But for what he was about to undertake it'd do just fine. He put it in the bag with the shotgun and filled half a dozen magazines for it.

Last of all, he took two sidearms, one standard issue and one concealable. He stuck the smaller one in his boot and the larger one in the holster he'd already strapped onto his pressure suit.

Bob forced himself to follow the EVA checklist meticulously, spending not one second less than the required minimum period breathing pure O2 to expel the nitrogen and argon from his bloodstream, and double-checking every seal on his suit.

The strip of cloth he tied around his forehead just before donning his helmet served the eminently practical purpose of keeping the sweat out of his eyes, Bob told himself. But really, if he was going to carry out a harebrained scheme straight out of a cheesy action movie, why do things by halves?

You have that trope too?
We have eyes and sweat glands, so I guess it makes sense. Okay, let's do this. And I hope you realise
I have absolutely no idea what I'm doing.

Bob took a firm grip on the bag of guns, and cycled the airlock.

There were two facts about the Blue Sun vessel that were currently working in his favour. One was that its various active and passive sensors only covered a 120-degree cone directly forwards, and that rotating the ship to compensate was not normal practice while in formation with other warships that did have all-aspect cover.

The other was that there was a little-used personnel airlock at the ship's stern with a faulty status indicator; unless an engineering watch-stander was specifically looking for unusual voltage spikes, nobody would notice it being cycled. It was also unlikely that the tiny thruster pack that Bob was using to reach the other vessel would put out enough energy to be noticed by another ship, unless they had the sensitivity of their passive-IR equipment set high enough to create an awful lot of false positives.

Unlikely didn't mean impossible, of course. But that was a risk he was just going to have to take.

This is a really dumb idea.

You suggested it.

I know.

After what felt like an eternity, Bob made contact with the hull of the Blue Sun ship, grabbing a handrail near the airlock and pressing his boots against the hull. The electromagnets built into their soles activated on contact, at least according to the indicator lights on his suit. No effect, he thought 'aloud'. Composite materials?

Far as I know. Something radar-absorbent, with nearly perfect thermal insulation when they want it. Next best thing to a real cloaking device.

Well, that's worrying.

Don't worry too much. They haven't sold any of the tech to the Navy yet, and I don't think they plan to.

And that's even more worrying.

Brings new meaning to 'corporate sovereignty', doesn't it?

I have no idea what that is, and I'm not sure I want to. Okay, I've reached the airlock.

The controls weren't hard to figure out, despite being labelled in languages Bob didn't understand. He emptied the duffel bag while he waited for it to repressurise, pulling out the guns and a heavy ballistic vest. He was wearing a shipboard pressure suit rather than full EVA gear, so the vest and the bandolier went on over it without difficulty. Once the green light flashed, Bob ditched his helmet and adjusted the bandanna before carefully stepping out of the airlock into the corridor.

"Hey, what the-?" One of the crew was coming out of a hatchway with a toolkit in one hand. The man could not have formed any terribly advanced conclusions before Bob kicked him very hard in the groin, grabbed him by the collar as he doubled over and slammed his head into the nearest handy bulkhead a couple of times. He rummaged in the fallen tool box and found a roll of duct tape, which he used to thoroughly truss and gag the groaning, semi-conscious human before dragging him into
the airlock.

Nice going.

Thanks.

You've got about ten minutes before he's missed. Take a left here and go down the next ladder, you'll come out in the Engineering compartment. It should be empty but don't let your guard down, I can't pick up much in there while the drives are running.

Well, we'll soon fix that! Bob replied, hefting the shotgun and working the pump-action. Now that he'd committed himself irrevocably his nervousness was starting to fade; in fact, he felt oddly cheerful. It was almost like the moment when the rocket motors shut down and he could unstrap from his seat: He was still scared, but the worst was over and the fun parts...

Bob wisely chose not to pursue that analogy any further.

The engine room was cramped, dimly-lit and noisy, a machine consisting of a large rotating cylinder and a lot of complicated plumbing taking up most of the space in the compartment. "This looks important," Bob said aloud, seizing a fire extinguisher from a wall bracket. He jammed it into the works and was rewarded with a horrible grinding noise followed by a small explosion and the sudden sensation of weightlessness. "And for my next trick," Bob muttered, glancing around for anything else to vandalise, "I shall... Aha!" He wasn't sure if whatever was on the other side of that hatch was explosive or just extremely flammable, but judging by the warning sign he'd lay any money you cared to name that it would react vigorously to the judicious application of arson. But that would have to wait, because another hatch at the far end of the compartment was opening. Bob unslung his sub-machine gun and crouched behind a locker.

There were two of them, both carrying pistols. That made this a bit easier... Bob flipped off the safety catch and fired. It was supposed to be a short burst, but he was startled by the greater-than-expected recoil and ended up putting a dozen rounds downrange. One human spun away, bleeding profusely from a wound in their side, and the other frantically kicked out for cover. Bob put another, much better controlled burst down in their general direction to discourage pursuit and wrenched open the hatch with the warning label on it.

Inside were two large rows of gas cylinders chained to a bulkhead. Bob switched to the shotgun, took careful aim and blew the valves off three on each side, then took a small cylinder about the size of a felt-tip pen out of his suit pocket. He gave it a twist, tossed it through the hatchway and slammed it closed.

What was that?

Emergency igniter for a rocket motor. Ninety-second delay. 'Scuse me! Bob kicked off and launched himself back towards the ladder. He retraced his steps as far as the airlock and then propelled himself down the opposite corridor, jamming shells into the shotgun and trying to remember everything Christopher had told him about the ship's layout.

Two men wearing body-armour and carrying carbines came floating clumsily towards him. Bob curled up as tight as he could to keep his centre of gravity close to the line of the gun and fired two rounds, using the recoil to slow himself down and drop his magnetic boots onto the deck. The security team were clearly unused to freefall and their answering shots left them spinning helplessly; one of them sailed straight into a bulkhead with a horrible crack and began screaming, and the other was knocked backwards by a chestful of buckshot and came to a dead stop, wheezing horribly. Bob drew his pistol with the intent of putting the man out of the fight with a round through the knee...
And then the whole world spun violently on its axis as a tremendous deafening boom echoed throughout the hull.

On the bridge of the Fredricksson, Jeb saw a brilliant flash, and then the Blue Sun vessel began spinning violently about its axis.

"I think we found Bob," he said softly.

"I don't suppose you have any idea what the hell he thinks he's doing, by any chance?" Captain Tarrant replied, without rancour.

"Funny you should ask that, Captain," Bill replied over the radio, "because Scott found a lot of notes in his cabin. A really detailed map of that ship, with 'holding cells' marked on it quite prominently. We don't know where he got all this information, but it looks an awful lot like someone on that ship sent some kind of distress message."

There was something in Bill's tone that made Jeb very, very suspicious. He sounded almost... amused, like he was playing a role in an elaborate practical joke.

"Distress message?" Admiral Liu said thoughtfully. "Well, that is odd. Captain, I suggest deploying a team of medical and engineering personnel to render assistance. And you'd better send some Marines along too, if there's an armed intruder aboard."

Captain Tarrant was nowhere near as good a poker player as the admiral, and couldn't keep the broad grin off his face. "Agreed, sir. Bosun, you heard the admiral. Make it at least two squads of Marines, and all medical and engineering staff are to wear sidearms. Can't be too careful."

"Aye, sir."

Jeb suddenly understood everything.

"Well, what do you know," one of the bridge crew remarked to nobody in particular. "They facepalm just like we do."

I'm going to be sick.

Try not to. It really isn't pretty in freefall. Bob rubbed his arm where he'd slammed into a bulkhead, then turned on his suit's shoulder-mounted flashlights. Did the lights go out where you are?

Yeah. The ventilation system stopped running too... And I'm in a small compartment that's now airtight. Shit. Shit!

Keep it together kid! Bob snapped. If you panic and start hyperventilating you'll just make things worse. You've got hours before the CO2 builds up enough to give you a headache, much less be dangerous, and I'll be there in a couple of minutes.

Alright. But please hurry!

I will. Bob kicked off from the deck.

The two Blue Sun representatives marched into CIC, both looking outwardly unruffled. "We just got word of what's happening onboard our ship," Green said neutrally.

"Civilians are supposed to request permission before coming in here," Admiral Liu pointed out
"We're not civilians."

"You sure aren't in uniform. Now what do you want?"

"We want you to call off the boarding party, and we want one of these Kerbals to instruct their deranged crewmate to surrender."

"I'm sorry, gentlemen, but I can't do that," Jeb replied. "Whatever your ship's made of is blocking or deflecting every form of EM radiation we send at it; his suit radio couldn't pick it up, assuming he even took one with him."

"Your buddy blew a twenty-metre hole in the gorram hull!" Brown snarled, his facade of cool indifference finally cracking. "Not to mention trashed our grav-engine, killed two of our crew and put three more in the infirmary!"

"Yeah, about that." Captain Tarrant drew himself up to his full height. "Perhaps you gentlemen would care to tell me just what might have motivated... Bob, was it, to board your vessel?"

"How the hell would I know?"

"Well, I have a few guesses," Kurt interjected. "I've been studying your news media pretty intensively these last few months, gentlemen. The whole Miranda thing has been getting the most attention, of course, but there's also been plenty of talk about the Academy. Destroyed in a terrorist attack, apparently, and dozens of 'specially gifted' children unaccounted for."

"Well, yes. As if that renegade ex-Browncoat Reynolds hasn't caused us enough-" Green made a shushing gesture at his colleague.

"Oh, please. Maybe you can fool the nicely ignorant voting public who've had their critical-thinking skills neatly amputated by your education system, but we Kerbals don't do things that way. Would you believe my best subject in highschool was Sociology? Did good enough that I won myself a full-ride scholarship all the way to degree level with a guaranteed job at the end, all courtesy of Information Warfare Command. Your bosses really ought to look into doing the same, you know, because from where I'm standing it looks like your PsyOps division is being run by a bunch of total amateurs." He glanced at Jeb, who was looking slightly peturbed by this revelation. "They didn't tell you I was an intelligence officer?"

"They called you a 'signals intelligence specialist'. I took that to mean you did the interception, not the analysis."

"What can I say? We're a small Air Force, I have to wear several hats. But the practical upshot of all this," Kurt said, turning a steely glare upon the two Blue Sun employees, "is that it's blindingly obvious to anyone with the most rudimentary ability to recognise bullshit when it pours out of his television set what kind of operation your 'school for the gifted' really is. Great Kerm above, how stupid do you think your own citizens are, much less us? Are we really supposed to believe that someone kidnapped your secret army of psychic space-ninjas?"

Green smiled faintly. "A fascinating hypothesis, Lieutenant. But you do realise that your only evidence that we even have an army of 'psychic space-ninjas', as you put it, is the unsupported word of a dangerously unbalanced teenage girl?"

"You mean a teenage girl like the one in the video footage you showed us, single-handedly taking apart several veteran special forces operators twice her size?" said Captain Tarrant, in a tightly
controlled tone of voice that made some of his more experienced subordinates start looking for the nearest object to hide behind.

Admiral Liu smiled, not pleasantly. "Captain? I think you'd better arrange reinforcements for that boarding party. At least the rest of your Marines."

"Admiral, our ship contains numerous classified experimental technologies-"

"Then let the record state that on my authority as taskforce commander, I am granting those marines access to all classified areas aboard your ship due to exigent circumstances. I suggest you contact your colleagues to inform them of this fact, and quickly," the Admiral replied, "because I will be very displeased if there was a misunderstanding that resulted in one of my sailors or Marines being harmed."

"You can't do that!" Brown protested.

"Watch me. Captain Tarrant, I believe this situation passes the threshold of reasonable suspicion. If you please?"

"I do please, Admiral, very much so. Agent Brown, Agent Green," Tarrant said formally, "under the provisions of the Naval Law Enforcement Powers Act, you are hereby bound by law on suspicion of false imprisonment and conspiracy to kidnap. Mr Hemry, as soon as these men have instructed the crew of their vessel to stand down, have them confined to the brig."

"Aye, sir." The Chief of the Boat stepped away from his station and loomed with the practiced ease of long experience riding herd on unruly sailors, one hand resting on the butt of his sidearm.

The Men in Grey looked at one another. "Told you we shouldn't have shown them the video," Brown muttered.

"Yeah, yeah." Green sighed. "Well, guess it's time for Plan B."

"Oh, hell no..."

"You have any better suggestions?"

"Gentlemen," the Chief said warningly. "The Captain gave you an order."

"Oh, go fuck yourself," Green retorted, and pulled a small cylindrical object from his pocket.

"What the hell-?" Hemry yanked the pistol from its holster, but it was too late.

Jeb yelped and covered his ears as an excruciatingly loud whine filled the air. All around him the Fredricksson's bridge crew were falling to the ground, screaming as blood began seeping from their eyes and ears. "Oh what the fuck," he breathed.

Then Green staggered backwards before his head snapped back and... well, stopped being recognisable as a human head. The cylinder dropped from nerveless fingers as his body crashed to the ground, mercifully cutting off the awful noise. Kurt shifted his aim to Brown... a fraction of a second too late, because the man had been a little more on-the-ball than his colleague and drawn his own sidearm the instant he realised the Kerbals weren't going down. He got the first shot off, and Kurt's own bullet went high as the impact knocked him flat on his back.

Brown had no time to enjoy any feeling of satisfaction, however, because Jeb snatched the pistol that Kurt had pressed on him some time earlier from his jumpsuit's inside pocket and shot the man
repeatedly in the back until his gun clicked dry. He fell to his knees, making incoherent little mewing noises.

"Told you... hweee... that thing would... hweee... come in handy," Kurt wheezed. The low-profile ballistic vest he'd been wearing under his jumpsuit had stood up to the shot, barely, but he still felt like he'd been sucker-punched with an anvil.

"Guess so." Jeb very cautiously approached the still-groaning Brown and kicked his gun out of reach. "You alright?"

Before Kurt could answer, half a dozen fully-armed Marines came bursting through the hatch. "Nobody move!" one of them bellowed. Then his brain caught up with his eyes. "What the...? Corpsman! Corpsman! Jesus Christ, what the fuck happened in here?"

"Wiseguy over there used some kind of sonic weapon," Jeb replied. "Guess it wasn't calibrated for Kerbals." He tried not to look at the vivid red stain on the bulkhead.

"Son of a bitch," the Marine muttered, then turned to the hatch. "Where the hell is that gorram corpsman?"

"Right here, Sergeant." A woman with a lieutenant's stripes on her cuffs walked in carrying a medkit, followed by several orderlies. "God almighty," she said to herself. "Get everyone in here down to sickbay, on the double! And someone put some cuffs on that Blue Sun bastard, I need to know what the hell that weapon was!"

"I wouldn't try and move him if you need him alive," Kurt warned, getting to his feet. "My boss here put a whole magazine into his back."

The lieutenant shot Jeb an appraising look. "For a race of peaceful explorers and scientists, you fellas sure play for keeps," she remarked. "Yuoh, get the spinal board on him."

Oblivious to all the fun and excitement taking place aboard the Fredricksson, Bob was carefully approaching the holding cells. Two guards were floating by the hatch, all gripping rifles. "This is crazy," one of them muttered. "You think the gorram Navy's not gonna ask any questions? We are screwed, man."

"Ah, cool it," another snapped. "They've got two Special Projects operators on the flagship. Ain't no Navy puke who values his career gonna tell them no."

"Wanna bet? My brother-in-law's Navy, he told me all about this Liu guy. You think a guy who values his career gets posted to the pi gu end of ruttin' nowhere? He 'speaks his mind', or so Marty tells me. Those Special Projects creeps are probably in the gorram brig by now."

Do you have something to do with the fact I can understand what these guys are saying?

Uh... Maybe? I've never tried calling someone who wasn't a native English speaker before.

Well, I'm not one for looking a gift horse in the mouth, as I believe you folks say.

"I said cool it, Jack. We will be fine. Worst case scenario, we toss a coupla Willie-Petes in the cell; no muss, no fuss, no evidence."

"Yeah, because it's not bad enough that I'm an accessory after the fact to kidnapping, but I gotta be an accessory to murder too! That's real gorram great!"
"Little late to be growing a conscience now, dude."

"Oh, really? Maybe you oughta give it a try. I mean, you've not got a whole gorram lot to lose right now."

"Jack, for Chrissakes, either shut the hell up or go lock yourself in one of these cells and think up horrible stories about your working conditions or something. You're makin' me nervous."

**Which one's Jack?**

**The shorter one, with the blonde hair. He's alright.**

*I know.*

Bob secured both primary weapons against his body by their slings, and drew his sidearm; he'd need a hand free for this. He thumbed off the safety, grabbed a suitable handhold and swung himself into the holding area.

"What the f-?" Jack's colleague never got to bring the gun up before Bob put three precise, efficient shots into his centre of mass. He shifted his aim to where Jack had been a moment before, but he was already hurling himself behind a computer workstation. "Fuck!" Jack whimpered. "Don't kill me! Please! I'm just a gorram cook, man! All I did at the Academy was serve grub in the canteen! I didn't even know what they were doing 'til I signed the NDA!"

Bob sighed. Insofar as he could actually tell with humans, the poor kid sounded like he couldn't have been more than two years out of high school. "Toss the gun out here, and come out with your hands where I can see them," he said, trying to sound stern.

The rifle went sailing across the compartment, and the man -no, boy; dear Kerweh he just looked so young- slowly emerged. "You can understand me?" he exclaimed.

"Yeah. Probably Christopher's doing. And he was wrong, Jack. It's never too late to grow a conscience. Now, do you have any idea how to get these cell doors open?"

"If they're like every other door in this place there's a manual override lever under... Shit. Under a panel that should be about here." He thumped a blank section of bulkhead with the flat of his hand.

"Well, crap. Christopher? Keep calm, we're working on getting you out of there!" Bob peered at the door controls. It was an electronic lock of some sort; maybe he could hotwire it. "You got a screwdriver or something?"

"Here." Jack passed him a multi-tool.

"Thanks." Bob unscrewed and pried off the panel, pulled out two likely-looking wires and touched them together.

Nothing. "Oh, for crying out loud! Not even a backup battery?"

Jack shrugged. "Safety inspectors ain't cleared to even know this ship exists."

"Figures. Okay, I can deal with this. Do you have a handheld radio, a music player, anything with a battery in it? This thing can't use all that much power."

"I don't, but I think he does." Jack grabbed his former colleague by his belt, overcame his revulsion and patted the corpse's pockets. "Aha!"
Bob caught the little walkie-talkie as it glided towards him and pulled off the battery cover. Going by size alone it was somewhere between seven and ten volts, plenty for what he had in mind-

"Heads up!" Jack hissed. Bob heard shouts from the corridor outside and hastily unslung his sub-machine gun. "Keep your head down," he whispered.

There were six of them, all carrying rifles and wearing body armour. Bob mentally tallied up his ammunition: One and a half magazines for the SMG, about fifteen shotgun shells plus whatever was in the two rifles Jack and the dead man had been carrying.

Not looking good.

I'm sorry I got you into this, Bob.

Don't be. It was the right thing to do.

Bob flicked off the safety, leaned out of cover and fired. He was getting better at controlled three-round bursts now, slamming the point-man backwards into his colleagues without wasting a single bullet. He couldn't have done much damage through all that Kevlar, but the amount of swearing he provoked was still pretty satisfying.

"Oh, give it up, you dumb son of a bitch!" one of them yelled. "There's only one way in or out of there! C'mon, if you surrender we might give you some lube for the anal probing!"

"Go stick it in a tree!" Bob retorted, showcasing a remarkable instance of convergent evolution in language despite the suggestion having some rather different connotations on Kerbin. He fired another quick burst to keep their heads down and turned to Jack. "Is there somewhere I can shoot a human where it won't do any permanent harm? You might need an alibi."

Jack shook his head and took hold of the rifle he'd dropped earlier. "Don't worry about it," he said. "I've had it with this shitshow anyway. Hey, that you, Sheng?" he called out. "Next time you drop in on Mr Numos for your daily ass-kissing session, tell him I quit!" He braced himself against the hatch and fired a long, wild burst down the corridor. "Get the door open," he hissed to Bob. "I'll keep 'em busy."

Bob nodded. "Be careful, kid."

Jack gave a hollow laugh. "I was being careful when I kept my head down and let these people make me an accomplice," he replied, then fired another, slightly more controlled burst. "Now hustle!"

Bob swung across the compartment and snatched the walkie-talkie out of the air. As he fumbled with it, he must have hit the power switch somehow.

"...pen your airlock or we will have to use force. I repeat, this is the Marine boarding shuttle off your port bow..."

"Oh, hell yeah!" Bob jabbed his thumb down on what he really hoped was the Transmit key. "Marine boarding shuttle, this is Bob Kerman! Myself and a former Blue Sun employee are at the holding cells! We're pinned down and need assistance!"

"What the...?" Whoever was on the radio clearly hadn't expected that, but a helpful burst of gunfire from somewhere behind Bob apparently convinced him that this wasn't a put-up job. "Understood! Stay off the air, this is a non-secure channel! We're on the way, over!"
"Copy that, Marines! Over and out!" Bob flipped the radio over and yanked the battery. "Backup's on the way, Jack! Now please Kerm and Kerweh and anyone else who cares let this fucking work..." There was a click, and the panel made an angry buzzing noise. "Yes! C'mon out Chris!"

A small -very, disturbingly small- black-haired missile shot out of the cell and collided with Bob. He couldn't have been more than than twelve years old.

Bob hugged him fiercely. "It's alright, kid. You're going to be okay."

"Alliance Marines, Alliance Marines! Drop the weapons and put your hands in the air!" someone yelled. The Blue Sun personnel spun around and began firing down the corridor behind them.

Jack began taking aim, but Bob grabbed the rifle and forced it down. "Don't! You'll hit our guys!"

"He might, but I won't!" Christopher pushed past the two men, holding Bob's sidearm.

"Chris no-!"

"Mustn't look," he whispered, and closed his eyes.

Six pistol shots rang out. Six Blue Sun employees fell dead. And the innocence of a boy not even old enough to shave died with them.

* * *

"I'm not honestly sure what a kerbal's ribs are supposed to look like, but I'm pretty sure you've cracked a couple," the medic declared, peering at the X-ray picture.

"Yeah, me too," Kurt agreed, wincing. "I'm sure glad that guy was packing subsonic hollowpoints."

The two Blue Sun employees had also been found to be carrying suppressors for their sidearms, presumably in case they wanted to dispose of inconvenient witnesses a bit more subtly. "How are your crew?"

"They'll live." The medic's face darkened. "All of them will have permanent hearing impairment, and Chief Hemry suffered a cerebral haemorrhage. There's probably other long-term injuries we haven't diagnosed yet because we don't know exactly how that little toy works."

Kurt felt a very brief moment of pity for the crew of that Blue Sun vessel if they were foolhardy enough to resist arrest. Every ship in the taskforce had sent its entire Marine detachment over to reinforce the initial boarding party, and the bootnecks were not likely to be in a very forgiving mood after word had got around. There was already an armed guard on Brown, despite the fact there was no more than a 50/50 chance he'd ever walk again.

Jeb's only comment when informed of this was, "Maybe he'll get lucky, and they'll shoot him instead of making him do thirty to life in a wheelchair."

There was a sudden commotion at the hatch, and Kurt looked up to see Bob walking slowly into the infirmary with a small child in his arms. He was still wearing his pressure suit, a cartridge bandolier and a bandanna of all things. It would have been comical if not for the look in his eyes.

"Is he hurt?" the Chief Medical Officer asked carefully.

"Not physically. He's sleeping now."

"Put him on one of these beds. We won't wake him."
Bob did so, and then collapsed into a chair next to the bed Kurt was lying on. "He killed six men today. Pickpocketed my gun and made six perfect headshots in less than fifteen seconds. They've turned him into a finely-honed killing machine."

"Oh Great Kerm..."

"He's eleven and a half years old, Kurt. The half's important, he was very clear on that. A kid that age ought to be dreaming of getting a cool new bike for his birthday, trying out for a sports team at school, maybe just starting to notice girls. But those... those fucking sociopaths taught him..." Bob's voice faltered, and he buried his face in his hands. "What makes anyone do shit like this?" he mumbled, once he'd composed himself a little. "I mean, what could possibly be worth doing that to a kid? World peace, the secret to immortality?"

"Some of them think they're making the Alliance safer." Bob started at Christopher's voice. "Some of them think they can make people better somehow, let everyone have the same gifts I do. But most of them... They like the world how it is, and they want to stop people changing it. Hey, the language thing works both ways. Cool."

"Thought you were asleep," Bob said softly, getting up and stroking the boy's hair.

"Not quite. And we're not all bad, you know. Even most of the Blue Sun folks weren't; they were just scared, like Jack."

"I know. Close your eyes now, kid. You've had a long day."

Jeb knew from experience that he was going to regret this -something about his endocrine system not having all the right enzymes yet according to the xenobiology people back home- but he'd gladly put up with some gastric distress in a few hours if it meant his hands would just stop shaking already. Besides, this drink that the locals called 'Navy Rum' was really rather nice.

"Thought I'd find you here." Jeb looked up, and saw Admiral Liu standing at the hatchway to the wardroom. "Mind if I join you?"

"I don't, although I suspect the medics might."

"Ah, the hell with what they think! I'm beyond economic repair anyway. Pour me one of whatever he's having, son, and leave the bottle."

"Aye sir." The steward poured Liu a double in a balloon glass and made himself scarce.

"So," the Admiral began, picking up his glass and savouring the bouquet, "how you holding up?"

"As well as can be expected, I guess." Jeb stared into his drink. "You're right, by the way. That was the first time I'd ever fired a gun at anything but a paper target, and so help me every deity who might be listening I never want to again."

"You saved a lot of lives today. Mine included."

"You're welcome."

"Doesn't help much, does it?" Admiral Liu raised his glass. "Here's to swimmin' with bow-legged women," he said to himself, and tossed it back in one long swallow.

"That did not translate well. And no, it doesn't. Every time I close my eyes, I keep seeing..." Jeb sighed heavily and poured himself another shot. "I'm sorry. This must seem rather pathetic to a career military man."
"Not at all. Sapient life's the rarest commodity in the gorram universe, near as we can tell. Attacking another thinking, self-aware being with intent to kill, even in defence of your own life or someone else's? That ain't something to take lightly. Sometimes I think we Navy folks have it too easy because we only see the ships through our gun-sights, not the people in 'em. Makes it easier to not think about the people in.. planetary targets, I guess you'd call 'em."

Jeb thought of satellites loaded with twelve-metre tungsten rods, an idea conceived at the height of the Kerm Grove Crisis but mercifully banned by treaty before it could go beyond a feasibility study. Not that warship railguns were any less deadly in practice, or even an overclocked cargo mass-driver on an asteroid mining tender, but by the time they'd started building *those* the prospect of war was a lot more distant. "I see what you mean," he agreed. "So, how much mayhem did we cause?"

"Oh, moderate amount. Parliament's about evenly split on awarding Bob a medal and clapping him in irons, and Blue Sun's got one hell of a lot of explaining to do."

"Good. I'm sure the Council of Twelve are feeling much the same about Bob, or they will be once they've read Kurt's report. Heck, *I* am. I'm going to need at least another three of these before I have that conversation..."

"I'll, uh, come back later then?"

Jeb spun around in his seat, preparing to give Bob an industrial hairdryer-grade shouting at, then saw the bandanna and burst out laughing instead. "Bob, you crazy son of a bitch, I've gotta hand it to you," he said, once he'd got his breath back. "When you get your action hero on, you go *all* the way."

"Well, if it's worth doing, it's worth doing right. Now if it's all the same to you gentlemen, I'm feeling a powerful urge to get drunk."

"Reckon that makes three of us," Admiral Liu replied.

So they did.

**A few weeks later...**

"You are completely unsuited to the very concept of a vacation, aren't you?" Inara sighed, but affectionately. "Here we are, staying in a beautiful country house on a *huge* estate as the guests of a fantastically wealthy couple, and you're yearning to be back onboard a cramped little cargo ship eating protein bars."

Mal just shrugged. "I'll admit to bein' a mite restless. Not to mention concerned 'bout overstayin' our welcome."

"You worry too much. Now get back into bed before I have to come get you."

Mal wisely declined to argue. Inara wrapped her entire body around him like he was the world's largest teddy-bear and sighed happily. Mal stroked her hair and smiled, allowing himself to relax a little...

"Cap'n, 'Nara, I think you'd better come see this!"

Inara said a word unbecoming her previous occupation. "Kaylee, this had better be *extremely* important!"

Gabriel and Regan had a ridiculously large television at one end of the ranch house's open-plan ground floor, and everyone currently even approximately awake crowded round it as a reporter
excitedly babbled into a microphone in front of the Parliament building.

"... still no official word from the government about what transpired, but- Wait, here they come now."

Someone stepped onto a small podium outside the building. Someone very, very obviously not human. He(?) fiddled with a small computer for a moment, plugged what appeared to be a microphone into it and clipped it to his lapel.

"Citizens of the Union of Allied Planets. My name is Jebediah Kerman, and my colleagues and I have journeyed here from a solar system some eight light-years distant. I know this is a terrible old cliche, but... we come in peace."

"Except for my friend Bob. He came to chew bubblegum and kick ass, and he ran out of gum somewhere in the Oort Cloud. And I have no idea what the hell that means," he muttered in a tone the microphones probably weren't meant to catch. "Can you tell I didn't write this speech myself? Anyhow, before taking questions I would like to give a short statement in order to place an accurate first-hand account of recent events in the public domain before the rumour mill can get going..."

"Well," said Inara, once the network finally cut back to the studio, "that... happened." Her expression and tone of voice suggested that she'd emote properly later when she could spare the mental system resources for it because what was currently happening was just that weird. That was normally more Mal's shtick, but even a trained and experienced Companion's professional veneer of unflappable serenity has its limits.

"Gorram it! I knew we missed some of the kids," River grumbled. "You'd better phone them," she told her father. "Mrs Wei will want to talk to Christopher."


Wordlessly, Simon pointed to the television, which was now showing footage from what appeared to be a Kerbal news channel.

"Are those Independent flags?"

"Yep."

"Ich bin ein Browncoat," River quoted happily.

"Right. Definitely something stronger. And not a word, dear," Gabriel added, giving his wife a quelling look.

"Actually, I was going to ask you to pour me one."

Mal just leaned back on the sofa and smiled. Today, he decided, looked like it was going to be a good day.

**THE END... of the beginning.**

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1 For obvious reasons, the Kerbals had never been able to take advantage of the benefits of green-screening.

2 Four centuries if you wanted to be picky, but there hadn't been much opportunity for scientific advancement during the long flight from Earth-That-Was.

3 A small but very aggressive species of mammal native to Kerbin, comparable in size, behaviour and
ecological niche to a wolverine. Their pelts have historically been highly prized, not because they're especially attractive but because they're an excellent visual shorthand for "I'm so rich I can pay some kerbals enough to go and hunt a gronnek for me" and/or “I'm badass enough to kill a gronnek”.

4A nickname so ancient that nobody on the *Fredricksson* could tell Kurt where it had come from.

Chapter End Notes

Finally got around to posting this. Not that many people are actually reading it here or anything, but hey.

Oh, and I have a Patreon page now: https://www.patreon.com/JakeGrey

End Notes

* Author's note: This is a very approximate translation of the name for a Kerbal team sport that, for reasons probably involving hyperintelligent pan-dimensional beings with far too much time on their hands, bears an uncanny resemblance to the game of cricket.

** Another approximate translation; its name is difficult to render even phonetically but it's usually served hot, it's bitter-tasting and it's got caffeine in it.

Please [drop by the archive and comment](https://www.patreon.com/JakeGrey) to let the author know if you enjoyed their work!