

Chapter 5

Leaving ISS

"How start?" Ryder asked, his voice sounding unusually loud in the pressurized cabin.

"Engines are online and green." Jimmy's voice came over the comm, sounding crystal clear.

"Roger Engineering. We're seeing the same on our boards up here." Ryder replied.

Josh's console beeped. He looked and felt a sinking sensation in his stomach.

"Incoming message from Earth." He said. "Denying access or receipt of message."

The others looked at him in surprise, then the import of what he'd said struck them.

"They found out." Doc said quietly.

"Yeah, but not until it was too late." Teresa said strongly. "It's just an attempt to get into our systems. No

access right now though! We'll be long gone before they can do anything else."

Josh wasn't sure, but he hoped she was right. He knew that the Chinese wouldn't give up so easily, and there were always backdoors into systems, even when the systems were supposedly hardened. He had the watch for these systems and he knew them well, but there could always be a chance.

He turned back to the console, letting the noises of the other drift over him as he tapped away on his console, calling up internal diagnostics and monitoring programs.

Lines of code appeared on his screen, flying almost too fast to read as program after program reported back in cheerfully. His eyes scanned the text, looking for any deviations, but it was tedious. It would be tedious for long years ahead; Argos was built to be operated manually for long periods, but only when she ran "silent", or as emergency backups in case the main computer failed. In reality, she was the most advanced system that America could field independent of China. Staggeringly complex, she featured over fourteen hundred programs that monitored air, water, fuel, reclamation, organic needs, etc., throughout the ship. On average, each of the programs ran with over two million lines of code, leading the Argos to operate with over a billion lines of code. Incredibly diverse, delicate, yet sturdy with dozens of redundancies, Josh knew how easy it would be to miss something; heck, he wasn't

sure he could tell if something would be wrong despite having trained on the system daily for five years and having prior experience with cyber warfare division. There was simply too much that could go wrong, and like all modern American computer users, he was infected with an innate distrust of security promises of perfect protection. He knew better; no matter what system that came out, someone with a laptop and lots of coffee could beat it.

So while he ran dozens of monitoring programs on two separate screens of his wrap around display, his central console ran lines of code for the system he felt likely to be the most open to attack: navigation.

With comms shut down, it shouldn't be likely that an attack could come from the outside, but the navigation system had several points of vulnerability. One part of it operated off optical systems which took constant images of the stars surrounding the ship through dozens of classified hi-definition cameras to create an incredibly detailed three-dimensional map of the surrounding space and star systems. There were also several radio receivers scanning for radioactive particles that could indicate potential sources of anti-matter fuel, radar systems that utilized the latest in sound-wave technology to determine position and course of nearby objects in space. Each of those were hardwired receivers, capable of receiving far more than the signals that were expected. Lasers could transmit information to

systems through the optical system, though the chance of a single laser being able to hurl enough information in a cohesive packet to a single or even multiple cameras was pretty small, it could be a point of vulnerability in case of ship to ship combat.

Josh put his money more on scramblers directed to the near-object sensing equipment. By spoofing those, someone could try to redirect the craft by having the built-in safety equipment engage and nudge them off course. With enough course changes, tiny at first, it would build until they were off on a new course plotted by their foes.

It was his job to see that no interference was allowed.

He heard Teresa say "All right, boosting main engines in five...four..."

He looked up, they were ready for take-off already?

He saw the others looking forward out the windows eagerly, straining towards the bejeweled black sky in front of them.

Settling back in his chair, he joined the others in watching the stars' tremble, the ship seeming to strain as her powerful engines spooled up.

"Two...One...Engage." Teresa said calmly.

Josh felt only subtle acceleration at first. In fact, he wondered if the ship had even moved. Yet subtly, he could see the aspect of the shadows from the asteroid behind him changing, the light just beginning to strike the top of the disk.

It shone with heart of a thousand torches, striking down on the cabin through the front viewports: utterly useless of course thanks to the all-important depleted-uranium shield. Instead, the Argos projected the what was in front of the craft from hundreds of dedicated micro-cameras placed in broad concentric rings at the nose of the craft in ultra-thick resin housings. The idea being that the chance of an individual strike in any given area affecting a spot the size of pin was infinitesimal.

Shortly the ship became bathed in light, and Josh got a chance to see her revealed in all her glory for the first time.

Her hull seemed to made of silver-white; a side-effect of the photovoltaic paint she'd been given, except for the fifty-foot high painted motif of a Grecian warrior with silver sword lunging towards the bow of the ship and her name blazoned with huge gold letters above.

"Power levels rising." Jimmy called from the engine room. "Electricity being stored in the batteries."

Josh nodded to himself. The antimatter fuel would provide lots of power, more than enough to hurtle the ship forward at fifteen percent of light, and the excess would power the interior of the ship with no problem, but he knew a little redundancy never hurt.

The moon seemed to grow larger and shift to the left as the started to pass it. Josh looked at Earth's closest celestial neighbor and felt a profound moment of silence envelop him.

There, for the longest time, had stood the only body in the solar system that had seen human feet beyond Earth's gravity. More than that, it had been an American triumph, proof that their country could work together to achieve the impossible.

What a shame that those glory days are behind us, he thought. Politics had fractured the nation. Oh, not on paper, perhaps. The lines were still there, but sharper, invisible ones filled in every space, home, county or even state. He thought of the badge in his locker that identified him as a Republican voter, and he knew Teresa had one identifying her as a Democratic one. Josh couldn't care less, but his family had always voted Republican, and his father would be damned if anyone voted Democrat.

New beginnings, he thought, looking forward to the promise of a new hope. And maybe, just maybe, the impetus to heal a broken nation.

The moon passed, an angelic sentinel to the blue-green gem behind it.

For a while no one spoke, each lost in their own world as they checked systems and monitored progress.

Suddenly Raven's voice broke the silence.

"Hey, why are we drifting off course?" she asked.

"What?" Teresa looked back at her, frowning.

"I just noticed the stars shift a tiny bit." Raven said.
"We're on a new course. Not much of one, I'll grant, but it was still there."

"We might have detected some space debris." Teresa responded. "Checking sensors."

"Confirmed. A twelve-meter chunk of rock in previous flight path, the computer determined damage could result from the strike and adjusted course to compensate."

Josh felt a stirring in his chest.

"I thought NASA had calculated our path to have no debris up through Martian space." He asked in a quiet voice.

"Things happen." Doc said unperturbed.

"Yeah, they can." He said.

He immediately delved into the navigation array.

"Hey, what are you doing?" Teresa asked, noticing his access.

"Checking a hunch." He said. "Can you tell me if our new course takes us closer or further from the projected Martian Path?"

"Checking. Yes, two-point-four minutes closer to projected Mars path."

"Recalculate route, give us twelve seconds wider margin." Ryder said calmly.

Josh nodded to himself, that could certainly help counter things.

He kept a close eye on the navigation for the next few hours as they continued to slowly pick up speed.

"We're drifting again." Raven commented.

"Another space rock." Teresa said.

"I wonder." Josh muttered under his breath.

"Going to external camera." He announced out loud. "Locking on to rock coordinates. Zooming."

An image sprang to life on the heads up display showing...

"Empty space." Ryder's voice went flat.

"Yep." Josh said, his voice cold and angry. "Somebody's spoofing the navigational array."

"Can you compensate?" Ryder asked.

"Working on an overlay, but for now I suggest cutting out the autopilot and taking manual control until I can find the problem."

"Understood. Switching to manual control." Ryder said as both he and Teresa took control of the sticks.

The computer beeped warnings at them, but the Argos had been designed with just such a contingency in mind. She had the ability to go to manual piloting control and give only navigational advice to the pilots.

Meanwhile, Josh began going into the navigational systems to find what was wrong with the ship. His first tests had turned up nothing, which meant the problem lay deeper, possibly in the relays themselves. That could be an issue, as many of their

components could only be accessed on the outside of the hull.
But there were spares down in the storage deck.

"I'll be right back." He announced. "I want to check a hunch."

"Okay." Ryder said. "Don't be gone long."

"Right." Josh said absently as he unbuckled and launched himself off the back of the chair to the ladder.

Once on the ladder he began pulling himself down the five decks from the pilot deck to the storage deck.

"Okay." He said as he turned to look in the loooong tunnel as the lights came on, illuminating thousands of plain grey cargo containers. "Let's get started."

He checked the manifest computer and discovered the box he wanted was thoughtfully up front, near the areas it would be most needed. A search of the racks let him locate the ones he needed and he popped the top to look inside.

A navigational relay didn't look all that much different to any other circuit board used in billions of appliances. It took training to recognize features that differentiated this board from all others.

The relay boards look okay, and they have MilleniaTech symbols on them, which is supposed to be fully American. Supposed to be, at least.

He grunted, looking carefully at the board. In the corner was a stamp that said "Made in USA". He grunted. Put it back,

pulled another and checked it over. Then checked another. On his fourth inspection he found what he was looking for.

"Oh, you daft bastards." He groaned, looking at the hunk of green plastic. In one corner the Made in USA gold paint had flecked off, revealing the raised stamp of CHINA underneath.

So that's how they got their in." he cursed under his breath.

Putting the array back where he found it, he hurried back up to the cockpit and strapped in.

"What did you find?" Ryder asked.

Quickly Josh relayed what he'd found.

"So what does that mean?" Doc asked, befuddled.

"Simple Doc." Josh replied absently as his fingers flew over his keyboard, typing commands and initiating his first line of defense. "We all know here that China has been putting backdoors into all their products for years, weaknesses that they can exploit during war with anybody, shutting down electronics or even giving them complete access to somebody's command infrastructure. Somehow they've managed to swap out some of the real components for the Argos for some of their stuff."

"So we're compromised?" Raven asked.

"Not necessarily. It could be part of a standing order to get as much of their tech into everything as possible. They often buy up American tech companies to do that, even the start-ups. Companies have tried suing, claiming the Chinese have

created monopolies in defiance of the free trade agreements, but the Chinese lawyers are smart and well-paid so those cases never go anywhere." Josh replied.

"That ain't comfortin', son." Ryder drawled. "What can you do 'bout it now?"

"Got a couple of options that I'm running. Fortunately, the Argos is built for manual control, so that's why I think we should continue manual control for now. After we pass Mars, I think the signals will drop off: nobody has much past Mars right now."

"Not since the Jupiter Disaster." Ryder confirmed.

"Well, let's hope we don't go the same way." Josh said seriously.

"How long until we pass Mars now?" Doc asked.

"Fifteen hours." Teresa said. "We're angling away right now, still slowly accelerating. We'll reach half-speed in about a week."

"It's going to be a long fifteen hours." Doc sighed.

"Yeah." Josh agreed, still working furiously at his terminal. "It will."

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