



**Does technology change the nature—  
and meaning—of sacrifice?**



# The Exchange Officers

By Brad R. Torgersen

Illustrated By  
Vincent DiFate

**T**he solar panels crumpled.

I didn't hear them, but I felt them through the stimulus-feedback system. My proxy's hands and feet still gripped the spars of the extended boom to which the panels had once been attached. Now those panels were splintered and floating away in bits—dangerous debris in an orbital zone already too clouded with fast-moving hazards. Not that I cared much at the moment. Half the team was red-lining towards black, and I had no telemetry from the other half at all, even though they were literally within shouting distance.

As long as I was still Operating, I knew only what my proxy knew, saw only what my proxy saw, and felt only what my proxy felt.

At present, my proxy's camera eyes focused on the Chinese combat capsule which had collided with Grissom Platform. A stealth job. We hadn't seen them coming. One of the capsule's bay hatches snapped open—shards of ruined solar panel flinging away—and several vacuum-suited figures appeared at the threshold. They wore modified copies of the latest Russian suits, only beefed up with sections of hard plate, not too different from the SAPI stuff I'd trained in and worn during my younger days on the ground.

Of course, back then I'd also carried a rifle.

No such luck five hundred miles from the surface of the Earth.

I spoke several obscenities.

If all of us had still been Operating, we'd have been able to overwhelm the enemy in moments. Each proxy moved faster than a man, and possessed many times the strength. But I seemed to be the only one who'd not been affected by the EMP weapon—which had fried so much else in the last five minutes.

"Hang on, Chopper," said a familiar voice in my ears.

"Chesty," I said, exhaling with relief. She'd been several kilometers distant, testing new equipment. The EMP had spared her too.

"How many Marines does it take to fight off a Communist horde?"

"Just one, and I'm it," she said. I detected a grin on her face, based just on the sound of

her words as she spoke them.

"Well, then you'd better make it fast," I replied. "Because these guys are for real, and unless the Air Force and Navy want to lose several hundred million dollars worth in equipment to a hostile Chinese takeover, you and I are all that's left to stand in their way."

"Sounds like the perfect odds," she said. "Just the two of us. Not a lot different from when we started, eh?"

Mission Control looked more like a penny arcade than a command center. No long desks populated with keyboards and computer displays. No super-sized jumbo screens on the walls. No bespectacled engineers with headsets perched on balding scalps. There were only control booths arrayed uniformly in neat bunches. And in each booth sat or stood an Operator, male or female. Most of them were United States Navy or United States Air Force personnel—the facility being a joint USN-USAF operation. As the United States Army's latest exchange officer to the Orbital Defense Initiative Station, I stuck out like a sore thumb. Both because of my rank, and because of my uniform.

"This way, sir," said the tech sergeant who was playing tour guide on this, my first duty day at ODIS. She took me between the booths—my eyes catching glimpses of hooded people in olive-drab long underwear, each of them contorting this way and that, and their hands, arms, legs, and feet sprouting with innumerable wires—until we arrived at a booth labeled with the number 23. It was dark, and the tech sergeant reached in to snap on a small overhead light.

"Home sweet home?" I said, peering in.

"Yessir," she said. "You'll be in one just like it during simulator training, but once that's over with, we'll be putting you here for the other nine months that we have you."

*Simulator training.* I frowned. I'd cut my teeth flying ground attack and surveillance aircraft in over a dozen countries on four continents. Though, to be honest, I'd never set foot in an actual plane. The inside of one ROV control trailer looked like any other. What more could there be to learn? I gave

myself a week to figure out the particular hardware and software that ODIS used. The rest of train-up time would be a snoozer—something to bore me while I waited for an actual mission.

A second tech sergeant arrived with a differently camouflaged person in tow. This one's pixilated duty uniform instantly marked her as a United States Marine. She had streaks of silver in her hair and lines on her face, and like me, bore the bar of a Warrant Officer.

I instinctively stuck out my hand.

"Dan Jaraczuk," I said as she grasped my palm, and gave me a satisfying shake.

"Mavy Stoddard," she replied. Her eyes were large, brown, and intelligent, with just a hint of hardness to them. I guesstimated her to be about ten years older than me, though she was one notch lower on the Warrant Officer totem pole. Which wasn't too unusual. Many Warrants spend years climbing the enlisted ladder, before finally putting in their packets for Candidate School. I'd jumped as soon as I was able, right from Specialist, because it had been one of the quickest routes I knew that might take me here, to this place—a small fortress of cutting-edge space technology located at Hill Air Force Base, in the desert valley wilderness of Northern Utah.

My tech sergeant nodded to her peer, then turned back to me.

"Warrant Officer Stoddard is going to be joining you for your training cycle. She'll be in 24 when she's done. We don't get a lot of Army or Marines at ODIS, nor Warrant Officers of any sort, so you'll have to forgive us if we're not up to speed on the courtesies."

"Most people just call me Chief," I said.

"That will confuse some of the Navy and Air Force folk," Stoddard said, correcting me. "I think we'll both be doing them all favor if we just stick with *sir* and *ma'am*."

I nodded, not wanting to contest the issue. "Fine by me."

Stoddard tilted her head slightly—sizing me up. I got the sense she didn't necessarily appreciate my informal manner. But then again, she didn't have to. I'd paid my dues, and logged my hours. Whatever the Marine standard might have been, this wasn't Jack-sonville nor Quantico. And until some Cap-

tain or Major decided to get up in my business, I was going to be as informal as I wanted—one of the perks of the position, or so it had been said when I'd come out of Fort Rucker, Alabama, right before Basic Course.

The two tech sergeants watched us as Stoddard and I watched each other, then one of them cleared his throat and said, "if you'll keep following us, we'll show you to the simulator room."

"After you," I said, motioning with my arm and putting a smile on my face.

Stoddard simply turned and walked away, the tech sergeants taking us rapidly out of Mission Control, through a series of hallways past office doors and junctions that were filled with milling Air Force and Navy personnel, until we passed through a set of double doors into a room that looked not too different from the one we'd just left. Only, each of the booths was double-sized. Room for two Operators.

"Right seat, left seat," I said, surveying the equipment.

"More or less," said a woman's voice. Stoddard and I turned to see a flight-suited Air Force colonel approach us. The colonel's hair was dark red and buzzed down past the usual female standards. Her face was plain, but her eyes were bright and she carried herself with confidence. She had a clipboard under one arm and read our name tapes on our uniforms as she stopped in front of us.

"Stoddard, right. And. . . *Jadzook?* *Jarezuck?* How the heck do I pronounce that?"

"Jare-uh-chuck," I said slowly.

"Okay," said the colonel. "Well, however you say it, for the duration of your time at ODIS I'm going to be calling you *Chopper*. That's your Operator Sign when you're in training and on missions. Stoddard? You'll be *Chesty*."

Stoddard raised an eyebrow.

"As in, 'Chesty Puller'," the colonel added.

Stoddard blinked, then smiled her understanding.

"My name's Fern McConnell," said the colonel, "but around here everyone knows me as Valkyrie. As your CO during your exchange officer stints, you will report directly to me. I know your in-processing people already went over rules and regs and stand-

ing orders for the installation, so what we need to get clear here today is what I'll be expecting from you, and what you can be expecting from me."

"Yes ma'am," Stoddard and I both chimed in unison.

"The Orbital Defense Initiative Station is an experiment," McConnell said. "When Congress and the Senate jointly agreed to dismantle NASA, much of the prior funding and all of the facilities were consigned to the Department of the Navy. Since the Air Force already had a strong space interest, the Secretaries of the Air Force and the Navy put together a unified program designed to protect United States interests in orbit, and beyond. But the Chairman of the Joint Chiefs wouldn't sign off on it—nor could he dig up additional funding—unless our cousins the Army and Marine Corps could tag along for the ride, too. This means what while you both are here as a *favor* from us to your respective services, I expect no less from you than I expect from any of my other Operators. I am tough, but I am fair, and if either of you have a problem with anything or anyone, I expect you to come to me with it first. Copy?"

"Roger that," I said.

"Yes ma'am," Stoddard replied more formally.

The colonel looked at us both, then took a deep breath, and continued.

"My full resume is posted on the ODIS intranet, but just so you know, I did two combat tours—one in the Middle East and one in Africa—as well as three trips to the International Space Station.

"It's because I've got the space rating and the flight hours that they assigned me to head up ODIS. My Operators never climb into a cockpit nor a space suit, but you're every bit as vital to ongoing United States space readiness as any astronaut ever was. The public doesn't give a damn because people long ago decided space was boring and run-of-the-mill. But since the Chinese put their first probe on the Moon, the politicians in Washington D.C. have been nervous about us losing our edge in a new space race."

I nodded, knowingly.

The People's Republic of China had been announcing plans for a lunar base, even be-

fore their first successful robotic landing. With the Russians doing most of the heavy lifting to the aging International Space Station, it was left to America's military establishment to decide if free men would walk on the Moon, or take a back seat to the world's newest assumed superpower.

"Unlike the last time America went to the Moon," the colonel continued, "this time we're doing it in steps. Not one-shots. And because the entire thing is rolled up under the significant umbrella of the Department of Defense, there's not been as much sensitivity to cutbacks as during the Apollo years—though certain politicians, and a certain President in particular, have done their worst."

Again, I found myself nodding.

"Don't wake the Chinese dragon," one notable political blogger had shouted when news about the creation of ODIS had gone public.

Thankfully for my sake, such alarmism had been ignored.

We were definitely going *back*.

But not before there was enough infrastructure in orbit—Earth's, as well as the Moon's—to ensure that we were going for keeps.

Which is where ODIS came in.

"We don't fly the usual ROV here," the colonel said, her eyes piercing as she looked at us. "The stuff we run is actually two or three generations past anything either of you have ever flown or driven in your careers. This is not joystick work. The ODIS environment is immersive, because the machinery you'll be piloting is billion-dollar stuff, and designed to work in one of the most hostile environments possible. The training is also immersive—'train as you fight,' I think the Army always says? Well, here at ODIS we train as we *Operate*, and you'll have plenty of time to work the kinks out and make all the usual beginners' blunders before we let you at the real thing."

I momentarily looked up at the white-tiled ceiling, imagining that I could peer through the roof and up through the sky, to where ODIS Operators were busily putting together the several orbital docking and receiving platforms that would be taking on material and manpower bound for the Moon.

*Cybernauts*, one Army Times headline had quipped, when the basics of the ODIS mission were made publicly known.

I'd taken one look at the program—concluded it was by far the coolest thing I'd ever seen—and immediately determined that, one way or another, I was going to be a part of it.

Each of the Chinese suits had the familiar hammer, sickle, and stars of the People's Republic of China emblazoned across a breast. The troops slipped out of their capsule—a solid dozen of them!—and began tethering themselves to Grissom Platform. They didn't have guns that I could see, though if there was a gun that functioned in vacuum and microgravity, I wasn't convinced I'd be able to recognize it in any case. I guessed that the Chinese had banked on their electromagnetic pulse weapon to do their dirty work for them, and because my proxy was—for all intents and purposes—still motionless on the solar panel boom, they probably assumed my circuits had been turned to toast along with all the rest.

Somewhere out there, though I couldn't detect or see her yet, Chesty was coming in hot. I held myself still and waited, watching the Chinese move closer to me and then, white-knuckled moments later, *over* me, advancing towards Grissom Platform's central modules. Those modules were uninhabited at the moment—no astronauts on staff for a thing only half built—but they could be made to power up and provide life support in a pinch. The Chinese moved with such rapidity and purpose, I began to wonder how much information about the platform's engineering had been leaked or smuggled to the PRC prior to this, their most brazen attack on the United States to date.

Did they worry that anyone back on Earth might notice? Or care? Or were they so convinced that the EMP had eliminated all electronic eyes and ears that they were willing to just walk in and *take* the platform—daring someone on the ground to say or do anything about it?

There was a whoop—no, not quite, more like a cry; a war cry.

“OOOOORAHHHHH!”

Chesty—or rather, her proxy—appeared

for an instant, her experimental maneuvering pack's micro-jets blasting tiny trails in the emptiness of space. She shot past me and *thunked* into the side of the enemy spacecraft. I watched Chesty hang there on the capsule's side for a moment, her contorted body depressed into the ablative shielding. Had she overshot the mark and terminated herself?

With relief, I saw her begin to move—servo-assisted joints flexing as she picked herself up out of the depression and turned around.

The Chinese had seen her too, and were not amused.

Half their squad began reeling themselves back towards the capsule.

I waited like a spider, just aching for a chance to strike, then shot up from where I'd been laying prone on the solar panel boom.

Two of the six got my titanium fists in their face bowls.

The *crunch* on my knuckles was ever so satisfying.

They flailed and reflexively pulled their hands up to their faces. I couldn't tell if I'd actually cracked the bowls badly enough to vent atmosphere—unlikely, given the fact each bowl was supposed to be meteorite-proof—but I'd definitely given them something to think about.

Chesty was prepared for the remaining four. She'd crouched directly in front of the mouth to the capsule's hatch, like a wrestler—her mechanized head swiveling this way and that as she sized up her four on-rushing opponents.

“I've got these,” Chesty said. “You better check on the others, before they do something both of us will regret.”

“Roger that,” I said, and spun to face the remaining Chinese.

Rather than come for me, however, they'd redoubled their efforts to break into Grissom Platform's central modules. Two of them had unfurled computer pads with ribbon cables, each cable snaked out and plugged into the now-exposed electronics near a main airlock. I began advancing on them—pulling myself hand-over-hand and foot-over-foot like a chimpanzee—when the world suddenly turned to grainy static. I yelled in frustra-

tion, feeling all my senses go dead. Had the Chinese set off a second EMP? And what about Chesty? If my proxy was kaput, that left her and her alone to combat the enemy—twelve to one. And even a Marine has her limits.

With the Operator suit on, I looked like a lab rabbit.

Hundreds of thin wires and cables snaked away from the one-piece body suit that hugged me uncomfortably in all the wrong places. Chesty was in the same predicament, though I had to admit the suit was much more flattering on her than it was on me. We were each standing on a yellow line with two yellow-painted footprints in front of it—to note our starting positions. Three meters in front of us, also poised on yellow-painted footprints, were our proxies.

Robots, really. Man-sized and fully articulated in ways not even the real thing had ever been. I experimentally snapped my right fingers a few times, and watched as my proxy's hand made the same motions, and even achieved a similar effect, though its plastic, ceramic and metallic flesh *clanked* and *dinked* more than it snapped.

"Please don't do that," said an Air Force master sergeant who'd been supervising Chesty and me during our first day in the suits. We'd already logged two weeks going over mechanics and theory, hitting the books and soaking our brains in math, diagrams, and history lessons on the development of these, the United States' most sophisticated remotely-operated vehicles in existence. Even a single arm from one of the proxies was worth more than my retired mother's five-bedroom McMansion in the Bay Area.

I rightfully quit my fooling around and waited for further instructions from the master sergeant—just one of many technically-savvy non-commissioned officers who prowled on the sidelines. The closed hangar in which we all stood was part of the ODIS simulator—a place where new proxy Operators could get a feel for their machines, and the body suits could be "tuned" to their wearers. No human being's electromagnetic or physiological signature being quite the same as any other's.

"Lift your right legs please," said the master sergeant. "Keep your knees about waist level and balance for thirty seconds."

I did as instructed, and so did Chesty. I was amazed to see my proxy emulate me exactly, even down to the minor shimmying I was doing as I tried to keep from dropping my leg or toppling over. For an insane instant I wanted to call out PT cadence—*One thousand, one! One thousand, two! One thousand, three!*—and decided against it. The Air Force NCOs might not grasp the humor of the moment, and I certainly didn't need to magnify the reputation I'd already earned as something of a goof.

If I'd been somewhat cocky about my ROV experience coming into ODIS, that cockiness had gradually crumbled as the magnitude of what I'd be doing became clear. ODIS wasn't about sitting in a trailer and guiding a mini-helicopter, armed with cameras and third-generation Hellfires slung under its stubby wings—prowling for insurgents. ODIS was as close as I'd ever get to actually *becoming* what I drove. Or Operated, according to the correct term, which Valkyrie was insistent that we use.

She watched us now, sitting back a bit from the NCOs who worked and tapped at keys on their portable laptops, their own sets of wires and cables trailing this way and that across the floor. Mobile servers on wheels had been rolled in to handle the software aspect—human nerve impulse being wickedly difficult to accurately transform into data the proxy's motors and servos could recognize. Fans in those servers hummed gently, and despite the superb air conditioning of the simulator, I felt myself begin to sweat.

"Okay," said the master sergeant. "Left legs down, and right legs up."

Chesty and I did as instructed, and our proxies mirrored us exactly.

"Won't the distance cause enough signal lag to give us issues?" I asked the master sergeant, who'd so far proven to be fantastically knowledgeable about his subject of assignment. I'd have tried talking him into going Warrant if the Air Force had had the good sense to keep its Warrants, instead of retiring them out of the service so that every pilot could claim to be a college graduate.



"Some," said the master sergeant. "But the proxy is only a few hundred miles up, at most. Not even the blink of an eye for round-trip transmissions. And we won't be operating these on the Moon from this building. Sooner or later some of you are going to have to go up."

*Go up . . .* I let myself thrill for the moment at the prospect of being assigned to honest-to-gosh-damned astronaut training. Would I even pass the harder parts of the physical? Would it matter? Now that the Navy and Air Force were calling the shots, a lot remained uncertain. But at least you didn't need a doctorate in the sciences to get to orbit anymore, as had been the case when NASA's astronaut feeder program had been clogged to the rafters with PhDs.

"Right leg down," said the master sergeant.

Chesty and I did it. Our proxies did it too.

"Now jog in place," said the master sergeant.

Chesty and I began to lightly pad up and down on the balls of our feet, not daring to get any more vigorous about it because our proxies were doing precisely as we did, and neither of us was sure how much terrestrial stress they'd been designed to take—despite what the factory specs said.

"Good," said the master sergeant. "Leap forward a few times."

Chesty and I looked at each other, but didn't move.

"It's cool," said the master sergeant, smiling. "They're expensive as hell, but then again they ought to be. They'll withstand 7.62 automatic fire, and come back for seconds. You could drop one from three thousand feet, and all you'd do is scratch the paint job."

Emboldened by the master sergeant's words, Chesty and I began to leap forward. Rather comically, I am afraid to admit, stretching our bodies out and curling back, covering several feet in each bound.

The proxies mirrored us beautifully.

Too beautifully for my taste, as I landed awkwardly on the third jump and fell on my ass.

My proxy emulated me, *thunking* loudly onto the rubberized floor.

Chesty couldn't help herself. She laughed

loudly.

I looked over at her and ruefully pushed myself to my knees.

All enlisted eyes darted to my proxy as it began to flop and flail like a fish on dry land.

"Oh, crap," I said. "Did I—?"

"No sir," said the master sergeant. "It's fine. Hang on a sec . . ."

He began hammering keys almost too quickly for the eye to see, and the spasming proxy relaxed and lay flat.

Valkyrie stood up and approached, with her habitually attached clipboard under one arm.

"It'll be like that for awhile," she said. "It's going to be days before each of you have fed enough data into the system for the proxies to read your movements correctly in all circumstances. It's a bit like voice recognition software, if you've ever used that. The basic setup is pre-packaged for a certain set of sounds matched to a certain set of words, but until the software *learns* you, it's going to mess up as often as not. Same here, with the proxies."

"Still," Chesty said, "this is flat-out remarkable. I've never seen anything like it. Truly space-age."

"Yes, it is," said the colonel. "And unlike an astronaut who has to be supplied with food and air and water, a proxy can remain in orbit for months or years without needing to do much more than take naps while tied to the nearest solar collector or fuel cell. The batteries in those proxies are space-age too. In the end, it's much cheaper and more effective to Operate in space, and I say that with no small regret, because once you've been up there—" I noticed Valkyrie's eyes had started to sparkle a bit, "—you won't ever be the same person again."

I was blind and nearly deaf. The lightweight audiovisual hood was feeding me static. My heart told me there was nothing much to be done. If the Chinese had set off another EMP—lethal, I thought, at that range; for them as much as us—then both Chesty and I were cold turkey. And we'd just have to wait and wonder what the Chinese did with Grissom Platform.

Suddenly my visual picture blinked, went black, then blinked again.



"Hang on," I said. I could vaguely hear the rapid speech of the Air Force and Navy people who'd clustered around Chesty and me as we Operated from our booths. They'd already assumed the worst, and rightly so. With the other Operators out of the picture, it seemed unlikely that Chesty or I could do much to change the present verdict.

Color swam back into my "eyes" and very quickly I realized I was staring up at a Chinese troop who'd bent over me. He was tugging at my torso with a tool of some sort. I could feel it, as if someone was trying to pry between my ribs with a pair of needle-nose pliers. I jerked and kicked—in the booth as well as via proxy—and the Chinese space soldier spun away from me, his tool lost to vacuum and only his tether keeping him from being similarly orphaned in orbit.

Chesty grunted and growled.

I re-orientated myself so that I could see what was happening down by the combat capsule. No less than six of the Chinese had piled on top of Chesty's proxy, which struggled mightily to break free. One of the enemy had a hand-held device of some sort and was trying to keep it applied to Chesty's upper torso.

"I'm losing it!" I heard her say in panic, as much through the Operating room as through the speakers in my ears. "Signal's breaking up!"

The situation quickly became clear.

Not only were the Chinese trying to take Grissom Platform intact, they were trying to take the proxies too. Which explained why they'd not so much as laid a pipe wrench on us during the melee. Probably they were under strict orders not to damage anything they came across, even if we fought back. They were trying to neutralize us instead.

Not thinking, I began my hand-over-foot-over-hand race back down the solar panel boom. Something latched hold of me from above, like a sack of cement stuck to me with duct tape. I ignored it and kept moving, intent on distracting the soldier who had the neutralizer in his hand and was trying to use it to knock Chesty out of the fight.

A final pull, then a hard push with motorized legs.

I curled.

My proxy hit them like a bowling ball.

The "pins" burst apart.

I had the neutralizer in my hand, and—lacking anything of sufficient toughness—slammed it across one knee. The sensors complained and I winced as the feedback hit me, but the neutralizer was in pieces, which I hurled away from me as I regrouped with my Marine battle buddy.

"Still too many," Chesty said, breathing heavily. Though the proxies were doing all the work, the fight was as visceral as anything either of us had experienced on Earth. We'd been japing around in our booths—Operator-style—since the moment the attack began. And even being in good condition didn't prevent a man—or a woman—from getting winded at that frenetic pace.

"I'd pay good money for a vacuum-tested .50-calibre machine gun right now," I said, watching to either side as the Chinese troops pulled themselves back towards us on their tethers. What little of their faces I could see appeared rather displeased. And I was suddenly very grateful to not be facing them in person.

Their tethers wagged as they drew near.

Wait.

*Tethers. . .?*

"We'll never beat them like this," I said. "We have to give them a new problem to solve."

Before Chesty could ask what I meant, I pulled myself over to one of the enemy tethers which was bound to the solar panel boom. Flexing my forearm, I deployed my proxy's cutting tool and bent low, applying it to the tether's base. Steel cable resisted, and then snapped as my cutting tool bit through the tightly-wound metal.

I grabbed the free end of the broken tether and yanked yard, then cast it away. The attached troop flailed and groped at nothing as he shot up and over me. I ducked. Were they smart enough to have configured their armored suits with miniature reaction control thrusters? I hadn't seen a lot of extra hardware on them when they'd first emerged.

Chesty hooted her approval and set to work on another tether.

Suddenly, Grissom Platform lurched.

Cones of mist sprayed from the much-larg-

er RCS system installed at mathematically determined points along Grissom Platform's architecture. The two Chinese who'd managed to get inside had obviously done their work quickly. They had control of the Platform's systems now, which was very bad news indeed.

"Someone has to get inside and stop them!" Chesty yelled.

Indeed.

"Do what you can," said a third voice. It was Valkyrie.

She'd plugged into the Operator frequency with a normal headset.

"Can you give us a SITREP, boss?" I asked.

"All the other Operators are blacked out right now. The EMP did its work well. There is no help available at this point. It would be hours before we could attempt to bring other proxies—being Operated on other Platforms. And by then it will be too late."

"Aren't the Chinese worried about how this will affect the diplomatic situation?" I said.

"Obviously not," Valkyrie replied. "I think it's a test—to see how ready we are to resist them in an open contest for orbital space. And since the European Union is sitting it out as a 'neutral' party, we're left to defend our turf the old fashioned way."

Chesty and I sat at the bar of the little wings'n'brew joint we'd found not far outside the west gate of Hill Air Force Base. Being none too familiar with the local denizens, we kept to ourselves—though it seemed obvious the staff were plenty used to military folk coming in for a drink and a meal. The man behind the bar was a friendly chap. Retired, I guessed, based mainly on his crisp high-and-tight haircut and the tattoo on his muscular arm—a half-naked woman that peaked out from under his rolled-up sleeve as he moved around and served customers.

"And here I thought you were going to be a joker," Chesty said, twirling the ice in her glass with a thin straw.

"Don't judge a book by its cover," I said. "Eight weeks ago you didn't know me. But now? Now, you don't have that excuse."

"True," she said. "But I get the feeling I'm not the only one who's had to correct himself on his assumptions."

"Right," I said, smiling slightly at her, before taking a slow sip of my root beer and putting the glass mug back on its foam coaster. ODIS rules were: no alcohol under any circumstances, any time. It somehow messed with the tuning of the proxy control suits. A nervous system thing?

A flatscreen TV behind and above the bar was playing the evening news. An earnest-looking reporter in a crisp suit was carrying on about something, though the sound had been turned down so we couldn't hear about what. When an image of a Chinese orbital booster was layered in behind the news anchor's head, with the words, "PRC RESOLVES TO MATCH AMERICA IN ORBIT," blown up under the anchor's chin, I pointed at the set and asked the man behind the bar to turn it up.

The anchor's voice suddenly cut in, mid-sentence, "... for the last four years, and Beijing has promised that if the United States does not cease its military activities in low Earth orbit, the People's Republic of China will be forced to declare the United States in violation of treaty."

The news anchor vanished, to be replaced by a slim, fit looking Chinese man in a blue business suit—Mao suits being something you didn't see much of in the new era of streamlined, bourgeois Chinese international relations.

"We consider the actions of the United States Department of Defense to be inexcusable," said the Chinese man, "and we would remind the United States President that the territories of Earth orbit, as well as the Moon, belong to *all* people. Not just America's capitalist exploiters."

I snorted.

"You think they're bluffing?" Chesty said.

I shook my head. "Hard to say. After the Party put down those big pro-democracy riots in the Chinese interior cities a couple of years ago, the Beijing government has been working double-time to plaster on a nice face at the United Nations. Given the fact that so many countries are up to their necks in debt to Chinese interests, nobody's going to mess with China. But maybe it's all part of a scheme to provoke the US? Make us look like the warmongering bad guys half the world seems ready and willing to believe we

are.”

I said the last with a bitter frown, and took a long draft of root beer.

“And you’re sure they aren’t right?” she said.

I nearly choked.

“What kind of talk is that for a Marine?”

“I’m just thinking that as much as we like to think we’re always the good guys, events of the last few decades have occasionally cast that into doubt. I’m not stupid. I know a bit about history and I know more than a bit about our overcommitments in the Middle Eastern and African theaters. If it were up to me I’d bring every last one of us home and let the world fend for itself for fifty years. But then I’m not the President, so I don’t get to make that call. She does.”

I pushed my drink aside and faced Chesty squarely.

“Well, surprise, surprise. I wouldn’t have figured you for a political thinker. Then again, we haven’t had a chance to talk much—about real stuff. Only about work.”

“No we haven’t,” she said, waiting for me to continue.

“So riddle me this, Marine, if the answer to America’s bad image abroad is to close the bases and bring the troops home, what are we doing constructing military space stations for the purpose of putting military personnel in orbit? And if you really feel the way you say you feel, what are you doing tied up in a project like this? ODIS being the thing on everyone’s minds lately, as the Platforms approach completion and the Chinese eat up the international news cycles with threats and rhetoric.”

She looked down at her drink—the ice tinkling in her glass—and sighed.

“I always wanted to be an astronaut,” she said. “But life got in the way. Twenty years went by in a flash, along with two kids, a mean divorce, and too many deployments. I was in Kuwait when I read about ODIS in an e-mail from a friend, and I decided it was the closest I might ever get to fulfilling my dream—even if I wasn’t exactly thrilled with the political cloud that surrounded the program.”

“The first sortie is coming up,” I said. “Are you sad like me that we won’t be going up on a rocket ourselves?”

“Yes,” she said hesitantly, looking directly into my eyes. “Don’t get me wrong. I know I beat long odds to be here, just like you. And I am glad I did this. But it won’t be the same—not being able to float outside the spacecraft and see my own real-live hand against the backdrop of the earth as it passes beneath my feet. Like Ed White. Do you know who Ed White is?”

“No,” I said.

“Look him up on the internet tonight,” she said. “When I was a little girl, I used to love the color photos of Ed White.”

“They’ve sealed the air lock,” I said.

“Use your proxy’s key card,” Valkyrie ordered.

“I did. It’s no good. However they’ve hot-wired it, I can’t get in.”

Grissom Platform was still thrusting with its RCS. The Earth was swinging away and to the right. I heard Chesty cursing as she struggled with the Chinese who’d resumed their attempts to subdue her. Unable to get in and stop the ones who’d gone inside and activated the Platform’s attitude controls, I debated between helping Chesty, and figuring out some other way to stop the Chinese.

“Now I’m wishing we had an auto-destruct sequence,” I mused sarcastically.

“You think this is a TV show?” Valkyrie said. “No can do, Chopper. No reactor overload. No explosives lining the hull. That’s movie theater stuff. And if you can’t stop the Chinese, then it’s basically game over. I’ll have to report to my bosses at the Pentagon that ODIS let the Chinese commit orbital theft of US military property.”

I stared—via proxy eyes—at the space around me. The layout of the station. The unfinished spars and beams poking out at different angles. Then my eyes hit something I’d not considered before. And as I watched the limb of the Earth drop away and disappear, I suddenly realized what I had to do.

After training was over, it took Chesty and me a few sorties to really get the hang of things. Even with the many, many hours logged in simulation, the real thing took just that much more adjustment, before we began to feel proficient. After that, it was very much a lunch bucket job.

"They used to make people with doctorates do this," I said to no one in particular as Chesty and I—our proxies—maneuvered a collapsible strut out of the yawning cargo bay of a Centurion rocket's third stage. Our feet were identical to our hands, and we "walked" our way up and down the slowly-growing superstructure of Ride Platform.

"Did they get paid any better?" said one of the team, a Navy Chief Petty Officer designated as Skips.

"I dunno," I said. "But it just seems hilarious to me. This is hard-hat stuff. We're a construction crew, y'all."

"If anyone ever saw a construction crew in robot form," Chesty said.

"Quick, someone scratch his robot crotch."

"Is it break time yet?"

"I forgot my lunch box!"

"How about a beer instead?"

"No beer in space."

"No beer? I want to talk to the union!"

The one-liners continued to reel from all lips, and pretty soon we'd all been reduced to painful laughter, our proxies emulating us as we hunched, our torsos and heads bobbing—letting it out.

"Okay kids," Valkyrie's firm, maternal voice said in our ears. "Play time is over. That will do. You've still got a lot of stuff to unload from that Centurion before the sortie is over. And your batteries are draining every second you waste hamming it up."

The lot of us *yeshammed* and shut up, though snickers could still be heard here and there.

Having affixed our collapsed strut to its designated hard point, Chesty and I went back to the Centurion and began taking out another.

I noticed there was a rudimentary control board up near the nose cone, tucked just inside the cowlings.

"Mind if I take this thing for a test drive, boss?"

If Valkyrie couldn't see what I saw, she at least inferred what I meant.

"Sure," she said. "There's plenty of orbital burn fuel in the tanks, if you want to use it. Take the nose cone off and the third stage has a hard dock that allows us to mate it with the Platforms and boost their orbits,

when it's necessary. Usually we run it from ground, but the Centurion has a manual backup system—just in case."

"Just in case," I said, thinking how fun it would be to get behind the "wheel" of a rocket ship in orbit.

The Chinese had all but ignored the Centurion.

Its clamshell bay doors hung open, inviting.

"Chesty," I said. "One of us has to get to the third stage. If we can't take the Platform away from them, maybe we can take it *down* with them still aboard."

"What?" Chesty said, breathing heavily. "I'm a little damned busy right now, Chopper."

"Hold them off—I'm going for it!"

"Chopper—" but Valkyrie's words were swept from my ears as I sprang across the Platform, covering meters with every move. I think the Chinese might have suddenly figured me out, because Chesty announced that they'd turned her loose. She was coming up after them as they came up after me.

I made it to the Centurion's open bay, found the manual control panel, and began pushing buttons.

After the first time I saw the manual controls—while working on Ride Platform—I got curious, and pleaded with Valkyrie to let me see the Centurion's operational specs. No sense holding back. Otherwise what was the exchange officer program for? I wanted the full skinny, nuts and bolts and nozzles and gears.

She had reluctantly agreed.

And now I believed this knowledge was our best, last hope.

The control panel lit up and announced via flashing LCD screen that the fuel pumps were being primed. Precious seconds ticked away as the Chinese came on. Wherever they thought they were taking the Grissom Platform via its own RCS, I was about to ruin their day.

Just when the Chinese—and Chesty—had almost reached me, I stabbed at the cheerful orange IGNITE button, and latched onto the control panel's protective rails with both hands and feet.

The Platform lurched and shoved, the sud-

den thrust from the Centurion causing it to begin spinning on a new axis as the Platform's own RCS went out of whack. Chesty just barely had time to grab hold of a support beam before the Chinese tumbled away and hung like cat toys on the ends of spongy strings. They flailed and kicked, but it was no good. The torque was too much for them.

But my proxy held fast, and I—safely on the ground—felt none of the deleterious effects of the spin.

"What are you doing??" Valkyrie demanded.

"I'm taking the Platform out," I said.

"By whose authorization, Chopper?"

"Ma'am," I said, "if I can't have an auto-destruct, it's up to me to effect a *manual* destruct. I'm going to try and push us down into the atmosphere. The Platform, the proxies, the Chinese, all of us."

Silence.

I suddenly imagined my boss being the chief witness at my court-martial.

"It's the only way," I said.

"He's probably right," Chesty said, agreeing. "We don't have any weapons, and the proxy batteries will run out sooner or later. And then the Platform belongs to the Chinese. Would you rather tell your bosses at the Pentagon we sank the ship and took the enemy with us? Or let them have it without a serious struggle?"

More silence.

Then, with a reluctant sigh, "Go."

"Yes ma'am," I said.

The manual controls were difficult to finagle, with the Platform's own RCS mucking up the trajectory. But I could already tell it was working. We were spiraling in. Faster and faster. And while the proxy had what it took to withstand the centrifugal gee, I could tell just by looking that the Chinese were in no position to stop me.

The Earth grew steadily larger as we went down, the Centurion's fuel gradually bleeding to fumes.

"Got any last words, Marine?" I said to my partner.

"I regret that I have but one life to give for my country," she said, half-mocking.

"Yeah," I said. "Me too."

I began to wonder what it would be like

to re-enter in proxy form.

I decided it was prudent not to find out.

The news called it an unfortunate accident. The fireball had streaked across the skies of one ocean and two continents, before what remained splashed down a hundred miles off the Hawaiian coast.

The Chinese never said a word, other than to offer some back-handed condolences for the loss of the hardware.

Chesty and me?

Well, we didn't get court-martialed.

Valkyrie did have to report to the Pentagon and she did have to do some rather extensive explaining—thank goodness for the proxy recordings giving the generals a front-row seat to the action—but in the end, the spiking of the Grissom Platform was deemed not only necessary, but valorous.

Though, Chesty and I both felt a bit sheepish receiving awards for a thing which had not, technically, placed either of our lives in danger.

But then, war had become more and more like that. The machines were doing the fighting, as well as the labor. I wondered what someone like Kipling might have thought of that? And decided I wasn't entirely sure.

When the dust ultimately settled, Valkyrie put us back to work.

"You broke it," she told us. "You build another one in its place."

Our exchange officer tours were extended.

The work was, well, *work*. But satisfying work. And the Chinese didn't try another stunt on our watch, so thank goodness for small miracles.

The true surprise showed up six months after Chesty and I left Hill.

It was a manila envelope, delivered certified USPS, from the Navy offices in Florida—where they still trained *real* astronauts.

Inside was a formal memo informing me that, if I chose to accept it, the Navy would gratefully accept me for another exchange officer tour. This time as part of the next year's class of astronaut candidates. I scanned the list of names who'd already accepted, and saw MAVELINE STODDARD.

Well, hell, who am I to let that Marine show me up? ■