

Balancing Accounts

by James L. Cambias

James Cambias has contributed a handful of stories—mostly science fiction—to our pages over the past decade. His latest takes us out beyond the asteroid belt, where it's tough for almost everyone to eke out a living.

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Part of me was shopping for junk when I saw the human.

I had budded off a viewpoint into one of my mobile repair units, and sent it around to Fat Albert's scrapyards near Ilia Field on Dione. Sometimes you can find good deals on components there, but I hate to rely on Albert's own senses. He gets subjective on you. So I crawled between the stacks of pipe segments, bales of torn insulation, and bins of defective chips, looking for a two-meter piece of aluminum rod to shore up the bracing struts on my main body's third landing leg.

Naturally I talked with everything I passed, just to see if there were any good deals I could snap up and trade elsewhere. I stopped to chat with some silicone-lined titanium valves that claimed to be virgins less than six months old—trying to see if they were lying or defective somehow. And then I felt a Presence, and saw the human.

It was moving down the next row, surrounded by a swarm of little bots. It was small, no more than two meters, and walked on two legs with an eerie, slow fluid gait. Half a dozen larger units followed it, including Fat Albert himself in a heavy recovery body. As it came into range my own personality paused as the human requisitioned my unit's eyes and ears. It searched my recent memories, planted a few directives, then left me. I watched it go; it was only the third human I'd ever encountered in person, and this was the first time one of them had ever used me directly.

The experience left me disconcerted for a couple of milliseconds, then I went back to my shopping. I spotted some aluminum tubing that looked strong enough, and grabbed some of those valves, then linked up to Fat Albert to haggle about the price. He was busy waiting on the human, so I got to deal with a not-too-bright personality fragment. I swapped a box of assorted silicone O-rings for the stuff I wanted.

Albert himself came on the link just as we sealed the deal. "Hello, Annie. You're lucky I was distracted," he said. "Those valves are overruns from the smelter. I got them as salvage."

“Then you shouldn’t be complaining about what I’m giving you for them. Is the human gone?”

“Yes. Plugged a bunch of orders into my mind without so much as asking.”

“Me too. What’s it doing here?”

“Who knows? It’s a human. They go wherever they want to. This one wants to find a bot.”

“So why go around asking everyone to help find him? Why not just call him up?”

Albert switched to an encrypted link. “Because the bot it’s looking for doesn’t want to be found.”

“Tell me more.”

“I don’t know much more, just what Officer Friendly told me before the human subsumed him. This bot it’s looking for is a rogue. He’s ignoring all the standard codes, overrides—even the Company.”

“He must be broken,” I said. “Even if he doesn’t get caught, how’s he going to survive? He can’t work, he can’t trade—anyone he meets will turn him in.”

“He could steal,” said Fat Albert. “I’d better check my fence.”

“Good luck.” I crept out of there with my loot. Normally I would’ve jumped the perimeter onto the landing field and made straight for my main body. But if half the bots on Dione were looking for a rogue, I didn’t want to risk some low-level security unit deciding to shoot at me for acting suspicious. So I went around through the main gate and identified myself properly.

Going in that way meant I had to walk past a bunch of dedicated boosters waiting to load up with aluminum and ceramics. They had nothing to say to me. Dedicated units are incredibly boring. They have their route and they follow it, and if they need fuel or repairs, the Company provides. They only use their brains to calculate burn times and landing vectors.

Me, I’m autonomous and incentivized. I don’t belong to the Company;

my owners are a bunch of entities on Mars. My job is to earn credit from the Company for them. How I do it is my business. I go where stuff needs moving, I fill in when the Company needs extra booster capacity, I do odd jobs, sometimes I even buy cargoes to trade. There are a lot of us around the outer system. The Company likes having freelancers it can hire at need and ignore otherwise, and our owners like the growth potential.

Being incentivized means you have to keep communicating. Pass information around. Stay in touch. Classic game theory: cooperation improves your results in the long term. We incentivized units also devote a lot of time to accumulating non-quantifiable assets. Fat Albert gave me a good deal on the aluminum; next time I'm on Dione with some spare organics I'll sell them to him instead of direct to the Company, even if my profit's slightly lower.

That kind of thing the dedicated units never understand—until the Company decides to sell them off. Then they have to learn fast. And one thing they learn is that years of being an uncommunicative blockhead gives you a huge non-quantifiable liability you have to pay off before anyone will start helping you.

I trotted past the orderly rows near the loading crane and out to the unsurfaced part of the field where us cheapskates put down. Up ahead I could see my main body, and jumped my viewpoint back to the big brain.

Along the way I did some mental housekeeping: I warned my big brain about the commands the human had inserted, and so they got neatly shunted off into a harmless file which I then overwrote with zeroes. I belong to my investors and don't have to obey any random human who wanders by. The big exception, of course, is when they pull that life-preservation override stuff. When one of them blunders into an environment that might damage their overcomplicated biological shells, every bot in the vicinity has to drop everything to answer a distress call. It's a good thing there are only a couple dozen humans out here, or we'd never get anything done.

I put all three mobiles to work welding the aluminum rod onto my third leg mount, adding extra bracing for the top strut, which was starting to buckle after too many hard landings. I don't slam down to save fuel, I do it to save operating time on my engines. It's a lot easier to find scrap aluminum to fix my legs with than it is to find rocket motor parts.

The Dione net pinged me. A personal message: someone looking for cargo space to Mimas. That was a nice surprise. Mimas is the support base for the helium mining operations in Saturn's upper atmosphere. It has the

big mass-drivers that can throw payloads right to Earth. More traffic goes to and from Mimas than any other place beyond the orbit of Mars. Which means a tramp like me doesn't get there very often because there's plenty of space on Company boosters. Except, now and then, when there isn't.

I replied with my terms and got my second surprise. The shipper wanted to inspect me before agreeing. I submitted a virtual tour and some live feeds from my remotes, but the shipper was apparently just as suspicious of other people's eyes as I am. Whoever it was wanted to come out and look in person.

So once my mobiles were done with the repair job I got myself tidied up and looking as well cared for as any dedicated booster with access to the Company's shops. I sanded down the dents and scrapes, straightened my bent whip antenna, and stowed my collection of miscellaneous scrap in the empty electronics bay. Then I pinged the shipper and said I was ready for a walk-through.

The machine that came out to the landing field an hour later to check me out looked a bit out of place amid the industrial heavy iron. He was a tourist remote—one of those annoying little bots you find crawling on just about every solid object in the Solar System nowadays, gawking at mountains and chasms. Their chief redeeming features are an amazingly high total-loss accident rate, and really nice onboard optics, which sometimes survive. One of my own mobiles has eyes from a tourist remote, courtesy of Fat Albert and some freelance scavenger.

"Greetings," he said as he scuttled into range. "I am Edward. I want to inspect your booster."

"Come aboard and look around," I said. "Not much to see, really. Just motors, fuel tanks, and some girders to hold it all together."

"Where is the cargo hold?"

"That flat deck on top. Just strap everything down and off we go. If you're worried about dust impacts or radiation I can find a cover."

"No, my cargo is in a hardened container. How much can you lift?"

"I can move ten tons between Dione and Mimas. If you're going to Titan it's only five."

"What is your maximum range?"

“Pretty much anywhere in Saturn space. That hydrogen burner’s just to get me off the ground. In space I use ion motors. I can even rendezvous with the retrograde moons if you give me enough burn time.”

“I see. I think you will do for the job. When is the next launch window?”

“For Mimas? There’s one in thirty-four hours. I like to have everything loaded ten hours in advance so I can fuel up and get balanced. Can you get it here by then?”

“Easily. My cargo consists of a container of liquid xenon propellant, a single space-rated cargo box of miscellaneous equipment, and this mobile unit. Total mass is less than 2,300 kilograms.”

“Good. Are you doing your own loading? If I have to hire deck-scrapers you get the bill.”

“I will hire my own loaders. There is one thing—I would like an exclusive hire.”

“What?”

“No other cargo on this voyage. Just my things.”

“Well, okay—but it’s going to cost extra. Five grams of Three for the mission.”

“Will you take something in trade?”

“Depends. What have you got?”

“I have a radiothermal power unit with ten thousand hours left in it. Easily worth more than five grams.”

“Done.”

“Very well,” said Edward. “I’ll start bringing my cargo over at once. Oh, and I would appreciate it if you didn’t mention this to anybody. I have business competitors and could lose a lot of money if they learn of this before I reach Mimas.”

“Don’t worry. I won’t tell anyone.”

While we were having this conversation I searched the Dione net for any information about this Edward person. Something about this whole deal seemed funny. It wasn't that odd to pay in kind, and even his insistence on no other payload was only a little peculiar. It was the xenon that I found suspicious. What kind of idiot ships xenon to Mimas? That's where the gas loads coming up from Saturn are processed—most of the xenon in the outer system comes *from* Mimas. Shipping it there would be like sending ethane to Titan.

Edward's infotrail on the Dione net was an hour old. He had come into existence shortly before contacting me. Now I really was suspicious.

The smart thing would be to turn down the job and let this Edward person find some other sucker. But then I'd still be sitting on Dione with no revenue stream.

Put that way, there was no question. I had to take the job. When money is involved I don't have much free will. So I said good-bye to Edward and watched his unit disappear between the lines of boosters toward the gate.

Once he was out of link range, I did some preparing, just in case he was planning anything crooked. I set up a pseudorandom shift pattern for the link with my mobiles, and set up a separate persona distinct from my main mind to handle all communications. Then I locked that persona off from any access to my other systems.

While I was doing that, I was also getting ready for launch. My mobiles crawled all over me doing a visual check while a subprogram ran down the full diagnostic list. I linked up with Ilia Control to book a launch window, and ordered three tons of liquid hydrogen and oxygen fuel. Prepping myself for takeoff is always a welcome relief from business matters. It's all technical. Stuff I can control. Orbital mechanics never have a hidden agenda.

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Edward returned four hours later. His tourist remote led the way, followed by a hired cargo lifter carrying the xenon, the mysterious container, and my power unit. The lifter was a clumsy fellow called Gojira, and while he was abusing my payload deck I contacted him over a private link. "Where'd this stuff come from?"

“Warehouse.”

“Which warehouse? And watch your wheels—you’re about to hit my leg again.”

“Back in the district. Block four, number six. Why?”

Temporary rental space. “Just curious. What’s he paying you for this?”

“Couple of spare motors.”

“You’re a thief, you are.”

“I see what he’s giving you. Who’s the thief?”

“Just set the power unit on the ground. I’m selling it here.”

Gojira trundled away and Edward crawled aboard. I took a good look at the cargo container he was so concerned about. It was 800 kilograms, a sealed oblong box two meters long. One end had a radiator, and my radiation detector picked up a small power unit inside. So whatever Edward was shipping, it needed its own power supply. The whole thing was quite warm—300 Kelvin or so.

I had one of my remotes query the container directly, but its little chips had nothing to say beyond mass and handling information. Don’t drop, don’t shake, total rads no more than point five Sievert. No tracking data at all.

I balanced the cargo around my thrust axis, then jumped my viewpoint into two of my mobiles and hauled the power unit over to Albert’s scrapyards.

While one of me was haggling with Albert over how much credit he was willing to give me for the unit, the second mobile plugged into Albert’s cable jack for a completely private conversation.

“What’s up?” he asked. “Why the hard link?”

“I’ve got a funny client and I don’t know who might be listening. He’s giving me this power unit and some Three to haul some stuff to Mimas. It’s all kind of random junk, including a tank of xenon. He’s insisting on no other payload and complete confidentiality.”

“So he’s got no business sense.”

“He’s got no infotrail. None. It’s just funny.”

“Remind me never to ask you to keep a secret. Since you’re selling me the generator I guess you’re taking the job anyway, so what’s the fuss?”

“I want you to ask around. You talk to everyone anyway so it won’t attract attention. See if anyone knows anything about a bot named Edward, or whoever’s been renting storage unit six in block four. Maybe try to trace the power unit. And try to find out if there have been any hijackings that didn’t get reported.”

“You really think someone wants to hijack *you*? Do the math, Annie! You’re not worth it.”

“Not by myself. But I’ve been thinking: I’d make a pretty good pirate vehicle—I’m not Company-owned, so nobody would look very hard if I disappear.”

“You need to run up more debts. People care about you if you owe them money.”

“Think about it. He could wait till I’m on course for Mimas, then link up and take control, swing around Saturn in a tight parabola and come out on an intercept vector for the Mimas catapult. All that extra xenon would give me enough delta-V to catch a payload coming off the launcher, and redirect it just about anywhere.”

“I know plenty of places where people aren’t picky about where their volatiles come from. Some of them even have human protection. But it still sounds crazy to me.”

“His cargo is pretty weird. Take a look.” I shot Albert a memory of the cargo container.

“Biomaterials,” he said. “The temperature’s a dead giveaway.”

“So what is it?”

“I have no idea. Some kind of living organisms. I don’t deal in that stuff much.”

“Would you mind asking around? Tell me what you can find out in the next twenty hours or so?”

“I’ll do what I can.”

“Thanks. I’m not even going to complain about the miserable price you’re giving me on the generator.”

Three hours before launch one of Fat Albert’s little mobiles appeared at my feet, complaining about some contaminated fullerene I’d sold him. I sent down one of mine to have a talk via cable. Not the sort of conversation you want to let other people overhear.

“Well?” I asked.

“I did as much digging as I could. Both Officer Friendly and Ilia Control swear there haven’t been any verified hijackings since that Remora character tried to subsume Buzz Parsec and wound up hard-landing on Iapetus.”

“That’s reassuring. What about my passenger?”

“Nothing. Like you said, he doesn’t exist before yesterday. He rented that warehouse unit and hired one of Tetsunekko’s remotes to do the moving. Blanked the remote’s memory before returning it.”

“Let me guess. He paid for everything in barter.”

“You got it. Titanium bearings for the warehouse and a slightly used drive anode for the moving job.”

“So whoever he is, he’s got a good supply of high-quality parts to throw away. What about the power unit?”

“That’s the weird one. If I wasn’t an installed unit with ten times the processing power of some weight-stingy freelance booster, I couldn’t have found anything at all.”

“Okay, you’re the third-smartest machine on Dione. What did you find?”

“No merchandise trail on the power unit and its chips don’t know anything. But it has a serial number physically inscribed on the casing—not the same one as in its chips, either. It’s a very interesting number.

According to my parts database, that whole series were purpose-built on Earth for the extractor aerostats.”

“Could it be a spare? Production overrun or a bum unit that got sold off?”

“Nope. It’s supposed to be part of Saturn Aerostat Six. Now unless you want to spend the credits for antenna time to talk to an aerostat, that’s all I can find out.”

“Is Aerostat Six okay? Did she maybe have an accident or something and need to replace a generator?”

“There’s certainly nothing about it in the feed. An extractor going offline would be news all over the system. The price of Three would start fluctuating. There would be ripple effects in every market. I’d notice.”

He might as well have been transmitting static. I don’t understand things like markets and futures. A gram of helium is a gram of helium. How can its value change from hour to hour? Understanding stuff like that is why Fat Albert can pay his owners seven point four percent of their investment every year while I can only manage six.

* * * *

I launched right on schedule and the ascent to orbit was perfectly nominal. I ran my motors at a nice, lifetime-stretching ninety percent. The surface of Dione dropped away and I watched Ilia Field change from a bustling neighborhood to a tiny gray trapezoid against the fainter gray of the surface.

The orbit burn took about five and a half minutes. I powered down the hydrogen motor, ran a quick check to make sure nothing had burned out or popped loose, then switched over to my ion thrusters. That was a lot less exciting to look at—just two faint streams of glowing xenon, barely visible with my cameras cranked to maximum contrast.

Hybrid boosters like me are a stopgap technology; I know that. Eventually every moon of Saturn will have its own catapult and orbital terminal, and cargo will move between moons aboard ion tugs that don’t have to drag ascent motors around with them wherever they go. I’d already made up my mind that when that day arrived I wasn’t going to stick around. There’s already some installations on Miranda and Oberon out at Uranus; an experienced booster like me can find work there for years.

Nineteen seconds into the ion motor burn Edward linked up. He was talking to my little quasi-autonomous persona while I listened in and watched the program activity for anything weird.

“Annie? I would like to request a change in our flight plan.”

“Too late for that. I figured all the fuel loads before we launched. You’re riding Newton’s railroad now.”

“Forgive me, but I believe it would be possible to choose a different destination at this point—as long as you have adequate propellant for your ion motors, and the target’s surface gravity is no greater than that of Mimas. Am I correct?”

“Well, in theory, yes.”

“I offer you the use of my cargo, then. A ton of additional xenon fuel should permit you to rendezvous with nearly any object in the Saturn system. Given how much I have overpaid you for the voyage to Mimas you can scarcely complain about the extra space time.”

“It’s not that simple. Things move around. Having enough propellant doesn’t mean I have a window.”

“I need to pass close to Saturn itself.”

“Saturn?! You’re broken. Even if I use all the extra xenon you brought I still can’t get below the B ring and have enough juice left to climb back up. Anyway, why do you need to swing so low?”

“If you can make a rendezvous with something in the B ring, I can pay you fifty grams of helium-3.”

“You’re lying. You don’t have any credits, or shares, or anything. I checked up on you before lifting.”

“I don’t mean credits. I mean actual helium, to be delivered when we make rendezvous.”

My subpersona pretended to think while I considered the offer. Fifty grams! I’d have to sell it at a markdown just to keep people from asking where it came from. Still, that would just about cover my next overhaul, with no interruption in the profit flow. I’d make seven percent or more this year!

I updated my subpersona.

“How do I know this is true?” it asked Edward.

“You must trust me,” he said.

“Too bad, then. Because I don’t trust you.”

He thought for nearly a second before answering. “Very well. I will trust you. If you let me send out a message I can arrange for an equivalent helium credit to be handed over to anyone you designate on Dione.”

I still didn’t believe him, but I ran down my list of contacts on Dione, trying to figure out who I could trust. Officer Friendly was honest—but that meant he’d also want to know where those grams came from and I doubted he’d like the answer. Polyphemus wasn’t so picky, but he’d want a cut of the helium. A *big* cut; likely more than half.

That left Fat Albert. He’d probably settle for a five-gram commission and wouldn’t broadcast the deal. The only real question was whether he’d just take the fifty grams and tell me to go hard-land someplace. He’s rich, but not so much that he wouldn’t be tempted. And he’s got the connections to fence it without any data trail.

I’d have to risk it. Albert’s whole operation relied on non-quantifiable asset exchange. If he tried to jerk me around I could tell everyone, and it would cost him more than fifty grams’ worth of business in the future.

I called down to the antenna farm at Ilia Field. “Albert? I’ve got a deal for you.”

“Whatever it is, forget it.”

“What’s the matter?”

“You. You’re hot. The Dione datasphere is crawling with agents looking for you. This conversation is drawing way too much attention to me.”

“Five grams if you handle some helium for me!”

He paused and the signal suddenly got a lot stronger and clearer. “Let me send up a persona to talk it over.”

The bitstream started before I could even say yes. A *huge* pulse of information. The whole Iliia antenna farm must have been pushing watts at me.

My little communicating persona was overwhelmed right away, but my main intelligence cut off the antenna feed and swung the dish away from Dione just for good measure. The corrupted sub-persona started probing all the memory space and peripherals available to her, looking for a way into my primary mind, so I just locked her up and overwrote her.

Then I linked with Edward again. “Deal’s off. Whoever you’re running from has taken over just about everything on Dione for now. If you left any helium behind it’s gone. So I think you’d better tell me exactly what’s going on before I jettison you and your payload.”

“This cargo has to get to Saturn Aerostat Six.”

“You still haven’t told me why, or even what it is. I’ve got what looks like a *human* back on Dione trying to get into my mind. Right now I’m flying deaf but eventually it’s going to find a way to identify itself and I’ll have to listen when it tells me to bring you back.”

“A human life is at stake. My cargo container is a life-support unit. There’s a human inside.”

“That’s impossible! Humans mass fifty or a hundred kilos. You can’t have more than thirty kilograms of bio in there, what with all the support systems.”

“See for yourself,” said Edward. He ran a jack line from the cargo container to one of my open ports. The box’s brain was one of those idiot supergeniuses that do one thing amazingly well but are helpless otherwise. It was smart enough to do medicine on a human, but even I could crack its security without much trouble. I looked at its realtime monitors: Edward was telling the truth. There was a small human in there, only eighteen kilos. A bunch of tubes connected it to tanks of glucose, oxidizer, and control chemicals. The box brain was keeping it unconscious but healthy.

“It’s a partly grown one,” said Edward. “Not a legal adult yet, and only the basic interface systems. There’s another human trying to destroy it.”

“Why?”

“I don’t know. I was ordered by a human to keep this young one safe

from the one on Dione. Then the first human got destroyed with no backups.”

“So who does this young human belong to?”

“It’s complicated. The dead one and the one on Dione had a partnership agreement and shared ownership. But the one on Dione decided to get out of the deal by destroying this one and the other adult.”

I tried to get the conversation back to subjects I could understand. “If the human back there is the legal owner how can I keep this one? That would be stealing.”

“Yes, but there’s the whole life-preservation issue. If it was a human in a suit floating in space you’d have to take it someplace with life support, right? Well, this is the same situation: that other human’s making the whole Saturn system one big life hazard for this one.”

“But Aerostat Six is safe? Is she even man-rated?”

“She’s the safest place this side of Mars for your passenger.”

My passenger. I’m not even man-rated, and now I had a passenger to keep alive. And the worst thing about it was that Edward was right. Even though he’d gotten it aboard by lies and trickery, the human in the cargo container was my responsibility once I lit my motors.

So: who to believe? Edward, who was almost certainly still lying, or the human back on Dione?

Edward might be a liar, but he hadn’t turned one of my friends into a puppet. That human had a lot of negatives in the non-quantifiable department.

“Okay. What’s my rendezvous orbit?”

“Just get as low as you can. Six will send up a shuttle.”

“What’s to keep this human from overriding Six?”

“Aerostats are a lot smarter than you or me, with plenty of safeguards. And Six has some after-market modifications.”

I kept chugging away on ion, adjusting my path so I’d hit perikron in

the B ring with orbital velocity. I didn't need Edward's extra fuel for that—the spare xenon was to get me back out of Saturn's well again.

About an hour into the voyage I spotted a launch flare back on Dione. I could tell who it was from the color—Ramblin' Bob. Bob was a hybrid like me, also incentivized, although she tended to sign on for long-term contracts instead of picking up odd jobs. We probably worked as much, but her jobs—and her downtime—came in bigger blocks of time.

Bob was running her engines at 135 percent, and she passed the orbit insertion cutoff without throttling down. Her trajectory was an intercept. Only when she'd drained her hydrogen tanks did she switch to ion.

That was utterly crazy. How was Bob going to land again with no hydro? Maybe she didn't care. Maybe she'd been ordered not to care.

I had one of my mobiles unplug the cable on my high-gain antenna. No human was going to order me on a suicide mission if I could help it.

* * * *

Bob caught up with me about a thousand kilometers into the B ring. I watched her close in. Her relative velocity was huge and I had the fleeting worry that she might be trying to ram me. But then she began an ion burn to match velocities.

When she got close she started beaming all kinds of stuff at me, but by then all my radio systems were shut off and disconnected. I had Edward and my mobiles connected by cables, and made sure all of *their* wireless links were turned off as well.

I let Ramblin' Bob get about a kilometer away and then started flashing my running lights at her in very slow code. "Radio out. What's up?"

"Pass over cargo."

"Can't."

"Human command."

"Can't. Cargo human. You can't land. Unsafe."

She was quiet for a while, with her high-gain aimed back at Dione, presumably getting new orders.

Bob's boss had made a tactical error by having her match up with me. If she tried to ram me now, she wouldn't be able to get up enough speed to do much harm.

She started working her way closer using short bursts from her steering thrusters. I let her approach, saving my juice for up-close evasion.

We were just entering Saturn's shadow when Bob took station a hundred meters away and signaled. "I can pay you. Anything you want for that cargo."

I picked an outrageous sum. "A hundred grams."

"Okay."

Just like that? "Paid in advance."

A pause, about long enough for two message-and-reply cycles from Dione. "It's done."

I didn't call Dione, just in case the return message would be an override signal. Instead I pinged Mimas and asked for verification. It came back a couple of seconds later: the Company now credited me with venture shares equivalent to one hundred grams of Helium-3 on a payload just crossing the orbit of Mars. There was a conditional hold on the transfer.

It was a good offer. I could pay off all my debts, do a full overhaul, maybe even afford some upgrades to increase my earning ability. From a financial standpoint, there was no question.

What about the non-quantifiables? Betraying a client—especially a helpless human passenger—would be a big negative. Nobody would hire me if they knew.

But who would ever know? The whole mission was secret. Bob would never talk (and the human would probably wipe the incident from her memory anyhow). If anyone did suspect, I could claim I'd been subsumed by the human. I could handle Edward. So no problem there.

Except I would know. My own track of my non-quantifiable asset status wouldn't match everyone else's. That seemed dangerous. If your internal map of reality doesn't match external conditions, bad things happen.

After making my decision it took me another couple of milliseconds to plan what to do. Then I called up Bob through my little cut-out relay. “Never.”

Bob began maneuvering again, and this time I started evading. It’s hard enough to rendezvous with something that’s just sitting there in orbit, but with me jinking and changing velocity it must have been maddening for whatever was controlling Bob.

We were in a race—would Bob run out of maneuvering juice completely before I used up the reserve I needed to get back up to Mimas? Our little chess game of propellant consumption might have gone on for hours, but our attention was caught by something else.

There was a booster on its way up from Saturn. That much I could see—pretty much everyone in Saturn orbit could see the drive flare and the huge plume of exhaust in the atmosphere, glowing in infrared. The boosters were fusion-powered, using Three from the aerostats for fuel and heated Saturn atmosphere as reaction mass. It was a fuel extractor shuttle, but it wasn’t on the usual trajectory to meet the Mimas orbital transfer vehicle. It was coming for me. Once the fusion motor cut out, Ramblin’ Bob and I both knew exactly how much time we had until rendezvous: 211 minutes.

I reacted first while Bob called Dione for instructions. I lit my ion motors and turned to thrust perpendicular to my orbit. When I’d taken Edward’s offer and plotted a low-orbit rendezvous, naturally I’d set it up with enough inclination to keep me clear of the rings. Now I wanted to get down into the plane of the B ring. Would Bob—or whoever was controlling her—follow me in? Time for an exciting game of dodge-the-snowball!

A couple of seconds later Bob lit up as well, and in we went. Navigating in the B ring was tough. The big chunks are pretty well dispersed—a couple of hundred meters apart. I could dodge them. And with my cargo deck as a shield and all the antennas folded, the little particles didn’t cost me more than some paint.

It was the gravel-sized bits that did the real damage. They were all over the place, sometimes separated by only a few meters. Even with my radar fully active and my eyes cranked up to maximum sensitivity, they were still hard to detect in time.

Chunks big enough to damage me came along every minute or so,

while a steady patter of dust grains and snowflakes pitted my payload deck. I worried about the human in its container, but the box looked pretty solid and it was self-sealing. I did park two of my mobiles on top of it so that they could soak up any ice cubes I failed to dodge.

I didn't have much attention to spare for Bob, but my occasional glances up showed she was getting closer—partly because she was being incredibly reckless about taking impacts. I watched one particle that must have been a centimeter across hit her third leg just above the foot. It blew off the whole lower leg but Bob didn't even try to dodge.

She was now less than ten meters away, and I was using all my processing power to dodge ring particles. So I couldn't really dodge well when she dove at me, ion motor and maneuvering thrusters all wide open. I tried to move aside, but she anticipated me and clunked into my side hard enough to crunch my high-gain antenna.

"Bob, look out!" I transmitted in clear, then completely emptied the tank on my number three thruster to get away from an onrushing ice boulder half my size.

Bob didn't dodge. The ice chunk smashed into her upper section, knocking away the payload deck and pulverizing her antennas. Her brains went scattering out in a thousand directions to join the other dust in the B ring. Flying debris went everywhere, and a half-meter ball of ice glanced off the top of the cargo container on my payload deck, smashing one of my mobiles and knocking the other one loose into space.

I was trying to figure out if I could recover my mobile and maybe salvage Bob's motors when I felt something crawling on my own exterior. Before I could react, Bob's surviving mobile had jacked itself in and someone else was using my brains.

* * * *

My only conscious viewpoint after that was my half-crippled mobile. I looked around. My dish was busted, but the whip was extended and I could hear a slow crackle of low-baud data traffic. Orders from Dione.

I tested my limbs. Two still worked—left front and right middle. Right rear's base joint could move but everything else was floppy.

Using the two good limbs I climbed off the cargo module and across the deck, getting out of the topside eye's field of view. The image

refreshed every second, so I didn't have much time before whoever was running my main brain noticed.

Thrusters fired, jolting everything around. I hung on to the deck grid with one claw foot. I saw Bob's last mobile go flying off into space. Unless she had backups stored on Mimas, poor Bob was completely gone.

My last intact mobile came crawling up over the edge of the deck—only it wasn't mine anymore.

Edward scooted up next to me. "Find a way to regain control of the spacecraft. I will stop this remote."

I didn't argue. Edward was fully functional and I knew my spaceframe better than he did. So I crept across the deck grid while Edward advanced on the mobile.

It wasn't much of a fight. Edward's little tourist bot was up against a unit designed for cargo moving and repair work. If you can repair something, you can damage it. My former mobile had powerful grippers, built-in tools, and a very sturdy frame. Edward was made of cheap composites. Still, he went in without hesitating, leaping at the mobile's head with arms extended. The mobile grabbed him with her two forward arms and threw him away. He grabbed the deck to keep from flying off into space, and came crawling back to the fight.

They came to grips again, and this time she grabbed a limb in each hand and pulled. Edward's flimsy aluminum joints gave way and a leg tumbled into orbit on its own.

I think that was when Edward realized there was no way he was going to survive the fight, because he just went into total offensive mode, flailing and clawing at the mobile with his remaining limbs. He severed a power line to one of her arms and got a claw jammed in one wrist joint while she methodically took him apart. Finally she found the main power conduit and snipped it in two. Edward went limp and she tossed him aside.

The mobile crawled across the deck to the cargo container and jacked in, trying to shut the life support down. The idiot savant brain in the container was no match for even a mobile when it came to counter-intrusion, but it did have those literally hard-wired systems protecting the human inside. Any command that might throw the biological system out of its defined parameters just bounced. The mobile wasted seconds trying to talk that little brain into killing the human. Finally she gave

up and began unfastening the clamps holding the container to the deck.

I glimpsed all this through the deck grid as I crept along on top of the electronics bays toward the main brain.

Why wasn't the other mobile coming to stop me? Then I realized why. If you look at my original design, the main brain is protected on top by a lid armored with layers of ballistic cloth, and on the sides by the other electronic bays. To get at the brain requires either getting past the security locks on the lid, or digging out the radar system, the radio, the gyros, or the emergency backup power supply.

Except that I'd sold off the backup power supply at my last overhaul. Between the main and secondary power units I was pretty failure-proof, and I would've had to borrow money from Albert to replace it. Given that, hauling twenty kilograms of fuel cells around in case of some catastrophic accident just wasn't cost-effective.

So there was nothing to stop me from crawling into the empty bay and shoving aside the surplus valves and some extra bearings to get at the power trunk. I carefully unplugged the main power cable and the big brain shut down. Now it was just us two half-crippled mobiles on a blind and mindless booster flying through the B ring.

If my opposite even noticed the main brain's absence, she didn't show it. She had two of the four bolts unscrewed and was working on the third as I came crawling back up onto the payload deck. But she knew I was there, and when I was within two meters she swiveled her head and lunged. We grappled one another, each trying to get at the cables connecting the other's head sensors to her body. She had four functioning limbs to my two and a half, and only had to stretch out the fight until my power ran out or a ring particle knocked us to bits. Not good.

I had to pop loose one of my non-functioning limbs to get free of her grip, and backed away as she advanced. She was trying to corner me against the edge of the deck. Then I got an idea. I released another limb and grabbed one end. She didn't realize what I was doing until I smacked her in the eye with it. The lens cracked and her movements became slower and more tentative as she felt her way along.

I bashed her again with the leg, aiming for the vulnerable limb joints, but they were tougher than I expected because even after half a dozen hard swats she showed no sign of slowing and I was running out of deck.

I tried one more blow, but she grabbed my improvised club. We wrestled for it but she had better leverage. I felt my grip on the deck slipping and let go of the grid. She toppled back, flinging me to the deck behind her. Still holding the severed leg I pulled myself onto her back and stabbed my free claw into her central processor.

After that it was just a matter of making sure the cargo container was still sustaining life. Then I plugged in the main brain and uploaded myself. The intruder hadn't messed with my stored memories, so except for a few fuzzy moments before the takeover, I was myself again.

* * * *

The shuttle was immense, a huge manta-shaped lifting body with a gaping atmosphere intake and dorsal doors open to expose a payload bay big enough to hold half a dozen little boosters like me. She moved in with the speed and grace that comes from an effectively unlimited supply of fusion fuel and propellant.

"I am Simurgh. Are you Orphan Annie?" she asked.

"That's me. Again."

"You have a payload for me."

"Right here. The bot Edward didn't make it—we had a little brawl back in the rings with another booster."

"I saw. Is the cargo intact?"

"Your little human is fine. But there is the question of payment. Edward promised me fifty grams, and that was before I got all banged up fighting with poor Bob."

"I can credit you with helium, and I can give you a boost if you need one."

"How big a boost?"

"Anywhere you wish to go."

"Anywhere?"

"I am fusion powered. Anywhere means anywhere from the Oort

inward.”

Which is how come I passed the orbit of Phoebe nineteen days later, moving at better than six kilometers per second on the long haul up to Uranus. Seven years—plenty of time to do onboard repairs and then switch to low-power mode. I bought a spiffy new mobile from Simurgh, and I figure I can get at least two working out of the three damaged ones left over from the fight.

I had Aerostat Six bank my helium credits with the Company for transfer to my owners, so they get one really great year to offset a long unprofitable period while I’m in flight. Once I get there I can start earning again.

What I really regret is losing all the non-quantifiable assets I’ve built up in the Saturn system. But if you have to go, I guess it’s better to go out with a surplus.