

Back to Venus, with a difference. This is the astronomical Venus, not the romantic vision of "The Doors of His Face, the Lamps of His Mouth." (But notice the sea images, even in this rationalist's view of the Planet of Love.)

Like all Lorry Niven's stories, this one is solidly based on present-day science and technology, and it contains a neat, nasty problem: if something goes wrong with a spacecraft whose control system is a Cyborgpart human, part wires and transistors is the trouble mechanical or psychological? And how do you find out before it kills you?

BECALMED IN HELL

Larry Niven

I could feel the heat hovering outside. In the cabin it was bright and dry and cool, almost too cool, like a modern office building in the dead of the summer. Beyond the two small windows it was as black as it ever gets in the solar system, and hot enough to melt lead, at a pressure equivalent to three hundred feet beneath the ocean.

"There goes a fish," I said, just to break the monotony.

"So how's it cooked?"

"Can't tell. It seems to be leaving a trail of breadcrumbs.

Fried? Imagine that, Eric! A fried jellyfish."

Eric sighed noisily. "Do I have to?"

"You have to. Only way you'll see anything worthwhile in this" Soup? Fog? Boiling maple syrup?

"Searing black calm."

"Right."

"Someone dreamed up that phrase when I was a kid, just after the news of the Mariner II probe. An eternal searing black calm, hot as a kiln, under an atmosphere thick enough to keep any light or any breath of wind from ever reaching the surface."

I shivered. "What's the outside temperature now?"

"You'd rather not know. You've always had too much imagination, Howie."

"I can take it, Doc."

"Six hundred and twelve degrees."

"I can't take it, Doc!"

This was Venus, Planet of Love, favorite of the science-fiction writers of three decades ago. Our ship hung below the Earth-to-Venus hydrogen fuel tank, twenty miles up and all but motionless in the syrupy air. The tank, nearly empty now, made an excellent blimp. It would keep us aloft as long as the internal pressure matched the external. That was Eric's job, to regulate the tank's pressure by regulating the temperature of the hydrogen gas. We had collected air samples after each ten mile drop from three hundred miles on down, and temperature readings for shorter intervals, and we had dropped the small probe. The data we had gotten from the surface merely confirmed in detail our previous knowledge of the hottest world in the solar system.

"Temperature just went up to six-thirteen," said Eric. "Look, are you through hitching?"

"For the moment."

"Good. Strap down. We're taking off."

"Oh frabjous day!" I started untangling the crash webbing over my couch.

"We've done everything we came to do. Haven't we?"

"Am I arguing? Look, I'm strapped down."

"Yeah."

I knew why he was reluctant to leave. I felt a touch of it myself. We'd spent four months getting to Venus in order to spend a week circling her and less than two days in her upper atmosphere, and it seemed a terrible waste of time.

But he was taking too long. "What's the trouble, Eric?"

"You'd rather not know."

He meant it. His voice was a mechanical, inhuman monotone; he wasn't making the extra effort to get human expression out of his "prosthetic" vocal apparatus. Only a severe shock would affect him that way.

"I can take it," I said.

"Okay. I can't feel anything in the ramjet controls. Feels like I've just had a spinal anaesthetic."

The cold in the cabin drained into me, all of it. "See if you can send motor impulses the other way. You could run the rams by guess-and-hope even if you can't feel them."

"Okay." One split second later, "They don't. Nothing happens. Good thinking though."

I tried to think of something to say while I untied myself from the couch. What came out was, "It's been a pleasure knowing you, Eric. I've liked being half of this team, and I still do."

"Get maudlin later. Right now, start checking my attachments. Carefully."

I swallowed my comments and went to open the access door in the cabin's forward wall. The floor swayed ever so gently beneath my feet.

Beyond the four-foot-square access door was Eric. Eric's central nervous system, with the brain perched at the top and the spinal cord coiled in a loose spiral to fit more compactly into the transparent glass-and-sponge-plastic housing. Hundreds of wires from all over the ship led to the glass walls, where they were joined to selected nerves which spread like an electrical network from the central coil of nervous tissue and fatty protective membrane.

Space leaves no cripples; and don't call Eric a cripple, because he doesn't like it. In a way he's the ideal spaceman. His life support system weighs only half of what mine does, and takes up a twelfth as much room. But his other prosthetic aids take up most of the ship. The ramjets were hooked into the last pair of nerve trunks, the nerves which once moved his legs, and dozens of finer nerves in those trunks sensed and regulated fuel feed, ram temperature, differential acceleration, intake aperture dilation, and spark pulse.

These connections were intact. I checked them four different ways without finding the slightest reason why they shouldn't be working.

"Test the others," said Eric.

It took a good two hours to check every trunk nerve connection. They were all solid. The blood pump was chugging along, and the fluid was rich enough, which killed the idea that the ram nerves might have "gone to sleep" from lack of nutrients or oxygen. Since the lab is one of his prosthetic aids, I let Eric analyse his own blood sugar, hoping that the "liver" had goofed and was producing some other form of sugar. The conclusions were appalling. There was nothing wrong with Eric inside the cabin.

"Eric, you're healthier than I am."

"I could tell. You looked worried, son, and I don't blame you. Now you'll have to go outside."

"I know. Let's dig out the suit."

It was in the emergency tools locker, the Venus suit that was never supposed to be used. NASA had designed it for use at Venusian ground level. Then they had refused to okay the ship below twenty miles until they knew more about the planet. The suit was a segmented armor job. I had watched it being tested in the heat-and-pressure box at Cal Tech, and I knew that the joints stopped moving after five hours, and wouldn't start again until they had been cooled. Now I opened the locker and pulled the suit out by the shoulders and held it in front of me. It seemed to be staring back.

"You still can't feel anything in the ramjets?"

"Not a twinge."

I started to put on the suit, piece by piece like medieval armor. Then I thought of something else. "We're twenty miles up. Are you going to ask me to do a balancing act on the hull?"

"No! Wouldn't think of it. We'll just have to go down."

The lift from the blimp tank was supposed to be constant until takeoff. When the time came Eric could get extra lift by heating the hydrogen to higher pressure, then cracking a valve to let the excess out. Of course he'd have to be very careful that the pressure was higher in the tank, or we'd get Venusian air coming in, and the ship would fall instead of rising. Naturally that would be disastrous.

So Eric lowered the tank temperature and cracked the valve, and down we went.

"Of course there's a catch," said Eric.

"I know."

"The ship stood the pressure twenty miles up. At ground level it'll be six times that."

"I know."

We fell fast, with the cabin tilted forward by the drag on our tailfins. The temperature rose gradually. The pressure went up fast. I sat at the window and saw nothing, nothing but black, but I sat there anyway and waited for the window to crack. NASA had refused to okay the ship below twenty miles : . .

Eric said, "The blimp tank's okay, and so's the ship, I think. But will the cabin stand up to it?"

"I wouldn't know."

"Ten miles."

Five hundred miles above us, unreachable, was the atomic ion engine that was to take us home. We couldn't get to it on the chemical rocket alone. The rocket was for use after the air became too thin for the ramjets.

"Four miles. Have to crack the valve again."

The ship dropped.

"I can see ground," said Eric.

I couldn't. Eric caught me straining my eyes and said, "Forget it. I'm using deep infrared, and getting no detail."

"No vast, misty swamps with weird, terrifying monsters and man-eating plants?"

"All I see is hot, bare dirt."

But we were almost down, and there were no cracks in the cabin wall. My neck and shoulder muscles loosened. I turned away from the window. Hours had passed while we dropped through the poisoned, thickening air. I already had most of my suit on. Now I screwed on my helmet and three-finger gantlets.

"Strap down," said Eric. I did.

We bumped gently. The ship tilted a little, swayed back, bumped again. And again, with my teeth rattling and my armor-plated body rolling against the crash webbing. "Damn," Eric muttered. I heard the hiss from above. Eric said, "I don't know how we'll get back up."

Neither did I. The ship bumped hard and stayed down, and I got up and went to the airlock.

"Good luck," said Eric. "Don't stay out too long." I waved at his cabin camera. The outside temperature was seven hundred and thirty.

The outer door opened. My suit refrigerating unit set up a complaining whine. With an empty bucket in each hand, and with my headlamp blazing a way through the black murk, I stepped out onto the right wing.

My suit creaked and settled under the pressure, and I stood on the wing and waited for it to stop. It was almost like being under water. My headlamp beam went out thick enough to be solid, penetrating no more than a hundred feet. The air couldn't have been that opaque, no matter how dense. It must have been full of dust, or tiny droplets of some fluid.

The wing ran back like a knife-edged running board, widening toward the tail until it spread into a tailfin. The two tailfins met back of the fuselage. At the tailfin tip was the ram, a big sculptured cylinder with an atomic engine inside. It wouldn't be hot because it hadn't been used yet, but I had my counter anyway.

I fastened a line to the wing and slid to the ground. As long as we were *here* . . . The ground turned out to be a dry, reddish dirt, crumbly, and so porous that it was almost spongy. Lava etched by chemicals? Almost anything would be corrosive at this pressure and temperature. I scooped one pailful from the surface and another from underneath the first, then climbed up the line and left the buckets on the wing.

The wing was terribly slippery. I had to wear magnetic sandals to stay on. I walked up and back along the two hundred foot length of the ship, making a casual inspection. Neither wing nor fuselage showed damage. Why not? If a meteor or something had cut Eric's contact with his sensors in the rams, there should have been evidence of a break in the surface.

Then, almost suddenly, I realized that there was an alternative.

It was too vague a suspicion to put into words yet, and I still had to finish the inspection. Telling Eric would be very difficult if I was right.

Four inspection panels were set into the wing, well protected from the reentry heat. One was halfway back on the fuselage, below the lower edge of the blimp tank, which was molded to the fuselage in such a way that from the front the ship looked like a dolphin. Two more were in the trailing edge of the tailfin, and the fourth was in the ram itself. All opened, with powered screwdriver on recessed screws, on junctions of the ship's electrical system.

There was nothing out of place under any of the panels. By making and breaking contacts and getting Eric's reactions, I found that his sensation ended somewhere between the second and third inspection panels. It was the same story on the left wing. No external damage, nothing wrong at the junctions. I climbed back to ground and walked slowly beneath the length of each wing, my headlamp tilted up. No damage underneath.

I collected my buckets and went back inside.

"A bone to pick?" Eric was puzzled. "Isn't this a strange time to start an argument? Save it for space. We'll have four months with nothing else to do."

"This can't wait. First of all, did you notice anything I didn't?" He'd been watching everything I saw and did through the peeper in my helmet.

"No. I'd have yelled."

"Okay. Now get this.

"The break in your circuits isn't inside, because you get sensation up to the second wing inspection panels. It isn't outside because there's no evidence of damage, not even corrosion spots. "That leaves only one place for the flaw."

"Go on."

"We also have the puzzle of why you're paralyzed in both rams. Why should they both go wrong at the same time? There's only one place in the ship where the circuits join."

"What? Oh, yes, I see. They join through me."

"Now let's assume for the moment that you're the piece with the flaw in it. You're not a piece of machinery, Eric. If something's wrong with you it isn't medical. That was the first thing we covered. But it could be psychological."

"It's nice to know you think I'm human. So I've slipped a cam, have I?"

"Slightly. I think you've got a case of what used to be called trigger anaesthesia. A soldier who kills too often sometimes finds that his right index finger or even his whole hand has gone numb, as if it were no longer a part of him. Your comment about not being a machine is important, Eric. I think that's the whole problem. You've never really believed that any part of the ship is a part of *you*. That's intelligent, because it's true. Every time the ship is redesigned you get a new set of parts, and it's right to avoid thinking of a change of model as a series of amputations." I'd been rehearsing this speech, trying to put it so that Eric would have no choice but to believe me. Now I know that it must have sounded phony. "But now you've gone too far. Subconsciously you've stopped believing that the rams can *feel* like a part of you, which they were designed to do. So you've persuaded yourself that you don't feel anything."

With my prepared speech done, and nothing left to say, I stopped talking and waited for the explosion.

"You make good sense," said Eric.

I was staggered. "You agree?"

"I didn't say that. You spin an elegant theory, but I want time to think about it. What do we do if it's true?"

"Why. . . I don't know. You'll just have to cure yourself."

"Okay. Now here's *my* idea. I propose that you thought up this theory to relieve yourself of a responsibility for getting us home alive. It puts the whole problem in my lap, metaphorically speaking."

"Oh, for-"

"Shut up. I haven't said you're wrong. That would be an ad hominem argument. We need time to think about this."

It was lights-out, four hours later, before Eric would return to the subject.

"Howie, do me a favor. Assume for awhile that something mechanical is causing all our trouble. I'll assume it's psychosomatic."

"Seems reasonable."

"It is reasonable. What can you do if I've gone psychosomatic? What can I do if it's mechanical? I can't go around inspecting myself. We'd each better stick to what we know."

"It's a deal." I turned him off for the night and went to bed.

But not to sleep.

With the lights off it was just like outside. I turned them back on. It wouldn't wake Eric. Eric never sleeps normally, since his blood doesn't accumulate fatigue poisons, and he'd go mad from being awake all the time if he didn't have a Russian sleep inducer plate near his cortex. The ship could implode without waking Eric when his sleep inducer's on. But I felt foolish being

afraid of the dark.

While the dark stayed outside it was all right.

But it wouldn't stay there. It had invaded my partner's mind. Because his chemical checks guard him against chemical insanities like schizophrenia, we'd assumed he was permanently sane. But how could any prosthetic device protect him from his own imagination, his own misplaced common sense?

I couldn't keep my bargain. I knew I was right. But what could I do about it?

Hindsight is wonderful. I could see exactly what our mistake had been, Eric's and mine and the hundreds of men who had built his life support after the crash. "There was nothing left of Eric then except the intact central nervous system, and no glands except the pituitary. "We'll regulate his blood composition," they said, "and he'll always be cool, calm, and collected. No panic reactions from Eric!"

I know a girl whose father had an accident when he was forty-five or so. He was out with his brother, the girl's uncle, on a fishing trip. They were blind drunk when they started home, and the guy was riding on the hood while the brother drove. Then the brother made a sudden stop. Our hero left two important glands on the hood ornament.

The only change in his sex life was that his wife stopped worrying about late pregnancy. His *habits* were developed.

Eric doesn't need adrenal glands to be afraid of death. His emotional patterns were fixed long before the day he tried to land a moonship without radar. He'd grab any excuse to believe that I'd fixed whatever was wrong with the ram connections.

But he was counting on me to do it.

The atmosphere leaned on the windows. Not wanting to, I reached out to touch the quartz with my fingertips. I couldn't feel the pressure. But it was there, inexorable as the tide smashing a rock into sand grains. How long would the cabin hold it back?

If some broken part were holding us here, how could I have missed finding it? Perhaps it had left no break in the surface of either wing. But how?

That was the angle.

Two cigarettes later I got up to get the sample buckets. They were empty, the alien dirt safely stored away. I filled them with water and put them in the cooler, set the cooler for 40 Absolute, then turned off the lights and went to bed.

The morning was blacker than the inside of a smoker's lungs. What Venus really needs, I decided, philosophizing on my back, is to lose ninety-nine percent of her air. That would give her a bit more than half as much air as Earth, which would lower the greenhouse effect enough to make the temperature livable. Drop Venus' gravity to near zero for a few weeks and the work would do itself.

The whole damn universe is waiting for us to discover antigravity.

"Morning," said Eric. "Thought of anything?"

"Yes." I rolled out of bed. "Now don't bug me with questions. I'll explain everything as I go."

"No breakfast?"

"Not yet."

Piece by piece I put my suit on, just like one of King Arthur's gentlemen, and went for the buckets only after the gantlets were on. The ice, in the cold section, was in the chilly neighborhood of absolute zero. "This is two buckets of ordinary ice," I said, holding them up. "Now let me out."

"I should keep you here till you talk," Eric groused. But the

doors opened and I went out onto the wing. I started talking while I unscrewed the number two right panel.

"Eric, think a moment about the tests they run on a manned ship before they'll let a man walk into the lifsystem. They test every part separately and in conjunction with other parts. Yet if something isn't working, either it's damaged or it wasn't tested right. Right?"

"Reasonable." He wasn't giving away anything.

"Well, nothing caused any damage. Not only is there no break in the ship's skin, but no coincidence could have made both rams go haywire at the same time. So something wasn't tested right."

I had the panel off. In the buckets the ice boiled gently where it touched the surfaces of the glass buckets. The blue ice cakes had cracked under their own internal pressure. I dumped one bucket into the maze of wiring and contacts and relays, and the ice shattered, giving me room to close the panel.

"So I thought of something last night, something that wasn't tested. Every part of the ship must have been in the heat-and-pressure box, exposed to artificial Venus conditions, but the ship as a whole, a unit, couldn't have been. It's too big." I'd circled around to the left wing and was opening the number three panel in the trailing edge. My remaining ice was half water and half small chips; I sloshed these in and fastened the panel. "What cut your circuits must have been the heat or the pressure or both. I can't help the pressure, but I'm cooling these relays with ice. Let me know which ram gets its sensation back first, and we'll know which inspection panel is the right one."

"Howie. Has it occurred to you what the cold water might do to those hot metals?"

"It could crack them. Then you'd lose all control over the ramjets, which is what's wrong right now."

"Uh. Your point, partner. But I still can't feel anything."

I went back to the airlock with my empty buckets swinging, wondering if they'd get hot enough to melt. They might have, but I wasn't out that long. I had my suit off and was refilling the buckets when Eric said, "I can feel the right ram."

"How extensive? Full control?"

"No. I can't feel the temperature. Oh, here it comes. We're all set, Howie."

My sigh of relief was sincere.

I put the buckets in the freezer again. We'd certainly want to take off with the relays cold. The water had been chilling for perhaps twenty minutes when Eric reported, "Sensation's going."

"What?"

"Sensation's going. No temperature, and I'm losing fuel feed control. It doesn't stay cold long enough."

"Ouch! Now what?"

"I hate to tell you. I'd almost rather let you figure it out for yourself."

I had. "We go as high as we can on the blimp tank, then I go out on the wing with a bucket of ice in each hand"

We had to raise the blimp tank temperature to almost eight hundred degrees to get pressure, but from then on we went up in good shape. To sixteen miles. It took three hours.

"That's as high as we go," said Eric. "You ready?"

I went to get the ice. Eric could see me, he didn't need an answer. He opened the airlock for me.

Fear I might have felt, or panic, or determination or self-sacrificebut there was nothing. I went out feeling like a used zombie.

My magnets were on full. It felt like I was walking through shallow tar. The air was thick, though not as heavy as it had been down there. I followed my headlamp to the number two panel, opened it, poured ice in, and threw the bucket high and far. The ice was in one cake. I couldn't close the panel. I left it open and hurried around to the other wing. The second bucket was filled with exploded chips; I sloshed them in and locked the number two left panel and came back with both hands free. It still looked like limbo in all directions, except where the headlamp cut a tunnel through the darkness, and my feet were getting hot. I closed the right panel on boiling water and sidled back along the hull into the airlock.

"Come in and strap down," said Eric. "Hurry!"

"Gotta get my suit off." My hands had started to shake from reaction. I couldn't work the clamps.

"No you don't. If we start right now we may get home. Leave the suit on and come in."

I did. As I pulled my webbing shut, the rams roared. The ship shuddered a little, then pushed forward as we dropped from under the blimp tank. Pressure mounted as the rams reached operating speed. Eric was giving it all he had. It would have been uncomfortable even without the metal suit around me. With the suit on it was torture. My couch was afire from the suit, but I couldn't get breath to say so. We were going almost straight up.

We had gone twenty minutes when the ship jerked like a galvanized frog. "Ram's out," Eric said calmly. "I'll use the other." Another lurch as we dropped the dead one. The ship flew on like a wounded penguin, but still accelerating.

One minute . . . two . . .

The other ram quit. It was as if we'd run into molasses. Eric blew off the ram and the pressure eased. I could talk.

"Eric."

"What?"

"Got any marshmallows?"

"*What?* Oh, I see. Is your suit tight?"

"Sure."

"Live with it. We'll flush the smoke out later. I'm going to coast above some of this stuff, but when I use the rocket it'll be savage. No mercy."

"Will we make it?"

"I think so. It'll be close."

The relief came first, icy cold. Then the anger. "No more inexplicable numbnesses?" I asked.

"No. Why?"

"If any come up you'll be sure and tell me, won't you?"

"Are you getting at something?"

"Skip it." I wasn't angry any more.

"I'll be damned if I do. You know perfectly well it was mechanical trouble, you fool. You fixed it yourself!"

"No. I convinced you I must have fixed it. You needed to believe the rams *should* be working again. I gave you a miracle cure, Eric. I just hope I don't have to keep dreaming up new placebos for you all the way home."

"You thought that, but you went out on the wing sixteen miles up?" Eric's machinery snorted. "You've got guts where you need brains, Shorty."

. I didn't answer.

"Five thousand says the trouble was mechanical. We let the mechanics decide after we land."

"You're on."

"Here comes the rocket. Two, one"

It came, pushing me down into my metal suit. Sooty flames licked past my ears, writing black on the green metal ceiling, but the rosy mist before my eyes was not fire.

The man with the thick glasses spread a diagram of the Venus ship and jabbed a stubby finger at the trailing edge of the wing. "Right around here," he said. "The pressure from outside compressed the wiring channel a little, just enough so there was no room for the wire to bend. It had to act as if it were rigid, see? Then when the heat expanded the metal these contacts pushed past each other."

"I suppose it's the same design on both wings?"

He gave me a queer look. "Well, naturally."

I left my check for \$5000 in a pile of Eric's mail and hopped a plane for Brasilia. How he found me I'll never know, but the telegram arrived this morning.

HOWIE COME HOME ALL IS FORGIVEN
DONOVANS BRAIN

I guess I'll have to.