

HIS MASTER'S VOICE

Spaceship McGuire had lots of knowledge – but no wisdom. He was smart – but incredibly foolish. And, as a natural consequence, tended to ask questions too profound for any philosopher – questions like "Who are you?"

By RANDALL GARRETT

I'd been in Ravenhurst's office on the mountain-sized planetoid called Raven's Rest only twice before. The third time was no better; Shalimar Ravenhurst was one of the smartest operators in the Belt, but when it came to personal relationships, he was utterly incompetent. He could make anyone dislike him without trying.

When I entered the office, he was sitting behind his mahogany desk, his eyes focused on the operation he was going through with a wineglass and a decanter. He didn't look up at me as he said:

"Sit down, Mr. Oak. Will you have some Madeira?"

I decided I might as well observe the pleasantries. There was no point in my getting nasty until he did. "Thank you, Mr. Ravenhurst, I will."

He kept his eyes focused on his work: It isn't easy to pour wine on a planetoid where the gee-pull is measured in fractions of a centimeter per second squared. It moves stewily, like ropy molasses, but you have to be careful not to be fooled by that. The viscosity is just as low as ever, and if you pour it from any great height, it will go scooting right out of the glass again. The momentum it builds up is enough to make it splash right out again in a slow-motion gush which gets it all over the place.

Besides which, even if it didn't splash, it would take it so long to fall a few inches that you'd die of thirst waiting for it.

Ravenhurst had evolved a technique from long years of practice. He tilted the glass and the bottle toward each other, their edges touching, like you do when you're trying to pour beer without putting a head on it. As soon as the wine wet the glass, the adhesive forces at work would pull more wine into the wine glass. To get capillary action on a low-gee asteroid, you don't need a capillary, by any means. The negative meniscus on the wine was something to see; the first time you see it, you get the eerie feeling that the glass is spinning and throwing the wine up against the walls by centrifugal force.

I took the glass he offered me (Careful! Don't slosh!) and sipped at it. Using squirt tubes would have been a hell of a lot easier and neater, but Ravenhurst liked to do things his way.

He put the stopper back in the decanter, picked up his own glass and sipped appreciatively. Not until he put it back down on the desk again did he raise his eyes and look at me for the first time since I'd come in.

"Mr. Oak, you have caused me considerable trouble."

"I thought we'd hashed all that out, Mr. Ravenhurst," I said, keeping my voice level.

"So had I. But it appears that there were more ramifications to your action than we had at first supposed." His voice had the texture of heavy linseed oil.

He waited, as if he expected me to make some reply to that. When I didn't, he sighed slightly and

went on. "I fear that you have inadvertently sabotaged McGuire. You were commissioned to prevent sabotage, Mr. Oak, and I'm afraid that you abrogated your contract."

I just continued to keep my voice calm. "If you are trying to get back the fee you gave me, we can always take it to court. I don't think you'd win."

"Mr. Oak," he said heavily, "I am not a fool, regardless of what your own impression may be. If I were trying to get back that fee, I would hardly offer to pay you another one."

I didn't think he was a fool. You don't get into the managerial business and climb to the top and stay there unless you have brains. Ravenhurst was smart, all right; it was just that, when it came to personal relationships, he wasn't very wise.

"Then stop all this yak about an abrogated contract and get to the point," I told him.

"I shall. I was merely trying to point out to you that it is through your own actions that I find myself in a very trying position, and that your sense of honor and ethics should induce you to rectify the damage."

"My honor and ethics are in fine shape," I said, "but my interpretation of the concepts might not be quite the same as yours. Get to the point."

He took another sip of Madeira. "The robotocists at Viking tell me that, in order to prevent any further . . . ah . . . sabotage by unauthorized persons, the MGYR-7 was constructed so that, after activation, the first man who addressed orders to it would thenceforth be considered its . . . ah . . . master.

"As I understand it, the problem of defining the term 'human being' unambiguously to a robot is still unsolved. The robotocists felt that it would be much easier to define a single individual. That would prevent the issuing of conflicting orders to a robot, provided the single individual were careful in giving orders himself.

"Now, it appears that *you*, Mr. Oak, were the first man to speak to McGuire after he had been activated. Is that correct?"

"Is that question purely rhetorical," I asked him, putting on my best expression of innocent interest. "Or are you losing your memory?" I had explained all that to him two weeks before, when I'd brought McGuire and the girl here, so that Ravenhurst would have a chance to cover up what had really happened.

My sarcasm didn't faze him in the least. "Rhetorical. It follows that you are the only man whose orders McGuire will obey."

"Your robotocists can change that," I said. This time, I was giving him my version of "genuine" innocence. A man has to be a good actor to be a competent double agent, and I didn't want Ravenhurst to know that I knew a great deal more about the problem than he did.

He shook his head, making his jowls wobble. "No, they cannot. They realize now that there should be some way of making that change, but they failed to see that it would be necessary. Only by completely draining McGuire's memory banks and refilling them with new data can this bias be eliminated."

"Then why don't they do that?"

"There are two very good reasons," he said. And there was a shade of anger in his tone. "In the first place, that sort of operation takes time, and it costs money. If we do that, we might as well go ahead and make the slight changes in structure necessary to incorporate some of the improvements that the robotocists now feel are necessary. In other words, they might as well go ahead and build the MGYR-8, which is precisely the thing I hired you to prevent."

"It seems you have a point there, Mr. Ravenhurst." He'd hired me because things were shaky at Viking. If he lost too much more money on the McGuire experiment, he stood a good chance of losing his position as manager. If that happened some of his other managerial contracts might be canceled, too. Things like that can begin to snowball, and Ravenhurst might find himself out of the managerial business entirely.

"But," I went on, "hasn't the additional wasted time already cost you money?"

"It has. I was reluctant to call you in again—understandably enough, I think."

"Perfectly. It's mutual."

He ignored me. "I even considered going through with the rebuilding work, now that we have traced down the source of failure of the first six models. Unfortunately, that isn't feasible, either." He scowled at me.

"It seems," he went on, "that McGuire refuses to allow his brain to be tampered with. The self-preservation 'instinct' has come to the fore. He has refused to let the technicians and robotocists enter his hull, and he has threatened to take off and leave Ceres if any further attempts are made to . . . ah . . . disrupt his thinking processes."

"I can't say that I blame him," I said. "What do you want me to do? Go to Ceres and tell him to submit like a good boy?"

"It is too late for that, Mr. Oaks. Viking cannot stand any more of that kind of drain on its financial resources. I have been banking on the McGuire-type ships to put Viking Spacecraft ahead of every other spacecraft company in the System." He looked suddenly very grim and very determined. "Mr. Oak, I am *certain* that the robot ship is the answer to the transportation problems in the Solar System. For the sake of every human being in the Solar System, we *must* get the bugs out of McGuire!"

What's good for General Bullmoose is good for everybody, I quoted to myself. I'd have said it out loud, but I was fairly certain that Shalimar Ravenhurst was not a student of the classics.

"Mr. Oak, I would like you to go to Ceres and co-operate with the robotocists at Viking. When the MGYR-8 is finally built, I want it to be the prototype for a fast, safe, functional robot spaceship that can be turned out commercially. You can be of great service, Mr. Oak."

"In other words, I've got you over a barrel."

"I don't deny it."

"You know what my fees are, Mr. Ravenhurst. That's what you'll be charged. I'll expect to be paid weekly; if Viking goes broke, I don't want to lose more than a week's pay. On the other hand, if the MGYR-8 is successful, I will expect a substantial bonus."

"How much?"

"Exactly half of the cost of rebuilding. Half what it would take to build a Model 8 right now, and

taking a chance on there being no bugs in it."

He considered that, looking grimmer than ever. Then he said: "I will do it on the condition that the bonus be paid off in installments, one each six months for three years after the first successful commercial ship is built by Viking."

"My lawyer will nail you down on that wording," I said, "but it's a deal. Is these anything else?"

"No."

"Then I think I'll leave for Ceres before you break a blood vessel."

"You continue to amaze me, Mr. Oak," he said. And the soft oiliness of his voice was the oil of vitriol. "Your compassion for your fellow man is a facet of your personality that I had had not seen before. I shall welcome the opportunity to relax and allow my blood pressure to subside."

I could almost see Shalimar Ravenhurst suddenly exploding and adding his own touch of color to the room.

And, on that gruesome thought, I left. I let him have his small verbal triumph; if he'd known that I'd have taken on the job for almost nothing, he'd really have blown up.

Ten minutes later, I was in my vacuum suit, walking across the glaring, rough-polished rectangle of metal that was the landing field of Raven's Rest. The sun was near the zenith in the black, diamond-dusted sky, and the shadow of my flutterboat stood out like an inkblot on a bridal gown. I climbed in, started the engine, and released the magnetic anchor that held the little boat to the surface of the nickel-iron planetoid. I lifted her gently, worked her around until I was stationary in relation to the spinning planetoid, oriented myself against the stellar background, and headed toward the first blinker beacon on refway to Ceres.

For obvious economical reasons, it is impractical to use full-sized spaceships in the Belt. A flutterboat, with a single gravitoinertial engine and the few necessities of life—air, some water, and a very little food—still costs more than a Rolls-Royce automobile does on Earth, but there has to be some sort of individual transportation the Belt.

They can't be used for any great distance because a man can't stay in a vac suit very long without getting uncomfortable. You have to hop from beacon to beacon, which means that your *average* velocity doesn't amount to much, since you spend too much time accelerating and decelerating. But a flutterboat is enough to get around the neighborhood in, and that's all that's needed.

I got the GM-187 blinker in my sights, eased the acceleration up to one gee, relaxed to watch the radar screen while I thought over my coming ordeal with McGuire.

Testing spaceships, robotic or any other kind, is strictly not my business. The sign on the door of my office in New York says: *DANIEL OAK, Confidential Expediter*; I'm hired to help other people Get Things Done. Usually, if someone came to me with the problem of getting a spaceship test-piloted, I'd simply dig up the best test pilot in the business, hire him for my client, and forget about everything but collecting my fee. But I couldn't have refused this case if I'd wanted to. I'd already been assigned to it by someone a lot more important than Shalimar Ravenhurst.

Every schoolchild who has taken a course in Government Organization and Function can tell you that the Political Survey Division is a Branch of the System Census Bureau of the UN Government, and that

its job is to evaluate the political activities of various sub-governments all over the System.

And every one of those poor tykes would be dead wrong.

The Political Survey Division *does* evaluate political activity, all right, but it is the Secret Service of the UN Government. The vast majority of the System's citizens don't even know the Government has a Secret Service. I happen to know only because I'm an agent of the Political Survey Division.

The PSD was vitally interested in the whole McGuire project. Robots of McGuire's complexity had been built before; the robot that runs the traffic patterns of the American Eastern Seaboard is just as capable as McGuire when it comes to handling a tremendous number of variables and making decisions on them. But that robot didn't have to be given orders except in extreme emergencies. Keeping a few million cars moving and safe at the same time is actually pretty routine stuff for a robot. And a traffic robot isn't given orders verbally; it is given any orders that may be necessary via teletype by a trained programming technician. Those orders are usually in reference to a change of routing due to repair work on the highways or the like. The robot itself can take care of such emergencies as bad weather or even an accident caused by the malfunctioning of an individual automobile.

McGuire was different. In the first place, he was mobile. He was in command of a spacecraft. In a sense, he *was* the spacecraft, since it served him in a way that was analogous to the way a human body serves the human mind. And he wasn't in charge of millions of objects with a top velocity of a hundred and fifty miles an hour; he was in charge of a single object that moved at velocities of thousands of miles per second. Nor did he have a set, unmoving highway as his path; his paths were variable and led through the emptiness of space.

Unforeseen emergencies can happen at any time in space, most of them having to do with the lives of passengers. A cargo ship would be somewhat less susceptible to such emergencies if there were no humans aboard; it doesn't matter much to a robot if he has no air in his hull.

But with passengers aboard, there may be times when it would be necessary to give orders—*fast!* And that means verbal orders, orders that can be given anywhere in the ship and relayed immediately by microphone to the robot's brain. A man doesn't have time to run to a teletyper and type out orders when there's an emergency in space.

That meant that McGuire had to understand English, and, since there has to be feedback in communication, he had to be able to speak it as well.

And that made McGuire more than somewhat difficult to deal with.

For more than a Century, robotocists have been trying to build Asimov's famous Three Laws of Robotics into a robot brain.

First Law: A robot shall not, either through action or inaction, allow harm to come to a human being.

Second Law: A robot shall obey the orders of a human being, except when such orders conflict with the First Law.

Third Law: A robot shall strive to protect its own existence, except when this conflicts with the First or Second Law.

Nobody has succeeded yet, because nobody has yet succeeded in defining the term "human being" in

socfe a way that the logical mind of a robot can encompass the concept.

A traffic robot is useful only because the definition has been rigidly narrowed down. As far as a traffic robot is concerned, "human beings" are the automobiles on its highways. Woe betide any poor sap who tries, illegally, to cross a robot-controlled highway on foot. The robot's only concern would be with the safety of the automobiles, and if the only way to avoid destruction of an automobile were to be by nudging the pedestrian aside with a fender, that's what would happen.

And, since its orders only come from one place, I suppose that a traffic robot thinks that the guy who uses that typer is an automobile.

With the first six models of the McGuire ships, the robotocists attempted to build in the Three Laws exactly as stated. And the first six went insane.

If one human being says "jump left," and another says "jump right," the robot is unable to evaluate which human being has given the more valid order. Feed enough conflicting data into a robot brain, and it can begin behaving in ways that, in a human being, would be called paranoia or schizophrenia or catatonia or what-have-you, depending on the symptoms. And an insane robot is fully as dangerous as an insane human being controlling the same mechanical equipment, if not more so.

So the seventh model had been modified. The present McGuire's brain was impressed with slight modifications of the First and Second Laws.

If it is difficult to define a human being, it is much more difficult to define a *responsible* human being. One, in other words, who can be relied upon to give wise and proper orders to a robot, who can be relied upon not to drive the robot insane.

The robotocists at Viking Spacecraft had decided to take another tack. "Very well," they'd said, "if we can't define all the members of a group, we can certainly define an individual. We'll pick one responsible person and build McGuire so that he will take orders only from that person."

As it turned out, I was that person. Just substitute "Daniel Oak" for "human being" in the First and Second Laws, and you'll see how important I was to a certain spaceship named McGuire.

When I finally caught the beam from Ceres and set my flitterboat down on the huge landing field that had been carved from the nickel-iron of the asteroid with a focused sun beam, I was itchy with my own perspiration and groggy tired. I don't like riding in flitterboats, sitting on a bucket seat, astride the drive tube, like a witch on a broomstick, with nothing but a near-invisible transite hull between me and the stars, all cooped up in a vac suit. Unlike driving a car, you can't pull a flitterboat over and take a nap; you have to wait until you hit the next beacon station.

Ceres, the biggest rock in the Belt, is a lot more than just a beacon station. Like Eros and a few others, it's a city in its own right. And except for the Government Reservation, Viking Spacecraft owned Ceres, lock, stock, and mining rights.

Part of the reason for Viking's troubles was envy of that ownership. There were other companies in the Belt that would like to get their hands on that plum, and there were those who were doing everything short of cutting throats to get it. The PSD was afraid it might come to that, too, before very long.

Ceres is fifty-eight million cubic miles of nickel-iron, but nobody would cut her up for that. Nickel-iron is almost exactly as cheap as dirt on Earth, and, considering shipping costs, Earth soil costs a great deal

more than nickel-iron in the Belt.

But, as an operations base, Ceres is second to none. Its surface gravity averages .0294 Standard Gee, as compared with Earth's .981, and that's enough to give a slight feeling of weight without unduly hampering the body with too much load. I weigh just under six pounds on Ceres, and after I've been there a while, going back to Earth is a strain that takes a week to get used to. Kids that are brought up in the Belt are forced to exercise in a room with a one-gee spin on it at least an hour a day. They don't like it at first, but it keeps them from growing up with the strength of mice. And an adult with any sense takes a spin now and then, too. Traveling in a flutterboat will give you a one-gee pull, all right, but you don't get much exercise.

I parked my flutterboat in the space that had been assigned to me by Landing Control, and went over to the nearest air-lock dome.

After I'd cycled through and had shucked my vac suit, I went into the inner room to find Colonel Brock waiting for me.

"Have at good trip, Oak?" he asked, trying to put a smile on his scarred, battered face.

"I got here alive, if that makes it a good flutterboat trip," I said, shaking his extended hand.

"That's the definition of a good trip," he told me.

"Then the question was superfluous. Seriously, what I need is a bath and some sleep."

"You'll get that, but first let's go somewhere where we can talk. Want a drink?"

"I could use one, I guess. Your treat?"

"My treat," he said. "Come on."

I followed him out and down a ladder to a corridor that led north. By definition, any asteroid spins toward the east, and all directions follow from that, regardless of which way the axis may point.

Colonel Harrington Brock was dressed in the black-and-gold "union suit" that was the uniform of Ravenhurst's Security Guard. My own was a tasteful green, but some of the other people in the public corridor seemed to go for more flashiness; besides silver and gold, there were shocking pinks and violent mauves; with stripes and blazes of other colors.

A crowd wearing skin-tight coveralls might shock the gentle people of Midwich-on-the-Moor, England, but they are normal dress in the Belt. You can't climb into a vac suit with bulky clothing on, and, if you did, you'd hate yourself within an hour, with a curse for every wrinkle that chafed your skin. And, in the Belt, you never know when you might have to get into a vac suit fast. In a "safe" area like the tunnels inside Ceres, there isn't much change of losing air, but there are places where no one but a fool would ever be more than ten seconds away from his vac suit.

I read an article by a psychologist a few months back, in which he claimed that the taste for loud colors in union suits was actually due to modesty. He claimed that the bright patterns drew attention to the colors themselves, and away from the base the colors were laid over. The observer, he said, tends to see the color and pattern of the suit, rather than the body it clings to so closely. Maybe he's right; I wouldn't know, not being a psychologist. I *have* spent summers in nudist resorts, though and I never noticed anyone painting themselves with lavender and chartreuse checks. On the other hand, the people who go to nudist resorts are a self-screened group. So are the people who go to the Belt, for that matter, but the type of screening is different.

I'll just leave that problem in the hands of the psychologists, and go on wearing my immodestly quiet solid-color union suits.

Brock pushed open the inch-thick metal door beneath a sign that said "O'Banion's Bar," and I followed him in. We sat down at a table and ordered drinks when the waiter bustled over. A cop in uniform isn't supposed to drink, but Brock figures that the head of the Security Guard ought to be able to get away with a breach of his own rules.

We had our drinks in front of us and our cigarettes lit before Brock opened up with his troubles.

"Oak," he said, "I wanted to intercept you before you went to the plant because I want you to know that there may be trouble."

"Yeah? What kind?" Sometimes it's a pain to play ignorant.

"Thurston's outfit is trying to oust Ravenhurst from the managership of Viking and take over the job. Baedecker Metals & Mining Corporation, which is managed by Baedecker himself, wants to force Viking out of business so that BM&M can take over Ceres for large-scale processing of precious metals.

"Between the two of 'em, they're raising all sorts of minor hell around here, and it's liable to become major hell at any time. And we can't stand any hell—or sabotage—around this planetoid just now!"

"Now 'wait a minute," I said, still playing ignorant, "I thought we'd pretty well established that the 'sabotage' of the McGuire series was Jack Ravenhurst's fault. She was the one who was driving them nuts, not Thurston's agents."

"Perfectly true," he said agreeably. "We managed to block any attempts of sabotage by other company agents, even though it looked as though we hadn't for a while." He chuckled wryly. "We went all out to keep the McGuires safe and all the time the boss' daughter was giving them the works." Then he looked sharply at me. "I covered that, of course. 'no one in the Security Guard but me knows that Jack was responsible."

"Good. But what about the Thurston and Baedecker agents, then?"

He took a hefty slug of his drink. "They're around, all right. We have our eyes on the ones we know, but those outfits are as sharp as we are, and they may have a few agents here on Ceres that we know nothing about."

"So? What does this have to do with me?"

He put his drink on the table. "Oak, I want you to help me." His onyx-brown eyes, only a shade darker than his skin, looked directly into my own. "I know it isn't part of your assignment, and you know I can't afford to pay you anything near what you're worth. It will have to come out of my pocket because I couldn't possibly justify it from operating funds. Ravenhurst specifically told me that he doesn't want you messing around with the espionage and sabotage problem because he doesn't like your methods of operation."

"And you're going to go against his orders?"

"I am. Ravenhurst is sore at you personally because you showed him that Jack was responsible for the McGuire sabotage. It's an irrational dislike, and I am not going to let it interfere with my job. I'm going to protect Ravenhurst's interests to the best of my ability, and that means that I'll use the best of

other people's abilities if I can."

I grinned at him. "The last I heard, you were sore at me for blating it all over Ceres that Jaqueline Ravenhurst was missing, when she sneaked aboard McGuire."

He nodded perfunctorily. "I was. I still think you should have told me what you were up to. But you did it, and you got results that I'd been able to get. I'm not going to let a momentary pique hang on as an irrational dislike. I like to think I have more sense than that."

"Thanks." There wasn't much else I could say.

"Now, I've got a little dough put away; it's not much, but I could offer you—"

I shook my head, cutting him off. "Nope. Sorry, Brock. For two reasons. In the first place, there would be a conflict of interest. I'm working for Ravenhurst, and if he doesn't want me to work for you, then it would be unethical for me to take the job.

"In the second place, my fees are standardized. Oh, I can allow a certain amount of fluctuation, but I'm not a physician or a lawyer; my services are not necessary to the survival of the individual, except in very rare cases, and those cases are generally arranged through a lawyer when it's a charity case.

"No, colonel, I'm afraid I couldn't possibly work for you."

He thought that over for a long time. Finally, he nodded his head very slowly. "I see. Yeah, I get your point." He scowled down at his drink.

"*But*," I said, "it would be a pleasure to work *with* you."

He looked up quickly. "How's that?"

"Well, let's look at it this way: You can't hire me because I'm already working for Ravenhurst; I can't hire you because *you're* working for Ravenhurst. But since we may need each other, and since we're both working for Ravenhurst, there would be no conflict of interest if we co-operate.

"Or, to put it another way, I can't take money for any service I may render you, but you can pay off in services. Am I coming through?"

His broad smile made the scars on his face fold in and deepen. "Loud and clear. It's a deal."

I held up a hand, palm toward him. "Ah, ah, ah! There's no 'deal' involved. We're just old buddies helping each other. This is for friendship, not business. I scratch your back; you scratch mine. Fair?"

"Fair. Come on down to my office; I want to give you a headful of facts and figures."

"Will do. Let me finish my guzzle."

Seven and a half hours later, the phone in the bedroom of the company apartment that Brock had arranged for me made loud musical sounds, and I rolled over in bed and slapped at the "*audio only*" switch.

"Yeah?" I said sleepily.

"You asked to be called at oh eight hundred, sir," said a pleasant feminine voice.

"Yah. O.K., thanks. I'm awake."

"You're welcome, sir."

I cut off and blinked the sleep out of my eyes. I'd spent an hour and a half in Brock's office, soaking up all the information he gave me and giving him all the information I could. I hoped that he had been more honest and straightforward with me than I had been with him. The trouble with being a double agent is that you frequently have to play dirty with someone you like, respect, and trust.

I looked at the watch on my wrist. Oh eight oh six, Greenwich Standard Time. The girl had been a little late in calling, but it didn't matter that much.

All over the Solar System, except on Earth itself, the clocks read the same as they do in Greenwich, England. Time zones don't mean anything anywhere except on Earth, where the natives feel that the sun should be at the zenith when the clock says twelve. An irrational concept, to say the least.

Well, not really. Let's say that it's an emotional concept. A man feels better if he has the comfortable notion that the position of the sun has something to do with the numbers on the clock. It gives him a sense of security. Only the fact that a man in the Belt—or anywhere else in the System, for that matter—is not dependent on Sol for lighting purposes makes it possible to establish a Standard Time for everyone.

Oddly enough, Greenwich Standard Time serves an emotional and religious purpose, too. It's only by the clock that a Jew can tell when the Sabbath begins; it's only by the clock a Catholic can tell when to begin his abstinence on Friday; it's only by the clock that a Moslem can tell when to begin and end the fasts of Ramadan.

And it is only by the clock that the various eight-hour work shifts can operate in the Belt. On Earth, the four-hour workday is standard, but there's a lot more work to be done in the Belt.

I got up and got dressed and took the tubeway to Viking Test Area Four, where McGuire was the ruler of the roost. The guard at the main door took one look at my pass, smiled me in, and headed for his phone as soon as I went inside. By the time I had arrived at the office of Chief Engineer Sven Midguard, the whole staff had been alerted, and the top men were waiting for me in Midguard's office.

Midguard himself met me in his outer office—a graying man in his sixties, still handsome in the telly-idol way, but running a bit to paunch now that he was approaching middle age.

"Mr. Oak! So glad to see you! So glad we could get you to help us."

"Happy to be of service," I said.

"Yes, yes, of course. Come along, come on in and meet the staff. They're . . . uh . . . anxious to meet you."

I'd have bet they would be. As far as they knew, I was just the guy who was supposed to take the boss' daughter to school on Luna, empowered only to make sure she didn't get into trouble, and had accidentally become McGuire's lord and master when I'd gone to take her off the ship. I was an errand boy who'd managed to get control of a spaceship that was worth millions, a layman who was holding up the work of responsible scientists and technicians. In simple words, a jerk.

In spite of the socially acceptable smiles on all their faces, every one of them managed to convey his or her opinion of me by facial expression alone when Midguard introduced me around.

Ellsworth Felder was short, big-bellied, round-faced, and slightly red-nosed, like a well-shaved Santa Claus. He was introduced as the head of the Viking robotics staff, and he shook hands firmly when he said he was glad to meet me.

Irwin Brentwood, the electronocist, was a slight, spare man with the body of a young boy and a gentle, soft tenor voice. His "How do you do, Mr. Oak" was almost apologetic, and his small hand in mine exerted more pressure than I'd expected.

Theodore Videnski looked more like a wrestler than a robotics expert. He was as tall as I was and much wider and heavier, and his expression and voice conveyed the idea that he could have lived a good deal longer without missing my acquaintance.

Vivian Devereaux was the only one of the five who gave the impression that she could, if given a chance, begin to like me. She was a tough-cored, no-nonsense, finely-muscled, alert, and very pretty woman in her late twenties—a not uncommon type is the Belt, although they usually don't come as lovely as that. The red, silver, and blue pattern of her union suit didn't at all distract my attention from the magnificently molded body beneath; I made a mental note to write a letter to the editor of a certain psychological journal. I decided that if this gal could think as good as she looked, she was probably one hell of a fine mathematician.

The conference room was small, cozy, and ringed with couches. On Earth, they would have been called padded benches, and they would have been uncomfortably hard, but you don't need innersprings and sponge rubber when your weight has dropped by ninety-seven per cent.

Midguard served coffee all around while we all kept up a patter of chatter that served to get us acquainted before we launched into deep thinking and heavy conversation.

"Well," said Midguard, when he finally sat down, "now that Mr. Oak is here, I suggest we begin scheduling our program."

There was a momentary silence, then the boyish Brentwood said, "I think we ought to explain to Mr. Oak just what our problem is."

That was generally agreed on, and for the next half hour I heard another re-run of information I already had. I just tried to look receptive and kept my mouth shut.

". . . So you see," Midguard finally wound up, "in order to put McGuire through his paces, your co-operation is vitally necessary."

"The first thing to do," rumbled the barrel-chested Videnski, "is to run a verbal check on him, to see how the brain is functioning."

"His circuits should be checked, too," said Brentwood softly. "But that can be done later. I'll get my testing equipment ready, so that I can hook it in immediately after you get through with the verbal check." He looked over at Miss Devereaux. "Vivian?"

"I though perhaps it might be quicker if we ran a few straight math checks on him before the verbal check," she said. "It wouldn't take long, and if there's anything wrong in that area, we'll know what to look for in the later checks. Would that be all right with you, Ted?"

Videnski nodded. "Certainly, certainly. Save us some backtracking, maybe."

Nobody asked me anything. I was just a tool; I was the switch that would turn on the machine these

people wanted to play with, that was all. I could see a long, boring day ahead for Daniel Oak.

If anything, my prediction was shortsighted. Not only was that day boring, but so were the next three. In effect, I told McGuire that he should let the nice people into his hull and answer all their pretty questions.

After that, there was nothing much to do but stand around and watch while the others worked. Mostly, I watched Brentwood doing his circuit checks; it was a great deal more interesting to watch lights flash and meter needles wiggle and lines dancing on oscilloscope plates than it was to listen to conversations that sounded as if they'd been lifted from C. L. Dodgson's treatise on logic.

"A man is marooned on an asteroid without food or water and only one day's supply of air in the tanks of his vac suit. If there is an emergency air tank on the asteroid, it contains enough air to last him for two weeks. If there is a flare bomb on the asteroid, then there is an air tank. There is either a dismantled communicator on the asteroid or an emergency water supply, but not both. There is either an emergency food package, or flare bomb, or a single hibernine injection; or there is both an emergency food package and a flare bomb, but no hibernine. If there is an emergency water supply, it contains enough water to last the man four days. If there is a hibernine injection, then there is a dismantled communicator on the asteroid. If there is an emergency food package, there is enough in it to last him for one day, and there is a dismantled communicator, but if they are not both there, then neither is there. If there is emergency air tank, then there is an emergency water supply.

"If there is a flare bomb, he can set it off immediately, and rescue will arrive within two days. If there is a dismantled communicator, it will take the man one day to put it together before he can call for help, and rescue will arrive in an additional two days.

"If there is an emergency water tank, there is either a single hibernine injection or a food package or both. If there is a hibernine injection, the man can use it to put himself into suspended animation for exactly twenty-four hours, during which time he will need neither air, nor food, nor water. If there is air, or water, or food on the asteroid, or any two of them or all three, the man will use each at the normal rate until it is exhausted, or the man dies, or he is rescued.

"Assuming that, without hibernine, the man can live for exactly two days without water, exactly one week without food, and exactly five minutes without air, can he be rescued? If so, how long will it be before he is rescued? If not, what is his maximum survival time?

"Does this problem have more than one valid answer? If so, give and explain both.

"Or is the problem unsolvable as given? If so, explain why it is unsolvable."

Sit around listening to that sort of stuff for very long, and you begin to wish you *were* out on an uninhabited asteroid somewhere. Problems like that are the sort of thing that any simple-minded computer can solve in a fraction of a second if they're reduced to binary notation first, but poor McGuire had to do his own mathematical interpretations from English, and the things got more complicated as they went along.

And McGuire went right on answering them in his calm, matter-of-fact baritone.

I remember that particular problem because, while Videnski was reciting it, Brentwood pointed at an oscilloscope plate that had nothing on it but a wide, bright, flickering band of light that wavered a little around the upper and lower edges.

"See that?" he asked in his tenor voice. "That's a tracing of McGuire's thinking processes. Actually, it's a very thin, very bright tracing, but it's moving over that area so fast that you can't see it. A high-speed camera could pick it up, and if the film were projected at normal speed, you could see every little bit of data being processed." Then he patted a small instrument that was sitting near the oscilloscope plate. "Of course, we don't go to all that trouble; we record it directly and analyze it later."

And that analysis can be pretty maddening at times," said a very lovely voice behind me. I turned around and gave Vivian Devereaux my best smile. Her close-cropped blond hair looked a little disheveled, but it didn't make her any the less beautiful.

"What does Videnski say?" I asked. "Is McGuire still passing his exams?"

She smiled. "Ted says that if this keeps up, we can get McGuire a scholarship at Cal Tech." Then she frowned slightly. "It all depends on the analysts, of course. We'll have to see how his timing is, and how many actual computations he's using for each problem. It'll take a lot of work."

I could hear Videnski's voice still droning away in the control room, alternating with an occasional answer from McGuire. Normally, McGuire only used the speaker in whatever compartment I happened to be in, but I'd given him orders to stick with Videnski during the testing. I'd also had him shut off his pick-ups everywhere in the control room, so that our chatter wouldn't be going into his brain along with Videnski's.

In the lounge, where we were, Brentwood had removed a panel that gave him access to the testing circuits. To actually get into McGuire's inner workings and tamper with him would be a lot tougher. McGuire wouldn't allow it unless I told him to, but even if he did, getting to the brain required three separate keys and the knowledge of the combination on the dial of the durasteel door to the tank that held his brain. Explosives would wreck the brain if they were powerful enough to open the door, and so would a torch. Viking Spacecraft had taken every precaution to make sure that nobody stole their pet.

"How long before we can give McGuire his test flight?" I asked. McGuire had been into space once, but it hadn't been a shakedown cruise.

Vivian looked at Brentwood. "Tomorrow, unless something unforeseen shows up, huh, Irwin?"

"That's what the schedule says," murmured Brentwood.

"Great," I said. "Just great. There's schedule, and no one's told me anything about it. Anything else I should know about, perhaps? Some little thing like where we're going, or whether I should pack a bag or whether I'm even invited along?"

Vivian Devereaux blinked. It was a very pretty blink. "Oh, my goodness. I'm sorry. I guess we haven't kept you very much in touch, really, have we? We're so used to working together that . . ." She let the words trail off with a sheepish smile.

Brentwood chuckled a soft, good-humored chuckle. "I thought the Chief had told you." By "the Chief," he meant Ellsworth Felder, the head robotocist. As far as these people were concerned, Sven Midguard was just a spacecraft engineer.

"Not a word," I said, mentally making a note to find out why Santa Claus Felder had failed to notify me.

"Well, bring a suitcase," Vivian said. "We—or, rather, you—are taking McGuire on a test hop to

Phobos. Mars is pretty close right now, so it'll be an easy drive sunwards.

"If all goes well, you're to set him down at Syrtisport, for his first planet landing. Then to Luna for a day or two. Then directly to Earth and Long Island Spaceport. We should know by then how he behaves."

"Why Earth?" I asked. There didn't seem much point to it.

"Keep it under your hat," she said. "Manager Ravenhurst is planning a big publicity campaign. First ship to make the voyage without a human hand at the controls, and all that. I don't know why, but he wants to make a big splash on Earth if McGuire has checked out perfectly as far as Luna."

"Oh. Well, Ravenhurst's the boss." I knew why. The general public didn't know how shaky Viking Spacecraft was, and neither, presumably, did the robotics staff. That knowledge was strictly managerial level. But a big splash on Earth would boost Viking's prestige tremendously, with a possible rise in stock values which would take some of the shakiness out of Viking.

By the time the day's work was over, I'd heard all of Videnski's rumbling baritone that I wanted to hear. I was grateful to get back to the relative silence of my apartment.

I opened a beer, lit a cigarette, and relaxed on my bed for a few minutes before I made a phone call. I punched BANning 6226, and got an answer almost immediately. The screen didn't come to life, but a voice said: "Marty here. Hullo, Oak." He could see me, even if I couldn't see him. If anyone punched that number by accident, Marty would simply turn on a recording that said: "The number you have punched is not a working number; please disconnect and punch again; this is a recorded message." There is no point in letting just anyone get in touch with the Ceres branch of the Political Survey Division through their secret channels.

"Marty," I said, "the test hop is tomorrow." I gave him all the details as I knew them.

"Hm-m-m." He sounded thoughtful. "If either Thurston or Baedeker agents are going to try anything, it seems as though this would be the time to do it."

"I think so, too. Do you have any new information at all?"

"Not much. Thurston's men don't know what Baedeker is up to, as far as we can gather. But the Baedeker agents have an idea that Thurston is trying to take over Viking, and they don't mind at all; they're evidently hoping that the Ravenhurst-Thurston battle will create enough confusion so that it won't take much push on their part to topple the whole mess and take control. We know most of the regular agents on both sides, and we've managed to get a lot of that information to Colonel Brock so that he can handle quite a bit of the work of the work for us." Marty chuckled a little. "That's what I call a *really* secret agent. Brock has no idea that he's an agent for a service he doesn't even know exists."

"Harrington Brock is a good man, Marty. Don't underestimate him."

"I don't. It's a shame he just doesn't have quite what it takes to be good PSD material."

"I hate to be referred to as 'material', good or bad. Do you have any idea how Baedeker or Thurston might be going to pull the grandstand play?"

"Not a one, so far. How about that robotics team, or the engineers who are working on the ship? Think any of them could be in the pay of a rival?"

"It's possible," I said, "but I don't know which one or ones it might be. I've been watching them for three days, and they all seem on the up-and-up to me. And that worries me."

"How so?"

"You'd think that at least one of them would behave suspiciously by accident once in a while. You know—nerves or jumpiness from purely personal reasons. Hang-over, maybe, or woman trouble. But, no."

"The clue of the dog in the night, huh? Does that mean you suspect any of them?" he asked dryly.

"Sure. Isn't that what a good detective is supposed to do?"

"I wouldn't know; I'm just an information post. I will say this, though. If any of that bunch is connected with either Baedeker or Thurston, he isn't a professional. He's someone who's been contacted secretly and offered a heavy bribe. We're checking back on all of them now, to see if there's anything in their pasts which might indicate that their ethics are not what they should be. Or any unusual circumstance that might indicate blackmail or financial pressure."

"Nothing so far, though?"

"Nothing."

I thought for a second, then said: "Is there any known rival agent in any position to sabotage McGuire on Phobos, Mars, or Luna?"

"Several, in each place. But we'll have agents there to keep an eye on them. To be honest with you, Oak, I don't think there's much to worry about. I don't mean you shouldn't keep your eyes open, but—"

"I know what you mean," I said. "Do my own worrying, and don't worry you with it. All right. Meanwhile, if you get anything I can use, call me. And I'll let you know at this end."

"Fair enough. Good luck."

I wished him the same, and cut off.

I had time for one drag off my cigarette and one swallow of beer before the phone chimed. I put my beer down and pushed the switch for the audio only.

"Yes?" I said.

The face that came on the screen was one I'd never seen before. A man about my age, I thought, or maybe a few years older. His skin was tanned—whether by heredity or sunlight was hard to tell; his features were not distinctive enough to be sure. His hair was medium brown and cut rather longer than the crew cut which is common in the Belt.

"I'm calling for Mr. Daniel Oak," he said in a low tenor voice.

I touched the "vision" button and let the pick-up transmit my image to him. No point in playing cagy just at that rime. "Speaking," I said.

"You're Mr. Daniel Oak, of New York?" he asked.

"That's right."

"The confidential expediter?" He seemed to want to make very certain of his quarry.

"That's right," I repeated.

His smile was a little stiff. "My name is Venuccio, Mr. Oak; André Venuccio. I'd like to speak to you about a matter of employment."

"You mean you want a job?" This is a conversational gimmick known as The Deliberate Misunderstanding, or The Innocent Needle.

He twitched his head a little, which might have been a negative shake. "No, no. *I wish to employ you, Mr. Oak.*"

"Well, I'm pretty busy right now, and I—"

He cut me off with: "Mr. Oak, I have come all the way from Earth to speak to you. I assure you that this is most important. I would like very much to discuss it with you."

"Well, all right. Go ahead."

"Not over the phone. There is a possibility of its being tapped. I would like to meet you personally."

I took a couple of seconds out for thought. There are a lot of places on Earth where a phone line can be tapped with fairly cheap equipment simply because, for economic reasons, the phone company hasn't installed new equipment. But on Ceres, everything goes through a synchronized random scrambler circuit, just as it does in the more modern cities on Earth. Nobody's been able to crack it yet without a good-sized computer and a lot of luck. Still—

"Very well, Mr. Venuccio; if you could be here in half an hour—"

"No, no," he said quickly. "Your apartment might be bugged."

He had a point there. He couldn't know that I'd already made sure that my apartment was bug-proof. A self-contained broadcaster isn't much use inside Ceres; the metal walls stop almost any radiation before it can get very far. If my place was bugged, conductors of some kind would have to be used, and I'd gone over the place thoroughly to make sure there was no such thing.

In addition, I'd used one of my favorite gadgets: a non-random noise generator. Because a conversation is patterned, it is possible to pick it out of a "white," purely random background noise, even if the background is louder than the conversation. But my little sweetheart was a multiple recording of ten thousand different conversations, all meaningless, *plus* a lot of "white" noise. After the gadget is connected up, the walls vibrate with jabber that can't be analyzed even by the best of differential analyzers. Only in the hush area away from the walls is it quiet.

But my caller couldn't be expected to know that, and I didn't feel like telling him.

I decided to see how far he'd go.

"Mr. Venuccio," I said in an apologetic tone, "I'm sorry, but my present work will require several more weeks and—"

"I understand that," he said quickly. He seemed to be a great one for interruptions. "But I assure you that I can make it worth your while. What would you charge for an hour of your time?"

"It would depend on what I'd have to do."

"All you will have to do is listen to me explain my problem and my proposition to you. An hour, at the very most. I could meet you at the *Seven Sisters* in half an hour. This is very urgent, Mr. Oak."

Not to me, it wasn't. But my intuition told me that there was something here I ought to know about. "All right, Mr. Venuccio; I'll be there. It'll cost you a hundred in cash, for the consultation fee. Have it with you." In case he didn't know what I charged, that ought to give him some idea.

He didn't flinch. "Very good, Mr. Oak. I'll see you in half an hour, then. Good-by." And his image vanished.

Interesting, I thought. There was something definitely phony about Mr. André Venuccio. His manner of speaking didn't sound natural; it was as though he were attempting to pretend to be something he wasn't.

I made a few phone calls and came up with more information. The last ship directly from Earth had landed four days ago. Mr. Venuccio could have come in by flitterboat, but it didn't seem likely, if he had, as he claimed, come all the way from Earth to see me. Aside from the fact that my staff in my New York office wouldn't have told him where I was, there was also the fact that no "André Venuccio" had come in on the last ship.

I made two more calls—one to Marty and one to Colonel Brock—and then began to get ready for my appointment with the enigmatic Mr. Venuccio.

The *Seven Sisters* is one of the most elaborate dining clubs on Ceres. It caters strictly to the moneyed class, and is positively drenched in snob appeal. The food is good, the liquor is good, and the entertainment is adequate. Since all three have to be imported from Earth, the first two are expensive and the last one is the best they can get, because most of the top-flight entertainers of Earth don't feel that it's worth their while to go asteroid-hopping.

It is one of the few public places in the Belt where you will be expected to "dress" for dinner. That means a jacket and Bermuda shorts over your union suit.

As far as decoration goes, the *Seven Sisters* is the lushest place in the Belt. The walls of the main dining room, which is about sixty by sixty feet in floor area, are paneled with white oak up to a height of eight feet. Wood is expensive in the Belt; forests on the asteroids share the null class with snowflakes on the sunward side of Mercury.

Above the paneling, the ceiling is domed and black, and a pattern of bright pinlights representing the Pleiades—greatly enlarged—glitters against the blackness.

The floor is decorative traction tile, white and pale blue, with rustled geometric designs on it. In the middle of the floor, there is a hollow, transparent column, brightly illuminated from below. Four feet in diameter, it rises a dozen feet above the floor to a flat, truncated top that is opaque to prevent the light from hitting the dome overhead and ruining the pseudo-sky effect, and mirrored on the underside to reflect the light back down the column. Inside, thousands of tiny, faceted, plastic gems are kept constantly in motion by forced air currents, swirling up and down the inside of the transparent column—easy enough to do under Cerean gravity. Each spinning gem, scarcely larger than a pinhead, catches the light and scatters it around the room. It's a sort of macroscopic Tyndall effect that is quite impressive.

I told the headwaiter that I wanted Mr. Venuccio's table, and was escorted straight to it. Venuccio was waiting for me.

He stood up as I approached and gave me his stiff smile. He was short—not more than five foot six—and rather lean. I got the impression that his jacket was padded to make his shoulders appear wider than they were

"Sit down, Mr. Oak," he said in that oddly forced voice of his. "Would you care for something to eat? Or drink, perhaps?" He already had a drink, still three-quarters full.

"Not just yet. Later, maybe."

I had watched him as he stood up, and I went right on watching him while we sat down. For a man who was just in from Earth, he handled himself remarkably well under low gee. "We may order later," he said to the waiter.

As soon as the waiter was out of earshot, Venuccio leaned toward me, and suddenly he was all business.

One hand sKd a banknote across the table. "Here is the hundred we agreed upon, Mr. Oak. I can state my proposition very quickly; you have only to listen."

I palmed the hundred and slipped it out of sight. "You have rented yourself a pair of ears, Mr. Venuccio."

"Very good" He kept his voice low and even. "Do you know anything of the Cronos Water Corporation?"

"Sure. Cronos is one of the companies that mines the rings of Saturn. A lot of the water here in the belt comes from the ice they ship in. Why?"

"Not exactly," he said, ignoring my question. "They now have full control of their only rival, Titan Enterprises. I am a stockholder in Titan, and I am convinced that there was chicanery involved in the transfer of managership. The Cronos Corporation intends to raise the price of water in the Belt and make a lot of fast money."

"Does the Government know about this?"

"No. Even I can't prove it on paper. That's why I want you to go out there and get the information. It will have to be done quickly, before Cronos can file notice of new prices."

"What do you mean, 'quickly'?"

"You'll have to take the *Warboat* which is leaving for Luna this evening, in order to catch the *Planger*, which is leaving Luna for Saturn. There won't be another chance for three weeks, and that will be too late."

It was all very pretty. Saturn was on the other side of the System at the time, and it would be a nice, long trip.

I shook my head. "Sorry, Mr. Venuccio, but, as I told you, I'm already engaged. You'll have to get someone else."

He looked suddenly desperate. "I will pay you well. I'll buy out your present contract, and I'll pay you

double for the work."

We spent the rest of his bought-and-paid-for hour haggling. Or, rather, *he* haggled. I asked a lot of questions, and he tried to answer them in order to convince me that I should go, and I just asked more questions.

Exactly one hour from the time I'd been handed the hundred, I stood up. Venuccio was in the middle of a sentence, but I said: "Your hour's up, Mr. Venuccio. The answer is still no. Thank you for your business."

"But—" He started to rise, started to grasp my sleeve.

"Sit down." I didn't say it harshly or angrily, just firmly. He sat. "I don't want to be bothered by any more of this kind of thing. Ever again. Is that understood, Mr. Venuccio?"

He nodded wordlessly, and I left him sitting there.

As I moved toward the door, the headwaiter came towards me. Before he could say anything, I said: "Mr. Venuccio is taking care of the check."

"I know that, Oak," he said in a low voice. "We'll have him tailed when he leaves here." I never would have recognized him; it was Colonel Harrington Brock, wearing a plexiskin mask. "Got any idea of what he wants or who he's working for?"

"He wants me to leave Ceres, which would hold up the testing of McGuire. Offered me plenty for it, too. I'm pretty sore he's wearing a plexiskin mask, too; and I'm almost certain I've heard that voice before, but I can't quite place it."

"We'll find out," Brock said grimly.

Then he gave me a headwaiter's smile and went on his way. I went on out through the ornate doors of the *Seven Sisters*.

When I got back to my apartment, I looked it over carefully. It didn't look as though anyone had made an unauthorized search. I called Marty, and he assured me that the men watching the place had seen no one go in. But I was already fairly certain that the purpose of Mr. Venuccio's appointment had not been to lure me away from my apartment. He wanted me to go a lot farther than that.

I drank a couple more beers and smoked four or five cigarettes while I thought things through, then I got ready for bed, cut the lights, and went to sleep.

The next morning, I showed up at Viking's Testing Area Four with a hot breakfast inside me and my vac suit outside, ready to go sky-climbing with McGuire. McGuire's tall blue spire shone brightly in the sunlight, and looked, as he always did, as though ready to take the leap at any time.

There would be only five of us aboard. Besides myself, there was the short, chubby Ellsworth Felder, head of the robotics staff; the boyish Irwin Brentwood; the toun, taciturn Theodore Videnski; and the lovely Vivian Devereaux.

We made the last-minute checks to make sure everything was ready for the hop to Phobos, and then

I took command.

"Plot a one-gee orbit to Phobos, McGuire. Take-off in five minutes."

"Yes, sir," said McGuire. He thought for a minute, then said: "Course plotted, sir."

"Good." I glanced at Brentwood, who had set up his instruments in a semipermanent installation for the trip. "Did you get that, Brentwood?" He nodded.

"All right, McGuire; we're going to be doing a few tests out in space, so, for right now, just follow the curve of the first half—up to five minutes before turnover. I'll let you know what to do then. Warn me at five minutes before turnover; otherwise, just keep going until I give you further orders."

"Yes, sir."

"How much longer until take-off time?"

"Three and a half minutes, sir."

"Begin a countdown at minus thirty seconds. One count every five seconds until minus five seconds, one count per second from there to zero. Lift at zero."

"Yes, sir."

We got everything settled, made sure there were no loose tools lying around, and sat down in the lounge chairs to wait for the lift. Pretty soon, McGuire said: "Minus thirty seconds." Finally, he said "Five . . . four . . . three . . . two . . . one . . . zero."

And we all sank down in the chairs under the pull of a full Standard Gee of acceleration—one thousand centimeters per second squared.

Ceres fell away from beneath us and slowly receded in the vast blackness of space.

I got up and stretched my muscles, and the others began doing the same. It takes time to get used to a full gee again after spending time in the Belt. Even in a flitterboat, you're in a bucket seat, lying on your back; you can't do any walking around in a flitterboat.

The change in Ellsworth Felder was remarkable. All that chubbiness that had ballooned out under the low gravity of Ceres and made him look like the Cheerful Cherub was pulled into sagging folds under the pull of the ship's acceleration. It made him look fifteen years older. None of the others seemed to be bothered much.

Felder kept his good humor though. He didn't seem to know there'd been any change in his appearance. He rubbed his hands together and said: "I, for one, always get hungry when the gravity goes up. May I suggest an early lunch?"

Nobody, disagreed with him.

We settled into a routine pretty quickly. There wasn't much to do since McGuire was taking care of the jobs that require a crew on an ordinary ship. To avoid boredom, we'd brought books and a few decks of cards and various other time-wasters. Several times, McGuire had to change course slightly because of rocks in his path, and Brentwood would always glance at his instruments when that happened, watching the squiggles that indicated McGuire's replotting.

Those occasional rocks were our reason for waiting before we tried any fancy tricks with McGuire. We wanted to get out into the relatively clear space between Mars and the Belt.

I beat Videnski out of a ten-spot at gin rummy, which, oddly enough, seemed to raise his respect for me. Vivian Deveraux talked with Brentwood for a while, then settled down to reading a book entitled "Some Applications of Discontinuity in Pattern Theory." Felder munched apples and read a magazine.

We ate another meal amid pleasant chatter, and I went into one of the two bedrooms for a nap. Miss Deveraux had one of the bedrooms all to herself. We men had drawn straws, and Felder and I had ended up with the bedroom while Videnski and Brentwood got the couches in the lounge.

I dozed off, but it was only a light doze. If there were an emergency, I would be the only one who could order McGuire around, and I wanted to be ready to wake up at a moment's notice.

I'd been snoozing for half an hour or so when I heard the noise that woke me up. I'd been lying with my face to the wall, and, for a moment, I couldn't figure out what had awakened me.

Then I heard it again. Just the faintest sound of a footstep near the bunk. I moved just in time. I sat up and moved to see Irwin Brentwood standing near me, holding a hypospray gun in one hand. I jumped him, knocking the gun aside, but his hand didn't lose his grip on it as we went down in a tangle.

He was a lot tougher than he looked. That boyish figure was all wiry muscle, and I was still dopey from sleep—not much, but just enough to impair my efficiency. I got a grip on his gun hand and began slowly twisting it while we rolled over and over on the floor. Then, somehow, he managed to get his other arm loose, and he drove an elbow into my throat.

There was an instant of blinding pain, and I heard the hypogun *chuff!* as my muscles tightened with the searing fire in my throat.

The next thing I knew, somebody was wiping my face with a cold, wet towel. I opened my eyes. It was Vivian Deveraux. I tried to say something, but nothing came out. There was only a terrible aching in my throat.

Videnski was standing near a chair where Brentwood was seated. Brentwood looked a little dazed; Videnski looked furious.

So did Felder, who was looking at the hypospray gun he was holding in his hand. "Who hired you, Brentwood?" he asked sharply. There was nothing Santa Clausy about him now.

"A man named Borodin," Brentwood said, in an uninterested voice.

I managed to force air past my bruised larynx. All that came out was a whisper. "What happened?"

"He tried to use pythantín on you," Felder said. "But he got the dose himself. That's why he's co-operative."

I nodded and stopped when a pain went through my throat. Pythantín would have made me receptive to any suggestions Brentwood wanted to make.

"What were you supposed to do after you dosed Daniel Oak?" Felder asked the electronicist.

"Tell him to order McGuire to change course, to go to Asteroid MJ3-1990."

I sat up. It was nice just to lie there and have Vivian bathe my brow, but I had more pressing things to

do. I didn't feel in the pink of condition, and my throat hurt like hell, but I wasn't in too bad a shape.

"This Borodin," I whispered, "who was he working for?"

"I don't know," Brentwood said. "He didn't say."

We questioned him for another half hour, but it soon became apparent that he didn't know very much. He'd been offered a tremendous amount of money to do the job, and he didn't have the stamina to refuse it. It's guys like Brentwood who gave rise to the saying that every man has his price.

"What'll we do now?" Felder asked at last. "Go on to Phobos, or go back to Ceres?"

"Back to Ceres," I whispered. "Colonel Brock will know what to do with him."

I'd been uneasy ever since my calls to Brock and Marty that morning had disclosed that Venuccio had lost the men who were supposed to be tailing him. It's fairly easy to do on Ceres, if you know how.

"It won't mean much of a delay," I went on. "Ravenhurst can still have his big splash on Earth."

We herded Brentwood into the lounge and bound him to a chair. Then I said: "McGuire?"

"Yes, sir?"

"We're changing course. Return to Ceres."

And McGuire said: "I'm sorry, sir; I cannot obey any orders except these of Mr. Daniel Oak."

I just stood there for a long minute. "I am Daniel Oak," I whispered. But I was fairly certain that the declaration would do me no good whatever.

I was right. "No, sir. You are not Mr. Oak." McGuire is always polite to anyone who speaks to him, even if he doesn't regard that person as human.

"McGuire," I said patiently, "can you see Mr. Oak? Is he on board?"

"Yes, sir. I perceive him seated on the starboard couch in the main lounge."

"Fine. Then your directional audio pick-ups should be able to tell you where this voice is coming from."

"Yes, sir. It is coming from the approximate volume of space now occupied by Mr. Oak's head. But it is definitely not Mr. Oak's voice."

Felder pat a hand over his eyes and moaned.

Videnski, who had carefully lighted a cigarette, blew out a cloud of smoke and looked at me. "I got to admit he's right. That is not Daniel Oak's voice."

"Which came first the chicken or the egg?" Vivian said abstractedly.

"What's that got to do with it?" Videnski asked with a scowl.

"A matter of definition," Vmai said. "Somewhere along the line of chicken evolution, it would have been possible to point at a specific bird and say, 'This is a chicken, but its parents were not chickens.'"

Now, do you define a chicken egg as an egg laid by a chicken or an egg that hatches out of a chicken?"

"That's right," Felder said. "Do you define Oak's voice as any voice coming from Oak or as any voice that sounds like Oak's?"

"Well, you people ought to be able to answer that," I said. "Which is it?"

"Both," said Felder in a dull voice. "When you activated him by giving him his first order, he identified you and the voice as parts of the same unit. If you'd gone hoarse slowly, step-by-step, as it were, McGuire could have made logical adjustments to the change. But this sudden change is too big a jump for his logic to follow; he hasn't got the intermediate steps he needs to put it into syllogistic form."

There was another question I wanted to ask of McGuire. "McGuire, you are not supposed to allow Mr. Oak to come to any harm. Yet you did so. Why?" I was wondering how he'd managed to let Brentwood get away with his attack on me, without at least warning me.

"Mr. Oak was in no danger, sir. He has come to no harm."

"What about Brentwood's attack?"

"Mr. Brentwood did not attack Mr. Oak, sir; Mr. Oak attacked Mr. Brentwood."

The other three looked at me. "In a way, he's right," I said quickly. "When I saw Brentwood standing there with the hypospray, I jumped him."

"That's another one of our problems," said Felder. "How do you define 'harm'? If you broke your arm and a doctor tried to set it with an anesthetic, what would McGuire think when you yelled? Could you and I engage in a friendly match? And since McGuire is supposed to *prevent* harm, he has to be able to define it in advance. Oh, we've had a lot of fun with that one, I'll tell you." There was a thin edge of bitterness in his voice.

"You see what this means, don't you?" Videnski asked, eyeing me through a cloud of blue cigarette smoke.

"Sure," I whispered. "It means that McGuire will go right on accelerating until I tell him to stop, and I can't tell him that until my larynx heals—if it ever does."

"If it takes a week or two, which is likely," Vivian said, "we'll be saying good-bye to the Solar System."

"By the time this heals," I said "we'll be so far out we won't be able to come back. At that distance, the amount of sunlight McGuire will be able to pick up will be negligible and the atomic fuel will be gone."

Nobody bothered to suggest that we call for help. McGuire had the communications system under control, too.

"One of us," I said, "had better think of something."

In the next several hours, every one of us thought of something, one way or another. Not that it did much good, because none of the ideas were worth much, directly. Indirectly, they told us plenty about what *not* to try.

When Brentwood finally came out from under the effects of the pythantoin, even he started thinking furiously about some way out of our predicament. We kept him locked in the bedroom for obvious

reasons, but he had just as much stake in getting us back in control of McGuire as we did. After all, there's no law against industrial espionage, and we couldn't prove any charge of sabotage. Even a charge of attempted kidnaping or attempted larceny would be almost impossible to make stand up in court. With a good lawyer, he could get out from under an assault and battery charge. He'd lose his job with Viking, of course, but that was better than losing his life.

His failure to deliver McGuire to Baedeker Metals & Mining might lose him some of the money he'd been promised, but he was prepared for that, too. I knew he was a Baedeker agent, even if he didn't, because I knew who Borodin worked for.

Meanwhile, five brains were trying frantically to think of some way of convincing McGuire that he should obey my orders.

First, I tried reasoning with him.

"McGuire, do you understand what it is that generates the human voice?"

"Yes, sir. A flow of slightly compressed air from the lungs causes vibration of the vocal cords, and this sound is modified by the lips, tongue, and teeth."

"Very well. Now, you see Mr. Oak, do you not?"

"Yes, sir."

"And you see that this voice is being generated by Mr. Oak?"

"I cannot tell that, sir. I have no way of sensing the operation of Mr. Oak's vocal equipment."

"But you can tell that this voice is coming from Mr. Oak?"

"Yes, sir."

"Then it must be Mr. Oak's voice."

"That does not coincide with the facts, sir, therefore the logic is faulty. A comparison of the present voice with the voice of Mr. Oak shows too few points of similarity for identification."

"You won't get anywhere that way," Felder said wearily. "None of the data you give him verbally is used in his final computations, since it doesn't come from Daniel Oak, by his own reasoning."

"That is correct, sir," said McGuire.

"Idiot machine!" said Vivian Deveraux angrily.

I shut up and did some more thinking. Talking only made my throat hurt.

Nobody could argue impressively with McGuire except Daniel Oak, and as far as McGuire was concerned Mr. Oak was keeping an impressive silence.

"Maybe I could write out the orders," I said.

"Nope," said Videnski. "He can read, but information coming in that way isn't counted as orders, not even from you. We should have installed a teletyper, too, but this is a little late for thinking of that."

"McGuire," I whispered, "what sort of proof would be needed to show you that this is the voice of

Daniel Oak?"

"I'm sorry, sir," McGuire said after a moment, "but that information is not in my banks."

"Maybe somebody could imitate Dan's voice," Vivian said hopefully. Videnski and Felder shook their heads in unison.

"No dice," Videnski said rumblingly. "It not only has to sound like Oak, it has to come from Oak."

"Ventriloquism?" Vivian said with a half-hearted grin.

"Wouldn't fool McGuire for an instant," Felder said. "That's an audio-visual trick of the human mind, not of a robot's."

The ship kept on moving. McGuire went serenely on, following his last orders.

We finally reached the point where we were to tired to think, and sleep became imperative. We were nearly two days out of Ceres.

When I announced my intention of taking a snooze, Felder looked at me through groggy, bloodshot eyes. "Hadn't we better sleep in two shifts? I mean, just in case there's another spy among us?"

I shook my head. "No spy would try anything now. There isn't anything to try. We're all safe, as far as that's concerned. I'll go in and sleep in my assigned room. Not even Brentwood could or would do anything to me now."

"For that matter," Felder said, "it's senseless to keep him locked up now. He's harmless until we reestablish control over McGuire. When that happens, we can lock him again."

"My sentiments exactly," I said my new hoarse, breathy, susurrant voice.

Brentwood didn't say much when I gave him the news; he just thanked me. I got into bed and worried for a while, but lack of sleep soon cut off my ability to worry. I only woke up once in the next nine hours, when McGuire changed course a trifle to avoid some unseen meteor. Not even the ache in my throat kept me from sleep.

It was Videnski's voice that woke me up. The door of my room was slid open a little, and I could hear him in the lounge. I got to my feet fast, shoved open the door, and went out.

Videnski had grabbed Brentwood by the front of his union suit, and had lifted him off his feet and slammed his back up against the wall. His free hand was swinging back forth in open-handed slaps that looked as though any one of them should have torn the smaller man's head off. Felder was ineffectually trying to pull Videnski away from Brentwood, but the big man didn't even seem to notice it. Vivian Devereaux was nowhere in sight.

Videnski's harsh baritone was filled with invective that should have made the air as glowingly blue as the inside of an old-fashioned rectifier tube.

I ran across the room, grabbed Videnski by the shoulder and said: "Stop that!"

He stopped. When I throw out an emotional field like that, only a very exceptional man can disobey.

"Let him go," I said.

Videnski released him, and Brentwood slid down the wall, just this side of unconsciousness.

"What's the idea?" I asked.

"I . . . I'm sorry," Videnski rumbled. "Lost my temper, I guess. That . . . I mean, *he*—" He stopped, fumbling for words.

"I know. I heard what you were saying. Sure it's his fault my voice sounds the way it does. Sure he's a spy and probably a saboteur, And if we die, he'll be morally guilty of manslaughter. *And* suicide—remember *that*.

"But slapping him around like that isn't going to do any of us any good, and we need all the thinking we can get if we intend to pull ourselves out of this mess.

"So leave him alone, Videnski. Hear?"

My whispery voice didn't sound very authoritative, but a crisp, firm, commanding baritone does not authority make, any more than iron bars a cage.

"Yeah," he said apologetically. "I'm sorry, Oak. I sort of lost my head. It won't happen again."

I knelt down and took a look at Brentwood. He wasn't actually damaged much, but his face was going to be swollen and bruised. Somehow, I couldn't feel very sorry for him.

I got him to his feet. "Come on, Brentwood; let's go lie down for a while. You'll feel better."

"Yeah," he mumbled through thickening lips. "Thanks."

I got him into his bunk, closed the door on him, and came back to the lounge.

"Anybody dream up any solutions in his sleep?" I asked.

It was apparent that they hadn't. "Maybe Vivian has," Felder said. "She's still asleep."

"Let's not bank on it," I said.

"Oh, I did have one idea," Felder said dispiritedly. "Ted, here, and I were working on it when Brentwood came out. When it didn't pan out, well, that's when the fight started,"

"What was your idea?"

"I asked McGuire if he realized what would happen to Mr. Oak if he just kept going. He said he did; that if he ran out of fuel, you'd be marooned and would die. So he's figured out a nice, complicated orbit that will allow him to obey your last order until the very last possible moment. He'll land us on Titan at the very last moment. The trouble is, we forgot to tell him how much food we have aboard, and he's made the assumption that there's plenty for everybody, for an indefinite length of time. But we're going to be plenty hungry by the time we get there. Can you last twelve days without food?"

"I don't want to try it. And of course it wouldn't do any good for you to tell him that we haven't enough food. How about letting him take a look at the food supply?"

"He doesn't know how much is necessary, and he would only have our word for it that there was any more aboard. One thing I can tell you: if we ever get back to rebuild McGuire, one of the things he's going to have is a lot more sensory devices so that he can judge more facts on his own hook."

"Agreed," said another voice, "right now, we're dealing with a half-blind idiot." Vivian Devereaux had stepped out of her room and had been listening to Felder explain what he'd tried. Sleep hadn't done her as much good as it might have under other circumstances; the strain was showing on her face.

Breakfast was a half-hearted affair. Brentwood stayed in his room, though he accepted the cup of coffee I brought him. The rest of us didn't eat much more than that. I was trying to think our way out of the fix, and so were the others.

Something, some sort of an idea, had been sitting quietly at the bottom of my mind, just barely discernable through the semipermeable barrier that separates the conscious from the subconscious, but I couldn't fish it out.

When I managed to grasp part of it, I said: "Look. The trouble is that McGuire is incapable of connecting my present voice with the voice he's used to. Then it seems to me that our job is to supply him with the missing steps."

"How?" asked Felder. "One of you—or all of you, if it took that to convince him—could take a hoarse, whispery voice. You could slowly make your voice worse and worse, so that he could see the steps involved."

Vivian brightened, but Felder and Videnski shook their heads together like the Bobbsey Twins sorrowing over a lost pet.

"What we may do voluntarily," said Felder, "over a relatively long period of time, has nothing to do with what happened to you suddenly and involuntarily. You see, in the long run, he really doesn't *care* about our voices. He doesn't pay any attention to us, really, except as incidental cargo. He has no concept of intelligence, actually; he can't accept any statements of ours unless they're verifiable by McGuire himself."

"Well, we could at least try it," said Vivian.

We did, and Felder was right. McGuire seemed almost condescending in his sorrow for our inability to see that there was no *logical* connection between their whispers and the voice of his Lord and Master, Daniel Oak.

Vivian, who had been standing near Videnski while we were talking to McGuire, suddenly blew up when McGuire assured us that our whispering was a waste of time. She grapped her book—"Some Applications of Discontinuity in Pattern Theory"—and threw it at the wall speaker from which McGuire's voice came. It bounced harmless off the protective grill and fell to the floor. Vivian Devereaux burst into tears.

I put, my arm around her, gave Videnski and Felder the high sign to keep thinking, and led her to her room. As soon as I got her settled, I said: "Relax. No matter what happens, we'll get out of it alive. If we stretch our rations, we'll be able to make it to Titan without being more than underweight and hungry."

"It's not that," she said tearfully, "it's the delay. All that time off the schedule."

"But I thought that was what you wanted," I said gently.

"Not any more. I—" She stopped suddenly and looked up at me, her eyes widening. "What are you talking about?" Her voice was as whispery as mine.

"It was the insistence on meeting me at the *Seven Sisters* that gave you away," I said. "Dyeing your hair and combing it straight back, and putting on that plexiskin mask and the contact lense—none of that helped conceal that lush figure of yours. It can't be done under a union suit. So you had to put on jacket and shorts, and that meant you had to meet me in some plush restaurant like the *Seven Sisters* or you'd look out of place.

"I knew all that talk about being afraid of being overheard was just that—talk. A directional beam microphone could have picked up every word at our table.

"What made you change your mind about delaying the work on McGuire?"

"Buh-Buh-Brentwood. I duh-didn't know they'd go that far in trying to stop the work. Nuh-nuh-not kih-kidnaping and piracy." She took a deep breath and forced herself to stop sobbing. "I guess they didn't trust me, anyway. Otherwise they wouldn't have put Brentwood on the same job without telling me."

She didn't know that Brentwood was working for Baedecker rather than for the Thurston group. How could she? The difference lay in their tactics. Thurston wanted to take over Viking as a going concern—a little under the weather, perhaps, but still functioning. That meant that they wanted the work on McGuire delayed and complicated, but they didn't want to put him out of the picture completely, since they expected to take over the work as soon as they got control of Viking.

Baedecker, on the other hand, didn't give a care about Viking Spacecraft. They wanted to take over Ceres for their own firm. If that meant that getting rid of McGuire completely would give them what they wanted then they'd get rid of McGuire.

"Why'd you take the job?" I asked.

"Money. I'm sick of the Belt. I want to go back home, to Earth." Her eyes were quite dry by now, and there was a choked sort of fear in them. "I hate it out here. There's death all around you all the time; sometimes it's just outside your skin, on the other side of the fabric of your vac suit. I wanted to get back home. But all the money is out here in the Belt. Back there, it's all eaten up in taxes and welfare, and nobody has a chance to get a job that really pays. So when they offered me the money—" She stopped and closed her eyes. "I'm scared, that's all. I've been scared ever since I came out here. And now—" She shuddered. "And now we're at the mercy of this idiot machine. I get so scared that I get mad, every time I hear his voice."

If somebody had set a thermonuclear bomb off inside my skull, there couldn't have been more sudden illumination.

I patted her on the shoulder. "You may get your money and more besides," I said.

She shook her head. "I wouldn't take their money now."

I stood up. "I think I can talk you into changing your mind, but right now, I think I have a way of getting McGuire to listen to me, thanks to you."

She looked up at me. "What did I do?"

"You threw a book," I said. "That's enough to win you a pardon as far as I'm concerned. You sit tight and don't let on that I know anything. Nobody else knows anything at all. Not even Brentwood. So keep quiet."

She dried her face quickly and stood up, too. "All right. Whatever you say."

As we went back out into the lounge, I felt a little pleased with myself. If things worked out right—and they would—we now had a double agent inside Thurston's organization. It wouldn't take too long to clear things up, and Miss Devereaux could go back to Earth with a nice piece of change in her pocket.

"What ate you looking so happy about?" Videnski asked suspiciously when he saw us.

"I'll show you," I said. "Where's the tool kit?"

Ten minutes later, I had the wall speaker in the lounge out of its housing, but still connected. McGuire hadn't interfered with the work, as he might have if someone else had tried to do it, because he could see perfectly well that it was Daniel Oak who was doing the job, even though Oak hadn't been speaking to him much lately.

Then I said: "McGuire, can you hear me?"

"Yes, sir; I can hear you," came his voice from the speaker.

"Can you hear your own voice?"

"Yes, sir."

"Very well. Now, are you watching what Mr. Oak is doing?"

"Yes, sir."

I picked up a small ball-peen hammer and hit the speaker—not too gently—at just the right place.

"Did you see that, McGuire?" I asked.

"Yes, sir. I saw it." His voice sounded hoarse, muffled, and whispery coming through the damaged speaker.

"Do you see what sudden damage can do to speaking apparatus?"

"I must test," McGuire said, an almost hesitant note in his new voice. He spent fifteen seconds or so saying a series of nonsense syllables that are used as a test for a robot's speaking apparatus. They contain every sound used in English.

When that was over, he said: "The damage inflicted has radically changed the basic patterns of the voice. If an equivalent amount of damage was done to Mr. Oak's vocal apparatus, then the voice which has been speaking must belong to Mr. Oak."

"You saw the damage being done in each case," I said quickly. "You also see that it is the source of the voice that becomes important when the pattern has changed."

"Yes, Mr. Oak I see that."

I breathed a deep, heartfelt sigh of relief.

Felder looked at me in a sort of numb awe. "How did you figure that out?"

"It came to me in a flash, but the clues were all over the place. McGuire didn't stay on the course I gave him; he couldn't, if he wanted to avoid meteors. And then, too you said that he ought to have more sensory apparatus, so that he could judge facts. The facts that come into his brain from his own sensory apparatus *have* to be utilized in his memory banks. He didn't have to know all the steps in reasoning that would lead from one voice pattern to another if it could be demonstrated as a *fact*—as an axiom, if you like.

"If *you* tell him that he must change course, he isn't obliged to pay any attention; but if he spots a meteor, he has to accept that as a fact, and he changes course to allow for it. In a sense, then, the meteor is capable of giving McGuire orders, and you aren't."

Felder didn't look any too happy; no one likes to have a point in his own field explained to him by a layman. But he couldn't argue with me.

"There's a great deal more to be done before McGuire can be put into practical service," he said heavily. "We may as well head back to Ceres."

"I don't think so," I said, "McGuire's in good enough shape to let us make the big splash on Earth that Ravenhurst wants to make. He'll need it if Viking is to have enough financial leeway to go on with this project."

"What about . . . what about Brentwood?" Vivian Deveraux asked.

"We can get rid of him at Phobos just as easily as we can at Ceres. If there's any explaining of any kind to do, we can lay the blame on him. He won't be in any position to deny it."

She nodded, understanding exactly what I meant.

There were still plenty of bugs to be worked out of McGuire, but now I could see our way clear to getting both Thurston and Baedeker off our backs for a while.

At that point, Brentwood stuck his head in the door. "What's going on?" he asked in his soft voice.

"We're going on to Phobos, Brentwood," I said. "Go on back to your room and stay there." He withdrew his head. I looked at Videnski. "Go lock him in, Ted. He gives me a pain in the neck."

I got the first laugh I'd heard in forty-eight hours.