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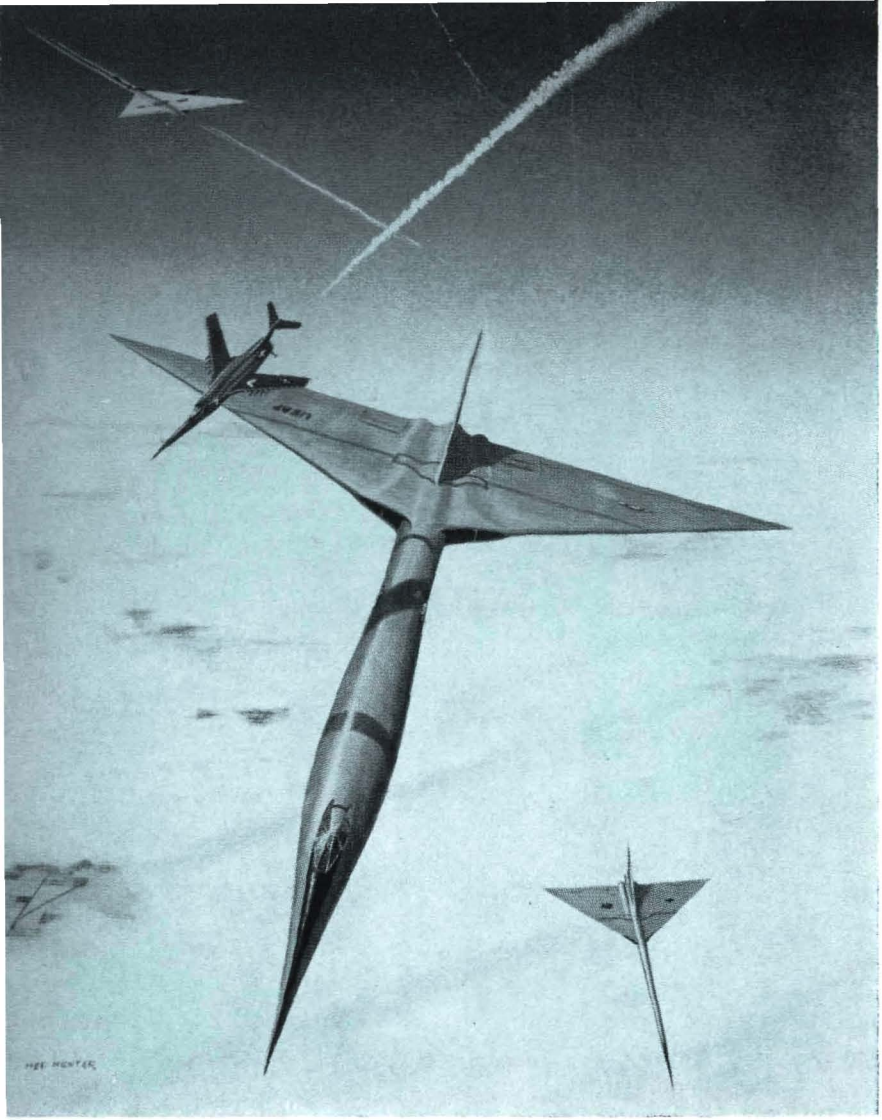
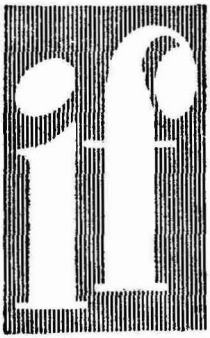
WORLDS OF
SCIENCE FICTION
APRIL 1956
35 CENTS
KELLY FREAS



ATOMIC BOMBER—These giant needle-nosed delta wing A-bombers, atom-powered aircraft of the future, are shown in combat practice eleven miles above the earth's surface. The "attacking" craft is a supersonic jet interceptor. These great ships will likely be powered by air flowing through ducts in their wings. Air will be expanded and ejected through rear jet nozzles at terrific speed by means of intense heat from atomic reactor buried in heavy shielding between wings. Despite shielding, crew in far-off nose will have perhaps 36 flight hours without radiation injury. Such aircraft will be first steps to adequate power for space flight. (Drawing by Mel Hunter)



WORLDS of SCIENCE FICTION

APRIL 1956

All Stories New and Complete

Editor: JAMES L. QUINN
Assist. Editors: EVE WULFF, ROBERT W. GREENE
Art Editor: MEL HUNTER

NOVELETTES

SHORT STORIES

FEATURES

COVER:

By Kelly Freas, from "The Executioner"

IF is published bi-monthly by Quinn Publishing Company, Inc. Volume 6, No. 3. Office of publication, 8 Lord Street, Buffalo, New York. Entered as Second Class Matter at Post Office, Buffalo, New York. Subscription $3.50 for 12 issues in U.S. and Possessions; Canada $4 for 12 issues; elsewhere $4.50. Allow four weeks for change of address. All stories appearing in this magazine are fiction; any similarity to actual persons is coincidental. Not responsible for unsolicited artwork or manuscripts. 35c a copy. Printed in U.S.A.

EDITORIAL AND BUSINESS OFFICES, KINGSTON, NEW YORK

Next issue on sale April 12th

THE ODD genre

I ENJOYED MYSELF recently at a local (Los Angeles) Auto Show, particularly observing the Cars of the Future, the fibreglas sabres with the fifth wheel for parking and other strictly-from-sci-fi embellishments, like the built-in hi-fi set, telephone, and even mini-TV. With the new emphasis on safety features, Wendayne and I had been talking at dinner, just before going to the exhibit, about an idea of an inventor friend of ours, namely wrap-around bumpers protecting the side of a car as well as the front; and when we arrived at the show, lo! what did we see but the demonstration of just such side-bumpers. And then there was the $62,000 gold-plated Cadillac—*very* far in my future.

After which I went out to the parking lot and kicked my new Oldsmobile: so it had power steering, power braking, power windows, power windshield wiping, power radio antenna, power horn and power cigaret lighter, what good was the damn old thing?—it didn't even have power handkerchief.

And long noses run in my family.

THE CONQUEST OF SPEECH: Consider the plight of poor Walter Ernsting, earnest German sci-fi fan. A one hundred Deutschmark fine (about $25 in our money) was levied against him for defending George Pal's "Conquest of Space" against derogatory criticism in one of the leading German newspapers. Ernsting, who is editor of the German s.f. fortnightly, *Utopia,* was thrilled by the picture, which he saw twice at once, but incensed by a review which he considered ignorant, ill-informed, unfair, usw. (that's German for etc). So he wrote a protest to the paper—and was promptly taken to court for it! Sued and made to pay for "insulting the editor".

It was only last year that we "fit the battle"—the *Battle of Bonn*—to save science fiction in Germany. Most of you won't have been aware that there was even any controversy over there, but a branch of the Bavarian Government lit a Bonn-fire under science fiction that threatened for awhile to incinerate the whole subject. The same ardent defender of s.f., Walter Ernsting, made a day's journey, at his own expense, to the seat of Government to represent and defend the magazine he edits, *Utopia,* from charges of "atom mongering", glorifying nuclear warfare and other thoughts farthest from the peace-loving mind of long-standing scientific-tionist Ernsting who had dreamed of introducing modern science fiction to his countrymen even while

a prisoner of the Russians. An appeal to America for moral support was answered by airgraphs and cables of protest from the Los Angeles Science Fantasy Society, the international Fantasy Foundation, the League for Better Science Fiction (New York), and concerned individuals throughout the country. A 2000 word "Open Letter" was composed, translated into German, professionally printed and distributed prior to the hearing to the District Attorney and the panel of twelve (lawyer, educator, minister, psychologist, author, businessman, etc) who investigated the case. In answer to the charge that some of the stories were "too realistic and horrible in their descriptions of weapons of the future", I contended:

There are many great writers expressing great philosophies, bombarding the human brain with thoughts and ideals, ways and means of achieving the utopian civilization for which all sane men yearn. If sometimes they dip their pens in acid and blood and paint pain-pictures of ghastly atomic horror, it is to crystalize for their perhaps less imaginative brethren the disastrous results of unholy ambition, twisted reasoning, misapplied science. For every bomb that drops in science fiction, an explosion takes place in the mind of the reader that blows away misconception. For every tower of lies that is toppled, a skyscraper of truth is erected. Better bitten by a snake on paper than in reality! And if we are shown the snake on paper, we learn to recognize and avoid it in reality.

If 8 of the 12 individuals judging the merits of science fiction and the issues of the magazine in question had turned thumbs down, it would virtually have been the end of the modern s.f. experiment in Germany. Which would have been not only tragic but downright ridiculous, considering what Germany has contributed to the genre via Willy Ley, Fritz Lang, Curt Siodmak, Otto Willi Gail, Thea von Harbou, Heinz Haber, Rick Strauss and Frank R. Paul. (Incidentally, to Frank Rudolph Paul, my favorite illustrator and the grand old dean of stf artists, my love, respects and congratulations to you, sir, on turning 70. May your enchanted brush be with us yet when you are 100.)

But science fiction got a clean slate at L'Affaire Bonn: the Bonnshell exploded, and out of the smoke and flame came a 100% exoneration for science fiction.

The Science Fiction Club Deutschland has been formed, has over 150 corresponding members, a lending library, and a society organ, *ANDROmeda.*

WHEN I WAS enroute to the 13th World S.F. Convention I stopped off in Chicago and visited the offices of *Playboy,* the sophisticated men's magazine that features a lot of slick sci-fi, and made the acquaintance of the editor, Ray Russell. He turned out to be a dyed-in-the-Wells fan from 'way back when Ray Bradbury was in rompers, and spent an afternoon reminiscing with me about the Good Old Days of Eando (Earl and

(Continued on page 112)

Illustrated by Paul Orban

HUMAN

BY RAYMOND F. JONES

The government was spending a billion dollars to convince the human race that men ought to be ashamed to be men—instead of errorless, cybernetics machines. But they forgot that an errorless man is a dead man . . .

ERROR

DURING ITS three years' existence, the first Wheel was probably the subject of more amateur astronomical observations than any other single object in the heavens. Over three hundred reports came in when a call was issued for witnesses to the accident that destroyed the space station.

It was fortunately on the night side of Earth at the time, and in a position of bright illumination by the sun. Two of the observers had movie cameras attached to their ten-inch mirrors. The film in one of these was inadequate, but the other carried a complete record of the incident from the moment of the *Griseda's* first approach, through the pilot's fumbling attempt to correct course, and the final collision.

The scene was lost for a few seconds as the wreckage drifted out of the field. The observer had been watching through a small pilot scope, however, and had wits enough to pan by hand so that he got most of the remaining fall that

was visible above his horizon as the locked remnants of the Wheel and the *Griseda* began their slow, spiral course to Earth.

By the time this scene was finished, word of the disaster was already flashing to Government centers. Joe McCauley, radio operator aboard the Wheel, had been talking with Ed Harris on the *Griseda*. As a matter of routine, all their conversation was taped, and some of this was recovered from the crash and played back at the investigation.

"— and get this," Ed was saying, "my kid had his fifth birthday just last week, and I've got him working through quadratic equations already. You've got to go some to beat that one."

"Doesn't mean a thing," said Joe. "You know how these infant brain boxes burn out. Better take him fishing and forget that stuff for a while. Hey — what the devil's going on? You got a truck driver in the control room? I just saw you out the port and it looks like you're right on top of us!"

"Jeez, I dunno. It's been like that ever since we cleared Lunaport. Sometimes I think this guy Cummins trained in a truck the way he —Hell, he's comin' up on the wrong side of the Wheel! I relayed the orders to go to the east turret. Acknowledged them himself—"

"Ed! I can see you outside the port—we're going to hit!"

The words were ripped by the shattering, grinding roar of colliding metal. Then a moment later the blast of an exploding fuel tank.

"Ed!"

"Joe—yeah, I'm here. Lights gone. Emergency power still on. Take the emergency band if you've still got a rig. I'll stand by—"

Joe switched over without comment and called Space Command Base on the emergency channel, which was always monitored. "Wheel just rammed by *Griseda,*" he said. "Possible loss of orbital velocity. Extent of damage unknown."

Lieutenant James, on duty at the Base, had just returned from a three day leave and was scarcely settled in the routine of his post once more. He glanced automatically at the radar tracking screen and his face paled at the sight of the irregular figure there, slightly out of the centering circle. It was no gag.

"You're dropping," he said. "Orbital velocity must be down. Can you correct?"

"I haven't been able to contact the bridge," said Joe. "Alert all Command and have crash point computed. Stand by."

It developed that the bridge was entirely gone, along with a full thirty percent of the station. Captain West had been spared, however, being on inspection in the other sector of the station. He came on at once as Joe McCauley managed to get the communication lines repatched.

"Emergency red!" he called. "All stations report!"

One by one, the surviving crew chiefs reported conditions in their sectors. And when they were finished, they all knew their chance of survival was microscopic. Captain West ordered: "Communicate with

Base. Request plotting of crash point."

"Done, sir," Joe answered.

"Command post will be established in the radio room. Emergency steering procedure will be started on command. Man all taxi craft."

It was all on the tapes that were salvaged. Everything was done that desperate men could humanly do.

At Base, its Commander, General Oglethorpe, was in the communications and tracking room by the time Joe McCauley had established contact with Captain West.

He picked up the mike at the table. "Plug me in to the station," he commanded the Lieutenant.

He got Joe first, but the radio operator put Captain West on as soon as he arrived in the radio room. "Hello, Frank," said General Oglethorpe in a quiet voice.

"Yes, Jack—" Captain West answered. "I'm glad you're there. Does it look pretty bad?"

"Orbital velocity is down two percent. You've been falling for eight minutes."

"That's pretty bad. I've got all steering stations manned, but only thirty percent of them are still operable. We're using the taxis to give a push too. But we haven't been able to dislodge the *Griseda.* Its inertia takes almost half our available energy."

"Couldn't you get a blast from the *Griseda's* tubes to put you in orbit?"

"Adler's got a crew out there working on it. But his controls are gone, besides his fuel tanks being opened. And even if we could get their rockets operating it's doubtful we could get the right direction of thrust. Our hope is in our own rockets, and in breaking the ship away from the station."

But the closer the massed wreckage dropped toward Earth, the higher were its requirements for orbital velocity. While the crews worked at their desperate tasks General Oglethorpe sat with his eyes on the tracking scope, and the voice of his friend in his ear. He listened to Captain West's measured commands to the men in the station and to those working to free the ship. General Oglethorpe heard the repeated reports of failure to free the *Griseda.* He listened to West's orders to transfer fuel from the ship to the station as the latter's supply ran low. He watched the continued deviation of the spot on the tracking scope.

Then he turned as a lieutenant came up behind him with a sheet of calculations. "Present rate of fall indicates a crash point in the San Francisco Bay region, sir."

The General gripped the paper, his face tightening. West said, "Did I hear correctly, Jack? The San Francisco area?"

"Yes."

"We'll have to try to keep it from happening there. I'll order the rockets shut off now. We'll save enough fuel to try to do some last minute steering as we approach Earth."

"No!" General Oglethorpe cried. "Use it now! Its effect will be the same as later. Blow the chambers apart! Get back in orbit!"

"We can't make it," West said

quietly. "We've gained forward velocity, but I'll bet your computers will show us better than four percent below requirements at this orbit. Spot our crash as accurately as possible on free fall from our present position. We'll save remaining fuel for last minute steering in case we're near a city."

The General was silent then as he heard the responses come back from the men who manned the rockets and who knew that with the closing of their fuel valves their own lives had also come to an end.

"We'll want testimony account for the investigation," Oglethorpe said finally. "Get the responsible officers on the circuit—but you first, Frank—"

There was a moment of silence before Captain Frank West began speaking in changed tones. "What is there to say?" he asked, finally. "You won't need to hold an investigation. I can tell you all you need to know—all you'll ever find out at least,—right now. Your decision will be the same one so many hundreds and thousands of investigating boards have made in the past: Pilot Error.

"*Human* error! That's what killed the first Wheel, and the *Griseda.* I don't know why it happened. Adler doesn't. Neither does any other man up here with us. Those who were with Cummins in the control room are dead, but they didn't know any more than we do.

"We spent a million dollars training that man, Cummins. We believed he was the best we could produce. We measured his reflexes and his intelligence and his blood composition until we thought we knew the function and capability of every molecule in his body. And then, in just one split second, he makes the decision of a moron, fumbling when he needed to be precise."

"Just what did he do?" Oglethorpe asked gently.

"Our customary approach is to the west turret. This time he had been ordered to go to the east side because of repairs on the other end of the hub. Cummins had seen and acknowledged the orders. Apparently, they slipped his mind during approach to the Wheel and he came up on the west side. Then he remembered and tried to correct his position.

"Everything must have gone wrong then. The decision was a blunder to begin with. Wrong approach, yes. But it was suicide to attempt such a detailed maneuver that close to the station. He used his side jets and slammed the *Griseda* into the Wheel at a forty-five degree angle, locking the ship in the wreckage of the rim and in the girders of the spokes."

"Was there any previous indication of instability in the pilot that you know of? We'll get a better answer on that from Adler, but we need to know if you were aware of anything."

"The answer is no! Cummins was checked out before the start of the flight just three days ago. He was all right as far as any of our means of evaluation go. As right as any man will ever be—

"Jack, listen to me. Remember when we were back at White Sands and talked of the days when there

would be a Wheel up here, and ships taking off for the Moon and for Mars?"

"I remember," said General Oglethorpe softly.

"Well, we've got a piece of that dream. But there'll never be any more, and what we've got is going to go smash unless we correct the one weakness we've never tackled properly. You'll fail again and again as long as men like Cummins can destroy twenty years' work and billions of dollars worth of engineering construction. One man's stupid, moronic error, and all of this goes to destruction, just as if it had never been.

"On the ground, a plane crashes —the board puts it down as pilot error and planes go on flying. You can't do that out here! The cost is too great. It's a sheer gamble putting this mountain of machinery and effort into the hands of men we can never be sure of. You think you know them; you do everything possible to find out about them. But you just don't *know*.

"We've solved every other technical problem that has stood in our way. Why haven't we solved this one? We've learned how to make a machine that will perform in a predictable manner, and when it fails to do so we can provide adequate feed-back alarms and correctors, and we can find the cause of error.

"With a man, we can do nothing. We have to accept him, in the final analysis, on little more than faith.

"A couple of hundred men are going to die because of a human error. Give us a monument! Find out why men make errors. Produce a means of keeping them from it. Do that, and our deaths will be a small price to pay!"

These were the words of a dead man. They were heard again and again in the committee rooms and investigation chambers. They were printed and broadcast around the world, and they enabled General Oglethorpe to do the thing that became a burning crusade with him.

He would probably have failed in his effort if those words hadn't been spoken by a dying man while a shrieking, white-hot mass plunged through the atmosphere to land, finally, in the waters of the Pacific.

The wreckage missed the city of San Francisco without the necessity of guidance by the rocket fuel so preciously hoarded by West. The Wheel and the *Griseda* were doomed the moment the pilot, Cummins, decided to shift the position of the ship with respect to the station.

IN THE anteroom of the Base Commander's office, Dr. Paul Medick rubbed the palms of his hands against his trouser legs when the secretary wasn't watching, and licked the dryness that burned the membrane of his lips.

The secretary remembered him. She probably had been the one to make out his severance papers and knew all about Oglethorpe's firing him.

Now she was no doubt wondering about the General's calling him back after that bitter occasion— just as Paul himself was wondering.

But he was pretty sure he knew. If he were right it was the opportunity of a lifetime, and he couldn't afford to muff it.

The girl turned at the sound of a buzz on the intercom. She smiled and said, "You may go in now."

"Thanks." He stood up and told his nerves to quit remembering the last time he passed through the door he was now entering. General Oglethorpe was nobody but the Base Commander, and if Paul Medick got thrown out once more he would be no worse off than he now was.

Oglethorpe looked up, a grim trace of a smile at the corners of his mouth. He shook hands and indicated a chair by the desk, resuming his own seat behind it. "You know why I called you—in spite of our past differences."

Paul hesitated. He didn't want to show his anxiety—and hopefulness—He weighed the answers that might be expected of him, and said, "It's this crash thing—and the appeal of Captain West?"

"Would there be anything else?"

"I'm flattered that you thought of me."

"There's nothing personal involved, believe me! I'd a thousand times rather have called somebody else—anybody else—but there's nobody that can do the job you can."

"Thanks."

"Don't bother thanking me. I expect there'll still be a great deal of difference between us about the basic goals of this project. But once we start I don't want to have to fire you again."

"Just what is the nature of this project," said Paul, "its goals? Fill me in on the details."

"There are no details—beyond what you've read and heard—you're going to provide them. The objective is to find a kind of man that will keep the Frank Wests of the future from dying, as those men aboard the Wheel did."

"What kind of man do you expect that to be?" Paul asked.

"One who will eliminate, for all time, the damning verdict that has been handed down in tens of thousands of investigations of accident and disaster: *human error.*

"We're going to find a kind of man who can be depended on to function without error. One who can undertake a complicated task of known procedure and perform it an infinite number of times, if necessary, without a single deviation from standard."

Paul Medick regarded the General through narrowed eyes. In spite of his almost agonizing desire to possess the appointment to head up this Project he had to have a clear understanding with Oglethorpe now. He had to risk his chances, if necessary, to make himself absolutely clear.

He said, "For untold thousands of years the human race has spent its best efforts to reach the goal of perfection without achieving it. Now you propose to assemble all the money in the world, and all the brains and say: give us a perfect man! The United States Space Command demands him!"

"Exactly." General Oglethorpe's face hardened as he returned Paul's steady gaze. "No other technical

problem has been able to stand before such an attack. There is no reason why this one should. And the problem *must* be solved, or we're going to have to abandon space just as we stand on the frontier, getting our first real glimpse of it."

"Your world is such a simple, uncomplicated place, General," said Paul slowly. "You want a man with two heads, four arms, and a tail? Order it! Coming up!

"That's the way you operated when I set up your basic personnel program five years ago. It didn't work then; it won't work now."

The General's face darkened. "It *will* work. Because it has to. Men are going to the stars—because they have to. And they're going to change themselves to whatever form or shape or ability is required by that goal. They've done everything else they've ever set themselves to do—life came up out of the sea because it had courage. Men left their caves and struck out across the plains and seas, and took up the whole Earth and made it what it is—because they had courage.

"But to go to space, courage is not enough. We need a new kind of man that we've never seen before. He's a man of iron, who's forgotten he was ever flesh and blood. He's a machine, who can perform over and over the same kind of complicated procedure and never make an error. He's more reliable and endurable than the best machines we've ever made.

"I don't know where we'll find him, but he can be found, and you *will* do it, because you believe, as I do, that Man's frontier must not be closed. And because, in spite of your cynicism, you still understand the meaning of duty to your society and your race. There is no possibility of your refusal, so I have taken steps already to make your appointment official."

"You must also have prepared yourself," said Paul, "to accept me with the basic philosophy that must guide me in this matter, And my philosophy is that this Project *must* fail. It has no possibility of success. The man you seek does not exist. An errorless man would be a dead man.

"Any living man is going to make errors. That's the process of learning: make an approach, correct for error, approach again, correct once more. It's the only way there is to learn."

The General inhaled deeply and hesitated. "I know nothing about that," he said finally. "You know what I want. Even if what you say were partially true, there remains no reason why that which has been learned cannot be performed without error. I may have to put up with it, but you'll save yourself and all of us a lot of time if you don't spend three months digging up reasons why the Project can't succeed."

He stood up as if everything had been said that could possibly be said. "Let's go and have a look at your laboratory quarters."

In the hot sunlight of the Southwest desert, they walked across the yard from the administration building to a large laboratory which had been cleared to the bare floor and

walls. Paul felt a sense of instability returning. But only for an instant. He'd all but insulted the General and told him he had no intention of producing the iron superman the Space Command contemplated. And still he had not been thrown out. They must want him very badly, indeed!

He had no qualms of conscience about taking the post now. General Oglethorpe had been forewarned and knew what Paul Medick's hopes and intentions were.

"You can build your staff as big as you need it," the General was saying. "This Project has crash priority over everything else. We've got the machines to go to space. The machines need the men.

"You can have anybody you want and do anything you like to them. We hope you can put them back together again in reasonable shape, but that doesn't matter too much."

Paul turned about the bare room that would serve adequately as office space. "All right," he said. "Consider Project Superman begun. Remember, I have no hope of finding a solution in an errorless human being. I'll find whatever answer there is to be found. If you have any objections to my working of those terms, say so now. I don't intend to get fired again with a Project in the middle of its course."

"You won't be. You'll find the way to give us what we need. I want you to come down to the other end of the building and meet a man who will be working closely with you."

There had been sounds of activity in the distance, and General Oglethorpe led Paul towards them. They entered a large area in which instrumental equipment was being set up. A tall, thin, dark-haired man came up as they entered.

"Dr. Nat Holt," said the General, "instrument and electronics expert. This is Dr. Medick, the country's foremost man in psychology and psychometric analysis.

"Dr. Holt will be your instrument man. He will design and build whatever special equipment your researches call for. Let me know soon what you'll need in the way of furniture and assistants."

He left them standing in the nearly bare room. Through the window they watched his stiff form march back to his own office.

Nat Holt shifted position and grinned at Paul. "I may as well tell you that the General has briefed me thoroughly on what he considered your probable reaction to the Project. I'm just curious enough to want to know if he was right."

"The General and I understand each other—I think," said Paul. "He knows I'm contemptuous of his approach to a problem of human behavior by ordering it solved. But he knows I'll take his money and spend it on the biggest, deepest investigation of human behavior via psychometrical analysis that has ever been conducted."

"It ought to be enough to buy gold fringed couches for all the analysts in the country."

Paul raised his brows. "If it's that way with you, then why are you joining me?" he asked.

"Because I have a stake in this,

too! I want to see the problem solved just as much as the General does. And I think it *can* be solved. But not this way!

"There's only one way to produce men of superior abilities. The method of adequate training. Hard, brutal discipline and training of oneself. I'm going to convince Oglethorpe of it after he's seen the failure you intend to produce for him."

"That shouldn't be hard," said Paul. "It's the General's own view. The Project is simply to implement that view.

"But let's not have any misunderstanding about my intentions. I expect to give honest value in research for every dollar spent. I expect to turn up data that will go a long way toward providing better spacemen for the Command—and to give Captain West the monument he asked for!"

Alone in his hotel room that night, Paul stood at the window overlooking the desert. Beyond the distant hills a faint glow in the sky marked the location of Space Command Base. He regarded it, and considered the enormity of the thing that was being brewed for the world in that isolated outpost. Now the chance was his to prove that manhood was a quality to be proud of, that machines could be built and junked and built again, but that a man's life was unique in the universe and could never be replaced once it was crushed.

For years he'd struggled to probe the basic nature of Man and find out what divorces him from the merely mechanical. He'd known there would probably never be enough money to reach his goal. And then Oglethorpe had come, offering him all the money in the world to reach a nebulous objective that Space Command did not know was unobtainable.

Somebody was going to spend that money. With clear conscience, Paul rationalized that it might as well be him. He'd see that the country got value for what it spent, even if this was not quite what the Space Command expected.

Nat Holt was going to be a most difficult obstacle. Paul wished the General had let him pick his own technical director, but obviously the two men understood each other. In their separate fields, they were alike in their approach to human performance. Whip a man into line, make him come to heel like a reluctant hound. Beat him, shape him, twist him to the form you want him to bear.

Discipline him. That was the magic word, the answer to all things.

Paul turned from the window in revulsion, drawing the curtains on the skyglow of the Base.

Human error!

When would Man cease to indulge in this most monumental of all errors? When would he cease to regard himself and his fellows as brute creatures to be beaten into line?

He had to find the right answer before Oglethorpe and his kind found some flimsy validation for the one they had already chosen long ago.

He stood up and glanced at the

clock, deciding he wanted dinner, after all. Tomorrow he'd wire Betty and the kids to get packed and be on their way. No—he'd phone tonight. She had a right to know immediately the outcome of his interview.

The dining room was almost empty. He ordered absently and clipped the speaker of his small personal radio behind his ear while waiting. He seldom used it, but here in the desert was a sense of isolation that made him seize almost compulsively upon any contact with the bright, distant world. The music was dull, and the news uninspiring. He was about to turn it off when his order arrived.

The wine was very bad; the steak, however, was good, so Paul considered it about even. His finger touched the radio switch once more. The newscaster's voice changed its tone of pounding urgency. "Repercussions of the recent crash of the world's first space station are still being heard," he said. Murmurs of protest against construction of a new Wheel are rising in many quarters. Today they approach the proportions of a roar.

The influential New England Times states that it is 'unqualifiedly opposed' to any restoration of the Wheel. 'In its three years' existence the structure proved beyond any question of doubt its utter lack of utility. Now its fall to Earth demonstrates the menace constituted by its presence over every city on the face of the globe.'

"Senator Elbert echoes these sentiments. 'It was utter folly in the first place to spend billions of dollars to construct this Sword of Damocles in the sky of all the world. I propose that our Government go on record denying any further intention to rebuild such a threat to the peace and well-being of nations who stand now on the threshold of understanding and friendliness which they have sought for so long.' "

Paul switched it off. He remembered the hours of worldwide tension while the Wheel was falling toward the city of San Francisco. In panic, the whole population of the Bay Area attempted evacuation, but there wasn't time. The bridges became clogged with traffic, and some hysterical drivers left their cars and jumped to the waters below.

As the wreckage neared Earth, the computers narrowed their circle of error until it was certain at last that the city would not be struck. But the damage was done. The fear remained, and now was congealing in angry determination that another Wheel would not be built.

Paul finished his meal, wondering what effect this would have on the plans to build a new Wheel—and on Project Superman. Maybe Congress would react in anger that would cut off all appropriations to the Project.

He wondered, in sudden weariness, if this would not be an unmixed blessing, after all.

THE NEXT three days were spent in telephone and telegraph communication with members of his profession as he proceed-

ed to recruit a staff.

On Friday, Betty arrived with the kids. By the end of the following week, laboratory furniture had been installed and the first trickle of potential staff members was coming in to see what Superman was all about. Nat, too, had been busy forming his own staff and setting up basic equipment.

Paul had the feeling that they were opposing camps setting up on the same site of exploration. He tried to tell himself it was completely irrational, until Nat approached him a few days later.

"Quite a crew you're getting in here," the technician said. "You'll have to take Oglethorpe up on his offer of new buildings if you expect to find couch space for all your boys."

"That's what you're here for," Paul suggested mildly, "to do away with couches."

"Right." Nat nodded. "Anything a couch can do, a meter can do twice as efficiently."

"Sometimes both are necessary. You forget my specialty is psychometry."

"No, I'm not forgetting," said Nat. "But that's what makes it so hard for me to figure out. You're attempting to span two completely incompatible fields: science and humanities. Man behaves either as a machine or as a creature of unstable emotion. To function as one you have to suppress the other."

"Splitting Man in two has never produced an answer to anything. It has been tried even longer than couches—and with far less result."

"I'll make you a small side bet. We going to have to work together on Superman, and coordinate all our procedures and results. But I'll bet the final answer turns up on the side of a completely mechanistic man, shorn of all other responses and motivations."

"I'll take that!" Paul said with a grim smile. "I don't know how much of an answer we'll find, but I know *that* won't be it!"

"Let's say a small celebration feed for the whole crew when Superman is completed. Nothing chintzy, either!"

They shook on it. And afterward Paul was glad the incident had occurred. It left no doubt about the direction Nat Holt would be traveling in his work.

Four weeks to the day, from the time Paul had stepped into Oglethorpe's office, he called the first meeting of his staff leaders. Invitations to the General and to Nat Holt were deliberately omitted. He wanted this first get together to be a family affair.

He felt just a little shaky in the knees as he got up before that group for the first time.

"I won't repeat what you already know," Paul said carefully. "You all know the background events that produced Project Superman.

"I am sure that each of you has also caught the two basic errors that have been assumed by the Space Command, first, that an errorless man is possible, and second, that genuine scientific discovery can be secured wholly upon command. General Oglethorpe recognizes that we consider these assumptions er-

roneous, but he also knows that our professional integrity demands that we pursue vigorously a course which he believes will result in success.

"We recognize, too, that we are not here to invent or produce anything that does not already exist. But, in a sense, our superiors and some of our co-workers expect us to do exactly that.

"We can agree, however, that most of Man's potential still remains to be discovered. And for us, who have hoped for a means of understanding that potential, this Project is the fulfillment of dreams. If we fail to take full advantage of it, we will win the condemnation of our profession for a century to come.

"Space Command has already concluded that a man can be stripped of his humanity and driven to an utterly mechanistic state with the robotic responses of a machine. Let there be no mistake about it: we have been brought here to validate that conclusion.

"We will validate it by default, so to speak, unless we can produce a clean-cut analysis and demonstrations of the thing that most of us believe: that the essence of Man is more than a piece of machinery or a collection of bio-chemical reactions.

"Our science of mind and Man is on trial. If we fail, we give consent to a doctrine that will spread from space technology to all the rest of our society, and bind Man in an iron mold that will not be broken for generations. While we have been hired and will ostensibly work at the task of developing an errorless man, our basic purpose must be to validate the humanity of Man!"

He waited for their reaction. Outside, far across the open desert at the station, a rocket screamed into the air. They waited until the sound died away.

Professor Barker stood up. "There is scarcely a human being who has not by now read or heard the words of Captain West's appeal. They will be looking for the day when there will come marching from our laboratories, like a robot, the errorless man he asked for.

"Do you mean we have to fight the stated objectives of this Project? Can we not discover sufficient understanding to establish some method of training which will accomplish, in another way, the things the Space Command needs?"

"We are not fighting the Space Command's desire for more adequate men for its ships," said Paul. "We are fighting only against the false conclusions they have already formed concerning the nature of such men.

"We must solve the problem of human error. We know its purpose in the learning process. We must discover the reason for its existence in a *learned* process. We have to find out what training actually means.

"We have to ask how we know when an error has been made. It is obvious, of course, when a spaceship rams a fixed orbit station. But what of the subtler situations, where results are less dramatic, or are postponed for a long time—?

"The primary thing to remember at this point is that our basic goal is to prevent any false confirmation of the dogma that Man is no more than a badly functioning machine, which will gain value when he has been tinkered with sufficiently so that he can slip in beside the gears and vacuum tubes and be indistinguishable from them. And to reach this goal we must discover his true nature."

It was two weeks later that General Oglethorpe made his first visit since Superman got under way. The soldier's face seemed more deeply lined and his eyes more tired than Paul remembered seeing them before.

"You seem to have things well in hand," he said. "How soon can you give us some tangible results?"

"Results! We've just started housekeeping. In a year, maybe two, we'll have an idea where to begin a concentrated search for what you want to know."

The General shook his head slowly, his eyes remaining on Paul's face. "You aren't going to have anything like a year. You haven't got time to run down one line of research and then another. Run them all at once—a thousand of them if you want to. Why do you think you've got the budget you have!"

"Some things," said Paul, "like threading a needle—or analysing a human being—don't go much faster when a thousand men work at it than when there's only one."

"They do when there're a thousand needles to thread—or brains to pick. And that's what we're up against here. We need a volume of the kind of men we've been talking about, and we need them quick!"

"We have to find out how to get the first one."

"And you haven't got as much time now as we thought you had when Superman began. They're trying to close us up.

"We hadn't planned to build another Wheel right away, not until some refinements of design had been worked out, and we had some results from Superman.

"Now, all that's been scrapped. We've received orders from Washington that erection of a second Wheel is to begin at once, using the plans of the first one. Fabrication of structures is already under way."

"I don't understand," said Paul.

"If we don't get another one up there within a matter of weeks, this hysterical opposition among the public is liable to prevent us ever getting one there again. We have to act while we still have authority, before the crackpots persuade Congress to take it away. And by the time it's built, I want some men to put in it. Men who can be trusted to not jeopardize it the moment they put their clumsy feet aboard. I want them, Medick, and I intend to have them. That's by way of an order!"

The General rose, but Paul remained seated. "You can't get them that way, and you know it," the latter said. "We'll do all we can, as I've told you before."

"I think you'll do considerably more, now. That was quite a talk

you delivered to your boys a couple of weeks ago. We will 'ostensibly work at the task of developing an errorless man', is the the way I believe you put it. You're going to do a lot more than ostensibly work at it, Medick. Just how much do you think you can get away with?"

Paul remained motionless in the chair. Only his lips moved. "So you had a report on our little meeting? I hope it was complete enough to give you the rest of the things I said, that my basic purpose was not to produce human robots, but to validate the humanity of man."

Oglethorpe leaned closer, his fists resting on the top of the desk. "The humanity of man be damned! I told you before we want men who've forgotten they were ever human, men of metal and electrons. If I didn't think you were the man who could do it—probably the *only* man in the whole country —you wouldn't last here another minute. But you *can* do it, and you're going to.

"Your little lecture was enough to ruin your career in any place you try to run to, if you undermine Superman. Who do you suppose would trust you with any kind of research after that expression of intent to sabotage the Project your Government entrusted you with, and which you agreed to carry out?

"You're finished, Medick, washed up completely in your own profession, unless you give me what I've asked for! I won't take promises any more. The only assurance you can give me from here on out is results! I want those men, and I want them damn fast!"

PROFESSOR BARKER listened attentively as Paul sat across from him in the administration office and reported Oglethorpe's visit and demands.

"We're caught in a squeeze, and we've got to push both ways," Paul said. "If the Base goes down, Superman goes with it, and we've lost an opportunity that will never come again in our lifetimes. So we've got to do two things: We've got to give active support to the rebuilding of the Wheel, and we've got to develop some kind of show that will convince Oglethorpe that Superman is giving him what he wants. It will mean detouring our basic objectives, but it's necessary in order to have a project at all. I'd like you to take charge of it."

"It'll be a waste of time," Barker said slowly. "I wonder if we'll ever get back on the track."

"We'll have to gamble on it," said Paul. "I don't want you to feel I'm deliberately pushing you up a blind alley, but I think you're the best man for bringing up something we can sell Oglethorpe—while we try to do some real research on some honest goals."

"We can follow the usual lines of so-called training—brute conditioning through shock and fear and pain and discomfort. Most of the men here are already well anaesthetized in that respect. Their breakdown level is high."

"Cummins' was the highest," said Paul, "and he cracked. But work along those lines anyway. Maybe we can find a way to thicken the conditioning armor. At the same time let's push a genuine in-

vestigation into the nature of error as hard as we can. For the moment we'll forget broader objectives, until we know the Project is safe."

Barker agreed reluctantly, feeling that they would end up as mere personnel counselors before long. As soon as he left, Paul called Oglethorpe.

"I've got a suggestion," he said. "Let's not get on the defensive about this thing. Why don't you propose a Senatorial investigation of Space Command?"

"Are you crazy? Why would we want to have them come out here and pick our bones to pieces before making final burial?"

"We've got a story to tell them —remember? We've got Superman, that's going to produce for the first time in the world's history a man adequate to go into the dangers of space. And there's that little story of yours about courage. I think that would go over with them. We'd be out in front if we took the initiative in this instead of just waiting until it rolled over us."

There was a long pause before Oglethorpe spoke again. "I wonder just what you're trying to do," he said finally. "I know you don't mean a word of what you're saying at all—"

"But I do mean it," Paul said earnestly. "I want Superman saved; you want the Wheel. It amounts to the same thing."

"You could be right. You might even be telling the truth. I'll give it some thought."

The officer in charge of the rocket crews and the take-off stand was a young engineer-soldier named Harper. Paul had met him during the first week at Base. His endorsement of Project Superman was enthusiastic.

After talking with Oglethorpe, Paul took a jeep over to the stand and located Harper. The engineer was overseeing the fueling process on a big rocket.

"Doc Medick!" Harper exclaimed. "How's your crew of head shrinkers coming along? We're just about ready for your new breed of pilots."

"What do you mean?"

"This is the nucleus ship. She's going out in orbit tonight with the first batch of supplies and instruments to get ready for the new Wheel. We're going to need your men awfully fast."

"That's what I came to talk about. Can you spare a few minutes?"

"Sure." Harper led him to the office, where the whining of fueling pumps was silenced. "What can we do for you?"

"I wanted to ask about Cummins. You knew him pretty well, didn't you?"

"Buddies. Just like that." Harper crossed his fingers.

"What went wrong, do you think? I know it's all been hashed over in the investigations, but I'd like your personal feelings about him."

Harper's face sobered and he looked away a moment. "Cummins was as good a guy as they come," he said. "But in a pinch he was just a weak sister. That doesn't mean he didn't have a lot on the

ball," Harper added defensively. "He was a better pilot than most of us ever will be, but he was just human like the rest of us."

"What do you mean, 'human'?"

"Weak, soft, failure when the going gets rough—everything we have to be on guard against every minute we're alive."

"I take it you don't think much of human beings, as such."

Harper leaned forward earnestly. "Listen, Doc, when you've been around ships as long as I have, you'll know what Captain West really meant. The weakest link in any technological development has always been the men involved with its operation. In space flight our weakness is pilots and technicians. Set a machine on course and it'll go until it breaks down—and flash you a warning before it fails. With a man, you never know when he's going to fail, and you have to be on guard against *his* breakdown every minute because he won't give any warning.

"Think what it's like to be in our shoes! We take the controls of a few hundred million dollars worth of machinery, and we know that every last man of us is booby-trapped with some weakness that can break out in a critical moment and destroy everything. We fight against it; we struggle to hold it in and act like responsible instruments. And we grow to hate ourselves because of the weak things that we are.

"Cummins was like that. He fought himself every waking hour, knowing that he had a weakness of becoming confused in a tight spot. Oh, it was nothing that even showed up on the tests, and he was the best man of any of us on the Base. But he knew it was there, just as we all know our closets bulge with skeletons that we try to keep from breaking out."

"Do you fight yourself the way Cummins did?" Paul asked.

"Sure."

"What would happen if you pulled a blunder that wrecked that ship out there on the stand."

"I'd have had it, that's all. I'd never get within ten miles of a rocket base again as long as I lived. And there wouldn't be much worth living for—"

"It would be pretty wonderful to feel you weren't constantly on the verge of some disastrous blunder, wouldn't it?"

"It would be a rocket man's idea of heaven to handle these ships with that kind of a feeling inside him."

"We're about ready to begin running tests on Superman, and I'd like you to be the first to help us out. Can you arrange it?"

"We're tied up like a ball of string on getting the nucleus ship in orbit. I know Oglethorpe gave orders we were to jump when you called, but I'll have to check on replacements for those of us you take. What kind of test are you going to run on me?"

"I want to find out how long it takes you to make a serious error, and what happens to you when you do!"

Arrangements were made for initiating this series of tests two days

later. Paul had designed them, and Nat Holt's crew had built the equipment.

But before they were started, Paul grew increasingly aware of the clamor and public agitation against the Wheel. Instead of dying out after a small spurt of anger, it was accumulating momentum in every corner of the nation.

A rabble rouser named Morgan in the middle-west had proposed a motor caravan to Space Command Base, where the participants would go on a sit-down strike until assurance was given that no Wheel would be built again. And on the heels of this came the demand by an increasing number of Senators for a full investigation of the Base.

Paul met Barker after seeing the newscast of Morgan's revivalist type appeal for a caravan of protest against the Base. "This looks like it could get to be something that would be hard to handle," Barker said. "It doesn't seem reasonable that the near-crash of the first Wheel at San Francisco could be responsible for all this commotion."

"I don't think it is," Paul answered reflectively. "The sinking of a big ocean liner doesn't produce hysterical demands that no more ships be built. The crash of an airship with a hundred people aboard is accepted for what it is, without this kind of reaction. I think these broadcasts and write-ups of Captain West's appeal have sunk in deeper than Oglethorpe or anyone else ever intended.

"For a long time there has been building up a sense of man's inferiority to his machines. Now this incident of the Wheel and the world-wide broadcast of West's final words have triggered that inferiority into a genuine fear. They're afraid to have another Wheel up there over their heads. They're afraid that no man is capable of mastering such a piece of machinery."

Not only the public was infected with this fear, but the very men on whom the operation of the ships depended. Harper was right, Paul thought, as he reached his own office again. It must be terrible to be in their shoes, fighting constantly the conviction that they were poor miserable creatures hardly fit to polish the shining hulls of their creations!

They were trained in the best of military traditions, crushing their weaknesses by sheer force. And they had concluded their own breakdown was inevitable, in spite of their training and traditions. How could such men even hope for the stars!

But where was the flaw in it all? If the answer was not in men who were more nearly like their own machines, where was it?

They needed a year or two to even approach the problem properly, and some kind of answer was demanded within weeks!

Oglethorpe came to the laboratory the morning Harper was to begin his test runs. "We're going on a complete crash-priority basis, with round-the-clock shifts," he said. "It's been a toss-up whether to close Superman and put everything we had on the new Wheel, or

leave it open in the hope of getting something out of it.

"For the time being I'm leaving it open, but remember that every hour Harper or one of his men spends here is an hour away from the job on the Wheel.

"We didn't need your suggestion about an investigation. Plenty of other people thought of it first. The Senators will be here in four or five days. You're going to talk to them. You're going to tell them what you proposed to tell them."

"Of course. And what are you going to do about Morgan's cavalcade?"

Oglethorpe spat out an exclamation. "We'll set up barricades that they'd better not cross within ten miles of Base!"

"That won't help," Paul warned. "I think you'd better let me prepare something for them, too."

"Forget them! Take care of the Senators and the Project and you'll be doing enough."

Harper arrived shortly, nervous in spite of his attempt to appear composed. But he was put at ease when they took him to the laboratory of complex testing equipment assembled by Nat Holt.

Paul indicated a seat in the middle of the mass of equipment. "As near as we've been able to make it," he said, "this simulates the landing procedure of a rocket craft. There are a hundred and thirty-five distinct actions, observations and judgements involved. A taped voice will lead you through the sequence, asking you to press buttons and make adjustments to indicate your observations and responses. When you can do all this to your satisfaction, you will turn off the tape and continue for as many cycles as you can."

"How long? A man could do that for a month, provided he didn't have to sleep."

"I think you'll be a little surprised. You will continue until your accumulation of errors becomes so great that the entire procedure collapses."

"It still looks like a kid's game to me," Harper said confidently. "Let's get started."

Carefully, they fitted the multiple electrodes of the electro-encephalograph recorder to his skull. The tape instructor was turned on, and Harper began the first cycle.

Behind the one-way glass of the observation room, Paul sat with Nat Holt and Professor Barker and two assistants, watching. The rocket engineer began jauntily, contemptuous of the simple actions required of him, impatient to have it over with and get back to his duties at the take-off stand.

The instructions coming over the speaker had some variations from the normal handling of a ship, including the items necessary to record observations and responses. Harper listened to these for a half dozen cycles. Then, confident that he could breeze through the procedure for the rest of the day if he had to, he switched off the tape and settled back to take it easy.

One by one, he watched the meters, noted their information, made the proper adjustments, added compensations, waited for results, checked and re-checked—

"He'll go a long time," said Nat Holt confidently. "He's had top training. If it breaks down, we may find out a few things."

"Cummins had top-drawer training, too," Paul said. "His break point seemed to have no adequate antecedents. I don't think we're going to find Harper holding out very long."

After an hour, the attitude of contempt had left Harper's face, and he was proceeding with obvious boredom. He had made no error yet, but there was evident a faint trace of anxiety as he concentrated on the instruments and levers.

At two hours and a half Harper reached for a button and withdrew his hand in abrupt hesitation. Then it darted out again and pressed decisively. At three hours he was making two such hesitations every cycle.

"Not so good," Barker commented. "Not for a man who battles himself the way Harper does."

Nat Holt remained silent, watching critically the wavering dials and graphs showing the engineer's physical condition and reaction.

At four and a half hours, Harper's hand reached for a lever in the center of the board. But it didn't get more than a third of the way. In mid-air it froze, as if paralysis had suddenly struck it. Harper regarded it in seeming dumb astonishment. His face grew red, and sweat broke out upon his forehead as if from the physical exertion of trying to put his hand to the lever.

Paul grabbed a microphone and switched it on. "Touch the lever," he commanded. "Draw it toward you."

Harper looked around as if in panic, but he completed the motion. He sat staring at the panels for a full two minutes while alarm eyes went from green to yellow to red.

"Alarm red!" Paul exclaimed into the microphone. "Correct course!"

Harper turned and glared about with hate in his eyes as if to find the source of the sound. He began tearing at the wires and contacts fastened to his head and body. "To hell with the course!" he cried. "I'm getting out of here!"

He hurled the wiring harness at the panels. Then, he stood in a moment's further paralysis and slumped finally into the chair. He put his arms and head down on the instrument desk and began sobbing deeply.

Paul put away the microphone and moved to the door. "That's the end of that," he said. "I hope our record is good. Harper might not like to go through that again."

Nat Holt was still staring through the window at the sobbing engineer. "I don't understand," he murmured. "What made him break down like that for no reason at all?"

ONE BY one, the top engineers of the Base went through the breakdown test. Some broke down with an emotional storm as Harper had, others simply ended in a swirl of confusion that put lights flashing all over the panels. But all of

them had a breaking point of some kind that could be measured in a small number of hours.

The test was a stab in the dark. It was based on an old and well-known principle that repeated tactile contact under command will break down the motor responses of the body in a matter of hours. Paul did not know whether it would actually provide a fertile lead to the problem of error or not, but it seemed the closest possible approach at present.

Nat Holt, however, was astonished at the reaction of the men. He insisted on trying it himself, determined that he would not break down no matter what happened. He lasted six hours before the panel lit up like a Christmas tree.

He subjected the resulting curves to an analyzer, and to his own he gave the most detailed attention. At the end of a full week of study on it, he called Paul with an excitement he could not suppress in his voice.

"It looks like you owe that dinner," he said. "We've got what we were looking for!"

"What are you talking about?" Paul demanded.

"We've got proof that a human being is nothing more nor less than a simple cybernetic gadget. It's a laugh—people trying to build a mechanical man all these years. That's the only kind there is!"

"You still aren't making sense."

"Come on over and see for yourself."

Puzzled and irritated, Paul left his office and went down to the analyzer laboratory. There he found Holt and his staff in a buzz of excitement.

The multiple recorder sheets were laid out on long tables, being studied intensely. Paul followed Holt to one series that was separated from the rest.

"We didn't know we had anything at first," said Holt. "The pulse was so low in amplitude that it was hard to pick out of the noise, but the analyzer showed it was consistently present under certain conditions of the subject."

"What conditions?" said Paul.

"At the exact moment of committing an error! I should say it occurs between the moment of making the decision to carry out an erroneous act and the triggering of the motor impulse that executes it."

Paul frowned. "How can you be sure it doesn't occur at any other time as well?"

"Because we've run every set of charts through the analyzer and this particular impulse comes out no other place."

"It looks very interesting," Paul said. "But why did you say you've got proof that a human being is nothing but a cybernetic gadget? I don't see what this has got to do with it."

"I didn't give you quite all the story," Holt said smugly. "I should have said that the pulse occurred every time there was an *intent* to perform an error. Sometimes that intent was not carried out."

"I don't understand."

"That pulse is nothing more nor less than a feedback pulse indicating that an action matrix has been set up which is in non-conformity

with the previously chosen pattern of learning or intent. It's a feedback alarm carrying the information that an error will result if the proposed action is carried out. When the feedback is successfully returned to the action matrix a change is made until there is no feedback and a correct action is taken. When the feedback is blocked or ignored, an error results. It's as simple as that! Your complex human being is nothing but a fairly elaborate cybernetic machine operating wholly on feedback principles. The only time he fails and breaks down is when he ceases to act like the cybernetic machine that he is!"

Holt's eyes shone triumphantly as he patted the long strips of paper on the table. Paul followed the motion of his hand and remained staring at the graphs in a kind of stunned recognition. There must be some mistake, there *had* to be. Holt's interpretation was wrong, even if the data were correct. Man, a feedback response mechanism—! If that were true a vacuum tube structure could eventually be devised to do *anything* a man could do.

"I think we'll hold off on that dinner a while yet," Paul said. "The data are interesting and, I'm sure, important—but I can hardly agree with your conclusions." Inwardly, he cursed the stiltedness he felt creeping into his voice, and his irrational resentment of Holt's continued smug grin.

"Take all the time you want," Holt said, "but when you're through you'll come up with the same answers I've got. Man is a machine and nothing else. Our only job now is to discover why the feedback sometimes fails, and to set it back on the job."

Paul took the recordings and the analyzer graphs back to his own office.

He called Barker and showed the older man what Holt had found out. "If this is true," he said, "we don't need to worry about validating Space Command's pre-chosen conclusions. It has already been done."

Dr. Barker looked puzzled and a little frightened as he sat down at the desk to examine the charts. After an hour, he looked up. "It's true," he said. "There's no escaping the fact. Look what we have here —" He pointed to a corresponding sector of the six charts he'd lined up.

"After the first feedback impulse, there was no attempt to correct," he said, "or, rather, there was a deliberate effort to suppress the feedback. This created a second, larger feedback, which, in turn resulted in increased suppression and a simultaneous enlargement of the error. The result was a hunting effect in increasingly large amplitude, like the needle of an autosyn indicator with undamped positive feedback.

"Now, here's another one with the opposite effect. In this case the hunting shows diminishing amplitude as correction of the effort results from application of the feedback pulses. One pulse is not sufficient, but they are applied in de-

creasing force as the intent is brought into alignment with the learned pattern. A purely mechanical response!"

Paul turned from the window through which he had been staring toward the launchers. "Then Space Command is perfectly right," he said bitterly. "We *can* give them their errorless, mechanical men—just as soon as we find ways of correcting the blockage of the feedback pulses!"

Barker leaned back in his chair and folded his hands across his moderate paunch. "I'm afraid that's right. We've been wrong all along in bucking the mechanical concept of Man. The technologists saw it long ago in a sort of intuitive way, but they couldn't prove it. Now, they can!"

"And the soul of Man is nothing but a feedback impulse!"

Barker sighed heavily. "What else, Paul?"

Morgan's Caravan appeared that evening and camped at the ten-mile limit imposed by the military police guards. They posted their signs of protest and began their picket lines. Oglethorpe sent out his sound trucks to try to scare them away, but they wouldn't scare.

Paul watched at home the broadcast of the scene, but the fate of the Base and the Wheel had almost ceased to concern him. He told Betty of the discovery Holt had made on Superman.

"It leaves nothing to account for the most valued acts of Man," he said. "It can't account for creativeness, because a cybernetic device cannot create; it can only follow a pattern. So where is the poetry, the art, the scientific invention if this is the essence of Man? It can't be, yet there's no way of getting around this thing."

"Where does the pattern come from?" asked Betty. "Isn't that the created thing which the cybernetic system tries to follow?"

Paul shook his head. "The pattern we're talking about is no more than a response to stimuli, a purely mechanical thing also. Holt claims this is all there ever is, that what we call art, poetry, music inspiration, and intuition are nothing more than the results of badly functioning cybernetic systems. The more or less irrational results of errors in accommodating to the real world. We find pleasure in them because they tend to excuse our badly malfunctioning circuits.

"The ideal, race of Man would be devoid of all this, a smoothly operating group of individuals unperturbed by emotional or artistic responses, completely capable of solving any problem in a purely cybernetic manner."

"And do you agree with it?" Betty asked.

"There's nothing else I can do! The evidence is there." He laughed shortly and moved to the window where he could see the nearby camp of Morgan's Caravan. "Human development has moved—is moving—in a completely different direction from anything I ever dreamed. Oglethorpe's iron-hard, emotionless machine-men are the only ones who'll get there. The rest

of us who can't match the pace of a technological society will be shucked off as the waste part in the development of a species meant to inhabit galaxies instead of a single world."

"If I had ever wondered how you'd sound when you were completely out of your mind I'd have the answer now," said Betty.

In the morning he turned over to one of the units the task of further identifying and analyzing the feedback impulse they had discovered. In the middle of this he was called to Oglethorpe's office. The investigating Senators had arrived.

They were favorably impressed by the day-long tour that General Oglethorpe provided for them around the entire Base. But they found in Paul's announcement the strongest single factor in favor of permitting Space Command to continue with its work.

"We know now," he said, "and this is something I haven't even had time to present to General Oglethorpe—we know that a completely mechanical man is possible."

The General's eyes narrowed as Paul's flat statement continued. "We know that it is possible to have men at the helm of our ships, who are incapable of error. We have hopes of producing them within a very short time if Project Superman is allowed to continue. And when this is done, there is no technical goal we cannot reach."

This was the thing the Senators had come to find out, and they were satisfied. "But the public has got to be reassured of this," Senator Hart said. "We need to get this mob away from your gates for one thing. The news programs keep them constantly before the public eye and the whole country is stirred up."

"We'll take care of it at once," General Oglethorpe said. "As Dr. Medick has indicated, this discovery is so new that even I had not been informed of it. Morgan's mob will go away as soon as they hear the news. And that, in turn, will reassure the entire country. We can arrange for a broadcast by Dr. Medick to the whole nation."

Paul was swept along as arrangements were made to make a statement to Morgan and his group camped outside the Base, to the press, and to the public in general.

Oglethorpe cornered him after the meeting with the Committee. "This is on the level," he said, "not something you cooked up on the spur of the moment?"

"It's on the level," said Paul. "You were right all along."

When he returned to his office an urgent message from Barker awaited him. He hurried down to the testing laboratory, where the older man greeted him in excitement and anxiety.

"It looks like we've got something by the tail and can't let go of it. Come in and have a look."

Paul followed him and found Captain Harper in an observation room, writhing on a cot in a storm of tears and emotional fury. He beat against the walls and the floor with his fists as his sobbing continued beyond control.

"What happened to him?" Paul demanded.

"We have three others in the same condition," said Barker. "We tried to determine the effect of a pure feedback impulse, and fed it back to each of them in amplified form as we found it on their charts. This is what happened. I'm afraid we may have cost them their sanity, and we don't know why."

"How could their own feedback do such a thing to them?" he asked in wonder. "What part of the chart did you take it from?"

"We used the impulse that didn't get through, the one that was blocked so that error resulted. Apparently this is the alternative to error." He nodded toward the writhing, sobbing man. "Harper reached a point where he *had* to fail or else be subject to this psychic storm."

Paul ran his long, bony fingers through his hair. "This makes less sense than ever! If that's true, then we've got to take back what we've told Oglethorpe. His errorless man isn't possible, after all."

"I don't know." Barker shook his head thoughtfully. "Evidently the production of error is a protection against the admission of this intolerable feedback impulse. But the question remains: why is it intolerable, and why does it become so after numerous other feedback impulses have been passed?

"Yesterday we thought we had it all wrapped up. Now it's blown open wider than ever before!"

Oglethorpe's public relations man prepared a statement to the effect that further danger from pilot error in rocket ships and the second Wheel could be considered as completely eliminated with the new training processes that would make men incapable of technical errors.

Paul knew it was as ineffectual as the average Government release, but he made no protest in his concern for Harper and the three other men. He signed the statement automatically.

He was presented the following day, however, with arrangements to give it personally to the members of Morgan's Caravan from the top of one of the sound trucks. He did protest then that any flunky on the Base could read it to the crowd as well as he. But Oglethorpe insisted he do it personally.

With official pompousness the big, olive-green truck rolled out from the Base. Paul rode beside the driver and Metcalf, the public relations man. He'd not told Oglethorpe about their latest development. If this psychic reaction to feedback proved an impenetrable barrier there'd be time enough to give Space Command the bad news. In the meantime a Wheel would be built, the public would be mollified, and Superman would continue on—to what unknown ends Paul didn't know.

The massed camp of the fanatic followers of Morgan appeared in the distance like a discarded rag on either side of the road. Then as they approached it broke into individual knots of sand-scoured, unwashed people clustered about their tents. Morgan hadn't given much thought to adequate facilities before leading them out here.

The truck rolled to a halt in the center of the camp. Morgan himself, a long, lanky figure in a dusty black suit, came at the head of a group of his people to meet them. "I hope you have the news we are waiting for," he said cordially.

"We have a statement," said Metcalf. "Dr. Medick here, who has made an important discovery that will enable all of you to return to your homes, will read it to you."

Paul could have stayed in the cab, but he preferred to climb to the platform atop the truck to get a look at the crowd Morgan had assembled. He hesitated a moment with the paper in his hands, then took up the mike and read the statement Metcalf had prepared. "The United States Space Command wishes to announce that—"

It fell utterly flat on completely non-understanding ears. Paul looked over the mass of faces and knew it had failed. Something far more than this was needed. A little feedback, he thought grimly. A little feedback of the idiocy of their present situation to correct their course and return it to normalcy.

"Five hundred years ago there might have been a crowd of people just like you," he said suddenly in low tones. "There was a harbor, and some small ships, and a man who believed he could sail them over the edge of the world. On the shore were people who thought he was a fool and a blasphemer, and a few who thought he was right—or at least hoped he was.

"Five hundred years ago was the beginning of a new freedom from the prison of a tiny, constricted world. Today, another freedom waits our successful conquest of space. And whenever a freedom has been won there have been more who jeered against it than have cheered for it. You are today making a choice—"

He talked for ten minutes, and when he was through he knew that he'd accomplished his goal. Even before the sound truck pulled out, the cars of the Caravan were breaking away from the mass and disappearing in the distance.

"Nice job," Metcalf congratulated, as if he'd been responsible for it himself.

"Just a little feedback in the right place—" murmured Paul absently.

"Feedback? What's that—new kind of propaganda technique—?"

"Yeah, you might call it that. How could a guy have been so *blind*—?" he said fiercely, more to himself than to his companions.

He hurried to the laboratory as soon as the truck got him back to Base. He rounded up Barker and Nat Holt and a dozen of his other top men. "The answer's been under our noses all the time," he said. "We've been too busy fighting each other for the sake of our own preconceived notions to have seen it!"

"What are you talking about?" Holt demanded.

"Feedback. Can't you guess what it is?"

"No."

"Are you willing to let us give you a small dose—something less than the level given Harper and his men—and then tell us what you find out about it?"

Nat Holt looked hesitant. "If you think you know what you're talking about. There's no point in my getting in a condition like Harper's."

"We'll pull you out before you get anywhere near that far."

Still dubious, he took a seat amid the mass of pulse generating equipment and electroencephalograph recorders. A single pair of feedback terminals were fitted to his skull. The generator was set to duplicate his own feedback impulse taken from a moment of failure.

Paul switched on the circuits and advanced the controls carefully. A look of pain and regret crossed Holt's face. He cried out with a whimper. "Turn it off!"

"A second more—," Paul said. He advanced the control a hair and waited. The technologist began to cry suddenly in a low, sobbing voice.

Paul cut the switch.

For a moment Holt continued to slump in the chair, his shoulders jerking. Then he looked up, half-bewildered, half-furious. "What did you do to me?" he demanded.

"You did it to yourself," Paul reminded him. "That's your own feedback pulse just beefed up a little, remember. How did it feel?"

"Terrible! No wonder a guy dodges that. It's enough to make him wreck a space station to avoid the full blast of it."

"What would you call it?"

"I don't know—," Holt hesitated. "Grief, maybe. Regret—anxiety. But regret, mostly, I guess."

"That's your feedback," Paul said as he removed the terminals and turned to the others. "These feedback pulses we've isolated are nothing but stabs of pure emotion."

He turned with a faint smile to Holt. "You and Harper and the rest of the iron-bowelled boys were so convinced that the pure mechanical man would be utterly devoid of all emotional responses and content! And I was so sure that a warm, responsive, emotional human being could never respond like a cold machine!

"And we were both utterly wrong. The human being does both. He operates on true cybernetic principles. But the content of his feedback control pulses is sheer emotion!

"A small error, a stab of regret. It's repeated, magnified, or diminished until the action gets back on the track that brings predicted results. Ignored, the error builds up until the whole structure goes smash.

"And we're *taught* to ignore it! It's the noble, brave and manly thing to ignore the human feelings that surge through us. Be steel, be glass, be electrons—anything but a responsive, emotional human being! That's the way to be a super-man! We've tried to find the way to perfection and have fought tooth and nail against the only means of achieving it."

Barker's face was glowing with excitement and Holt seemed to be remembering something afar off. "That *was* it," he breathed softly. "I can feel it now—the way it was as I began to get jittery and make mistakes in the test procedures. I seemed to fight something within myself—something I thought was

making me do it wrong. But it wasn't that, at all. I was fighting against the emotional feedback the errors were throwing at me."

"Right," said Paul. "And your iron-hard, errorless Superman is going to be the most emotionally sensitive creature you can produce."

"How did you catch on to this?" Barker asked.

"We should have seen it in Harper. He's the original iron-man. He's bottled up and fought his emotions all his life. A concentrated dose of his own feedback simply shattered the dam.

"But I didn't get it until I watched Morgan's mob reacting to the purely rational explanation Metcalf prepared to convince them they should go home. They were on a wrong tack and needed a generous amount of the right feedback to get them back where they belonged. The cold, logical approach was a dud. What does it take to move an intractible mob? Emotion —based on the projected consequences of what they're doing. A perfect feedback setup when correctly applied. And it worked."

Holt shuddered faintly and moved away from the chair he had sat in to experience his own feedback. "I'm not quite sure who owes who that dinner," he said to Paul. "But I think somebody does."

"We'll split it," Paul said. And then he was silent as they listened to the departure of another cargo ship carrying parts of the second Wheel to the thousand-mile orbit.

He smiled to himself. Ye of little faith!—he thought. Frightened about the true nature of a race that had come through three billion years of the kind of torment that Man had survived!

Man had everything that was needed to go to the stars or anywhere else he might want to go. He was safe. Man could never be turned into a robot. The basic mechanisms of his humanity were so interwoven with the structure of his being that they could never be separated.

But they hadn't come very far, Paul knew. They had opened only a small crack in a door that had been irrationally closed from the beginning of time. They had to know fully why that door had never been opened before. And beyond it might lie a thousand others just as tightly closed and closely guarded.

Yet they had reached a starting point, at last. Project Superman could get about its business of preparing men for the stars. • • •

THE executioner

Illustrated by Kelly Freas

The vote was three to two for death! Jacques had no choice. He was a public servant with a duty . . .

BY FRANK RILEY

"... CONTINUED FAIR weather and the unusual circumstances of the execution promise a turnaway crowd of more than 100,000 spectators by Court time. All unreserved tent space has been sold out for several days. Next news at ..."

Sir Jacques de Carougne, Lord High Executioner for the Seventh Judicial District, spun the dial on the instrument panel of his single-seater rocket, but the vidcasts were over for another hour. He cursed, without too much vigor, and wished he had troubled to look at a vidcast or faxpaper during his vacation. But then he shrugged his massive shoulders.

What did it matter? After a thousand executions, everything was instinct and reflex. Some died hard; some died easy. Some fell to their knees, too paralyzed with fear to fire their own shots. Others fought daringly, even with a degree of skill, but always the end was the same: A broken body bleeding and twitching in the dust; the blood-happy spectators shrieking in the ecstacy of release from the humdrum of their pushbutton lives; the flowers, the scented kerchiefs and the shreds of torn garments showered on him by screaming women, who always seemed to find him more satisfactory in the arena than in his tent.

As the skyline of New Chicago shimmered into view, Jacques flipped on the 'copter mechanism. His air speed braked, and the needle-nosed little craft drifted lazily down the eastern shore of Lake Michigan, then veered westward over the tinted glass rooftops of the spotless city.

Jacques stared glumly down at the city that had been so much a part of his life, from the long-ago years of his training and youth to the professional years of his most famous executions.

Farther to the west, out beyond the eternally green landscaping and the precise, functional homes of the residential

suburbs, Jacques saw the crude stone parapets of the Chauvency judicial arena, surrounded by acre after acre of colorful tents and pavilions.

His powerful, jutting nose wrinkled with disgust, but his eyes widened at the number of tents. There must indeed be something unusual about today's execution. He hadn't worked before that big a crowd for years. The Federal Bureau of Internal Tranquility should be happy about this one!

Jacques sighed, still struggling against the despondency that had been within him since the vacation interlude with the brunette government worker in Curaçao had ended as unsatisfactorily as all the rest. Someday it would be his body bleeding in the dust, smashed at last by the soft-nosed bullets from Le Pistolet du Mort. Then the flowers and adulation would go to the condemned man, and the Bureau would add his name to the plaque at the base of the towering statue on the Washington Mall. So be it. He had played a long roll of the dice, and the stakes had been high. But if only once, just once before it ended . . .

The bell on his instrument panel told him that the servo-pilot in the tower below had taken over for the landing. He sniffed with disgust again, but this time the disgust was for himself. God, but he was in a foul humor today! He released the controls and stared at his strong hands, grimly admiring them. There was still speed as well as strength in these fingers. His lips twisted into a thin smile, cold and confident. Whoever he was to meet at joute à l'outrance, let him try to match twenty years of training and skill!

His rocket cradled with scarcely a jar into the small landing space at the north end of the arena, between the two replicas of 15th century towers, reproduced so faithfully by 22nd century technicians. Jacques squeezed his huge frame through the door of the small craft and looked dourly around. A squire, in scarlet leggings and tunic, his long black wig slightly askew, came running toward him and knelt three paces away, as prescribed by the Judicial Code of Heraldry.

"Oh, sire!" he panted, "Thanks be that ye have arrived! The hour is well past noonday, and we had begun to fear . . ."

"Time enough," Jacques growled. He gestured impatiently, and the squire clambered to his feet, bowing again.

"This way, your Lordship!"

The squire led him to the lower room in the north tower. It was the usual room of monastic simplicity —whitewashed stone walls, a single window, two wooden benches and a low couch on which his garments for the occasion had been carefully arrayed. After the execution, he would be moved to his black silk tent in the center of the camping grounds.

While the squire fluttered around him, eager to be of help, Jacques removed his short-sleeved dacron shirt, kicked off his sandals and stepped out of the comfortable shorts he always wore for traveling. The squire gaped with awe at the

sight of his muscular body.

"M'Lord, truly thou art a powerful man!"

Jacques looked down at him with mixed contempt and amusement. The squire was a thin, pale little man, with the pinched look of nearsightedness about his eyes. His wig and tunic were much too big for him.

"What do you do, Squire?" Jacques inquired, not unkindly.

The man looked hurt, as if the question reflected somehow on his ability to serve as a squire to the Lord High Executioner.

"Computer development," he muttered. "Resonating pentode circuits." Then he drew himself up defensively, with not a little pride. "But I placed at the top of the list in the Bureau's test for squires!"

"That's fine," Jacques commented drily. "Now hurry, let's see what you learned . . ."

"Dress him handsomely, Squire!" boomed a taunting voice from the doorway. "Our Lord High Executioner faces a rare challenge this day!"

Jacques recognized the voice of Guy de Archambault, the Court Bailiff, whose bilious nose he intended to grind into the dust one of these fine days. But his anger at the Bailiff's intrusion was overbalanced by curiosity.

"What's all the excitement about?" he demanded. "Who's on the docket, anyway?"

The Bailiff grinned mockingly.

"Forsooth, M'Lord, restrain thy impatience! In the Court's good time wilt ye learn . . ."

"Oh, knock off that drivel, will you! Court's not in session yet . . ."

The Bailiff's huge belly shook with laughter.

"Have it your own way, Jacques, m'boy! But in any vernacular the meaning's the same—you're in for quite a surprise, if rumor has it right!"

"Out with it, then! I can see you've been waiting to tell me."

The grin broadened on the Bailiff's puffy lips.

"You can bet your last sou on that! It would have broken my heart not to be the first to tell you . . ."

Jacques took a threatening step toward him.

"I'll break more than your heart if you don't answer my question . . ."

"Patience, pa—Oh, all right!" the Bailiff hastily interrupted himself as Jacques took another step in his direction. "You've got a woman to shoot down this time—and that's just half the story!"

Jacques' craggy features hardened into immobility.

"What's the rest of it, fool?"

"There's gossip going around that she's a page out of your past—maybe several pages, or even a whole chapter!"

Jacques leaped the rest of the distance to the door and grabbed the Bailiff by his lace collar, twisting it until his round, fat cheeks swelled and reddened.

"Who is it?"

"L-Lady Ann—of—Coberly!"

Jacques thumped his head against the side of the doorway.

"I told you to knock off that drivel."

"But—but that's all I know—I swear it! I just got here this morning, too, and took a quick peek at the calendar when I heard all the rumors out among the tents . . .!"

Jacques shoved him out into the hallway, and stalked back into the room. The Bailiff straightened his collar, but made no move to leave.

"M'Lord," he jibed, breathing heavily, "there's also a rumor that you have no stomach for executing any woman. Can that be true?"

Jacques only scowled in reply, but he knew that *this* rumor, at least, was true. The last woman had been back in the Fifth Judicial District. A flint-faced murderess with the shoulders of a man. But the horror of firing the coup du mort into her naked, contorted body still came back to haunt his dreams. For weeks afterwards he hadn't been able to touch the women who came so eagerly to his tent during the wild execution night Festivals.

The Bailiff's coarse voice continued to prod at him:

"I'm sure you'll remember this one, once you see her! I've just come from watching her being dressed for Court!" The Bailiff's bloodshot right eye winked suggestively. "My duty, y'know, to protect their Judicial Highnesses by checking for concealed weapons."

"Get out of here!"

The Bailiff fell back a step, but continued talking.

"I'd say she's your type all right—full of fire! Too bad you have to kill her instead of . . ."

Jacques ripped the white tunic from his squire's trembling hands and hurled it into the Bailiff's face. Guy de Archambault waddled back out of danger, then finding that he was not followed, poked his head around the edge of the door.

"Prithee, Sir Jacques, have ye any message for their Judicial Highnesses?"

"Yes, damn you! Tell them to get someone else for this infernal execution—and be quick about it!"

With a gleeful chuckle, the Bailiff disappeared again. The little squire picked up the white tunic and brushed it off dejectedly. If he missed this opportunity to serve as squire to the Lord High Executioner, his name would rotate to the bottom of the list and he might not have a chance to serve again before it was time to make up new lists.

Jacques strode to the window. Lady Ann of Coberly. The name could mean anything or nothing, according to the whimsy of the lower courts. Lady Ann. . . Ann! But it couldn't be her—Or could it? Jacques looked far down the years to a youngster just out of training, eager to prove himself in the execution arena. There had been an Ann then, and she had left one morning taking a young man's heart with her, leaving behind only the unfathomable look of reproach and disappointment that he had come since to know so well.

But it couldn't be that Ann! He tried to create the image of her face, but saw only the acres of spectator tents, their bright pennants snapping in the wind, and the open squares teeming with spectacular costumes copied from

medieval history books by an atomic age which found in the pageantry of execution-day its one escape from safe, sanitized, prescribed living. The Arthurian song of a strolling minstrel drifted up to him. . .

"To the fairest of all maidens,
To Argante, the Queen, most beauteous elf,
She will make my wounds all sound,
And with a healing draught make me full well. . ."

Jacques clenched his great fists. No, he wouldn't do it. Seniority entitled him to some consideration. If necessary, he'd put a call through to the Bureau. They'd understand. His record was good. He'd always performed faithfully, meeting death every session, dealing it out to young and old alike.

But not to a woman; certainly not to a woman who might have meant a great deal to him! During the long spartan years of his training, the isolated years of monastic living at a time when youth burned strongest in him, the image of woman had become a haunting dream, unreal as the moonlight streaming through his curtainless window, untouchable as the mist of a summer morning. A sense of that image and unreality still persisted, even after all the women who had come to him so willingly and had left with that undefinable look of unhappiness deep in their eyes.

Since that woman back in the Fifth District, he'd been lucky with his executions. Not too many women drew the death penalty, and the few times women had been on his docket he had learned of it sufficiently in advance to pretend illness or make up some plausible excuse for emergency leave. But today had taken him totally by surprise.

The squire shuffled up behind him, and begged,

"Please, your Lordship, shall we not don these garments now?"

Jacques shook his head so impatiently that the squire scurried back in fright.

And then the Bailiff's voice intoned sonorously from the doorway:

"His Highness, Chief Justice of the Seventh Judicial District!"

Jacques turned in time to see the Bailiff bow low. The Chief Justice entered with a swish of ceremonial robes. He was followed by a tall, thin man, dressed in knightly costume. The Bailiff made a second bow, and spoke again:

"His Excellency, Sir Mallory, representing the Federal Bureau of Internal Tranquility!"

Jacques felt suddenly relieved. It was good to have someone from his own Bureau here. These judges were too cold, too impersonal.

The Chief Justice was carrying his wig, which was not yet fully powdered. His heavy jowls quivered with indignation.

"What's this nonsense, Sir Jacques?" he demanded imperiously. "Court is ready to convene—We have no time to get another executioner!"

"I'm sorry, your Highness, but I must ask your indulgence this one time."

"Impossible!"

Sir Mallory stepped forward and smiled in a conciliatory manner.

"Perhaps Sir Jacques does not understand all the circumstances," he said soothingly. "You see, Sir Jacques, this execution is very important to FBIT. There hasn't been a first-rate execution in nearly three years, and this is the only release we've had to offer the public in all that time. Of course, the Court still must decide in its own wisdom whether there are any grounds for setting aside the verdict, but we would not want any of our Bureau personnel to be responsible for disappointing the public."

"I've always done my duty," Jacques protested. "But this one time—"

"The FBIT is well aware of your splendid record," Sir Mallory interrupted, striking a hearty note of sincerity. "Your services have been deeply appreciated in these difficult times. Yet, we must always take the long view! Particularly 'this one time', as you say. Technology has rushed us into a world without need for strife or conflict, but man has not yet matured enough for such a world—and he needs release to prevent dangerous explosions. Believe me, Sir Jacques, it would not be wise to postpone today's execution!"

The Chief Justice cleared his throat angrily.

"And it's not wise to stand here talking while my court is waiting to convene," he snapped "Sir Mallory, can't you remind this man of his oath, his duty, and be done with it?"

Jacques felt his own anger rising.

"I know my oath," he growled, "but—"

"Of course, of course, "murmured Sir Mallory, "and the FBIT shares your feelings. We also deplore—naturally—the idle gossip that is circulating to build such interest in this execution. But circumstances are beyond our control, Sir Jacques. As public servants, we must serve . . ."

The Chief Justice shook his wig in Jacques' face.

"Your answer, man! "he demanded. "Are you or are you not going to perform your duty?"

Sir Mallory stepped back, spreading out his hands as if to show Jacques there was nothing more he could do about it.

Jacques stood tautly erect, impassive, while his mind reeled on a hairline balance between defiance and submission. He knew that more than this one issue would be decided by his next words. His entire professional life was involved, everything he had trained and fought for since he had been selected for the service at the age of thirteen. A wrong word, and he could be dismissed by the Bureau. The rest of his years would be spent in a cubicle in some atom-powered plant, where he'd have his own button to push for two hours every day. The monotony would be intolerable after the way he had lived!

But to send his bullets smashing into the body of a woman who might be Ann . . . Sweat trickled down the chiseled furrows of his cheeks. Beside him, the little squire was a study in still life, poised with one foot forward, the white tunic

still draped on his outstretched arm.

"Sir Jacques, we are waiting for your reply," prompted the cold voice of the Chief Justice.

A turbulent voice within Jacques urged him to turn his back on all of them, but prudence counseled that he play for time. From Sir Mallory's oily manner, he could very well have made up and circulated the gossip about his supposed past relationship with this condemned woman. It might be wise to wait a bit before making a decision that could be so final.

Jacques bowed, and said hoarsely.

"I await the orders of the Court, Your Highness."

If the Chief Justice noted that Jacques said "await" instead of the more correct "will obey", he gave no sign of it.

"Very well," he said. "Court will convene in five minutes." He turned so abruptly that he almost bumped into the Bailiff, who was making a poor effort to cover his disappointment.

Sir Mallory smiled at Jacques, and said warmly:

"The FBIT is proud of you!"

When they had left the room, the still frightened squire stuttered:

"S-shall we d-dress, Sire?"

Jacques walked without answering to the couch and sat down on the edge of it.

"Get a move on!" he ordered. His feelings were in turmoil: He was desperately eager to see this Lady Ann, yet he dreaded the moment. If this was the Ann . . .

Fingers trembling, the squire anointed each muscular shoulder with three drops of perfumed oil, after which he drew over Jacques' head and upper body the white tunic—white to symbolize the purity of motive in entering the execution arena. Next came the black breeches and hose—black for the eternal remembrance of death. Over the tunic came the flaming red jupon, blazoned on the sleeves with gules and on the back with a lion rampant argent. On his left shoulder, the squire fixed a lace of white silk, representing a deed not yet accomplished. Following the execution, a woman who had won the honor in her plant lottery would cut it off.

After lacing on Jacques' boots, the squire stepped back, snatching an instant to admire his handiwork.

"Well done, Squire," said Jacques. "Now, let's be off!"

The squire flushed and beamed in gratitude. He picked up the silver case containing the two Pistolet du Mort, one for Jacques, one for the condemned person.

Court was on a portable platform in the center of the Judicial Arena. As soon as the execution was confirmed, it would be wheeled out of the way.

When Jacques stepped from the tunnel and strode toward the platform, an abrupt hush choked off the babbling and laughter in the stands. Most of the hundred thousand capacity crowd was already seated. Behind Jacques, the squire straightened his narrow shoulders with pride. This was the highpoint in a life spent among the tapes,

circuits and feedback problems of computer research.

Jacques mounted the platform, bowed to the crowd and took his seat in the black-draped, carved oak chair to the left of the Bailiff. His squire stood proudly behind him. The Bailiff murmured:

"An imposing entrance for one who had only five minutes to dress! Your fair victim isn't here yet."

Jacques stonily ignored him.

An explosive cry from the stands brought the Bailiff to his feet.

"Here she comes!" he announced with a grin of anticipation. "Take a good look, Sir Jacques—it's worth while!"

Though it was the hardest thing he had ever done, Jacques refrained from looking until the woman and her two jailers had nearly reached the platform steps.

And then he looked straight at her, and the shock of it was a physical blow. This was Ann, all right. Even after all the years there was no doubt about it. She was as tall as he remembered her, and there was the same softness and warmth in the curve of her sun-brown shoulders. He suddenly felt the old ache for her.

She held a velvet robe around her shoulders, but she held it loosely, disdainfully. Under it, she was already dressed in the translucent death gown. Her thick, blond hair, much longer than the fashion of the day, fell nearly to her shoulders. On her feet were the silver sandals she would later remove, along with the velvet robe, just before stepping up on the pedestal in the execution circle.

The two jailers, each in skull cap and long black sleeveless robe, led her to the prisoner's bench below the dais where the judges would sit. The sight of her was a torment to Jacques, the ripping open of an old scar. He knew that in a moment their eyes would meet, but there was not enough strength in the corded muscles of his neck to turn his face away.

Time had been kind to her, Jacques thought in one corner of his numbed brain. There were signs of its passing, around her mouth and her eyes, but it had given her what youth could not. There was a knowing in the curve of her lips, and he wondered what her eyes would tell him now.

But she glanced first, with some amusement, at the two jailers, who held their crooked staffs at the alert position. Next, her eyes contemptuously swept the semi-circle of empty judicial chairs. They passed by the Bailiff so quickly that he looked cheated, and then they stopped full on Jacques.

He read in their calm appraisal the knowledge that she had expected him to be here, and that she was not surprised at what the years had done to him. Perhaps she had seen his pictures in the faxpapers, or even watched some of his executions. But he wanted to know more than this, and he tried to look deeper into the light and shadows of her eyes.

It was still there, he discovered, feeling a selfish sense of pleasure that she had not found what he hadn't been able to give her. The endless seeking, the search for some-

thing never put into words, the want unfulfilled—all this was still there.

He knew that she was reading him in the same way, but he could not tell what she found. Finally, it was she who looked away first, not in retreat, rather to appraise him thoughtfully. He felt her eyes on the knotted muscles of his cheeks, on his arms, on the whitened knuckles of his scarred hands, on his boots, now grey with dust from the walk across the arena. When her eyes came back to his, her unpainted lips parted in a faint smile.

She knows, thought Jacques. She knows I don't want to kill her! And then the torment in him became unbearable. What irony that out of all the years of their lives they should come back together at this moment. An impulse tugged at him to snatch his pistols from the squire's silver box and try to take her from the arena, daring any to stop them.

Then he realized that the Bailiff was standing again, that the hundred thousand spectators were surging to their feet. Trumpet fanfare blasted from the main tunnel, signalling the arrival of the judges. Instinct brought Jacques to his feet. Ann remained seated, and rose only after the jailers nudged her with their curved staffs.

"Oyez, oyez, oyez!" cried the Bailiff into a microphone concealed in a carved boar's head. " 'Tis now two of the clock at aftir noone, and yon heralds bearing trumpets of devise give in knowledge unto all gentilmen, ladyes and gentilwoomen the cooming of this high and most honourable court! Remain at standing until said court is seated!"

The Chief Justice, regally stern, led the procession of judges, clerks and pages across the arena. They mounted the platform, stepping in cadence. When the robed and bewigged judges were all seated, the Bailiff raised his staff and the crowd settled down with a buzz of anticipation. High atop one of the north towers, hidden cameras picked up the scene and vidcast it around the earth, and to the satellites and lonely planet outposts.

One of the clerks picked up five rolls of parchment, untied the scarlet ribbon on each, and passed them around to the judges. The Chief Justice went through the pretext of scanning his, then nodded to the Bailiff to present the prisoner.

With a sly wink at Jacques, the Bailiff took Ann firmly by the arm and guided her three steps forward. The Chief Justice coughed the nervousness from his throat, and asked:

"Is this the Lady Ann of Coberly?"

Before the Bailiff could make the correct response, Ann gave her own impatient answer.

"I am Badge No. 7462883, Transistor Division, Coberly precision Products, Ltd."

The Chief Justice frowned at this breach of court etiquette.

"Have ye not been properly instructed?"

Ann shrugged, and the loose robe slipped lower on her shoulders.

"I suppose so, but is it necessary to waste all this time? You've got

the record in front of you!"

The judges exchanged significant glances, and a delicious shudder swept through the stands. Jacques felt time running out on him. At best the chances of a reprieve for any prisoner were small, and in face of Ann's attitude . . .

The Chief Justice's expression congealed into judicial impassiveness.

"Ye are charged with taking the life of a man," he began solemnly.

"That's not true!" Ann interrupted.

Her unexpected words brought a startled gasp from the spectators. The judges leaned forward alertly.

"According to the evidence . . ." the Chief Justice began again.

"He wasn't a man!" Ann cried scornfully. Her glance flickered across at Jacques. "There are no more men."

Ponderously, like a slow moving river that would not be diverted from its course, the Chief Justice returned to the facts of the case:

"Ye speak in riddles, Lady Ann! The evidence makes it full clear that the victim was a man . . ."

"Evidence!" Ann gestured toward the breathless stands. "There is your evidence! Ask those women what they are doing here! Ask them what their great, great grandmothers were doing at the ancient wrestling matches!! Ask them if they have ever known a real man—or ask your own wives!"

The Chief Justice's impassiveness was shattered. His cheeks puffed out indignantly. A strange, tense silence gripped the women in the stands; the men drew back their padded shoulders, and shouted in reproof:

"Shame! For shame, Lady Ann!"

"Why don't you ask them?" Ann persisted.

Yes, ask them, Jacques thought, with a sudden, overpowering anger of his own. Ask them! Maybe their answers would tell why he, too, of all men, should have failed so many of them.

"Hold thy insolent tongue, woman!" roared the Chief Justice. "There remains before this Court only one issue—Did ye or did ye not strike a man to his death in the full view of scores of gentilmen and gentilwoomen of Coberly?"

Ann shook her long hair in defiance.

"It wasn't a man I struck with that casing, and all the FIBT's heraldic mockery can't make him a man! I struck a bloodless slide-rule, a cold filing cabinet full of equations, a set of dull geometric patterns, an automaton that tried to treat a woman like a punched holrith card! He was no more a man than this. . ." She brought her elbow up so sharply that the paunchy Bailiff was toppled off balance and nearly fell. He looked frightened.

"Ye admit to the killing, then?" demanded the Chief Justice.

"I'm proud of it!"

"And ye claim no special circumstances?"

"How would you understand them?"

The crowd exploded into a frantic, unintelligible babble, and the Chief Justice slammed down his gavel. He turned to his fellow judges. Two were staring at the

prisoner with an indignation that exceeded his own. The other two, both very old men, sat with heads bowed and hands fumbling with their robes.

Jacques felt his pulse leap with a hope that had seemed impossible. Could it be that after all. . .? Ann turned toward him, faltering for the first time, and they stared into each other's eyes.

At a curt nod from the Chief Justice, the Bailiff, still trembling, began to poll the Court.

The first two judges angrily raised their hands to signify that they were voting to uphold the death sentence of the lower court. The third judge hesitated, then held out both hands, palms down.

This brought an outburst of applause from the stands. The first palms-down vote always evoked such a demonstration, for a one-sided execution was a comparatively dull affair.

But the applause was choked off as the fourth judge slowly extended both hands, palms down. A scattering of boos and catcalls started. An ugly undercurrent rippled close to the surface. Was this woman going to win a reversal, in spite of all her insolence? If she did, the whole holiday would be spoiled, since there were no other executions on the docket. Better to have stayed home and watched films of old executions on the FBIT's nightly vidcast!

Jacques looked away from Ann to watch the Chief Justice. The lines in Jacques' face were like gouges in a metal casting.

Acutely aware of his role, the Chief Justice stood up and drew his robe about him with great dignity, taking care to face toward the TV cameras on the north tower.

And as the Bailiff called for his deciding vote, the Chief Justice solemnly raised his right hand.

Three to two for death! A hundred thousand spectators leaped to their feet, hysterically waving their arms. Three shots for the Lord High Executioner! Two for Lady Ann! What a day this was going to be after all! Here was a truly great joute à l'outrance! Ann swayed a little, then smiled. Jacques closed his eyes.

Ritual and habit took over where Jacques' will could not function. His squire stepped forward, opened the silver box and offered the Pistolets du Mort to the Bailiff. The weapons sparkled in the sunlight. They were a modern adaptation of an ancient design, and had become official death weapons after earlier experiments had convinced the FBIT that few 22nd century men were strong enough to handle the swords and lances of chivalry. The Bailiff loaded one gun with two shells, the other with three. Then he replaced both in the silver box, closed the lid and put the box on the bench in front of the Chief Justice.

Already the judicial platform was wheeled to one side of the arena; the twin pedestals were being rolled to position in the execution circle. They were thirty inches high, and were positioned precisely sixty feet apart, each on a line with the open ends of the stands so that wild shots would not

strike a spectator.

Next came the Ceremony of Confrontation, intended to symbolize that the Lord High Executioner was acting only under the compulsion of duty, without malice or any base motive.

Moving mechanically, Jacques stepped toward Ann. The jailers crossed their staffs two paces in front of her. It was the closest Jacques would be permitted to approach until the Ceremony of the Spirit, when he would kneel beside her shattered body in the dust of the arena. He also was supposed to kneel now, and silently speak a prayer for both their souls. He knelt, but could not bow his head. Ann looked down at him, and the faint, unfathomable smile returned to her lips.

"It's all right," she said softly. "You don't have to speak to me with words."

The natural, warm scent of her body came through the fragrance of the oils with which she had been anointed in her death cell. It was a remembered scent that once again drove Jacques to the brink of madness.

Her voice, husky and steadying, came down to him:

"For two like us there is no other way, Jacques. Don't fail me again."

He rose stiffly, backing away, staring into the mystery of the lights and shadows in her wide eyes, groping for the meaning of her words.

A friar moved up to take his place, and the jailers dropped their staffs. But Ann dismissed the friar with a quick shake of her head.

The Code now called for Jacques to leave the platform and walk with measured steps around the arena before mounting his pedestal in the execution circle. A signal from the trumpets started him on his way before he was aware of what he was doing. The habits of a thousand executions demanded obedience.

Women in the front rows leaned far over the railing. Some reached their hands down to him, offering flowers and kerchiefs, hoarsely begging him to wear their favors during the execution. Others sat still, transfixed, lips parted and moist. The men beside them shrank back in their seats, looking at him as a sparrow would look at a coiled snake. Vendors of ribbands and souvenirs, cakes and drink, stood silent as he passed before them. The flutes, citterns and cymbals, the melodic voices of the minstrels, picked up the brooding death chanson:

"Farewell my friends, the tyde abideth no man,

I am departed from hence, and so shall ye;

But in this passage the best songe that I can

Is requiem eternam. . ."

The walk around the arena was an eternity, and then it was over and done with, and he had mounted his pedestal.

A low crescendo, like the roll of faraway surf, swept across the stands. Ann was at the edge of the platform. She stepped out of her slippers, unfastened the velvet robe, handed it to one of the jailers. The

crescendo grew, matching the surge of blood in Jacques' temples. A breeze swept the translucent death gown tight against her bare body, and she walked steadily down the steps, across the arena. Her feet stirred little puffs of grey dust that twisted and whirled away. The friar followed a few paces behind. At the pedestal, he offered her his hand. She refused it, stepped up without assistance. Bowing his head, the friar walked back to the judge's platform.

Jacques' squire and a page boy appeared almost immediately. They walked part way across the arena together. Each bore one of the pistols on a black satin pillow. At the edge of the execution circle, their paths forked toward each of the pedestals. The trembling page offered Ann her pistol first.

"Do ye remember your instructions?" he asked in a quavering voice that was picked up for the vidcast by the microphone hung under his frock.

"Yes, thank you."

Ann held the pistol loosely at her side, and looked toward Jacques, across the abyss of sixty feet.

With frozen fingers, Jacques accepted the other pistol from his squire, and knew that he was out beyond the point of no returning.

But he did not, could not, know what he would do once the signal for the execution was given. "Do not fail me again," Ann had pleaded. But what had she meant? Even at this final moment her smile was as enigmatic as ever.

The page and the squire retreated to their stations at the side of the arena, this time moving hastily.

The Bailiff raised his black staff and pennant, held it poised until the Chief Justice nodded, then lowered it with a flourish. A trumpet sounded one high, clear note.

The signal had been given.

Jacques remained motionless, waiting for a sign from Ann. But she, too, waited, her chin slightly lifted. What was she waiting for? What did she expect from him?

In the stands, the breathing of a hundred thousand people was a rasping sound.

And then Ann moved, so quickly that the surprise was complete. Her pistol flashed up, fired while still in its arc. The bullet blasted the air beside Jacques' ear, so close that for a fraction of a second he thought he had been hit.

Ann's voice drifted across to him, across the stunned silence, and it contained both a taunt and a plea:

"I won't miss next time, Jacques!"

And he knew she would not. He had seen too many guns fired not to recognize technique. If she had learned to shoot that well, there was no doubt she could have hit him the first time.

Jacques still couldn't fathom her motive, but there was no longer any chance to consider it. His conscious mind wanted to let her fire again, to put an end to this terrible dream. But the instinct of self-preservation was too strong; the lessons at the FBIT academy had been taught too well. Numbness went out of him, and he watched her eyes for the telltale

(Continued on page 114)

LIFE HUTCH

There was no way out. Death in the form of a robot had come to live with him. He was going to die. Unless . . .

BY HARLAN ELLISON

Illustrated by Ed Emsh

TERRENCE SLID his right hand, the one out of sight of the robot, up his side. The razoring pain of the three broken ribs caused his eyes to widen momentarily in pain.

If the eyeballs click, I'm dead, thought Terrence.

The intricate murmurings of the life hutch around him brought back the immediacy of his situation. His eyes again fastened on the medicine cabinet clamped to the wall next to the robot's duty-niche.

Cliche. So near yet so far. It could be all the way back on Antares-Base for all the good it's doing me, he thought, and a crazy laugh trembled on his lips. He caught himself just in time. *Easy! Three days is a nightmare, but cracking up will only make it end sooner.*

He flexed the fingers of his right hand. It was all he *could* move. Silently he damned the technician who had passed the robot through. Or the politician who had let inferior robots get placed in the life hutches so he could get a rake-off from the government contract. Or the repairman who hadn't bothered checking closely his last time around. All of them; he damned them all.

They deserved it.

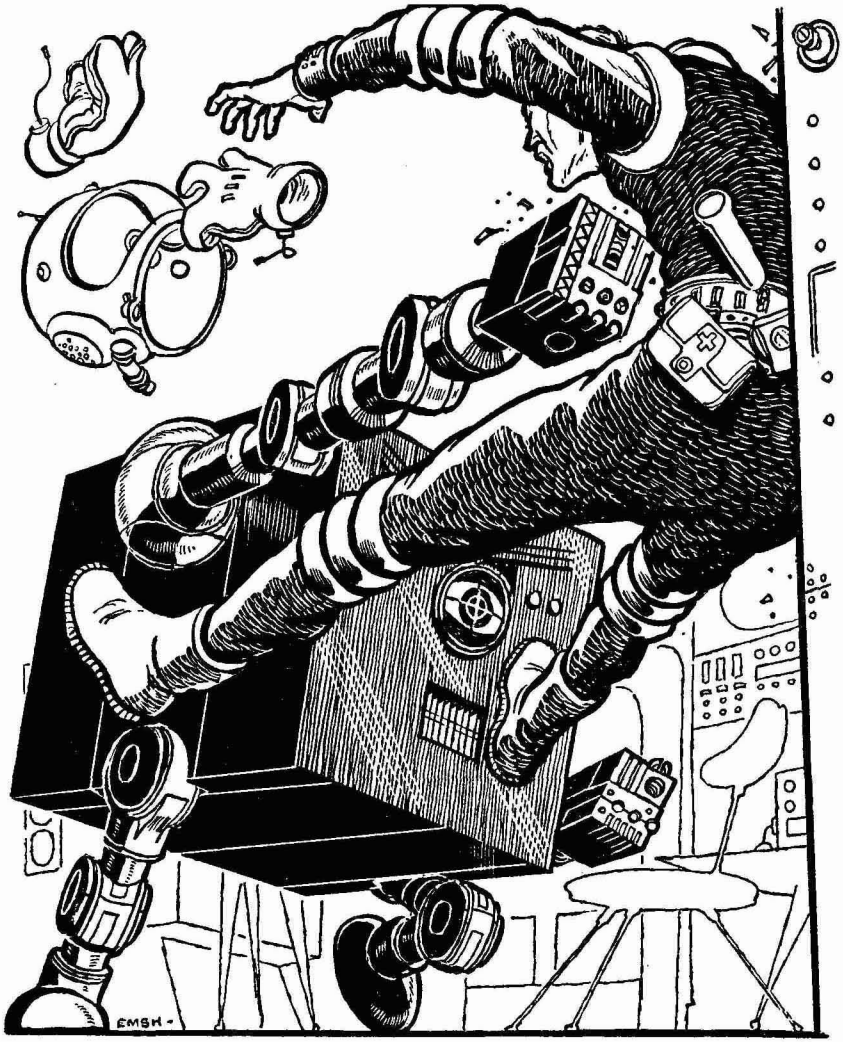
He was dying.

He let his eyes close completely, let the sounds of the life hutch fade from around him. Slowly the sound of the coolants hush-hushing through the wall-pipes, the relay machines feeding without pause their messages from all over the Galaxy, the whirr of the antenna's standard turning in its socket atop

the bubble, slowly they melted into silence. He had resorted to blocking himself off from reality many times during the past three days. It was either that or existing with the robot watching, and eventually he would have had to move. To move was to die. It was that simple.

He closed his ears to the whisperings of the life hutch; he listened to the whisperings within himself.

To his mind came the sounds of war, across the gulf of space. It was all imagination, yet he could clear-



ly detect the hiss of his scout's blaster as it poured beam after beam into the lead ship of the Kyben fleet.

His sniper-class scout had been near the face of that deadly Terran phalanx, driving like a wedge at the alien ships, converging on them in loose battle-formation. It was then it had happened.

One moment he had been heading into the middle of the battle, the left flank of the giant Kyben dreadnaught turning crimson under the impact of his firepower.

The next moment, he had skittered out of the formation which had slowed to let the Kyben craft come in closer, while the Earthmen decelerated to pick up maneuverability.

He had gone on at the old level and velocity, directly into the forward guns of a toadstool-shaped Kyben destroyer.

The first beam had burned the gun-mounts and directional equipment off the front of the ship, scorching down the aft side in a smear like oxidized chrome plate. He had managed to avoid the second beam.

His radio contact had been brief; he was going to make it back to Antares-Base if he could. If not, the formation would be listening for his homing-beam from a life hutch on whatever planetoid he might find for a crash-landing.

Which was what he had done. The charts had said the pebble spinning there was technically 1-333, 2-A, M & S, 3-804.39#, which would have meant nothing but three-dimensional co-ordinates, had not the small # after the data indicated a life hutch somewhere on its surface.

His distaste for being knocked out of the fighting, being forced onto one of the life hutch planetoids, had been offset only by his fear of running out of fuel before he could locate himself. Of eventually drifting off into space somewhere, to finally wind up as an artificial satellite around some minor sun.

The ship pancaked in under minimal reverse drive, bounced high and skittered along, tearing out chunks of the rear section; but had come to rest a scant two miles from the life hutch, jammed into the rocks.

Terrence had high-leaped the two miles across the empty, airless planetoid to the hermetically-sealed bubble in the rocks. His primary wish was to set the hutch's beacon signal so his returning fleet could track him.

He had let himself into the decompression chamber, palmed the switch through his thick spacesuit glove, and finally removed his helmet as he heard the air whistle into the chamber.

He had pulled off his gloves, opened the inner door and entered the life hutch itself.

God bless you, little life hutch, Terrence had thought as he dropped the helmet and gloves. He had glanced around, noting the relay machines, picking up messages from outside, sorting them, vectoring them off in other directions. He had seen the medicine chest clamped onto the wall, the refriger-

ator he knew would be well-stocked if a previous tenant hadn't been there before the stockman could refill it. He had seen the all-purpose robot, immobile in its duty-niche. And the wall-chronometer, its face smashed. All of it in a second's glance.

God bless, too, the gentlemen who thought up the idea of these little rescue stations, stuck all over the place for just such emergencies as this. He had started to walk across the room.

It was at this point that the service robot, who kept the place in repair between tenants and unloaded supplies from the ships, had moved clankingly across the floor, and with one fearful smash of a steel arm thrown Terrence across the room.

The spaceman had been brought up short against the steel bulkhead, pain blossoming in his back, his side, his arms and legs. The machine's blow had instantly broken three of his ribs. He lay there for a moment, unable to move. For a few seconds he was too stunned to breathe, and it had been that, perhaps, that had saved his life. His pain had immobilized him, and in that short space of time the robot had retreated, with a muted internal clash of gears, to its niche.

He had attempted to sit up straight, and the robot had hummed oddly and begun to move. He had stopped the movement. The robot had settled back.

Twice more had convinced him his position was as bad as he had thought.

The robot had worn down somewhere in its printed circuits. Its commands distorted so that now it was conditioned to smash, to hit, anything that moved.

He had seen the clock. He realized he should have suspected something was wrong when he saw its smashed face. Of course! The hands had moved, the robot had smashed the clock. Terrence had moved, the robot had smashed him.

And would again, if he moved again.

But for the unnoticeable movement of his eyelids, he had not moved in three days.

He had tried moving toward the decompression lock, stopping when the robot advanced and letting it settle back, then moving again, a little nearer. But the idea died with his first movement. The agonizing pain of the crushed ribs made such maneuvering impossible. He was frozen into position, an uncomfortable, twisted position, and he would be there till the stalemate ended, one way or the other.

He was twelve feet away from the communications panel, twelve feet away from the beacon that would guide his rescuers to him. Before he died of his wounds, before he starved to death, before the robot crushed him. It could have been twelve light-years, for all the difference it made.

What had gone wrong with the robot? Time to think was cheap. The robot could detect movement, but thinking was still possible. Not that it could help, but it was possible.

The companies who supplied the life hutch's needs were all govern-

ment contracted. Somewhere along the line someone had thrown in impure steel or calibrated the circuit-cutting machines for a less expensive job. Somewhere along the line someone had not run the robot through its paces correctly. Somewhere along the line someone had committed murder.

He opened his eyes again. Only the barest fraction of opening. Any more and the robot would sense the movement of his eyelids. That would be fatal.

He looked at the machine.

It was not, strictly speaking, a robot. It was merely a remote-controlled hunk of jointed steel, invaluable for making beds, stacking steel plating, watching culture dishes, unloading spaceships and sucking dirt from rugs, The robot body, roughly humanoid, but without what would have been a head in a human, was merely an appendage.

The real brain, a complex maze of plastic screens and printed circuits, was behind the wall. It would have been too dangerous to install those delicate parts in a heavy-duty mechanism. It was all too easy for the robot to drop itself from a loading shaft, or be hit by a meteorite, or get caught under a wrecked spaceship. So there were sensitive units in the robot appendage that "saw" and "heard" what was going on, and relayed them to the brain —behind the wall.

And somewhere along the line that brain had worn grooves too deeply into its circuits. It was now mad. Not mad in any way a human being might go mad, for there were an infinite number of ways a machine could go insane. Just mad enough to kill Terrence.

Even if I could *hit the robot with something, it wouldn't stop the thing.* He could perhaps throw something at the machine before it could get to him, but it would do no good. The robot brain would still be intact, and the appendage would continue to function. It was hopeless.

He stared at the massive hands of the robot. It seemed he could see his own blood on the jointed work-tool fingers of one hand. He knew it must be his imagination, but the idea persisted. He flexed the fingers of his hidden hand.

Three days had left him weak and dizzy from hunger. His head was light and his eyes burned steadily. He had been lying in his own filth till he no longer noticed the discomfort. His side ached and throbbed, the pain like a hot spear thrust into him every time he breathed.

He thanked God his spacesuit was still on, else his breathing would have brought the robot down on him. There was only one solution, and that solution was his death.

Terrence had never been a coward, nor had he been a hero. He was one of the men who fight wars because they must be fought by someone. He was the kind of man who would allow himself to be torn from wife and home and flung into an abyss they called Space because of something else they called Loyalty and another they called Pa-

triotism. To defend what he had been told needed defense. But it was in moments like this that a man like Terrence began to think.

Why here? Why like this? What have I done that I should finish in a filthy spacesuit on a lost rock—and not gloriously but starving or bleeding to death alone with a crazy robot? Why me? Why me? Why?

He knew there could be no answers. He expected no answers.

He was not disappointed.

WHEN HE awoke, he instinctively looked at the clock. Its shattered face looked back at him, jarring him, forcing his eyes open in after-sleep terror. The robot hummed and emitted a spark. He kept his eyes open. The humming ceased. His eyes began to burn. He knew he couldn't keep them open too long.

The burning worked its way to the front of his eyes, from the top and bottom, bringing with it tears. It felt as though someone were shoving needles into the soft orbs. The tears ran down over his cheeks.

His eyes snapped shut. The roaring grew in his ears. The robot didn't make a sound.

Could it be inoperative? Could it have worn down to immobility? Could he take the chance of experimenting?

He slid down to a more comfortable position. The robot charged forward the instant he moved. He froze in mid-movement, his heart a lump of snow. The robot stopped, confused, a scant ten inches from his outstretched foot. The machine hummed to itself, the noise of it coming both from the machine before him and from somewhere behind the wall.

He was suddenly alert.

If it had been working correctly, there would have been little or no sound from the appendage, and none whatsoever from the brain. But it was not working properly, and the sound of its thinking was distinct.

The robot rolled backward, its "eyes" still toward Terrence. The sense orbs of the machine were in the torso, giving the machine the look of a squat gargoyle of metal, squared and deadly.

The humming was growing louder, every now and then a sharp *pfffft!* of sparks mixed with it. Terrence had a moment's horror at the thought of a short-circuit, a fire in the life hutch, and no service robot to put it out.

He listened carefully to figure out where the robot's brain was built into the wall.

Then he thought he had it. Or was it there? It was either in the wall behind a bulkhead next to the refrigerator, or behind a bulkhead near the relay machines. The two possible housings were within a few feet of each other, but it might make a great deal of difference.

The distortion created by the steel plate in front of the brain, and the distracting background noise of the robot broadcasting it made it difficult to tell exactly which was it.

He drew a deep breath.

The ribs slid a fraction of an

inch together, their broken ends grinding.

He moaned.

A high-pitched tortured moan that died quickly, but throbbed back and forth inside his head, echoing and building itself into a paen of sheer agony! It forced his tongue out of his mouth, limp in a corner of his lips, moving slightly. The robot rolled forward. He drew his tongue in, clamped his mouth shut, cut off the scream inside his head at its high point!

The robot stopped, rolled back to its duty-niche.

Beads of sweat broke out on his body. He could feel them trickling inside his spacesuit, inside his jumper, inside the undershirt, on his skin. The pain of the ribs was suddenly heightened by an irresistible itching.

He moved an infinitesimal bit within the suit, his outer appearance giving no indication of the movement. The itching did not subside. The more he tried to make it stop, the more he thought about not thinking about it, the worse it became. His armpits, the bends of his arms, his thighs where the tight service-pants clung—suddenly too tightly—were madness. He had to scratch!

He almost started to make the movement. He stopped before he started. He knew he would never live to enjoy any relief. A laugh bubbled into his head. *God Almighty, and I always laughed at the joes who suffered with the seven-year itch, the ones who always did a little dance when they were at attention during inspection, the ones who could scratch and sigh contentedly. God, how I envy them.*

The prickling did not stop. He twisted faintly. It got worse. He took another deep breath.

The ribs sandpapered again.

This time he fainted from the pain.

"Well, Terrence, how do you like your first look at a Kyben?"

Ernie Terrence wrinkled his forehead and ran a finger up the side of his face. He looked at his Commander and shrugged. "Fantastic things, aren't they?"

"Why fantastic?" asked Commander Foley.

"Because they're just like us. Except of course the bright yellow pigmentation and the tentacle-fingers. Other than that they're identical to a human being."

The Commander opaqued the examination-casket and drew a cigarette from a silver case, offering the Lieutenant one. He puffed it alight, staring with one eye closed against the smoke, at the younger man beside him. "More than that, I'm afraid. Their insides look like someone had taken them out, liberally mixed them with spare parts from several other species, and thrown them back in any way that fitted conveniently. For the next twenty years we'll be knocking our heads together trying to figure out how they exist."

Terrence grunted, rolling his unlit cigarette absently between two fingers. "That's the least of it."

"You're right," agreed the Commander. "For the next thousand years we'll be trying to figure out

how they think, why they fight, what it takes to get along with them, what motivates them."

If they let us live that long thought Terrence.

"Why are we at war with the Kyben?" he asked the older man. "I mean really."

"Because the Kyben want to kill every human being that can realize he's a human being."

"What have they got against us?"

"Does it matter? Perhaps it's because our skin isn't bright yellow; perhaps it's because our fingers aren't silken and flexible; perhaps it's because our cities are too noisy for them. Perhaps a lot of perhaps. But it doesn't matter. Survival never matters until you have to survive."

Terrence nodded. He understood. So did the Kyben. It grinned at him and drew its blaster. It fired point-blank, crimsoning the hull of the Kyben ship.

He swerved to avoid running into his gun's own backlash. The movement of the bucket seat sliding in its tracks to keep his vision steady while maneuvering made him dizzy.

The abyss was nearer, and he teetered, his lips whitening as they pressed together under his effort to steady himself. With a headlong gasp he fell sighing into the stomach. His long, silken fingers jointed steely humming clankingly toward the medicine chest over the plate behind the bulkhead.

The robot advanced on him grindingly. Small fine bits of metal rubbed together, ashing away into a breeze that came from nowhere as the machine raised lead boots toward his face.

Onward and onward till he had no room to move.

The light came on, bright, brighter than any star Terrence had ever seen, glowing, broiling, flickering, shining, bobbing a ball of light on the chest of the robot, who staggered, stumbled, stopped.

The robot hissed, hummed and exploded into a million flying, racing, fragments, shooting beams of light all over the abyss over which Terrence teetered. He flailed his arms back trying to escape at the last moment, before the fall.

He saved himself only by his subconscious. Even in the hell of a nightmare he was aware of the situation. He had not moaned and writhed in his delirium. He had kept motionless and silent.

He knew this was true, because he was still alive.

Only his surprised jerking, as he came back to consciousness started the monster rolling from its niche. He came fully awake and sat silent, slumped against the wall. The robot retreated.

Thin breath came through his nostrils. Another moment and he would have put an end to the past three days—three days or more now? how long had he been asleep? —of torture.

He was hungry. Lord how hungry he was. The pain in his side was worse now, a steady throbbing that made even shallow breathing tortuous. He itched maddeningly. He was uncomfortably slouched against a cold steel bulkhead, every rivet having made a burrow for it-

self in his skin. He wished he were dead.

He didn't wish he was dead. It was all too easy to get his wish.

If he could only disable that robot brain. A total impossibility. If he could only wear Phobos and Deimos for watchfobs. If he could only shack-up with a silicon-deb from Penares. If he could only use his large colon for a lasso.

It would take a total wrecking of the brain to do it enough damage to stop the appendage before it could roll over and smash Terrence again.

With a steel bulkhead between him and the brain, his chances of success totaled minus zero every time.

He considered which part of his body the robot would smash first. One blow of that tool-hand would kill him if it were used a second time. On top of the ribs, even a strong breath might finish him.

Perhaps he could make a break and get into the air chamber . . .

Worthless. A) The robot would catch him before he had gotten to his feet, in his present condition. B) Even allowing for a miracle, if he did get in there, the robot would smash the lock doors, letting in air, ruining the mechanism. C) Even allowing for a double miracle what the hell good would it do him? His helmet and gloves were in the hutch itself, and there was no place to go on the planetoid. The ship was ruined, so no signal could be sent from there.

Doom suddenly compounded itself.

The more he thought about it, the more certain he was that soon the light would flicker out for him.

The light would flicker out.

The light would flicker . . .

The light . . .

. . .light . . .?

His God, if he had had anything to do with it, had heard him. Terrence was by no means a religious man, but this was miracle enough to make even him a disciple. It wasn't over yet, but the answer was there—and it *was* an answer.

He began to save himself.

Slowly, achingly slowly, he moved his right hand, the hand away from the robot's sight, to his belt. On the belt hung the assorted implements a spaceman needs at any moment in his ship. A wrench. A packet of sleep-stavers. A compass. A geiger counter. A flashlight.

The last was the miracle. Miracle in a tube.

He fingered it almost reverently, then unclipped it in a moment's frenzy, still immobile to the robot's "eyes."

He held it at his side, away from his body by a fraction of an inch, pointing up over the bulge of his spacesuited leg.

If the robot looked at him, all it would see would be the motionless bulk of his leg, blocking off any movement on his part. To the machine, he was inert. Motionless.

Now he thought wildly, *where is the brain?*

If it is behind the relay machines, I'm still dead. If it is near the refrigerator, I'm saved. He could afford to take no chances. He would have to move.

He lifted one leg.

The robot moved toward him. The humming and sparking was distinct this time. He dropped the leg.

Behind the plates above the refrigerator!

The robot stopped, nearly at his side. Seconds had decided. The robot hummed, sparked, and returned to its niche.

Now he knew!

He pressed the button. The invisible beam of the flashlight leaped out, speared at the bulkhead above the refrigerator. He pressed the button again and again, the flat circle of light appearing, disappearing, appearing, disappearing on the faceless metal of the life hutch's wall.

The robot sparked and rolled from its niche. It looked once at Terrence. Then its rollers changed direction and the machine ground toward the refrigerator.

The steel fist swung in a vicious arc, smashing with a deafening clang at the spot where the light bubble flickered on and off.

It swung again and again. Again and again till the bulkhead had been gouged and crushed and opened, and the delicate coils and plates and wires and tubes behind it were refuse and rubble. Until the robot froze, with arm half-ready to strike again. Dead. Immobile. Brain and appendage.

Even then Terrence did not stop pressing the flashlight button. Wildly he thumbed it down and down.

Suddenly he realized it was all over.

The robot was dead. He was alive. He would be saved. He had no doubts about that. *Now* he could cry.

The medicine chest grew large through the shimmering in his eyes. The relay machines smiled at him.

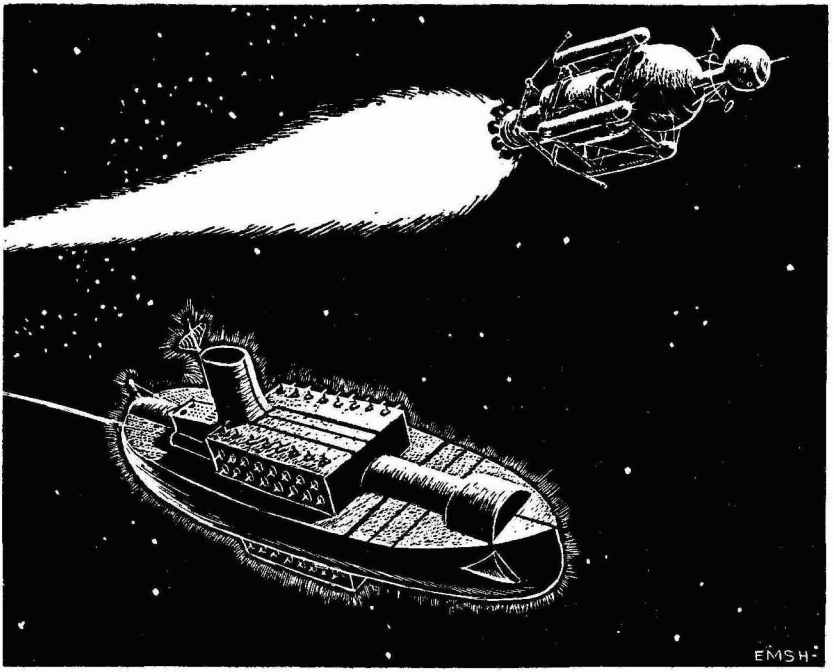
God bless you, little life hutch, he thought, before he fainted.

• • •

ATOM DRIVE

BY CHARLES FONTENAY

It was a race between the tortoise and the hare. But this hare was using some dirty tricks to make sure the ending would be different . . .



Illustrated by Ed Emsh

THE TWO spaceship crews were friendly enemies, sitting across the table from each other for their last meal before blastoff. Outside the ports, the sky was nothing but light-streaked blackness, punctured periodically by Earth glare, for Space Station 2 whirled swiftly on its axis, creating an artificial gravity.

"Jonner, I figured you the last man ever to desert the rockets for a hot-rod tow-job," chided Russo Baat, captain of the Mars Corporation's gleaming new freighter, *Marsward XVIII*. Baat was fat and red-faced, and one of the shrewdest space captains in the business.

Jonner Jons, at the other end of the table, inclined his grizzled head and smiled.

"Times change, Russo," he answered quietly. "Even the Mars Corporation can't stop that."

"Is it true that you're pulling five thousand tons of cargo, Captain?" asked one of the crewmen of the *Marsward XVIII*.

"Something like that," agreed Jonner, and his smile broadened. "And I have only about twice the fuel supply you carry for a 100-ton payload."

The communicator above them squawked and blared:

"Captain Jons and Captain Baat of Martian competition run, please report to control for final briefing."

"I knew it!" grumbled Baat, getting heavily and reluctantly to his feet. "I haven't gotten to finish a meal on this blasted merry-go-round yet."

In the space station's control section, Commander Ortega of the Space Control Commission, an ascetic officer in plain blues, looked them up and down severely.

"As you know, gentlemen," he said, "blastoff time is 0600. Tonnage of cargo, fuel and empty vessels cannot be a factor, under the law. The Mars Corporation will retain its exclusive franchise to the Earth-Mars run, unless the ship sponsored by the Atom-Star Company returns to Earth with full cargo at least twenty hours ahead of the ship sponsored by the Mars Corporation. Cargo must be unloaded at Mars and new cargo taken on. I do not consider the twenty-hour bias in favor of the Mars Corporation a fair one," said Ortega severely, turning his gaze to Baat, "but the Space Control Commission does not make the laws. It enforces them. Docking and loading facilities will be available to both of you on an equal basis at Phobos and Marsport. Good luck."

He shook hands with both of them.

"Saturn, I'm glad to get out of there!" exclaimed Baat, mopping his brow as they left the control section. "Every time I take a step, I feel like I'm falling on my face."

"It's because the control section's so close to the center," replied Jonner. "The station's spinning to maintain artificial gravity, and your feet are away from the center. As long as you're standing upright, the pull is straight up and down to you, but actually your feet are moving faster than your head, in a larger orbit. When you try to move, as in normal gravity, your body swings out of that line of pull and you nearly fall. The best corrective, I've found, is to lean backward slightly when you start to walk."

As the two space captains walked back toward the wardroom together, Baat said:

"Jonner, I hear the Mars Corporation offered you the *Marsward XVIII* for this run first, and you turned them down. Why? You piloted the *Marsward V* and the *Wayward Lady* for Marscorp when those upstarts in the Argentine were trying to crack the Earth-Mars run. This Atom-Star couldn't have enough money to buy you away from Marscorp."

"No, Marscorp offered me more," said Jonner, soberly now. "But this atomic drive is the future of space travel, Russo. Marscorp has it, but they're sitting on it because they've got their fingers in hydrazine interests here, and the atom drive will make hydrazine useless for space fuel. Unless I can break the franchise for Atom-Star, it may be a hundred years before we switch to the atom drive in space."

"What the hell difference does that make to you?" asked Baat

bluntly.

"Hydrazine's expensive," replied Jonner. "Reaction mass isn't, and you use less of it. I was born on Mars, Russo. Mars is my home, and I want to see my people get the supplies they need from Earth at a reasonable transport cost, not pay through the nose for every packet of vegetable seed."

They reached the wardroom door.

"Too bad I have to degrav my old chief," said Baat, chuckling. "But I'm a rocket man, myself, and I say to hell with your hot-rod atom drive. I'm sorry you got deflected into this run, Jonner; you'll never break Marscorp's orbit."

The *Marsward XVIII* was a huge vessel, the biggest the Mars Corporation ever had put into space. It was a collection of spheres and cylinders, joined together by a network of steel ties. Nearly 90% of its weight was fuel, for the one-way trip to Mars.

Its competitor, the *Radiant Hope,* riding ten miles away in orbit around the Earth, was the strangest looking vessel ever to get clearance from a space station. It looked like a tug towing a barge. The tug was the atomic power plant. Two miles behind, attached by a thin cable, was the passenger compartment and cargo.

On the control deck of the *Radiant Hope,* Jonner gripped a microphone and shouted profane instructions at the pilot of a squat ground-to-space rocket twenty miles away. T'an Li Cho, the ship's engineer, was peering out the port at the speck of light toward which Jonner was directing his wrath, while Qoqol, the Martian astrogator, worked at his charts on the other side of the deck.

"I thought all cargo was aboard, Jonner," said T'an.

"It is," said Jonner, laying the mike aside. "That G-boat isn't hauling cargo. It's going with us. I'm not taking any chances on Marscorp refusing to ferry our cargo back and forth at Mars."

"Is plotted, Jonner," boomed Qoqol, turning his head to peer at them with huge eyes through the spidery tangle of his thin, double-jointed arms and legs. He reached an eight-foot arm across the deck and handed Jonner his figures. Jonner gave them to T'an.

"Figure out power for that one, T'an," ordered Jonner, and took his seat in the cushioned control chair.

T'an pulled a slide rule from his tunic pocket, but his black almond eyes rested quizzically on Jonner.

"It's four hours before blastoff," he reminded.

"I've cleared power for this with Space Control," replied Jonner. "That planet-loving G-boat jockey missed orbit. We'll have to swing out a little and go to him."

On a conventional space craft, the order for acceleration would have sent the engineer to the engine deck to watch his gauges and report by intercom. But the *Radiant Hope*'s "engine deck" was the atomic tug two miles ahead, which T'an, in heavy armor, would enter only in emergencies. He calculated for a moment, then called softly

to Jonner:

"Pile One, in ten."

"In ten," confirmed Jonner, pulling a lever on the calibrated gauge of the radio control.

"Pile Two, in fifteen."

"In fifteen."

"Check. I'll have the length of burst figured for you in a jiffy."

A faint glow appeared around the atomic tug far ahead, and there was the faintest shiver in the ship. But after a moment, Qoqol said in a puzzled tone:

"No Gs, Jonner. Engine not work?"

"Sure, she's working," said Jonner with a grin. "You'll never get any more G than we've got now, Qoqol, all the way to Mars. Our maximum acceleration will be 1/3,000th-G."

"One three-thousandth?" exclaimed T'an, shaken out of his Oriental calm. "Jonner, the *Marsward* will blast away at one or two Gs. How do you expect to beat that at 1/3,000th?"

"Because they have to cut off and coast most of the way in an elliptic orbit, like any other rocket," answered Jonner calmly. "We drive straight across the system, under power all the time. We accelerate half way, decelerate the other half."

"But 1/3,000th!"

"You'll be surprised at what constant power can do. I know Baat, and I know the trick he's going to use. It's obvious from the blastoff time they arranged. He's going to tack off the Moon and use his power right to cut 20 days off that regular 237-day schedule. But this tug-boat will make it in 154 days!"

They took aboard the 200-ton landing boat. By the time they got it secured, the radio already was sounding warnings for blastoff.

Zero hour arrived. Again Jonner pulled levers and again the faint glow appeared around the tail of their distant tug. Across space the exhaust of the *Marsward XVIII* flared into blinding flame. In a moment, it began to pull ahead visibly and soon was receding like a meteor.

Near the *Radiant Hope,* the space station seemed not to have changed position at all.

"The race is not always to the swift," remarked Jonner philosophically.

"And we're the tortoise," said T'an. "How about filling us in on this jaunt, Jonner?"

"Is should, Jonner," agreed Qoqol. "T'an know all about crazy new engine, I know all about crazy new orbit. Both not know all. You tell."

"I planned to, anyway," said Jonner. "I had figured on having Serj in on it, but he wouldn't understand much of it anyhow. There's no use in waking him up."

Serj was the ship's doctor-psychologist and fourth member of the crew. He was asleep below on the centerdeck.

"For your information, Qoqol," said Jonner, " the atomic engine produces electrical energy, which accelerates reaction mass. Actually, it's a crude ion engine. T'an can explain the details to you later, but the important thing is that the fuel is cheap, the fuel-to-cargo ratio is low and constant acceleration is

practical.

"As for you, T'an, I was surprised at your not understanding why we'll use low acceleration. To boost the engine power and give us more Gs, we'd either have to carry more fuel or coast part of the way on momentum, like an ordinary rocket. This way's more efficient, and our 63-day margin over the *Marsward* each way is more than enough for unloading and loading more cargo and fuel."

"With those figures, I can't see how Marscorp expects to win this competition," said T'an.

"We've got them, flat, on the basis of performance," agreed Jonner. "So we'll have to watch for tricks. I know Marscorp. That's why I arranged to take aboard that G-boat at the last minute. Marscorp controls all the G-boats at Marsport, and they're smart enough to keep us from using them, in spite of the Space Control Commission. As for refueling for the return trip, we can knock a chunk off of Phobos for reaction mass."

The meteor alarm bells clanged suddenly, and the screen lit up once with a fast-moving red line that traced the path of the approaching object.

"Miss us about half a mile," said Jonner after a glance at the screen. "Must be pretty big . . . and it's coming *up!*"

He and T'an floated to one of the ports, and in a few moments saw the object speed by.

"That's no meteor!" exclaimed Jonner with a puzzled frown. "That's man-made. But it's too small for a G-boat."

The radio blared: "All craft in orbit near Space Station 2! Warning! All craft near Space Station 2! Experimental missile misfired from White Sands! Repeat: experimental missile misfired from White Sands! Coordinates . . ."

"Fine time to tell us," remarked T'an drily.

"Experimental missile, hell!" snorted Jonner, comprehension dawning. "Qoqol, what would have happened if we hadn't shifted orbit to take aboard that G-boat?"

Qoqol calculated a moment.

"Hit our engines," he announced. "Dead center."

Jonner's blue eyes clouded ominously. "Looks like they're playing for keeps this time, boys."

THE BROTHERHOOD of spacemen is an exclusive club. Any captain, astrogator or engineer is likely to be well known to his colleagues, either personally or by reputation.

The ship's doctor-psychologist is in a different category. Most of them sign on for a few runs for the adventure of it, as a means of getting back and forth between planets without paying the high cost of passage or to pick up even more money than they can get from lucrative planetbound practice.

Jonner did not know Serj, the *Radiant Hope*'s doctor. Neither T'an nor Qoqol ever had heard of him. But Serj appeared to know his business well enough, and was friendly enough.

It was Serj's first trip and he was very interested in the way the ship

operated. He nosed into every corner of it and asked a hundred questions a day.

"You're as inquisitive as a cadet spaceman, Serj," Jonner told him on the twenty-fifth day out. Everybody knew everyone else well by then, which meant that Jonner and Qoqol, who had served together before, had become acquainted with T'an and Serj.

"There's a lot to see and learn about space, Captain," said Serj. He was a young fellow, with fair hair and an easy grin. "Think I could go outside?"

"If you keep a lifeline hooked on. The suits have magnetic shoes to hold you to the hull of the ship, but you can lose your footing."

"Thanks," said Serj. He touched his hand to his forehead and left the control deck.

Jonner, near the end of his eight-hour duty shift, watched the dials.

The red light showing the inner airlock door was open blinked on. It blinked off, then the outer airlock indicator went on, and off.

A shadow fell across Jonner briefly. He glanced at the port and reached for the microphone.

"Careful and don't step on any of the ports," he warned Serj. "The magnetic soles won't hold on them."

"I'll be careful, sir," answered Serj.

No one but a veteran spaceman would have noticed the faint quiver that ran through the ship, but Jonner felt it. Automatically, he swung his control chair and his eyes swept the bank of dials.

At first he saw nothing. The outer lock light blinked on and off, then the inner lock indicator. That was Serj coming back inside.

Then Jonner noted that the hand on one dial rested on zero. Above the dial was the word: "ACCELERATION."

His eyes snapped to the radio controls. The atomic pile levers were still at their proper calibration. The dials above them said the engines were working properly.

The atomic tug was still accelerating, but passengers and cargo were in free fall.

Swearing Jonner jerked at the levers to pull out the piles aboard the tug.

A blue flash flared across the control board, momentarily blinding him. Jonner recoiled, only his webbed safety belt preventing him from plummeting from the control chair.

He swung back anxiously to the dials, brushing futilely at the spots that swam before his eyes. He breathed a sigh of relief. The radio controls had operated. The atomic engines had ceased firing.

Tentatively, cautiously, he reversed the lever. There was no blue flash this time, but neither did the dials quiver. He swore. Something had burned out in the radio controls. He couldn't reverse the tug.

He punched the general alarm button viciously, and the raucous clangor of the bell sounded through the confines of the ship. One by one, the other crew members popped up to the control deck from below.

He turned the controls over to Qoqol.

"Take readings on that damn tug," Jonner ordered. "I think our cable broke. T'an, let's go take a look."

When they got outside, they found about a foot of the one-inch cable still attached to the ship. The rest of it, drawn away by the tug before Jonner could cut acceleration, was out of sight.

"Can it be welded, T'an?"

"It can, but it'll take a while," replied the engineer slowly. "First, we'll have to reverse that tug and get the other end of that break."

"Damn, and the radio control's burned out. I tried to reverse it before I sounded the alarm. T'an, how fast can you get those controls repaired?"

"Great space!" exclaimed T'an softly. "Without seeing it, I'd say at least two days, Jonner. Those controls are complicated as hell."

They re-entered the ship. Qoqol was working at his diagrams, and Serj was looking over his shoulder. Jonner took a heat-gun quietly from the rack and pointed it at Serj.

"You'll get below, mister," he commanded grimly. You'll be handcuffed to your bunk from here on out."

"Sir?. . . I don't understand," stammered Serj.

"Like hell you don't. You cut that cable," Jonner accused.

Serj started to shrug, but he dropped his eyes.

"They paid me," he said in a low tone. "They paid me a thousand solars."

"What good would a thousand solars do you when you're dead, Serj . . . dead of suffocation and drifting forever in space?"

Serj looked up in astonishment.

"Why, you can still reach Earth by radio, easy," he said. "It wouldn't take long for a rescue ship to reach us."

"Chemical rockets have their limitations, "said Jonner coldly.

"And you don't realize what speed we've built up with steady acceleration. We'd head straight out of the system, and nothing could intercept us, if that tug had gotten too far before we noticed it was gone."

He jabbed the white-faced doctor with the muzzle of the heat-gun.

"Get below," he ordered. "I'll turn you over to Space Control at Mars."

When Serj had left the control deck, Jonner turned to the others. His face was grave.

"That tug picked up speed before I could shut off the engines, after the cable was cut," he said. "It's moving away from us slowly, and at a tangent. And solar gravity's acting on both bodies now. By the time we get those controls repaired, the drift may be such that we'll waste weeks maneuvering the the tug back."

"I could jet out to the tug in a spacesuit, before it gets too far away," said T'an thoughtfully. "But that wouldn't do any good. There's no way of controlling the engines, at the tug. It has to be done by radio."

"If we get out of this, remind me to recommend that atomic ships always carry a spare cable," said

Jonner gloomily. "If we had one, we could splice them and hold the ship to the tug until the controls are repaired."

"Is cable in cargo strong enough, Jonner?" asked Qoqol.

"That's right!" exclaimed Jonner, brightening. "Most of our cargo's cable! That 4,000-ton spool we're hauling back there is 6,000 miles of cable to lay a television network between the Martian cities."

"Television cable?" repeated T'an doubtfully. "Will that be strong enough?"

"It's bound in flonite, that new fluorine compound. It's strong enough to tow this whole cargo at a couple of Gs. There's nothing aboard this ship that would cut off a length of it—a heat-gun at full power wouldn't even scorch it—but we can unwind enough of it, and block the spool. It'll hold the ship to the tug until the controls can be repaired, then we can reverse the tug and weld the cable."

"You mean the whole 6,000 miles of it's in one piece?" demanded T'an in astonishment.

"That's not so much. The cable-laying steamer *Dominia* carried 3,000 miles in one piece to lay Atlantic cables in the early 20th century."

"But how'll we ever get 4,000 tons in one piece down to Mars?" asked T'an. "No G-boat can carry that load."

Jonner chuckled.

"Same way they got it up from Earth to the ship," he answered. "They attached one end of it to a G-boat and sent it up to orbit, then wound it up on a fast winch. Since the G-boat will be decelerating to Mars, the unwinding will have to be slowed or the cable would tangle itself all over Syrtis."

"Sounds like it's made to order," said T'an, grinning. "I'll get into my spacesuit."

"You'll get to work on the radio controls," contradicted Jonner, getting up. "That's something I can't do, and I can get into a spacesuit and haul a length of cable out to the tug. Qoqol can handle the winch."

DEVEET, THE Atom-Star Company's representative at Mars City, and Kruger of the Space Control Commission were waiting when the *Radiant Hope*'s G-boat dropped down from the Phobos station and came to rest in a wash of jets. They rode out to the G-boat together in a Commission groundcar. Jonner emerged from the G-boat, following the handcuffed Serj.

"He's all yours," Jonner told Kruger, gesturing at Serj. "You have my radio reports on the cable-cutting, and I'll make my log available to you."

Kruger put his prisoner in the front seat of the groundcar beside him, and Jonner climbed in the back seat with Deveet.

"I brought the crates of dies for the groundcar factory down this time," Jonner told Deveet. "We'll bring down all the loose cargo before shooting the television cable down. While they're unloading the G-boat, I wish you'd get the tanks

refilled with hydrazine and nitric acid. I've got enough to get back up, but not enough for a round trip."

"What do you plan to do?" asked Deveet. He was a dark-skinned, long-faced man with a sardonic twist to his mouth.

"I've got to sign on a new ship's doctor to replace Serj. When the *Marsward* comes in, Marscorp will have a dozen G-boats working round the clock to unload and reload her. With only one G-boat, we've got to make every hour count. We still have reaction mass to pick up on Phobos."

"Right," agreed Deveet. "You can take the return cargo up in one load, though. It's just twenty tons of Martian relics for the Solar Museum. Mars-to-Earth cargos run light."

At the administration building, Jonner took his leave of Deveet and went up to the Space Control Commission's personnel office on the second floor. He was in luck. On the board as applying for a Mars-Earth run as ship's doctor-psychologist was one name: Lana Elden.

He looked up the name in the Mars City directory and dialed into the city from a nearby telephone booth. A woman's voice answered.

"Is Lana Elden there?" asked Jonner.

"I'm Lana Elden," she said.

Jonner swore under his breath. A woman! But if she weren't qualified, her name would not have been on the Commission board.

The verbal contract was made quickly, and Jonner cut the Commission monitor into the line to make it binding. That was done often when rival ships, even of the same line, were bidding for the services of crewmen.

"Blastoff time is 2100 tonight," he said, ending the interview. "Be here."

Jonner left the personnel office and walked down the hall. At the elevator, Deveet and Kruger hurried out, almost colliding with him.

"Jonner, we've run into trouble!" exclaimed Deveet. "Space Fuels won't sell us any hydrazine and nitric acid to refill the tanks. They say they have a new contract with Marscorp that takes all their supply."

"Contract, hell!" snorted Jonner. "Marscorp owns Space Fuels. What can be done about it, Kruger?"

Kruger shook his head.

"I'm all for you, but Space Control has no jurisdiction," he said. "If a private firm wants to restrict its sales to a franchised line, there's nothing we can do about it. If you had a franchise, we could force them to allot fuel on the basis of cargo handled, since Space Fuels has a monopoly here. But you don't have a franchise yet."

Jonner scratched his grey head thoughtfully.

It was a serious situation. The atom-powered *Radiant Hope* could no more make a planetary landing than the chemically-powered ships. Its power gave a low, sustained thrust that permitted it to accelerate constantly over long periods of time. To beat the powerful pull of planetary surface gravity, the terrific burst of quick energy from

the streamlined G-boats, the planetary landing craft, was needed.

"We can still handle it," Jonner said at last. "With only twenty tons return cargo, we can take it up this trip. Add some large parachutes to that, Deveet. We'll shoot the end of the cable down by signal rocket, out in the lowlands, and stop the winch when we've made contact, long enough to attach the rest of the cargo to the cable. Pull it down with the cable and, with Mars' low gravity, the parachutes will keep it from being damaged."

But when Jonner got back to the landing field to check on unloading operations, his plan was smashed. As he approached the G-boat, a mechanic wearing an ill-concealed smirk came up to him.

"Captain, looks like you sprung a leak in your fuel line," he said. "All your hydrazine's leaked out in the sand."

Jonner swung from the waist and knocked the man flat. Then he turned on his heel and went back to the administration building to pay the 10-credit fine he would be assessed for assaulting a spaceport employe.

The Space Control Commission's hearing room in Mars City was almost empty. The examiner sat on the bench, resting his chin on his hand as he listened to testimony. In the plaintiff's section sat Jonner, flanked by Deveet and Lana Elden. In the defense box were the Mars Corporation attorney and Captain Russo Baat of the *Marsward XVIII*. Kruger, seated near the rear of the room, was the only spectator.

The Mars Corporation attorney had succeeded in delaying the final hearing more than a 42-day Martian month by legal maneuvers. Meanwhile, the *Marsward XVIII* had blasted down to Phobos, and G-boats had been shuttling back and forth unloading the vessel and reloading it for the return trip to Earth.

When testimony had been completed, the examiner shuffled through his papers. He put on his spectacles and peered over them at the litigants.

"It is the ruling of this court," he said formally, "that the plaintiffs have not presented sufficient evidence to prove tampering with the fuel line of the G-boat of the spaceship *Radiant Hope*. There is no evidence that it was cut or burned, but only that it was broken. The court must remind the plaintiffs that this could have been done accidentally, through inept handling of cargo.

"Since the plaintiffs have not been able to prove their contention, this court of complaint has no alternative than to dismiss the case.

The examiner arose and left the hearing room. Baat waddled across the aisle, puffing.

"Too bad, Jonner," he said. "I don't like the stuff Marscorp's pulling, and I think you know I don't have anything to do with it.

"I want to win, but I want to win fair and square. If there's anything I can do to help . . ."

"Haven't got a spare G-boat in your pocket, have you?" retorted Jonner, with a rueful smile.

Baat pulled at his jowls.

"The *Marsward* isn't carrying G-boats," he said regretfully. "They all belong to the port, and Marscorp's got them so tied up you'll never get a sniff of one. But if you want to get back to your ship, Jonner, I can take you up to Phobos with me, as my guest."

Jonner shook his head.

"I figure on taking the *Radiant Hope* back to Earth," he said. "But I'm not blasting off without cargo until it's too late for me to beat you on the run."

"You sure? This'll be my last ferry trip. The *Marsward* blasts off for Earth at 0300 tomorrow."

"No, thanks, Russo. But I will appreciate your taking my ship's doctor, Dr. Elden, up to Phobos."

"Done!" agreed Baat. "Let's go, Dr. Elden. The G-boat leaves Marsport in two hours."

Jonner watched Baat puff away, with the slender, white-clad brunette at his side. Baat personally would see Lana Elden safely aboard the *Radiant Hope,* even if it delayed his own blastoff.

Morosely, he left the hearing room with Deveet.

"What I can't understand," said the latter, "is why all this dirty work, why didn't Marscorp just use one of their atom-drive ships for the competition run?"

"Because whatever ship is used on a competition run has to be kept in service on the franchised run," answered Jonner. "Marscorp has millions tied up in hydrazine interests, and they're more interested in keeping an atomic ship off this run than they are in a monopoly franchise. But they tie in together: if Marscorp loses the monopoly franchise and Atom-Star puts in atom-drive ships, Marscorp will have to switch to atom-drive to meet the competition."

"If we had a franchise, we could force Space Fuels to sell us hydrazine," said Deveet unhappily.

"Well, we don't. And, at this rate, we'll never get one."

JONNER AND Deveet were fishing at the Mars City Recreation Center. It had been several weeks since the *Marsward XVIII* blasted off to Earth with a full cargo. And still the atomic ship *Radiant Hope* rested on Phobos with most of her Marsbound cargo still aboard; and still her crew languished at the Phobos space station; and still Jonner moved back and forth between Mars City and Marsport daily, racking his brain for a solution that would not come.

"How in space do you get twenty tons of cargo up to an orbit 5,800 miles out, without any rocket fuel?" he demanded of Deveet more than once. He received no satisfactory answer.

The Recreation Center was a two-acre park that lay beneath the plastic dome of Mars City. Above them they could see swift-moving Phobos and distant Deimos among the other stars that powdered the night. In the park around them, colonists rode the amusement machines, canoed along the canal that twisted through the park or sipped refreshment at scattered tables. A

dozen or more sat, like Jonner and Deveet, around the edge of the tiny lake, fishing.

Deveet's line tightened. He pulled in a streamlined, flapping object from which the light glistened wetly.

"Good catch," complimented Jonner. "That's worth a full credit."

Deveet unhooked his catch and laid it on the bank beside him. It was a metal fish: live fish were unknown on Mars. They paid for the privilege of fishing for a certain time and any fish caught were "sold" back to the management at a fixed price, depending on size, to be put back into the lake.

"You're pretty good at it," said Jonner. "That's your third tonight."

"It's all in the speed at which you reel in your line," explained Deveet. "The fish move at pre-set speeds. They're made to turn and catch a hook that moves across their path at a slightly slower speed than they're swimming. The management changes the speeds once a week to keep the fishermen from getting too expert."

"You can't beat the management," chuckled Jonner. "But if it's a matter of matching orbital speeds to make contact, I ought to do pretty well when I get the hang of it."

He cocked an eye up toward the transparent dome. Phobos had moved across the sky into Capricorn since he last saw her. His memory automatically ticked off the satellite's orbital speed: 1.32 miles a second; speed in relation to planetary motion . . .

Why go over that again? One had to have fuel first. Meanwhile, the *Radiant Hope* lay idle on Phobos and its crew whiled away the hours at the space station inside the moon, their feet spinning faster than their heads . . . no, that wasn't true on Phobos, because it didn't have a spin to impart artificial gravity, like the space stations around Earth.

He sat up suddenly. Deveet looked at him in surprise. Jonner's lips moved silently for a moment, then he got to his feet.

"Where can we use a radiophone?" he asked.

"One in my office," said Deveet, standing up.

"Let's go. Quick, before Phobos sets."

They turned in their rods, Deveet collecting the credits for his fish, and left the Recreation Center.

When they reached the Atom-Star Company's Martian office Jonner plugged in the radiophone and called the Phobos space station. He got T'an.

"All of you get aboard," Jonner ordered. "Then have Qoqol call me."

He signed off and turned to Deveet. Can we charter a plane to haul our Earthbound cargo out of Marsport?"

"A plane? I suppose so. Where do you want to haul it?"

"Charax is as good as any other place. But I need a fast plane."

"I think we can get it. Marscorp still controls all the airlines, but the Mars government keeps a pretty strict finger on their planetbound operations. They can't refuse a

cargo haul without good reason."

"Just to play safe, have some friend of yours whom they don't know, charter the plane in his name. They won't know it's us till we start loading cargo."

"Right," said Deveet, picking up the telephone. "I know just the man."

Towmotors scuttled across the landing area at Marsport, shifting the cargo that had been destined for the *Radiant Hope* from the helpless G-boat to a jet cargo-plane. Nearby, watching the operation, were Jonner and Deveet, with the Marsport agent of Mars Air Transport Company.

"We didn't know Atom-Star was the one chartering the plane until you ordered the G-boat cargo loaded on it," confessed the Mars-Air agent.

"I see you and Mr. Deveet are signed up to accompany the cargo. You'll have to rent suits for the trip. We have to play it safe, and there's always the possibility of a forced landing."

"There are a couple of spacesuits aboard the G-boat that we want to take along," said Jonner casually. "We'll just wear those instead."

"Okay." The agent spread his hands and shrugged. "Everybody at Marsport knows about you bucking Marscorp, Captain. What you expect to gain by transferring your cargo to Charax is beyond me, but it's your business."

An hour later, the chartered airplane took off with a thunder of jets. Aboard was the 20-ton cargo the *Radiant Hope* was supposed to carry to Earth, plus some large parachutes. The Mars-Air pilot wore a light suit with plastic helmet designed for survival in the thin, cold Martian air. Jonner and Deveet wore the bulkier spacesuits.

Five minutes out of Marsport, Jonner thrust the muzzle of a heat-gun in the pilot's back.

"Set it on automatic, strap on your parachute and bail out," he ordered. "We're taking over."

The pilot had no choice. He went through the plane's airlock and jumped, helped by a hearty boost from Jonner. His parachute blossomed out as he drifted down toward the green Syrtis Major Lowland. Jonner didn't worry about him. He knew the pilot's helmet radio would reach Marsport and a helicopter would rescue him shortly.

"I don't know what you're trying to do, Jonner," said Deveet apprehensively over his spacehelmet radio. "But whatever it is, you'd better do it fast. They'll have every plane on Mars looking for us in half an hour."

"Let 'em look, and keep quiet a while," retorted Jonner. "I've got some figuring to do.

He put the plane on automatic, took off the spacesuit handhooks and scribbled figures on a scrap of paper. He tuned in the plane's radio and called Qogol on Phobos. They talked to each other briefly in Martian.

The darker green line of a canal crossed the green lowland below them.

"Good, there's Drosinas, mut-

tered Jonner. "Let's see, time 1424 hours, speed 660 miles an hour . . ."

Jonner boosted the jets a bit and watched the terrain.

"By Saturn, I almost overran it!" he exclaimed. "Deveet, smash out those ports."

"Break out the ports?" repeated Deveet. "That'll depressurize the cabin!"

"That's right. So you'd better be sure your spacesuit's secure."

Obviously puzzled, Deveet strode up and down the cabin, knocking out its six windows with the hand-hooks of his spacesuit. Jonner maneuvered the plane gently, and set it on automatic. He got out of the pilot's seat and strode to the right front port.

Reaching through the broken window, he pulled in a section of cable that was trailing alongside. While the baffled Deveet watched, he reeled it in until he brought up the end of it, to which was attached a fish-shaped finned metal missile.

Jonner carried the cable end and the attached missile across the cabin and tossed it out the broken front port on the other side, swinging it so that the 700-mile-an-hour slipstream snapped it back in through the rearmost port like a bullet.

"Pick it up and pass it out the right rear port," he commanded. "We'll have to pass it to each other from port to port. The slipstream won't let us swing it forward and through."

In a few moments, the two of them had worked the missile and the cable end to the right front port and in through it. Originating above the plane, it now made a loop through the four open ports. Jonner untied the missile and tied the end to the portion which came into the cabin, making a bowline knot of the loop. Deveet picked up the missile from the floor, where Jonner had thrown it.

"Looks like a spent rocket shell," he commented.

"It's a signal rocket," said Jonner. "The flare trigger was disconnected."

He picked up the microphone and called the *Radiant Hope* on Phobos.

"We've hooked our fish, Qoqol," he told the Martian, and laid the mike aside.

"What does that mean?" asked Deveet.

"Means we'd better strap in," said Jonner, suiting the action to the words. "You're in for a short trip to Phobos, Deveet."

Jonner pulled back slowly on the elevator control, and the plane began a shallow climb. At 700 miles an hour, it began to attain a height at which its broad wings—broader than those of any terrestrial plane—would not support it.

"I'm trying to decide," said Deveet with forced calm, "whether you've flipped your helmet."

"Nope," answered Jonner. "Trolling for those fish in Mars City gave me the idea. The rest was no more than an astrogation problem, like any rendezvous with a ship in a fixed orbit, which Qoqol could figure. Remember that 6,000-mile television cable the ship's hauling? Qoqol just shot the end of it

down to Mars' surface by signal rocket, we hooked on and now he'll haul us up to Phobos. He's got the ship's engine hooked onto the cable winch."

The jets coughed and stopped. The plane was out of fuel. It was on momentum—to be drawn by the cable, or to snap it and fall.

"Impossible!" cried Deveet in alarm. "Phobos' orbital speed is more than a mile a second! No cable can take the sudden difference in that and the speed we're traveling. When the slack is gone, it'll break!"

"The slack's gone already. You're thinking of the speed of Phobos, *at Phobos.* At this end of the cable, we're like the head of a man in the control section of a space station, which is traveling slower than his feet because its orbit is smaller—but it revolves around the center in the same time.

"Look," Jonner added, "I'll put it in round numbers. Figure your cable as part of a radius of Phobos' orbit. Phobos travels at 1.32, but the other end of the radius travels at zero because it's at the center. The cable end, at the Martian surface, travels at a speed in between—roughly 1,200 miles an hour—but it keeps up with Phobos' revolution. Since the surface of Mars itself rotates at 500 miles an hour, all I had to do was boost the plane up to 700 to match the speed of the cable end.

"That cable will haul a hell of a lot more than twenty tons, and that's all that's on it right now. By winching us up slowly, there'll never be too great a strain on it."

Deveet looked apprehensively out of the port. The plane was hanging sidewise now, and the distant Martian surface was straight out the left-hand ports. The cable was holding.

"We can make the trip to Earth 83 days faster than the *Marsward,*" said Jonner, "and they have only about 20 days' start. It won't take us but a few days to make Phobos and get this cable and the rest of the cargo shot back to Mars. Atom-Star will get its franchise, and you'll see all spaceships switching to the atomic drive within the next decade."

"How about this plane?" asked Deveet. "We stole it, you know."

"You can hire a G-boat to take it back to Marsport," said Jonner with a chuckle. "Pay Mars-Air for the time and the broken ports, and settle out of court with that pilot we dropped. I don't think they'll send you to jail, Deveet."

He was silent for a few minutes.

"By the way, Deveet," said Jonner then, "radio Atom-Star to buy some flonite cable of their own and ship it to Phobos. Damned if I don't think this is cheaper than G-boats!" • • •

WHAT IS YOUR SCIENCE I.Q.?

ANSWERS: 1—Silver. 2—Cyclotron. 3—Rapidly. 4—Blaise Pascal. 5—Electron. 6—Catalysis. 7—Inversely. 8—80. 9—One. 10—Parthogenesis. 11—32. 12—Right angles. 13—14.7. 14—Violet. 15—Hydrogen. 16—One. 17—Two. 18—Hydrogen. 19—Balloons. 20—5/9ths.

chrome PASTURES

The Car was the new concept of the golden calf.

And the Green Pastures and Still Waters had

been replaced by the Happy Highways of Heaven . . .

Object worship reached its heyday in the mid twenty-first century. The bluebird, which had already become a number of ignominious things, finally became an automobile. It grew chrome wings and exchanged its heart for a carburetor, its feet for wheels and its backyard for a pedestal in The Church of the Happy Traveler. It was inevitable that the procedure for catching it should change.

—Bethe Royale, MASS MOTIVATIONS

THE SENECA Cathedral was crowded even for Display Sunday. Marcus Brett shouldered his way through the vestibule into the big Showroom and paused at the head of the center aisle. The Showroom was ablaze with the blue-white radiance of fluorescent candles, a radiance brightly mul-

BY ROBERT F. YOUNG

tiplied by the mirrored walls, caught by the polished chrome ceiling and flung blindingly down upon the congregation. The new Seneca model which was to be unveiled stood upon the pedestal behind the Dealer's dais, concealed by a huge damask sheet. Brett looked at it hungrily, trying to visualize its new lines, its new combination of colors. He took a slow deep breath, then started down the aisle toward his reserved seat.

The seat next to his was Czech's, Brett's turn-buddy. Brett

Illustrated by Kelly Freas

was surprised to find it occupied by a White Collar girl. White Collar Workers were getting bolder and bolder every day. Not that the girl's boldness was going to do her any good: as soon as Czech showed up she'd have to leave.

She glanced at Brett curiously when he sat down beside her and he returned the glance with his flat gray eyes. Her hair was short and dark and her eyes were a limpid brown. Her small turned up nose and round cheeks lent her face a quality of childish innocence; it could almost have passed for a little girl's face if her full lips hadn't given it away. She was wearing a cheap majorette ensemble, but cheap or not, on her robust young body it looked good.

Quite without his knowing it, Brett's glance had become a stare. The girl dropped her eyes, obviously embarrassed, though she did not blush. Brett turned away then, irked at the direction of his thoughts, and tried to concentrate on the sheet covered model.

It looked slightly longer than last year's job, but he couldn't be sure. However, an increase in length was a good bet, for the Seneca manufacturers had a tradition to live up to: every new model they put on the market virtually *had* to be longer than its predecessor . . .

Gradually Brett became aware of a subtle perfume. There was something about it—perhaps the nostalgic scent of apple blossoms which it contained—that intrigued him. There was no question as to its source and it was all he could do to keep his eyes on the sheet covered model where they belonged. He was relieved when the electronic organ struck up the Seneca hymn and the choir came down the aisle. Brett listened to their voices with usual dedication, but he still smelled apple blossoms.

After the choir had aligned themselves on either side of the pedestal and delivered their last note, the Dealer himself appeared, resplendent in a gold and scarlet robe. He walked slowly and majestically down the aisle, stepped upon the dais, and turned to face the congregation. His eyes surveyed the packed Showroom. "My children," he said simply, in his deep resonant voice; then, after a brief prayer, he began the Seneca beatitudes:

"Blessed are the rubber forests of Vega Twelve for their worthy contribution to the betterment of Mankind. Blessed are the mountains of Rigel Seven for their tin and their copper and their magnesium. . ." And finally—"Blessed are the rust red plains of Alpha Crucis Fourteen, for without their manganese, their titanium, and their iron ore, life as we know it would have long since perished from the Earth."

The sermon followed. It was a typical sermon, exalting the supreme patience of the Finance Bishop and deprecating the thoughtless irresponsibility of the average consumer. Brett shifted uneasily. He had a guilty conscience. During the caryear which was now drawing to a close, he'd missed three weekly installments and had had to have them prorated. As a

result, the remaining installments had been so huge that he'd barely been able to manage them, and he'd come uncomfortably close to losing his Seneca. Even now, with his final payment safely deposited with the Finance Bishop, the very thought of such a calamity was enough to evoke tiny globules of sweat on his brow.

He promised himself to be more conservative in the future, chase fewer women, drink fewer Dream Girls. Then his attention wandered. The Dealer was explaining a new decree which the Finance Bishop had issued, and decrees bored Brett to death. He unsealed his white driving jacket and slumped down in his seat, crossing his booted legs. The apple blossom scent was all around him, more intriguing than ever. He wondered rather desperately what had happened to Czech and concluded that something important must have come up and made it impossible for him to attend the services.

At last the sermon ended and the moment for the unveiling arrived. The congregation murmured in awed expectation, and there was an over-all shift in the spectrum of gaudy driving jackets as everyone leaned forward in his seat. After giving forth with the usual panegyrics concerning the superiority of Seneca models in general and the new Seneca model in particular, the Dealer said: "And now it is my privilege to reveal our latest creative masterpiece—the Bluebird!"

He raised one square bejeweled hand and the sheet fluttered ceilingward like a frightened cloud. At first there was only silence, and then a mass *Ahhhh* rose from the congregation. Following the Ahhhh, voice after voice was raised in reverent astonishment.

"Why," Brett gasped, "it *is* longer. A good ten inches longer!"

"It's a dream," the White Collar girl breathed.

"Beautiful," Brett murmured. "Beautiful beautiful beautiful . . ."

He began to notice some of the details he had glossed over in his first moment of rapture. The Bluebird was not only longer than last year's model, it was lower, too: its highest point was barely three feet above the pedestal. And there was a striking change in the chrome décor, the main feature being a wing-like strip along the brilliant blue flanks so suggestive of movement that it was hard to believe the car was standing still.

"It looks almost as if it could fly," the White Collar girl said.

In his excitement, Brett forgot her status. "It's a swell job all right," he said, turning towards her.

"Such a beautiful blue!"

Briefly, Brett forgot the car. The girl's enthusiasm had turned her full cheeks pink, made her dark eyes sparkle. Her cheap majorette ensemble was painfully conspicious in a gathering where women wore feminine adaptations of masculine driving attire; nevertheless, it brought out her figure in a way that a pair of thigh-tight breeches and a breast-fitted jacket never could have. Abruptly Brett wondered what she'd be like undressed. He'd never tried to pick up a White Collar girl, not only because

they were beneath his social status, but because it had never occurred to him that any of them would be worth the trouble.

This one looked like she might be worth a lot of trouble. "What's your name?" he asked impulsively, invisible apple blossoms falling all around him.

"Linda," she said. "Linda Dalms."

"Mark Brett. . . Like to ride?"

Her eyes had been on his face. At his question they dropped to the gaudy Seneca insigne on the collar of his jacket. "Yes. Yes I do."

"How would it be if I picked you up around six tonight and we take a whirl?"

"It would be divine," Linda said . . .

The Dealer was bringing the services to a close. "Tonight," he said, "the Bluebird will be placed on display in Seneca Square. While there will be enough of the new models to supply all our customers, I'd advise all prospective buyers to place their orders before Turn-In Friday in order to be assured of delivery by New Car Sunday. Orders will be taken in the vicarage immediately following the end of the services."

After the prayer, Brett accompanied Linda to the street. Standing in the April morning sunlight, he said: "Guess I'll order mine right away. No sense waiting."

He watched for a gleam of envy to come into her eyes; such a reaction on the part of a person who couldn't even buy one of the chrome wings of the new model would have been logical. But Linda's eyes remained the same—large and limpid and guileless—and all she said was, "I'm glad, Mr. Brett."

Brett was annoyed. "Whereabouts in Center City do you live?" he asked abruptly.

She hadn't said she lived in Center City and his assuming that she did was a calculated insult, even though both of them knew she couldn't possibly live anywhere else. But if the insult got home, she gave no sign. "The old office block," she said. "Building 14, Apartment 902."

"I'll see you about six," Brett said. He was about to turn and walk away, but she beat him to it. She threw a soft goodbye over her shoulder just before the departing crowd engulfed her. He stood there furious for a moment, but a wisp of her perfume had lingered behind her and when it touched his nostrils his anger dissolved.

Suddenly he remembered the small apple orchard in which he had played as a little boy. The whole scene came back, the trees with their pink-white blossoms, his mother reading in the nearby summerhouse; the utter peace and tranquillity that had pervaded the lovely June day. . . The orchard was gone now, leveled to make room for the new illuminated Raceway, the orchard and the antique double garage behind which it had stood; and his mother too, for that matter, killed in the same five car pile-up in which his father had perished magnificently. Only the memory remained, strengthened by the number of times he had had to recall it

orally in the presence of the finance psychoanalyst during the yearly pre-contract examination, and triggered now by the ersatz scent of apple blossoms contained in a White Collar girl's perfume.

It was far from being an unpleasant memory, and ordinarily Brett would have permitted his mind to dwell upon it. But there was a much more important item on his mind this morning and the memory had scarcely touched his consciousness before the Bluebird brushed it aside with a scintillating flurry of chrome wings. Brett turned and began walking towards the vicarage.

The Seneca vicarage adjoined the Seneca cathedral, facing the mile-wide business boulevard that encircled Center City. While its modest façade could not compete with the glorious façade of the cathedral itself, it was imposing in its own right. It had no chrome-mullioned windows of course, and no chrome-garnished steeples; but its ornamental glassbrick design was pleasing to the eye, and it boasted the largest display window of any vicarage in the city.

Last year's Seneca—the Four Million model—still stood in the window. Brett merely glanced at it as he passed. A year ago its sleek lines and scarlet body had dazzled him, and he had been one of the thousands of enthusiastic First Owners to drive in the New Car Sunday Parade. But now he had glimpsed the Bluebird and beside the Bluebird the Four Million looked like an antique clunker, only too deserving of the fiery demise which awaited it in one of the open hearths during the coming caryear.

A queue of people had formed outside the vicarage door and Brett appended himself to it. He lit a cigarette and smoked nervously. It was noon by the time he stood in front of the caged window and presented his identity disk to the acolyte in charge.

The acolyte took the disk and placed it beneath the objective eye of the electronic examiner. Brett waited complacently for the familiar "Beep" of approval. He was demoralized when the examiner emitted the raucous buzz that signified credit disqualification.

"There must be some mistake," he said tightly. "Try it again."

The acolyte did so. The buzz sounded again, more raucous than before. "There's no mistake," the acolyte said.

"But there must be!" Brett's whole world was tottering. "I want to see the Dealer. I demand to see the Dealer!"

"If you wish." The acolyte depressed a button with his elbow. "Another one, Father," he said into his wristcom, giving Brett's name and number. Then he raised his wrist to his ear, listened a moment, finally lowered his arm and depressed the elbow switch again. The Dealer will see you presently," he said to Brett, handing back the disk. "Take a seat, please."

There was a bench running the length of the office at right angles to the acolyte's window. Brett saw that it was already crowded, and he

felt some consolation in the evident fact that his disk wasn't the only one that the examiner had rejected. He made room for himself, wedging his lean body between a perspiring fat man and a sniffling woman; then he folded his arms across his chest and gazed up through the transparent ceiling into the pale blue April sky.

A jet had just finished stratosphere-writing. Brett read the familiar sentence automatically: THE FINANCE MAN WILL GET YOU IF YOU DON'T WATCH OUT! He winced and dropped his eyes to the tile floor. The Finance Man had been close upon his heels for the past several months and the experience had been harrowing. And then the thought struck him: perhaps his three defaulted payments had had something to do with his credit disqualification.

He shook his head. Missing payments and prorating them was common practice, and becoming more common every day. It was unthinkable that the Finance Bishop would disqualify anyone's credit on those grounds alone.

Or was it?

Brett spent the next two hours trying to convince himself that it was. Every fifteen minutes or so a small, tousle-haired acolyte threw open the door leading to the Dealer's quarters, called a name, and one of the occupants of the bench got up and followed him out of the office. But the bench never emptied. At intervals the examiner behind the acolyte's window would emit a raucous buzz, and shortly thereafter another crestfallen consumer would come over and sit down.

Presently the tousle-haired acolyte opened the door and said: "Marcus Brett." Brett got up, followed him through a long cool corridor, through two sumptuous outer rooms and into a large study. Three of the study walls were lined with car catalogues, parts manuals, and road atlases—all bound in imitation Morocco leather. On the wall opposite the door hung a huge three-dimensional mural depicting the popular conception of the Highways of Heaven: shining roads leaped like shards of light from fleecy cloud to fleecy cloud against a backdrop of breathless blue, and here and there along the promised highways could be seen the speeding cars of the Happy Travelers.

The Dealer sat behind a tremendous chrome desk studying a thick sheaf of papers. He had divested himself of his sacerdotal robes and was wearing a black, smartly-cut driving jacket that contrasted effectively with the whiteness of his turned around collar. He looked up when Brett and the acolyte entered, dismissing the acolyte with a wriggle of his little finger. "Sit down, my son," he said to Brett, indicating a chrome chair by the desk.

Brett complied nervously and the Dealer returned his attention to the papers. He was an old man—forty-five at least. But that was not surprising for Dealers were usually good drivers. The ancient tortoise-rimmed spectacles which he affected gave his full square face an aristocratic touch, and his dark brown

hair grew gray and graceful along his temples.

After a moment he looked up at Brett again. "You realize, do you not," he said in his deep pleasant voice, "that these papers which I am perusing are facsimiles of your contract, your promptitude record, your character analysis, and your biography?"

"Yes, Father."

"An electronic examiner *never* makes a mistake, but I am always willing to check and recheck a customer's dossier if he so wishes. I have checked yours thoroughly and see nothing that would invalidate the examiner's decision. What makes you think that your credit does *not* deserve disqualification?"

"I can't see any reason why it should deserve disqualification," Brett said hoarsely. "My Four Million's all paid for—I deposited my last installment in the Finance Bishop's account yesterday. Maybe I defaulted once or twice, but—"

"Three times," the Dealer said. . . "Did you attend my services this morning?"

"Certainly, Father. I attend your services every Sunday."

The Dealer shook his large handsome head in mild despair. "You attend them—and hear nothing of what I say. This morning I called everyone's attention to the new restriction which the Finance Bishop has seen fit to impose on future finance contractions, yet apparently no one in the Showroom heard me other than myself."

Brett hung his head. "I heard you mention something about a restriction, but I'm afraid I missed exactly what it was."

"I'll repeat verbatim what I said." The Dealer leaned forward, resting his elbows on the polished chrome of the desktop. "Listen carefully, my son: In view of the fact that delinquency in weekly finance payments has increased deplorably during the recent caryear, the Finance Bishop has been forced to issue the following decree: 'Any car buyer who has defaulted on more than two installments during the caryear ending April 6, 2055 shall be deemed unworthy of contract renewal on any new model unless (1) he deposits a down payment in addition to the traditional one third allowance on his last year's model, said payment not to be less than one fourth the amount of the remaining balance, or (2) he submits evidence that his character has, or will in the near future, come under the stabilizing influence of a factor hitherto unpresent.' "

Brett was on his feet. His face was ashen. "But that's fantastic, Father!" he shouted. "You know I can't raise that much money!"

The Dealer raised a square, twinkling hand. "Calm yourself, my son. If alternative number one is impracticable, why not consider alternative number two? And in this connection, may I presume to elaborate upon the Finance Bishop's erudite, but somewhat confusing, phraseology? The factor to which His Holiness refers is, to put it simply, marriage. It is a statistical fact that of all the car buyers who defaulted on more than two payments during the recent caryear, ninety-eight percent were unat-

tached men or women, the men predominating by a ratio of almost two to one. Quite obviously the responsibilities of conjugality have a stabilizing effect upon both sexes, particularly the male; add to this happy eventuality the fact that marriage brings two incomes together over the same garage and you begin to appreciate the shrewd reasoning behind the Bishop's decree . . . Have you any marital prospects, my son?"

Brett shook his head numbly. His last affair had been dead embers for more than a week, and the one coming up with the White Collar girl didn't count. A White Collar girl was a far cry from being a marital prospect.

"Then I'd suggest," the Dealer continued, "that you start looking around. And may I remind you," he added, his wide, thin-lipped mouth curving in a bleak smile, "that you haven't much time if you don't want to get caught without a new car. You have, in fact—"and he glanced at his watch—"six days, nine hours, forty minutes, and some odd seconds before New Car Sun-Day."

He wriggled his little finger and the tousle-haired acolyte appeared magically in the doorway. "Show Consumer Brett out through the side entrance," the Dealer said. "And for Seneca's sake, comb your hair!"

BRETT HEADED straight for the parklot. He was so upset that he almost climbed into his Seneca without deactivating the sentry and he came close to getting his brains blown out for trying to steal his own car.

The sentry was the latest car thief device to be put on the market, and like all the devices that had preceded it, it would be good only until the car thieves got onto it. Otherwise its only drawback was its impartiality: while it was functioning anyone who came within its field of vision was automatically classified as a car thief and shortly thereafter became a car thief with a hole in his head.

Driving along the boulevard, Brett considered getting rid of the deadly little mechanism. He decided not to. The safety of his Seneca warranted a little personal danger. After all, it was the only car he had, and from the way things were beginning to look, it was the last car he was ever going to have.

He made a complete circuit of the business district, his mind reverting to the Bluebird. He had never wanted a car so badly. Presently he turned down one of the tangent streets that led to Peripheral City. After the mile-wide boulevard, Peripheral City seemed friendly and secure. Brett drove along slowly, winding through the idyllic streets, looking at the trimmed hedges and the pruned shade trees, the neat garages set well back from the street and reached by concrete, blacktop, pebble, or gravel driveways; the charming little self-service stations tucked away in maple arbors.

Garages always fascinated him, regardless of his mood. There was that colonial affair, with sedate

hedgerows leading up to its early American double doors; and then, a block farther on, that ranch type affair, so low and rambling that there was hardly enough space for the overhead apartment. Double garages predominated of course; one car families were unusual in Peripheral City, and a single garage almost invariably implied a single man or woman.

Presently he came to the street that led to his own garage and turned down it. His problem was heavy on his shoulders as he climbed the narrow stairs to his overhead apartment, and when he bumped his head on the low beam in the kitchenette, his morale was far from being improved.

He ordered a salmon course from the Instantcook, and picked at it disinterestedly when it emerged. For one of the few times in his life he couldn't concentrate on his food. All he could think of was the Bluebird.

He glanced at his watch. He had nearly two hours to kill before he could pick up Linda. He decided against going for a ride—riding would only bring the Bluebird more poignantly to mind. That left 3V. Brett threw the remnants of his meal into the devourer and went into the compact living room. He sat down in his relaxer and toed on the 3V set. The Construction Engineer materialized on the screen.

Ordinarily Brett never listened to the Construction Engineer. Changing channels when the thin haunted face appeared was practically a conditioned reflex in any car owner. But Brett wasn't himself today, and he lay back in his relaxer, hardly aware of what the man was saying.

However, his indifference was short-lived. There was a quality about the Construction Engineer's voice that commanded attention: a deep, vibrant sincerity that belied the insanity of his perspective, the dearth of logic behind his words.

His words were many—

"—cannot impart sanctity. Stealing the hierarchical nomenclature, the architectonics, and the ceremonial garb from a genuine institution and integrating them into a pseudo-institution can never validate that pseudo-institution in the eyes of God. A money lender is still a money lender no matter what title he confers upon himself. Spires do not a cathedral make, nor sacerdotal robes a man of God.

"Economic necessity can never justify the apotheosis of metal. The fact that the yearly turnover of automobiles is inexorably related to the financial security of the individual is an inadequate foundation for a religion. I say to you: Better an economic chaos than the idealogical chaos which affronts us now!"

Brett shifted uncomfortably in the relaxer. What the Construction Engineer was saying was pure nonsense, but his sincerity was to unquestionable that the nonsense took on some of the aspects of sense.

Perhaps that was why the Dealers feared him so much, why they campaigned so incessantly against him. The Seneca Dealer was the most zealous campaigner, possibly

because it was the Seneca Memorial Trust Building that had precipitated the Construction Engineer's heresy. A year ago his bid had been accepted by the Seneca Foundation and he had begun the job on schedule. Then, the day following the ceremonial laying of the first cornerstone, he had inexplicably disappeared. All efforts to contact him had failed, and finally another contractor had been engaged. Then, six months later, the Construction Engineer had reappeared, purchased 3V time, and commenced his series of anti-automobile lectures.

To date, the Dealers had been unable to do much about him. Even the Finance Bishop was helpless. For although the Construction Engineer's lectures sometimes embodied economic and ethical heresy, he had never advocated the overthrow of the existent society on any but a religious level and therefore could not be prosecuted.

With an effort Brett raised his eyes to the man's face. It was an old face—the Construction Engineer was a good fifty. But considering the fact that he had not driven a car for years, his age was not unusual. In spite of himself Brett found himself listening to the man's words:

"The canonization in the year 1970 of the original automobile manufacturers was the result of diverse pressures: the whole economy hinged on car output and car consumption; the four-wheeled *raison d'etre* of the average individual had long ago been established; and the automobile foundations had already begun the initial experiments in faster-than-light drives that led eventually to the conquest of interstellar space—and of course to the acquisition of desperately needed natural resources.

"But the canonization of the original automobile manufacturers can never justify the series of sacrilegious events that followed it: the new sales methods, the renaming of names, the rebuilding of showrooms to resemble cathedrals, the creation of the Church of the Happy Traveler and its subsequent usurpation of all religious activities in the western world; the supplanting of Green Pastures and Still Waters with the immature concept of the Highways of Heaven—"

The Construction Engineer paused, as though overcome by his own rhetoric. "What," he asked abruptly, "is a car?" There was a blackboard behind him and, turning, he printed the letter "A" in the upper left hand corner and the letter "B" in the lower right hand corner.

"A car," he went on, "is a mechanical conveyance capable of transporting us from point "A" to point "B", or, conversely, from point "B" to point "A". It is nothing more than that.

"It is a means toward an end, and as long as it is so regarded, it is beneficial to the human race. When, however, it is regarded as an end in itself, nothing but tragedy can result—"

With a convulsive movement Brett pressed the channel pedal with the toe of his right boot. The

Construction Engineer was beginning to get on his nerves.

He looked at his watch: 5:00 o'clock. If he stopped some place and had a few drinks he could be at Linda's apartment long enough after six to convince her that he didn't much care whether she went riding with him or not.

He descended to the garage, deactivated the sentry and got in his Seneca. He chose a tangent street at random, made a half circle of the business boulevard and drew into the parklot of the The Hub Cap. It was dusk by then and the myriad lights of the business buildings formed coruscating palisades on either side of the car streaming boulevard.

Brett brooded over a Dream Girl at the chrome bar, trying to see some way out of his dilemma. He lit a cigarette and considered selling his garage to raise the one fourth down payment which the Finance Bishop required. But if he sold his garage he'd have to live in his car, and it would only be a question of time before the carcops picked him up for Indecency. Next he considered putting a second mortgage on his garage. But that would never do: he had trouble enough keeping up the payments on the first mortgage.

Finally, after three more Dream Girls, he got around to considering marriage. He didn't consider it for long. Marriage, when you were only twenty-six, was an outrageous price to have to pay, even for a Bluebird. Besides, he had no prospects anyway—unless you counted Linda.

And he was damned if he'd count her!

But just the same, when he thought of her his pulse came to life, and he glanced at the clock inset in the big chrome hub cap behind the bar: 5:57. He finished his fifth Dream Girl hurriedly and went out and got in his Seneca. It wasn't technically wise to be *too* late.

Center City had once been *the* city before the gradual exodus to the suburbs had isolated it. Some of its buildings were centuries old, and its ancient streets were little more than series of chuck holes, frost upheavals, and fissures.

A long time ago the begrimed towers had been honeycombed with offices; now the few offices needed in a society of business machines existed behind the bright façades on the business boulevard, while the old office space had been taken over by the White Collar Workers and converted into apartments.

The elevator of Building 14 creaked alarmingly as it raised him to the ninth floor. He was relieved when he stepped out into the cluttered corridor. Old fashioned fluorescents cast pallid light on the dusty floor, lent a ghastly tinge to the peeling walls. Many of the rooms were vacant, but most of them were occupied by squabbling families. The stale odor of plankton soup hung in the air like miasma.

By the time he found Apartment 12, Brett was sorry he had come. Then, when the battered door opened at his knock and Linda

stepped out to meet him, he was suddenly glad that he had come. The odor of plankton soup faded away and the corridor became an apple orchard in June. Linda had exchanged the majorette ensemble for a simple dacron dress, and she looked like a Greek goddess with a baby face who had just descended the slopes of Olympus to find out what mortal life was all about.

Brett took a slow, deep breath. "All set, baby?" he said.

When Brett was a small boy attending elementary tech, there had been a certain period which he and all the other pupils looked forward to each day. It was the period during which the identifilms—donated by the Seneca, the Oneida, or one of the other Dealers—were shown, and it was called the Daydream Hour.

Invariably the identifilms dealt with automobiles, and invariably the youthful audience got a chance to get behind the wheel at least once during the hour. Total identification techniques were primitive in those days, but they were capable of lending a sense of participation, especially if you were a child.

The film that had made the deepest impression on Brett depicted a boy taking his girl for a ride in a new Seneca. The boy was Brett's own age and Brett identified with him easily, and shortly *he* was behind the wheel and feeling the pulse of the car beneath his feet and the summer wind in his hair. From that moment on, he had lived for the time when he could really climb into a new Seneca and really take his girl for a ride on the Speedway.

He had realized the Daydream many times by now of course, though the Speedway had bowed out before the wider and better banked Raceway; but those first vicarious moments were still sweet in his memory, and he knew he would never forget them as long as he lived.

"Do you always drive so fast?" Linda asked.

"You call this fast?" Brett said. "You should ride to work with me some time!"

The illuminated Raceway had its usual Sunday evening complement of hurtling cars. Brett twisted adroitly in and out, never diminishing the Seneca's speed unless collision were unavoidable. The myriad lights of the Seneca Assembly Plant began to flicker by. Brett pointed.

"That's where they put these jobs together," he said.

"Do you work there?"

"Not me. I run an open hearth."

"Oh."

It was a small "oh." And small wonder, Brett thought. The kid was probably overawed. Here was a world she had probably never seen before, imprisoned as she was in the cramped canyons of Center City.

The lights of the Seneca Stamping Plant came next, and after them, the haze-dimmed lights of the Seneca Steel Mill. Brett pointed out the open hearth which he operated, but it was behind them by the time Linda turned her head.

"Ever seen the spaceport?" he asked.

"Not for years."

"I know a parking place where we can get a good view of the ships. "What d'you say?"

"All right," Linda said.

Brett watched for the turnoff, and when it appeared, slipped smoothly out of the stream of traffic. The darkness of the countryside activated the Seneca's headlights, and the macadam leaped into bright visibility. It was familiar territory to Brett and he drove confidently, taking the banked curves at an easy ninety. It was the kind of driving he liked best.

The spires of the ships began to show against the starred sky. Brett slowed the Seneca, keeping an eye on the right shoulder of the macadam. Presently the sign he was looking for appeared: SKULL HILL ROAD. PROCEED AT YOUR OWN RISK.

It was a dirt road, badly eroded by the spring rains. He followed it to the crest of the hill from which it had obtained its name, then turned off into a blackened field. The hill had been halved to make room for the expanding port, and he braked the Seneca near the edge of the man-made cliff. There was a ship squatting in the blasting pit at the foot of the cliff, its tapered prow rising high above the halved hilltop. Beyond it, the prows of other ships showed, some in darkness, some pied with the round radiance of open ports.

Brett turned off the motor and extinguished the headlights. He turned to Linda. "Like it here?"

"Is it safe? That sign back there—"

"That sign is for rubes who don't know anything about ship schedules," Brett said. "That big job in the pit there is the only one close enough to burn us and it isn't due to blast off till Turn-In Friday. It's a prison ship."

"If it did blast right now, there wouldn't be much left of us, would there, Mark?" she said.

"Not even ashes. But I didn't bring you all the way up here just to talk about ships." He slipped his arm around her shoulders.

She moved closer to him. Her face, when he bent down to kiss her, was soft and pale in the starlight; her lips were tender, cool and moist. Apple blossoms fell aromatically and April changed subtly to June. A sense of security pervaded Brett; he felt safe and warm and wanted. . . .

His hand fumbled with the shoulder strap of the dacron dress, then paused of its own accord. He tried again, and again his hand refused to do his bidding.

He raised his head and looked down into Linda's round starlit face. Her eyes seemed more limpid than ever, and from their deeps the reflected stars looked steadily up at him. Tenderness suffused him, tenderness and anger. For with the tenderness came the realization that he could not treat this girl the way he had treated all the others.

His need for her was different; it was far more complex than the simple craving he'd experienced in the presence of the other girls he had

taken out. He could not analyze it —it was far beyond him; and finally he gave up trying.

He bent and kissed her again and contentment and peace engulfed him. He became a wanderer in the enchanted universe of her lips and her subtle perfume. When he raised his head and looked around him the night had attained a new beauty: a simple beauty of land and sky and stars.

He knew that if he kissed her again he would say things he would regret in the morning, and he knew that if they stayed there on the hilltop he could not help kissing her again. Brett was a practical man. He kneed the starter and the Seneca purred in the night, its headlights picking up the pitted hull of the prison ship.

He withdrew his arm from Linda's shoulder. "Feel like riding?" he asked.

Her limpid eyes regarded him quietly, and again he saw the reflected stars in their depths. The laughing stars— For a moment he had the eerie feeling that she knew exactly what he was thinking, exactly why he was running away.

But she only said: "I love to ride."

BRETT WENT to bed thinking about Linda and he got up the next morning and went to work still thinking about Linda. Her face accompanied him up to the air-conditioned control booth and her eyes mocked him as he sat down before the televised images of his six furnaces, numbers 40 through 45.

"40's ready," the 0400-0800 man said, donning his jacket. "I just took a test bar . . . How's the car?"

"Fine," Brett said. "How's yours?"

"Couldn't be better. Be seeing you."

Brett lit a cigarette and blew smoke into Linda's face. Then he tapped 40, giving his attention to the pit screen while the blue-white heat poured out into the three hundred ton ladle. His fingers moving unerringly over the intricate maze of buttons on the horizontal remote control panel. He started number 2 charger on the limestone charge. The scrap charge was late and he phoned Yard to hurry it up.

Pit called. "45 be ready this turn?" Czech asked.

Brett glanced at the tapping time schedule. "No."

"That's good news," Czech said . . . "How's the Seneca?"

"Fine," Brett said. "How's yours?"

"Great."

Brett thought of something. "Where were you yesterday? I didn't see you at the Services."

"I got called before the Finance Bishop," Czech said. "Somehow they forgot to process my last ten payments and the F. B. thought I'd defaulted. But when I kept insisting that I was paid up to date, he checked back and found out that his office was to blame. Some efficiency! How was the Bluebird?"

"Out of this world," Brett said.

"Going to get one?"

"Certainly I'm going to get one! Why should you ask that?"

"Don't get mad. I was just curious."

"I'm not mad!"

Brett hung up. His hands were trembling. Linda had driven the Bluebird out of his thoughts, but now it flew back, more tantalizing than before. If he continued to drive his Four Million model after Turn-In Friday, he would automatically become a social outcast. There was no *law* that said you had to turn your car in every year. But there were the expressions on peoples' faces and there was the contempt in peoples' eyes; there was the hollow feeling inside you that you did not belong; that you were no better than the White Collar Workers who walked all their lives because their wages never permitted them to amass the amount of a down payment.

Abruptly his thoughts switched back to Linda. Why should a poverty-stricken White Collar girl affect him so? What quality did she have that his other girls had lacked? He did not know. He only knew that he had to see her again, that the security and contentment he had experienced in her company had only whetted his appetite.

Yard had sent up the scrap charge, and Brett started number 2 charger in on the first buggy. He never tired of watching a scrap charge. He loved to see the compressed bodies of last year's cars being shoved into the White-hot maw of the hearth, dumped unceremoniously, then left to turn into unshapely pink ghosts, finally to dissolve into the yellow ignominy of molten metal.

Soon, he knew, he would be getting the first of the Four Million bodies. And none to soon. Last year's scrap inventory was nearly exhausted and the open hearths needed new material.

In his absorption with the scrap charge Brett had forgotten Linda and the Bluebird, but the moment the charger dumped the last pan, both returned to haunt him. For the first time he saw Linda and the Bluebird in relationship to each other, and a common solution to both problems began to germinate in his mind.

It was time for 43's drink and Brett brought the hot metal ladle down on number 1 crane, set the spout in number 3 door, and slowly tilted the ladle till the red-gold Crucis ore spilled in a steady molten flow down into the bath.

His mind was exceedingly clear now. There were two main objectives: (1) to get the Bluebird, (2) to have his way with Linda. Getting the Bluebird involved getting married; having his way with Linda, and placating his incomprehensible idealization of her, involved the same thing. But there was one more consideration: his self respect.

Steel workers in their right minds did not marry White Collar girls. Not if they wanted to keep their self respect. But a steel worker could marry a White Collar girl and keep his self respect if he had the marriage annulled as soon as he got what he wanted. And getting the annulment would be no problem: no judge could possibly fail to see the incongruity of such a

union once it was brought to his attention.

Relief ran warmly through Brett's body. Here was the perfect solution; here was the loophole which the Finance Bishop had overlooked. Not only would he be able to get the Bluebird, but he would be able to make love to Linda without coming into conflict with his idiotic idealization of her; and he would emerge from the whole transaction a free man.

It was time for 44's drink. Brett whistled happily as he guided number 1 crane down the floor to the hot metal pit. The world had never seemed so bright.

After the turn he shaved and showered, then he dressed and went down to the open hearth parklot. He deactivated the sentry, then he started the Seneca and drove it out of the lot and onto the Raceway. He gunned it up to one ten. The April wind sang in the vents, and the sky was a brisk spring blue.

He stopped at a Raceway restaurant and ordered a scallop plate. There was a 3V screen behind the counter and a tele-newscast was in progress. The Construction Engineer was the number one topic of the day; according to the announcer he had gone berserk on the previous night and left himself wide open to legal prosecution.

The scene of his activities had been Seneca Square. He had desecrated the alabaster statue of the Seneca Dealer by writing "Thou shalt not steal!" across its base, and he had desecrated the Bluebird, which had just been put on display, by printing "Golden Calf II" on its windshield. Moreover, the announcer said, the Construction Engineer had performed both acts in the presence of a dozen witnesses, all of whom were willing to testify against him. It was as though he were proud of his heretic vandalism, though not proud enough—the announcer added—to remain on the scene till the police arrived.

"Mr. District Attorney has let it be known," the announcer concluded, "that every force at his command will be utilized to apprehend this madman in our midst. Informed sources say that the Construction Engineer is at present hiding out in Center City."

Brett finished the rest of his scallops and lit a cigarette. He wondered if the Foundations would ever get far enough ahead on raw materials so that they could develop at least one of their planets along agricultural lines—a project they had been promising the people for decades. Seafood was all right, but it got monotonous after a while. Meat wasn't even available on the black market any more, and potatoes were no more than a dream remembered.

But the economy came first, and automobiles were the backbone of the economy, and you couldn't very well manufacture automobiles without the necessary metals and people couldn't very well drive them without the necessary fuel. Besides, there were plenty of fish in the ocean, so there wasn't really any *need* for extra-terrestrial agricultural development—as long as traffic fatalities continued to counter-

balance population.

Brett paid the electronic cashier and went outside. The sky was more briskly blue than before, and the breeze coming in over the factoried fields was acrid with spring. High in the sky a jet was stratosphere-writing. Brett watched idly as the lofty letters emerged:

BUY A BLUEBIRD TODAY!

He smiled. No, not today, he thought. Nor tomorrow. His courtship of Linda was going to take a little time.

But definitely by Turn-In Friday!

COURTING LINDA, Brett discovered, had a Fitzgerald effect on time.

At first she was very quiet when he picked her up for their second date, opening the door of her apartment before he even had time to knock, then closing the door quickly behind her and taking his arm. But her quietness gave way to gayety when he took her to the latest identi-scope where they became vicarious bride and groom in a hilarious highway marriage. Afterwards on the Raceway she snuggled against his shoulder, so close that her soft hair tickled his neck and her perfume enveloped him like an enchanted cloud. Almost before he knew it, it was time to take her home.

That was Monday night. Tuesday night he took her dining, and later in the evening they found a charming little cafe in the country where you could sit at a rustic table in a secluded corner and listen to the muted strains of the latest love songs, and drink and talk—

They talked of many things. Brett talked about his work, and she listened attentively. But when it came time for her to talk about her work, she said very little, only that she was a secretary and that she hated her job. Brett thought he understood her reticence and did not press her.

After a while the Construction Engineer crept into their conversation. "I can't figure him out," Brett said. "What's he trying to accomplish?"

"He has a Christ-complex," Linda said. "Can't you recognize the pattern?"

"You mean he thinks he's Christ?"

Linda's voice had become bitter. "Yes. He thinks he's Christ."

"But he's never claimed to be."

"Of course not. Did Christ ever publicly claim to be the Messiah? It's all a part of the pattern. His disappearance a year ago was supposed to symbolize Christ's sojourn in the wilderness, and his 3V harangues are supposed to symbolize the ministry in Galilee; his anti-social demonstration in Seneca Square the other night was supposed to represent Christ's conflict with the Pharisees and the Sanhedrin. He's deliberately seeking both persecution and prosecution now, and probably will contrive some way of attaining symbolic crucifixion."

"But why?" Brett demanded.

Linda's eyes were on the chequered tablecloth. Sadness routed the bitterness from her voice. "Be-

cause he's sick," she said. "Though of course he thinks that we are the ones who are sick and that he is the physician come to cure us. By playing Christ he hopes to change society—eliminate the automobile, the Raceways, and so forth. His perspective is so warped that he can't realize that a high traffic fatality rate is the only effective way to counterbalance population increase; that the public's endorsement of the Church of the Happy Traveler is not the result of materialism but of economic pressure; or that economic pressure is merely a civilized way of saying 'fear of hunger'. Considering the economic importance of the automobile to the average consumer, its apotheosis isn't any more abnormal than the fertility rites of the ancient Egyptians, or the worship of the rain gods by the Zuñi."

"You seem to know a lot about him," Brett said. "Why are you so interested in him?"

"Because— Oh, never mind. I don't want to talk about him any more!" She raised her eyes and the desperation in them astonished him. "It's so close in here. Can't we go riding somewhere?"

"The Raceway?"

"Yes. Yes. The Raceway. And drive fast, Mark. Fast . . ."

The Construction Engineer was apprehended the next morning. Brett was eating a late breakfast when the bulletin bulb on his 3V turned red and began to buzz. He went into the living room and toed the set on, depressing the channel pedal till the buzzing stopped and the light went off.

A familiar room appeared on the screen and Brett recognized it as the vicarage office. There was the bench, and there was the acolyte's window, and beyond the window—

Brett gasped. He had never seen so many overturned tables and chairs before, so many papers of all description scattered about. In the middle of the shambles stood the Seneca Dealer, and beside him stood On-the-spot Harrigan, the traveling newscaster. An interview was in progress.

The Dealer was saying. "He performed the whole sacrilegious act right in front of me. But as I said, I couldn't raise a finger to stop him. There was something about the way he looked at me—As though— As though he felt sorry for me."

"But why should he feel sorry for you of all people, Father?"

"I don't *know*," the Dealer said.

"Well all I can say is he should have saved his pity for himself," On-the-spot Harrigan said meaningfully. "He's going to need it." He turned and faced the eye of the 3V camera. "Yes folks," he went on, "he's going to need it real bad. For our minions of the law have him safely in custody, and Mr. District Attorney assures me that he'll have this infamous scoundrel shackled in the brig of the prison ship before Turn-In Friday."

Brett toed off the set and returned to his breakfast. He wondered what Linda would have to say regarding this new development.

She didn't say anything about it. She was pale and listless when he

picked her up that night, and all she wanted to do was ride on the Raceway. He couldn't drive fast enough to suit her.

Brett was disgusted. He'd planned to propose to her, but you couldn't propose to a girl while you were hurtling at a one hundred thirty mile per hour clip through a veritable river of cars. He decided to wait till he took her home, but when he pulled up before Building 14 she got out of the car before he had a chance to say a word; then, as though remembering his existence, she leaned through the open window and kissed him warmly on the lips. "I know I've been terribly poor company," she said. "But I'll make up for it tomorrow night."

"Promise?" Brett said.

"Promise!"

And then she was gone and he was sitting alone in the car. It began to rain and he drove home in the rain, wondering if he was going to get the Bluebird after all.

There was only one day left.

He proposed to her the next night. He didn't wait for the right moment, the right background, the right anything. Time was running out, and not only that, there was a desperation inside him that he could not analyze, that he was afraid to analyze. "Will you marry me, Linda?" he said when she answered his knock.

She paused in the doorway, lovely in her white dress. She did not close the door behind her as she had the night before and he could see the bare peeling walls of the apartment behind her.

She said:

"You can't be serious, Mark!"

"Yes I can." The huskiness of his voice surprised him. His words sounded sincere even to himself.

Apparently they sounded sincere to Linda too, for she said, "When?"

"Right now," Brett said. His heart was pounding painfully and it was all he could do to keep from taking her in his arms and kissing away whatever objections she might have. His passion for the Bluebird astonished him; he could not recall a time when the prospect of getting a car had had so profound an effect upon his emotions.

"You forgot one thing," Linda said. "When you propose to a girl you're supposed to tell her you love her."

Her large limpid eyes were on his face as though daring him to say the words. A little ways down the hall a husband-wife fight was in progress, and from somewhere nearby a baby was squalling lustily. But even though the background was definitely detrimental to romance, Brett found that he could say the words easily.

"I love you," he said.

Her eyes dropped then. "I'll get my things," she said.

She had pitifully few belongings: an armful of clothes, a handful of trinkets, and a half dozen books. Most of the books, Brett noticed, were written by the same author—someone named Freud. He helped her carry them down to the car.

By ten o'clock they were man and wife, thanks to the efficiency of the marriage processing bureau

which was open twenty-four hours a day. Across the street from the marriage bureau was the separation bureau which maintained the same hours and the same efficiency.

"I think the occasion calls for champagne," Brett said.

"But darling, it's fabulously expensive."

"We aren't going to drink an ocean of it. Just a glass or two. I've got the midnight turn tonight, so that's all we'll have time for anyway."

He chose a glittering bar on the business boulevard not far from the Seneca Cathedral. Czech was there, sipping a Dream Girl at the bar. Brett waved to him as he ushered Linda to a private table, and Czech waved back, his eyes protuberant with surprise. Linda gave a little start when Czech's eyes met hers. She glanced away quickly. At first Brett felt self-conscious about being out with a White Collar girl; then he remembered that this particular girl was his wife and his self-consciousness was supplanted by pride. His pride, in turn, was supplanted by bewilderment: why in the world should he feel proud of Linda?

The inevitable 3V screen iridesced behind the bar, strategically located so that it was visible—and audible—to every customer in the place. Brett didn't want to watch 3V, but when he saw the direction Linda's eyes had taken, his own eyes followed.

A bulletin had just been issued. The Construction Engineer had been tried, found guilty of car-desecration, and sentenced to hard labor for the rest of his life in the Foundation mines. Two car thieves had received similar sentences at the same tribunal, and all three sentences were to be carried out immediately.

The scene shifted from the studio and the announcer to the spaceport. On-the-spot Harrigan was standing at the foot of a mobile Jacob's lift. On the platform of the lift stood three men manacled together. Brett recognized the man in the middle as the Construction Engineer.

"You cannot sin against your society and survive," On-the-spot Harrigan said sententiously. "The three prisoners you see standing before you have cheated on the Ride and now they must pay the Chauffeur."

He raised one arm dramatically and the platform began to rise. The camera followed it. The three men stood pale and silent, their faces touched by starlight. Presently the bright rectangle of the open lock came into view and the platform stopped. Two guards stepped forth and ushered the prisoners into the ship. The lock swung shut and the scene faded out.

Brett became aware of Linda's fingers digging into his wrist. When he turned to her the whiteness of her face frightened him.

"That ship," she said. "It's the one we saw that night we parked on that hill, isn't it?"

"That's the one," Brett said. "It blasts at dawn tomorrow—

"And the hill we were parked on. What was its name?"

"Skull Hill. You haven't touched your champagne."

"Skull Hill. Of course. The pattern was too perfect, it might never occur again. The fool, the poor, pitiful fool . . ."

Her eyes glistened oddly in the rose-tinted light of the table lamp. Brett looked at her for a moment, wanting to question her, and yet reluctant to question her because he was afraid he might get answers he did not want to hear. Out of the corner of his eye he saw that Czech was looking at her too, staring at her as though he couldn't get over the fact that his turn buddy had fallen for a White Collar girl.

Again the sequence of self-consciousness, pride, and bewilderment ran its gamut of Brett's emotions. But this time another phase was added. Realization. With a shock he recognized his real reason for marrying Linda. The Bluebird, for all its chrome and grandeur, had been nothing more than a rationalization, a means whereby he could fit an incongruous item into his rigid set of values. And the item was love . . .

Brett stood up. "We can go home if you want to," he said. He took her arm and escorted her proudly to the door. He hoped that Czech was still watching but he did not turn his head to look. Suddenly he felt sorry for Czech.

The 2000-2400 man had tapped 43 and when Brett took over the heat was still running into the pit ladle. He gave 41 a drink while he was waiting and by the time he replaced the hot metal ladle the last of 43's contents had run out and Czech was already pouring the heat. Brett dried 43's bottom with the robo-shoveler and closed the tap hole. He started number 1 charger on the limestone charge.

Czech called. "Where'd *you* meet the Finance Bishop's secretary?"

Brett had anticipated the call but he hadn't anticipated the question. He'd anticipated a number of other questions and he had his answers ready. But this one caught him unprepared.

"*Whose* secretary?"

"The F. B.'s. Don't tell me you didn't know she works for His Holiness himself!"

The control booth seemed suddenly cold.

"She's some number all right," Czech went on when he got no answer. "White Collar girl or not! I saw her Sunday morning when I went before the F. B. She was just leaving when I got there. I heard her tell His Holiness she had an important appointment, and away she went! Where'd you meet her?"

The suspicion in Brett's mind was as yet no more than a minuscule seed but it was germinating rapidly. "I'll tell you later," he said. "The scrap charge just came up and I've got to get it started."

He couldn't feel his fingers they were so numb, but they were so familiar with the console of the r.c. panel that they directed the charge of their own accord. The whole pattern of Linda's deceit emerged and arrayed itself mockingly before his eyes. She had known about the Finance Bishop's new restriction long before anyone else—months in advance, probably—and she had seen in it an oppor-

tunity to escape from the sidewalks to the boulevard, from the crumbling canyons of Center City to the idyllic garages of Peripheral City, from poverty to security; and above all she had seen an opportunity to get the Bluebird.

As secretary to the Finance Bishop she had access to the dossier of every car owner in the city. She had known which marriageable car owners would be affected by the new restriction and to find the most likely prospect she had merely needed to study their character analyses, their personal histories, and their financial statuses.

She had finally narrowed the prospects down—probably after a great deal of deliberation—to a single name: Marcus Brett.

As secretary to the Finance Bishop she also had access to the floor plan of every cathedral in the city. To arrange a meeting at the most opportune moment all she had had to do was vacate the seat next to Brett's. This she had done by deliberately neglecting to process Czech's last ten payments, by calling the Finance Bishop's attention to Czech's payment record a day or two before Display Sunday, and by coinciding Czech's appointment with the Finance Bishop with the unveiling of the Bluebird.

The rest had been a gamble—a gamble abetted by a perfume that was probably aphrodisiacal, a baby face, a goddess-figure, and a proficiency in the art of dissimulation.

Brett's fingers were no longer numb. They were taut and purposeful, depressing combinations of switches with cold efficiency. He took a test bar of 41. He filled the manganese pan for 45. He gave 42 a shot of spar.

The pit phone rang. Brett let it ring.

WHEN BRETT got home that morning Linda had disappeared. The windows of the overhead apartment were gray with dawn and the bulletin bulb was buzzing angrily. When he went into the living room Brett saw the folded sheet of paper propped before the 3V screen. Wonderingly, he picked it up and unfolded it. He read the hastily written words in the red light of the bulletin bulb:

Dear Mark,

Czech recognized me tonight and by now he has probably told you where he saw me. No doubt you've guessed part of the truth and no doubt you hate me. When I tell you the whole truth you will despise me.

Five years ago my mother was horribly mutilated in a ten car pileup on the Raceway. She lived for almost a year, if you can call existence without a face, without sight, without hearing, without vocal chords, living. My father never left her side. The only sound she ever made was a thin whistling sound. I heard it only once. He must have heard it many times. My father is the Construction Engineer.

After my mother's death, he went back to work. That is, part of him went back to work. The rest of him brooded. He did not break down till a year ago at the laying

of the cornerstone of the Seneca Memorial Trust Building, and he did not break down then, really; the inner part of him took over—the part that had exhaustively systematized the factors that resulted in my mother's death and discovered that society was to blame.

I reacted to my mother's death differently. I was young and I had only heard the whistling sound once. To me my mother's death was tragic, but I did not hold society responsible. Society was nothing more to me than a musty concept and had nothing to do with the glittering galaxy of objects almost within my reach—objects made all the more desirable by my father's refusal to let me touch them.

Shortly after my mother's accident I was taken out of tech school and forbidden to ride in any kind of car whatsoever. My friends refused to associate with me; the world I had taken for granted came tumbling down around me. Owning a car of my own became more than a conditioned reflex for me: it became an obsession.

I was twenty-one when my father began his symbolical acts. That was when I left home. I never saw him again till last week when he came to Center City and asked me to hide him from the police. Yesterday morning he left the apartment and committed his penultimate symbolic act—the overturning of the tables in the "temple".

When I left home there was no place for me to go except Center City. (All my near relatives are listed in the traffic fatality files). My technical education had been cut short, so I couldn't obtain a respectable position; however, I was literate enough to obtain a white collar job, and I finally did obtain one—with the Finance Bishop.

I had only one aim in life—to get a car. The opportunity I had been waiting for turned up two months ago when the Finance Bishop drafted his new restriction. I selected you as the most logical prospect and contrived to meet you. That much you probably know already. What you don't know is that part of the F.B.'s restriction never got through to the Dealers—the proviso that reads: "Any person who has defaulted on more than two payments during the recent caryear and who chooses alternative number 2 (marriage) must agree to forfeit his or her purchase to his or her marriage partner in the event of a divorce or an annulment." I saw to it that it didn't go through—but it'll be a part of the contract you'll sign tomorrow.

Now you merely hate me. But in a moment you'll despise me.

When you were eight you fell in love with your mother. You fell in love with her in an apple orchard on an afternoon in June, and the apple trees were in blossom. It's all there in your dossier. Finance psycho-analysts, like all psycho-analysts, are primarily interested in the Oedipal phase, even when it is normal.

All children fall in love with their sexually opposite parent at one time or another, and to a varying degree, carry the parent's imago in their mind. But the imago is not merely a mental picture of the

parent: it is a composite memory, a memory compounded of surroundings and sound; of sight and smell and taste.

My perfume called your mother to your mind, whether you were aware of it or not. The taste of her lip rouge was enough to complete the illusion (I had access to her dossier too, and I had the rouge made especially.) The combined attack upon the two senses brought back the feeling of security and love which you once felt in your mother's presence, and reawakened your idealization of her. And you transferred that idealization to me.

In retrospect it seems fantastic that I should have gone to such extremes to acquire an object which, now that I can acquire it, means utterly nothing to me.

When you sign the contract tomorrow you needn't worry about the proviso. I don't want the Bluebird. I was glossing over the truth when I said that the apotheosis of the automobile wasn't any more abnormal than the fertility rites of the ancient Egyptians or the worship of the rain gods by the Zuñi. I wanted to prove to you—and thereby prove to myself—that my father was wrong in his denunciation of the Church of the Happy Traveler. Fear of hunger seldom gives birth to noble concepts, and hucksters are poor substitutes for men of God. My father was right in everything he said.

You're wondering by now what made me change my mind, and why I'm writing this. I have been sitting here in this absurd overhead apartment ever since you left, thinking of how clever I have been. But I forgot one thing—the most important thing of all. I forgot that I, too, had been a child once, and that I had fallen in love with my sexually opposite parent.

Do you know when I fell in love with my father, Mark? I fell in love with him the first time he took me riding on the Raceway.

Linda

Brett stood in the gray room waiting for the hatred to rise in him. He stood there waiting for a long time, cold and empty. Presently he became aware of the buzzing of the bulletin bulb and he turned the 3V set on and depressed the channel pedal till the buzzing stopped and the light went out.

There on the screen before him was the prison ship, gaunt in the dawnlight. Behind it was Skull Hill, its blackened top a smudge against the pinkening sky. On the edge of the man-made cliff bordering the blast pit stood a tiny figure —unidentifiable to the casual observer, unmistakable to Brett.

His emptiness left him abruptly, and he realized why he had been unable to feel hatred. The sight of Linda standing there awaiting cremation in the backwash of the prison ship brought home to him the truth that love is a thing-in-itself, unrelated to the factors that motivate it.

And then he was running down the stairs to the garage and climbing into the Seneca—and remembering, almost too late, the death trap he had set for thieves.

The bullet struck Brett in the

shoulder as he made a convulsive effort to get out of the car. He felt no pain, only numbness, and the numbness spread all through him, turning into rage. He bent and tore the deadly mechanism from its fastenings and hurled it, trailing wires and all, against the back of the garage, all the while marveling how any human being could value a possession more highly than he valued his own life.

He drove furiously through the streets of Peripheral City, finally gained the Raceway. With luck he could reach her in time and with more luck he could get her to safety before the prison ship blasted. Just before he came to the turnoff he passed a four car pileup—two Senecas, an Oneida, and a Cortez. The cars were mangled and there were mangled bodies in them, and shattered glass and blood intermingled on the macadam. The salvage crew was already on the scene, separating flesh from metal. As usual, there were no survivors.

Brett had seen a thousand pileups but none of them had ever bothered him. This one, why he did not know, horrified him. He kept seeing the flesh and the metal and the blood long after he had left the Raceway behind, and for the first time he asked himself the question: *Why?*

The spires of the ships came into view against the brightening sky and Brett slowed. He noticed an acrid odor and traced it to the shorted wires behind the dash. His Seneca was on fire! His every instinct screamed for him to stop and extinguish the flames but the thought of Linda standing on the blackened hilltop froze his foot to the accelerator and his eyes to the sky where, any moment, he expected to see the prison ship rise on an incandescent geyser.

A barrier had been erected across the entrance to Skull Hill road and a new sign said: ROAD WASHED OUT. Brett parked the Seneca on the shoulder of the highway and fumbled beneath the seat for the fire extinguisher. Abruptly the Brobdingnagian voice of the port tower came to life—

"The *Gethsemane* now blasting from pit 32. Payload: sixty prisoners for occupational assignment. Destination: Alpha Crucis Fourteen. . .

"One minute—"

Brett stood paralyzed, the fire extinguisher in his hands.

"Fifty-nine seconds—"

Without a car as a down payment he would never be able to buy the Bluebird.

"Fifty-eight seconds—"

He would lose his job, his garage, his social status—

"Fifty-seven seconds—"

Everything he had valued so highly, everything—except Linda—

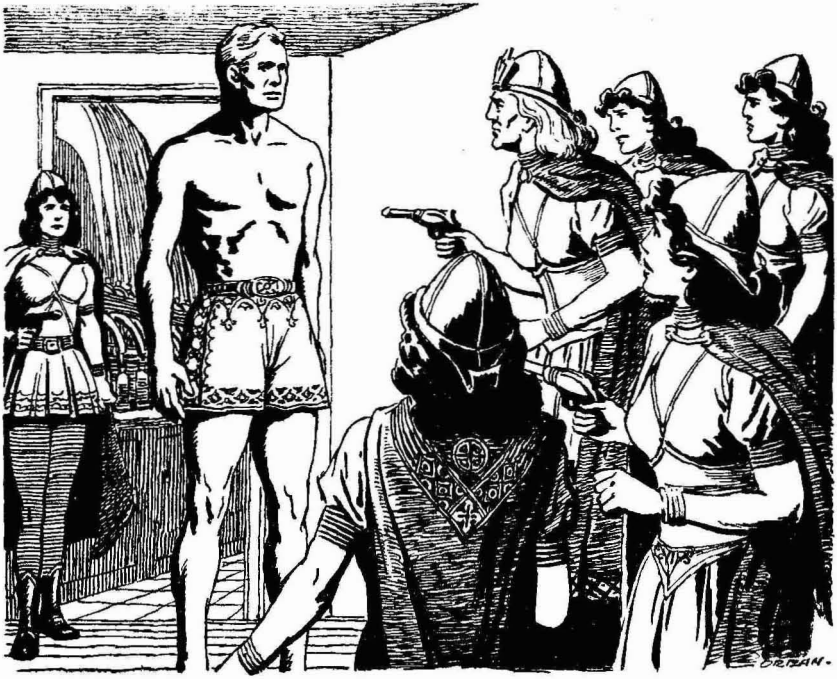
"Fifty-six seconds—"

The fire extinguisher slipped from Brett's fingers and he began running up the hill. As he ran, a burden slipped from his shoulders and his heart found a new rhythm —a cadence that pounded through his whole body apprising his every cell of the new freedom.

"Nineteen seconds—"

He glimpsed the hull of the

(Continued on page 120)



Illustrated by Paul Orban

love story

Everything was aimed at satisfying the whims of women. The popular cliches, the pretty romances, the catchwords of advertising became realities; and the compound kept the men enslaved. George knew what he had to do . . .

BY IRVING E. COX, JR.

THE DUTY bell rang and obediently George clattered down the steps from his confinement cubicle over the garage. His mother's chartreuse-colored Cadillac convertible purred to a stop in the drive.

"It's so sweet of you to come, Georgie," his mother said when George opened the door for her.

"Whenever you need me, Mummy." It was no effort at all to keep the sneer out of his voice. Deception had become a part of his character.

His mother squeezed his arm. "I can always count on my little boy to do the right thing."

"Yes, Mummy." They were mouthing a formula of words. They were both very much aware that if George hadn't snapped to attention as soon as the duty bell rang, he risked being sentenced, at least temporarily, to the national hero's corps.

Still in the customary, martyr's whisper, George's mother said, "This has been such a tiring day. A man can never understand what a woman has to endure, Georgie; my life is such an ordeal." Her tone turned at once coldly practical. "I've two packages in the trunk; carry them to the house for me."

George picked up the cardboard boxes and followed her along the brick walk in the direction of the white, Colonial mansion where his mother and her two daughters and her current husband lived. George, being a boy, was allowed in the house only when his mother invited him, or when he was being shown off to a prospective bride. George was nineteen, the most acceptable marriage age; because he had a magnificent build and the reputation for being a good boy, his mother was rumored to be asking twenty thousand shares for him.

As they passed the rose arbor, his mother dropped on the wooden seat and drew George down beside her. "I've a surprise for you, George—a new bidder. Mrs. Harper is thinking about you for her daughter."

"Jenny Harper?" Suddenly his throat was dust dry with excitement.

"You'd like that, wouldn't you, Georgie?"

"Whatever arrangement you make, Mummy." Jenny Harper was one of the few outsiders George had occasionally seen as he grew up. She was approximately his age, a stunning, dark-eyed brunette.

"Jenny and her mother are coming to dinner to talk over a marriage settlement." Speculatively she ran her hand over the tanned, muscle-hard curve of his upper arm. "You're anxious to have your own woman, aren't you, George?"

"So I can begin to work for her, Mummy." That, at least, was the correct answer, if not an honest one.

"And begin taking the compound every day." His mother smiled. "Oh, I know you wicked boys! Put on your dress trunks tonight. We want Jenny to see you at your best."

She got up and strode toward the house again. George followed respectfully two paces behind her. As they passed beyond the garden hedge, she saw the old business coupe parked in the delivery court. Her body stiffened in anger. "Why is your father home so early, may I ask?" It was an accusation, rather than a question.

"I don't know, Mother. I heard my sisters talking in the yard; I think he was taken sick at work."

"Sick! Some men never stop pampering themselves."

"They said it was a heart attack or—"

"Ridiculous; he isn't dead, is he? Georgie, this is the last straw. I intend to trade your father in today on a younger man." She snatched the two packages from him and stormed into the house.

Since his mother hadn't asked him in, George returned to his confinement cubicle in the garage. He felt sorry, in an impersonal way, for the husband his mother was about to dispose of, but otherwise the fate of the old man was quite normal. He had outlived his economic usefulness; George had seen it happen before. His real father had died a natural death—from strain and overwork—when George was four. His mother had since then bought four other husbands; but, because boys were brought up in rigid isolation, George had known none of them well. For the same reason, he had no personal friends.

He climbed the narrow stairway to his cubicle. It was already late afternoon, almost time for dinner. He showered and oiled his body carefully, before he put on his dress trunks, briefs made of black silk studded with seed pearls and small diamonds. He was permitted to wear the jewels because his mother's stockholdings were large enough to make her an Associate Director. His family status gave George a high marriage value and his Adonis physique kicked the asking price still higher. At nineteen he stood more than six feet tall, even without his formal, high-heeled boots. He weighed one hundred and eighty-five, not an ounce of it superfluous fat. His skin was deeply bronzed by the sunlamps in the gym; his eyes were sapphire blue; his crewcut was a platinum blond—thanks to the peroxide wash his mother made him use.

Observing himself critically in the full-length mirror, George knew his mother was justified in asking twenty thousand shares for him. Marriage was an essential part of his own plans; without it revenge was out of his reach. He desperately hoped the deal would be made with Jenny Harper. A young woman would be far less difficult for him to handle.

When the oil on his skin was dry, he lay down on his bunk to catch up on his required viewing until the duty bell called him to the house. The automatic circuit snapped on the television screen above his bunk; wearily George fixed his eyes on the unreeling love story.

For as long as he could remember, television had been a fundamental part of his education. A

federal law required every male to watch the TV romances three hours a day. Failure to do so—and that was determined by monthly form tests mailed out by the Directorate—meant a three month sentence to the national hero's corps. If the statistics periodically published by the Directorate were true, George was a relatively rare case, having survived adolescence without serving a single tour of duty as a national hero. For that he indirectly thanked his immunity to the compound. Fear and guilt kept him so much on his toes, he grew up an amazingly well-disciplined child.

George was aware that the television romances were designed to shape his attitudes and his emotional reactions. The stories endlessly repeated his mother's philosophy. All men were pictured as beasts crudely dominated by lust. Women, on the other hand, were always sensitive, delicate, modest, and intelligent; their martyrdom to the men in their lives was called love. To pay for their animal lusts, men were expected to slave away their lives earning things—kitchen gadgets, household appliances, fancy cars, luxuries and stockholdings—for their patient, long-suffering wives.

And it's all a fake! George thought. He had seen his Mother drive two men to their graves and trade off two others because they hadn't produced luxuries as fast as she demanded. His mother and his pinch-faced sisters were pampered, selfish, rock-hard Amazons; by no conceivable twist of imagination could they be called martyrs to anything.

That seemed self-evident, but George had no way of knowing if any other man had ever reasoned out the same conclusion. Maybe he was unique because of his immunity to the compound. He was sure that very few men—possibly none—had reached marriage age with their immunity still undiscovered.

George was lucky, in a way: he knew the truth about himself when he was seven, and he had time to adjust to it—to plan the role he had been acting for the past twelve years. His early childhood had been a livid nightmare, primarily because of the precocious cruelty of his two sisters. Shortly before his seventh birthday they forced him to take part in a game they called cocktail party. The game involved only one activity: the two little girls filled a glass with an unidentified liquid, and ordered George to drink. Afterward, dancing up and down in girlish glee, they said they had given him the compound.

George had seen the love stories on television; he knew how he was expected to act. He gave a good performance—better than his sisters realized, for inside his mind George was in turmoil. They had given him the compound (true, years before he should have taken it), and nothing had happened. He had felt absolutely nothing; he was immune! If anyone had ever found out, George would have been given a life sentence to the national hero's corps; or, more probably, the Morals Squad would have disposed of him altogether.

From that day on, George lived with guilt and fear. As the years passed, he several times stole capsules of the compound from his mother's love-cabinet and gulped them down. Sometimes he felt a little giddy, and once he was sick. But he experienced no reaction which could possibly be defined as love. Not that he had any idea what that reaction should have been, but he knew he was supposed to feel very wicked and he never did.

Each failure increased the agony of guilt; George drove himself to be far better behaved than he was required to be. He dreaded making one mistake. If his mother or a Director examined it too closely, they might find out his real secret.

George's basic education began when he was assigned to his confinement room above the garage after his tenth birthday. Thereafter his time was thoroughly regulated by law. Three hours a day he watched television; three hours he spent in his gym, building a magnificent—and salable—body; for four hours he listened to the educational tapes. Arithmetic, economics, salemanship, business techniques, accounting, mechanics, practical science: the things he had to know in order to earn a satisfactory living for the woman who bought him in marriage.

He learned nothing else and as he grew older he became very conscious of the gaps in his education. For instance, what of the past? Had the world always been this sham he lived in? That question he had the good sense not to ask.

But George had learned enough from his lessons in practical science to guess what the compound really was, what it had to be: a mixture of aphrodisiacs and a habit-forming drug. The compound was calculated to stir up a man's desire to the point where he would give up anything in order to satisfy it. Boys were given increased doses during their adolescence; by the time they married, they were addicts, unable to leave the compound alone.

George couldn't prove his conclusion. He had no idea how many other men had followed the same line of reasoning and come up with the same answer. But why was George immune? There was only one way he could figure it: it must have happened because his sisters gave him the first draft when he was seven. But logically that didn't make much sense.

Bachelors were another sort of enemy: men who shirked their duty and deserted their wives. It seemed unreasonable to believe a man could desert his wife, when first he had to break himself of addiction to the compound. George had always supposed that bachelor was a boogy word contrived to frighten growing children.

As a consequence, he was very surprised when the house next door was raided. Through the window of his confinement cubicle, he actually saw the five gray-haired men who were rounded up by the Morals Squad. The Squad—heavily armed, six-foot Amazons—tried to question their captives. They used injections of a truth serum. Two of the old men died at once. The

others went berserk, frothing at the mouth and screaming animal profanity until the Squad captain ordered them shot.

George overheard one of the women say, "It's always like this. They take something so our serum can't be effective."

Later that afternoon George found a scrap of paper in his mother's garden. It had blown out of the bonfire which the Morals Squad made of the papers they took out of the house next door. The burned page had apparently been part of an informational bulletin, compiled by the bachelors for distribution among themselves.

". . . data compiled from old publications," the fragment began, "and interpreted by our most reliable authorities." At that point a part of the page was burned away. ". . .and perhaps less than ninety years ago men and women lived in equality. The evidence on that point is entirely conclusive. The present matriarchy evolved by accident, not design. Ninety years ago entertainment and advertising were exclusively directed at satisfying a woman's whim. No product was sold without some sort of tie-in with women. Fiction, drama, television, motion pictures—all glorified a romantic thing called love. In that same period business was in the process of taking over government from statesmen and politicians. Women, of course, were the stockholders who owned big business, although the directors and managers at that time were still men—operating under the illusion

STATEMENT OF THE OWNERSHIP, MANAGEMENT, AND CIRCULATION REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (39 U. S. C. 233)

Of IF, published bi-monthly at Buffalo, New York, for October 1, 1955.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: *Publisher*, Quinn Publishing Company, Inc., 17 Pearl Street, Kingston, N. Y.; *Editor*, James L. Quinn, 17 Pearl Street, Kingston, N. Y.; *Managing editor*, None. *Business manager*, None.

2. The owner is (if owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 per cent or more of total amount of stock): Quinn Publishing Company, Inc., 17 Pearl Street, Kingston, N. Y.; James L. Quinn, 17 Pearl Street, Kingston, N. Y.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

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5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, and triweekly newspapers only).

James L. Quinn, *Editor.*

Sworn to and subscribed before me this 26th day of September, 1955.
(SEAL) Charles H. Gaffney (My commission expires March 30, 1956)

that they were the executives who represented ownership. In effect, however, women owned the country and women governed it; suddenly the matriarchy existed. There is no evidence that it was imposed; there is no suggestion of civil strife or . . ." More words burned away. "However, the women were not unwilling to consolidate their gains. Consequently the popular cliches, the pretty romances, and the catchwords of advertising became a substitute for reality. As for the compound . . ."

There the fragment ended. Much of it George did not understand. But it gave him a great deal of courage simply to know the bachelors actually existed. He began to plan his own escape to a bachelor hideout. He would have no opportunity, no freedom of any sort, until he married. Every boy was rigidly isolated in his confinement cubicle, under the watchful eye of his mother's spy-cameras, until he was bought in his first marriage.

Then, as he thought more about it, George realized there was a better way for him to use his immunity. He couldn't be sure of finding a bachelor hideout before the Morals Squad tracked him down. But George could force his bride to tell him where the compound was made, since he was not an addict and she could not use the compound to enslave him. Once he knew the location of the factory, he would destroy it. How, he wasn't sure; he didn't plan that far ahead. If the supply of the drug could be interrupted, many hundreds of men might be goaded into making a break for the hills.

THE DUTY bell rang. George snapped to attention on the edge of his bunk. He saw his mother waving from the back door of her house.

"I'll be down right away, Mummy."

His mother was waiting for him in the pantry. Under the glaring overhead light he stopped for her last minute inspection. She used a pocket-stick to touch up a spot on his chest where the oil gleam had faded a little. And she gave him a glass of the compound to drink.

"Jenny really wants to marry you, George," she confided. "I know the symptoms; half our battle's won for us. And my former husband won't be around to worry us with his aches and pains. I made the trade this afternoon."

He followed her into the dining room where the cocktails were being served. Aside from the Harpers, George's mother had rented two handsome, muscular escorts for his sisters. In the confusion, George saw Jenny Harper's mother stealthily lace his water glass with a dose of the compound. He suppressed a grin. Apparently she was anxious to complete the deal, too.

George found it almost impossible to hold back hilarious laughter when Jenny herself shyly pressed a capsule of the compound into his hand and asked him to use it. Three full-size slugs of the drug! George wondered what would have happened if he hadn't been immune. Fortunately, he knew how

to act the lusty, eager, drooling male which each of the women expected.

The negotiations moved along without a hitch. George's mother held out for twenty-eight thousand shares, and got it. The only problem left was the date for the wedding, and Jenny settled that very quickly. "I want my man, Mom," she said, "and I want him now."

Jenny always got what she wanted.

When she and her mother left that evening, she held George's hand in hers and whispered earnestly, "So they were married and lived happily ever after. That's the way it's going to be with us, isn't it, George?"

"It's up to you, Jenny; for as long as you want me."

That was the conventional answer which he was expected to make, but he saw unmasked disappointment in her face. She wanted something more genuine, with more of himself in it. He felt suddenly sorry for her, for the way he was going to use her. She was a pretty girl, even sweet and innocent—if those words still had any real meaning left after what his mother's world had done to them. Under other circumstances, George would have looked forward with keen pleasure to marrying Jenny. As it was, Jenny Harper was first a symbol of the fakery he intended to destroy, and after that a woman.

Five days later they were married. In spite of the short engagement, Mrs. Harper and George's mother managed to put on a splendid show in the church. George received a business sedan from his mother, the traditional gift given every bridegroom; and from Mrs. Harper he received a good job in a company where she was the majority stockholder. And so, in the customary pageantry and ceremony, George became Mr. Harper.

"Think of it—Mr. Harper," Jenny sighed, clinging to his arm. "Now you're really mine, George."

On the church steps the newlyweds posed for photographs—George in the plain, white trunks which symbolized a first marriage; Jenny in a dazzling cloud of fluff, suggestively nearly transparent. Then Mrs. Harper drew Jenny aside and whispered in her daughter's ear: the traditional telling of the secret. Now Jenny knew where the compound was manufactured; and for George revenge was within his grasp.

George's mother had arranged for their honeymoon at Memory Lodge, a resort not far from the Directorate capital in Hollywood. It was the national capital as well, though everyone conscientiously maintained the pretense that Washington, with an all-male Congress, still governed the country. George considered himself lucky that his mother had chosen Memory Lodge. He had already planned to desert Jenny in the mountains.

George knew how to drive; his mother had wanted him to do a great deal of chauffeuring for her. But he had never driven beyond town, and he had never driven anywhere alone. His mother gave him a map on which his route to the

lodge was indicated in bright red. In the foothills George left the marked highway on a paved side road.

He gambled that Jenny wouldn't immediately realize what he had done, and the gamble paid off. Still wearing her nearly transparent wedding gown, she pressed close to him and ran her hands constantly over his naked chest, thoroughly satisfied with the man she had bought. In the church George had been given a tall glass of the compound; he acted the part Jenny expected.

But it was far less a role he played than George wanted to admit. His body sang with excitement. He found it very difficult to hold the excitement in check. If he had been addicted to the compound, it would have been out of the question. More than ever before he sympathized with the men who were enslaved by love. In spite of his own immunity, he nearly yielded to the sensuous appeal of her caress. He held the wheel so hard his knuckles went white; he clenched his teeth until his jaw ached.

All afternoon George drove aimless mountain roads, moving deeper into the uninhabited canyons. Carefully judging his distances with an eye on the map, he saw to it that he remained relatively close to the city; after he forced Jenny to give him the information he wanted, he wanted to be able to get out fast.

By dusk the roads he drove were no longer paved. Ruts carved deep by spring rains suggested long disuse. The swaying of the car and the constant grinding of gears eventually jolted Jenny out of her romantic dreams. She moved away from George and sat looking at the pines which met above the road.

"We're lost, aren't we?" she asked.

"What's that?" he shouted to be heard above the roar of the motor.

"Lost!"

For a minute or two longer he continued to drive until he saw an open space under the trees. He pulled the car into the clearing and snapped off the ignition. Then he looked Jenny full in the face and answered her. "No, Jenny, we aren't lost; I know exactly what I'm doing."

"Oh." He was sure she had understood him, but she said, "We can spend the night here and find the lodge in the morning. It's a pity we didn't bring something to eat." She smiled ingenuously. "But I brought the compound; and we have each other."

They got out of the car. Jenny looked up at the sunset, dull red above the trees, and shivered; she asked George to build a fire. He tucked the ignition key into the band of his white trunks and began to gather dry boughs and pine needles from the floor of the forest. He found several large branches and carried them back to the clearing. There was enough wood to last until morning—whether he stayed that long or not. Jenny had lugged the seats and a blanket out of the car and improvised a lean-to close to the fire.

He piled on two of the larger branches and the bright glow of

flame lit their faces. She beckoned to him and gave him a bottle of the compound, watching bright-eyed as he emptied it.

With her lips parted, she waited. He did nothing. Slowly the light died in her eyes. Like a savage she flung herself into his arms. He steeled himself to show absolutely no reaction and finally she drew away. Trembling and with tears in her eyes, she whispered, "The compound doesn't—" The look of pain in her eyes turned to terror. "You're immune!"

"Now you know."

"But who told you—" She searched his face, shaking her head. "You don't know, do you—not really?"

"Know what?"

Instead of replying, she asked, "You brought me here deliberately, didn't you?"

"So we wouldn't be interrupted. You see, Jenny, you're going to tell me where the compound's made."

"It wouldn't do you any good. Don't you see—" He closed his hands on her wrists and jerked her rudely to her feet. He saw her face go white. And no wonder: that magnificent, granite hard body, which she had bought in good faith for her own pleasure, was suddenly out of her control. He grinned. He crushed her mouth against his and kissed her. Limp in his arms, she clung to him and said in a choked, husky whisper, "I love you, George."

"And you'll make any sacrifice for love," he replied, mocking the dialogue of the television love stories.

"Yes, anything!"

"Then tell me where the compound's manufactured."

"Hold me close, George; never let me go."

How many times had he heard that particular line! It sickened him, hearing it now from Jenny; he had expected something better of her. He pushed her from him. By accident his fist raked her face. She fell back blood trickling from her mouth. In her eyes he saw shock and a vague sense of pain; but both were overridden by adoration. She was like a whipped puppy, ready to lick his hand.

"I'll tell you, George," she whispered. "But don't leave me." She pulled herself to her feet and stood beside him, reaching for his hand. "We make it in Hollywood, in the Directorate Building, the part that used to be a sound stage."

"Thanks, Jenny." He picked up one of the car seats and walked back to the sedan. She stood motionless watching him. He fitted the seat in place and put the key in the lock. The starter ground away, but the motor did not turn over.

He glanced back at Jenny. She was smiling inscrutably, "You see, George, you have to stay with me."

He got out of the car and moved toward her.

"I was afraid you were planning to desert me," she went on, "so I took out the distributor cap while you were getting the firewood."

He stood in front of her. Coldly he demanded, "Where did you put it, Jenny?"

She tilted her lips toward his. "Kiss and tell—maybe."

"I haven't time for games. Where is it?"

His fist shot out. Jenny sprawled on the ground at his feet. Again he saw the pain and the adoration in her face. But that couldn't be right. She would hate him by this time.

He yanked her to her feet. Her lips were still bleeding and blood came now from a wound in her cheek. Yet she managed to smile again.

"I don't want to hurt you, Jenny," he told her. "But I have to have—"

"I love you, George. I never thought I'd want to give myself to a man. All the buying doesn't make any difference, does it? Not really. And I never knew that before!"

With an unconscious movement, she kicked her train aside and he saw the distributor cap lying beneath it. He picked it up. She flung herself at him screaming. He felt the hammer beat of her heart; her fingers dug into his back like cat claws. Now it didn't matter. He had the secret; he could go whenever he wanted to. Nonetheless he pushed her away—tenderly, and with regret. To surrender like this was no better than a capitulation to the compound. It was instinctively important to make her understand that. He knew that much, but his emotions were churned too close to fever pitch for him to reason out what else that implied.

He clipped her neatly on the jaw and put her unconscious body on the ground by the fire. He left the map with her so she could find her way out in the morning; he knew it was really a very short hike to a highway, where she would be picked up by a passing car or truck.

He drove out the way he had come in—at least he tried to remember. Four times he took a wrong turn and had to backtrack. It was, therefore, dawn before he reached the outskirts of Hollywood. In any other city he would not have been conspicuous—simply a man on his way to work; only women slept late. However, Hollywood was off-limits to every male. The city was not only the seat of the Directorate, but the manufacturing center for the cosmetics industry. And since that gave women her charm, it was a business no man worked at.

George had to have a disguise. He stopped on a residential street, where the people were still likely to be in their beds. He read names on mail boxes until he found a house where an unmarried woman lived. He had no way of knowing if she had a husband on approval with her, but the box was marked "Miss." With any luck he might have got what he wanted without disturbing her, but the woman was a light sleeper and she caught him as he was putting on the dress. He was sorry he had to slug her, but she gave him no resistance. A spark of hope, a spark of long-forgotten youth glowed in her eyes; before she slid into unconsciousness.

Wearing the stolen dress, which fit him like a tent, and an enormous hat to hide his face, George parked his sedan near the Direc-

torate and entered the building when it opened at eight. In room after room automatons demonstrated how to dress correctly; robot faces displayed the uses of cosmetics. There were displays of kitchen gadgets, appliances, and other heavy machinery for the home; recorded lectures on stock management and market control. Here women came from every part of the country for advice, help and guidance. Here the Top Directors met to plan business policy, to govern the nation, and to supervise the production of the compound. For only the Top Directors—less than a dozen women—actually knew the formula. Like their stockholdings, the secret was hereditary, passed from mother to daughter.

George searched every floor of the building, but found nothing except exhibit rooms. Time passed, and still he did not find what he had come for. More and more women crowded in to see the exhibits. Several times he found newcomers examining him oddly; he found he had to avoid the crowds.

Eventually he went down steps into the basement, though a door marked "Keep Out." The door was neither locked nor guarded, but there was a remote chance it might lead to the production center for the compound. In the basement George found a mechanical operation underway; at first he took it for another cosmetic exhibit. Conveyor belts delivered barrels of flavoring syrup, alcohol and a widely advertised liquid vitamin compound. Machines sliced open the containers, dumping the contents into huge vats, from which pipes emptied the mixture into passing rows of bottles.

The bottles: suddenly George recognized them and the truth dawned on him, sickeningly. Here was the manufacturing center for the compound—but it might just as well have been a barn in Connecticut or a store window in Manhattan. No man was enslaved by the compound, for the compound did not exist. He was imprisoned by his own sense of guilt, his own fear of being different. George remembered his own fear and guilt: he knew how much a man could be driven to make himself conform to what he thought other men were like.

His revenge was as foolish as the sham he wanted to destroy. He should have reasoned that out long ago; he should have realized it was impossible to have immunity to an addictive drug. But, no, George believed what he saw on the television programs. He was victimized as much as any man had ever been.

He turned blindly toward the stairway, and from the shadows in the hall the Morals Squad closed in around him. With a final gesture of defiance, he ripped off the stolen dress and the absurd hat, and stood waiting for the blast from their guns. An old woman, wearing the shoulder insignia of a Top Director, pushed through the squad and faced him, a revolver in her hand. She was neither angry nor disturbed. Her voice, when she spoke, was filled with pity. Pity! That was the final indignity.

"Now you know the truth," she

said. "A few men always have to try it; and we usually let them see this room and find out for themselves before—before we close the case."

Tensely he demanded, "Just how much longer do you think—"

"We can get away with thus? As long as men are human beings. It's easier to make yourself believe a lie if you think everyone else believes it, than to believe a truth you've found out on your own. All of us want more than anything else to be like other people. Women have created a world for you with television programs; you grow up observing nothing else; you make yourself fit into the pattern. Only a few independent-minded characters have the courage to accept their own immunity; most of them end up here, trying to do something noble for the rest of mankind. But you have one satisfaction, for what it's worth: you've been true to yourself."

True to yourself. George found a strange comfort in the words, and his fear was gone. He squared his shoulders and faced the mouth of her gun. *True to yourself*: that was something worth dying for.

He saw a flicker of emotion in the old woman's eyes. Admiration? He couldn't be sure. For at the moment a shot rang out from the end of the corridor; and the Top Director fell back, nursing a hand suddenly bright with blood.

"Let him go." It was Jenny's voice. She was sheltered by a partly open door at the foot of the stairway.

"Don't be a fool," the old woman replied. "He's seen too much."

"It doesn't matter. Who would believe him?"

"You're upset. You don't realize—"

"He's mine and I want him."

"The Directorate will give you a refund of the purchase price."

"You didn't understand me. I don't want one of your pretty automatons; anybody can buy them for a few shares of stock. I want a man—a real man; I want to belong to him."

"He belongs to you; you bought him."

"And that's what's wrong. We really belong to each other."

The old woman glanced at George and he saw the same flicker of feeling in her eyes. And tears, tears of regret. Why? "We have you outnumbered," the old woman said quietly to Jenny.

"I don't care. I have a gun; I'll use it as long as I'm able."

The Morals Squad raised their weapons. The Director shook her head imperiously and they snapped to attention again. "If you take him from us," she called out to Jenny, "you'll be outlawed. We'll hunt you down, if we can."

"I want him," Jenny persisted. "I don't care about the rest of it."

The old woman nodded to George. He couldn't believe that she meant it. The Director was on her home ground, in her headquarters building, backed by an armed squad of stone-faced Amazons. She had no reason to let him go.

She walked beside him as he moved down the hall. When they

were twenty feet from the guard, she closed her thin hand on his arm; her eyes swam with tears and she whispered, "There truly is a love potion. Not this nonsense we bottle here, but something real and very worthwhile. You and this girl have found it. I know that, from the way she talks. She doesn't say anything about ownership, and that's as it should be. As it has to be, for any of us to be happy. Hold tight to that all the rest of your life. Don't ever believe in words; don't fall for any more love stories; believe what you feel deep inside—what you know yourself to be true.

"You men who learn how to break away are our only hope, too. Most of us don't see that yet. I do; I know what it used to be like. Someday there may be enough men with the stamina to take back the place of dominance that we stole from them. We thought we wanted it; for decades before we had been screaming about women's rights." Her thin lips twisted in a sneer and she spat her disgust. "Finally we took what we wanted, and it turned to ashes in our hands. We made our men playthings; we made them slaves. And after that they weren't men any more. But what we stole isn't the sort of thing you can hand back on a silver platter; you men have to get enough courage to take it away from us."

Her grip tightened on his arm. "There's a fire door at the end of the hall; if you push the emergency button, you'll close it. That will give you a five or ten minute start. I can't help you any more . . ."

They were abreast of Jenny. She seized Jenny's hand and thrust it into his. "Beat it, kids; there's a bachelor camp on the north ridge. You can make it.

"And from here on in, what he says goes," the old woman added. "Don't forget that."

"She won't," George answered, supremely self-assured.

He took Jenny's arm and, turning abruptly, they made their break for freedom. The Director managed to remain standing in the middle of the corridor, making a dangerous target of herself so that none of the Morals Squad could risk a shot at the fugitives. As the fire door clanged shut George looked back. He saw the old woman's lips moving in silent prayer.

• • •

THE ODD GENRE

(Continued from page 3)

Otto) Binder, Dr. Keller, Hugo Gernsback, Ray Cummings et al.

In retrospect Russell was amused at how the year 1955 had once held such a fatal fascination for him as a far distant year of mystery, glamor, excitement; when robots would be walking the streets, the Trans-Atlantic Tunnel would be a reality, and stratorockets would ply the transpolar route, 90 minutes from New York to London.

I must confess that 21 years ago, when I attended the first meeting of the Los Angeles Science Fantasy Society (then chapter #4 of the S.F. League), I scarcely thought that I'd be attending most of the nearly 950 meetings thru the years to come and be Master of Ceremonies (shy guy and tongue-tied introverted youth that I was in those days) at the Adult Anniversary meeting. But the Hallowe'en meeting of the LASFS—oldest s.f. organization in existence—was its 21st birthday, and I'm sure I'll be at the 1000th meeting and the quarter century mark as well. A salute to my pal Russ Hodgkins, Australian-born fan who's the only other charter member of the club who's a "survivor" to today. And the Anniversary meeting itself was a humdinger, with the SRO sign hung out. Mark Clifton, Ed Clinton, Kris Neville, Mel Sturgis, Arthur J. and Wm. D. Cox, Henry Lee and Frank Quattrocchi were among the pro's present as Directrix Helen Urban, herself a selling sci-fi writer, banged the oaken gavel to call the memorable meeting together. A large number of congratulatory telegrams were received from around the world, among them: "A TWENTY-ONE GUN SALUTE TO THE L.A.S.F.S. SIGNED: CAPT. NEMO, SEC'Y OF THE NAVY" (Jules Verne's Navy, that is). *"Congratulations on 21st Anniversary. I predict club meetings in future will take place regularly each week-day evening falling between Wednesday and Friday.*—Nostra Damus." Signed Sincerely Yours, "NO OTHER SCIENCE FICTION CLUB IN THE WORLD CAN HOLD A CANDELABRA TO YOUR RECORD. FRITZ LIEBERACE." *"I have never encountered a more loyal, kind, considerate; well-behaved, intelligent, morally straight and physically strong group, and my keeper says it's time for my electric shock treatment now.* —Robespierre Bloch." "AMAZED AT LASFS REACHING ITS MAJORITY. OFFER $50,000 FOR FIRST SERIAL RIGHTS TO YOUR UNEXPURGATED MINUTES. CORNFED-DENTAL MAGAZINE."

'ROUND-THE-WORLD Round-up:

France: Jules Verne's "From the Earth to the Moon" to be filmed.

Italy: 100th issue of beautiful bi*weekly* sci-fi magazine, *Urania,* published.

Mexico: GIGANTURO, an original scientifilm script by Frank Quattrocchi, to be produced here in widescreen and technicolor.

That's All, Folks.

—fja

What Is Your Science I. Q.?

SCIENCE-FICTION is not confined to realms of space. To make sure you catch on the next time the hero is a "down to earth" scientist, test yourself on this quiz. Count 5 for each correct answer. A score of 80 is excellent! Answers on page 71.

1. The best conductor of electricity among the metals is ———.
2. What is another name for a magnetic resonance accelerator?
3. The lighter a gas the more ——— it diffuses.
4. Who originated the theory of probability?
5. A positron is a particle having the same mass and magnitude of charge as ———.
6. What is the term used to describe the changing of the speed of a reaction brought about by the introduction of a contact agent?
7. The density of sea water is ——— proportional to its temperature and increases with salinity.
8. How many calories of heat are required for ice to change each gram of water at its melting point?
9. 33,000 foot-pounds of work per minute are equal to ——— horsepower.
10. What term is used to describe the form of reproduction in which a female cell reproduces without fertilization by a male cell?
11. Bottom waters of the ocean in all latitudes approach ——— degrees Fahrenheit.
12. In which direction do light waves vibrate in relation to the direction in which they are traveling?
13. Standard pressure for scientific observations is established at ——— pounds per square inch.
14. Which color of the spectrum has the shortest wave length?
15. Deuterium is a form of heavy ———.
16. How many B.T.U.'s of heat are required to raise the temperature of one pound of water one degree?
17. The velocity of sound increases about ——— feet per second with every centigrade degree rise in the temperature of the air.
18. Which element is used as the unit of comparison for deciding the valence numbers?
19. Radiosondes are ——— used in the study of meteorology.
20. A Fahrenheit degree is equal to ——— of a centigrade degree.

THE EXECUTIONER

(Continued from page 45)

flicker that would give a split-second warning of her next move.

The warning came, and he was ahead of it. His shot struck Ann high on the right shoulder. Her second and last bullet ploughed into the dust midway between them. She twisted around from the force of the impact, and half slipped, half fell from the pedestal. But she kept herself erect, bracing against the pedestal with her left hand. A red blotch was spreading from her shoulder to her breast and down her side. There was shock and pain in her eyes, but the half-smile was still on her lips.

"Une!" shouted the crowd, counting his first shot.

Jacques no longer needed a will of his own. The momentum of a thousand deaths swept him along, overpowering everything else.

"Deux!" screamed the hundred thousand voices. "Deux! Deux!"

His second shot struck Ann well below the left shoulder, knocking her away from the support of the pedestal, sprawling her in the dust. Yet so indomitable was her will that she brought her hands together and raised herself to her knees. Her entire upper body was covered with dust and spreading fingers of crimson.

"Trois!" shrieked the maddened crowd. "Trois! Trois!"

Women tore away pieces of their clothing and waved them with savage abandon.

"Trois! Trois! Trois!"

The third shot could barely be heard. Ann was lifted from her knees and hurled backwards. She rolled over twice, then lay face downward, her fingers digging in the hard earth.

With his last shot, the fierceness drained out of Jacques. He blinked like a man awakening from a horrible dream. He stared at Ann's shuddering body, not believing he could have done this. He cried out to her, and ran to her side with great, lunging steps. His body shook with dry sobs.

He turned her over tenderly, smoothed back the tangled hair from her forehead, tried to wipe some of the dirt and bubbles of red from her lips.

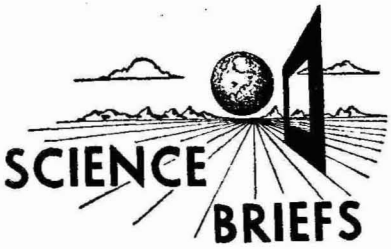
An FBIT man rushed toward them with a microphone. With one terrible look, Jacques sent him scurrying back.

"Ann . . . Ann . . ." he cried. "What have I done?"

Her glazing, pain-filled eyes cleared for a moment, and drew him closer. In them, for all the pain, there was peace at last. No reproach, no disappointment. Only peace. And he knew then, what he should always have known: That when a man lived as one with Death, he could not give less to any person, nor expect more.

Ann's fingers crawled through the dust and touched the toe of his boot. Her quivering lips twisted in a final grimace of ecstacy. And out of the lonely void of the dying came the words he had always hoped to hear, and would never hear again:

"Good night," she whispered. "You—were wonderful—my lover —my husband." • • •



Dream cars of the future will have practically trouble-free motors. Experiments have proved that gas turbine engines are simpler and more rugged and will burn almost any liquid fuel including kerosene and cheap diesel oil. The new motor, which operates on the pinwheel principle, is inherently simple, with none of the clutch and shift jerks felt even in modern cars with automatic transmissions. The engine has few parts, only one of which requires workmanship to close tolerances. The only real moving part is the turbine, an efficient fan that converts jet blasts to turning motion. It is easy to take apart and put together and packs more power per pound of engine than the piston engine of today.

Even telegraph operators can be replaced by machines. An electronic device is now ready that can translate international Morse code signals from radio beeps into typed copy. The robot radioman can handle signals produced by hand or machine keying and overcomes a major problem by automatically adjusting itself to different speeds of transmission. It can even compensate for the sender's change of pace within a single message.

A new solar cooker folds up like an umbrella for carrying, but inverted in the sun it becomes so effective in concentrating the sun's heat that hot dogs can be roasted at the "handle" heat focus. The fabric of the cooker is a special reflecting plastic. Picnickers of tomorrow will be able to carry the cooker with them on a sunny day and prepare lunch without fuel or flame.

Pilots in Australia are being trained to fly planes that catch falling parachute-borne rockets in mid-air. When the rockets begin to fall, a parachute opens. A plane with a 500-foot paravane trailing slightly to one side then flies alongside the falling missile, and grapnels on the paravene cable grip on a cable trailing from the parachute. The "catch" is played like a fish on the line and the plane flies down a gully spanned by cables so that the rocket is transferred from the paravane to a cable, where it swings until collected.

Antibiotic-burgers may be on the menu at the local diner soon. The presence of small amounts of aureomycin will keep hamburger meat from spoiling several days longer than meat kept under refrigeration. Experimenters have found that as little as ten parts of the antibiotic to a million parts of hamburger keeps the meat in good condition for at least ten days. The process is not yet commercially usable since the effects of the aureomycin

on humans eating the meat has not yet been thoroughly studied.

Evidence that the anti-proton actually exists was recently announced by the A.E.C. The negatively charged particle was created in the bevatron at the University of California, Berkeley. There is no known "practical" application of the anti-proton discovery; but it does verify the electrical charge symmetry of nature—for each known charged particle there is a particle of equal mass with opposite charge. A new era of nuclear research, rivaling that which led to the atomic bomb, is foreseen as a result of this anti-proton creation.

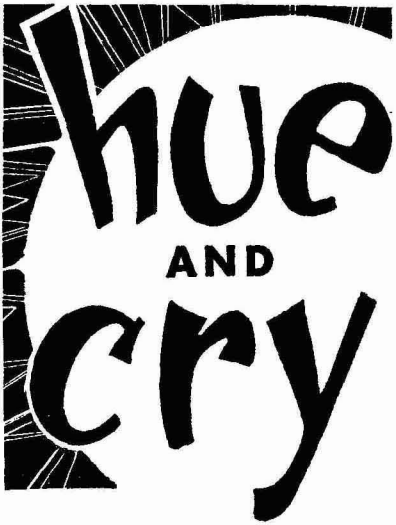
An aerial uranium detector designed for one-man pilot prospectors has been developed. The 17-pound scintillation counter has an automatic alarm that signals the pilot whenever an anomaly is passed. The counter can also be provided with a strip chart pen recorder and two indicating meters.

Air "traffic cops" will need more and more radar to keep up with the mammoth air jam envisioned in the next ten years. The Civil Aeronautics Commission has a ten-year program set up to loosen the jam. This includes a secondary radar beacon system with an airborne device that returns signals so strong they can penetrate rain and fog. More important, the device returns a coded impulse for positive indentification of the plane. The new set up should be ready for installation early in 1957.

Trackless wastelands will be broad highways for a new truck-train with huge balloon-like tires. The cross country carrier can criss-cross the deserts, glide through jungles and roll over arctic snow without bogging down. Cars in the train are connected mechanically by a steering arrangement that makes every car follow the tracks of the lead truck. The train can climb steeper inclines than an auto and can roll smoothly over stumps and ditches. Tires on the cars range up to ten feet in height.

An automatic "seek-and-kill" system for submarine torpedoes that uses transistors instead of the conventional vacuum tubes has been developed. The new guided torpedo system eliminates the need for a thirty-second warm-up period before firing, uses less current and is more compact. Developed by Westinghouse Laboratories, the torpedo guides itself toward the enemy target by means of ultrasonic sound waves in the water.

The establishment of the first civilian skin bank was announced recently. This followed on the heels of the development of a new technique for grafting the skin from recently dead bodies as a life-saving measure for persons with severe and extensive burns. When stored at ordinary refrigerator temperatures these post-mortem grafts can be used as long as three weeks after removal. The added factor of being able to use larger and larger patches with success has practically eliminated the need for live donors.



Sir:

Your World's Champion is a fraud, if we judge by 1955 standards. Looky there, brass knuckles, wrist spikes and a bikini boxing outfit . . . and not a scar! Max Factor and Perc Westmore should live so long . . . or do such a cover up job. I can only conclude that their 2155 equivalents have never been near her. I am also forced to conclude that this is her first, last and only defense of her championship, she having originally won it by sending in write-in votes on Krispy-Krunchy boxtops. She's an ad agency promotion discovered by a talent scout while sitting on a drugstore stool in Cornpone, Ky. The annual contest ended last week at Atlantic City and oil wells were awarded to runners up. Sales of Krispy Krunchies have quadrupled.

The Champion will defend her title against a specially designed robot made by the Azimov Positronic Robot Foundry. She will win by a knockout after 40 seconds of the 8th round when the robot responds to an electronic impulse and collapses to the canvas in a welter of slipped gears and worn condensers. She will be awarded a size 24 champion's belt, which will later be displayed on 30 nationally televised coast-to-coast spectaculars. Her retirement will consist of 10 weeks at the Palace Theater, a 5 year recording contract, a short-term movie contract and a 29 week contract with T.V. awarding the mink coats on giveaway programs. She will marry a man three times her age, cheat him of his longevity shots, and buy a planet of the Vega system as a gilt-edged investment.

—Bob Pilkington
Louisville, Ky.

Dear Editor:

I am impressed and intrigued by the lack of intelligence in the faces on your cover . . . I see this as a symbol of a time when Man has forgotten the basic laws for civilized existence, a world declining, retrogressing, without love and with too much leisure; an irreligious, heartless, deadly, insensible world moving backward in terms of intelligence and callous far beyond the point of brutality. If we make the assumption that a regime such as that of the communists has overrun the earth, subjugating man and bringing intellectual chaos, then the cover is more than possible.

—Mervin Chapman
Key West, Fla.

The writers of the two preceding letters were awarded $5 each for their thoughts on our December cover. Three other awards went to Orma McCormick of Ferndale, Mich., John Murphy of Jersey City, New Jersey, and J. Frank Gamble of Littleton, Colorado . . . Comments on the gal with the brass knucks were varied and interesting indeed and we wish we had room to run more of them.

Dear Sir:

I flatly think that sexy covers are the reason that s-f isn't skyrocketing to greater popularity. When the average individual throws his 35c on the counter he undoubtedly has an urge to hide the covers. You have a readable magazine and I give science-fiction the credit for my choosing Physics as my college major. My only complaint is those covers. Can't s-f editors be a little subtle—the drawings usually scream of poor taste.

—W. G. Cantrell
Bryan, Texas

Sirs:

Interstellar colonization seems to be the most hopeful subject for the s-f readers of today, yet authors always assume that other races will be either so far ahead of us that they are dead or so far behind us that we will have to "civilize" them. I agree that the chances of another exactly at our own level is a probability that's astronomical considering the differences in time, temperature, physiology etc. that are involved. Considering the former highly civilized group, why haven't we met them yet? They must have passed through the exploratory stage somewhere along the line. We've argued the point pro and con and come up with several proposed explanations.

1. The supermen are here, but so smart we haven't found any traces.
2. Habitable planets are so rare they can't find each other.
3. Interstellar travel is so difficult that races are confined to a few light-years from their home planet.
4. The extermination theory: the cultural level necessary for star travel makes race suicide inevitable.

What I'm after is an answer from your readers who I'm sure have given it a deal of thought themselves. Or at least an estimated percentage of how many numbers of readers believe which theory would be of interest to all s-f fans.

Would you let the readers use the letter column for a sounding board?

—J. G. Hickman
Park Forest, Ill.

Delighted! We'll go a step farther and propound a fifth explanation: Could it be that we really are *the first and most highly civilized race?*

Dear Editor:

IF was my ideal, unfortunately this state of affairs was not to last. "Hue and Cry" has reared its ugly head. A trespasser from the pulp field. You were original with

"What's Your Science I.Q.?", "Science Briefs" and "Worth Citing", so why retrogress? I'm convinced that a number of those in favor of letter columns are more interested in getting their names in print than in constructive criticism. Apart from "Hue and Cry" keep it as is—it's great.

—W. J. Allen
Calgary, Alberta

We hate to disagree and don't feel that we publish the "pulpy" sort of letter. If we can have good arguments and slices of interesting ideas, we enjoy the stimulation. I hereby appoint "Hue and Cry" the sounding board for this controversy, in the hopes that a solution will be found.

Sirs:

Perhaps someday we can build machines that have all the functions of a human; would these machines be competitors of ours? Should we scrap all machines now lest we become their slaves? I don't think so. It may be paradoxical, but the more we understand about machine thinking, the more we understand about human thinking. With a greater understanding of ourselves, we can ensure that the role of the machine is a beneficent one. I have a deep conviction that a vastly humbled and chastened—but improved!—humanity will result from the effort to teach a machine what Man believes. The tough part will be that Man will have to find out exactly what he believes—and make sense out of it.

—K. L. Hamilton
Walton, Mass.

Wouldn't you like to stick around a few thousand years and find out? It's a new approach: instead of the computers solving the problems—they will force man to solve them himself.

Dear Mr. Quinn:

Although a reader of s-f for about 8 years, I've never felt the urge to write to an editor before now. What did it? Jerry Bixby's *Laboratory,* that's what. The relatively few attempts at humor in s-f have made me glad that they were few they have been of such low quality. In my opinion *Laboratory* is far and away the best piece of humorous s-f I've read. I also enjoyed the other yarns.

—George Thome
Detroit, Mich.

CHROME PASTURES

(Continued from page 97)

Gethsemane through the trees. It was blood-red in the morning sunlight.

"Ten seconds—"

There wasn't going to be time enough to save Linda from the backwash, but there was time enough to try—

"Five seconds—"

No, not even time enough to try.

"Two seconds—"

Brett breasted the hill just as the *Gethsemane* blasted. He reeled back, blinded by the jets, deafened by their thunder. When the afterimage faded he saw the brief morning star in the sky and he felt the first tearing pangs of his loss.

"How did you know I'd be here?" Linda said.

Brett turned around, not believing at first. She had just stepped from a sheltering stand of locusts. She was crying.

"I saw you on the telecast," he said. "I thought—"

She shook her head. "You can't fight anything by running away from it," she said. "One useless sacrifice is enough."

She swayed and Brett leaped forward and caught her arm. "I'm all right," she said. She looked into his eyes and seemed surprised at what she saw there. "I thought you'd hate me," she said.

"I can't hate you," Brett said. "You can't hate someone when you already love them."

She looked up at the sky. "I'll get him back," she said. "Somehow, some way. Will you help me?"

"Of course I'll help you."

They walked down the hill together. When they reached the highway the Seneca was burning brightly. Linda gasped. Brett took a slow deep breath. It was the most beautiful fire he had ever seen.

A long time ago Thoreau said: "We do not ride the railroad; it rides upon us." It remained for the wife of an unemployed steelworker to paraphrase that statement. In her best-selling social novel, The Highways of Hell *(Brandt & Payne, 2060), Linda Dalms Brett wrote: "We do not drive our cars; our cars drive us."*

Civilizations decay from within. Sometimes the decay goes unnoticed for years, manifesting itself only through reactions of the subconscious. But it is there, weakening the social structure to a point where the slightest impetus can send that structure toppling.

The Highways of Hell *afforded that impetus, and the sacred automobile fell from its pedestal. It became a mere vehicle again, with a tyrannical governor that said 30 mph and meant it. As a mere vehicle it could not of course justify the stern laws enacted to protect it in its former glory, and consequently those laws were modified. This resulted in amnesty for some tens of thousands of prisoners serving sentences on the Foundation planets, among them a man who once believed himself to be Christ. . .*

—Bethe Royale
MASS MOTIVATIONS

• • •

—continued from Back Cover

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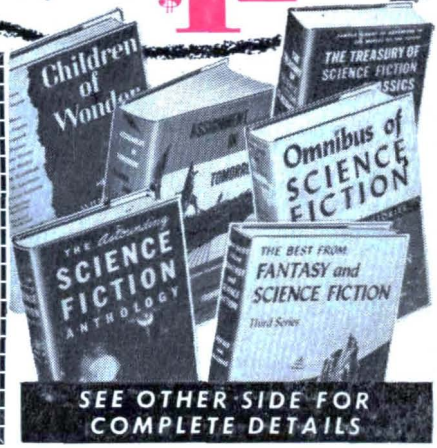

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