

This is the third part of the beginning. Chronologically, it is in the spring of 1944. The outcome of World War Two was looking up; it is not easy to say exactly when the war in Western Europe took its turn, it was about as low as it could get after Dunkirk, and things stayed that way for a long, long time. But in the summer of 1944, the invasion of the Continent was on, and the Allies were on the offensive. The war in the Pacific had its turn at the Battle of Midway, when what had been left of the United States Navy after Pearl Harbor clobbered the Japanese Navy down to the same point of military inactivity. But here in the spring of 1944, the Allies were taking the offensive in the Southern Pacific.

Ships, designed to fight the war in the Pacific, were built on clockwork time, and equipped with the latest models of radar and sonar and communication equipment— but without the manuals for instruction, maintenance, and repair that are necessary to run and keep running such equipment.

The need was specific. The Navy had to have these manuals, but manuals had to be written. Preferably, they were to be written without taking the engineers off their development job to do the writing. In addition, one can generally say that, unless they're writing for other engineers, and not for some bright technician who has been handed a piece of machinery which needs to be explained, engineers (aside from a rather few) make a whole mess of the language.

The Navy needed these manuals, and the emphasis on the war in the Pacific centered on the American West Coast, and the Navy, with sound reason, figured that there were a lot of writers on the West Coast. Like in Hollywood, for instance.

Nothing official is done simply. One doesn't write a memo saying, "Hire me some technical writers to create manuals—" One works through channels.

So the bureau that wanted the maintenance and repair manuals went through the Naval Development Research Council, who, in conjunction with the Office of Scientific Research and Development, contracted with the University of Southern California, Los Angeles campus, to start a crash program to produce these manuals.

UCLA promptly ran into an interesting difficulty. Seems yes, 'twas true, there are a lot of writers in Hollywood and environs, and what they knew about rescuing the heroine from a fate worse than death and getting her into the sack with the hero was one thing, but none of them had ever gone to bed with an electron. Well, that was the ~~cat and dog~~ ~~cat and dog~~ over

again. So the selected group of professors of rhetoric, lexicography, and electronic physics left California to come east, where the best-known and highly recommended publisher of technical books could be found. They picked McGraw-Hill, and hired Keith Henney, the editor of *Handbook for the Radio Engineer*. Keith Henney, a long-time science fiction reader, promptly hired John W. Campbell, who promptly got in touch with those he knew had technical background and experience, and invited them in.

In July 1944, I moved east. Housing, in 1944, wasn't merely impossible; it didn't exist. John suggested that if I didn't mind sleeping on a pull-out bed-sofa, I could stay there until I could find a suitable place to live.

Once more I went into a change of living. Where I'd been hauled into John's cellar once each month, it became every night and the entire weekend. But even that pattern began to change, for very good reasons. The first was that John didn't want to become an engineer, all he wanted was the technical knowledge that would enable him to build stuff in his workshop for his own amusement and a possible profit if he could sell an article. It had been said that the best engineer, in any field, is the one who knows more ~~about~~ things that work, and why, than his fellows. John had a good beginning with his earlier misguided attempts. Now, with help, he wasn't just trying everything in mind, only those things that sounded reasonable, and most of my time was explaining just why this or that either wouldn't work or was not too good an idea. The other reason is that it had been nine years since I'd swapped my collection of radio parts for my camera and had given up home electronics, and I wasn't about to dive back in.

In that summer, John developed a habit that made me hoarse. As the train loaded up in Westfield, John would ask, "But why can't... work?" and the train would take off with a roar, and I'd spend to the next station at the top of my voice explaining. As things quieted down, he'd pose another question.

But mostly, during the latter part of that summer of 1944, John tinkered until he ran into trouble, and that's how I spent my time in his cellar, getting him out of trouble. As he grew more experienced—that is, discovered more things that wouldn't work—his need became less, and I began to use his typewriter instead of his soldering iron.

Here it becomes necessary to take a look at the distaff side of the family. What did Doña Campbell think of all this?

As I said, John's operations were his way of life, and he'd been at it since before he graduated. Doña put up with it, or possibly had become used to it. Let's put it in a series of sentences. For example, John did not drink, but he didn't object if his wife had some of her neighbor friends over

for Saturday-afternoon cocktails, so long as he wasn't involved. Or she went to one of the neighbors' houses—and one of John's projects when I arrived was a wired-radio pickup system with the transmitter in the kid's room and the receiver with Doña up or down the block.

Then, one weekend afternoon, with the living room full of neighbors, I had to go to the—well, Campbell used to get fluffy over the misuse of his name, so I won't say it—and on my way back, I was asked if I'd stay and have a drink. I didn't reply, "I thought you'd never ask me," but about three hours later, John came up to ask about something and found me in the kitchen, where I'd taken over the task of refilling the glasses.

In that early autumn of 1944, things took another change. The Heinleins (Robert A. and wife) and the Campbells had for long celebrated a birthday coincidence in September. Bob Heinlein had been Navy Reserve, and at the outbreak of the war (and possibly earlier, although I'm not quite sure) he'd asked for a reinstatement of his commission, been refused for medical reasons, but had been accepted as a civilian employee at the Philadelphia Naval Yard. With them came L. Sprague de Camp and wife, and it became a very merry weekend. It closed with an invitation that I visit Philadelphia the following week to attend a house-warming party, which was another merry weekend.

In the meantime, Henry Kuttner and C. L. Moore were living in a house in Hastings-on-Hudson. One of the writers of the Campbell Troupe in the UCLA installation in the Empire State Building was one L. Jerome Stanton, a former radio telegrapher who'd taken the pitcher to the well once too often on the Murmansk run—the ship took a stick of bombs across the foredeck and, happily, the one that landed next to the radio shack was a dud. L. Jerome got out; the next one might go off. He was, and is, an excellent guitar and banjo player, so he was always welcome. In October I found a house in Scarsdale, warmed it up properly, and started to live socially. Somewhere, I don't recall exactly where. Theodore Sturgeon, who had been running a D-7 'Dozer down in the Virgin Islands for a Seabee battalion, wrote the novelette "Daisy Etta," which is a sort of pun since it's the way the Islanders say D-7. John changed it to *Killdozer*, since puns in Latin-American Spanish aren't likely to be understood in the United States unless one pauses to explain why they're funny.

Among-them-present now-and-then was A. Bertram Chandler, who was first officer in the British Merchant Marine—the "Wavy-Navy." He used to turn up with a couple of rations of H. M. naval stores when his ship hit New York. On one such occasion, with L. Jerome on the banjo and Ted Sturgeon on the guitar, I was giving my bathroom baritone a go on "Abdul

Abulbul Ameer,” and at the end Chandler said, in his BBC accent, “I say! I’ve never heard *that* version!” The musicians started over again, and Jack Chandler came out with about the rawest, dirtiest version of anything I’d ever heard—and that’s the only way he’d ever heard the epic sung.

And so autumn went into winter with the social life going on fine, here and there and back and forth in a cheerful, closed, merry group that included Will Jenkins (Murray Leinster) now and then, and Isaac Asimov, infrequently.

By that same late autumn, the war in the Pacific had become a matter of time. The war effort hadn’t slowed down, indeed, it was going ahead as fast as it could, because slowing down when you’re ahead is what the hare did. But there were plans to take care of things when the shooting stopped, and one of these plans was to prepare for the occupation of Japan by setting up a school to train interim military governors. They set it up at Princeton.

Now, Lafayette Ronald Hubbard had been an adventurer and a soldier of fortune, and he was a skilled seaman, and one of the areas he knew very well was the Aleutian Islands. During the war, L. Ron Hubbard skippered a number of small warcraft, destroyer escorts and landing craft, personnel or tank or what-have-you, through the Aleuts, and had gone through some shooting scrapes, since the Aleuts lie uncomfortably close to the enemy’s home territory and the enemy had, at one time, invested the outland island Attu.

And Ron, like L. Jerome, had one too close. Unlike L. Jerome, the one too close put L. Ron in the hospital, where, the cheerful fellows they were, they suggested that he might be wise to study Braille.

Since L. Ron had signed up for the duration, he was sent to the military government school at Princeton, instead of giving him another ship.

In the background, but seldom part of the bunch, was Fletcher Pratt, far too busy writing about naval warfare, building as his hobby the scale models of whatever warships he could get pictures of plans of. (This collection was purchased and donated to the U. S. Navy by Lt. Commander Marsden Perry after Fletcher died.) Unhappily missing by now was Willy Ley, whom I’d met when John and Willy (during my Cincinnati, Washington, New York trips) had been interviewing Dr. Felix Ehrenhaft, whose theories on magnetism might have caught John’s hobby-riding habit if they had a chance for success. Willy was missing because Willy, wife, and family had gone to Washington because the helicopter had become popular, and one

of the finest ways to save horsepower and give the chopper a whopping take-off without that counter-rotation prop in back would be to put a small liquid-fuel rocket on the end of each blade and let the chopper rotate itself.

So in the summer, autumn, and winter of 1944, my whole attitude changed. I'd been reading the stuff written by the names I met in that period, but now here I was, both socially and professionally accepted by them.

This had its backlash, and I must recount another event that I shall spend as little time upon as I can. I'd been raised in my own home on the South Side of Chicago that my mother held together by hook and by crook until she died in 1930 after a long illness. From 1930 to 1935 I lived in rooming houses, and I hated them but that was what I had. One of the pleasures of life was to sit on the front steps in the evening. When things began to turn toward the better in 1935, I mentioned the fact that my job was way the hell up on the far West Side and that it was silly of me A) to live on the South Side with an hour elevated ride, that B) I was sick and tired of living in a four-by-six room with one window looking out on an air shaft, and C) I was tired of living alone and if I found someone who agreed with A, felt the same way as I did about B, I'd suggest C and we'd cancel all three of them. No, I wasn't introduced to her. We'd met all along, before. But, there being a distinction, I now *met* my first wife.

Skipping the middle, it was not until the social fraternization began, with weekend party after weekend party, that it came unglued. For there are two reasons for wanting a home and a place. One is a home with the latchstring out, the windows open, and coffee, tea, or 100 proof to the visitor who enters. The other is a castle with the drawbridge raised, the portcullis closed, and boiling transformer oil to pour down upon he who has the temerity to rap upon the closed and barred door.

Selah!

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To clear the air, let me tell you a tale. It was in the rolling-around period toward the last of the war, and Henry Kuttner and C. L. Moore were beginning to think about going back to Los Angeles (Their home had been rented, which is why they stayed in Hastings-on-Hudson for the duration). L. Jerome, Theodore the Sturgeon, and some of the rest had been invited to a sort of pre-call house-cooling party for Saturday. Hank suggested that if I weren't busy, why not come out Friday, because he wanted to talk about something that would be better off without a noisy gang.

The subject wasn't much. He'd heard about fire lanes cut in the woods to fight forest fires, and he knew that I'd been raised in the Illinois, Wisconsin, Michigan, Minnesota areas, and— although no one will believe me today—I was once a Boy Scout. Hank wanted to know how-come they sometimes used dynamite, and I explained that fire lanes take a long time to cut.

Okay, Friday night passed quietly.

I now admit that I am one of those wholly unbearable people who waken at the first sign of sunshine and, as Fred Pohl once said, "At six o'clock in the morning, he's making home-fried potatoes and cooking four pounds of bacon..." and so I awoke and couldn't find the Kuttners' four pounds of bacon, nor the potatoes, and while I was wondering where the coffee, tea, et cetera was, two things took place. Hank came feeling his way downstairs, and, as he located the coffee, the typewriter upstairs began to make noises. One half hour, maybe three-quarters, we'd had our morning coffee, and Hank said something about going upstairs and getting dressed. He disappeared.

They didn't pass each other on the stairs, but Catherine turned up very shortly afterward, reconstructed the coffee, which Hank and I had finished, and I had my second wake-up with her—with the typewriter going on at the same rate upstairs. Once more, say three-quarters of an hour passed, and Catherine said something about getting into day clothes, and disappeared. Hank came down, dressed, and said something cheerful about breakfast—with the typewriter going on as usual. This went on. They worked at it in shifts, in relays, continuously, until about two o'clock that Saturday afternoon, when the one downstairs did not go upstairs when the one upstairs came down. This time the typing stopped.

They had been writing the novelette "Vintage Season" which was about time travelers who came back to witness some awful epidemic of some sort of plague that was so contagious that the city authorities dynamited plague lanes.

I learned later, from John, that they always worked that way, and worked so well at it that the only way he could tell who had written what was if the word "gray" came in the story. One of them habitually spelled it "grey."

L. Jerome and Ted Sturgeon turned up late in the afternoon, and once more we had a merry weekend.

It was Sunday afternoon when I was asked why I didn't write more, and I told them that the job of preparing technical manuals took some of the steam out of me, and besides, the day was too damned short. That started a discussion with Hank Kuttner, Ted Sturgeon, and me re-doing Life. We were to have a thirty-hour day, nine days a week, and so on and on until we'd run out of alterations. At which point, L. Jerome put the guitar down with the remark that "If we were to wake up tomorrow morning with eight fingers on each hand, by noontime some guy would have invented a twelve-string guitar."

It was also about the period when it was considered possible that we could exist on Venus and Mars, although it was generally accepted that native extraterrestrial life did not exist in this solar system, and one began to wonder what, if any, good are the other planets.

I got to pondering, and tried the following under the title "The Plumber's Helper," but it didn't go at the time. Later, in the period after the war, I tried it again, under a new title and with new characters. This time it worked, but it goes here now because it was in this period that the idea came to me that, if one tries, one can find a use for anything.

As Don Channing said, "The navel is a good place to hold the salt when eating celery in bed."

The Planet Mender By George O. Smith

I

She looked at Phil Watson thoughtfully. "You're the most restless man I've ever met," she told him.

Phil smiled sourly. "Sorry," he said. "I'm—just always looking, I guess." He tried to straighten up his smile because he wanted this date to run off happily. The attempt only pointed out his unease.

"What are you looking for?" asked Louise.

“Damned if I know,” he said. He contemplated her thoughtfully. She was a good looking woman of about twenty-three or thereabouts, brunette, slender, high-breasted, and long-legged. Pretty, but no startling beauty, he decided. Brains she must have, and Phil’s interest lifted for a moment as he wondered how she used them. She was a schoolteacher. It had been a long time since Phil Watson had been in a position to observe how a schoolteacher used her brains, and then he had not been intellectually equipped to study the process. He smiled wistfully, then, and started to say, “Everything seems so staid and uneventful. I—”

The music from the radio came to a dreamy halt, and the voice of the announcer said, “This is the Mars-Week program, brought to you by the Mars Chamber of Commerce. Remember to stay tuned to this station; be sure that you don’t miss the announcement of the century! Some time this week—within the next few days—the one billionth space traveler will set foot on Mars! So be ready for the Mars-wide celebration. Be ready to greet the one billionth person! Who will it be? Who will be the—”

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Phil walked over and turned the radio off. “That’s partly what I mean, I think,” he said, and then joined Louise Hannon’s rueful laugh. He added. “That’s no less added than I am.”

“I know,” she said.

“I wonder if you do,” he murmured. “Look, Louise. Here we sit in a city on Mars waiting for the one billionth visitor. It should be wonderful. It ought to be a breathless moment—something soul-stirring. So what do we have? A radio program doing its best to whip up some enthusiasm for something that would have made people bug-eyed a hundred years ago.”

Louise nodded solemnly. “A hundred years ago it was the first man on Mars. That was exciting. But you can’t go on and on in a breathless state forever. What do you want?”

“A little excitement. Everything’s so smooth and well-controlled. Mars was an adventurous place back then. Now? Now we have a planet full of bank clerks and farmers and machinists and hot water and gin mills and apartments and—”

“You’d prefer it if we had to hack our lives out of the planet’s crust, fighting the cold nights and the thin air and the arid red desert?”

Phil shook his head. "That's where my seeking falls flat on its face. I like my comforts, too... but there ought to be something left to chance."

Louise laughed. "In other words you want to hang your cake on the wall after your dessert?"

"Maybe. Maybe."

Louise went to the French doors and looked out on the Martian landscape. It was dark. Hazy-dark, with just enough luminosity at the horizon to show the flatness of the land. She took a deep breath and lifted her arms to the night air. Her gesture was unconsciously alluring, and Phil went over to stand beside her. He put an arm around the slenderness of her waist and turned her to face him. Her arms came down, her hands squeezed his shoulders gently; but she held herself at arms' length from him, leaning back and looking solemnly into his eyes.

"You're seeking romance and adventure," she told him. "And I represent—which?"

Phil felt some of the wind go out of his sails. Lamely, he said, "Which will you have?"

She leaned forward suddenly and pecked him chastely on the lips. "A little romance first—and then the adventure of motherhood," she told him. "Is that enough?"

These were not exactly the plans that Phil had in mind, but he could not tell her so. Besides, she knew darned well already.

His mental fumbblings for something to say were interrupted by a slight flickering in the sky, followed by a muttering of thunder. A few pelting drops of rain—large, wet ones—struck Phil on the head and splashed from Louise's cheeks.

Startled, they turned out of the half embrace and peered into the night.

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The sky was split by a jagged streak of blue-white and the roll of thunder crescendoed to an artillery-crashing. Phil drew Louise back into the shelter of the door frame as the rain increased to a steady downpour.

“Talk about your careful controls and your planning,” said Louise uncertainly.

“This can happen,” he said matter-of-factly. “So one of the circuits went out. Chances are that it went out an hour ago and is now repaired, but the time lag let this catch up with us only now. If it were bad they’d have let us know. Everything’s under con—”

The lightning and the resulting crash came simultaneously, and the heavens opened up. Water lashed down at them in sheets, driven by the wind. Startled, they retreated into the living room, and the rain followed them, soaking the rug and the floor, and driving all the way across the apartment to fleck the far wall with darkly wet blotches that tried to run down but soaked into the plaster before the wetness could reach the floor. There was a banshee howl as the wind changed direction; driving rain lashed in through the back windows and slammed the French doors shut. Panes of glass shattered, and fell on the tiny balcony outside. Then the wind whipped around again, and slashed rain in through the open panes before it banged the doors inward and against the wall, finishing the job of ruining them completely.

Water churned along the baseboard molding like a small flood. The wind whipped a picture from the wall, and hurled it against the floor. The shade blew from a floorlamp, and mere was the warning sizzle from the wall plug, enough to call their attention that way in time to see blue-white smoke issue from the socket before the lamp went out.

“It’s all right—the fuse blew—” said Phil, groping in the semidark. The back of the apartment still had light; the place was on two fused circuits.

They went into the kitchen by the roundabout way, to close whatever windows there were; they sat in the kitchen and eyed the water running on the linoleum.

“This is to be expected?” asked Louise in a cynical tone.

“Something must have happened. I’d better—”

The wind howled again, cutting him off. They went to the window and looked out. Between the lashings of rain that completely obscured the glass in a running sheet of water, the landscape was flashed on and off in the lightning. In its flicker they could see the red mud leaping and churning as the cloudburst whipped down.

“You can’t go out in this,” said Louise.

“They’ll be needing me.”

“But you can’t—”

Phil rubbed his damp scalp unhappily. “Open roadster,” he gritted. “Damn it!”

Louise laughed. “Funny,” she said. “Screamingly funny.”

“What’s so damned funny?” he demanded.

“The gentleman comes a-wooing. Nothing could better fit the gentleman’s plans than to be entrapped with the lady of his desire so that she, hard-hearted as she might be, would not suggest that he leave. But the gentleman happens to be big cheese in Weather Control, and in the case of emergency he must forego pleasure for business, no matter if he gets drowned for it!”

Phil grunted. That just about pinned it down pat. “Wouldn’t do me much good to stay,” he grumbled. “Atop it all, every darned bed in the joint is soaked to the springs.”

He left her and went to the telephone. He tried it, but even Louise could hear the constant rattle of static that chattered out of the earpiece. The telephone was useless.

The lights flickered a bit, went dim, then came on again at about half-brilliance, wavering slightly. The semidarkness and the wail of the wind and the constant roar of the rain made Phil’s nerves grate. The helplessness of his position added to his state of nerves; he knew that he had no chance to get to the weather control station some twenty miles away in his open roadster.

Louise was visibly jittering. Phil poured a stiff jolt from the bottle on the sink and put it in her hand. Louise tossed it down without wincing; it seemed to iron her out a bit. Phil tried a jolt himself, but it was raw and bitter instead of the smooth stuff he knew it to be. It did not help him at all.

With a false feeling of confidence, Phil smoothed her damp hair and patted her shoulder. He could feel the damp warmth under the thin dress, and he dimly realized that this sort of thing should have aroused him, but it

did not and he knew why. "Take it easy, Louise," he said with a wry smile. "We've got a bunch of good bright eggs at the station and they'll have this ironed out in no time."

She shivered.

Phil pushed her gently in the direction of the bedroom. "Get into some dry clothing."

Rain sprayed in through the ruined French doors and filled the apartment with mist, and Phil suddenly followed Louise into the bedroom. She was toweling her bare back as he came in; she looked around, wonderment on her face. Phil grabbed a light blanket from her bed and went out with it. It was only after he had the blanket nailed to the frame of the French door that he realized that she had been completely undressed.

The blanket did not cut the deluge completely, but it helped.

Louise came out in a skirt and blouse, with a towel wrapped around her head. She handed Phil another towel, a huge one. He nodded.

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The rain had not decreased; the wind was still howling, and the lights were still flickering. Phil sat on the kitchen table wrapped in the huge towel while Louise tested the clothing she was baking dry in the oven.

"Well done or rare?" she asked him.

"Well done, please."

"I think you can try them now," she said. She left the kitchen while he donned his shapeless trousers and rumpled shirt. He called her, and she came back with the towel gone from her head, fluffing out her hair with her hands. "Dry?"

"Dry—but for how long?" he mumbled. "I've got to get—"

"You'll wait here until you can get out without being drowned. Pour me another, will you?"

Phil did, and he poured himself another, too. It went down more smoothly than the previous drink, but it still lacked something.

Hours passed; the rain got worse; and Phil could no longer comfort himself with his oft-repeated statement that the boys in the station would have it ironed out in jig time. Something was completely wrong with this picture. Man and man's science had brought water to Mars; but it was never planned, never intended, never computed to deliver water anywhere in quantities approaching this deluge. It was more than blown fuses or a dead vacuum tube or even a ruined servo-amplifier. This was a major catastrophe, and Phil Watson was trapped away from the scene of activities.

And then eventually the doorbell rang, and they went to answer it. It was Tommy Regan who came in like a ghost, cowering beneath a white rubber poncho that swirled around him like a wet tent with the tentpoles removed. He stumbled into the living room and threw the fore edge of the rubber sheet back and over, flinging a spray of water.

"God!" he gritted. "Phil—come on!"

"How'd y' get here?"

"Covered jeep-wagon. I— Come on!" Tommy Regan tossed a small folded package at Phil and it opened partly on its flight. It was another poncho. Or, more properly, it was a rubber sheet from the station's dispensary. "The process is involved but interesting," said Regan grimly. "You lift the front and aim, then you plunge it blind until you have to take aim again. Ready?"

"Not without me!" wailed Louise.

"You'll drown," said Regan flatly.

"Wait—" Louise went into the bathroom, and came out wrapped in the shower curtain. "Let's go," she said.

"But—"

She shook her head. "I'm frightened bright purple," she said shakily. "But I'm with a couple of people who might be able to help; I'm not going to stay in this mess of an apartment alone while they go out to stop this thing. I'm going along."

"It's rough," said Regan.

"Staying here alone would be rougher."

"But—"

"Come on, then," Phil broke in. "There's been too much time wasted already."

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They stood downstairs in the lobby while Regan explained. "The crate's out there," he said, pointing through the glass doors. "You can't see it, but it's there. You've got to cover your face and plunge. I'll go first. I'll open the door and get in. Miss Hannon comes second, and I'll swing the door open for her. You come last, Phil. Each of you count twenty seconds so I'll be able to time your arrivals. Got it?"

They nodded, and Tommy Regan left.

Twenty seconds later, Phil held the lobby door for Louise; she flopped the edge of the shower curtain over her face, put her head down, and disappeared into the wall of downpour. And twenty seconds later Phil covered his own head and went out into it himself.

It was like trying to run in a swimming pool; it was like trying to make time through a haymow. The rain hammered at his head through the rubber sheet. The air he took in was heavy with water, and the wind whipped the edge of the sheet around his legs, and the swirling sheet carried wetness up into his face. Water tore at his ankles and made him stumble, and the lashing sheet turned him this way and that so that he lost his direction.

He lifted the fore edge for a brief second.

The car was there before him, seen briefly before the water pasted his eyes closed and the wind beat down the uplifted edge of his poncho. He lurched forward and stumbled into the car. Louise slammed the door shut as he fell into the seat.

Regan drove slowly, peering through the rain-pelted windshield. The wipers cut brief arches on the glass and left a bit of transparency just behind them through which the eye could see if it were fast enough. There was, of course, no traffic to contend with, which was a good thing, because Regan swerved from one side of the road to the other. It was only about

twenty miles from Louise's apartment to the weather control station, but they took a full two hours to fumble their way along the water-strewn road.

Going in was no problem. The station was equipped with a garage. They were inside with the big door closed against the rain before they opened the door of the car.

Upstairs in the station was the mess.

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The acrid smell of burned-out electrical components floated in the air like cigar smoke in a night club. Hogarth was wrist-deep in a panel-assembly, Forsyth was changing relays as fast as he could unsolder and replace them, Jones was checking blackish-looking cables with an ohmmeter, Robinson was making a run-down on the terminal strips, Merrivale was probing deep into the guts of a meter with a slender pair of watchmaker's forceps, and Wadsworth was chopping the ruined leads from transformers and dropping the things on the floor behind him. Hansen, the janitor, was stolidly pulling burned-out vacuum tubes from their sockets and replacing them from the large sack he had slung over his shoulder. Two of the station's stenographers were there; elderly Miss Morgan, whose only familiarity with machinery was her knowledge of how to run a typewriter, was trekking back and forth from the stockroom to the operations department bringing replacement parts; and Miss Larrabee, the station's glamor-girl, whose highest asset was her ability to take dictation and keep her stocking seams straight at the same time, was delivering pliers, cutters, screwdrivers, and wrenches from one man to the other as they were needed.

"What happened?" demanded Phil.

Regan threw out his hands. "Who knows?" he said plaintively. "All at once everything went to hell. There was a sizzle and then a f-f-f-t! and the whole goddam shooting match went to hell in a five-gallon bucket. Overload, I think—"

"Tried the radio?" said Phil.

"I tried the telephone. No dice."

"Radio's worse," Regan broke in. "It's—"

"Mercury," said Phil flatly. "Something's wrong there."

Regan said, "But how—"

Phil looked around the station. "Someone's got to go. You've got the thing under control as best you can—I'll hit space."

"Okay. But tell 'em to shut the damned water off!"

There was a flurry and a fuss of voices from the stairway leading from the garage. A group of men in rather soggy business suits came in. They were—literally—as mad as wet hens.

The foremost of them looked the situation over with the baffled eyes of the layman, and began to sputter. "Who's in charge here?"

"I am," said Phil.

High blood pressure became apparent. "What on Mars do you thing you're *doing*?"

"We've had a bit of trouble."

"You've had—" the gentleman choked up. His face purpled, and his throat bulged over the edge of his damp collar.

Phil eyed the group with just a trace of cynical amusement. "As soon as we can find my magician's wand, which is somewhere in the toolroom, we'll have this fixed. In the meantime we're doing all we can with the standard, old-fashioned things like long-nose pliers and side-cutters."

"Who are you?"

"I'm Phillip Watson. Who are you?"

"I'm John Longacre. I'm chairman of the Senatorial Committee on Internal Affairs, and I'll have you know—"

"I'm glad to meet you."

"You're in charge here?" demanded Longacre sharply.

"Yes."

"I should think that an older, more responsible man would be in

charge.”

“I believe that I am responsible enough. I’ve been told so by Solar Weather Control. They didn’t pick me for the shape of my head or the size of my ears. I’m also capable of doing everything that can be done.”

“Are you?” demanded Longacre sourly. “Why aren’t you helping? Why isn’t this young woman helping?”

“I’m not helping because I’m talking to you, and this young lady is not helping because before any work could be assigned to her you gentlemen entered and interrupted the proceedings.”

Longacre harrumphed, took a deep breath, and tried to get hold of his blood pressure. “There is no sense in bandying any more words,” he said. “I am empowered to instruct you to cause an end to this debacle.”

“Thank you for the privilege. I assure you that we do not care for it any more than you do.”

One of the other gentlemen behind Longacre stepped up while Longacre was regaining his breath. “I’m Senator Forbes. Do you realize that billions of dollars’ worth of damage has been done already?”

“Of course—”

“You must put a stop to it.”

“Look,” said Phil Watson gently. “Please be assured that we are not sitting here with folded hands hoping it will go away.”

Senator Longacre regained his breath, and used it to say, “Whether or not your attitude is sufficiently acute will be decided later. At the present moment I carry authorization from the Martian Senate to deliver unto you the right to do whatever is necessary to cause the abatement of this catastrophe.”

“Senator, we’re wasting time. I assure you that if I needed anything that the planet Mars has to offer I would not wait for a senatorial authority to demand it. You’re a little late with your offer.”

“This is a deplorable situation,” said Senator Forbes. “Some time this week we will have the arrival of the billionth space traveler to Mars—and what will he find?”

Phil snorted. “Nine hundred and ninety-nine million, nine hundred and ninety-nine thousand a few odd hundred persons have put their good right foot on Mars and found the place in about every stage of development from hell to breakfast. Your billionth visitor doesn’t faze me.”

“But the Mars-wide celebration—”

“How about the Mars-wide deluge?”

“This must be stopped!” roared Senator Forbes.

Longacre added, “You have every authority. Until this terrible thing has been culminated to the satisfaction of—”

“Why not forget the high-flown language, Senator?”

“We’ll see about this attitude of yours, young man!”

“I’ve got every authority?”

“You have. Use it!”

“Miss Hannon, Mister Regan: you have heard this. I have authority to use whatever measures I deem necessary to cause the satisfactory conclusion of this cosmic catastrophe. So, gentlemen, my first order under this authority is to impress you as workmen.”

“Impress us?” roared Senator Longacre.

“Impress you. We have one hundred and sixteen thousand vacuum tubes, all of which must be replaced. There are ten of you, which makes eleven thousand six hundred tubes each. I think you may be able to average about five hundred an hour after you get some practice, which will take you approximately—”

“We are issuing you an ultimatum, Mister Watson. We—”

“The title is Doctor Watson, Senator, and no relation to the friend of the brilliant Sherlock Holmes. As to your ultimatum, no one can ultimate to sheer arithmetic, nor especially logical mathematics. One man may dig a hole in ten hours, but that does not mean that thirty-six thousand men can dig the same hole in one second. So I am impressing you as workmen. If you have not completed this job within the time limit of your ultimatum, you

have only yourselves to blame. Hansen!"

"Yes, boss."

"You are in charge of this group. See that they get these tubes replaced in the shortest possible time."

"I get it, boss."

Senator Forbes spluttered. "We'll answer to no underling—"

"You'll have to."

* * * *

Senator Longacre eyed Phil sourly. "And what are you going to be doing?"

"I'll tell you. When there's trouble, the proper place to stop it is at the source. I am going to Mercury to stop the flow of water!"

"Mercury?"

Phil said patiently, "I'll take another minute and a half to explain. We get water from Mercury via matter transmitter. The way a matter transmitter works is too involved and complicated for any simple explanation, but the gist of the argument is that the damned things have to deliver what's put into them or violate the law of conservation of energy. Since the water is stuffed into the transmitter on Mercury, the only way to stop all this wetness is to go there and stop the input, see?"

"Haven't you got men on Mercury?"

"Darned right, and a darned good crew, too. So something must be fouled up, or they'd have shut it off themselves. So—work hard, gentlemen!"

"Wait. If the transmitter is on Mercury what's all this equipment we've got to fix?"

"Briefly, this is the hygrometric integrating averager and primary servomechanistic feedback control originating device."

"Huh?"

“You asked for it. I’ll explain it after we get dried out.” Phil snorted derisively. “We mustn’t let our billionth visitor get his dainty feet damp, must we?”

He turned on his heel and left the senatorial group spluttering.

At the door he was halted by a cry from Senator Longacre. “But, Doctor Watson, this man is the janitor of this station!”

Phil Watson turned with a laugh. “That’s okay. I consider all of you gentlemen unskilled labor.”

He got into the car and closed the door; it was opened again almost immediately and Louise got in. “Maybe I can help?”

“Maybe. But—”

“But what?” she asked.

He shook his head. “I’d like the company,” he said. “Normally there might be a fuss about taking unauthorized persons on a jaunt like this, but I think it will probably be overlooked because this is an emergency. And you might be able to help.”

“I hope so,” she said soberly.

* * * *



The trek was not as bad as the original run from the apartment to the station. The station’s fast little spaceship stood on the field a couple of hundred yards away, and the jeep-wagon made it in a matter of a minute or so through the blinding rain. The rough part was getting the spacelock open; it did not flip open, but moved ponderously. Phil was completely wet even under his poncho by the time the door swung wide; Louise suffered less because she waited in the car until she could run for it.

And then, for the first time in hours, the roar of the rain and the rumble of the thunder was muted. The dome of the ship was a blind-running river, but Phil did not care. All he was going was straight up, and there was nothing flying that night.

He touched the console buttons, and they rose through the blackness and the rain.

“What was all that string of long words you used?” Louise asked after a moment.

“Doubletalk. They wouldn’t have understood the real name, either, so why bother?”

“But if the matter transmitter is on Mercury, what is your station?”

“Primary control,” he said. “Simply and easily, it measures the amount of surface water on Mars, and sends out signals accordingly to control the input. You see, Louise, Mars is as dry as a sponge. This guff about drying sea-bottoms and so on is so much food for the birds. Mars never had enough water to begin with. So the boys computed how much water Mars would soak up, and came up with a rather staggering figure. It couldn’t possibly be fed in all at once. It’s got to go in very, very slowly, otherwise we have a recurrence of this evening’s floods. Furthermore, the additional mass of the added water is changing the Martian year and the Martian day ever so slightly, because the angular momentum of the water is not exactly equal to the factor of Mars.”

Phil stretched in his pilot’s chair as Sol burst out from behind Mars. He watched the course integrator trace its line around the planet and towards Mercury. Satisfied, Phil relaxed again and went on:

“To top this all off—there are some places where the water soaks in faster than others, so we have to make allowances. All over Mars there are hygrometers. Some are on the surface, some are buried deep. From each and every one comes information about the water seepage and how it progresses. These signals are all combined, added up, divided down, multiplied by a bugger-factor, and compared to readings of yesterday and the day before so that an all-comprehensive sigma curve can be drawn. The result of all these shenanigans is that the control station sends forth a signal to Mercury, who then delivers water according to the need.”

“But where does the water come out of?”

“The receiving end of the matter transmitter is on Phobos. Phobos points one face to Mars all the time, you know, so the water sprays out of the face of the receiving plane right at Mars, like a gigantic water sprinkler. It falleth like a gentle rain from heaven upon that place beneath in a finely divided mist... Ah!”

“Ah!—what?”

“We’re on course at last. Now we make feet. This is going to darned near burn out the drivers, and the power-pile is going to diminish like the proverbial snowball in hell:” Phil shoved a lever all the way home, and the ship surged beneath them. “I’ve always wanted the opportunity to try a spacecraft on emergency drive. It’s tough that we have to have a catastrophe to make it possible, but unless there’s good reason for using the emergency power, it’s verboten. Costs too much per hour, gets the guy involved in a board of investigation, where he had better be darned well prepared to give good and sufficient reason for depleting a pile. M’lady, can you brew coffee?”

“That I can.”

“Then go brew. We make Mercury in two hours!”

* * * *

The place where the water came from had never been, nor would it ever be, a vacationland. The best that man had been able to produce in the way of redesigning the Solar System had not gone far towards humanizing the cosmic hell that was the planet Mercury. Maybe the complete humanization of the planet would never take place simply because Mercury might better remain the way it was—with certain minor improvements. Mercury was an economically sound proposition; there is nothing in human history that suggests that an economically sound proposition has to be even remotely acceptable from the comfort standpoint. Mercury had its important imports and its important exports, and it was necessary. Perhaps a necessary evil, but there it was.

Someone, writing in a sensational vein, had once compared the Solar System to a large apartment, and had called Mercury the boiler room.

He had not been too far off the trolley. Mars, for one, is not a warm planet. Mercury is. So the water that went to Mars carried heat. The result-- Mercury is the boiler room for the Solar System. Thirty, end of statement.

Above the landing spaceship, Sol hung in the sky like an incandescent washtub. Below them was a roiling floor of mist, white mist that made the boiler room of the Solar System look as though the main steam pipe had sprung a rather gaudy leak.

It was into this misty maelstrom that Phil Watson dropped his ship, flying by the seat of his pants because the radio beacon was non-functional. There was no beacon, and probably for the same reason that Mars was now having a first-class cloudburst. Something had more than blown a fuse.

The cloud layer was not as thick as it had seemed from above. The sun still shone through, redly, fiendishly hot. Below, the cloud layer parted and thinned, until finally Phil and Louise could look down and see the source of the water that was being delivered to Mars.

“Down there should be the terminal of the Mercury Canal,” said Phil.

Instead was a roiling lake which filled the rock-rimmed valley and spilled over the edges into the valley next, where the water boiled away against the hot rocks and produced the clouds of vapor.

The Mercury Canal was not properly a canal; a real canal is a channel cut out of the face of a planet by man. Nor was the Mercury Canal a natural waterway, for if Mercury had ever had any water, it had boiled away and gone elsewhere sometime within a few minutes after the first day of creation. Instead, the Mercury Canal meandered along what might have been a natural waterway, following a couple of thousand miles of normal declivities in the rocky surface of Mercury. It collected in broad pools here and there, and dropped magnificently in a couple of waterfalls, spreading out to collect the heat from Sol as it flowed from Inlet to Outlet.

Here at Outlet Station it should have been a pleasant sight.

The rim of the canal had been cooled by the water, just as the water had been heated by the planet and the sun. So the combination of water and sun and the general hardness of life in general had produced a rather lush rain-forest growth along this end of the Mercury Canal. None of this was visible now. The Outlet Station was immersed completely, too, in the vast lake that churned and tossed.

The tropical sea in a typhoon, or the North Atlantic lashing at the rock-bound coast of Maine in a Nor'easter, or the Mississippi on a rampage were nearly as violent as this lake below.

“What,” said Phil tonelessly, “do we do now?”

Louise pointed over to one side. There were men and a line of parked trucks which looked very puny against the elemental violence. Phil

slid the spaceship sideways and landed on the ridge near them.

* * * *

Tom Britton came running with the rest of his crew behind him.

“Phil!” cried Britton. “God—”

Britton looked exhausted. The rest of them were all the same; weariness and fear were in every face, in every step.

“What happened,” he asked gently.

They all began to talk at once. “Flood—control circuits shot to hell—overload—water spilled over the ridge—cool water on hot rock—earthquake—lost the spacecraft—station covered— can’t get to it unless—”

Phil held up a hand. “I get it. Okay, fellows. Let’s—”

An ear-splitting crash came from more than a mile away along the ridge. They turned to look, fear in every face.

The water had risen to the level of the ridge; through a little rill, an uncertain pseudopodium of water had trickled, wavering back and forth with the rise and fall of the waves, steaming briskly as it advanced onto the uncooled rock, reinforced as it was thrust back by the rising water behind it. It rose until it crossed the ridge and started to spill down the decline on the far side, hissing and steaming as it poured over.

Then the meeting of three cross-chop waves at the rill sent a twenty-foot curler over the ridge into the valley beyond. The water plunged down the decline in a torrent, and there was the shrill-pitched chatter of tearing glass as the ridge divided and opened to let the waters pour from the Mercury Canal into the hot valley beyond. Ton after ton of water poured through the crevasse, and the sound on the hot rock was like the feeling of walking on sugar. The fault line spread, and the next table of rock slowly uptilted and turned over, sinking like a raft capsizing. It slid into a glare of magma, with the water behind it, and the resulting explosion hurled rock and lava into the sky with a planet-shattering roar.

“Krakatoa,” muttered Phil, awed.

The blackness billowed upward in a mighty column.

Their own ridge trembled.

“Inside” snapped Phil. They made it in a scramble, and the spaceship rose just as the ridge they left split into three uncertain blocks that gutted steam and incandescent gas after them.

“We’ve got to stop it,” said Phil.

They looked down at the mud-churning water and nodded. Tom Britton tried to speak, but only a croak came from his dry throat.

“We’ll go in,” said Phil flatly.

“In there?” cried Louise.

“No other way. Cross your fingers and deliver us a prayer. Strap down, fellows. This is going to be rough!”

* * * *

With a flip of his hand on the lever, Phil dropped the spaceship into the angry water. The torrent caught the hull and slapped it back and forth, turned it over, and rolled it sidewise. Phil fought the levers and righted his ship, only to lose control again as the flood changed in flow and skirled around like the maelstrom that it was.

Far down at the bottom of that lake there was an outlet; the system was no more than the washbowl of a titan, and the Outlet Station was its drain.

“Careful,” said Britton. “You don’t want to follow this flow into the transmitter-plane.”

“I won’t. I have no intention of returning to Mars through this pipe, and raining down out of the sky in a hodgepodge of my component molecules and junk aluminum and iron and stuff, all neatly divided molecularly.”

“Ain’t funny,” grunted Britton.

“I wish we could see,” complained Louise. The murky water pressed against the dome of the ship; it was a terrifying thing to see.

“We’ve got radar,” grunted Phil. “But sonar gear is something that

spacecraft don't pack, for obvious reasons. And radar is no good under water. I think—yeow!”

A girder had probed for their glass dome; a large jagged thing as wide as a desk-top, which would have poked through the dome with the ease of a needle piercing a toy balloon. The result would have been as fast and as deadly.

From below there came a shout: “Phil—up! Up, goddammit! The plane—”

Watson jockeyed the lever; then he moved the ship to one side, slowly. And out of the murk there appeared the edge of a building of concrete.

“We were low,” said Phil in a dry-throated voice.

Terrifyingly close below them was a broad plane of force that shone like a perfect mirror, if seen in the daylight. Above this plane, now, was a madness of angry water falling into it and falling out of a similar plane laid face-flat on Phobos. It was the down-drain of this monstrous washbowl.

Below the plane was a room, cylindrical and dry. The plane filled the metal-lined cylinder from wall to wall, and there was no pressure because the plane did not attempt to hold the water but let it pass through, frictionless and free. In this cylindrical room, protected from the water by the matter-transmitting plane, was the equipment that generated the twin planes that delivered this torrent of water to Mars.

It must be shut off.

First they had to find the pathway to that room below the plane.

It was somewhere up on the top of the building, a tall castlement rising like a turret above the building itself. The word “building” is not essentially correct, for Outlet Station was like no other building in the Solar System. It was more like a well-proportioned and nicely machined lunar crater perhaps a mile in diameter. Or maybe a squat angel's-food cake, much flatter and much wider across the hollow center. Normally, the water from the Mercury Canal flowed across the top of this “building” and fell in a Niagara-dwarfing circle upon the plane of the matter transmitter to be hurled upon Mars as a mist from the sky, while the entrance to the underwater equipment rose above the flowing waters like a tall, squat chimney.

They found it now, covered completely by the rise of the water.

“Ram it,” said Britton. “Ram the door and let the water in—it’ll ruin the damned gear below.”

“Not if we can save it,” said Phil.

“But how?”

“I can get down there through the watertight doors, and turn the transmitter off.”

“You turn it off and that water will drop on you and—”

“I’ll turn it low.”

“Ram it and bust the watertights,” snarled Britton.

“Let me try it my way. Can you hang on to this crate? Keep it against this casement?”

“I can try.”

“You can’t just try. You’ve got to do it, Tom.”

Louise looked frightened. “You’re going out into this horror?”

“I’ve got to.”

“But—”

“Just have a couple of prayers on tap, snooky. I’ll be back.”

“You’re sure?”

He nodded. “We got a date to finish.”

He left. He did not hear Louise complain to Britton that “a date” was all she represented to Phil Watson.

* * * *

Down below, Phil donned a spacesuit. Hugson stood by, alternately shaking his head and suggesting that Phil bust the watertights and let the whole damned thing go down the drain. Phil went on stolidly.

He blew up the spacesuit until he was spread-eagled in the spacelock. Hugson closed the inner door and Phil was alone.

Gingerly, Phil opened the scuttlebutt, and the water lanced in. It drove across the room and splattered against the inner wall and broke into a dashing spray. It ran down the airlock into a puddle on the floor which rose until the scuttlebutt was covered. The water churned in a furrow as Phil opened the valve wider. The room filled until a small space of air was left at the top, and equilibrium of pressure had been reached.

Hugson pressed the outer lock control, and the big door swung inward, sending little churning currents around its edge. Phil went outside.

The water tore at him, whipped him about, and he was thankful for the line that held him fast to the ship. He fumbled over the wall of the casement, found the watertight door, and opened it; he went inside and closed the outer door until the rushing flow of water was only a trickle.

Here Phil pondered a problem that he had not anticipated. Before he could enter the building, he must free himself of the safety-line, so that the outer watertight could be closed. But—if he did that, how could he return to the spaceship afterwards?

Chance—hope and chance.

He cut his line, and let the rushing water pull it out of the door. He closed the door, cutting himself from the outside world.

The pump began to force the water out of the lock, and, after a few moments, Phil went into the building.

He walked easily now. The weights he had left in the airlock, his space helmet he flipped back over his shoulder.

He knew the station well. Here was the safety circuit and here was the control circuit, and above his head, stretching out and away from the slight curve of the cylindrical wall, was the mirror perfection of the matter-transmitting plane. The trouble here was the local safety control. Too much pressure would destroy the plane, and sometimes the Mercury Canal

delivered a bit more than expected; Mars always got a mild rain when the safety circuit took the extra load.

This time it was a prolonged rainstorm, because something had gone hell, west, and crooked, and deluged the matter transmitter. The thing was only doing its job—like the gismo that the sorcerer's apprentice started and couldn't shut off.

Phil turned off the safety circuit. He shut the admittance of the transmitter down, too, almost to zero.

The mirror surface above his head bowed down until the center touched the concrete floor. The very center vanished into the stone, and Phil knew that the corresponding surface out on Phobos was bending in the opposite direction, and that there was a bit of a dusty rain falling on Phobos from the underside of the receiver plane as the Mercury transmitter plane pushed its way through the concrete.

And then Phil got out of there quick. The thing might give way, and if it did he had no intention of standing under God-knows-how-many tons of falling water. He had done his best, and the deluge upon Mars would cease. If he lost the station it was too bad, but he had tried. The next thing was to go to the source of this mess and see if he could fix things there in time to save the station.

* * * *

The torrent of water was slowed; its flow was stopped, but the churning would go on until the energy dissipated. Slowed; that was all. And the sucking flow of the rapids was gone.

But outside the watertight the spacecraft was so close—and so far away.

The safety line was whipped off somewhere, of course.

His magnetic shoes were as helpful on the concrete building as a pair of dancing pumps. He could not let go of the stanchion outside of the door; the water drew at him and pulled him back and forth. He grunted and swore, and the sound inside his helmet startled him.

He tried to step over to the spaceship when the water seemed quiet.

He was whipped from his feet and sent skirling tail over eyebrow.

His hands found the air-bottle valve and he blew up his spacesuit until it was spread-eagling him again. It was buoyant once he shucked the weights from his waistline.

He bobbed to the top and porpoised. The mad roil of the water was stilled; it was churning, of course, but the maelstrom had abated, and the lashing waves were less awesome. They were strong enough to turn Phil over and over, and to toss him under now and again. But he waited, feeling like a half-dozen dice in a shaker, safe in the cushion of the suit, until the spaceship emerged and found him.

“Inlet,” he said to Britton. “Or shall I take it?”

Britton stood out of the pilot’s chair and waved Phil down. “I’m beat,” he said.

“I gather. But look, Tom, before you come completely unglued, hang on while we figure out what happened.”

“Okay. That I can do.”

“Who’s taking the trick at the cutter?”

“Johnny Wilkes and Walter Farrow.”

“There’s trouble there.”

“Right.”

Louise shook her head. “Would you bring me up to date? I feel like an innocent bystander.”

Phil smiled briefly, and said, “Sorry. I’m so used to it that I think everybody knows it.” He waved a hand at the swollen Mercury Canal below them; they were sidling along above it, by now some distance from the terminal lake; the water here was still in a flood-rush. “Obviously, he said, “this water doesn’t originate on Mercury. The boys here take tricks of a month, running Station One. Something must have happened there. Then the whole thing blew up, and among the things that went into the drink was the spacecraft used here to take care of such jaunts. So now we’ve got to go out to Station One and clean up the mess. We’ll just stop at Inlet Station and pick up the rest of the crew and take us out there.”

“This is all very well,” she said a little dazedly. “But you haven’t told me where Station One is.”

“Oh—forgetting again. It’s at—”

“My God!” breathed Tom Britton.

They all looked—at Inlet Station.

* * * *

Inlet Station was another huge matter-transmitter plane, held vertically against the face of a cliff. In normal times, the face of the plane spewed forth a mist of molecularly divided water that collected into drops of ice that fell into the valley below it. Rock and rill were usually covered with a glint of melting ice that built up into fantastic shapes. It was always a rather breathtaking sight... but pale and drab compared to the sight that had awakened Tom Britton.

The face of the transmitter plane was obscured by the froth of vapor that poured forth. This was no gentle flow, but a torrential storm. And cutting the mirror from full view was a half-mile of sheer crystal fairyland. Pillars of crystal rose high, surmounted by monstrous, intricately fabricated six-sided figures. Twenty-foot snowflakes interlocked with one another, some of them whole, most of them partially complete and mingled with the ones beside them, lacery tangled into glittering domes and graceful rainbow-arches. Jagged and shapeless stalagmites of ice thrust upward through the graceful lace to heighten the delicacy by comparison, and through this Chantilly of ice flowed the frothy vapor that was settling on it to add to the structure.

The sunlight glinted from the billion points, melting them just enough for the next layer to stick, melting the base of the crystal palace so that the structure flowed in a constantly changing pattern.

It was the Crystal Palace of Santa Claus, or the Emerald City of the Land of Oz—

They watched, enraptured; perhaps entrapped by the awesome incongruity of such sheer beauty growing out of disaster.

Then Phil shook himself visibly. “Think we can make it to Inlet?”

Britton blinked and tore his eyes away. “How?”

“We might ram the ice until—”

“Until we get frozen in, too?”

“But—”

Britton pointed down. Dimly, through the faceted crystals of a tall ice structure could be seen the sullen glint of metal. The power that would drive a spacecraft across the Solar System nearly at the speed of light was not strong enough to break the grip of this icepack upon the hull. It was more probable that the ice was crushing the hull—

Somewhere down in that maze were the men who ran Inlet Station; and somewhere down in that crystal structure they would remain until the ice melted.

“That’s why ship number two didn’t go out either,” said Britton.

Phil nodded. He set his levers, and the vast ice field began to diminish until it was no more than a tiny glinting diamond on the white-hot face of Mercury. Then the spacecraft rounded Mercury, and the diamond was gone.

* * * *

V

Sol was dwindling below. The spacecraft was silent again, speeding through the inky black towards a mote in the sky ahead.

Phil stretched and said, “This is an odd situation.”

“Odd?” asked Louise.

“Very. Here we are, you and I, isolated in a spacecraft with about six hours of nothing to do. There have been reams of words written and miles of film exposed and kilowatts of juice burned purveying situations like this. Attractive woman and virile man entrapped together with nothing to do but consider each other objectively or subjectively.”

“Or personally.”

“Yah. So what do we have? Here we are in a situation where your virtue shouldn’t be worth a hoot—and the joint is loaded to the scuppers with dead-weary techs draped untastefully on everything that offers a flat surface. Not that we’d wake them up with any mild activity, but they’ve left us nothing to be active in.”

Tom Britton emitted a slight snore, turned over languorously and burrowed deeper in the divan.

“Damned chaperone,” growled Phil.

Louise laughed. “So,” she said, “since my virtue is safe from harm, let’s discuss something else.”

“Might as well. We’ll take up the matter of your virtue upon some date when the environment lends itself better to experimental evidence. So where do we go from here?”

“Phil, I’d like to know—where are we going?”

“To the ice-mines of the Solar System,” he said. “I thought you knew.”

“You were about to tell me.”

“That’s so. Well, as I was saying, there is no native water on Mercury.”

“I’ve also been given to understand that there was no air on Mercury either. But we were breathing.”

“Sure were. But tell me, Louise, what grade of school do you teach?”

“Fourth grade.”

“Then it isn’t important to you—or them—yet. But you’d better be getting hep to a newer book of the skies.”

“Go on.”

“For centuries we have been told that Man is an adaptable animal. This isn’t so. Man isn’t adaptable. He is adapting. When his environment does not agree with his metabolism, he changes his environment. Nobody could really live on Mars. So we change it. We mine ice on Uranus and ship it to Mercury to warm it, and then deliver it to Mars as a hot rain. This changes both the temperature and the water-vapor content of the planet to

a human-acceptable norm. Venus had a lousy atmosphere, so we send that to Jupiter, where it won't be noticed, and replace it with oxygen and nitrogen from Mercury, which we get by delivering the frozen gas from Neptune. The whole thing is simple. Pluto was airless and damned cold. The air Pluto gets now is hot, and someday Pluto will be warm enough to accept colonization. Venus doesn't need hot air, so the stuff that goes there is not warmed much. And so it goes. The rest of the planets and satellites are all treated in the same way, according to their various and sundry needs."

* * * *

Louise looked at him softly. "And you're the gent who was complaining about everything being so calm and unruffled."

"What's exciting about running a central heating plant? I'm just a cosmic plumber."

"So?"

"It's darned dull, except when it blows a fuse."

She laughed. "Do you understand yourself at all?"

"Who can?"

"That I can't answer."

"Then what are you driving at?"

"It's just that the human race is always looking at the other side of the fence."

"Is this bad for the human race?"

"Not at all. People have been looking over the fence for millions of years. So that today you can stand on the intellectual shoulders of your forebears and work with what they left you. It seems unglamorous, but you forget the glorious wonder of it all. You grab in your gadgets and your science, and forget to think about the big question."

"Which is what?"

"Where are we going, and what are we going to do when we get there?"

“I’ve pondered that question. It has no answer. Ergo, I direct myself at things that I can answer without getting into a tizzy.”

“So you go on building and inventing and creating gadgets. The man who crossed the lake in his day is no better than the man who crossed space yesterday. You sit in your cave and draw pictures and dream. You have an itch to create.”

“I suppose I do.”

“Of course you do. That’s why you’re here doing what you’re doing.”

“But I’m not creating.”

“You are!” she said vehemently. Tom Britton snorkled, mumbled something unintelligible, and then dropped off into deep slumber again. “We can’t all be Rembrandt or Rodin, creating something world-shakingly beautiful, or Einstein delivering something profound. Some of us have to go on through life just dropping a thin layer of ourselves on top of what’s been left before. You’re creating, even though you do no more than keep another man’s work from falling apart.”

“I’ve never looked at it that way.”

“Of course not. That’s why you also shy at the first tenet of creation.”

“Who—me?”

Louise looked at her wrist watch. “It isn’t too many hours ago that you were saved from the irksome task of answering an embarrassing question.”

“Which?”

“I asked you whether romance and marriage and a family might not be the answer to your unrest.”

“That’s a woman’s question,” he said slowly.

“Maybe it is. But it’s a man-and-woman answer.” Louise smiled and looked at him. “You’re quite a guy, Phil. If you were to make the right motions and the right noises at the right time—you might find an enthusiastic cooperation.”

“In other words, I am being proposed to?”

“You are not. And if you propose to me right now, you’ll get a quick ‘no’.”

“But I thought—”

“Think a little deeper, Phil. You dated me last evening because of the possible thrill of wooing.”

“I’m—”

Louise grinned. “Phil, if you claim that you dated me because you considered me as a possible matrimonial partner, I’ll scoff at you for the liar you are. No woman is that naive. So we’ll just go on.”

“Go on what?” he asked. “Admitting that I dated you for the possible fun and games?”

* * * *

Louise nodded. “Men come a-wooing for the fun and games, and the woman’s game is to make them stay for the duration. Or so the books tell me. So you will continue to lay siege to my virtue and I shall continue to employ every weapon to capture the enemy. And someday one of two things will happen: you’ll get tired of the siege and go elsewhere, or you’ll succumb to my wiles. Who knows?”

“But—”

Louise laughed. “Let’s leave it that way, Phil. It’s true. Maybe my thinking is a bit archaic, but that’s my opinion.”

“Okay,” he said with a smile. “We’ll get this mess cleaned up and then we’ll get you back to Mars quietly so that we can take up where we left off.”

“You’re still not convinced about this family idea, are you?”

“They do sort of tie a man down.”

Louise smiled. “We’ll leave it that way until you are convinced. Okay?”

“Okay.”

She stood up and crossed the control room to stand before him. Her stance was deliberate. She knew that her slender waist and softly rounded breasts were attractive enough to make a man ignore the fact that her dress was crumpled from too much wearing. She leaned down to take his hands from where they lay at ease on the arms of his chair, and she knew that this motion also gave him a brief view into the neckline of her dress. His eyes widened satisfactorily. She drew him up, standing. She lifted her face.

He reached for her and she melted into his arms, clinging to him. Her lips were soft and mobile under his; her skin was warm and soft under the dress.

Phil raised his head, eyes a little glazed, and looked around the control room. Louise leaned back in his arms, grinning at him.

“You’re a witch,” he told her.

She laughed. “Just think of how nice it would be if we didn’t have a collection of tired gents cluttering up the joint. Maybe even a joint of—all—maybe our own?”

Phil laughed and kissed her again. “Damn you for being a calculating female,” he said.

Louise kissed back before she whirled out of his arms.

He reached for her again, but she held him off with a shake of her head. “Coffee?” she asked.

He looked at his watch. “Somebody’s got to stay alive for the rest of this leg.”

“All the better reason for saving the canoodling until later.”

“I can canoodle and—”

“Drive with one hand? Nope. I’ll have no divided attentions, Phil. But I will build coffee.”

“Might find an egg, too.”

“I’m way ahead of you.”

“Good.”

She chuckled. “Just a bit more of the old bait, old man.”

“Shucks, lady. I can cook too.”

“It’s a lousy substitute.”

“For what?” he asked.

But he asked the back of her head—just as it disappeared down the ladder towards the galley. He eyed his reflection in the nearest port, wiped his brow, and said, “*Gr-r-r-ruff!*”

* * * *

VI

Uranus was dim-lit by a tiny sun that cast an ineffectual light across a flat vista of blue-black ice. Crests of white showed white-diamond glints—not really snow, but a rime-ice. Below— somewhere at the end of the radar beam—was Station One.

Station One, doing something unpredictable, no doubt.

They dropped down, following the radar beacon, until they saw it.

It had to be seen to be believed.

Uranus is mostly ice. Normally its gravity was enough to keep the ice cold-flowed into a reasonably flat surface. It is too cold to snow, too cold to rain, too cold to hail or sleet or hurricane or much of anything. But it is not too cold to grind together, to thrust one planetary block against another, to cause upthrusting mountain ranges of ice, which in the normal course of events will cold-flow into the resemblance of flatness. These upthrustings are rare—

Station One had met one of these.

Strain develops slowly; an ounce at a time, it builds up over a long period until a tremendous pressure develops. The pressure overcomes everything. Then, with two monstrous forces thrusting against one another, the angle of thrust will begin to change. The vector of force will become more amiable to the forces involved, and the whole vista then drives forth

along the new direction of resulting motion. In the case of planetary thrust, this direction is upward, causing mountains.

Forty miles high, the mountain of cold-flowed ice had risen. Up and up and up in a rising pillar, a rising pyramid until the top, bowed over by some trick of angular force until it leaned sideways, broke from the mountain top and came tumbling down the side of the slope in a giant avalanche.

There was neither rock nor stone; only ice.

Station One was a huge structure of metal and concrete, driven by an atomic pile contained inside of it. It moved across the face of Uranus on tractor treads which depressed acres with each planting of a monstrous foot. It left behind it a trail that might someday amaze some visitor from somewhere else.

Station One pushed before it a rectangular matter-transmitter plane like the scoop of a platypus, and the speed with which it scooped up the ice of Uranus was dictated by the needs of the Mercury Canal.

But now it had gone berserk.

Because it had been caught in the rise of a mountain ridge, and then walloped from above by a catapulting avalanche.

Shelling with a three-inch rifle, it might have withstood for a time. But not cascade upon cascade of tertiary ice that slithered down in shards like giant shrapnel.

Its normally hump-backed appearance was crushed into a veritable sickle shape. Forward was the girder structure that supported the matter-transmitter plane; behind it on a small flat platform stood a tiny spacecraft. Both were untouched by the downfall. But the center section had taken the brunt.

It had been a tough fight.

Battered and dented, the central of the station was for the most part intact. But it took only one hole to admit the poisonous atmosphere of Uranus—

* * * *

Phil swore, and Hugson crossed himself; Tom Britton reached for a hat he

did not own, and Louise went solemn.

Two men had died awfully in that monumental structure. Two men had died—but the insensate mechanism still fought to carry on its function as it had under their hands. Intellect would have known when it was licked. Brains would have turned the vast machine aside to direct its voracious appetite against a less threatening ice-scape. But the undirected machine gouged and tore at the insurmountable rise, and more ice slid down to fill the gap, to fill the insatiable maw of the uncontrolled machine. The process was without interruption: and endless Niagara of ice poured downward into the matter-transmitter plane.

From a cosmic viewpoint, a forty-mile cliff of ice ava-launched across space to the Mercury Canal. And one step farther, Mars was under the hammer of a forty-mile avalanche of rain.

“How d’ye feel, Tom?”

“Fit. I’ve been slumbering.”

“Want to take over?”

“Sure. We can handle this. We’ll back Station One out of the mess. That’ll relieve Mercury Inlet, and eventually the canal will go down to a reasonable level. We’ll stay here to patch up.” Tom Britton called his crew together, and they donned spacesuits.

Phil Watson waited until Station One began to move backwards, away from the downpour of cold-flowing ice. As the transmitter’s cutting action withdrew, the down-flow lessened. Phil sighed, and lifted the ship, and headed it towards Mars.

“I hope,” he said to Louise, “you don’t mind if I collapse.”

She cradled his head in her lap. Phil squirmed into a comfortable position. He slept almost at once.

Louise slipped out from under and went to sit in the pilot’s chair. The maze of instruments meant little to her, but so long as the autodriver registered on the green lamp they were in no danger. She dozed, herself, from time to time, shaking herself awake to cast an anxious glance at the few meters that she could read.

Turnover-time came, and Louise debated if she should awaken Phil.

But she remembered that space is a large bit of vacant lot, and so she took the levers and produced one of the most wide-spread turnovers in the history of space flight.

Eventually a planet came up out of the ambiguous stellar display below, and Louise went over to awaken Phil. A couple of million miles tossed off in a ragged turnover was one thing, but landing a spacecraft was definitely another.

She touched him gently and he came awake. He drew her down and she snuggled beside him for a moment before she said, "Mars is dead below."

He got up quickly. "All I'm getting out of this shindig is hard work and frustration."

"Does it make you think of a white cottage and—"

Phil grunted. "Me? I'm too young to be a father—"

* * * *

He set the ship down near the weather control station. The marks of its previous landing were obliterated by the rain, but of that rain there was no longer much trace.

Above, in the blue sky, the smallish sun shone brightly, and the air was chill and bracing. A cloud or two was billowing in the Martian sky. The rain had soaked in, and the ground was muddish and wetly red, but not mushy. People lined the landing field, waiting for them.

"Expecting a reception?" asked Louise.

"No. But the gang will be waiting for me to give them the lowdown on the cloudburst and how it happened."

"Looks larger than the gang."

"There's always Senator Longacre and his crew of plug-hatted characters."

The air was moist, and it smelled of spring and growing green things. It rolled into the airlock, fresh and pleasant. The ramp went out, and Phil waved Louise first.

Halfway down the ramp a cameraman called, "Hey! Watson! Let her come second!"

Louise let him pass; Phil went down the ramp and turned to take her hand as she stepped from the ramp onto Mars.

There was a flaring of flashes and a crescendo of music from a portable sound projector parked somewhere. A hubbub of voices rose and grew into a cheer.

Senator Longacre stepped forward and shouldered Phil aside. He handed Louise a large bouquet as the flashers flared again, and from the back there came a battery of dolly-trucked television cameras.

In the midst of the racket, Phil heard the good senator start a bit of carefully prepared oratory:

"—the one billionth space traveler to set foot upon Mars—"

"— she's got legs," said one of the photogs, "let's cheesecake her—"

"— a few words, Mrs. Watson—"

"— wife of the weather control manager—"

"— smile, please, Mrs. Watson—"

"— who cares about him—?"

"— schoolteacher."

"Schoolteachers didn't look like that in my day!"

"You were young and—"

Louise turned back. There was a humorous glint in her eye. "Phil," she whispered, "you're in the middle. After what you did to Senator Longacre, he'd like nothing better than to get you in a jam."

Phil nodded. He looked around the field. People were arriving in droves; the field was becoming jammed with revelers. The sound wagon had been hooked up with the MCOC network, and was blaring something about a Marswide holiday for the billionth visitor. He looked at the billionth

visitor, and found her attractive. He remembered the billionth visitor's quick mind, and he found it attractive, also. And then he realized that he knew something about woman that Louise did not: that the lure was the lip and the breast and the round hip, but the door to the trap was the character and the personality and the rather intriguing question of what kind of intellect might spring from—

“Louise—will you wed with me?”

“I told you—”

Phil stretched himself tall and extended his chest. “I shall flick a finger and bring ammonia to Terra; I shall twist a dial and rain methane on Mars. I shall start this goddam deluge again. Or I can go on a nice drunken spree and let the whole damned solar system scratch for itself.”

“But—”

“It might have my brains and your looks.”

“But if it had my brains and your looks?”

Phil grinned. He knew what to say: “My looks aren't too bad.”

They rode through the streets of Marstown, arm in arm under a blue sky. It was spring, and there were violets thrusting their heads up through the ruddy soil. And while nobody would ever see Phillip Watson's name in the Books, or see Louise Hannon Watson carved in marble, their future would someday ride through the streets of Pluto, or Aldebaran IV, or—