A Thrilling Novel of the First Men in Orbit

SPACEHIVE

JEFF SUTTON

First Book Publication

A GRIPPING ADVENTURE IN SPACE SCIENCE

12 July 196?:

Ben Gore, top space ace for the USAF, got an urgent order. The Reds had learned about America's first spaceship project, and now the *Spacehive* had to be completed in a hurry—or else!

16 July:

To finish assembling *Spacehive* by August 3rd, while whirling around the Earth once every ninety minutes seemed hopeless. For the foe were firing anti-satellite missiles every time the orbital factory was over the USSR!

2 August:

The politicians were chickening out! They ordered Ben's personnel out of the sky and *Spacehive* abandoned. To add to Ben Gore's woe, the Reds were sending up manned rockets to demolish the thing by force.

3 August:

Deadline for *Spacehive*. Deadline for the Free World. And deadline for Ben Gore.

JEFF SUTTON'S background includes journalism, technical writing (specializing in flight safety), human engineering and communications in the aviation and missile industry. He lives with his wife and children in El Cajon, California.

In consequence of his close association with the actual modern industry of space flight and space technology, his novels, though taking place in the very near future, cannot be called science-fiction so much as they should be termed "novels of space science." Along with Jeff Sutton's two previous Ace Books, FIRST ON THE MOON (D-327) and BOMBS IN ORBIT (D-377), SPACEHIVE is therefore a progenitor of a new type of modern fiction, a realistic rendition of today's space frontier.

Sutton says of this: "Men are looking skyward: the dawn of manned space flight is near. Men are being trained; hardware is being readied—the Big Nations of the world are in a grim race. The future depends upon the winner; the time is near."

SPACEHIVE

by

JEFF SUTTON

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SPACEHIVE

For Eugenia

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5 JULY 1969.

Ben Gore came out of orbit.

He punched the first button at 0530 hours with the glide-tug racing toward the top of the world at altitude 350 miles. The craft's small retrorockets immediately coughed and burst into a steady firing; a muffled roar came through the bulkheads accompanied by a slight jerking motion and the faint sensation of weight. He shifted his shoulders—he was a big man, lean and hard—and his body encased in the still-deflated spacesuit left scant room in the pilot's compartment. Behind him were two empty side-by-side bucket seats and, beyond, a small baggage compartment, also empty.

He breathed heavily, scanned the instrument panel and looked out. Through the heavily-leaded glass port the stars resembled colored baskets in an ebon sky; ebon, but with a strange three-dimentional quality that defied analysis. Entire stellar systems never seen from earth by the naked eye sparkled with awesome radiance, appearing like clustered blast furnaces in a black pit. Below, the earth was a tremendous curving surface wearing a white satin cap, now agleam under a long summer sun.

He stretched uncomfortably, conscious as always of the lack of space, and studied the racing landscapes far below. He'd come by the powerful enemy missile base of Tyura Tam, northeast of the Aral Sea, plunging through the skies east of the Urals to breach the coast close to where the Yamal Peninsula stretched north into the Kara Sea. Now the long crescent-shaped Novaya Zemlya, frozen and tundra-

covered, was wheeling past; it was, he knew, Russia's greatest Arctic missile base. Down there, beyond the Matochkin Shar, a winding gulf which split the land into two great islands, a series of subterranean launch complexes faced the polar north, their ICBM's waiting. "The teeth of the Red Bear," the astronauts called it. True, there were no hostilities yet; but with the world at the exploding point . . . He speculatively watched the islands recede.

The top of the world raced toward him, slipped past and he breathed easier. Below, he knew, giant eyes charted his passage, following him as a blip on a dozen scopes. Enemy eyes and friendly eyes, for SMEWS—the Space Missile Early Warning System—would have caught him by now. The knowledge was comforting. He looked at his instruments.

Altitude . . .

Attitude . . .

Speed . . .

The variables that meant life or death. At the moment he was moving at near orbital speed, nearly seventeen thousand miles per hour. Attitude as yet was automatically controlled. Delicate electrical contacts bled information from a fixed gyro frame and fed it to an autopilot; magnetic amplifiers converted the minute impulses into electrical power, actuating a set of hydraulic rams connected to specially designed power packets. From instant to instant the autopilot compared the actual course and attitude of the glidetug with programed information implanted in its memory banks. When a difference occurred, the resulting torque actuated the amplifiers and steering mechanism—pitch, roll and yaw were corrected. But, he knew, even mechanical brains erred.

Checking his rate of fall, he hunched forward and looked deep into space. There was a speck in the heavens—Tank Town. Officially the speck was named the Space Command Astronautic Training Station (SCATS), but it was a name seldom used except in official communications; the astronauts called it Tank Town. New to the skies, it was not yet fully

equipped; now it looked as if the Air Force would lose it. At least that was his observation.

In the short time since he'd left it, the station had dwindled to a mere glint in the sky, discernible only by the reflectance of the sun off its silvery surface. Olin was there, and Devlin, the two astronauts who composed Team Three of Space Wing One, the first of the two space wings of the fledgling USAF Space Command. The station itself was little more than a nylon room inflated to fill the empty fuel tanks of a giant rocket previously fired into orbit. Later it had been partially equipped and supplied by glidetugs.

Watching closely, he caught sight of a number of specks tumbling lazily around it—support packages that had been injected into orbit. Food, oxygen, a boom that looked somewhat like an overly-long telephone pole, and the drifting empty tankage of a super ICBM. Entire electrical and mechanical systems drifted there in their protective cocoons like flotsam on a sullen sea, making the area around Tank Town appear like a cosmic junkyard. More payloads were being put up regularly, lofted into the skies from Orbit Point, the great West Coast space complex.

They're going to build a spaceship in the sky.

The insistent rumor had spread through the base—whispers, conjectures, hopeful surmises. The cluster of specks had the code name "Spacehive." But that could mean anything, he thought. He didn't know. He only knew the specks represented a civilian project. That was the rub. It came under SPA, the Space Projects Administration, a super agency that directed all nonmilitary space programs. Tank Town, intended as the Space Command's first orbital training station, had been assigned to the civilian agency temporarily to serve as a base of operations for the project. They'd never get it back, he thought gloomily. At least that had been the past history of such projects. Tank Town swept slowly across the face of the leaded glass port and he returned his attention to the instrument panel.

Altitude, rate of descent, re-entry angle, temperature—he

couldn't forget that. The heat wouldn't come until he impacted against the denser air mass still far below, but he'd have to prepare. The speed and attitude of the glidetug had to be kept within narrow limits or he'd die. He scanned each dial. The retrorockets, programed for re-entry, abruptly cut off; the vibration and roar ceased and with them went the faint sensation of weight. Free fall. It was an eerie sensation, one that seemed new each time he experienced it, despite a dozen trips into orbit. It took a while to get used to.

He glanced through the small viewport. The wings of the glidetug were broad planes of metal, swept back so that the vehicle resembled a huge isosceles triangle; they had an extremely large area relative to the small cabin. The blunt nose and airfoil leading edges were designed to yield minimum heat at high Mach numbers. It was a graceful bird except for the cabin, he thought; only it was discordant. Crouched between the wings, its double-walled architecture and blistered fuel tank housing gave it a bug-bodied appearance. All in all, the glidetug looked like a plane that could never lift itself from the planet below. Nor could it! It was the third stage of a MEOS vehicle—a manned earth-to-orbit rocket—in which the last satelloid stage alone reached the fringes of space. The name of this particular glidetug was the *Wheelhorse*, and it was the first of its kind—a breed already becoming outdated.

He felt the utter calm; no sound, no sense of motion or weight. After a while he became aware of the clicking of a solenoid. It sounded abnormally loud in the silence. He fancied he felt his heart thumping slow and strong against the chest wall. Falling, falling . . . The only movement was the shifting of light patterns across the dial faces on the instrument panel. The radar altimeter indicated the earth was a scant hundred miles below, and coming up fast.

Glancing out, he snapped his faceplate shut and opened an oxygen valve. The pressure built up inside his suit and mask and he automatically reversed his breathing cycle, exhaling against the mask oxygen pressure. The suit's G-blad-

ders, protection against blood pooling during the high decelerations to come, pressed against his calves, thighs, torso, arms; his fingers stiffened inside the pressurized glove. He didn't like to fly with the suit inflated but it was orders, a protection in event of cabin failure. Methodically he gave his equipment a last-minute check: harnessing tight, suit oxygen and cabin pressure okay, radio ready. The inertial reference system gave an attitude readout on a visual display. He studied it a moment and turned a dial.

Captain Jansen re-entered at too steep an attitude.

It was the voice of General Bryant, living again in his mind. The Old Man was telling *why* Jansen had died. The *how* was unnecessary.

Major Eberhardt died the same way.

He pushed the voice aside and concentrated on the dial, moving it slowly. A small electric motor hummed to life, a flywheel spun and produced a minute force which brought the glidetug's nose slowly upward. The re-entry path was programed for a series of braking ellipses; the vehicle had to enter the denser atmosphere at a shallow angle and skip across the air mass while dissipating its tremendous forward speed. On each skip it would move slower, describe a smaller ellipse until, finally, it would be able to maintain a steady boring glide into the deep parts of the air ocean. But he had to penetrate slightly nose-up. If he struck the atmosphere at too steep an angle, the friction-generated heat would turn his ship into a flaming meteor. More than one man had gone that way. But not Ben Gore, he promised himself. At a precise instant he reversed the dial and applied a touch of counter-force, his eyes never leaving the control panel.

The glidetug fled down over the frozen North riding close by the dawn line, falling toward the earth while hurtling forward at suborbital speed. Although the static generated in the ionsphere disrupted radio communication, he switched on the vehicle's transmitter, sending out a continuous signal to aid the ground trackers in their task of pinpointing his position as he fled south.

The plane beneath him grew enormous; the white cap had fled to his rear and the portion of Northern Canada visible this side of the night line was a splotched giant, a shifting pattern of whites and smoke greens, partially obscured by clouds. He caught sight of an irregular blue shape etched against the mosaic and recognized it as Great Slave Lake. The tracker there would have him. He felt exhilarated, the familiar sensation of excitement tinged with fear, and he liked it. Thump, thump—his heart beat stronger. He studied the panel again while the glidetug raced through a domain of lonely atoms, falling faster and faster. The air ocean was moving up to meet him.

Weight; a touch of weight! He involuntarily stiffened and caught his breath, staring at the glidetug's nose. Now! He forced himself to exhale and tried to relax. The nose of the ship glowed a pale pink, a deepening pink. He reached toward a firing button that controlled a series of small rocket jets aligned perpendicular to the axis of the glidetug and as quickly stopped the motion, realizing it was too late to dampen the growing G-forces. The weight increased and he kept his eyes rivited on the vehicle's nose. It flamed a deeper color. Small thermocouples imbedded there and in the leading edges of the wings measured the friction-generated heat, converted it to electricity and returned it as an indicator reading.

Nearly 800° C.

The glidetug wrenched violently, smashing him against the seat and he struggled for breath, switching his eyes to the instruments. The G-meter was climbing fast. His legs and arms were leaden weights and it took a tremendous effort to hold his head erect. A pain knifed through his lungs, hot and deep, and he gasped, feeling the fear again. Rough, rougher than it should be. The thought was a panic in his mind and he dimly wondered what had gone wrong. His vision was dimming, he was light-headed, giddy, and the cockpit swam around him, a vertiginous sea, swaying, rocking, rolling.

His peripheral vision failed. He was staring at the instruments through a long black tunnel. Six G? It looked like six but he couldn't be sure. A ton of lead smashed his chest. How long could a man take six negative G without folding? Six or eight seconds, the book said. He corded his jaws and exhaled in fast shallow breaths, holding his stomach muscles taut as he fought to retain consciousness and read the dancing dial faces. Tough it out, tough it out . . . Time seemed to stop. Black, it was black now and he was falling, falling. . . . His breath was a harsh rasp in his phones.

He'd make it!

The knowledge came in a flash of insight as he remembered his other re-entry runs. This was bad, but not too bad. Not as bad as the first time. But bad enough. Each time he'd felt the touch of panic, the imminence of death. Re-entry was like that. Despite the air circulating in his suit his face and body were dripping sweat; it stung his eyes and blurred what little central vision he had left. Hold on, hold on, hold on . . . The thought became a refrain in his mind.

Abruptly the weight left his chest and he gasped hungrily, letting the mask pressure push oxygen deep into his lungs before he forced it out again. The glidetug's nose was a light fading pink. Squaring his shoulders, he looked at the instrument panel. His full vision was returning and he saw the worst was past; the first impact was always the roughest. His first reaction was one of exultation and he smiled, self-satisfied.

"You've got it made, baby," he told himself.

The radar altimeter showed 400,000 feet. He'd hit and skipped off the thickening air, now was hurtling through the lonely edges of space again. A few more savage smashes and he'd be in a steady glide—if all went well. But things could happen, lots of things. Like sudden 100-mile-per-hour vertical winds and, lower down, the savage unpredictable jet streams. But at the moment he could relax and wait. Hunching forward, he looked out. Below the sky was broken and a

series of purple-blue mountains crouched against the dawn line. Off to one side he saw the moon.

The moon. He grimaced. The moon—his moon—had been given to Harkness and Peters of Team One. "The top astronauts of the Space Command," the papers called them. They were up there now, sitting in a damned dome and, no doubt, grinning like Cheshire cats. Not that they were the first. The Russkies were there, too—had beat them by weeks. But he and his teammate Jastro—together they comprised Team Two—had gotten chiseled in the deal. Why? Sure, he knew why. He gritted. Because of Clement Strecker, a damned civilian bureaucrat with the Space Projects Administration.

"I'm assigning you to assist on the SPA project beacuse of its importance," the Old Man told him. "Perhaps more important then the moon."

Bushwa, Gore thought. Instead of the moon he'd pulled down a damned milk run to Tank Town; he and Jastro were earth-to-orbit bus drivers. It wasn't the glory he wanted but the moon itself. To most people it was just a huge chunk of cratered rock that moved serenely around the earth; something to gawk at, make love under. But he didn't see it in that light. To him it was different. A new world, strangely alien, where man might take his first step while balancing for the more precarious step outward. To Mars, maybe, or beyond.

The slight sensation of weight came again, grew stronger and he pushed the bitter thoughts aside. The nose of the glidetug began to flame and he braced himself for the shock. When it came, it was less than he had anticipated. The weight didn't squeeze the air from his lungs or pin him into an immovable posture, and he retained all but his peripheral vision. Hands steady, he waited, studying the bright array of dials and warning lights, feeling ready for whatever might come. The dials glowed a comfortable green and the temperature remained well below the critical level.

The weight lifted, came again and lifted. Three, four, five times the glidetug skipped off the dense air mass, each time

losing speed as it dipped deeper into the atmosphere. By the time he reached 100,000 feet he'd dropped to Mach 2.5—around 1,700 miles per hour at that altitude. The nose temperature was down to a safe 450°. He studied the chronometer, finally stirred the controls and felt the glidetug almost imperceptibly respond, changing heading.

To the west the Pacific merged to meet the darkness and the horizon was a shallow arc against the black vault of space. Incongruously, he saw stars reaching down to meet the curve of the earth. Small isolated cloud patches floated off to one side, crimson-edged where they caught the morning sun. He sighed deeply as if releasing some inner tension and relaxed against his seat. Made it, he thought. Abruptly his radio crackled to life.

"Station Oboe calling Wheelhorse. Station Oboe calling Wheelhorse." The distorted voice held a spectral quality. "Come in, Wheelhorse."

He reached for a knob and adjusted the radio while part of his mind placed Oboe as one of the Navy communication trackers.

"Wheelhorse to Oboe. I read you."

"Nice going," the voice said. "Stand by for a position check."

"Roger." Moving a toggle switch, a scope on the instrument panel lit up a small gridded map. The voice read off coordinates and he pushed a button several times, changing maps until the correct one came up. He turned a second dial that moved a small lighted arrow across the map until its tip rested at the indicated position, then pressed a button. From here on out the arrow would point the way.

"Please acknowledge," the speaker requested. He read his position back, rogered and the voice cut off. At 50,000 feet, below Mach, he cut in the rocket engines. The glidetug leaped ahead and a blur swept over the horizon—the channel islands off the California coast. He checked the cabin pressure; satisfied, he released his suit pressure and opened his

faceplate. Sighing with relief, he flexed his arms and stomped his feet to get the blood circulating freely.

From time to time he checked his position, keeping a hawk-like watch on the fuel gauge. The glidetug had a relatively short powered flight range; enough to allow him to reach base following the programed re-entry and descent. But the margin for error was slim. He crossed the coastline at an angle and saw the vast megapolis of Los Angeles sweep past. It reached from sea to mountains, from north to south as far as he could see.

Scanning it he thought of Dorena and Eva, and mentally flipped a coin. Eva won. Grinning, he thought of the night ahead. The glidetug crossed over the city on a southeast heading. For a while rugged peaks slipped beneath him, then fell away and he started a wide turn toward the left and got on the radio.

"Wheelhorse to Big Strip. Wheelhorse to Big Strip."

"Big Strip. Come in, Wheelhorse." The response had been immediate. He gave his position, speed and altitude in crisp tones.

"You're on the screen. The main runway's cleared," the voice informed him.

"Roger." He looked down. The desert floor was moving up fast. Sand dunes, shallow ravines and rocky knolls fled past. Off to one side he saw the giant skeletons of missile static test towers reaching skyward from a series of rolling barren hills. Farther off a smooth black-topped seemingly endless strip stretched toward him. Punching a button, he felt a slight jerk as a drogue chute streamed out behind the craft and flared open. Actuating the landing gear and flaps, he checked airspeed and altitude and looked down. The strip was rushing toward him, then he was over it. It floated closer, began moving faster and faster. Off to his sides the desert became a blur.

The glidetug vibrated and bounced as the tail skid touched down, touched again and began dragging across the surface. He grimaced, thinking he'd made better landings, and

looked out. A jeep, a fire truck and an ambulance were racing along the edge of the strip trying to keep abreast of him. He grinned cockily.

Not this time, he mocked.

2

THE MOON fled past.

Stark, barren, it fell away to the horizon, cutting a pale arc against the sky. Stars gleamed at the very edge of the arc, cold and hard. There was no scattering of light on the airless surface, only stark blacks and whites intertwined in odd and sometimes grotesque forms. Other world. The unfolding of the bleak land struck Gore as always. Beautiful, he thought, and alien.

"Tsiolkovskii Crater," a flat voice said. A rocky cone sped past, a dark splotch on an otherwise featureless plain. A mountain range raced forward and receded: the Sovietsky Range. The sun, sloped toward the horizon, etched jagged shadow profiles on the plain at its base. An isolated cone raced into view and the speaker announced:

"The Lomonosov Crater; beyond is the Sea of Moscow."

Alex Jastro stirred slightly and leaned forward, his taut, windburned face unnaturally white in the gloom. Shorter than Gore by some inches, he was also a good twenty pounds lighter; a dark, hard whiplash of a man with thin lips and a nose that belonged on a larger face. He was Gore's teammate, and best friend.

"I'm going to be the first man on the moon," he used to claim. And often as not he'd add, "I'm going to take along a blonde and a case of whiskey."

That had been before the moon had been doled out to Harkness and Peters of Team One. But he still held hopes; Gore saw it in his hungry face. A low jumbled series of

sharply serrated hills rose from the center of a vast sea and passed under him at fantastic speed.

"There, down there somewhere, is a new Russian dome." Gore snapped his head up, startled. Russkies on the back side of the moon? He heard Jastro curse and leaned forward to see better. Not that the Russian dome was visible, of course, but he was fascinated by the general topography. It was unlike the familiar face of the moon. Absent were the vast walled plains, the towering Appennines, Leibnitz and Dorfel Mountains, the giant enclosure Clavius and the awesome crater Copernicus. Gone was the old familiar pitted face. This face was flatter for one thing, dominated by a huge waterless sea. It was as if, in its infancy, the earth's gravity had tugged the visible face of the moon into a distorted nightmare of rock while at the same time pulling the hidden surface drum-taut. Only a few razor-sharp shadows attested to heights and depths; the Sea of Moscow was planed smooth.

Abruptly the picture flickered and ended and the lights flashed on. A low murmur of voices immediately arose. Colonel Bruckman, the Space Wing One intelligence officer, got up, removed a cigar from his mouth and the room grew quiet. He scanned the audience casually and spoke:

"The back side of the moon from our latest TV probe, gentlemen. Any questions?"

"Yes, sir, how do we know the Russians are there?" someone asked.

"Tracked 'em," he answered laconically.

The questioner persisted: "How do we know it was a manned vehicle?"

"Several reasons. Characteristics of the vehicle's flight path, for one—" and he hesitated briefly "—details out of Russia."

A low laugh broke out and Gore grinned wryly. They knew all right. There wasn't a major missile base behind the curtain that didn't have a pipeline of one kind or another leading to Air Force Intelligence. The few firings that were missed were quickly picked up by SDS, the Satellite Detection System. The small spy eyes, whirling in orbits that

intersected at the poles, monitored the globe around the clock, their infrared sensors responsive to the telltale radiation plumes of any missile reaching the fringes of space. The rocket trackers took over from there. No, they had it wired; the Russkies couldn't pull any great surprises. He hoped.

He looked over the audience, perhaps a score of men. Most were in their middle and late twenties; a few like himself in the early thirties. Space types; faces burned by wind and sun, eyes that squinted, hard intelligent faces. Some, he knew, were from Space Wing Two, recently formed on the Atlantic coast. Looking at them now he thought they were a breed apart and felt a touch of pride. The astronauts were the cream of the Air Force, just as the interceptor pilots had been a decade earlier. He spotted another face at the rear of the room and uttered an exclamation.

Strecker! What the hell was he doing here? He chewed his lip, thinking about the man. Clement Strecker supposedly was an authority on assembling space stations in orbit. He was also a wheel in the Space Projects Administration. Chief of space construction, they called him. Now he was in charge of the Spacehive operation. But he'd also pulled the wires that had resulted in Gore's assignment to the Tank Town run when the station had been turned over to SPA as a temporary base for its operations. Yeah, Strecker had cost him the moon—he was damned if he'd forget it.

They're going to build a spaceship in the sky.

He considered the rumor. Somehow, Strecker didn't look like a builder of spaceships—especially in orbit. He studied the space engineer. The man's saturnine face was sharp-featured, with the high dome popularly associated with scientists. It was also a ruthless, cynical face with eyes that told nothing. To hell with him, he thought. Jastro caught his look and turned, staring toward the back of the room. After a few seconds he said bitterly:

"What's he doing here?"

"Damned if I know. I thought these sessions were restricted to Space Command personnel." He felt an unreason-

able anger. His teammate uttered a curse that had a definite bearing on Strecker's forebears.

Gore was forced to grin. "Probably lining up another job for us," he commented. Jastro told him what he thought of the idea in two short words and he turned his attention to the briefing. Someone in the audience was asking:

"How does the Russian dome affect ours, sir?"

"It doesn't—not that we can see. This one is half a moon removed from our plot of ground. But it's interesting to know they're there."

"Would it have a military purpose?" the speaker persisted.

"Probably." The colonel spoke drily. "But its immediate purpose is more likely as a take-off point for deep space. Perhaps Mars."

"A supply base?"

"Probably."

"I'd like to know why they always beat us," Jastro growled.

"Ask him."

"Sure, and spend the rest of my career polishing rockets. No thanks."

"Why did they choose the back side of the moon?" someone asked.

"I wouldn't know. They haven't told us." The quip brought a laugh and when it died he continued, "But that puts them on both sides, front and back."

"Is there an advantage militarily?"

"We can't say yet. We assume they have good reasons."

A new voice spoke up: "Have we any plans for the back side of the moon?" Gore straightened, intent on the answer. Bruckman took a deep drag on his cigar, blew a puff of smoke toward the ceiling and replied:

"We have plans for every place in the solar system that a human hand can reach. Naturally, we'll take them as they come. I don't believe it's any secret we intend to reinforce our present dome first, both in manpower and supplies. After that . . ." He shrugged.

It was an indirect answer but Gore was satisfied. He knew

the intelligence officer wasn't one to make loose statements. He and Jastro still had a chance if they ever got off the Tank Town run. He waited. The colonel was looking around. He puffed rapidly on his cigar a few times and said:

"If there are no other questions, we'll look at the latest Mars probe." A hush fell over the audience. He gave a hand signal and the lights went out. *Mars.* Gore felt an odd expectancy. The film leader flashed the words: USAF SPACE COMMAND . . . TOP SECRET. The usual blurb about the penalty for unlawful disclosure of classified information was followed by a hazy flickering picture of a distant planet. It faded away. When it came back the landscape was barely discernible. Jastro gave a low whistle and hunched forward.

"Not so good, but a hell of a lot better than anything in the past," said Bruckman.

Gore nodded to himself, conscious of a tenseness in his muscles and he tried to relax. Mars—the eye of man was looking across more than fifty million miles. The enormity of the technological feat was apparent. The very fact that they had come so far they could put a facsimile scanner around the Red Planet and reclaim its pictures told of the vast strides in space science. But it was more than that. Electronic probes were mere forerunners of human penetration, instruments that pointed the way. Probes had led man into orbit, to the moon. Now the probes were scanning Mars. He studied the fuzzy picture. The planet wore a thin white polar cap; its body was a sandy color streaked with dark markings. The colonel observed conversationally:

"The data shows an uninhabitable atmosphere; over ninety percent nitrogen, the remainder mostly carbon dioxide. Atmospheric pressure at the surface is calculated about ten percent earth level," he added. Gore nodded to himself. It was old knowledge but it didn't matter. He hadn't expected another Palm Beach. A man could live there in a dome, survive and explore, feel the dust of an alien world underfoot and see things never before seen by the human eye. That's what counted. He watched the face of the planet sweep by.

The picture was poor, distorted, lost altogether in spots. Yet he got the impression of a vast, shallow, curiously gridded plain, an eroded planet whose very mountains had been worn to stumps.

Bruckman's voice droned on, pronouncing Mars cold, hostile, inimical to human life; but in the next breath relating the problems of logistics and supplies, the length of time it would take to cross the abyss of space. Gore grinned. In effect Bruckman was saying: This is what we must do to get there. It was a language he liked. When the film ended the lights came on and Bruckman got up.

"Any questions, gentlemen?"

Gore spoke up. "Yes, when do we go?" A low laugh filled the room but all eyes remained riveted on the squarely built, fiftyish man at the front of the room. Silence welled over the audience. When he spoke his voice was positive:

"As soon as possible."

"How soon will that be?" Jastro rapped out.

"I can't say, but I can promise you this—" he leaned forward and the room became deathly still— "there are men here now who'll go."

Gore let the air exhale slowly from his lungs. So soon? Incredible! They'd scarcely reached the moon. Yet, somehow, not so incredible. Not with the stakes what they were. The all-out race for the conquest of space had switched to a cold and not-so-cold war in which the military overtones were becoming more apparent daily as the realization grew that mastery of space meant mastery of earth as well. Even the politicians were beginning to sense that. But how long? Two years? Five? Ten? He refrained from asking. He was already thirty-two. He couldn't afford a long wait. Bruckman was mentioning something about the necessity of establishing the inner planets as Western world territory before the Russians moved in. Gore heard the word *British* and looked up.

"British?" a voice asked.

"I'm glad to say they're very much in the running," Bruckman declared. "We have word they're ready for their own

manned space station, their own moonshot and lunar dome."

"How about China?" someone asked.

"Not ready yet despite the propaganda," the Colonel said briefly. He added: "They seem to be concentrating on missiles."

"Space missiles?" a sandy-haired lieutenant inquired.

"Very definitely."

"Re-entry types? ICBM's?" the lieutenant asked dubiously.

"No, I wouldn't say so." The colonel didn't elucidate.

"How about the French?" a voice asked.

"Not ready."

"The Japanese?"

"Not ready."

"The Germans?"

"Getting ready," Bruckman acknowledged. "They're close to the space station stage. Maybe two years away. Just now they're doing some magnificent work with probes."

"How about Venus, sir, the Venus probes?" Gore and Jastro jerked their heads up simultaneously. Venus, the misty planet, had always been the question mark. Somehow, though, it had seldom enjoyed the spotlight accorded Mars. The colonel let a few seconds elapse before answering.

"Classified," he remarked quietly. Classified! Christ, how can you classify a plant? Gore thought sourly. Apparently Jastro was wondering the same thing. His face twisted in a quizzical smile. A murmur swept the room. The briefing ended and Gore started to get up, half-turned, and saw Strecker watching him, his lips twisted sardonically. He stared back coldly and started to leave.

"Ben." He looked back. Colonel Bruckman was threading his way toward him. "You, too, Alex," he called to Jastro as he drew closer.

"Yes, sir," Jastro replied. The colonel reached them and automatically produced a pack of cigarettes. They took one, knowing he was waiting for the room to clear. Gore liked Bruckman and considered him a good friend. Occasionally

they tipped a bottle together. While waiting for the last straggler to depart, the colonel idly asked:

"Have a good liberty last night?" Gore looked at him quizzically.

"Went to L.A.," he acknowledged. Jastro got a smirk and Bruckman observed:

"So I know. You were both out of here in about five minutes flat."

"Those Smogville babes won't wait," Jastro put in. "You've got to get there early for the good pickings."

"So I hear." Bruckman abruptly changed the conversation. "How'd you like to fly over to PMR tomorrow . . . see a big bird go?"

Gore smiled. "I'd like it."

"So would I, if I'm included," Jastro put in.

"You're included," Bruckman assured him. "In fact you can't get out of it."

"The Slug?" Gore asked curiously.

"The Slug," the Colonel affirmed. "Lord, it's supposed to be a secret but every newsman in the country seems to know about it." Gore whistled. The Slug was one of the big babies.

"I'd heard rumors but I didn't think it was ready," he reflected.

"That point's open to question," Bruckman said frankly. "They've been pushing pretty hard for this shot."

"Why the rush? It'll set us back on our heels if she boo-boos because of an unready condition," Gore observed.

"This damned race for space," Bruckman growled. His eyes searched their faces. "We have to use what we have, now."

"What is she, another moonshot?" Gore pursued. The Colonel hesitated briefly.

"No, it's an orbital shot."

"But we're more than mere observers?"

"I wouldn't say that, but I think it would pay you to see the launching. It's a big bird, Ben, and well worth the trip."

"Your idea?"

"General Bryant's," Bruckman corrected.

"We'll be glad to see it."

"What's that rumor about building a space ship in the sky?" Jastro blurted.

"Didn't hear it," the Colonel returned blandly. He looked at Gore. "You'll get your official orders first thing in the morning. I just wanted to alert you ahead of time."

Gore grinned. "So we wouldn't get tanked?"

"That's right, no whiskey or girls."

"Damn, this is wrecking my love life," Jastro moaned.

"I wouldn't say that, not from what I hear," the colonel retorted.

"Don't point the finger at me. Ben leads me into it," Jastro answered, aggrieved.

"We'll be glad to see the launch," Gore stated, speaking for both of them. "And I'll keep Alex under wraps until afterward. It'll do him good to stay pure for a change."

"Do that." The colonel bid them goodnight and turned to leave, then swung back. "Take a good look at that upper stage, gentlemen," he said.

Gore held back his questions, nodded and walked outside with Jastro. They paused, smoking silently.

"No use talking about it. We don't know a damned thing," Gore observed after a while.

"Not a damned thing," Jastro agreed dolefully, adding: "We told the gals we'd be back tonight."

"We stay pure," he replied absently, thinking about the Slug. It would be a dinger of a shot. He took a deep drag and let the smoke filter out through his lips. It was dusk. The desert air was hot and still and the first stars were popping out. Venus hung like a lantern on the horizon. After a while Jastro broke the silence.

"Look at that beautiful classified sonuvabitch," he declared sourly.

3

"T MINUS twenty minutes and counting."

In the silence of the cavelike room the words had a sepulchral ring. Gore watched the proceedings curiously, conscious that Jastro next to him was fidgeting.

"I wish the show'd get on the road," he said.

"The man gets in for nothing, then doesn't do anything but bellyache," Gore answered, knowing full well his teammate wouldn't miss the launch for anything. He liked to growl.

"They ought to have a girlie show while they're waiting," he persisted. Gore looked idly around, not answering. The square low-ceiling structure was the nerve center of Complex 21 of PMR, the vast Pacific Missile Range. Inasmuch as the majority of the nation's space vehicles were fired from here, this particular launch complex was widely known as Orbit Point.

Electronic consoles extended along the side walls, their panels covered with softly lighted dial faces, switches, gages —cathode ray tubes displaying analogs of a multitude of different and constantly shifting electrical patterns. It was the first time he'd ever seen this particular blockhouse and he looked inquisitively around. Like the majority of facilities at the launch site, it was underground, and a little too cool for comfort, he thought. Bluish-gray tobacco smoke filled the air, swirling as it moved toward the air vents. In moments of silence he heard the faint whir of fans. Like all blockhouses, he decided, except this one was more crowded. He smiled at the thought, thinking it should be. The first knowledge of the true nature of the firing had staggered him. A nuclear-engine—that was the Slug's payload. He had deliberately suppressed his excitement, not daring to hope. Yet the engine

spelled spaceship. Everyone in the room knew it. The Spacehive. . . . He let the thought dangle.

They're going to build a spaceship in the sky.

Damn, the rumor was true.

"T minus nineteen minutes and counting."

He was turning when he saw Strecker. The man wore a slightly patronizing smile, as if secretly amused, and Gore felt irked. He turned away and murmured to Jastro, "Strecker's here."

"That bastard haunts me," the astronaut replied. Gore smiled tightly. A spaceship. But it would be a SPA ship—Strecker's spaceship. The thought galled him. He returned his attention to the activities. Figures wearing headphones hunched before the consoles, eyes glued to the dial faces and scopes, occasionally stirring to adjust a setting. Automatic writing recorders lined one wall, spilling long paper tapes to the floor. The launch control officer, wearing a major's gold leaf in his open collar, sat behind the master launch panel in the center of a U-shaped battery of consoles, facing a series of television screens located on the forward wall. The consoles were divided into two sets. One was for controlling the various support equipment and vehicle systems, and one was for measuring performance. Behind him a timekeeper—called the "town crier"—rolled off the minutes.

"T minus eighteen minutes and counting," he said. Jastro leaned toward Gore. "Just like the good old days."

Gore nodded without answering, knowing what the other meant. The manual countdown was an anachronism, a page from the past. It was a detailed step-by-step operation used to check a rocket's countless mechanical and electrical components, to warm up and start its subsystems, to check operational readiness, load its fuel and, finally, fire the huge engines. That's the way it had been. But in the present day the big operational rockets were checked out and launched electronically. The entire process was automatic, with man but little more than an observer.

But it was different with the Slug. This was no usual rocket.

It was strictly an experimental prototype, the forerunner of a new breed of huge unmanned space supply ships for which the automatic checkout systems were not yet ready. Hence, the countdown. The stakes were big, but in the race for space there was no time to wait.

He switched his attention to the television screens. The rocket, officially named the Centurion, but more lovingly called the Slug, had just been elevated from its underground cell. Now it stood on its launch pad, pointing upward into an almost cloudless sky. It was still connected to its ground equipment by pneumatic, fuel and power lines. It would be, he knew, until the last seconds of its earthly life. Naked, it pointed toward the sky—naked but not exposed. A vast radar network monitored the heavens around it and, seaward, huge sonar chains floated placidly in the deeps, listening for the echo that would spell *intruder*. Nor did he think the precautions unnecessary. He had little doubt the eyes of the world, friendly and hostile, were riveted on the Slug today.

"Big," Jastro murmured. There was awe in his voice.

"Damned big," he agreed, thinking the rocket dwarfed even the super ICBM's. Its squat base consisted of a ring of monstrous mainstage engines, each capable of delivering over one-and-a-half-million pounds thrust. The second stage, a circular structure, fitted over the tankage of the first. Both, after achieving their mission, would arch back into the seas. Only the third stage with its sustainer engine, automatic guidance, controls and precious payload were designed for orbit.

"T minus seventeen minutes and counting."

Gore thought he would have felt better if the Slug had been a manned vehicle. He'd never quite accepted the belief that an electronic system was as capable as the human brain. At least not in emergencies. He felt the tension mount and shared some of the excitement of the men whose job it was to put the giant into orbit. Although he'd witnessed a number of launchings, he never quite got over the thrill of seeing a new satellite born. And this was the giant of the lot, the

culmination of years of research. His eyes reverted to the major sitting at the master launch control panel.

He was the key figure. The small army of men with mikes and headphones, the glittering array of dials and scopes, the subterranean blockhouse and the distant launch sites where the rocket waited—all were dedicated to the same purpose. But the final responsibility was the major's. It was a responsibility that increased with each passing minute. To hold or fire, to hold or fire—The decision was his alone.

Gore studied him—a big shouldered, graying man with a square face that just now looked tired—and wondered how he felt sitting alone at the console. The latter looked, he thought, like a small atoll in the wastes of the Pacific, and that's how the major seemed; alone and cut off from the world.

"T minus sixteen minutes and counting."

Favorable reports came in on the weather, the stratospheric winds, and from the range safety officer. At the moment the only life in the blockhouse was that of the major as he ran down the long typed pages of his checklist, watched the stream of data flash across the face of his console. Occasionally he spoke into his mike, holding his head slightly cocked until an answer came. So far everything had gone smoothly.

Gore knew the scene he was witnessing was but the final end of an exhaustive process that had begun in the early hours of the preceding night. Electrical connections, circuits, instruments, valves, tanks, lines and conduits had been checked one by one. No single part of the Slug's brain, muscle, vascular or nervous system had been overlooked. When the critical single components had been okayed, its many subsystems and then entire systems had been checked. So had the complicated web of ground handling equipment and, finally, the equipment within the blockhouse itself been checked. Nothing was left to chance. The tension that had been building imperceptibly throughout the night now was

held by everyone. He could fairly feel the electricity in the air, a sense of confidence mingled with anxiety.

"T minus fifteen minutes and counting."

He watched the crowd again, conscious of a growing strain. Jastro was squirming in his seat, his lips half parted. There was a taut look on his face. Time suddenly seemed to speed up. He looked at the Slug again, studying its upper edge. Nuclear engine. Somehow he didn't think he was seeing it for the last time.

"T minus fourteen minutes and counting."

The major spoke sharply into his phones: "Start the auxiliary power supply."

"Roger," a figure at one of the consoles replied. He moved a switch.

"Start the hydraulic pumps."

"Roger."

"Commence fuel loading."

"Roger."

Gore listened to the stream of commands, the muffled answers, sensed the growing restlessness that told of strain. For a moment the silence returned, broken only by the timekeeper tolling off the minutes. Autopilot warmup, checkout of guidance and autopilot, report on fuel readiness—the orders and acknowledgments were coming faster now.

"T minus ten minutes and counting."

Gore swung his eyes from the Slug to the major. His voice was crisp, now, and decisive. The low tense answers, lights flashing, needles swinging, long rolls of paper tumbling from the automatic writers—all seemed in a race with time. Once the major paused, looked sharply at his console, then relaxed.

"T minus five minutes and counting." A buzzer sounded, imperative in the closed room.

"Take cover on all pads and outposts," a metallic voice ordered over a hidden speaker. "Clear the launching zone. Fire fighters to the ready."

"Report on electrical," the major said.

"Electrical ready, roger to go," someone answered.

"Holddown cylinders?"

"Roger, pressurized."

A flow of water, a mere trickle, started over the flame deflector to preserve it from the blast of the rocket engines. Gore tried to follow the quick commands, queries and answers, thinking he'd rather try and come down from orbit in a rowboat than have the major's job. Fuel level was checked. At T minus three minutes the smoking lamp was out and the blockhouse ventilation system was shut off to seal the last inlet from flame or gas in event of an accident. The standby oxygen system was checked and pronounced ready.

"T minus two minutes and counting."

Rocket electrical circuits were switched to internal power.

"T minus ninety seconds and counting."

The major checked with several panel operators. "Command on internal," he said.

"Roger," a panel operator responded.

"Telemetry in launch condition?"

"Roger."

"Missile on internal DC?"

"Roger."

"T minus sixty seconds and counting," the timekeeper called.

"Range safety?"

"Roger."

"Range ready?"

"Roger."

"Water system ready?"

"Roger."

"T minus forty seconds and counting."

The fuel level was checked, adjusted; telemetering recorders were turned on; in one corner of the blockhouse a motion picture camera started up with a whir.

"T minus thirty seconds and counting."

Gore saw the beads of sweat on the major's face. He brushed his hair back from his forehead with a quick hand

movement and checked his console. A small army of lights indicated every major system was ready. He reached over and almost negligently pushed a button—the last human act necessary. For the remainder of the time the countdown was in the hands of an automatic sequencer. The major would intercede only if something went wrong. Gore saw him sit back, his fists clenched into hard knots.

"T minus twenty seconds and counting."

The atmosphere in the room was almost brittle. Gore felt that a single word was enough to snap it, that the air would shatter like glass. Jastro was leaning forward, glassy-eyed, wet with sweat. The panel operators kept their eyes glued to the consoles, monitoring the flow of electronic information. Every light, every slender needle dial, every curve recorded by the automatic writers were scanned.

"T minus fifteen seconds and counting."

Gore swung his eyes around. The interior of the blockhouse was a tableau. The figures hunched over the consoles were frozen into immobility, the major's face was a chunk of expressionless granite. Quiet, so quiet Gore's own breathing was a harsh rasp. An operator punched a button and motion picture cameras around the launch site came to life.

"Six, five, four—"

Small trimmer rockets fired to life high above the mainstage, followed by a second set still higher. Their function, he knew, was to assure the stages exactly the right velocity at exact instants in time.

"Three, two, one . . ."

Time seemed held in abeyance.

"Zero."

"Mainstage!" The simultaneous cry from two periscope observers broke the silence. Five hundred yards away the behemoth engines developed hundreds of thousands of pounds of thrust, belched huge streams of flame, but incongruously the monstrous roar failed to penetrate the thick cover of the buried blockhouse. His eyes riveted on the television screen, Gore automatically began counting to himself. A sequencer

would hold the rocket on the pad for ten seconds before releasing it. The internal propellant cargo of liquid oxygen and hydrogen had caused an icy frost to form on the rocket's outer skin, but now, shaken loose by the tremendous engine vibrations, it was cascading downward like a miniature snowstorm. The count over the communication system had halted but each man was counting to himself:

". . .Eight . . . nine . . . ten."

The arms holding the rocket on the launch pad flew back. The tens of thousands of gallons of water pouring over the flame buckets sent huge clouds of steam swirling skyward, all but blanketing the missile.

"First movement," a periscope observer called. An instant later he shouted: "Lift-off!"

All eyes were fastened to the television screens. The launch control officer, his job done, stood to get a better view.

"Go, baby, go," he murmured in a tense voice. It was the decade-old prayer of men who sent missiles to pierce the skies. The rocket rose slowly, its tail of flame and smoke beating down on the launching pad and the base below the mainstage became a hellish inferno. A cloud of vapor rolled off to one side.

"Go, baby, go."

The Slug rose straight up, accelerating slowly at first, then more rapidly until the flames no longer beat against the pad.

"Go, baby, go . . . go . . . go," the major pleaded, louder this time. The rocket seemed to leap ahead. In a short while it grew smaller, pitching over slightly to the proper angle for its climb into orbit. The major was pounding the console with his fists and his voice had risen to a shout:

"Go, baby . . . go, baby . . . go, baby . . ."

The ensuing minutes seemed without end. The timekeeper was counting again. The major stood as if transfixed, staring at the television screen. His face held an agonized look. The console operators waited, motionless, watching the lights, their jobs done. The Slug's guidance now was accomplished

through inertial gyroscopic platforms. Gore sweated and waited. After a while a voice crackled: "Lock on."

The major nodded. The radars and ground-based optical instruments were locked on the Slug. Computers charted its course. An instant later a decisive voice sang out:

"Mark one!"

A restless stir ran through the crowd and someone exhaled audibly. The mainstage engines had cut off.

"Mark two!" the voice said immediately.

Mark two—the first stage had accomplished its separation. Gore pictured the scene: small thrusters had retarded the mainstage; the forward stages had pushed free. A minute bit of space would show between them. The first stage would hug close for a while, but gradually it would fall behind and, finally, curve down into the sea.

"Go it, baby," Jastro pleaded hoarsely. Gore suppressed his emotion and waited. The major tilted his head upward, staring into the ceiling as if he could see the Slug. His face was tight. After what seemed a long time another call-out came, louder this time: "Mark three!"

Gore sighed, feeling his tension ease a little. The sustainer engines had cut off. Mark four came shortly afterward. The trim rockets had shut down on schedule. The single engine, to drive the payload into orbit, cut in.

"She's getting there," Jastro said, his voice edgy. He didn't reply. It looked good, good, but he wanted to know for sure. Mark, mark, mark . . . The Slug drove upward. Again the radar returned favorable reports. After a while Mark seven came. The final engine had shut down on schedule.

Slug was in orbit.

4

"SIT DOWN," the gaunt man said. He nodded briefly toward several chairs across from him and turned back to his report. Gore and Jastro slid into the seats with murmured thanks, wondering at the sudden summons. A moment, several moments passed. Aside from the occasional rustling of paper, the office was still.

Gore watched the gaunt man appraisingly. He had a leathery hawklike face in which the aquiline symmetry was broken by an overly square jaw. The nose, high-arched, was bent midway as if from a sharp blow. A jagged scar crossed one cheek. It wasn't a handsome face, never had been. Rather, the lines were those of patience and strength. The black thinning hair showed streaks of gray. But there was nothing old about the eyes. They were hard, black, expressionless. It was not a kind face. Although engrossed in his reading, he sat curiously erect, as if to slouch showed a sign of weakness. His face and manner spelled *astronaut*. Bryant was his name; Brigadier General Curtis Bryant. He was also commanding officer of Space Wing One.

Jastro stirred restlessly, scuffing his feet over the heavy carpeting and impatiently sliding his hands along the arms of his chair. Gore disregarded him, watching Bryant and waiting. Despite the slight antipathy he felt, he appreciated the fact the Space Wing's top man was no desk jockey. He had gone into orbit at an age when most fliers reverted to desk commands, at a time when going into orbit meant riding a small capsule, hoping it wouldn't blaze to a cinder

during re-entry, or that the programed electronic system wouldn't err. Hoping, too, the capsule would be found when it finally parachuted down into the sea. Gore had been flying an F-106 in those days as part of the Air Defense Command. Bryant, he realized, was a man who had gambled and won—the hard way. Now he was the nation's top astronaut. He'd tabbed Gore for his command immediately on the first space wing's formation. Gore had been joyous at the time, until the moment he'd lost the moon. He blamed Bryant for that one. The Old Man had gone along with Strecker. He was thinking about it when the General Bryant looked up.

"Sorry to have kept you waiting, gentlemen, but I just received an important report." His head indicated the paper before him. Jastro murmured something and he pushed the paper aside, smiling briefly.

"How did you like the launch?"

"It went very well, sir," Gore replied formally.

"A beaut," Jastro said feelingly.

"Yes, I think so." The general switched his attention from Gore to Jastro and back again. "The Slug's success is a big step forward. Now we have a nuclear engine in orbit." He spoke slowly, his eyes alert. Gore waited for him to continue.

"We're going to build an interplanetary vehicle up there —the Spacehive."

"Spaceship?" Jastro blurted. The general didn't answer. Gore felt a touch of excitement, almost as quickly squelched by the question he had to ask.

"A SPA program, sir?"

"Yes, of course, it couldn't be justified as a military program. Or rather, it wasn't," he added.

"I don't see why not, sir," Jastro commented. The general disregarded the remark and continued.

"It seems that getting the reactor up is the least of our worries."

"Oh?" Gore watched his commanding officer intently.

"There's still the assembly job," the other continued.

"For SPA?" Jastro asked.

"With an Air Force assist," said Bryant, nodding.

"That means we do the work," the astronaut observed.

"Not exactly," the general said tolerantly. "We'll continue to supply the necessary transportation facilities and, naturally, do everything we can to assure its success."

"The vehicle was built on the ground, disassembled, and its parts injected into orbit," Gore mused.

"Yes." The black eyes watched him intently.

"Then it's primarily an assembly job."

"Yes, but with complications." The general's countenance hardened and his voice grew clipped. "Building a vehicle in orbit isn't the same as building it on earth. Even a simple assembly job could be overwhelming. But it's more than that. It's being built under enemy guns."

"I doubt they'd pull the trigger, sir."

"No? Did you know we lost a meteorological satellite, a detector satellite, and four communication satellites in the last few weeks? Does that sound like they're soft on the trigger?"

Gore flushed but managed to keep his voice level. "I hadn't heard."

"No, of course not, it's highly classified. But what do you think happened to them?"

"I wouldn't know," he said honestly.

"You can surmise?"

"Russkies?"

"Of course, and Red China." Bryant rapped the edge of his desk sharply. "Those satellites were shot down, gentlemen."

Gore sucked his breath in sharply, at the same time wondering at his reaction. It was no great trick to knock down a satellite. The Air Force had known the technique for several years.

"Launched from where?" Jastro broke in.

The General hesitated. "Kamchatka, Anadyr, Novaya Zemlya . . ." He shrugged. "The detector satellite I mentioned gave a report on the attacking missile. It came up north of the

Koryak Mountains. But we've had other trackings including one from the Tientsin area." He fell silent.

Gore digested the information before asking, "Why haven't they knocked out Tank Town? That's a real pigeon."

"Intelligence conjectures the Reds are playing a bit of psychological warfare, trying to force a retreat on our part, assessing our reactions. The big game—like Tank Town, like the Spacehive—will come soon enough."

"Would they dare?" Gore asked, unconvinced.

"The Reds can't afford to let us complete the Spacehive," the General said sharply. He stopped speaking, studied their faces.

"Could I ask a question, sir?" said Gore.

"Certainly."

"At the last briefing Colonel Bruckman indicated that information about Venus was classified—"

"About certain aspects of Venus. That is correct."

"Is there a connection?" he asked bluntly. The general didn't hesitate.

"The Spacehive is designed for an orbit around Venus," he said quietly. "We intend to use it to transport a smaller vehicle, the Wasp, which will be used for the actual penetration of the planet's middle atmosphere." Gore's lips formed in a silent whistle.

"This is classified information," Bryant went on.

"Yes, sir," they replied simultaneously.

"I'm telling you because it affects your future duties."

"Yes, sir," Jastro repeated quietly. Gore waited, knowing what was coming—knowing and not liking it.

"You'll both be attached to the job," Bryant observed. He looked pointedly at Gore and said quietly: "Construction will be under the technical direction of Clement Strecker, of the Space Projects Agency."

"What will our roles be?" Gore asked woodenly.

"Transportation. Transportation and supplies. The same thing you're doing now. Only you'll be pushing the glidetugs overtime, Gore. Both of you will. It won't be easy. It's not just

a matter of the job, either. The lives of the men in orbit will be squarely in your hands. It might require a bit of ingenuity."

Gore didn't answer. The general waited while the silence built up. Finally he said softly, "You don't like working with Strecker?"

"Not particularly," Gore replied.

"Because he's not military?"

"Because he's Strecker," Gore corrected.

"He specifically requested you, both of you."

"I wouldn't be surprised."

The general hesitated. "You like space work." He made it a statement.

"I like the Space Command," Gore answered obliquely.

"What's the matter, major, think you got chiseled out of the moon?" The general's voice had a hard edge.

"It would have been nice." Gore's eyes were stony, his voice unruffled.

"What the hell do you think we're doing, catering to personal likes and dislikes?" Bryant leaned forward, his dark eyes blazing. "We've got a job to do," he said. "We pick the men for the job—not the men who *want* the job but the men who can *do* the job. Captain Harkness and Lieutenant Peters were good moon men so we put them there, just like we're putting Lieutenants Hegmann and Brice of Team Five there next week." He disregarded the startled expression that crossed Jastro's face and added, "You—you and Jastro—are the best glidetug men we have."

Gore hid his disappointment and said sourly, "It's getting pretty routine."

"Routine? Captain Jensen died bringing one down. So did Major Eberhardt. And they were damned good men, Gore." Bryant lowered his voice. "You've made twelve trips, Ben. More than any man alive. Alex has made eight. If you were me, would you send a less experienced astronaut, especially on a project like Spacehive?"

"No, I guess not," he admitted honestly.

"How about you, Alex?"

"I'd give it to Ben," Jastro responded promptly. "He's the hottest article you've got." Gore grimaced, but Alex continued. "Only I'd like to get a crack at the moon some day. So would Ben. Or something farther out."

The general permitted himself a slight smile. "So would I," he said. "Sometimes I wish this desk I'm pinned to had thrust under it. I feel like a damned voyeur peeping the sky. Don't you think I'd like to get a piece of it?"

"Yes, sir, I can appreciate your feelings," Jastro said tactfully.

"Who'll be in charge?" Gore asked bluntly.

"The pilot of a glidetug is commander of his craft at all times. In addition, in your case, as senior officer present you will assume the duties of station commander, with Captain Olin in command during your absences. The construction —the space end of it—is Strecker's baby." Bryant hesitated before continuing.

"These half-military, half-civilian functions are never quite clear. As a military man, I realize your feelings. But it's one of the facts of life we have to live with. You know that."

"Yes, sir," Gore replied. He realized his commanding officer's words were intended as an explanation rather than an attempt to mollify him, and he felt a touch of guilt. He had to admit that assembling a nuclear vehicle in orbit was a bit out of his line.

"How long will the operation take?" He asked curiously.

"One month. She's slated for completion by 10 August, but we hope to better that." Bryant saw the incredulity in Jastro's eyes. "It's a straightforward assembly job. We've timed the operation on the ground and allowed for space conditions."

"Have you allowed for the men?" Gore asked quietly.

"Strecker's men are tops. They've all gone through the space environment training course," the general assured him.

"It seems short," he said cautiously.

"It's pretty tight but we've got to meet it, can't slip up."

"Because of the Russians?"

"Yes, they're in the race, too. And they're breathing down our necks." Bryant hesitated. "I might add that the budget choppers are watching this project like a hawk. Not only is the future of SPA at stake but, literally, the future of the nation's space efforts. If the Spacehive fails, we'll be back to concentrating on infantry, and that's exactly what'll happen if we muff it and the Carron Committee gets its way."

"Yes, sir," Gore said tacitly, wishing he'd kept up more on his politics. He'd heard about the Carron Committee, of course. It was a power block built around Senator Alexander J. Carron, and it ostensibly was created to help preserve world peace. As he got it, the main idea seemed pegged to the thesis that wars couldn't be fought without weapons; abolish all weapons and wars would disappear. But more recently the Carron Committee had been turning its guns on the nation's space program, urging that the tremendous sums be spent instead for world education.

Gore saw his commanding officer waiting and said, "How about the anti-satellite missile complication, sir?"

"We have defenses in the mill. . ."

"I've been thinking about it—have an idea," Gore offered. The black eyes moved up, came to rest on his face.

"Yes?"

"A stopgap weapon," Gore said. He looked into the hawkish face and for the first time noticed the lines of fatigue and a pallor that seemed out of place in the gaunt features. He began talking. When he finished, Bryant remained silent. Jastro shifted uneasily but Gore waited, poker-faced.

Finally Bryant said, "We'll try it." He looked at Gore more appraisingly. "By the way, you'll have two passengers next trip."

"Yes, sir?" Gore waited.

"Two SPA personnel." He cleared his throat. "Mr. Strecker and a Mr. Carmody, his nuclear specialist. Well, that'll be all, gentlemen."

"Yes, sir." Gore followed Jastro to his feet, hesitated, then said, "We'll give it our best, sir."

"I know that." The general smiled slightly and nodded dismissal.

5

12 JULY 1969.

A great red sun was just lifting above the horizon when the time before flight entered its final minutes.

Seated in the pilot's compartment of the glidetug, Gore made a quick check of his personal equipment before looking out through the leaded glass port. A clash of blazing light backdropped the desert's foothills. The shadows were fleeing from the sage and the sky was turning to a pale washed blue. The bed of the dry lake ahead of him, parched and cracked into odd geometric shapes, had a reddish color that reminded him of the hills back of San Diego.

Gore spoke tersely. "Check safety belts, harnessing. Acknowledge."

"Roger," the muffled voice of Clement Strecker answerd from the rear compartment.

"Roger." The second voice—Lewis Carmody's—was faint, worried, and Gore smiled slightly. Strecker's companion from the Space Projects Administration didn't seem overly enthusiastic about going into orbit. Not that he blamed him. Normally the SPA men were confined to their laboratories. But now the time had come when the laboratories had to be moved into the sky. Carmody was a nuclear engineer and the reactor was his baby. All in all, some ten or twelve SPA men were slated for orbit. Gore didn't relish the thought.

A five-minute check came over the phones. He shifted restlessly in his heavy space suit and glanced out the small side port. The glidetug had lost its identity. Now it was merely

the third stage of a MEOS vehicle—a large manned earth-to-orbit rocket. Nestled horizontally atop an oversized rocket sled, its over-all configuration was that of an immense triangular sweep of metal with four great nozzles protruding from its base. So huge was it that the small stubby rudders and rocket engine housings that marked the second and third stages seemed but minor parts of the vehicle's over-all pattern

It had the lines of a vast delta-wing aircraft rather than those of an orbital rocket, he thought. Certainly it but little resembled any of the great rockets launched vertically from Orbit Point. This was, in fact, the only horizontally-launched type of manned space vehicle known to the Western world, and he doubted the Russians could equal it. The sled itself was huge, an offspring of the smaller rocket sleds used to test men and equipment at near sonic speeds. He looked out over his shoulder. Only a faint closely machined groove showed where the glidetug was mated to the second stage, forming the triangle's nose. He thought again that the rocket poised here in the emptiness of the desert was an incongruous thing.

Automatically scanning the instrument panel, he acknowledged the four minute call-out and shifted his wide shoulders to squint out the side port. Off to one side small figures were moving into a squat blockhouse. One of them had stopped to wave. He recognized his teammate's lean figure and passed a hand across the viewport in reply. Jastro wig-wagged both arms, held up two fingers and turned back toward the blockhouse. Good boy, he thought, watching him vanish through the narrow entrance. He couldn't have picked a better man if he'd had his choice. Team Two—damn, they'd make the planets yet.

Restlessly he scanned the area. Several smaller buildings near the blockhouse bore antennae, and one had a radar scan. In back of a parking area a high metal framework topped by a control tower rose gaunt against the desert's face; beyond was a huge hangar. A second MEOS vehicle mounted on a

rocket sled stood off to one side on a rail siding. The Bucket —Jastro's Bucket—would follow in two days.

The three-minute call-out came and he switched his eyes to the front. The wide-gauge steel rails on which the sled rode ran lengthwise over the surface of the dry lake, gleaming in the dawn sun like twin bands of silver before seeming to merge and become lost in the distance.

At two minutes to zero he said, "Check suit ventilation and pressurize. Acknowledge."

"Roger . . . Roger." The words drifted up from the twin bucket seats behind him. Checking his suit mike connection, he shut his faceplate and opened an oxygen valve. Air rushed into the G-bladders and he felt the pressure build up against his arms, legs and torso. The fabric became taut. Finally he checked his in-built mike and headphones. They were in order.

"T minus one minute," a tiny voice crackled in his ear. He acknowledged and waited, conscious of the old familiar tension building up inside him. He tried to shake it off. No go. It came with every launch, a curious commingling of excitement, anticipation, wonderment. Fear? He wasn't sure. Despite the air circulating throughout his suit his hands felt clammy.

His thoughts flicked to the men behind him. Strecker appeared to be taking the launch in stride. His voice had never lost its slightly sardonic quality and he showed a quick familiarity with his suit and equipment. But then, he'd had lots of flying time, Gore reflected. He didn't like the man but he had to admit there was nothing wrong with his nerves; he could just as easily have sent a subordinate. No, he had guts.

Lewis Carmody was a different proposition, he decided. Like Strecker, he was a space engineer—at least on paper. But the slender narrow-faced man was frankly worried. He had seen it in his eyes, known it by the way he had gone through the motions of donning his spacesuit and climbing the tall ladder to the glidetug. Robot, he moved like a robot. His very lack of expression was the tip-off he was fighting to keep

his nerve up. Remembering his own first launch, he could understand the SPA man's feelings. The call-out was coming in seconds now. At T minus ten seconds he felt his harnessing, glanced at the instrument panels and waited.

"Four, three, two, one—" He took a deep breath.

"Zero seconds."

A sputtering followed by a deep roar came through the cabin walls. The powerful solid propellant engines built up to full thrust within seconds and the huge sled began to move. The desert sage inched toward him, came faster and faster and faster. The roar grew louder, became a steady beat against his ears and he felt pressure crushing his chest and forcing his body back against the seat. His arms and legs grew numb.

The sage was speeding past. It became a blur and he forced himself to relax, thinking the first stage was always the toughest. Despite the escape facilities—he had only to punch the chicken switch to eject the entire sealed capsule hundreds of feet into the air where an automatically-opened chute would lower it to the ground—he knew that escape at this speed held dreadful odds. The sled could derail, explode. The MEOS engines could fail to ignite near the end of the track where a plow beneath the sled would dip into a water trough to bring it to a frightfully quick stop: the sudden deceleration was murder. Anything could happen. His hands felt sweaty and he knew his mind played at the edge of fear.

He didn't savor the first stage; didn't savor it because he wasn't the pilot at this point. The flight was programed, controled from the ground, would be until after the final stage separation. Until that instant he was so much baggage. He felt the pressure increase; his ears buzzed and his eyes blurred. But he kept them glued straight ahead, staring through the leaded glass.

The distant hills rushed to meet him. The ground passed so swiftly that the stunted forms of the desert's sparse growth lining the edge of the lakebed made a continuous blur. The clacking of the sled's wheels punctuated the deep roar of the

rocket engines driving it; a sound akin to an express train hurtling through a long narrow tunnel, he thought. Faster . . . Faster . . . The landscape became a flicker, dull and indistinct. The sled roared across the floor of the dry lake like an unleased arrow and the air buffeted the glidetug with quick sledgehammer blows, giving the illusion of yawing.

He fought to clear his vision, read the chronometer and G-meter. The dials seemed to dance and he thought the sled should be near the end of its run, at better than Mach .84. Momentarily he wondered how his passengers were enjoying the ride, and almost as quickly forgot them. The barren desert hills were near now. His chest ached and he gasped, breathing high in his lungs. They felt seared with fire.

"Stand by for sled separation." The tiny voice in his headphones spoke matter-of-factly. He inhaled deeply, feeling the pain, exhaled and let the mask pressure force the air into his lungs again. A new roar came through the bulkheads; a stentorian bull-fiddle roar that made the sled rockets sound mild in comparison. Smaller turbojet engines, used to supplement the rocket engine thrust during ascent through the denser regions of the atmosphere, added to the din. The noise spectrum grew, drowned out the clacking of the wheels, filled the cabin with a vast thunder despite its elaborate soundproofing. Power. The noise represented the hell of unleashed energies necessary to drive the MEOS vehicle into the skies. A distinct tremor shook the compartment, overriding the high frequency vibration of the noise spectrum.

Separation!

A sudden shifting of force threw his blood and guts downward, pinning him to the seat as the MEOS vehicle, freed from the sled, accelerated rapidly and started upward in a long shallow curve. Its path steepened and the resulting negative-G forced his body fluids toward his legs, draining his brain. His calves and feet felt like inflated balloons, his hands were lead weights, and the dizziness increased. Once again he was starting through a long black tunnel; the circle of light at the end grew smaller and smaller and he blinked rapidly

to keep it from vanishing altogether. Gasping, holding his stomach muscles taut, he fought the increasing pressure. The direction of force on his body changed as the rocket made a slight correction. His vision cleared, the dizziness let up a bit and he focused his eyes on the altimeter.

Fifty thousand feet. The rocket was already leaving the troposphere, the dense air region of storm. He'd barely comprehended the information before they were well into the stratosphere, climbing through cold thin air that remained at nearly a constant temperature of 55° C. It was a region where the atmosphere was too thin to transmit sound. It was also a region of tricky high-velocity air currents and strange mother-of-pearl clouds. The noise of the powerful engines had dropped to a muted roar and the cabin no longer vibrated. The MEOS vehicle climbed with incredible swiftness. In no time at all the small voice in his phones said:

"Staging."

His glance went from the chronometer to the radar altimeter: 170,000 feet. Right on the button. Abruptly the muted roar stopped and the rocket glided through the velvet gathering dusk of space, borne on the wings of momentum. A slight jerk came through the bulkheads. It was caused by the detonation of small solid propellant rockets designed to retard the mainstage, letting the forward stages surge free.

An instant later the muted rumble came again, and with it a sense of pressure. He studied the G-meter. It moved up, hovering near the three-G mark. Comfortable, he thought. They had it whipped, or almost whipped. He watched the radar altimeter. Outside the ship areas of concentrated ozone absorbed the sun's radiation and the temperature started moving up, but abruptly fell as the cold of space closed in.

Twisting his head, he looked downward through the side port, searching for a moment before he caught the metallic glint of the first stage. It had started earthward along a course that would carry it over the sea. Below, and now far to the north, the men in the blockhouse would be bent over their electronic consoles, guiding it down, a precarious passage,

he knew. The stage would wing seaward, decelerating through the use of programed retrorockets as it approached its destination. At lower altitudes the turbojets would cut in; later, systems of air brakes, drag chutes and, finally, a large metal parachute would drop it to the surface of the sea. Flotation gear would keep it afloat until Navy units could recover it. Retrieved, it would be rushed back to a factory for repair and operational readiness. In less than a week it would be back at Big Strip, ready to hurl other astronauts into orbit —if the landing went as planned. He turned his attention to the instrument panel.

The rocket altered its course slightly. The knowledge came in the form of pressure against his body. Now it was curving into orbit, riding a trajectory programed to reach zero upward velocity in the orbital plane of Tank Town. Still accelerating, the rocket rushed through a tremendous black desolation; the bounds of its realms were infinity. A crackle came through the phones, a sputtering that rose and died, a twisted voice lost in the seething sea of ionized atoms high above the chemosphere. He knew the meaning of the crackle: in a few seconds he'd be free, on his own. The knowledge gave him relief.

Separation occurred in the deep dark of the ionsphere. It came as a minute push that followed by seconds the cutoff of the second stage engines. An instant later the murmur of the third stage engine came through the bulkheads. Looking out, he saw the second stage fallng away, also to be guided home into the sea. Home. He smiled at the thought. Home wasn't down there; it was here, in space. This was the real home of the astronauts. General Bryant had once said the main usefulness of Earth was as a hoping-off point, a fulcrum point by which to lever humanity to the stars. Whatever it was, it had become replaced by a new home: space. The discomfort, stress, even the danger was a small price to pay to see the universe as it really was instead of through a dense blanket of air. He took an instant to pity the general, shackled to his

desk, then dismissed him and spoke into the phones. "You can bleed the suits."

He heard the slight hiss of escaping air as he released pressure, followed by Strecker's slightly mocking voice.

"Congratulations, major, a nice trip."

"Programed. The computers did it," he replied bluntly.

"I know." Gore ignored the gibe and asked; "How'd you like your introduction to space, Carmody?"

"I'm still scared." The engineer laughed nervously. "For a while I felt like I was being crushed under a steamroller." Gore liked the frank answer.

"It's not comfortable," he agreed. He studied his instruments before looking earthward, conscious the other two were straining to see through the side ports. Baja California was a long finger of land in the east, already receding. Ahead lay the cloud-sprinkled Pacific, split between night and day. Farther to the left, Mexico filled the horizon, a patchwork of various shades of gray splotched here and there with light sand-colored areas. It was night to his right, day to his left. He turned his eyes up from the curving horizon. Sheets of stars formed clusters, spirals, odd geometric shapes, tremendous banks of stars that in some areas merged to form giant pools of light. Colored pools. He turned back to the cockpit.

Tank Town and the yard were small blips on the radarscope. He gimbaled the engine, making a slight course adjustment. This done, he got on the radio.

"Wheelhorse to Tank Town. Come in, Tank Town."

"Tank Town—" the response was immediate "—Devlin speaking. We've been watching you on the scope, wondering if you'd foul up." Gore smiled and told him what he thought about Tank Town's occupants.

"No offense," the astronaut replied. "It's just that we're not sure Team Two has the experience for this sort of thing."

"Quiet, or Team Three'll find itself floating around in that bag without visible means of support," he threatened. "Don't forget, we're the delivery boys."

"We bow down," Devlin replied humbly. "What's the grocery man bringing today?"

"Two VIP's from the Space Projects Administration."

"Females?"

"Males," Gore corrected.

"Take 'em back."

"I'd like to." He glanced through the port. Two large cylinders floated off to one side, beyond which the huge tankage of a missile resembled the hulk of a ship on a lonely sea. An object that looked like an overly-long telephone pole floated farther out, next to a cluster of spheres, and a number of other objects of all sizes and shapes were strewn along the orbit at varying distances. He spoke into the mike:

"Where's the Slug's payload?"

"Way up ahead. Olin and I gave it a look-see. It's okay. Just a matter of rounding it up."

Gore grunted, thinking it could be the damndest roundup he'd ever heard of. There was an interplanetary ship up here. Only it was disassembled, strewn along the orbit like a bunch of randomly flung pebbles. But that was Strecker's headache. He smirked, thinking the VIP from SPA was due for a workout. He felt a trifle sorry for Carmody, who didn't appear to have the constitution required for the rugged task ahead, but he seemed a fairly decent sort. Gore wondered about him. SPA or not, he had taken the full treatment at the Air Force space indoctrination course—and had come through. Maybe the man was tougher than he looked, he thought.

Tank Town loomed large in the visual scope. The distance decreased, fast at first, then more slowly as the glide-tug lost its upward velocity. Finally it was riding in space slightly above and to the rear of the tremendous cylinder that had started its life as the tankage of a super ICBM. He spoke:

"Pressurize your suits . . . five psi." He closed his own faceplate and opened an oxygen valve, feeling the pressure build up around him. The spacesuit tended to increase in girth and length and the internal pressure forced his helmet upward

against its restraints. The faceplate clouded for an instant before the circulating oxygen cleared it. Bellows joints permitted limited flexion of his knees and elbows and a ball-bearing joint between the helmet and suit allowed him to turn his head slightly. He experimentally flexed his fingers, finding difficulty moving them. Finished, he looked toward Tank Town. A spacesuited figure holding the end of a mooring line was zooming toward him. Olin. Even in the heavy gear he recognized the other by the particular way he held his body.

"We're home," he announced.

6

"WELCOME to Tank Town," Gary Olin greeted, as the glide-tug passengers depressurized and opened their faceplates. His face, tired and bearing an odd pallor, wore a welcoming grin. Gore made brief introductions.

"Glad for the company," Devlin declared, grinning. "It's been mighty lonesome up here with no one around but poor old Olin."

"Quiet, or I'll have you out collecting meteorite dust," the astronaut threatened.

"You won't be lonely long," Strecker promised. He attempted a smile, conscious he was floating several feet above floor level, unable to help himself. He started to remove his helmet and the effort sent him spinning against a bulkhead. First he looked startled, then grimly determined to get control of the situation.

"Weightlessness," Olin reminded. "It takes a bit of getting used to."

Strecker didn't answer. He managed to free the clasps holding the helmet, then leaned forward and pushed to remove it. His body spun slowly backward, colliding against one of the consoles as he frantically tried to catch a balance that no longer existed. Carmody was having equal difficulty. The astronauts suppressed their smiles. The sight of Gore slipping from his spacesuit in easy graceful movements made them appear all the more ludicrous.

Finally Strecker snapped, "Could you give us a hand?"

"Sure," Olin drawled, winking at Gore. He and Devlin

went to his aid, one holding him while the other removed his suit. Finished, they turned their attention to Carmody, who appeared somewhat embarrassed at his inability to control his movements.

"Don't let it bother you," Olin advised. "We all have the same trouble at first."

"How long before you get the hang of it?" the engineer asked.

"Some people never do," he confessed.

Gore left his suit suspended in midair, caught hold of a stanchion and propelled himself toward a locker, where he got some plastic-topped slippers. Zipping on a pair he stood up.

"Magnetized. There's no up or down or sideways in space so we've arbitrarily established a floor," he explained, indicating several metal strips that ran lengthwise through the station. "You might try 'em out."

He sent two pairs floating through the air and Strecker and Carmody promptly got into trouble again trying to catch them. Olin and Devlin stepped in and steadied the men. Strecker's face was visibly angry. Strapping the slippers on, they tentatively extended their feet toward the metal strips. Audible clicks came as they made contact.

"They give a fair grip but you've still got to be careful," Gore warned as they tried a few steps. Carmody grunted, holding his arms out as if tightrope-walking. They practiced until they mastered the trick of walking without making any unnecessary arm or body movements. Even so, it took a long while before they moved freely, Carmody longer than Strecker.

"Care to look over the station?" Devlin invited when they were satisfied with their progress. "It's not large but it's interesting."

"Has everything but women," Olin mourned.

"Wait'll you've been married as long as I have. This place'll look good," Carmody observed wryly. Gore grinned, thinking he liked the little man more all the time. He was a sharp contrast to his sardonic companion.

"The cabin atmosphere's a mixture of oxygen and nitrogen at a pressure equivalent of about 10,000-foot altitude, temperature around 70°," Devlin explained. He was a lank, gangling figure with yellow hair, seemingly much younger than his twenty-five years. New to the astronauts himself, he was extremely proud of the station, a fact he tried to conceal by referring to it as a cave in the sky.

Carmody asked, "Any trouble keeping the CO^2 level down?"

"We've been able to keep it well below one percent. At the present we're absorbing excess carbon dioxide by use of chemicals—granular lithium hydroxide—but we've got the experimental algae tanks cooking." The engineer nodded understanding and he added, "Humidity's a comfortable 35 percent."

He pointed out the sleeping pallets, now folded against the walls, and the instrumentation console for monitoring radiation. He started to explain the operation of the latter and abruptly stopped, as if recalling Carmody's specialty. The small man grinned.

"If I were running this station, I'd keep my eye glued to that baby around the clock," he said. "Those solar flares scare me."

"They're not as bad as we once thought, but we watch them pretty closely," the astronaut admitted, adding that a record of each man's dosage was kept from the moment he came into space.

"Show them through the rest of the station," Olin suggested. "They might like to see the girlie pictures you've got hung around the back."

Carmody, grinning disarmingly, asked, "Get the latest TV shows?"

"No, that's one of the benefits," Devlin replied. "We rely on our own talents for entertainment."

"He means he's a comedian," Olin explained. While Devlin showed them through the two-room quarters built inside the orbiting tankage, Gore filled Olin in with the latest information.

"Looks like we're stuck with the Spacehive," Olin murmured when he had finished. "I was hoping to get back to the Strip, maybe get a crack at the moon."

"There's a lineup for that one. Team Five—Hegmann and Brice—have the next shot wired," Gore informed him.

"Straight dope?"

"Straight from the Old Man."

"Then it's straight." He pondered the information. "What's the setup?"

"I wasn't told. I imagine it'll be like the first landing; a manned vehicle and a couple of supply drones," Gore surmised.

"It'll be easier this time. They can go into orbit around the moon and let Harkness monitor them down."

"Probably, but it won't be easy."

"No, it won't," Olin agreed. He sucked his lip thoughtfully. "The lucky dogs."

"We'll get a chance eventually," Gore encouraged.

"Sure, when it's as crowded as Grand Central Station." Olin got a hopeful look. "How about Spacehive?"

"A SPA project. We're just the errand boys," he replied bitterly.

"It might be built by SPA but it'll be manned by the Space Command," Olin stated positively.

"Maybe."

"What's its mission?" Gore shrugged, remembering the general's caution. He'd let the Old Man spread the word himself. "That reactor spells planet to me," Olin pursued.

"Could be."

"Mars . . . Venus . . ." The astronaut's eyes got a faraway look.

"I'd rather have Venus," Gore stated.

"Why?"

"The misty planet," he said slowly. "I've thought about it for as long as I can remember . . . men going down into the mists." He looked suddenly sheepish. "But I'd settle for Mars."

They kicked around the information Gore had gotten dur-

ing the last briefing and on the satellites lost through missile action. The latter didn't surprise Olin.

"We got word to keep on our toes," he admitted. "We guessed something like this was in the wind." He grinned wryly. "We make a nice target, don't we?"

"The Old Man's figuring an angle," Gore told him.

"What? Better burial benefits?"

"He didn't say." They saw Devlin returning with the others and fell silent. Strecker's smile was cynical but Carmody bubbled with enthusiasm.

"A really remarkable job," he said beaming. "The inflated rooms make it as comfortable as an apartment."

"Except this apartment spends about half its time over the Red World," Devlin supplied drily.

"One of the hazards," Strecker intoned.

"We've got enough junk in orbit to cause a total eclipse down there," Olin remarked sourly. "Why in hell didn't your outfit pick an equatorial orbit? At least then we wouldn't be looking down their damned throats all the time."

"Mainly supply problem," Strecker answered. "But neither did we expect a shooting war."

"Shooting war?" Devlin was astonished.

"We've lost a couple of satellites, but it's a long way from a shooting war," Gore interjected.

"Man, I hope so," the astronaut declared. "This is like flying in front of a duck blind."

Olin cut in. "How would you like to go outside, look over the yard?"

"The yard?" Carmody asked curiously.

"That's what we call the area around the station."

"Sounds good. What part of the world will we be over?"

Gore motioned toward an 18-inch globe of the world set inside a gimbaled bracket next to one of the control panels and the SPA men moved over for a closer look. A complicated mechanism rotated the globe so that the station's position over the earth was indicated by a fixed pointer.

"Pretty neat," Carmody said. He edged closer and got a startled look. "Russia's coming up."

"So it is," Gore agreed dryly. "If we hurry we can look down on Stalingrad." He glanced at Strecker, adding, "There's probably a nest of anti-satellite bases there."

"I'd like to see them," the SPA man answered smoothly.

The world spun beneath them; a vast, cloud-spattered ball that held both night and day. Tank Town was racing up the backside now, streaking over the highlands of Iran. It was light to the west, dark to the east. The mountains of Tehran, south of the Caspian—Gore knew them only by their position—swept past and Russia rolled beneath them. The land was a mosaic, partially obscured by a cloud cover. To their left was a glint of water, appearing scarcely more than a blue puddle in the immensity of the continent: the Black Sea. The Mediterranean had receded on one side, and to the east the Caspian was caught in night. Ahead lay the heart of Russia itself.

He returned his eyes toward the Caspian. There, somewhere in the blackness, was Kapustin Yar. He hesitated, refraining from calling out the area. This was just one base. The pulse and muscle of enemy power, a broad band reaching high into the Arctic, was invested in a score of such bases. Missiles, satellites, lunar spaceships, and now anti-satellite missiles were all launched from the dark landing sweeping past below him. Komsomolets, Anadyr, Severnaya Zemlya, names that were as familiar to him as neighborhood streets. Other names for death. The astronauts had named the stretch between Kapustin Yar and the Barents Sea "Missile Alley."

He floated alongside the station. His companions were swimmers in a velvet night. The glint of sun on their spacesuits gave them the appearance of cosmic fireflies. He watched contentedly. The night side of the earth was a formless black giant. Black, except for an occasional pale splotch marking the location of a metropolis. But the sky was alive. Violets, blues, greens, yellows, reds and orange reds were the clear

steady eyes of a great canopy that filled the universe, except where they were blotted out by the Earth itself.

He found an inner peace in orbit that was unknown on earth. There were no clouds, no winds to rustle through the payloads, no sound except that which came through his earphones. Nor was there any random movement. It was a steady, predictable world, free of the stresses man had made for himself on the huge splotch hurtling through space below him.

For a while he listened to the chatter over the phones, suppressing a chuckle. Apparently Strecker and Carmody were finding it difficult to propel themselves by use of the small handjets provided for that purpose.

"Fire with the recoil along a line that passes directly through the center of gravity of your body and you won't spin," Olin was advising.

"I'm trying . . ." Gore recognized Carmody's voice. The small engineer sounded thoroughly miserable and he felt a flash of sympathy for him. A little vertigo in space was far worse than airsickness.

"There, that's better," Olin encouraged. Gore returned his attention to the yard. Off to one side was a cluster of spheres linked together by lengths of strong, lightweight nyla cord to prevent any slow scattering that might occur. It had been that job Olin and Devlin had started when the station was transferred to SPA's use for the Spacehive project. Odd shapes littered the sky. He saw a scattering of cylinders of various sizes, ovoid-shaped capsules, other shapes that resembled nosecones and tankage structure.

A unit that resembled a small dumbbell tumbled slowly along, end over end, giving a stroboscopic illusion as the sun caught its changing surfaces. Behind it a long telephone pole-shaped object trailed Tank Town at a distance he couldn't calculate, for there was no visual frame of reference to measure it by. A number of other objects were strewn in orbit, as if randomly flung into the sky. Although the payloads of each missile had been programed to home in on Tank Town's

radio, the components of the Spacehive were spread over several cubic miles of space.

Occasionally one passed between him and the stars, eclipsing the glowing baskets of light in its movement. He looked up into the bowl of night: Polaris, the Great Dipper hanging down, and opposite it would be Cassiopeia. Star-naming had been a pastime from his youth. For a moment the years rolled back and he was lying on the low hill back of his home in San Diego. Vega, the blue-white sun in Lyra, Deneb in the Northern Cross, and Altair in Aquila would form a great brilliant triangle overhead. He used to wait for them to rise in the cool September evenings. Names that were music.

He moved his body, adjusting it to the suit. This was unlike the garment he wore in the glidetug. Bulkier, more cumbersome, it gave his body gigantic proportions. This was a spacesuit, a micro-model of the earth environment itself, designed for living and working for long periods of time in the vacuum of the stars. The heavily-leaded faceplate was equipped with filters which automatically limited the intensity of light to prevent visual damage. A small panel on his chest enabled him to control the suit's three main subsystems: environmental control, communications, and sensors that monitored carbon dioxide, oxygen and trace gases. The electrically-heated double-walled faceplate prevented fogging and frosting from respiration. Thermistors served as temperature sensors with individual circuits controlling the internal temperatures for different parts of the body to compensate for heat differences between the sun and shadow sides. Another device warned of micrometeoric damage. Still another gave a radiation readout. A UHF line-of-sight link provided communications, with a small loop antenna atop the helmet to provide direction in the limitless void. He liked the suit despite its bulk. It gave him an otherworld feeling.

Floating comfortably, for the moment he forgot his companions and Tank Town. The sky was sown with livid suns and somewhere out there were alien planets. Planets for the

taking. The cold moon was pale in comparison. Mars and Venus were but neighborhood pebbles. He cursed softly for having been born too soon. Men after him, in long generations to come, would reap the harvest.

He shook the thought aside and studied Tank Town. It was a vast cylindrical bulk, the huge cigar that erased the stars in its passage across the heavens. Antennae and radar equipment, automatically erected after it had reached orbit, protruded from its nose. Alongside its massive body, a cluster of liquid oxygen spheres nestled in the cold of its sunless side and four huge bands circled the station's body. Half black, they could be rotated to absorb or dissipate heat, according to the need. He idly contemplated the scene, feeling a strange inner peace he seldom knew on earth. A voice—he recognized it as Carmody's—came over his phones.

"Where's the reactor?"

"Leading the station by some hundreds of yards," Olin answered. His voice was muffled as if he had a cold. He added, "We have a line to it."

"Can we see it?"

There was a hesitancy before the astronaut replied. "Later. Later we'll go out. We're on the downleg again and we'll be tied up with communications for a while."

"Are all the components linked?" Strecker asked.

"No, we haven't had time."

"Then how . . .?"

"We monitor them pretty closely," the astronaut cut in. "They gyrate in odd ways but we've linked the chief offenders. The rest are coming along nicely."

"We hope," Strecker snapped.

"We know," Olin affirmed softly.

7

SOVIETS REJECT U.S. PROTEST ON SHOOTING DOWN SATELLITES

WASHINGTON, July 13 (AP)— The Russian Government today rejected a U.S. protest lodged against the destruction of "several" American satellites during the last few weeks, an informed source close to the White House stated today.

Loss of the satellites was publicly disclosed yesterday in a copyrighted article in the New York *Times*.

Although it could not be verified, the note was believed to have been handed to A. A. Tatarchenko, the Russian Ambassador, several days ago. Its exact contents were not revealed.

A high-ranking Air Force officer, who declined to allow the use of his name, admitted the loss of the satellites, and stated categorically they had been destroyed by anti-satellite missiles. He refused to affirm or deny that this country is equipped with a super anti-satellite missile of its own.

According to Radio Moscow, the latest edition of the Red Army Journal, *Krasnaya Zvezda,* editorially stated that snooper-type satellites would not be tolerated in Soviet space. The journal is regarded as a spokesman for Russian military policy.

The latest development in the touchy international affair is expected to result in a vigorous American protest against what a high-ranking State Department officer termed, "An act that has shaken the civilized nations of the world."

In other developments, Alfred Wengler, Secretary of the Carron Committee, told newsmen the nation's space program was an open invitation to a holocaust which could sweep mankind from the face of the globe. He said he expected the committee to lodge a protest with the White House to suspend all space activities until an international agreement could be reached regarding space rights.

"Anything short of this means total war," Wengler warned.

Senator Harmon N. Bridgeman (D-Calif.), Chairman of the Senate Space Activities Committee, told newsmen that Russia had recognized space as an international property on October 4, 1957, the day she launched Sputnik I into orbit over the nations of the world. Senator Bridgeman stated: "This nation does not propose to recognize any proprietary claims to space."

The red sun broke the horizon again.

The desert flat roiled beneath manmade thunder as a huge rocket-driven sled hurtled across a lake bed, attaining a speed of Mach .84. At a precise instant in time the main rocket engines and turbojet assists of the MEOS vehicle atop the sled roared to life and the vehicle lifted, zooming skyward trailing a fiery wake.

Tank Town's occupants watched it come up. Olin's face was intent, Devlin's alive with suppressed excitement. Gore masked his expression but felt the worry nagging at his mind. Strecker and Carmody were frankly curious. The blip on the screen that was Jastro's Bucket split as the final stage separated. One blip curved back toward earth.

Gore exhaled, feeling the tension drain away. The final separation was the critical point, an instant when the electronic systems relinquished control to the human pilot. Jastro was on his own now. He felt better for that. Olin got the wedge-shaped speck of metal on the visual scope while Gore slipped into his spacesuit. The glidetug was coming along fast, on schedule.

"Bucket to Tank Town." Jastro sounded cocky. Devlin adjusted his mike and spoke:

"Come in, Mr. Bucket."

"Captain Bucket to young looies," Jastro replied. "Have the brass roll out a space carpet. We got two visiting firemen."

Devlin glanced around. Gore was entering the air cylinder. "Your boss is going out with the carpet now," he reported.

"Good, he'll have a chance to see how a first-class driver handles one of these wagons."

"Watch out for the traffic," Devlin warned. "It's dangerous for amateurs."

Gore emerged from the airlock and floated alongside the station, watching the glidetug slide into orbit. It came swiftly, growing in size, an arrowhead that sparkled on its sunward side, then seemed to slow down as the relative speed between it and the yard decreased. Jastro made minute corrections with the vehicle's auxiliary jets until it was riding serenely behind the Wheelhorse. Grasping the loose end of a mooring line, Gore gave a burst with his handjet and zoomed up to meet it.

The visiting firemen were, as he knew, two more of Strecker's crew: Gordon Lindenwall, an electronics engineer, and Albert Grumann, an airframe construction specialist who was slated to act as Strecker's crew chief. Both were short, dark men in their early thirties, but there the resemblance ended. In contrast to Lindenwall's wiry frame, Grumann was built like a wasp, with wide, powerful shoulders, big arms and hands, but the hips and legs of a dancer. His voice when he spoke, had the hoarseness of a foghorn. Lindenwall's was almost gentle. While they went through the routine of adjusting to weightlessness and learning to walk—Strecker wore a supercilious smile—Jastro got Gore to one side.

"The fat's on the fire," he said. He related the latest news on the satellites and added, "Bruckman briefed me before

take-off. He confirmed it. He indicated the powers that be might suspend the Spacehive operation until this thing's settled."

Gore snorted. "Settled how, by knuckling down?"

"He didn't say."

"They can't stop now. Not with a reactor in space."

"That's what I told him," Jastro agreed, "but he did say it wasn't an Air Force idea."

"SPA, maybe?" Gore didn't sound convinced.

"I wouldn't think so."

"No, neither would I," he said slowly. "It's their life blood. Sink the Spacehive and they might as well fold, along with the whole space program," he concluded.

"Not while we've got a moon base," Jastro corrected.

"No, but it could cost us the planets."

"We're usually second place anyway." Jastro smiled wanly. "My guess is that it's the Carron Committee. It's been raising a helluva squawk."

"Damned politicians," Gore growled. He got another thought. "When does Team Five go up?"

"Friday. The schedule is firm."

"I'd like to see that launch."

"I'd rather be on it," Jastro said with feeling. He grinned crookedly. "Bruckman said the Old Man was called back to Washington."

Gore considered it. "That could be good or bad." He looked with interest at his teammate. "Did you get any special orders?"

"Only what Olin got by radio; to stay glued to the instruments and maintain a communication checkout with all tracking stations."

"Hell of a lot of good that will do if any hardware comes up."

"Give us a chance to say our prayers," Jastro replied. They talked a while longer before turning back to the men. Strecker was restless, anxious to get back into space. Although he only had about a third of his crew, there was

much that could be done, such as moving the more distant payloads into closer proximity, mooring them to prevent drift, stripping the protective shields from some of the components and preparing them for assembly into the Spacehive's complex structure. When Grumann and Lindenwall had achieved a little mastery of their sealegs, Olin broke out extra spacesuits. Lindenwall eyed his skeptically.

"You could get two people my size into this thing. Haven't you anything smaller?"

"They're all the same size," Gore interjected.

"Yeah, too damned small," Grumann growled, finding difficulty getting the suit over his wide shoulders.

"They were made for the perfectly built man," Jastro told him. "Notice how nicely mine fits?"

"Then why hasn't it got a peanut-sized helmet?" Olin cracked.

"Because I'm not on Space Team Three," the astronaut retorted.

Gore gave the newcomers brief instructions on the operation of the suit subsystems before they closed their faceplates, pressurized, checked their communications and, one by one, passed through the air cylinder, leaving Devlin to man the station. Gore went last.

He emerged to find the Antarctic icecap fleeing past. Ahead, he saw the glint of sunstruck waters. For a while he let his body drift, watching the stars gleam overhead. Major Gore of the Space Command—just now the world seemed far away. Orbit was lonely, peaceful and beautiful, he thought, like a woman's face in a world where but a single woman lived. He idly studied the racing surface beneath him. An unbroken expanse of blue water lay to the west. Eastward the Indian Ocean was smothered in night. He looked ahead. The Cape of Good Hope was a blur on the northwest horizon and Madagascar, off the east coast of Africa, sprawled on the sunlit side of the dusk line. Olin's voice tinkled in his ears:

"The boom line is secured." Grumann broke in to explain

the next task. Although Strecker was in command, Gore quickly realized that the squat, powerful crew chief spearheaded the actual assembly operations. He listened with half an ear, staring into space. After a while he shifted his eyes to his companions. They were small mites in the distance, floating around an elongated payload that had been fired into orbit several weeks before. The sun reflecting off their suits and the metal surface of the payload was a many-faceted thing. He eyed the scene speculatively, wondering if they'd be allowed sufficient time to finish. Damn, the Reds were bad enough, but when opposition came from the home front . . . .

After a while he lifted his handjet, aligned it in the opposite direction and triggered a burst, feeling a momentary push against his arm. Only by watching the station recede could he get an awareness of movement. Near the boom he triggered another burst to slow his progress, coming to a stop next to Carmody.

"She looks in good shape," the latter greeted.

"Should be. It was handled like a crate of eggs." Looking at Carmody he thought space should be good medicine for a man's ego. The spacesuit made him appear a veritable superman. Grumann said, hoarse-voiced:

"We might as well open 'er up." He was drifting alongside Olin at the far end of the boom.

"The sooner the better," replied Strecker curtly.

Grumann pulled himself slowly along the boom, stopping now and then to release a lock bar. Gore watched the operation with interest. The boom was telescoped. When opened, it would provide a long shaft to separate the Spacehive's cabin from the nuclear engine, a distance necessary to protect the crew from the exhaust radiation. Grumann kicked his legs as if swimming and Gore grinned, thinking space was like a sea; the impulse to swim through it came naturally. Despite his own familiarity with space, he sometimes caught himself making breast strokes, especially during the first few seconds after stepping from the airlock. Grumann finally reached

Carmody and halted, holding on to the boom with one gloved hand. He nodded at Gore.

"It might take a little pulling to open this baby," he explained.

"We'll have to apply equal force outward from the ends," cut in Strecker.

"Pushing alone won't do it," Gore observed. "You'll need your jet assists."

"Certainly." Strecker's voice was a brittle rebuff. "Push in a direct line along its longitudinal axis."

"Okay, we'll push from this end, you from that," Grumann directed. "Get set and I'll give the word."

"Roger," Lindenwall answered. Grumann and Carmody anchored themselves to the boom and lined up their handjets so that the firing tubes pointed directly at the men at the far end of the boom.

"Ready?" Grumann called.

"Roger."

"Make it a steady burst to the count of four."

"Roger."

"Ready . . . fire!" The handjets recoiled in unison. "Two, three, four," Grumann counted. The boom started to slide open, then stopped.

"Frozen grease," Grumann said disgustedly. "Try again." While they worked to extend the boom into its five sections, Gore contemplated the world below. Off to one side the Red Sea was a deep-blue finger between Egypt and Saudi Arabia. He followed the curving coast of the Mediterranean, picking out Turkey. Within moments they'd be over Russia. He spoke into his phones: "Devlin?"

"Standing by," the lieutenant answered.

"Kapustin Yar coming up."

"Man, don't I know it. I'm glued to the scope."

"Roger. Out." Gore turned back to the others. They had learned the trick and the work was going smoother.

Finally Grumann announced, "That does it. I'll lock the sections in place." He began pulling his body back along the

boom, closing the lock bars as he moved and a few seconds later his voice came through the phones, "Done. Now we have something to build around."

"I have a question," Lindenwall said.

"Yes?" Strecker asked caustically.

"When do we eat?"

8

THE MISSILE rose from a bleak land far north of the Koryak Mountains, near where the icy waters of Chaun Bay mark the southernmost extension of the East Siberian Sea.

It climbed swiftly.

During its early stages its ascent had been secret; the plumes of its rocket exhaust, absorbed by the denser atmosphere, gave no indication of its presence. No unfriendly eye watched it rise.

At the instant it burst into space, something happened within the body of a small satellite which at the moment was rushing down from the barren Arctic ice fields: a mechanism was triggered by the action of infrared cells responding to the missile's radiation. Mindless, capable of response only to a stimulus of a certain kind, the satellite performed the act for which it had been created: it sent a message.

Far below to the south a long black cigar lay partially submerged in the sea off Kamchatka. Its scanners rode above the waves, waiting for a particular signal. The submarine had been waiting now for weeks. At that instant, the signal came, arriving in the form of an electromagnetic wavetrain. An antenna sensed the energy from space and transmitted it to a plot room in the bowels of the black ship, one of two trackers that had heard the lonely voice from on high.

Within seconds a stream of data flowed from the submarine. A central tracker received it and simultaneously retransmitted it over a multipronged military network. Far away computers hummed to life, automatic writing pens moved

over gridded paper, plots were extrapolated and commands went out. Coded messages, reflected off passive satellites, were received at far-flung bases on both land and sea. Submariners, airmen, misslemen—the tension grew brittle at a dozen command posts. Other messages were relayed back into the heavens. By then too much time had passed; there was little anyone could do except, of course, note the event in the daily log.

At Big Strip a graying colonel read one of the messages and cursed softly. He was as helpless as the others.

The work moved swiftly despite the continued difficulty the SPA men encountered getting oriented to space. Carmody, in particular, suffered sharp periods of vertigo and had trouble controlling his movements. Space had no night or day. Time was a singular phenomenon without characteristic, unless one gaged it by the rotation of the planet below. Aside from weightlessness, it was this aspect of space as much as anything else that disturbed the newcomer. By the second day they had fallen into a schedule dictated by body needs rather than by the clock.

Gore was helping Strecker strip the protective cover from a case of special tools Grumann needed when Devlin spoke softly into the phones. "Major—"

The one terse word word immediately alerted him. Something was wrong. He hesitated, framing an answer, aware the others were plugged into the system. His mind automatically recorded the fact that they had crossed the pole a few minutes earlier, should be southeast of Kamchatka at about 50° North. He saw that Strecker had stopped working, was watching him with a waiting attitude.

Keeping his voice casual, he answered. "Okay, coming in." He glanced at the SPA man and added, "Be back in a bit."

"Something wrong?" Carmody blurted, swinging toward him.

"Nothing wrong," he answered positively. Lifting an arm

he triggered a burst and felt the thrust exerted against his frame. Receding, he saw Strecker moving uncertainly, as if undecided whether or not to follow. Off to one side Olin and Jastro were running a mooring line to a free-drifting assembly. The latter saw him passing and dipped the beam of his electric torch in salute. Gore increased his speed with several more bursts, not braking down until the station was but a score of yards away. Coming alongside the airlock, he grasped the hatch combing and swung himself inside with a practiced motion, then hurried through the cylinder. Devlin was waiting anxiously.

"Bogey," he rasped sharply, the moment Gore decompressed and opened his faceplate. "An intercept."

"On the scope?" He instinctively swung toward the instrument and saw it wasn't.

"No, a message from North Eye. A Navy tracker," the astronaut added needlessly. "I haven't got it on the scope yet but it's on the analog."

Gore cursed and moved across the cabin, looking at the automatic writer. Two pens attached to extensible arms moved slowly across the gridded paper, approaching each other as they translated the tracker data to a plot depicting the spatial relationship between the station and the approaching missile. Anadyr. It had come from the bleak Red base north of the Bering Sea, he thought. Not that it mattered. He studied the analog grimly, deciding it was already too late to attempt an intercept with one of the glidetugs. Nothing could stop the missile. He masked his thoughts and ordered, "Keep on the scope."

Devlin nodded, glanced at the scan and got back on the radarscope. This is it, Gore thought, the thing they had been dreading—and no defense. Damn, his next trip down and they'd have a weapon of sorts, if the Old Man had followed his suggestion. The airlock hissed and he turned. Jastro came in, depressurized and opened his faceplate.

"Trouble?" he asked quietly.

"We've got an intercept coming up."

"Great, that's all we need. I thought something was in the wind the way you hightailed it back here." Gore started to say something when Devlin exclaimed.

"Got it!"

Gore swung around. There was no mistaking the blip.

"Well, you can't say we haven't got a ringside seat. She's a real beaut," Jastro exclaimed. Gore took a few seconds to feel proud of him. His thoughts were interrupted by Strecker's call over the speaker: "Any difficulty?"

He hesitated, thinking there was no use keeping the situation secret. They could see the missile now if they knew where to look. He leaned closer to the mike. "We have an alert."

"A missile?"

"Grade-A type, we think."

"What are you doing about it?"

"Doing?" Gore was incredulous. "Not a damned thing."

"I'm coming in," the SPA man snapped.

"Stay put," he barked. "This is our province."

"What'll happen?" Carmody asked, his voice shaken. No one answered. The radio sputtered to life and a voice, twisted and torn by seething atoms through which it passed, gave the code name of another Navy tracker. Devlin automatically snapped on the tape recorder. The static rose to a high wine, cut into the words, and finally only the crackling of space remained. Gore tried to get through several times before snapping off the recorder and swinging back toward the instrument console. Jastro's eyes followed. Devlin had transferred the data to the "B" scan, depicting the blip on a range versus azimuth plot.

"Closing fast," Jastro observed calmly. He got a startled look and exclaimed, "Damn, the glidetug—" Gore stopped him with a gesture.

"Too late," he said quietly. Jastro stared at the scan again and nodded agreement, his face taut. Gore got on the radio.

"Disperse. Use your handjets but don't get lost," he ordered. "Follow one of the nyla cords. Got that, Carmody."

"Yes, sir." The engineer's voice was tinged with panic.

"You've got to do something," Strecker shrieked. Gore was startled. He had expected almost anything of the saturnine SPA man except fear. Yet his shriek reeked of it.

"There's nothing to be done except disperse. Get moving. Find a bundle."

"Damn you, Gore, it's the Spacehive I'm worried about. I'm not going to see it knocked down."

"It's not knocked down yet."

"You've got to do something."

"This ball game's just started," Gore snapped. "Ferchrissakes, shut up and get moving."

"Just started? What do you mean?"

"Damnit, get off the air," he barked. "I've got other lives to worry about." Olin's voice interrupted:

"We're dispersing," he reported calmly.

"Keep in contact. Give me a rundown. We don't want to lose anyone."

"I'm headed toward the reactor."

"Grumann?"

"I'm staying with the payload we were working on. It's as good as any," the construction man replied.

"Carmody?"

"I'm here, following a line," the nuclear engineer replied nervously. "I don't know where it goes."

"Don't lose it," Gore snapped. "Lindenwall?"

"I'm headed below, toward the tankage for the Spacehive's cabin," a reedy voice answered.

"She's coming up fast," said Devlin.

Gore glanced at the scope. Time had almost run out. Swinging back toward Jastro he gave a quick smile. "We need one glidetug man, Alex. Shove off, scram to the top of the yard—it can't get us both."

"She will if she's got a nuclear warhead. The radiation will cook the whole damned yard."

"I don't think she has."

"I'll gladly accept the opinion. Be seein' you." He lifted a

glove, winked, snapped shut his faceplate and started pressurizing while heading for the airlock. Gore watched him go before turning toward Devlin.

"Want to watch from the outside?"

"I'll stay with the station," the astronaut said steadily.

"It's a big target, Dev. You don't have to."

"It's six of one and half a dozen of the other. I'll be okay."

"I see it." Grumann's voice was almost soft through the speaker. "There's an odd trail fluffing out, almost silvery-like. She's converging, getting nearer." Gore didn't answer.

"Pressurize," he ordered Devlin. "This baby might get a puncture."

"Roger."

Closing his faceplate, he pressurized his suit and moved into the airlock with a backward glance, thinking the astronaut presented a forlorn picture standing alone in the station. It looked like a dimly lit cave. Devlin waved and held up two fingers. Gore went through the lock in record time. The moment he stepped into space Olin's voice came through the phones.

"Dev . . .?"

"I'm staying with the bag."

"Okay, boy, take it easy." Worried about him, Gore thought. Why not? When a couple of men were linked together in a venture like this, they became almost as one. Like himself and Jastro. Lord, he'd hate to lose that ugly lunkhead. He looked around, failed to see the missile, then spoke softly into the phones.

"Stay off the air till she blows, then check in."

"Roger," someone murmured. Raising his arm, Gore triggered a short burst and watched the hulk of Tank Town recede. Below, off to one side, a torch beam cut a lonely swath through the night. He shivered. Someday, when his helling was over, he was going to find a gal and settle down, have kids. That was the long-range dream. After the planets. But the missile was coming up . . .

All at once his eyes caught the intercept. It was a bright

speck painted against a blue-black sheen that was the sea, and he thought he'd never have seen it were it not for its oddly luminous wake. It was riding close to the dusk line and he supposed the curious tail was caused by sunlight striking the hot exhaust gases. He eyed it professionally. There was nothing by which to judge its movements but he knew its speed was enormous, of the order of seventeen thousand miles per hour. Had it been coming straight at the station it would long since have struck, but its approach was on a converging course.

He mentally analyzed the possibilities. It could be a homing variety, have a proximity warhead, but conventional, not nuclear. Somehow he knew that. The Russkies weren't ready to hit them with a full house. A nuclear attack might spell all-out war. He felt easier. Even a giant conventional weapon couldn't do too much damage. A few components, perhaps . . . It grew larger and suddenly lurched slightly; he realized its radar had locked on. Slowly, almost imperceptibly, it was reprograming its course, orienting itself into an intercept. He watched, tensely, waiting for some cue to its destination.

Suddenly it seemed enormous. He gave a quick upward glance in the direction Jastro had gone. Strange, there was a gun-metal sky alive with ten million glowing bowls; a giant red eye stared back at him and he shuddered at the malevolence of it. The sky at the moment was an alien thing, vast and amorphous, and he was caught with a sudden loneliness. Man was a creature of the deeps. A flash of light brushed his eyes and he blinked, unaware the missile had exploded until Olin called in alarm.

"Dev?"

"Roger," the astronaut answered. "Did she blow?"

"Amen."

Gore spoke quickly. "Any damage to the station?"

"Don't know yet, don't think so. Everything seems okay."

"How's your air pressure?"

"Normal. She's holding normal."

"Good. Keep a close check. You might have a slow leak."

"Roger, will do."

"Jastro," he called.

"Standing by. Can I come home?"

"Come ahead . . . Strecker?"

"I'm all right." The SPA man's voice was tight, high-pitched.

"Carmody?"

"I'm . . . I'm okay."

"Grumann?"

"Finishing this job," the construction man replied gruffly.

"Lindenwall?" There was no answer and he repeated louder, "Lindenwall?" The silence hung heavy.

"Did anyone see Lindenwall?" he called sharply.

"I think he went toward the tankage for the Spacehive," someone finally said.

"My God—" it was Strecker's startled voice "—that's where the missile detonated."

They gathered in the space cabin.

The search for Lindenwall's body had been futile. Neither could Devlin pick it up on the scope due to the large number of objects in orbit. They decompressed and stripped off their heavy space gear quietly, so quietly that the low whirring of the air fan seemed loud. Gore looked toward the chronometer: the fifteenth of July. Lindenwall had been in orbit one day.

He glanced at Olin and Devlin and saw the strain on their faces, strain and lines of fatigue. They had the worst of it, had been in orbit for weeks . . . He scanned the others without appearing to do so. Jastro wore his usual carefree look but Strecker, visibly agitated, was having difficulty removing his gear. Shook up, he thought. Grumann was studiously grim, but it was not the nervous manner his superior exhibited. Gore recalled that Grumann had continued work throughout the attack and decided he had little to worry about in that direction. The man was a rock. Gore looked at Carmody. The slight engineer seemed withdrawn; his face was

singularly blank, and aside from opening his faceplate, he'd made no move to get out of his heavy suit.

"Anyone want chow?" Devlin asked. No one answered. Finally Grumann spoke: "We'd better check the yard, assess the damage."

"Rest a bit," Gore counseled.

"Rest!" Strecker snapped out the word bitterly.

Grumann caught Gore's look and said, "Good idea. Think I'll take a short break."

While the crew rested, Gore coded a brief message detailing the damage as well as Lindenwall's death. They'd need new tankage for the Spacehive's cabin, and how much more he didn't know. They'd also need an immediate replacement for the electronics engineer. Devlin taped the message and set it for automatic transmission on contact with the next tracker. When the men were ready to return to space, Gore told Strecker:

"We'll have to make a detailed inspection of the yard, find out if we have other damage."

"Certainly." Strecker spoke abruptly. "We need more help. I'm short seven, eight men."

"They aren't due up yet," he pointed out. "We're on schedule."

"We've got to speed up the operation," Strecker insisted.

Gore held his temper and replied quietly. "That's your province."

"We might not be so lucky next time. We've got to get the Spacehive finished."

"I agree, but there's one thing you might as well get used to: you're going to cross Red territory a helluva number of times before this baby's completed."

"Why haven't they infrared detection equipment on the station?" Strecker flared. "It seems pretty derelict—"

"This was designed as an orbital training station, and it wasn't even completed when you people grabbed it," Jastro cut in hotly.

"There should be some defense," the SPA man insisted.

"They're working on one at Big Strip." Gore kept his voice down, wondering at the other's irrational reactions. Strecker sucked his lip nervously, glanced at Carmody and Grumann, then looked back at Gore.

"Two construction men are scheduled to come up next. Would you contact SPA and have one of them replaced by an electronics man, preferably Herbert Anderson?"

"Certainly," Gore agreed.

"The tenth of August isn't far away," Strecker added.

"Cheer up, we might not last that long," Jastro cut in.

Grumann observed quietly: "We can't wait very long for the tankage. We were scheduled to start working on that next."

Olin snorted. "You won't get one of those big babies up here without twenty miles of paper work."

"That's SPA's worry," Jastro put in.

"No, it's the nation's worry. But I don't think we'll be stuck," Gore replied. His eyes weighed Strecker for a moment but when he spoke, it was to Grumann. "Can't you start at the other end, couple the reactor to the boom?"

"We could."

"In the meantime, there's the job of getting the other assemblies lined up, ready to go."

"There's plenty to do but I'd feel better with the tankage up," Grumann replied quietly.

"So would I." Gore looked around the circle of faces.

Grumann started to say something when Strecker snapped, "Let's get to work."

9

16 JULY 1969.

Exactly seven minutes after the glidetug touched down, Gore entered General Bryant's office, leaving his flight gear piled in a jeep. The hurried summons didn't surprise him, not after the attack on the Spacehive. Bryant, Bruckman, and on down the line—everyone would want a second-by-second account. The general was speaking into a recorder when he came in, but promptly snapped it off and got up with a faint smile. They briefly shook hands.

"Had it rough, eh? Sit down." The tone of his voice said he knew damned well it was rough. His eyes flicked over the astronaut's face as he absently seated himself.

"Could have been worse, sir." Gore slid into a chair alongside the desk, thinking the Old Man looked shot. His usual snap and vigor seemed gone and his face was drawn, unusually pale. He was thinking about it when the other said casually:

"I suspect this is just the beginning." Gore wondered if he were speaking through knowledge or intuition, hoping it was the latter. "Too bad about Lindenwall. I was sorry to hear it," he added.

Gore filled in the details. They went over the events of the attack several times before Bryant appeared satisfied.

"Bruckman will want to bleed you," he remarked when they were finished. Gore nodded.

"Strecker's worried about getting more men, afraid time will run out on him," Gore said.

"It could, very easily," Bryant remarked drily. "SPA's rushing out a replacement for Lindenwall. He'll return with you."

"Strecker's expecting two men."

"Not this trip." He didn't elaborate. Gore accepted a proffered cigaret with a murmured thanks. After they lit up, the general continued.

"Lots of things are happening, but I guess that's no surprise. The international situation's getting rough. Then there's that damned Carron Committee. Well . . ."

He smiled again, warmer this time, and his usual clipped voice dropped to a casual friendliness. Gore relaxed, thinking it was a good omen that the Old Man didn't appear too worried. But despite his casualness, Gore had the uncomfortable feeling he was being sized up, and he thought again his commanding officer was a tough nut to figure. He never quite knew what he was thinking. Bryant blew a cloud of smoke toward the ceiling and abruptly switched the conversation to the Spacehive. He talked about it almost casually for a while, adding:

"If it's the vehicle we think it is, we've got the solar system in our pocket."

"It is," Gore said positively.

"Intelligence thinks Russia and China will go to almost any lengths to stop it."

Gore said harshly, "They can't."

"Their political strategy is to force us into using an equatorial orbit, one that doesn't cross their territory." Gore was silent, thinking abandonment of the polar orbit would set the nation back several years—cost them Tank Town, the Spacehive, everything they'd gained.

Bryant was speaking again. "They're fighting a delaying action to hold us until they're ready to go, till they can use their moon base as a refueling and jump-off point. I think they're pretty close," he added musingly.

"My God, the politicians won't buy that, will they?"

Bryant smiled thinly. "I think not. Not while Senator Bridgemann heads the Senate Space Activities Committee.

But the Carron group is getting a lot of support, including the crackpot fringe. The threat of war makes a lot of people jittery."

"They'd be a lot more jittery if we lost."

"True, they would be."

"I don't think they'd risk war—not with our ICBM arsenal," Gore interjected. "If they were prepared for that, they'd have clobbered the Spacehive with a nuclear job."

"It was a warning," the other agreed calmly.

"They'll try again." Gore made it a statement.

"Yes, on the basis we won't go to war over a destroyed satellite, just like we didn't over downed planes. But you're right, they won't use nuclear warheads." The General's gaunt face got a wry smile. "Strange, the public doesn't get disturbed too much when we're attacked with conventional weapons. Never has."

"Notes, we deluge them with notes," Gore said sourly.

"That's the way they gage our reactions." His commanding officer straightened up and spoke more briskly. "Now here's what we have to do—operating on the assumption we won't be stopped, of course."

"We won't be stopped."

He nodded and began speaking, explaining the time schedule, the available resources, the earth back-up for the mission. Strecker was the key man in space, he said, responsible for getting the Spacehive operational—the key man because he represented SPA. His eyes lingered on the astronaut's face while he spoke of Strecker's role. Gore listened impassively, thinking he didn't give a damn who ran the show as long as the job got done. Despite his dislike of the man, he had the sneaking suspicion Strecker was every bit as valuable as the Old Man seemed to think. At least he had political connections.

He found it difficult to suppress his feelings when Bryant spoke of the Spacehive's mission. He sounded as if there weren't any great complications, and Gore momentarily wondered if he were as confident as he appeared. According

to him, it was a less complicated mission than the moon; there would be no landing, for one thing, and no drones to shepherd. But the flight path—a section of an elliptical orbit around the sun—would require a round trip of well over a year. Well, he could spare it if they'd give him the chance.

While he listened, one part of his mind dwelt on the Spacehive itself. Just now it was so many payloads scattered in orbit; assembled it was the key to the planets. The main part of the job was already done—in men's minds, on drafting boards, in research laboratories and factories. Now the jigsaw puzzle had to be pieced together. He became aware that the other had ceased speaking and jerked his attention back to reality. The black eyes were fixed bemusedly on his face.

"Any questions?"

"The tankage. Strecker's ready for it," Gore stated.

"That part's arranged. He'll get it in time."

"The rest of his crew?"

"Ready. You'll be running a commuting service."

Gore grinned. "Aren't we now?"

"It'll be stepped up," Bryant promised. "I think it might be a good idea, though, if you stayed aboard for a trip or so. Let Olin come down, and let Devlin take over for Jastro." He saw the question in the astronaut's eyes and added, "A matter of morale. They've been up too long. A day or so on earth would do 'em good."

Gore nodded agreement, asking, "How about weapons?"

"That's the one thing we didn't expect to need. The one weapon we had in mind is still out to bid." Gore winced, realizing it was months away.

"How about the idea I suggested, sir?"

"We've followed through. Bruckman will fill you in, give you a man." He smiled grimly. "You can't complain if it doesn't work."

"That's for sure." Gore leaned forward. "I've got another idea if this one misses. A better one, I think."

"The time element?" Bryant said softly.

"Only days."

"Good, let's hear it." Gore explained what he had in mind. After the first few words the other's eyes became thoughtfully fixed on his face and he could almost see the razor-sharp mind opposite him racing. He finished, leaned back and waited.

"Fantastic . . . we'll try it." That was all, but it was enough. If the Old Man said he'd buy it, he'd have it in the works before the morning was out, Gore thought, satisfied. If they couldn't protect the Spacehive, they could at least hide it, conceal it in an incredible cosmic garden. He felt a little proud of the idea. Now if they could just hold out, if the stopgap defense worked . . . Sensing the interview terminating, he blurted the question bothering him:

"Who'll man the Spacehive, sir, SPA or Air Force personnel?"

"Air Force. The Space Command," the General replied promptly.

"Has a team been selected?" He asked the question, realizing he was treading on *verboten* ground, and his heart thumped while he awaited the answer.

"Two teams. They're going through indoctrination now," Bryant said drily.

"Yes, sir." He suppressed his disappointment, listening to the final rundown of things to be done. He was thankful when the session ended. Outside he looked at the sky and cursed luridly. Teams One and Five had the moon. Three—Olin and Devlin—was stuck with Tank Town. His own team was running a delivery service. That left Four and Six, unless the plum went to Space Wing Two. The last thought startled him and he realized he'd never taken the other wing into consideration. Contemplating it, he supposed it was because the East Coast astronauts were newer, still training in the re-entry techniques. No, he had little doubt Four and Six were the ones selected. It accounted for the reason they'd never caught a Tank Town run. Damn, he'd lost the moon; now he was losing Venus. He gritted his teeth thinking that if

he stuck around long enough he could lose the whole damned solar system. You're just the boy to do it, he thought. The Old Man made it easy. Christ, Four and Six—they'd get Venus on a platter.

Looking at the sky again he climbed into the jeep, started the engine, slammed it into gear and roared toward his quarters, almost clipping a military truck at a crossing. From somewhere behind him an air policeman's whistle shattered the quiet of the morning. He jammed his foot down on the accelerator.

Just now he wouldn't mind getting brigged.

Gore was right in his estimate of the day. Bruckman put him through a grilling session, extracting every morsel of information he had, including things he hadn't consciously thought of. He was surprised at how much the intelligence officer was able to glean from the chaotic impressions locked in his mind. The missile's configuration, its wake, its flight path—he examined them all, coming back to each question several times in different ways, and taping the entire interview. Although some of the questions seemed quite irrelevant, he answered as best he could. Some simply couldn't be answered. Bruckman kept trying. He was thankful when the session ended.

"You think you've got it rough," Bruckman told him. "Think of me. I've got to make sense out of it."

He was leaving the colonel's office when the space medicine officer caught him, subjecting him to an interrogation that was, if anything, even worse. How did each man react to the situation. What were the visible evidences of emotion? The doctor noted each answer on a sheet bearing the appropriate man's name. Gore gave his observations on Strecker and Carmody with a sense of guilt. The doctor was quick to detect it.

"I appreciate your reluctance but I wouldn't worry about it," he said.

"No?" Gore asked quizzically.

"They haven't had the same training, the same experiences," he pointed out. "I think their reactions are quite normal—for them."

"I'm glad to hear it."

"Now, about you . . ."

The questions came again. How did he react? Was he afraid? (He wasn't sure.) Did he want to return to orbit? During the attack did he notice himself sweating, breathing fast?

"Not till I got here," Gore told him. The doctor didn't think it funny. Did he remember his heart pounding? (He didn't.) Could he recall other evidences of personal stress? Gore gave the best answers he could. In the last moments before the missile struck did the men continue to function as a team, or was it an individual scramble? And so on. The grilling lasted two hours and Gore felt as if he'd been drawn and quartered when it was finished.

A roly-poly lieutenant colonel wearing a beaming face caught him next. Gore recognized him as the legal officer.

"Don't tell me," he exclaimed, exasperated. "You want me for a third degree."

"A necessary procedure, major, I assure you."

"For God's sake, why?"

"A question of indemnity might arise."

"You mean I can sue?" He was rewarded with a glassy stare. "Okay, fire away," he said helplessly.

Gore returned to his quarters feeling disgruntled and worried, too, about Tank Town. It whirled around the earth fifteen times per day. On twelve of those trips it crossed some part of Red territory, six on the downward leg and six on the upward leg. The men would be sweating it out. He started to undress for a shower when he heard a knock on the door. He cursed, debating whether or not to answer, wondering who wanted to question him next. The knock was repeated and his curiosity won out.

"Come in," he called, suppressing his irritation. The door

opened and his eyes lost their sour look. The newcomer was a tall angular man garbed in the forest green of the Marine Corps.

"Major Gore?"

"Right." He noted the other's long lantern-jawed face was saved from severity by a crooked smile and merry blue eyes.

"I'm Lieutenant MacMillan, just in from Dago. I was told to report to you. Bernard MacMillan," he added.

"I wasn't expecting a Marine." Gore extended a hand.

"Nothing's too good for the Air Force." The lieutenant had a strong grip, and pumped Gore's hand vigorously. Gore grinned.

"Just going to grab a shower," he explained, conscious that he was stripped to the long cotton underwear he wore under his spacesuit. The lieutenant eyed him quizzically.

"I can come back."

"Hell, no, sit down. I'll just dive through." He got another thought. "Have they assigned you quarters yet?"

"All fixed up," the Marine replied. He added, "Know everything except my assignment. Colonel Bruckman—that's the man I reported in to—said you'd give me the dope." Gore saw the question in his eyes.

"We'll talk about it over chow," he told him. "I haven't eaten yet and I'm damned near starved."

"Whatever the job is, it'll be a gravytrain," MacMillan said cheerfully.

"How do you figure that?"

"I got out of the war games," he confessed. "When they put the finger on me I was slated for some nice rough amphibious exercises off the coastal islands."

Gore suppressed a smile. "Some people are just lucky."

"Yeah, I guess I live right."

"Bring your Big Stick?" he asked curiously.

"Yeah." The eyes were curious again, but Gore didn't enlighten him.

"I understand one of those babies can stop a heavy tank."

"They can stop anything," MacMillan said cheerfully. "What do you want stopped?"

"Tell you in a bit," Gore replied. "Wait'll I dive through the shower."

The water felt good after the heavy spacesuit. Despite its built-in ventilation, the circulating air never quite removed all the perspiration, with the result that his body felt gummy with dried sweat. He stood under the full force of the water letting it hit him in the face, splash against his shoulders and chest and run down his body. He soaped down several times before ending up with cold water, and its stinging tingle gave him a vigorous feeling.

Rubbing down with a towel, he studied himself in the mirror. His weight, close to 190, hadn't changed in years, but his shoulders and arms were more corded, and he wondered if it were due to working in the heavy spacesuit. He examined his face closely. His normally tanned skin was paler, as if the color had washed out, and there were small crinkles at the corners of his brown eyes. Still, for thirty-two . . . He looked at his hair. Aside from a touch of gray at the temples it was as dark as ever. But it wouldn't be for long, he reflected. Men aged early in this business. Dressing, he went back to join the lieutenant.

The Marine exhaled a cloud of smoke and indolently asked, "When do we go to work?"

"Tomorrow."

"Nothing till then?"

"Nothing worth mentioning."

"Looks like there's time for a short liberty." His eyes fixed on Gore's face speculatively. "I know a couple of babes in L.A."

"I know a couple myself." Gore grinned, thinking it sounded good. He had a mental picture of his last date when he'd awakened in a plush bedroom in one of the swank homes plastered on a hillside overlooking Hollywood. He hadn't the slightest memory of how he'd gotten there, but he liked it. Dorena, her name had been, and she'd let him

know she was expecting to see more of him. Reluctantly he brushed the temptation aside. MacMillan was watching him expectantly.

"No soap, we can't afford to be hung over tomorrow," Gore told him.

"Well, it was a good try."

"Matter of fact, it was a damned good suggestion, but we've got an early day ahead."

"Hell, I can get along without sleep. You ought to see these babes."

"Know what you're going to be doing at sunrise tomorrow?" Gore challenged. The marine waited. "You're going to be riding a rocket sled, clipping across the sage at about Mach .84."

"Rocket sled. What the hell would I be doing on a rocket sled?" he asked, perplexed.

"Going into orbit." He watched the other's face closely for a reaction. MacMillan looked awed, then pleased.

"Well, whaddya know," he said.

10

EARLY NEXT morning Gore's Wheelhorse reached the fringes of space, slipping into the vast, still exosphere along its programed course. The sun, a flaming red ball when the MEOS vehicle shot upward from the rocket sled, now was an intolerably bright plate pasted against the velvet sky, dominating the star field around it. Below, the continent of North America had receded. Ahead, the world was split between night and day. On the sunward side, under a cloudless sky, the Pacific stretched to meet the horizon.

Gore felt happy as he always did when coming into orbit. It was an adventure that each time was new, as if changeless space wore a chameleon face. Somewhere far behind him Jastro's Bucket would be in its final powered flight approaching Big Strip. The astronaut had started his descent with Tank Town hurtling over the Kara Sea, clipping a corner of Novaya Zemlya on its poleward flight. It was a moment when the meridian, passing through Big Strip, lay just east of the dawn line. Well, there was no sweat, he thought, not with Jastro at the controls.

He dismissed his teammate from mind and spoke into the phones. "How'd you like it?"

"A doozy," MacMillan promptly answered.

"Quite an experience." The second voice was that of Herbert Anderson, Lindenwall's replacement. Like his predecessor he was small and wiry, but where Lindenwall's face had been dark, Anderson's was abnormally pale, or so it appeared against his dark hair and eyes. He had arrived at

Big Strip late the preceding afternoon and Gore had spent the evening indoctrinating his new charges for the trip ahead. Like the SPA men already in space, Anderson had gone through the space training course, hence was quite familiar with the personal equipment and many of the problems he would encounter. Gore quickly decided MacMillan was a natural, and whoever had selected him hadn't acted as haphazardly as the marine implied. MacMillan's voice broke into his thoughts.

"When do we get there?"

"Pretty quick. We're sliding into orbit now." He glanced at the radarscope, where Tank Town and the components of the Spacehive were represented as so many blips, when the radio crackled to life.

"Tank Town to Wheelhorse." Gore adjusted a dial.

"Wheelhorse. I read you."

"Watch those nyla cords." The voice was Olin's. "We've been busy. Right now the station looks like the center of a cobweb."

"Roger. Will do."

"You'd better slide over the top of the yard."

"Roger."

"Strecker's asking about Lindenwall's replacement."

"Right here, safe and sound," Gore reported cheerfully.

"Who else from SPA?"

"No one, I'm bringing a representative of a friendly military power."

"Oh . . .?" Olin sounded dubious

"A marine."

"Jesus, a glory boy." He added quizzically, "Are you serious?"

"I swear it's the truth." Gore smiled to himself, enjoying the moment.

"Why a marine?"

"To keep you bastards in line," he told him. "You've been giving me too much lip lately."

Olin told him what he could do and Gore grinned, riveting

his attention on the leaded glass port. He caught a sparkle in the deep night of space and recognized it as sunglint on one of the orbiting components. In another moment the yard emerged from the blackness like a swarm of fireflies. The pinpoints of light grew larger and he began working on the trim rockets, conscious that MacMillan and Anderson were straining to see over his shoulders. The rearmost components slipped gradually below him and several minutes later the glidetug rode serenely above the space station. He checked the drift and, satisfied, spoke: "We're home."

"It was a cinch. We should have taken that liberty," MacMillan told him.

"Good thing you saved it. You're going to need it a helluva lot more before you're through."

"I can believe that," the marine affirmed.

"Check oxygen pressure and switch to suit communications," Gore ordered. When the affirmatives came he slowly decompressed the cabin, then punched a button that caused the canopy to open. A spacesuited figure holding a mooring line was already alongside. He saw it was Devlin.

While the astronaut nimbly fastened the line to the glidetug, Gore instructed his passengers: "When you emerge, pull your way to the airlock along the line. Gently," he added.

"How about my equipment?" MacMillan asked.

"We'll pick it up later." Climbing from the cabin, Gore floated alongside Devlin and waited until the others emerged, then followed them along the line toward the airlock.

"You're due for a trip down," Gore told Devlin.

"Man, I'm game. All I want is a good shower. I'm getting to smell like a goat." He had another thought. "How about Gary?"

"He'll take the Wheelhorse next trip," Gore told him. "The Bucket's yours when Jastro returns." Off to one side he saw the distant gleam of torches and paused to study them.

"Threading some control lines through the boom," Devlin explained. "Strecker's had his crew working around the clock. Christ, he even hates to see a man go to the head," he

added, disregarding the fact that the SPA man was on the phones.

"Who'd you bring up, major?" Strecker cut in testily.

"Anderson and MacMillan."

"MacMillan?" He was plainly puzzled. "You were supposed to bring two of my men."

"MacMillan had priority."

"Why? We need technicians, labor."

"We need protection a damned sight more."

"Getting the Spacehive finished has top priority," Strecker rebuked.

"Tell it to the marines," Gore drawled. MacMillan chuckled. Strecker didn't answer. Passing through the airlock, Gore immediately asked about Jastro, relieved to find he'd landed with no trouble.

"I thought he was kidding when he said he was bringing a marine," Olin said, half apologetically, when Gore introduced the newcomers. He eyed the lieutenant curiously. "What do you use against missiles, a bayonet?"

"A Big Stick," MacMillan answered, enjoying their perplexity.

"Big Stick? You mean one of those super bazookas?"

"The same."

"Well I'll be damned. Who dreamed up that goofy idea?"

"I did," Gore answered.

"Ahem, looks like I stepped into it," Olin observed.

"No, I did if it doesn't work," Gore said.

"Correction," MacMillan cut in, "you mean I did."

"I guess we're all in it," Gore agreed. He got a sudden suspicion and turned to Anderson. "Did they tell you what to expect up here?"

"The missiles? Yes, they told me." Gore's respect for the electronics man jumped a few notches. "The job's got to be done," he added. Gore nodded understandingly. Carmody emerged from the rear compartment where the chemical bathroom was installed. He walked uncertainly and his face was an ashy white. Gore glanced at Devlin.

"Vertigo," the astronaut said. Carmody started to close his faceplate.

"Take it easy, rest a bit," Gore told him.

"I'll be okay." Carmody sucked his lips and glanced at the newcomers. Gore murmured introductions. Carmody acknowledged with a nod, finished closing his faceplate and went into the air cylinder.

"He couldn't care less," MacMillan said, when he was gone. He started to take a step forward and found himself floundering in midair. Olin caught him just before he crashed into the radar console.

"What the hell," he exclaimed, after the astronaut had steadied him.

"Weightlessness," Gore explained succinctly. He gave a brief lecture on the phenomenon, then let the newcomers flounder around until they got the knack of controlling their movements. He didn't bother with the magnetic shoes, thinking they'd be in the cabin but a short time. When they got better at walking, he pointed out the food cabinet, water bulbs, chemical head and the small pallets that let down from the bulkheads for sleeping. MacMillan asked about the straps on the latter.

"To keep you from floating off while you're napping," he explained. The Marine nosed through the station curiously, examining all the consoles and personal equipment.

"Not bad. I still think it's a better deal than the amphibious landings," he told Gore.

"We hope."

Devlin broke out extra spacesuits and handjets and went over the operation of each, emphasizing their proper use.

"The god up here is oxygen," he warned. "Watch your gage; don't slip up on that one."

While they donned the equipment, Olin filled Gore in on the log: all the trackers had come through on schedule; there had been no priority messages; and, according to Grumann, work on the Spacehive was on schedule. Finished, Gore assigned him to take Anderson to the SPA crew work-

ing on the boom, while he and MacMillan brought the equipment in from the glidetug. Devlin was left to man the station. Gore preceded the lanky Lieutenant through the airlock, and waited. The latter paused at the edge of the lock and looked down.

"Dizzy?"

"No, it looks a helluva long way to fall."

"No one's fallen yet," Gore assured him. MacMillan stepped into space and began milling his arms wildly until he caught one of the mooring lines.

"Lord, I thought I was going down for sure," he said sheepishly.

"Don't let it bother you. Everyone feels the same way at first."

"I didn't, coming in from the glidetug," MacMillan observed.

"You were holding on to a line."

"From now on this line's my buddy." The marine looked down, studying the earth, and after a moment asked, puzzled: "It's still morning down there. Why?"

"Dusk," Gore corrected. "We're on a polar orbit. We left at sunrise so we follow the dawn line to the South Pole. On the upward leg—the opposite side of the earth—we're on the dusk line."

"I don't get it."

"Supposing you threw a spotlight on a globe of the world in a dark room. What would you see?"

"It would be light on the side where the beam hit and dark on the other side," MacMillan replied.

"Exactly, and if you stood at right angles to the light?"

"I'd see both the night and day sides."

"And if you rotated the globe?"

"I get it," the Marine exclaimed. "We're just watching the earth rotate through the same line."

"Through the dawn line going south and through the dusk line when we're coming up on the opposite side of the earth," Gore corrected.

"I feel a little stupid," MacMillan said cheerfully.

"So did I at first."

"But if that's the dusk line, we've crossed the South Pole."

"Check, we're coming up over the Indian Ocean," Gore concurred. "We'd better get busy."

"Russia?"

"Just minutes away."

The long telescoping boom that would separate the Spacehive's cabin from its nuclear engine was ready for mating with another section. A huge saucer-shaped shield, injected into orbit in sections, had been assembled and fitted around the boom like a gigantic collar. Later a series of interconnected fuel tanks would be clustered behind the shield. Tanks and shield together would protect the space cabin's occupants from the engine's radiation. Cables and rods to connect the cabin with the power plant had been strung through the hollow center of the boom, ready for connection to the end components.

When the work was finished, Grumann announced, "Bring on the reactor!" There was a brief cheer and Gore felt a tingle of excitement. The speed at which the boom components had been assembled was a good omen; he was almost afraid to hope the rest of the job would go as smoothly.

"Let's go . . . we're getting there!" yelled Strecker. The enthusiasm behind the words momentarily startled him. He hadn't supposed the saturnine engineer could be other than sardonic, and he decided he still had something to learn about the SPA man.

"Check your oxygen gages and handjet power packets," Grumann called. Drifting in space, Gore listened to the chatter of voices while the torch beams receded, then checked with Devlin.

"Everything lovely," the astronaut reported. "We've contacted all check points, no sweat."

"Roger." He looked at the distant beams again, raised his

handjet and gave a short burst, idly watching the earth. They were on the upward leg of the third turn since his latest arrival into orbit, about 5° West somewhere around 40° North. At the moment Madrid lay somewhere below him with the dusk line cutting through the Bay of Biscay. Westward the Atlantic wore a cover of jagged white clouds which gapped here and there to show splotches of blue sea beneath. Moving his head, he saw the tapering finger of the Mediterranean narrow to a small gap: Gibraltar. They would cut the Spanish coast near Bilbao, clip a corner of France and cross the length of England and Scotland, to hurtle poleward into the Arctic. Most of Europe was lost in a black night.

Passing the space station, he saw torches playing across the huge cylindrical shape that housed the reactor. It looked like a giant cocoon, alive with light on its sunward side. Voices in the phones were discussing the best method of bringing the reactor and assembled boom together. Someone —it sounded like Anderson—suggested towing the reactor at the end of a nyla cord.

"Can't," Grumann replied, "it's mass is too big. We'd just pull ourselves toward it."

"Supposing we used a power source, slow it a bit until it dropped back to the boom position," another voice suggested. They discussed it for a while. Carmody asked if a change in forward velocity might not start the reactor moving out of orbit.

"It wouldn't be enough to matter," Strecker retorted irritably.

"The boom's the lighter component. Why not move it instead of the reactor?" Grumann suggested. Strecker cut in to suggest they run a line between the two units and draw them together by use of a small winch. Grumann broke the silence that followed:

"A good idea."

Gore spoke. "If you did that, they'd come together in the vicinity of the station."

"Well . . .?" Strecker asked acidly.

"I don't want them grouped that close," he said flatly.

"I think that's for me to decide," Strecker snapped.

"No, it's a military decision," Gore replied, restraining his temper. "I don't want us in a position where one warhead could kill the entire project. You'll have to keep the Spacehive and the station separated."

"I don't think it's a military decision at all," Strecker said hotly. "We have a schedule to meet."

"You'll have to work it some other way," Gore answered stonily.

"I regard this as rank interference."

"I don't give a damn. Keep those units away from the station," Gore snarled, fighting to keep his temper. A startled silence followed his words. When Strecker spoke again, it was as if the conversation had never occurred.

"We'll move the boom up here," he decided.

The men began moving toward the trailing end of the yard. Their torches blinked out and Gore was left floating under a glittering canopy of stars. Quietly he damned Strecker, damned the fact that he was stuck with the job, damned everything about it. The mental explosion did him good and he felt his anger subside. He watched the earth for a while—it was masked now by a solid blanket of cloud—then propelled himself toward the station. Inside he found MacMillan and Devlin chatting amiably. They looked up at his entrance.

"Must be show time," the astronaut observed. "What'll you have—your usual bleached algae cake, vitamins and chocolate?" Gore told him what he could do with the rations and went for a drink. He slipped the end of a tube into his mouth and squeezed gently on a rubber bulb filled with water, having the usual difficulty swallowing it. MacMillan watched curiously.

"Can't you just drink it from a cup?"

"You can try."

"Why won't it work?" he persisted.

"The water, free, would just float around, break into umpteen million droplets," Devlin explained. Gore finished and replaced the water carrier.

"One of the tribulations of space," he intoned.

11

TANK TOWN climbed up east of Perth at about 120° East, crossed the Timor Sea and hurtled over Java. The dark green mass of Borneo came up, and off to one side the Sunda Islands sprawled across the tropic waters like a monstrous lizard. Ahead, beyond Sarawak, lay the South China Sea.

The boom section moved slowly. The torches of Strecker's crew reflected off its dark side but the giant radiation shield, now turned into the sun, gleamed like a polished mirror. Gore thought it resembled a giant radar saucer. Grumann had automatically taken charge of the actual work, deferring only the major decisions to his superior. His voice was brittle in Gore's phones. They're feeling the strain, he thought. Too many hours of continuous push, too much pressure and uncertainty. The moving of the boom had been far more difficult than anticipated due to the web of mooring lines that had to be removed before a passage through the yard could be cleared. Strecker had driven the men at a fast pace but Gore noted that he relayed most of his orders through his crew chief in the form of suggestions. As the boom moved slowly forward, the nyla mooring lines to each payload had to be reconnected, a task Gore helped with, preferring to let the SPA boss figure his own solution to positioning the boom.

Returning to the station, he paused outside to watch its movements. It came slowly toward him, swimming out of the night as if borne on some mysterious space current. The men darted around it, checking to make sure no entangling lines remained, and reconnecting those that had been loosened.

Gore moved toward the airlock and looked along the side of the station, startled to realize there wasn't sufficient clearance. Someone else saw the danger at the same instant.

"She's too close. Swing out the nose," the voice yelled. Gore spoke sharply into his phones. "Devlin!"

"Roger," the astronaut promptly responded.

"Pressurize your suit, pronto."

"Affirmative."

"Watch your cabin pressure."

"Will do."

"Stand by for a ram!" he concluded sharply. The nose of the boom began to swing wide, turning to present a broadside view of the shaft. The shield near the far end swung slowly around, slicing toward the space cabin.

"Strecker!" Gore yelled imperatively.

"What is it?"

"Watch that tail shield—" He clipped off the words, realizing he was already too late. The metal edge of the shield closed the gap; a violent scream rang out as it struck the aft end of the space station. The nose of the boom swung slowly around, freeing the shield, leaving the entire assembly floating alongside the station.

"Attention!" Gore barked. "Answer to your names." There was an instant of startled silence.

"Strecker?"

"Here." He caught the panic in the SPA man's voice.

"Olin?"

"Roger."

"Grumann?"

"Roger."

"Carmody?" There was no answer and he called louder, waiting.

"Carmody?" Strecker shrieked the name.

"Anderson?" Gore snapped.

"I'm here." The man was plainly shaken.

"Carmody must have been caught between the shield and the station," Gore rasped. He heard a startled gasp and the

torches began converging inward. He immediately called Devlin, relieved to find the impact apparently hadn't damaged the station's hull. Instructing him to keep a close watch on the pressure gage, he fired a burst from his handjet and moved into the dark shadow between the shield and the station.

"I've got him," someone ahead of him yelled. A torch blinked in the darkness followed by the exclamation: "My God!"

He pushed past the man—it was Strecker—and shined his light on Carmody's helmet. The engineer's tongue and eyes had almost popped from his head and his bloated face filled the mask. He snapped off the light, sickened.

"Carmody's dead," he said tersely.

"Wha—what happened?" Strecker chattered.

"Suit must have ripped, or a crack in the helmet—a total decompression." He turned angrily toward the SPA boss. "Why in hell did you try to float that bastard so close to the station?"

"There was plenty of room until someone yelled that damned order to swing the nose out," Strecker retorted. His voice rose to a yell. "Who gave that order?"

"I did," Anderson said calmly. "I saw it was going to hit."

"You killed a man," Strecker shrieked.

"Shut up," Gore snarled. "He's right. It would have struck the station anyway. Carmody just happened to be in the wrong place."

Strecker didn't reply. Gore looked at the engineer's body a moment, feeling sorry for him. He'd been the most fearful of the lot, yet he had done his job resolutely. He remembered Carmody's plea to hasten the mating of the reactor and wondered if he'd had a premonition of his death.

"Take him to the lee side of the station 'till we can bury him," he said tiredly. He had the feeling things were closing in.

"Bury him?" someone blurted.

"In space." He added slowly, "His body shall be con-

signed to the deeps." He started to turn away when Devlin barked out:

"Major!"

"A leak?"

"No, sir."

"Be right in." He cast a backward glance at the men moving Carmody's body and propelled himself toward the airlock. Emergency—Devlin's voice reeked the word. He hurried faster, wondering what more could go wrong.

"What's up?" Strecker called imperatively.

"I don't know but keep the phones clear," he snapped. "Until I say otherwise, the communication system is restricted to military personnel. Is that clear?"

He waited, but Strecker didn't answer. Passing through the lock, he decompressed and opened his faceplate. MacMillan was inspecting the Big Stick rocket launcher.

"An intercept, I think," Devlin blurted.

"On the scope?"

"No, message, the fragments of one." Gore glanced at the automatic position indicator and wrinkled his brow, perplexed. The API pointer showed they were over China.

"We're pretty far away from our trackers," he said dubiously.

"A message came through," Devlin insisted. "It was probably bounced off a satellite, which would account for the way it was scrambled," he added.

"Coded?"

"Coded," he affirmed.

"No key to the identity of the sender?"

"None."

"Keep trying to raise the source. Watch the scan," he snapped, then swung toward MacMillan. "Outside with your blaster and ammo."

"Yes, sir." The lieutenant promptly closed his faceplate, pressurized and moved into the airlock with his weapon and a nylon sack containing the rocket ammunition.

"Keep a close check and keep me informed. I'll be outside

with the Marine Corps." Devlin turned back toward the console and Gore went through the lock. Outside he spoke sharply into the phones:

"Attention! We have a missile alert. Disperse, spread out over the top of the yard, stick with the smaller payloads. They're least likely to be hit," he added.

"Roger," someone murmured.

"And keep the communication lines clear. That order still holds." No one answered. He watched the beams recede in the dark. MacMillan was waiting alongside the station.

"Got that baby loaded?" Gore asked.

"Yeah, but what the hell do I shoot at?" the marine asked, perplexed.

"Damned if I know, he responded cheerfully. "If there is a missile, it'll probably be pretty close by the time we spot it."

"This baby's got a pretty short range," MacMillan observed dubiously. Gore eyed the weapon. It was one of the latest 90-millimeter assault weapons, designed for tearing heavy equipment apart. He knew the rocket's fins were useless in space but he banked on the fact there was nothing to deflect its course once it was fired, unless the exhaust gases were emitted in an unstable pattern. MacMillan was awaiting an answer.

"It's not short-range in space," he explained. "There's no friction to contend with."

"You mean it'll just keep going?"

"For our purposes, yes." He looked toward the earth. The vast gray mosaic below was China. Ahead lay the wastes of Siberia. If there were a missile it would have been launched from the China homeland—he hoped Devlin was wrong. A couple of hours before he'd been congratulating himself on their progress; now, the roadblocks were coming up. They needed more men—fast. And weapons. In a little more than two turns—less than four hours—Jastro would be up with two more SPA men and, he hoped, word of the weapon he'd suggested. Olin would be going down. Christ, it was a rat race.

He watched MacMillan and relaxed, letting the tension slip from his body. The marine didn't appear perturbed. At the moment he was gathering the rocket shells in a ring close around him. He looked up suddenly.

"These babies are a little unwieldy. I might need help with the reloading. Usually there's a two-man team," he added.

"Gotcha," Gore replied. "Better lash one of the mooring lines around your waist, though."

"These babies are supposed to be recoilless. They don't kick much," the Marine said.

"Yeah, but even a little recoil could kick you back to earth," he replied drily.

MacMillan grinned. "Would that be bad?"

"It might also kick you in the opposite direction."

"In that event, I'll lash myself," he agreed emphatically. He'd just finished the job when Devlin's voice came on the phones.

"I've got a blip."

"Any idea of its trajectory?"

"By azimuth and range. I can't tell its elevation angle, but —" His words broke off.

"Well?" Gore snapped sharply.

"Three blips," the astronaut corrected, trying to keep the excitement from his voice. "We've got three babies coming up."

He gave an approximation of range and azimuth. "I'd say they're some type of homing job, probably programed into our flight path for a lock-on."

"Probably," Gore answered drily. "Keep feeding us the data." He looked at MacMillan. "Ready?"

"All set on one," the marine acknowledged. Gore swept his hand through an area below him.

"They'll probably come up through a corridor there somewhere."

"Be moving pretty fast, huh?"

"Damned fast."

"I might have trouble leading them."

"Their movement will be relative to ours, a converging course," Gore explained. "The actual closing time might be over quite a few minutes. Maybe the first shot will give you a clue for placing the others."

"Gotcha," MacMillan said smartly.

Devlin's voice came in: "Looks like the same type job as the last time."

"Except these are Chinese," Gore grunted sourly. Nevertheless, the report made him feel better. It wouldn't be as touch and go as it could have been. The converging courses would give MacMillan time to lay a fire lane in their paths. With any luck, and if the rockets were big enough to register on the missiles' homing radar, they could detonate them. If they got close enough. It was a big *if*. He explained the probable course of events and MacMillan nodded.

"I'd feel better if they were tanks," he remarked.

"Still think you got a lucky break getting out of the war games?"

"Wouldn't miss this for anything," MacMillan replied. Gore had the feeling he was telling the truth. The marine looked grim, ready, but with the same touch of expectancy he'd seen so often on Jastro's face. He waited, conscious of the heavy silence in his earphones. The sunlit face of the Earth was a patchwork partially obscured by ragged cloud islands. Once he swept his eyes through the yard. The floating payloads, rimmed with silver, obliterated the stars in their passage. He caught sight of a distant torch moving erratically through the night, as if its owner were pulling himself hand-over-hand along one of the mooring lines. Breaking the radio silence, he satisfied himself the men were suitably dispersed and made a mental note of the location of each.

"You ought to be spotting 'em," said Devlin's tense voice. He repeated the course and range data. Gore searched the sky systematically, breaking the corridor into small cubes and scanning each in turn. He suddenly picked up a wispy trail, then spotted the missiles.

"I see them," a voice murmured. MacMillan saw them at almost the same instant. The enemy rockets came milling up from the gray land below, three specks leaving tenuous trails in their wake. They were curving upward in a long arc, one whose highest point would intersect the station's orbital plane far ahead. Strung out, they came through the sky in stepped formation, appearing like small deadly hornets. MacMillan placed the rocket launcher against his shoulder, having difficulty handling it with his heavy gloves. Gore saw it would be all but impossible to sight the weapon because of the heavy faceplate.

"Take it easy," he counseled. The Marine relaxed, lowering the weapon. "The lead missile's your target," he added unnecessarily.

"Man, it looks small," MacMillan exclaimed. He'd no sooner spoken than the missile made an erratic movement, corrected its course and began converging more rapidly. Gore held his voice steady.

"She's locked on—take a lead and let her have it."

"One for the good old Corps." MacMillan lifted the weapon, moved the barrel slightly and fired. The recoil sent him spinning backward, jerking him violently at the end of the short line attached to his waist. But, somehow, he managed to retain his hold on the launcher. Gore's eyes followed the rocket projectile. It shot downward leaving a trail of flame. Grasping the line, he reeled the lieutenant in.

"Damn, a good thing I was tied or I'd be passing over Omaha by now." MacMillan swung the launcher around. Gore was ready with another rocket.

"Not enough lead," he cautioned. MacMillan nodded and brought the launcher to his shoulder. Gore waited, tensely, feeling his heart thud in his ears. He was sweaty, clammy, shaky inside. He stifled the feeling. At that instant the missile corrected again. MacMillan moved the barrel to maintain his lead, fired, and was kicked backward into space. Gore reeled him back without waiting to see the results. They'd barely reloaded when Devlin barked:

"Something's wrong with missile three, the last one!" Gore abruptly turned and looked down. The missile was weaving erratically and he saw its tenuous tail had vanished; its trajectory seemed to flatten.

"One baby we won't have to worry about," he rasped.

"Just like Chinese New Year," MacMillan yelled. He brought the launcher up, firing just as the second missile altered course. Gore reeled him in, conscious that his eyes stung from sweat.

"The second has locked on," someone screamed.

"To hell with it," he gritted. MacMillan got off another salvo. The malfunctioning missile started curving back to earth and someone cheered. An instant later the lead missile exploded in a sheet of flame.

"Got it, got it," MacMillan yelled happily. Before they could reload the remaining missile came within detonation range and exploded.

"Report in!" When the last man answered he gave a sigh of relief. "Strecker, get an immediate damage report."

It was Grumann who answered. "She exploded near the far end of the yard. There were no major components there."

"Every component's major," Strecker rasped.

"Make a check," Gore ordered, feeling suddenly tired. A nerve twitched at the base of his throat and his hands were shaky, a fine tremor that ran up his arms and carried through the rest of his body. Nerves. Goddamnit, he was getting like an old wash woman.

"I guess I didn't do so well," the Marine said apologetically.

"You did fine," he answered. "Lord, we didn't expect 'em to come in threes. You could hardly knock 'em all down."

"What happened to the third missile?"

"A malfunction, probably a damned lucky break for us."

"Man, I hope this doesn't happen every day."

"It will," Gore responded cynically. "It will."

12

As it turned out, Carmody wasn't buried in space.

Olin, going down empty in the Wheelhorse, suggested returning the body to the base, a course Strecker quickly urged.

"We can't bury him here," he insisted.

"A lot of men will be buried in space in the future," Gore replied grimly.

"It's barbaric." The SPA man almost shouted the words. Gore lifted his eyes, surveying him curiously, thinking there was something almost akin to hysteria in his voice.

"It'll be easier to take him down," Olin interjected simply. Gore realized it was the most sensible course and agreed, and Strecker hurriedly left to join his crew. Gore watched him go, convinced that Carmody's death had shaken the man to the core. Yet he had come voluntarily into orbit to direct a task that could have been left to an underling. Grumann, for example, knew every facet of the operation. Glory, the glory outweighed the fear: that was the answer. When Strecker disappeared in the direction of the boom assembly, Gore turned back and helped Olin load the engineer's body in the glidetug. Finished, Olin looked at the dead man.

"What's the date?" he asked.

"The nineteenth," Gore replied, puzzled.

"Seven days," Olin said. "He lasted seven days."

"Ask Bruckman to write his family . . . whatever details he can," Gore requested.

"Roger."

"And take it easy with that wagon."

"It couldn't be in safer hands." Olin had gotten his composure back. He waved cockily and climbed down into the cockpit. "Hold the fort."

"Will do." Gore moved back from the glidetug while the astronaut programed his course from data supplied from the station. A brief time later Devlin's voice crackled over the phones.

"T minus sixty seconds."

"Roger," Olin called cheerfully. He verbally checked off several items, adding, "Watch yourself, Dev."

"Watch yourself. You're the fireball," the astronaut responded. "T minus thirty seconds."

"Roger." When time zero came, the ship's small retrorockets spit blue lances of flame into space. For a long moment nothing seemed to happen. Then, its forward speed slowed, it started falling astern, breaking from orbit as Tank Town raced toward the top of the world. Olin was going down, Jastro coming up.

The glidetug grew small in the distance and Gore instructed Devlin to give him a call when the Bucket was on the scope, then propelled himself toward the SPA cerw. Moving toward the distant torches, he suppressed the sense of urgency he'd felt since the last attack. The warhead that had exploded in the yard had destroyed a payload containing components for the Spacehive's cabin air purification system. The loss meant another rocket that had to be injected into orbit. It was, he reflected, the minor kind of item that could wind up a major snafu.

The coded report he'd dispatched on the damage had been followed by a specal report to Bruckman containing their observations on the origin and type of missiles hurled against them. In turn, a Navy tracker sent through a cryptic message: *Stand by for all-out attack.*

Aside from Devlin, who handled the communication, he hadn't told the others yet, preferring to hear what news Jastro might have. While he waited for the Bucket, he helped strip the protective cocoon from the nuclear engine preparatory

to coupling it with the boom assembly. Grumann expressed confidence that they could complete the installation of the power plant without the aid of another nuclear engineer. Strecker readily agreed, stressing that what he needed was labor, more hands. He'd asked for MacMillan's help during periods when the station was over friendly territory, a concession Gore quickly made, realizing the division between civilian and military had been erased the instant the first hostile rocket had seared the sky. The project had become a grim race against time. Time and men—they needed both.

Despite the zero-G condition—or because of it, he thought—the work was slow and arduous. The huge engine was light as a feather, yet each physical movement made while working on it required some counter-force to keep the body from gyrating or being propelled into space. He quickly saw that the small Anderson lacked the physical stamina of the others. Although willing enough, the strain of working in the heavy spacesuit was evident in his sluggish movements and, when he spoke, his words were labored and his breath came through the phones at times with a harsh whistle.

Strecker fretted at each real or fancied delay, becoming almost frenetic at time. He drove himself like a madman and demanded the same of the crew. Time for food, rest, care of body needs—he resented every interruption. But Gore saw with satisfaction that the calm, almost plodding Grumann was a steady hand at the wheel. Unhurried, methodical, he made every motion count. Still, Gore wondered how long they could sustain the pace. They were stripping the last of the protective shielding from the engine when Devlin announced he had the Bucket on the scope.

"Roger," he replied. He pushed himself back from his work, spoke a few words to Strecker and headed for the station, idly noting that Baja California was falling astern on the sunlit side of the world. Near the station he spotted the glidetug coming through the velvet night, sparkling on its sunstruck side. Its small trim rockets spit blue flames as Jastro jockeyed it over the top of the yard. It looked, he thought,

like a giant gull, its wings motionless, floating on the tides of space. He stopped at the station for a mooring line, reaching the ship just as Jastro decompressed the cabin. He floated gracefully out, flapping his arms in slow motion as if flying.

"Clown," Gore spat.

"Back to the old rest home."

"Rest home, hell. You earthbound souls just don't know the score."

"You ought to see what it's like downstairs," Jastro replied. "Man, what a nightmare. You'd think there was a war going on."

"Red alert?"

"Red as Maggie's drawers. The ICBM boys are are squatted on the push-buttons twenty-four hours a day and they got the Polaris fleet planted and ready." Gore looked speculatively at the two figures emerging behind the astronaut, additional men for Strecker. They climbed from the cabin with awkward movements, instinctively flailing their arms as if to prevent themselves from falling.

"Cripes, you get dizzy looking down," one of them exclaimed.

"Don't look down," his companion drawled.

Jastro spoke: "The whole damned shebang hit the papers and TV. Bruckman thinks the Carron Committee leaked the story. He's plenty burned." He turned to instruct his passengers to follow the mooring line to the station, and briefly watched their progress before securing the canopy. Finished, he fell in next to Gore.

"You're a hero," he told him.

"What?" Gore was startled.

"The papers got hold of your name. They're painting you as a one-man space army."

"Ain't it the truth," he replied amiably.

"Yeah, wonder what some of those babes in L.A. will think?" Jastro mused.

"Lord, I'd forgotten that." He felt a sudden dismay.

"That dish Eva—you palmed yourself off as a whirlybird pilot, didn't you . . . Promised to marry her."

"The hell I did," he exclaimed, thinking that he was in the soup. The girl his teammate was talking about was a fashion model for Scantywear Swim Suits. He'd met her while on leave with Jastro and they'd burned the town a bit. It had wound up with him being A.W.O.L. for two days, leaving Jastro to cover for him. He grinned at the memory, thinking it'd been worth it.

"Man, oh man, you can't go back there again," Jastro exclaimed.

"I don't think she'd mind so much," Gore replied, for the moment savoring the memory. Anyway, there was still Dorena.

"I can get you out of the hole," Jastro persisted.

"How?"

"Turn her over to me."

"I will like hell," he said flatly. "Do your own scrounging."

"I think she'd like that," Jastro mused. "Young, handsome, a dashing astronaut—real class for a change."

They reached the station and found the new men waiting to be shown how to use the airlock. Gore instructed them on its operation, then he and Jastro followed them through. Inside, the latter made brief introductions before turning them over to Devlin for the usual orientation. Gore eyed them appraisingly.

Tolenberg, by far the larger of the two, fit his idea of what a spaceman should look like. Tall, big-shouldered, his wind-burned face had a hungry look and the squint of his eyes told of long exposure to the elements. Despite his size—he topped Gore's six-foot height by a good four inches—he moved as easily as a cat despite the zero-G. He was, Gore learned, a crackerjack construction man. Graybell, his companion, was middle-height, compact, a chestnut-haired version of Grumann except for his yellow-flecked eyes. Like his companion, he appeared in his middle thirties, but his skin was already the color and texture of old parchment. His hands, when he removed his suit, were out-sized and calloused. But Gore

watched Tolenberg. The man looked like a tiger. Somehow, he reminded him of MacMillan. While Devlin showed them around, Gore drew Jastro to one side.

"What's it like down below?"

"There's hell to pay."

"You said that before," he reminded. "What kind of hell?"

Jastro grinned bleakly. "Russia and China have announced they're conducting firings over the next few weeks to evaluate several types of defensive weapons." Gore whistled softly. That explained the tracker message warning of an all-out attack.

"Firings from where?" he asked.

"They didn't say."

"What kind of weapons?"

"They didn't say that, either."

"A nice bucket of snakes," he mused, thinking it was a perfect setup. Any nation could claim the right to test missiles over its own territory. It made no difference that they were of the anti-satellite type. Right now the Spacehive looked like a dead duck. So did Tank Town, for that matter.

"What's the reaction?" he asked.

"The papers are screaming bloody murder. Boy, you should see—"

"The official reaction," he interrupted.

"The State Department is expected to send a harsh note," the astronaut began. Then, catching the hard look in his friend's eyes, he soberly said, "I don't know. The situation's pretty muddy."

"What did they tell you?" he pursued.

"The tankage will be up tomorrow. I guess that means we're not backing water yet." Jastro's eyes got an inquiring look. "Bruckman says to tell you Operation Needle will be effected within a few days. Confirmation will be sent by tracker."

"If some damned politician doesn't jazz it up," Gore said sourly.

"There's talk of evacuating the SPA crew."

"They can't do that," Gore spat harshly.

"It's not the Air Force's idea," Jastro told him. He hesitated, then bluntly asked, "What's Operation Needle?"

"From needle in a haystack, if I'm guessing right," he answered. Seeing Jastro's furrowed brow, he briefly explained the idea behind the operation. When he finished, his friend whistled softly.

"A beaut," he exclaimed. "Who's idea?"

"Mine," Gore confessed, a little proudly.

"Lord, a military genius."

"Every generation breeds one," he admitted. "How the hell do they expect us to hold out until they get the defenses up?"

"The Old Man really loaded the Bucket," Jastro informed him.

"Big Stick rockets?"

"Yeah, plus a second launcher and a fancy foil thrower. They're all excited about the missile MacMillan knocked down."

"They should be."

"The foil thrower is the kind they used in the old days to fill the sky with chaff, only it's been adapted for use with a new type of solid propellant rocket," Jastro explained. "Bruckman thinks it might foul up the missile radars."

"What we need are beam-riders, something to home in on the bastards."

"That's in the works."

"Sure," Gore said sourly. He turned at the sound of the airlock and saw Strecker. The SPA man decompressed, nodded briefly and went forward toward Devlin, who was showing the newcomers how the cabin air system worked.

"Welcome aboard," Strecker greeted. "You're just in time for a sticky job."

"That's why we're here," Tolenberg agreed. From the way they shook hands it was evident they had worked together before. "I'll have to learn to walk first. I feel like a feather in

a windstorm," he added. His voice had a hoarse gravelly quality.

"You'll learn fast enough," Strecker promised. He said something to Devlin and the astronaut turned toward the equipment locker.

"Can't wait to get 'em to work," Jastro observed drily.

"Matter of fact, neither can I," Gore admitted.

"Getting rough, huh?"

"Damned rough." He glanced at the automatic position indicator, thinking the South Pole already was hurtling past. Tank Town would come up over the Indian Ocean, cross the Middle East, then plunge between the Black and Caspian seas and on over the heart of the Red Bear. Russia: land of a thousand faces. They'd come out west of Novaya Zemlya, in the bleak Barents Sea. It could be a rough passage.

"You'd better start unloading the arsenal," he ordered abruptly. Despite Strecker's protest he called on MacMillan to help, and ordered strict radio silence during the passage over enemy territory. Strecker raised a protest.

"We can't carry on a construction operation without talking."

"You'll have to," Gore shot back.

"You'll bear the responsibility for the schedule."

"Goddamnit, program your work," he cut in, trying to suppress his irritation.

"Don't tell me how to do my job," Strecker returned acidly. The SPA man glowered, then abruptly turned and went through the lock. Tolenberg and Graybell finished dressing and followed.

By the time they had the weapons ready Russia was wheeling underfoot, largely engulfed in clouds. They watched silently, knowing the first indication of an attack might very well be a blip on Devlin's scope. Somewhere down there the saucers were tracking them, feeding information to computers, telling the Red missilemen their exact location, and the precise spot in space they'd occupy in X

minutes. Here and there the clouds rifted, showing a sullen land on the sunlit side.

Aside from an occasional check Gore made with the station, the phones were silent. When the last of Russia sped past, Tank Town hurtled out over the Barents Sea and Novaya Zemlya slipped by on one side. Gore immediately got Strecker on the phones.

"The lines are open," he announced.

"We need help," Strecker replied shortly. There was a brief pause and he added: "We're having trouble aligning the boom for coupling with the reactor.

"Three good men coming up," Gore replied.

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The tankage came up.

Propelled by the powerful thrust of its ringed mainstage engines, the modified super ICBM climbed through the scattered clouds above Orbit Point, the thunder of its passage through the air beating against the rolling coastal plain. The sun had yet to break the eastern hills. High in the thin, cold vacuum of near-space the flames shooting from the flaring tail nozzles blinked out. The ring of booster engines separated, curving down to the sullen sea. The upper stage, driven by its mighty sustainer engines, pushed upward in a long, shallow arc toward the orbital plane of Tank Town.

Gore and Jastro watched it rise, neither of them putting into words the thought uppermost in their minds: This was it. Especially modified to house the inflatable nylon rooms that would provide the Spacehive's crew quarters, the tankage had to be injected into orbit at a precise time and place; there would be no second chance.

Watching it, Gore thought: The Spacehive had to be completed in exactly three weeks; it seemed like they'd hardly gotten started. Lord, they couldn't afford a foul-up. He felt the tension build up inside him while the huge bulk rushed upward. There, the vein at the base of his throat was throbbing again. . . .

He glanced at Jastro. The astronaut was on the scope, his face taut, and for the first time he saw the fatigue there. His eyes were tired, his face thin. Christ, we're all pooped, he

thought. It was a damned rat race. The vein was throbbing in a steady beat. Finally the blip on the scope became a full-blown image on the visual screen.

"Smooth," Jastro murmured. Gore nodded, having the uncomfortable feeling things were too smooth. Devlin had started his descent in the Bucket nearly a half an hour earlier. Olin, blasting off from the desert floor some minutes before the tankage was launched, already was jockeying the Wheelhorse into position above the station. And the tankage shot was good—he knew it. It was sliding toward the eastern side of the yard, a course that would put it behind and below the level of the station, but within reach. That was the main thing. He watched its slow approach, giving a sigh of relief when finally it rode serenely at the edge of the yard. A spontaneous cheer broke from the cabin speaker. Jastro grinned at his teammate.

"That does it. Now to get the damned thing put together."

"Three weeks. We have three weeks," Gore asserted.

"That'll be one hell of a tough push . . ." He let the words trail off.

Gore said flatly, "Give us that long and we'll have it ready; boost it so damned high no missile could ever reach it."

"Yeah, get it ready for the fancy-pants astronauts," Jastro said bitterly.

"They're just lucky."

"Sure they're lucky," he exclaimed. "Some astronauts get the moon, some get the planets, and you know what we get?" He told him and Gore smiled, inclined to agree. Jastro pursed his lips and added, "We might make it."

"We will make it," Gore corrected. He turned at the hiss of the airlock and Olin came in with a cheery wave, followed by two newcomers for Strecker's crew. They swam uncertainly from the lock, looking frantically for anchorage. The astronaut disregarded them, decompressed and opened his faceplate.

"Hear from Dev?" he asked immediately.

"The trackers gave an okay report," Gore informed him.

Olin nodded. "Looks like we're ready to go. The old tank's right in the groove."

"Listen to the cheerful bastard. He must have had a liberty," Jastro complained.

"Liberty, hell, they gave me the third degree until it was time to climb into that damned crate again. All I got was a few slugs of beer."

"Now ain't that a shame," Jastro drawled, in mock sympathy. Olin flung back an uncomplimentary remark and turned to introduce his passengers, Schwartz and Meredith.

"Damned if I don't feel seasick," Schwartz complained when the introductions were completed. His round face was pale and sweaty and he kept opening and closing his mouth as if gulping air.

"Same symptoms," Gore told him. "They usually pass away pretty quickly."

"If they don't, I will," Meredith remarked ruefully. His long, horselike face gave him a sad expression, and he flicked his eyes around the cabin in a nervous manner. Gore got the immediate impression of an underlying current of unease. Jastro got some magnetized slippers from the locker.

"Slip these on until you get your spacelegs," he advised.

"Magnetic?" Schwartz asked. He nodded and they donned the slippers, taking a few tentative stips while subconsciously holding their arms out to maintain balance.

When they'd mastered the trick of walking, Jastro said, "I'll show you through the station before your boss takes you to the salt mines."

"So soon?" Schwartz exclaimed.

"I'd predict about ten minutes."

"I'd just as soon go now," Meredith stated.

Jastro grinned. "It's a good world when you get the hang of things." While he showed them through, Olin opened his suit and drew out an envelope, extending it to Gore.

"Orders," he said succinctly.

"From the Old Man?"

Olin nodded. "You're a wheel."

Gore glanced at the envelope and slipped it into his pocket.

"Bruckman says things are getting rugged," Olin pursued. "Down there or up here?"

"Both—we're close to war."

"A scare, or really bad?"

"Really bad. All parties have yanked their ambassadors home and the Reds have slipped their sub fleet into a strike position. The Navy says they're pouring down from the Arctic like sardines."

Gore whistled softly. "What are we doing?"

"Keeping our fingers on the buttons."

"I hope no one gets nervous."

"Amen, it's an ulcer-maker," Olin agreed.

"Did he say anything about Operation Needle?"

"He explained it," the astronaut admitted. "They've had some kind of a complication but they expect to get it rolling pretty quick."

"We've had complications up here, too," Gore growled. "Did they send any homing rockets?"

"Nothing but oxygen cylinders," Olin replied cheerfully. "That's getting to be a major item with the population Strecker's pulling up here."

Gore grunted. "Looks like we'll have to tough it out with what we've got." He glanced at the far end of the cabin where Jastro was going over the operation of the spacesuits with the new men. "I guess we'd better suit up and get moving. We're going to have a job with that tankage."

He read the orders brought by Olin before preparing for space. They were sweet and to the point. Finished, he folded the paper thoughtfully, returned it to his pocket and stepped to the mike.

"Your attention, please. This is Major Gore speaking." He paused, conscious of the sudden silence in the cabin. Then Strecker's worried voice came over the phones, "What's up?"

He disregarded the question and continued:

"By order of the Commanding General, United States Air

Force Space Command, Space Wing One. The military commander of the Space Command Astronautics Training Station Number One is hereby designated as military commander over all Air Force and Space Projects Administration personnel and space activities connected with project Spacehive. Orders effective immediately. That is all."

He stepped back from the mike, feeling the finality of his words. Now *he* was responsible for Tank Town, the scattered components of the Spacehive, and all personnel. More, he was responsible for the fate of the project itself. Major Gore, commanding officer of one big ring of vacuum, of the orbit and all it contained. He wasn't surprised at Strecker's immediate challenge:

"SPA personnel are not military," he snapped tartly.

"You're under military jurisdiction," Gore answered quietly.

"I have no orders to that effect."

"You've just had them."

"Not from my own immediate superior."

"I imagine we have the same superior farther up the line," Gore pointed out.

"I'd like it directly," Strecker remarked, coldly. Gore suppressed his temper, trying to decide how best to handle him. He could plainly tell him to go to hell, but he preferred to keep their relationship as amicable as possible—would have to if there was to be any hope of completing the Spacehive.

"Do you want to return earthside, get a personal clarification?"

"You know better than that," Strecker snapped.

"Grumann can take over till you get back."

"No!"

"Then you'll have to live with the orders," he concluded. A long silence followed. When Strecker answered it was with that same curious quality that had baffled him before; he spoke as if the conversation had never occurred.

"We need the new men," he said. "We're going to have a tough time getting the tankage and boom assembly together."

The yard zoomed down across the bottom of the world. Twenty-four minutes after crossing the equator, it sundered the sky over the desolate storm-ravaged Antarctic Plateau and came out over the ice shelves off Enderby Land, cutting into the Indian Ocean on its upward leg.

Strung out in three dimensions, the components of the Spacehive gyrated in odd ways, perturbations due to vast gravitational shifts resulting from the irregular shape of the planet below. All in all, the yard occupied several cubic miles of space. Viewed from afar, the thin, sun-reflecting nyla cords binding the components together gleamed against the blackness with a faint luminescent quality, so that the entire network resembled a giant silver cobweb flung against the stars, with Tank Town as its hub.

Gore had seen the web grow through each successive trip into orbit, marveling at the manmade thing pasted so audaciously against the sky. It was, he thought, a fitting symbol for the new dawn of man. It was the portent of a technology freed from the earth, the first building block of a new type of architecture which, in time, would fill the spaceways in the long, lonely lanes, between the stars.

He shook the thought aside and looked down past his feet. Madagascar was coming up. They'd cross the Gulf of Aden —time to call Jastro and MacMillan to the weapons—split Saudi Arabia, cut a corner of the Persian Gulf, and hurtle over Iran, with Turkey, the last friendly tracker station to the west. Beyond was the heart of the Red Bear.

He had the strange feeling of knowing the land beneath him almost as well as he knew his own native soil. It was a map burned in his brain during the course of a thousand intelligence briefings—facts and figures that ranged from thrust and megaton data to the delicate balances of politics and economics; in short, the character of the enemy.

Russia: in the east were Anadyr, Okha, Komsomolsk, Irkutsk, the great line of Red ICBM bases that brooded over the Arctic North. Magnitogorsk, Aralsk, Alma-Ata, Kalinin, those and a dozen other ICBM and IRBM bases girded the

heart of West Central Russia itself, names as familiar to him as the names of a dozen or more Air Force bases where he'd served prior to being assigned to the Space Command. Khatanga, Taimyra, Kavykuchi—names with musical rings and deadly portents. It amused him faintly to think he knew the topography of the Red World far better than the vast majority of its citizens; knew it from the desolate Murgas Oasis, high on the Afghanistan border, to cold, crisp Cape Chelyuskin, a shadow land high in the Arctic.

Watching the sweep of the Indian Ocean come up, he idly listened to the chatter in the phones while he tried to plan the moves ahead. Not that he could, of course. That depended upon the enemy. Yet, despite that, he was determined that the Spacehive would live. He contemplated the orders placing the operation under his command. It meant things were going to get rougher, he thought grimly. The Old Man had plopped the weight squarely on his shoulders. Yet, there was one power he held: the power of withdrawing the crew from orbit if, in his opinion, their position became untenable. He had confided that to no one except Jastro, who had replied:

"Forget it. If it gets untenable up here, it'll be impossible down there."

That's the way he had it figured, too. Come hell or high water, they were committed to orbit. Besides, he knew he rather liked the idea of playing midwife in the birth of an interplanetary ship. After a while he raised his handjet and kicked himself toward the station. Almost immediately Olin came on the phones.

"Red Bear coming up!"

He looked down, surprised to see the Caspian speeding toward them, and immediately called for Jastro and MacMillan to man their battle stations. Despite Strecker's reluctance to spare them, he noticed most of the activity ceased during the eight-minute period it took to cross Russia along that particular course. Most of the SPA crew floated along-

side the tankage, staring down toward the land rushing below them. The silence was almost electrical.

Tension, he thought. They were getting edgy. Not that he blamed them. There was something nerve-wracking about staring into the enemy's heartland, waiting for missiles that might or might not come. But it was a crew with guts, he told himself. They might have small bodies like Anderson, or come in the form of giants like Tolenberg, but they shared one attribute in common: courage. That and a dedication to space itself that overrode all else.

Russia came up, wheeling beneath them, an oddly geometrical pattern of multi-grays on its sunward side; it swept toward the rear and the Barents Sea rushed toward them. Novaya Zemlya came and sped past unseen, lost under a cloud blanket, and he called the all-clear signal. The chatter came back on the phones.

Despite the fact the missile had been engineered for quick removal of the sustainer engines, the job of freeing them from the tankage proved extremely difficult. By the time it was accomplished the world had rotated to a point where they began crossing Russia again, this time on the downward leg. When the task was finished, the men stopped work for a quick meal of packaged rations, small squares of chocolate, and a chance to refresh themselves. Although obviously impatient, Strecker allowed an extra fifteen-minute rest period before returning to the job.

Despite the tremendous bulk of the tankage, the crew got it moving—inching was the better word, Gore thought—using the power of their handjets. Lined up behind it, they fired in unison, thus obtaining an effect somewhat analogous to that of an extremely small rocket engine. The first attempt started the huge zeppelin-shaped structure moving in a slow end-over-end spin, one that took considerable effort to stop. Grumann finally got the men aligned right and the next try was more successful.

Gore saw Anderson moving toward the station. Too tired to sustain the pace, he had been given the job of ferrying

extra handjet power packets for the crew. Gore privately thought the small man was on his last legs, but Anderson wouldn't admit it. Grumann, tactfully, had switched his job in a routine manner; if Anderson realized he'd been purposefully freed from the more arduous work, he didn't show it.

Olin's voice interrupted Gore's thoughts. "Check your oxygen, everyone." It was a routine check. There was a brief flurry before work was started again.

"Line away," Tolenberg called. In the distance his torch splayed across a drifting payload as he moved ahead of the tankage, freeing the mooring lines in its path. Gore watched him. The giant had taken to space as if it were his natural habitat. He moved with the ease of long familiarity, operating his suit and equipment in a manner to evoke admiration from a veteran astronaut.

The tankage drifted past the loosened line and Graybell, bringing up the rear, propelled himself toward it. He moved uncertainly, having difficulty preventing his body from spinning when he used his handjet. Finally he got the line fastened and called, "Line secure."

Inch by inch, foot by foot, the tankage moved across the yard, reminding Gore of a giant whale moving through a school of small fish. It glinted on its sunstruck side, obscured the stars, wobbling with a slow, odd gyration about its longitudinal axis.

Each ninety-six minutes for the next six turns they halted work while they hurtled over some part of Russia or China. At such times Jastro and MacMillan stood by the weapons with the Big Stick launchers while Gore handled the smaller foil thrower. From time to time Olin broke in with routine messages from one or another of the Navy trackers which girdled the oceans of the world. Finally, nearly twelve hours after they had started stripping the sustainer engines from the tankage, it drifted into line behind the boom assembly.

"We've got it whipped," someone yelled.

"We're just getting started," Strecker snapped tartly. There was a brief silence broken by Tolenberg's hoarse voice.

"What's next?"

"Strip the tankage," Strecker ordered. "There's a lot of gunk that's got to come out." He hesitated, then called sharply, "Grumann!"

"On deck," the crew chief boomed good-naturedly.

"You can start in . . . show them what comes out."

"Check."

"We've got to have it ready for the inflatable liner."

"It'll be ready."

"Major!"

"Go ahead," Gore said bemusedly.

"Will the liner be on schedule?"

"No word to the contrary," he replied. For the moment he felt at ease, almost lazy. The sight of the tankage drifting just aft of the boom assembly did something for his morale, and he pictured the finished vehicle. Venus, he thought—some lucky bastard would take her down.

14

"SKIPPER!"

The bark of Jastro's voice brought Gore's head up sharply.

"Coming . . ." He raised his handjet and fired, noting that the coast of California was receding; the snake arm of Baja California sprawled out to one side.

"What's up?" a voice came through the phones.

"Maintain radio silence," he ordered curtly, thinking that the crew had become attuned to the slightest indication of danger—the tone of Jastro's voice was enough to start an alarm. Increasing speed, he subconsciously ticked off the possibilities of emergency: Olin was going down; Devlin coming up. So was the rocket bearing the inflatable liner for the Spacehive's cabin. It was one of the three. He felt his heart began to thump; a nerve twitched and his hands became immediately clammy. Lord, he hoped it was the latter. He came alongside the airlock and used his arms against the side of the station to break his speed, then dexterously swung into the air cylinder and closed the hatch. Inside he decompressed and snapped his faceplate open with a quick motion. Jastro was on the radio and the crackle of static filled the cabin.

"What's up?" he asked sharply.

"Devlin—something's haywire."

"Got him on the scope?" Gore moved quickly to his side. Jastro nodded.

"He's past the staging point."

"Oh . . ." Gore murmured the single word, glanced briefly

at the scope and took over the radio. "Tank Town to Bucket. Come in, Bucket."

"I had him and lost him," Jastro interjected. "The damned radio howls like a banshee." Gore nodded and repeated the call, listening to the crackle of static. It rose and fell, dropping to an almost gentle whisper before rising anew. He adjusted the radio and repeated the call over and over.

"Tank Town to Bucket. Come in, Bucket, come in, Bucket."

"Bucket . . ." It was a whisper, distorted by the furiously seething ions through which it passed. Abruptly it grew stronger: "Tank Town, I read you."

"What's up?" he asked tersely, knowing the answer even before it was asked.

"Staging failure . . ." Devlin's voice was strangely calm. "The second stage failed to separate."

"How about the manual release?"

"Nothing works—she's hung up." The words had an air of finality. He added: "We're starting down."

Gore's mind raced. The second stage, like the main stage, was recoverable. It was designed to be guided to an ocean landing for recovery by Navy units; but it wasn't designed to carry the additional weight of the glidetug. It had retrorockets and automatically-activated air brakes for when it reached the denser regions of the troposphere. But its speed, with the glidetug . . . Aside from that the Bucket had its own escape facilities, could eject the entire cabin as a sealed capsule, but it wasn't designed for escape at the fringes of space.

"You can't eject now," he rasped.

"I know."

"Do your passengers know?"

"I've cut the intercom," the astronaut answered.

"Use your retrorockets, chutes, airbrakes. Kill all the speed you can."

"Roger, will try, but everything seems dead—a major failure," Devlin cut in. He started to say something else but the words became garbled, blending with the rising static.

A raucus crackling came through the speaker. Gore tried to get him back.

"Calling Bucket. Calling Bucket . . ." The static rose higher, became a harsh squawk, subsided and a new voice came through the speaker.

"Brown Field calling Tank Town. Brown Field calling . . ."

"Tank Town, we read you," Gore snapped.

"We have a track on your MEOS vehicle. Downrange sea and air rescue units have been alerted."

"Roger, stay with 'em." He'd barely gotten the words out before the static rose to a strident sputter, drowning the voice. It died away leaving an overwhelming silence against which the whir of the air fan seemed like a harsh grate. Lord, oh Lord. His hands were clammy and he shook the sweat from his eyes, trying again and again to raise the Bucket, with no success. Finally he turned, regarding his teammate with stony eyes. Jastro was pale, sweaty, jittery-looking.

"Sonuvabitch," Gore cursed bitterly, thinking that despite the elaborate escape system, it wasn't designed to operate under this combination of factors.

"They'll come down west of the lower tip of Baja California," Jastro observed tonelessly. He got no answer. Gore stared at the silent radio, feeling his body tremble. The cabin survival equipment included dye markers, smoke bombs, radio homing devices, signal lights, flares, automatically-inflated flotation gear—everything to maintain life until rescuers reached the spot. But their speed at the instant of escape, even if the mechanism worked . . . There was no need to put it into words. Jastro knew. The astronaut glanced back at the scope; the blip representing the Bucket had vanished, replaced by another blip.

"The payload from Orbit Point," he said in a dead voice.

"We won't know anything until we come around again," Gore gritted impatiently.

"Olin's going to take it hard."

"Yeah." He unclenched his hands. "A risk we all take.

There's got to be some losers," he added harshly. Jastro smiled crookedly.

"I guess we'll get our chance one of these days."

"That's for sure. It's a damned bingo game." He silently watched the rocket approach. "I'm going outside."

He closed his faceplate, pressurized, and automatically checked his suit instrumentation before passing through the airlock. Outside he saw the torches of the SPA crew slashing through the night, converging on the latest payload from Orbit Point. He wondered at the quiet in the phones before he remembered having ordered radio silence. Bruskly he broke it, and almost instantly Strecker asked:

"Where's the Bucket?"

"It won't be coming up this trip."

"I have two men due—need them," the other persisted. He hesitated, thinking the SPA man was certainly entitled to know what had happened to his men. At the same time, he didn't know himself, for sure. In the end he answered evasively.

"There's been some mechanical trouble." There was a brief silence.

"I suppose it couldn't be helped," Strecker finally said. The tone of his voice indicated his assumption the Bucket hadn't been launched. Gore let it go at that. He drifted, feeling the tension ebb. The suit air removed the sweat from his body and the vein at the base of his throat stopped throbbing. But the ache was there. Joe Devlin—he hadn't a chance. He'd been a good boy, the youngest of the lot, a gangling, yellow-haired farm kid from Green Bay who somehow had gotten stars in his eyes. And the SPA men. Resolutely, he pushed the thought aside and considered their situation. The astronaut's loss meant Jastro would have to man the station until Olin's return; that would leave them a man short on the weapons.

"Does anyone know anything about the Big Sticks?" he asked irritably.

"Count me in," It was Tolenberg's hoarse voice.

"Good," he replied, not surprised it was the giant who had answered. "Return to the station with Lieutenant MacMillan."

"Fall in," the marine cracked. Gore, expecting Strecker to protest the use of one of his men, was surprised when he didn't. The two men came toward him through the night, moving gracefully side by side.

"Used to be a gyrene," Tolenberg explained when he reached Gore's side. He glanced at MacMillan and added, "A private."

"You can't beat that," MacMillan said. "Do a bang-up job and I'll recommend you for two stripes in the reserve."

They got the weapons out and Gore quickly saw that Tolenberg was as adept with them as the lieutenant. Despite the bulky spacesuit, he handled the Big Stick rocket launcher with a familiarity that bespoke expert training. The giant was a man of many talents, he thought. They lashed the mooring lines around their waists and Gore manned the portable foil thrower, leaving the Big Sticks to the others. Finished, he watched the Caspian wheel toward them, then called for radio silence. Once Jastro called in with a routine check from a tracker buried in the lonely Samsun hills of Turkey. After that the silence was complete. When Russia was safely behind them, Gore broke the radio silence and returned his men to work.

They came down from the North Pole, splitting the skies above the lonely ice-locked Beaufort Sea, now hidden beneath a vast curtain of steel-gray cloud. Alaska wheeled by unseen. Gore and Jastro waited by the radio, disappointed when no message came from the northern trackers. They came down over the Pacific and crossed 30° North at approximately 144° West. Shortly thereafter the radio sputtered to life. It was Blue Boy, a Navy tracker stationed in the empty stretches of ocean east of the Hawaiian Islands. Gore quickly acknowledged and listened intently.

No word of Devlin—that was the gist of the garbled mes-

sage. A mammoth air and sea search was on. The station receded and they looked quietly at each other.

Finally Gore murmured, "They didn't make it."

"No, they didn't make it," Jastro said flatly. Gore moved back from the panel and reached for his faceplate.

"He was a good astronaut."

"Damned good."

He closed the faceplate, pressurized and went outside, pausing to stare into the blanket of stars woven into the sky above him. Yeah, it was worth it, but he felt a sorrow that Devlin hadn't lived to see the completion of the Spacehive.

Before the next turn was completed, Strecker's men had stripped the covering from the bundled inflatable cabin, mooring the contents alongside the boom until they were ready for its installation. While a crew under Grumann cleared the tankage and prepared it for the interior assembly work, Strecker and Schwartz started a survey of the yard, tagging the mooring line of each payload at its source in the order in which it would be required. Gore helped, feeling the need for action. Besides, it was good to see the progress.

Strecker and Grumann pushed the work hard, trying to achieve as much as possible before further interruption. The lack of immediate hostilities had a cheering effect; occasionally someone hummed or whistled over the phones and light banter flowed between the men. Finally Grumann announced the tankage cleared.

"We're ready to start installation of the exterior electronic gear," he called triumphantly.

"Good," Gore answered. He jetted over to the tankage, surprised to find the shell of the airlock already installed in the aft end, filling part of the gap left by removal of the sustainer engines. Entering, he swept his beam through the interior. The tankage formed a huge cylinder tapered at the far end, and held a partial metal framework to contain the sides of the cabin when it was installed and inflated.

"Looks like you're getting there," he complimented Grumann when he emerged.

"This baby will be ready before you know it," the construction man asserted. He swept his arm toward the drifting hulks. "It'll go fast once we couple the tankage to the boom assembly."

"It's 22 July," Gore said casually.

"She'll be ready."

"Looks like a pretty major job," he observed dubiously.

"Not the way it's engineered. It's pretty straight-forward."

Gore grinned. "They look like pretty big chunks of hardware to be shoving around."

"We learned a lot handling the nuclear engine," Grumann stated. "It won't be bad, just takes time."

"Yeah, time," he replied drily. He stared moodily at the earth, then shook his head and turned to help with the payloads.

The day passed without event. Aside from brief pauses to gulp their rations, snatch catnaps, or refresh themselves, the work went on unceasingly. Gore began to hope the schedule was more realistic than it had first appeared. Tomorrow was the twenty-third, the eve of Operation Needle. After that, he thought, it would be a breeze. A sudden weariness swept over him, and all at once he realized he was dog-tired. How long since he'd slept? Too long. He turned toward the station, thinking maybe he could sneak an hour. An hour, he told Jastro.

The astronaut let him sleep seven.

The missiles came up.

They rose from the bleak frozen lands inland from the East Siberian Sea, churning upward through a gray mass of low-hanging clouds.

Three miles west of their subterranean launch complex, two men lay on the crest of a wooded hill, garbed in heavy jackets and mittens to break the chill of the icy winds. The faint roar of the rocket engines reached them first, sounding like the roll of distant thunder. One of them looked inquisitively at the sky, then immediately lifted a pair of field glasses,

catching the first of the fire trails. The roar became louder.

"Three. Three of 'em," he said after a moment.

His companion bent over a portable radio, turned a switch, waited and gave a call number, repeating it several times before an answer came. When it did, he tersely gave a coded report, snapped off the radio and looked at his companion.

"I'd suggest scramming the hell out of here," he suggested drily.

"Yeah, they'll be on us." They quickly shouldered their packs and began picking their way down a steep slope to the floor of a broad valley, plunging toward some distant woods. Minutes later another roar reached their ears and they paused to look back. Three helicopters swept over the brow of the hill they'd just left and began circling, dropping to tree-top level, their blades snarling in the cold air.

"Right on the ball," one of the men remarked. They plunged ahead, keeping under the cover of foliage until they reached the edge of the forest. One of the two men glanced worriedly behind him and immediately froze.

"Look!" he exclaimed, motioning toward the sky. His companion brought his head around with a sharp jerk. A big, fat-bellied, old-fashioned propeller-driven airplane came high over the hill and an instant later began spilling tumbling objects. Parachutes snapped open, breaking their fall.

"Jesus, paratroopers," he exclaimed. "Let's make tracks."

"You're not just a whistlin' Dixie," the other replied fervently. They briefly scanned the terrain ahead of them and plunged into the deep shade of the Siberian forest.

By the time Jastro got the message, relayed from an unidentified tracker, he already had the missiles on the scope. Gore, outside the station, barked an instant command.

"Missile alert. Deploy in the yard and maintain radio silence."

"Roger," a muffled voice answered.

"The tankage is the biggest target. Keep away from it," he added. Searching the sky below, he tried to locate the

attacking missiles from Jastro's information, but was baffled by sunglint on the clouds. The yard hurtled down over the Koryak Mountains and the cloud bank began to break, coming to an end with only isolated patches adrift against the dark blue of the Bering Sea.

"I see 'em," Tolenberg rasped. Gore's eyes followed his hand and he detected them almost immediately, three slender bodies riding spectral trails on a path closing with their own. Jastro came in with range data.

"Hold your fire," Gore cautioned. MacMillan hefted his weapon and grunted. The lonely Komandorskie Islands off Kamchatka fled past in the east. The missiles were strung out in stepped formation, almost matching speed with the space station as they slowly closed in. Gore recalled the last attack, thinking he could almost predict what was to come. Luck—they'd need a barrel of luck to beat this one. The marine cut into his thoughts.

"These damned missiles will be the death of me yet," he remarked facetiously.

"Death," Tolenberg intoned, "is nature's way of telling you to slow down." Gore smiled grimly, thankful for the addition of the two men. Somehow, it was hard to be nervous with them around. The lead missile began to lurch in a series of corrective movements.

"She's locked on!" MacMillan barked.

"Now," Gore said calmly. He lifted the foil thrower, calculated the lead, and fired. The recoil kicked him back to the end of the short mooring line, snapping his body like a whip. He gasped harshly, managing to hold on to the launcher. Tolenberg and MacMillan were having similar difficulties. The giant cursed while he struggled to help the marine reload. Gore didn't wait. He got off two more salvos before pausing to see the effect of their fire.

Midway between them and the oncoming missiles, the foil-throwing rockets exploded, one by one, sending out fountains that caught the sun. It appeared like silver rain in the smoke-hued sky. Beyond, he saw the tenuous wakes of two Big

Stick rockets churning toward the enemy formation and thought they looked wide. The lead missile began to jerk erratically and suddenly exploded in a small puff of smoke. Someone cheered, and Gore glanced at Tolenberg and MacMillan. They were calmly sighting in for another salvo. Waiting till the second missile locked on, he fired.

The slim shadow altered its course in small corrective movements, riding closer and closer while he struggled to reload for another shot. The warhead passed through the rain of foil as if it weren't there, small blue flames licking from its stern tubes. A Big Stick rocket passed it to one side and someone cursed. Unaccountably, the last missile in the formation exploded in a small puff of smoke while well out of range.

"One to go!" MacMillan boomed.

"Get that bastard," Tolenberg yelled. Before they could fire again the remaining missile altered course and closed the gap with startling suddenness, passing out of their line of sight for an instant as it was eclipsed by one of the payloads.

"Oh God, oh God," a shrill terror-stricken voice screamed. An instant later someone yelled it had exploded. Gore's jubilant thought that it hadn't gotten through to the tankage or boom assembly was broken by Jastro's voice.

"The show's over," he announced calmly. Gore lowered his launcher and gave a victory wave to MacMillan and Tolenberg.

"Attention, please." He waited until the phones were quiet, then ordered the men to report in. Strecker, Grumann, Schwartz . . . He listened, relieved when everyone was accounted for.

"What's the damage?"

"Not a bit," Grumann answered. "I saw her blow. She exploded by the old sustainer engine we yanked off the tankage."

"Thank God for that," he said fervently. "Now we can go back to work."

"Not till they feed me," Tolenberg replied. "They always feed marines after battle."

"Food—I second the motion," someone yelled.

"Food, rest, beer, women—bring 'em all on," MacMillan bellowed jubilantly.

"We feast," Gore decided. "Two squares of chocolate instead of one."

15

24 JULY 1969.

Operation Needle.

The seeding satellites came up. They lifted, one after the other, from widely separated launch pads at Orbit Point, churning upward through mushrooms of vapor and smoke into a dawn-tinted sky.

"Lift-off on Needle One. Going, going . . ." a voice on the radio droned. Almost immediately it added, "Lift-off on Two. Do you read me?"

"Roger, I read you." Gore spoke loudly into the mike to make himself heard above the crackling static.

"Going, going on One . . . Plus twenty-five seconds," the voice continued "Going, going, going on Two. Both going nicely." The noise spectrum rose, masking the words, and for a brief period the cabin was filled with the violent snappings of space. In the station the sound was like that of a string of fire-crackers exploding. Gore held the mike close, waiting for it to subside.

"Tank Town to Orbit Point." The response was prompt.

"Orbit Point. Come in, Tank Town."

"We're having trouble reading you."

"The static's wild . . ." The words died and came back, high-pitched against the sound spectrum. "Going . . . going . . ."

He glanced at the visual scope. The station had hurtled down from the Pole and now California was speeding past, a curiously disordered geometric pattern of shapes and colors; splotched greens of the coastal plains butted against olive-colored mountains and, beyond, the tan Mojave curved into

the east. He picked out Los Angeles. It sprawled over the coastal plain like an ungainly amoeba, splashing over into the desert and reaching south to meet San Diego. He could see its form and colors, not its details, but that was enough to revive pictures in his mind. The behemoth of cities was a second home. He'd done a lot of helling down there—would do more, too. A momentary touch of nostalgia swept over him. Mountains, desert, the teeming metropolis and blue sea —it was a land he loved. He watched it speed past in the east, followed by Baja California. Ahead, the unbroken Pacific raced to meet the dawn line. He caught the voice again.

"Going, going on One. Plus sixty-five seconds. Going, they're both going, leaving nice vapor trails." The static rose, ebbed, and after a while the voice came stronger.

"Staging—she looks good. That's Needle One, going nicely, going nicely . . ."

"Got 'er on the scope?" Gore called.

"Uh-huh." Jastro, working over the console, sounded uncertain. He had stripped down to his shorts and his dark wiry body was beaded with sweat.

"Needle Two staging. Going, going, both going . . ." A harsh crackle drowned out the words and Gore fiddled with the dials to no avail.

"Both on the scope," Jastro blurted, trying to control his voice. "Man, they're coming along, coming along." Gore studied the screen, relieved as always when a rocket passed the critical staging point, then stepped to the con system.

"Keep your eyes peeled and you'll see two beautiful babes coming along."

"What kind of babes?" MacMillan called.

"You'll see." He felt good suddenly. The work on the Spacehive was moving fast and now—Operation Needle. The Reds would have a helluva time picking them off. Tank Town —the Spacehive—they'd be the proverbial needles in a haystack. Only this would be a haystack of silver masking the sky. Lord, he'd like to see the expressions on the Russkies'

face next time they raced over Missile Alley. Or of the people in his own country, for that matter. The press would have a field day. His idea. The last thought sobered him. It'd better work.

"They're on the visual scope," Jastro cut in.

"Hold down the fort," he answered. "I'm going outside and watch those beautiful babes come home."

"Home to daddy." Jastro grinned. "You'd better hurry, they're moving right along."

"Right." He closed his faceplate, pressurized and went through the lock, conscious of the murmur of voices in the phones. The men were plainly puzzled. Outside, he briefly scanned the earth. Mexico was falling away along the eastern horizon.

"See 'em?" Jastro asked impatiently.

"Not yet . . . yes I see them," he corrected. He cut the words short, watching the rockets approach. With the sun behind them they appeared like small haloes, moving along a line slightly angled to his present position. Drawing near, they took on the shape of squat cylinders, square-ended and taper-nosed, but he knew they must be far larger than they appeared. At the moment they were decelerating in the coast phase, with the distance between them and the yard rapidly decreasing. The lead satellite gradually slipped into a position slightly to one side and a good eighth-mile in advance of the station. The second trailed the station by a lesser distance. Not perfect, he thought, but good enough. The usefulness of the satellites themselves was short; their payloads were what counted. That's what he was waiting for. Floating contentedly, he watched them. It was the twenty-third, no, twenty-fourth. Two days since the last attack, and the Spacehive was shaping up nicely. Now with the added protection . . . Grumann broke into his thoughts.

"What've they got—gear for the Spacehive?" He sounded puzzled.

"Nope." Gore was noncommittal, enjoying the moment. Aside from Jastro, none of the others knew about the oper-

ation. They were in for a surprise. He hoped it would be a pleasant one.

"Where's the glidetug?" Strecker asked sharply.

"She won't be up this trip."

"How about my men?"

"You'll have to wait."

"Well, what have they sent up?" His voice was exasperated and perplexed at the same time.

"A hiding place," Gore answered smoothly.

"A what?"

"A hiding place. Something to hide us from the Earth and the stars."

"Are you crazy?" Someone gasped at Strecker's audacity but Gore wasn't perturbed.

"Not a bit," he replied blandly. "Just watch those babies."

The phones became silent and he kept his attention riveted on the satellites. The distance was too great to see the first object ejected from Needle One, but a moment later a bright speck grew in the darkness, blossoming like a small nova. It slowly unfolded, expanding, an irregular shape that caught the sun.

"What is it?" a puzzled voice asked.

"Watch," he commanded. The odd shape slowly increased in size as Tank Town raced south. It became a colossal crumpled ball, a glittering silver on its sunstruck side. From time to time other small novas flared in the darkness around it, crowding one another as they expanded. After a while Grumann stated positively:

"Communication satellites."

"The same kind," he affirmed.

"Why that?" Strecker demanded. He didn't answer, watching the balloons grow. He roughly knew how they worked. Each of the giant balloons had been packed inside a folded mass of metal foil. The bundles had been placed on simple conveyor belts that were activated by preset signals when the satellites reached orbit. A small pressurized helium bottle inside each balloon released its gas upon ejection, slowly

inflating the foil around it to its full 100-foot diameter.

"Looks like a goddamned carnival," someone remarked. Gore didn't bother to answer. One by one the silvery blossoms sprouted around the satellites.

"How do they work?" Tolenberg asked. He briefly explained, feeling a touch of pride that the idea was his. By the time they started upward over the Indian Ocean, the first balloons released had attained full size, the others growing at varying rates. He felt suddenly solemn. Glittering on their sunstruck sides, ebony on the faces turned from the light, the balloons erased the stars, appearing like huge ghostly shadows as they moved through the purple-black night.

"Those babies are going to play hell with our communications," Grumann warned. "They're grade A reflectors—nothing'll get through."

"Including missiles, we hope," Gore rejoined.

"They'll foul up the interphones, too. Get a man out of sight behind one of those babies and his radio's as good as dead."

"I take it you don't like the idea?"

"I didn't say that. I'm just citing some of the complications," the construction man warned.

"It's going to make it tough to move the payloads," Strecker objected.

"Might—I don't know," Gore answered noncommittedly.

"I don't like it." It took him a few seconds to place the voice as that of Meredith.

"Why not?" he asked curiously.

"They hide the earth."

"That's the whole idea."

"I don't get it."

"The balloons offer a shield."

"Why?" Schwartz challenged. "They're too fragile to stop anything."

"They'll foul up the missile homing devices, explode 'em before they get here."

"A bit of shrapnel and your balloon barrage'll be gone," Grumann observed shrewdly.

"Maybe. We'll see," he replied, not wishing to argue. For the moment he was satisfied just to see the spheres there. From the earth, the yard would resemble a silver swarm streaking across the skies, visible even from the sunlit lands, he thought.

"Over Iran. Red Bear coming up," Jastro called warningly.

Surprised at the passage of time, he immediately dispatched MacMillan and Tolenberg to their battle stations and ordered radio silence.

"Can we keep working?" Strecker's question was a challenge.

"I don't see why not," he replied.

"How will we know whether or not to disperse if we can't see anything coming up?"

"I'd suggest you make tracks if any of the balloons start bursting," he answered. Strecker's reply was a grunt and a moment later he gave a brief order to his men, then the silence came again. Off to one side he caught sight of several figures moving toward the top of the yard and smiled grimly. Some of the men, at least, weren't waiting for a signal to disperse.

"From the halls of Montezu . . . umaaa
To the shores of Tripoli . . ."

MacMillan sang lustily into the phones and Tolenberg joined in, forcing a grin to Gore's face. The two men were taking positions forward of the station, using the discarded shielding from one of the payloads as a carrier for the rocket launchers and ammunition, a contrivance MacMillan had dreamed up after the last attack. He had attached lines to the carrier to enable them to tow it as they shifted position. The song ended and MacMillan exclaimed:

"Boy, if old General Hartzell could only see me now."

"Hartzell!" Tolenberg blurted. "Hasn't that cantankerous moth-eaten sonuvabitch retired yet?"

"Him retire? You don't know the old boy."

"Don't, huh? He gave me ten days piss and punk once," the giant replied, aggrieved.

"That's my boy," MacMillan chortled happily.

"I thought there was supposed to be radio silence?" Strecker cut in testily.

"Major," Tolenberg drawled, "order that goddamned civilian off the lines." Someone snickered and Gore chuckled. To hell with him, he thought. Let the fighting men have their day. He waited, conscious of the tension building up inside him again. Take it easy, boy, he told himself. Relax. The vast gleaming, staggered formation shielding the yard sped by the Caspian and plunged toward the heart of Russia, spearheaded by a single, still partially-inflated balloon which somehow had gotten into position well in advance of its satellite carrier. At the rear of the yard, other balloons trailed at varying distances. Several rode far out on the flanks or above the station, but the majority were clustered close around or below it. Some appeared like crinkled quarter or half moons, others like new moons or slender crescents, according to the sunstruck surfaces visible and the degree to which they were inflated. They seemed in constant slow-motion collision, causing huge canyons to open, show glimpses of the earth and close again in ever-changing patterns.

"Give me a fix," he barked impatiently.

"Fifty-five North," Jastro promptly replied. Gore mentally placed their position as some ten or twelve degrees east of Moscow. Once or twice Strecker gave hushed orders. That and the occasional harsh rasp of someone's breath and the sputtering of the radio phones themselves were the only sounds heard. The minutes seemed to stretch into an eternity and he grew restless. Finally Jastro called out.

"That's all for the Red Bear."

Gore promptly broke the radio silence, noticing that some of the balloons had edged deeply enough into the yard to cut off his view of the Spacehive. It took him a few seconds to realize the usual flow of chatter that followed a safe pas-

sage over enemy territory was missing. He caught only snatches of words.

"MacMillan," he said softly.

"Roger." The marine swung around and looked at him.

"Just checking the phones. It looks like Grumann's right; those silver babies ahead have cut our transmission.

"We can push 'em away," MacMillan observed.

"We might have to do that—keep a line-of-sight open to the work area. When you report back, you might tell Strecker he's out of radio contact, if he doesn't know."

"Will do," the marine said smartly. They secured the weapons and Gore entered the station to code a message for transmission over the next tracker.

"The radio's snafu," Jastro commented matter-of-factly, when he opened his faceplate. "Don't hear a thing."

"So I found out."

"Can't see that it makes much difference. It'll be a relief not to hear Strecker yapping all the time."

Gore grinned. "Think we can get a message through?"

"No, but we can try." Jastro sucked his lip thoughtfully. "Olin's going to have a rough time bringing the Wheelhorse in."

"He'll have to ease 'er in over the top of the yard."

"Quite a bit over the top." While Jastro prepared the message for transmission, he stripped, squeezed some water into a rag from one of the drinking bulbs and briskly rubbed himself down. The damp cloth felt good against his flesh. He studied his body briefly before dressing, thinking he was getting pale. He looked lean and hard but the mahogany glint was gone from his flesh. Come to think of it, his teammate was lighter, too; the windburn on his face was all but gone. The beach—a couple of days on the beach, that's what he needed. The beach and a girl and a stiff drink or two. On second thought, he could do without the beach. He promised himself he'd remedy the situation next time he was down, stick the Old Man for a pass and hit the big burg.

"Whatch' smirking about?" Jastro cut in. "You look like a cat in a cream pitcher."

"Liberty. Think I'll hit 'em for a couple of days. Run over to Smogville."

"Sure, sure, talk silly some more. I love to hear it."

"Well, I can think about it, can't I?"

"What gripes me is how easy it would be to solve these problems," Jastro complained, "but do you think the Air Force would do anything about it?"

"Okay, how'd you solve 'em?"

"Girl astronauts. They'd have to be 38-26-36 to pass the physical."

"That'll be the day."

"Imagine, a cabin full of babes," Jastro drooled, looking appealingly at his teammate. "What kind would you pick, a blonde, brunette, or a redhead?"

"All three."

"And a jug of whiskey."

"Amen." Gore got ready to go outside. "Let me know if the next tracker signal comes through," he ordered before closing his faceplate.

"Girl astronauts," Jastro said wistfully. "Man, what a service."

Gore propelled himself above the mooring lines running from the station to the tankage and boom assembly. They hung limp and he realized Tank Town and the Spacehive components had drifted closer together, and the spheres had crowded deep into the yard. Several of them intruded in his path, blocking his view of the work area, and he was forced to move along an S-shaped course that made use of the hand-jet extremely tricky.

He was surprised at the continuous movement of the balloons within orbit, and wondered if it were due to their extreme lightness and consequently more sensitive response to the earth's uneven gravisphere. Light? The thought startled him. The balloons, each of which weighed less than thirty

pounds on earth, and the vast tonnage of the Spacehive were equally light in orbit; neither had weight. He puzzled over it. He was propelling himself between the spheres when his body started into a slow-motion spin that produced a curiously disorienting effect. Momentarily he felt nauseated, before he managed to regain control. It was, he thought, like piloting a light plane between the walls of a narrow, twisting canyon, a complication he hadn't considered. He reflected it would be worse for the SPA men who, with the exceptions of Grumann and Tolenberg, still handled the handjets awkwardly.

Several times he caught glimpses of the Spacehive between the balloons, catching the chatter of voices at the same time, and wondered again if he should have a line-of-sight path cleared. He was struck by the ever-changing patterns the spheres created. Their dark sides were huge blobs that erased the earth and stars while their sunstruck surfaces gleamed with a harsh light that kept the automatic filter system in his faceplate continually opening and closing as he shifted his line of sight.

It was a disturbing phenomenon. In a sense, he could understand Meredith's attitude. The sheer bulk of the balloons made them appear dangerous, as if by coming together they could crush a man, like the way Carmody had died. Silly, of course, but they gave that impression. He emerged from the metal canyon into the work area and his phones immediately cracked to life.

The SPA crew was shifting the huge hull into position for coupling with the boom. Grumann had delayed the task long enough to connect the cesium fuel flow system into the engine and complete the remaining work on the propulsion system. Now they were on the last remaining major operation.

"Steady . . . steady," Grumann called. "Ease off, MacMillan."

"Roger."

"In a bit at your end, Schwartz."

"Okay."

Gore drifted, realizing there was little he could do at the moment to help; it was an operation that required delicacy rather than manpower. The tankage had to be aligned so that its longitudinal axis coincided exactly with that of the boom.

"Meredith, give a touch. Easy does it," Grumann encouraged. "No—too much."

Watching, he envisioned how the Spacehive would look when completed. The nuclear engine and tankage that formed the cabin would ride at opposite ends of the long boom. If it were not for the huge saucer-shaped shield with the ring of tanks butted behind it, the whole thing would resemble a lopsided barbell, he thought. The airlock would be on the aft end of the tankage, alongside the boom; the exterior radar gear and antennae, already in place on the nose section, gave the ship the appearance of a pile of equipment haphazardly thrown together. It looked massive and fragile at the same time. Yet it was strangely beautiful. Its planes and curved surfaces and odd assortments of external equipment gave it an alien appearance that left little doubt of its mission. Other world—it had that look. It was a ship whose future clearly lay beyond cislunar space. He decided that's what made it beautiful.

"Hold it . . . hold it," Grumann directed. The torches around the hull became momentarily stationary, then began to move again. "In a bit, just a touch. Not so much, not so much . . . hold it." There was a short silence followed by Strecker's impatient call.

"Ready to couple?"

"Not yet. Tolenberg, in a little on your end."

"Affirmative." The tankage appeared absolutely stationary to Gore, as if pasted against its background, and he realized the corrective movements required to align it properly were too minute to be seen at the distance. Grumann made several more attempts to position the components, then ordered the men to slack off while he propelled himself to a place where he could study the alignment. He saw Gore and waved his torch in recognition.

"Looks tough," Gore observed.

"Damned tough. It's not like doing it on the ground."

"You were right about the radio snafu."

"Uh-huh." The construction man scanned the tankage briefly before propelling himself farther back for an overall view. Finally he ordered: "Take a break. We'll try later."

"It's those damned balloons," Meredith claimed.

"Balloons? There's none around here," Tolenberg answered.

"Maybe not, but they make me jittery."

"Hell, I like to see 'em." The giant saw Gore and shouted, "Hiya, skipper. She looks like a damned pregnant whale, doesn't she?"

"She does," he agreed. Grumann zoomed alongside him.

"They should have a light metal framework that fits around the end of the boom to help nose this baby in," he observed.

"Good idea, let's pass it along," Gore agreed, making a mental note to do just that.

"That won't help now. Let's get back at it," Strecker spoke sourly.

"Okay, easy does it," Grumann responded. He eyed the alignment of the tankage again before giving directions. After a while the bottom of the world sped past and they came up through the South Atlantic to split Africa and hurtle toward the Mediterranean.

Finally he shouted, "She's in—coupled." Someone gave a brief cheer.

"Check your oxygen," he added.

"We'd better start pulling the payloads in closer," Strecker decided. "Those damned balloons will make it tough."

Balloons, Gore thought, no one likes 'em. He wondered if it had been such a good idea after all. Returning to the station, he wasn't surprised to find no tracker signals had come through, and he was certain his own messages weren't being received.

"Can't see that it makes any difference. They sure know we're here," Jastro observed. He smiled crookedly. "I kind of like the looks of 'em. They give us class."

"Some of the others don't."

"Who?"

"Strecker, Schwartz, Meredith—even Grumann." Gore gave a rundown of their reactions.

"They'll be happy if they stop the missiles," Jastro ventured when he was finished.

"We don't even know if they'll do that."

"No, but we'll find out."

"That's for sure." He got a drink and returned outside. Fragments of conversation came through the phones and he realized it was because some of the men were dispersed through the yard, swimming around and between the giant spheres as they moved the payloads. The voices reached him only when none of the balloons intervened.

Strecker proved right about their effects on the work; the task had been complicated enormously. Not that the spheres were difficult to move; the slightest force briefly applied was sufficient to push one aside, but their fragility was another matter. The mooring lines and payloads had to be handled with extreme care to prevent rupturing the delicate skins. Even so, several of them abruptly collapsed, crumpling and shrinking with astonishing swiftness. Strecker was quick to let him know the interference the balloons had caused.

"I won't be responsible for the schedule," he concluded.

"I'll worry about that," Gore gritted. He clamped his jaws, thinking the SPA man was deliberately needling him, then propelled himself toward the tankage. Coming closer, he saw several men working on it. Anderson floated off to one side, dexterously coupling a small pair of components, using special tools modified for the work. Graybell had donned a pair of magnetic shoes over his space boots and was walking along the hull at a seemingly impossible angle.

A small floodlight installed on the hull swept the dark side of the work area. Gore thought it gave the scene a slightly science-fiction quality. The spacesuited figures swimming around the huge cylinder in the garish light were reminiscent

of scenes from the magazines he used to read in school, concealed behind covers of his notebook.

Tolenberg and MacMillan came out of the darkness with a small payload and secured it to the boom. The giant was bragging about an affair he'd had when he was in the Corps, stationed at Camp Pendleton.

"Sure, sure," MacMillan cut in. "She breezed up in a Cad, opened the door and rushed you right over to her luxurious La Jolla apartment. Man, I know all about it."

"Just about the way it was," Tolenberg insisted. "Boy, those were the days."

Gore chuckled. The two had gravitated together, working as a team, and he thought it natural they should. They were of the same breed, with a reckless devil-may-care attitude that appealed to him. He looked down. California would be racing past.

Olin was due up tomorrow. The twenty-sixth. The thought came abruptly. Lord, time was flying. And the Spacehive was just a hull, a vast, odd-shaped shadow that eclipsed the stars. Its shape was there, but its guts were still strewn over the orbit. Christ, how time went . . . He turned wearily toward the station.

The attack came without warning

Tank Town and its entourage of payloads and giant balloons had hurtled over the Laptev Sea, past the frozen shores of Kytakh, had crossed the breadth of Siberia and cut deep into Manchuria. Gore drifted alongside the weapon carrier. MacMillan and Tolenberg were gigantic shadows at his side, and in the distance he saw torches slashing through the night as Strecker's men moved through the yard. He felt the tension grow in his body and wondered if it affected his companions in the same way. His nerves were taut and brittle, as if some titanic explosion were in the making inside him, and he tried to suppress the feeling. No good—it was there, rising . . . Jastro's voice crackled in the phones:

"Fifty North."

"Roger," he acknowledged, thankful they were past Russian territory. Floating with the foil launcher ready, he caught occasional glimpses of the earth between the silvery spheres and mentally calculated their passage. The Khingan Mountains would be dropping behind . . . Tientsin would be a degree or two to the west, beyond the Gulf of Pohai. Its lights would be blinking out now in a gray dawn. Shanghai was coming up . . . Someday, if peace came to the world, he'd like to see the land beyond the curtain. Peace—he smiled grimly. It was a word people had used wistfully for as long as he could remember.

"Missiles!" Tolenberg's yell snapped him to attention. At almost the same instant a number of balloons below the station abruptly collapsed and dwindled, leaving streamers of silvery cloth floating in space.

"Disperse! Disperse!" someone screamed. A sob came through the phones.

"Attention! We're under attack—disperse," Gore ordered, trying to keep the tremor from his voice. He immediately added; "Alex, pressurize."

"Roger." The astronaut's voice was tight. Gore gave a quick sideward glance. His companions were ready.

"There, down there," Tolenberg said, sweeping an arm toward the earth. Suddenly exposed, the land to the east lay sharply etched under a morning sun. Gore caught sight of two rockets milling toward them, leaving curious wisps in space. He spoke calmly into the phones.

"Strecker, are your men dispersed?"

"They were already dispersed," he yelled back, adding worriedly, "I haven't been able to locate Graybell or Anderson. They're out of radio contact."

"They'll know what's happening." He swung his eyes back to the missile just as MacMillan said: "Lock-on."

The lead missile was making small corrective movements and Gore brought the launcher up, took rapid aim and fired, feeling the mechanism slam against his shoulder. It spun him backward against the end of the short mooring line and he

was jerked to a violent stop that smashed the air from his lungs. Gasping, he swung back into position and saw his companions struggling to reload the launchers. Beyond, the trails of the Big Stick rockets looked wide, and the rain of foil thrown by his own rocket launcher hung silvery against the sky. The missile was close, close. . . .

"Oh God, oh God . . ." The voice on the phones was terror-stricken. He managed to reload and fire just as someone screamed: "She blew!"

He heard a cheer in the phones, kicked himself into position and saw another segment of the shield had vanished near the rear of the yard The balloons had been simply erased from the sky, leaving the under side of the yard exposed. MacMillan had reloaded again.

"One to go," he yelled.

"I'll match you for it," Tolenberg boomed.

"Goddammit, quiet in the ranks." The marine lifted his launcher and Gore followed suit, but almost as quickly lowered it and shouted a warning. The last missile, near zero upward velocity, gave the illusion of yawing, jerking toward the rear of the yard. Tolenberg cursed as the missile was lost to sight behind some balloons.

A shriek rang in the phones:

"She exploded—exploded in the yard." A babble filled the phones.

"Attention . . . Report in!" Gore yelled into the phones.

Strecker, Grumann, Anderson (Anderson, he'd been worried for the little fellow), Schwartz, Graybell . . . The roll came to an abrupt end. There was a sharp silence and Grumann spoke.

"Meredith—where's Meredith? He didn't answer."

"Maybe out of radio contact, somewhere between those damned balloons," someone suggested.

"Balloons . . ." Strecker sneered the word.

"Anyone see him?" Gore demanded. There was a silence and he added, "We're spread out all over. He can't stay out of touch long. Move around, call his name."

"Roger," Grumann acknowledged. He repeated the order. *Meredith . . . Meredith . . . Meredith* The call came like a haunting echo through Gore's phones. Fragments reached him as the men moved among the remaining spheres. He checked with Jastro, relieved to find the station unscathed. The last one had been close and the shield below them was all but destroyed. Even some of the spheres above the yard had vanished in the rain of shrapnel. Luck—luck had saved them. But they'd need more balloons, more rocket ammo, and more of God only knows what else. He ordered Jastro to code a message, grimly thinking they'd have no trouble getting it through; not with the bottom of the shield gone. That done he pulled Grumann off the search to assess the damage.

"I'll help with Meredith," he concluded.

"He's done for," the other said positively.

"Maybe." He propelled himself into the metal canyons, calling the name sharply from time to time.

Meredith . . . Meredith. The call was a refrain in the phones. Finally it died away.

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Around and around.

The North Eye tracker on the frozen Prince Albert Peninsula deep in the Arctic Circle crackled a message through as Tank Town raced down over the face of the globe toward 70° North. Gore, standing by in the cabin since crossing the pole, took over the radio and acknowledged.

"Stand by for a relay." The voice sounded distant and unreal against the static field. He rogered and waited, listening to the noise generated by the ionosphere until a curiously muffled voice came through.

"Tank Town . . .?"

"Tank Town—Gore," he cut in impatiently.

"Stand by."

"Stand by to stand by to stand by," Jastro mocked, but his tired face was expectant. The radio crackled to life again.

"Major Gore?" He automatically stiffened, recognizing General Bryant's voice, and acknowledged.

"We have major complications down here," the General said crisply. "Captain Olin will apprise you of them."

"Yes, sir."

"Three Operation Needle satellites are on the pads."

"Three?"

"A triple firing." He briefly explained the nature of the satellites. One would release its balloons immediately upon achieving orbit; the other two could be activated by radio command from the station. Gore thought the idea good. It

would allow them to repair the shield immediately following an attack. The noise spectrum rose and ebbed and Bryant continued.

"What's Strecker's estimate for the windup?"

"I talked with him about it," Gore said slowly. "We'll make the schedule. August tenth."

"You'll have to do better than that. You'll have to cut it by a week, be finished by the third."

Gore was aghast. "Impossible," he snapped.

"That's the order," the general said ominously. Gore hesitated. Jesus, didn't the Old Man know what they were up against? The third of August—eight days! It couldn't be done.

"Why the deadline?"

"Pressure . . ." He let the word dangle, and although he didn't say it, Gore knew he meant political pressure. The damned fainthearted Carron Committee. He suppressed the thought.

"Supposing we don't make it?"

"No Spacehive," Bryant snapped. The radio broke into a harsh cacaphony of noises that hurt Gore's ears. He waited impatiently. It finally ebbed and a new voice broke in.

"Slave Lake Tracker," it said. "Stand by for the relay." There was a short burst of static followed by Bryant's crisp voice. He spoke as if there had been no interruption.

"Gore, Space Teams Seven and Eight from Space Wing Two have been rushed over from the East Coast to evacuate the civilian personnel."

"No!" he exploded.

"That's the way it is. We have no control over the situation."

"Seems to me we're surrendering," he said bitterly.

"Those are the orders," Bryant snapped.

"What about our own teams, Four and Six? If they're in such a hurry, why don't they use them and start pulling out now?" He spat the words angrily.

"Their glidetugs were returned to the factory for modifi-

cation—unfortunately." His commanding officer's voice plainly said there was nothing unfortunate about it. He added, "Keep pushing to the last."

"I'll push that damned thing to Venus," Gore gritted. The communications were interrupted again while the Spokane station came in and reconnected them. The general spoke quickly.

"It's too bad about Meredith." Gore sensed the question behind his statement.

"We don't know what happened. He simply vanished."

"That was the straw that swung the decision," Bryant reported obliquely.

"We'll probably lose more. This is no kindergarten."

"Do the best you can."

"Yes, sir." The static rose and the General raised his voice trying to override the noise but the harsh howl masked the words. Gore glanced toward the automatic position indicator.

"Forty-five North. We'll get them direct from Orbit Point in a minute," Jastro answered his unspoken question.

"We're ordered to evacuate," Gore said bleakly.

"So I gathered."

"They'll have the SPA crew down in eight days; by the third of August."

"We'll finish first," Jastro blurted. "It might not be so bad. If they were hep on pulling out, why send up more balloons?"

"Saturate the orbit—a passive defense until they decide what to do." Yeah, that was it, Gore thought. It accounted for the fact that two of the satellites could be made to discharge their balloons upon radio command. They could be activated from the ground.

"I think they got the fancy idea they can let this junk float around until the fracas dies, then pick up where they left off," he added.

"The Old Man knows better than that."

"Yeah, but do the peanut politicians?" He felt suddenly tired. It had been a hard push. It would get harder. Well,

he'd rest later. No further message came through. Well, what more was there to say? The Old Man had given him the word. Or had been forced to give it, he added mentally. He sighed and ordered:

"Keep on the board. Olin's coming up and there'll be a flock of satellites." Jastro glanced at the API, got a startled expression and exclaimed, "He's almost due."

"Then quit loafing."

"Worry not, a strong hand's at the helm," the astronaut quipped, trying to conceal the disappointment so clearly written on his face. He added, "Why not step outside and get a breath of fresh space?"

"Okay, will do." Gore automatically checked his oxygen reading, closed his faceplate, pressurized and passed through the lock, at the same time trying to recall the general's exact words. *Evacuate.* Just the sound of it irked him. Damning the politicians, he stepped into space.

In no time at all, or so it seemed, Jastro picked up the Orbit Point satellites. At almost the same time Gore saw the glidetug, a small triangle of metal that rapidly enlarged as it came out of its trajectory, seeming to flatten its flight path as it approached the rear of the yard. At first its speed had appeared tremendous; now it seemed barely to move, slowly closing the gap between it and its destination.

"Tell him to watch the balloons topside," Gore called to Jastro.

"Already have," the astronaut confirmed. The glidetug began jockeying into position above the spheres, and he got a mooring line and went to meet it. Halfway there, Jastro reported the satellites should be visible. He slacked his speed, spotting them almost immediately. They came fast, moving upward along their flight path in stepped formation. Scanning them briefly, he turned back toward the glidetug. Olin had already parked it and was emerging from the cabin. He waved indolently and paused to study the balloons.

"Looks like a circus," he observed.

"More like a shooting gallery."

"The whole damned world's one big clay pigeon," he said bitterly, starting to add something when Jastro blurted:

"Something's wrong!"

"What is it?" Gore asked sharply. He swung his body around and looked earthward, gripped by a sudden anxiety. Jastro spoke more calmly.

"The lead satellite is falling off. Probably engine failure." Gore digested the information, his view of the rockets momentarily blocked by the balloons. At least it wasn't an emergency. His tension began to fade.

"Nothing we can do about it. Better send along a report."

"They know. The trackers would have caught it," Jastro answered.

"Send one anyway." He turned back toward Olin. The astronaut was staring in the direction of the satellite, as if picturing the fall. He stifled what he was about to say, realizing Olin probably was thinking how it must have been with Devlin. Silently he finished securing the glidetug. When he turned back, the astronaut was waiting. Gore tried to find a suitable expression of sympathy, and finally simply said:

"We're sorry about Dev."

"Yeah." Olin didn't say any more about it. But back in the cabin he gave Gore the word. The press and radio had gotten hold of the deaths in orbit and were playing them to the hilt.

"Carmody, Lindenwall, Meredith, Dev—they plastered 'em all over the front page," he related tonelessly. Gore listened quietly. With the release of the balloons, the space train had gleamed in the sky, clearly visible in the sun. Russia and China had immediately claimed to have identified them as hydrogen bombs. Bombs in orbit! The world outcry had been immediate, adding hot coals to the war scare.

"The sob sisters are screaming about the men we're losing, and what would happen if the bombs fell on America," Olin told him. "There's been a couple of riots already—pacifists tangling with the police," he explained. There had been an abortive march on Washington, several race riots, a sitdown

strike of blue collar workers in Omaha. But that wasn't the worst. A powerful congressional bloc had swung behind the Carron Committee and the program was being suspended until some international agreement on space could be worked out.

"Agreement," Gore scoffed.

"The order to evacuate came from the top. We were supposed to start today but Teams Seven and Eight weren't ready."

"I know," he replied shortly. "We got word that the third of August is it. They expect to have the civilian personnel down by then."

"Eight days," Olin mused.

"Eight lousy, stinking short days to complete a half-built spaceship," Gore exploded. "Jesus, what a lash-up."

"The Old Man's hands are tied."

"Sure, whose aren't?" He suppressed his anger. "Haven't you any more good news?"

"Only one thing." The astronaut became grave. "The Reds have announced a new weapon, one which they claim will sweep us from the skies."

"Threatening to use it, I suppose?"

"Not a threat; an announcement."

"Good, that's all we need." He snapped his faceplate shut and went outside.

The space train sped down over the Pacific, crossed Antarctica and climbed up over the Indian Ocean to hurtle across the Middle East and slash into the skies above Russia. With the new barrage of balloons, Gore thought it must be more spectacular than ever from the earth. The spheres preceded and followed the yard, were spread out on both flanks, and blanketed them above and below. A silver cocoon, Jastro called it.

The North Pole, the Pacific, the South Pole, the Atlantic; Europe, the Americas, Africa, Asia, Australia—encompassed in their silvery womb the astronauts whirled through space

as if no other universe existed. Only the chronometer and automatic position indicator gave reality to their situation; that, and Olin, who had relieved Jastro in the care of the station. Periodically he gave a position check, or warned of enemy territory coming up.

Due to the balloons' interference with the radio and radar, Gore stationed Tolenberg below the bottom of the sphere field to watch the Earth during passages over hostile territory, thinking it might give them a slight edge in case of attack. It proved to be a shrewd psychological move. With the threat of a surprise attack diminished, the men were less tense, even cheerful at times.

Work on the Spacehive was pushed at a rate that surpassed even Strecker's former harsh demands. It was a pace set by desperation, Gore thought, as if the men were anxious to complete the job and return to earth before a final blow fell. They set the schedule themselves, without demand, and rotated in grabbing short naps, refreshing themselves or hurriedly gulping meals, so that men were working around the clock. But the third of August . . . The date was burned in Gore's brain. It was a time coming nearer and nearer, faster and faster, rushing like a clock gone mad. He tried not to think of it, but it was always there, in his consciousness. Time was running out. . . .

He was threading his way toward Grumann when he caught sight of someone zooming between the spheres toward the bottom of the yard. He shouted too late. The figure had already disappeared, and was beyond radio contact.

"Something wrong?" Grumann queried.

"Someone cut through the bottom of the shield," he snapped, unaccountably irritated.

"Graybell. He's after a load at the far end. It's easier than threading through the yard," the construction man explained.

"I don't like it," he stated.

"Oh?"

"He's out of contact. Supposing his handjet failed, or something happened?"

"It's pretty safe." Grumann ventured.

"Safe? How about Meredith?"

"Oh, that was different."

"Different, how?" Gore was startled.

"I knew Meredith a long time. A good man," Grumann stated. "He started out as a mining engineer." He looked absently toward the tankage, lost in thought.

"Well?" he reminded softly. Grumann kicked himself into position facing him.

"He was caught in a mine disaster, trapped underground for five days. After that he changed jobs several times before coming to us." He broke the words off.

"Claustrophobia?" Gore asked quietly.

"Yeah, claustrophobia."

"Oh . . ." He was silent, remembering Meredith's unease when he first came to the station. He'd thought the man was an eager-beaver to get into space at the time. Now he realized. Meredith couldn't stand being enclosed in the cabin. Grumann was speaking again.

"Space—it was open, a place where he thought he could never be boxed in." The words ended on a bitter note.

"The spheres?"

"That's right, he couldn't take it. When the attack came his only thought was to get out. He went too far, that's all."

"I'm sorry, I didn't know."

"Not many people did," the construction man said gruffly. "He hid it pretty well." He swung around, watching Strecker and Anderson trying to maneuver one of the small payloads toward the Spacehive. He murmured something and went to help, leaving Gore alone. Carmody, Lindenwall, Meredith, Devlin . . . Wearily he shook the names from his mind and propelled himself toward the area where he'd last seen MacMillan and Tolenberg, thinking he'd have time to help a bit before Russia came around again.

Schwartz was first to collapse. He simply slipped away from the payload he was moving and floated inertly between the

spheres. Fortunately, Graybell spotted him. His alarmed shout brought Gore rushing to the scene. Strecker was yelling something and he snarled for him to shut up. The SPA man's voice stopped suddenly, leaving a harsh breathing in the phones. Reaching Schwartz, he automatically checked his oxygen gage, relieved to find the tank half-full.

"Gotta get him inside," he rasped. Graybell swung in to help and together they got him to the station. Inside, Gore snapped open the man's faceplate. He was snoring lustily.

"Exhaustion" he stated, his voice full of relief. They stripped off his suit and laid him on one of the sleeping pads, fastening a strap across his chest to keep him from floating off. Finished, Gore stepped back. Schwartz's breath was a harsh rattle in his throat; his chest rose and fell spasmodically. Instructing Olin to keep an eye on him, he returned outside and curtly informed Strecker what had happened.

"We'll never get finished at this rate," the SPA chief complained.

"You'd better," he snapped. Strecker didn't reply. Gore turned angrily away, realizing that his anger wasn't justified. Strain, he told himself, too much strain. It was showing on everyone. He sensed it in the men's looks and actions, a something-that-was-not-quite-right, yet the work went ahead. Strecker's face had become a lean yellow mask, with the skin stretched taut over his high cheekbones, and his deep-sunk eyes burning with a fanatical fire. He was increasingly irritable, unpredictable. When he napped, which was seldom, it was usually a sleep of nightmarish terror during which he rolled and tossed, or awoke screaming. On such occasions he'd get up immediately and return to space, hurrying as if to escape some unnamed terror. The air of aloofness and cynicism which had marked him from the first had become tinged with a quality Gore couldn't quite define. Fear? He wondered.

Anderson surprised him. He'd expected the slightly-built engineer to be the first to crack, or at best pass out from sheer exhaustion. But the man somehow managed to keep

going. Watching him, Gore began to sense the qualities which had carried him through the strenuous space indoctrination course in the first place. He was tough; there was no doubt about it, but it was a toughness of the mind rather than of the body. He was a Chihuahua with a bulldog tenacity. Even the stalwart Graybell seemed more affected, drawing into a shell of isolation. More and more he realized the real strength of the SPA crew lay in the quiet, almost unobtrusive Grumann. He knew every facet of the operation—better, Gore suspected, than did Strecker himself. Seldom raising his voice or moving fast, he worked with a dogged efficiency, ploughing through task after task, at the same time directing the work of the others. Nor did he pause during passages over enemy territory. Just like a robot, he thought.

He didn't consider MacMillan or his own men—mentally adding Tolenberg to the category—priding himself that they were a breed apart. Not that they were braver or more durable, he thought. It was more a matter of aptitude, a devil-may-care bravado that appealed to him, and he privately suspected the danger was a stimulus that whetted their appetites.

He dismissed the thoughts and moodily went to help Strecker's men with the payloads. They were bringing them in from the yard, one by one, leaving them to drift in the vicinity of the Spacehive. When they weren't over enemy territory, Gore and Jastro helped moor them in position in the order which they would be needed, working from a chart prepared by Strecker. A packaged computer, an electronic console, innumerable oxygen cylinders, the elements of the cabin life support system—these and many other items formed payloads of many sizes and shapes.

All of a sudden the Spacehive was shaping up. The exterior work was done, the engine hook-up completed, and most of the interior equipment was ready for installation, awaiting inflation of the cabin itself. The Wasp, the slim powerful vehicle designed to be carried piggyback by the Spacehive across the interplanetary gulfs for use in the actual

penetration of the Venusian atmosphere, wouldn't be injected into orbit until almost time for the actual voyage. With minor exceptions, everything else was in space. Gore was contemplating the fact when Jastro looked up from a squat cylinder he was mooring.

"What day is it?"

"The twenty-eighth."

"We're going to make it."

"Sure, did you ever think otherwise?"

"Don't give me that, I've seen you sweating it out," Jastro gibed.

"I suppose you weren't?"

"Matter of fact, I still am." The astronaut's voice grew serious. "I just never quite visualized it. Somehow, it was sort of a dream; a good dream, but still a dream. Now, well . . ." He fell silent.

"If the Reds don't hit us," Gore said softly.

"Yeah, if the Reds don't hit us." Jastro fumbled with the mooring line.

"In a way, I hate to finish this baby," he said.

"How so?"

"Hate to leave her," the astronaut amended. "Hate to see anyone else take over."

"Yeah."

"They won't appreciate her," he said vehemently. "They won't realize the goddamned blood and sweat and tears we've built into her." He swept an arm toward the Spacehive. "Every damned inch of her was built with blood."

"I know," Gore said. They fell silent, working with the lines. After a while Olin's voice came through the phones.

"Coming up, one Red Bear."

17

"ATTACK!"

The yard was hurtling toward 60° North on the upward leg of a passage that took it east of Lake Baikal when Tolenberg shouted the alarm. Gore, manning the foil thrower, saw him zoom up between the spheres, and at the same instant his voice crackled on the phones.

"Missile coming up!"

"One?" Gore shouted, surprised. He had come to think of them as coming in salvos of three.

"That's all I saw but she's coming like a bat out of hell. A damned funny critter," he added. He braked down as if to return to the bottom of the yard.

"Funny in what way?" Gore asked sharply, remembering the threat of a new Red weapon.

"It looks . . . well, like it was winged."

"Like a glidetug?"

"Yeah, that's it, like a glidetug."

"Impossible!" Strecker's voice was a snap in the phones. Gore disregarded it.

"Return to the station," he snapped.

"Roger." Tolenberg expertly shifted his body, loosed a blast with his handjet and propelled himself upward. Gore glanced quickly around. Jastro and MacMillan, manning the Big Sticks, watched him expectantly and he realized they were awaiting orders. Disregarding them for the moment, he commanded Strecker to disperse his men over the top of the yard and ordered Olin to pressurize his suit. When the acknowledgements came, he called to Jastro.

"I'm going down for a look-see. Take over."

"I wouldn't mind a peek myself."

"Give Tolenberg the Big Stick and take over the foil launcher." He shoved it toward him without giving him a chance to reply, and immediately propelled himself downward. Glidetug! The word had an ominous ring. He zoomed past Tolenberg.

"Watch yourself, it's a funny bastard." Tolenberg's gravelly voice was filled with concern.

"Sure, I wouldn't do anything dangerous," he mocked. Small fragments of conversation came through the phones as he dived toward the bottom of the shield. They abruptly cut off as he maneuvered down between the silver spheres. Emerging at the bottom of the yard, he checked his speed with a burst from his handjet and scanned the earth. Lake Baikal, a narrow blue thread on the face of Siberia just north of the Mongolian border, was receding; the afternoon side of the earth was a splotch of grays broken by dark contours he knew to be mountains. He spotted the enemy rocket immediately.

Missile? No, it was unlike any missile he'd ever seen. It was—*manned!* The shape of the intruder fairly screamed the word. Its great triangular wing sections, etched starkly against the background, could only be for re-entry. But there was something else; something he was missing. It took him an instant to grasp it. The invader wasn't on an intercept course! It was already coming over the top of its trajectory, leveling off far below the station. Observation? He dismissed the idea. He was trying to discern its purpose when he caught sight of a number of small white threads stretched upward in the sky, reaching toward the yard like balls of silver rope unrolling.

Rockets! He stared incredulously, automatically counting. Six . . . seven . . . eight of the missiles were slashing upward, stepped so close together he thought they must have been fired machine-gun fashion, or from multiple launchers. Twisting around, he blasted savagely out with his handjet, in-

creasing his speed as he climbed. Zooming out between the spheres, he shouted, "Olin, depressurize the cabin."

"Depressurize?"

"So she won't blow if she's hit. Jastro, get your men out of there. Move to the top of the yard."

"Roger, but why not clobber 'em?"

"There's nothing to shoot at."

"Nothing?" someone exclaimed.

"Rockets, eight, small," he blurted. "But they look like solid jobs, unguided, too small to hit. Strecker, keep your men dispersed, high."

"Eight?" the SPA chief exclaimed.

"Keep the phones clear," he snapped. Looking up, he saw the top of the yard rushing to meet him and braked down. Higher yet and off to one side Jastro, MacMillan and Tolenberg were blasting toward the top of the yard with the weapon carrier in tow. Beyond, he saw several other figures slipping between the spheres.

"Lordy, the shield," someone screamed. He jerked his head down and saw the great silver balloons bursting, collapsing, sagging in weird shapes, dwindling to streaming banners of shiny material that hung ragged in the sky. The world sprang into view as more and more of the huge balloons burst. Someone's breath came harsh through the phones, a voice babbled incoherently and another started a curse. He looked up. A large part of the top shield had been erased from the skies, its debris lost against the glitter of the starfield. It was over within seconds.

Keeping his voice calm, he spoke into the phones. "Olin . . ."

There was no answer and he worried for a few seconds until the astronaut abruptly emerged from the airlock.

"She's riddled," he said calmly. "I'd gotten her partially depressurized when, whoosh! But I guess I evacuated enough air to keep her from exploding."

"Great," Gore answered, thinking that's all they needed. No station, no Spacehive, no nothing. Lord he should have wings. He got on the phone and checked with Jastro and

Strecker, relieved to find everyone safe. The missiles must have been of the fragmentation variety, spraying the yard with thousands of bits of metal. He winced at the possible damage. He ordered the men to return to the station, waiting while they converged on him through the night. They came slowly, as if bewildered by the sudden blow that had stripped them of the shield, leaving them naked to the world. Just now the Arctic was rushing past, alight in its dim long summery day. The sungleam on the snow reached to the horizon, met the starfield, and his mind automatically registered the fact they'd come down somewhere over Baffin Bay, cut the northeast corner of Canada on a course that would take them across the Bahamas.

Olin moved restlessly alongside him. The tension was heavy, still, and it seemed to Gore to pervade the yard like some ominous but unseen guest whose presence was sensed rather than seen. The silence, that was it. The phones were absolutely quiet. He purposefully blew into his mike, listening to the roar of his breath in his ears. It was a comforting sound. Strecker was first to speak.

"The station . . . he said it was hit." The words were uttered in a dead monotone.

"How bad?" Grumann asked.

"We don't know. We'll check immediately."

"That damned balloon idea," Strecker rasped bitterly. "If it weren't for that we could have seen the missiles, shot them down."

"Not those babies," Gore snapped. "Grumann, how soon can you get the liner installed in the Spacehive?"

"A couple of hours, if it's not damaged."

"Check it," he ordered. "Put a man inside and bathe the exterior with lights. Get on it, pronto."

"Roger."

"One other thing. How long would it take to get it operable?"

"You mean ready for space?"

"Powered, so the engines work," he answered impatiently.

"A couple of days, but it'd take three or four to equip the cabin, get the electrical power and life support equipment installed, ready for deep space."

"We've got to do better than that."

"We can try." Grumann didn't appear perturbed. "We'd better see what condition she's in first."

"We can't stay here." Strecker's voice was shrill. Gore hesitated, sensing the man's agitation, and swung his eyes over the others. Anderson's thin face through the leaded glass looked tense but not unduly perturbed. Schwartz and Graybell were floating silently, watching the earth.

"There's nothing we can do but patch up the pieces," he said finally.

"We should have evacuated," Strecker exclaimed. "This is suicide."

Graybell's head jerked up at the words.

"We have the glidetug," Gore spoke reassuringly.

"Glidetug?" Strecker swung his hand toward the sky and laughed harshly. "Look!"

Startled, he twisted his head upward, seeing the Wheelhorse floating alongside one of the big balloons. But the wing . . . One edge showed a ragged profile and the entire tip was missing. He tried to conceal his dismay, aware the others were watching him.

"We can still use its cabin." His own words had a death knell in his ears.

"How about the space teams standing by?" The SPA chief's voice rose to a shout and Gore fought to keep his temper down, hoping to keep the other's panic from spreading. He spoke calmly.

"If the time comes to evacuate, we'll evacuate."

"The time's now. You should be putting a message through to the ground," Strecker insisted. His voice took on a righteous note. "As chief of the construction team, I've got to insist on it for the safety of my men."

"Speak for yourself," Tolenberg growled.

"I demand that an immediate message to that effect be

sent to General Bryant," Strecker finished, as if he hadn't heard.

"Right now, if we want to keep living, we'd better get one of the cabins operable," Gore answered. He looked toward Olin. "Try and get a message through. You know the score. Code it yourself, get something off."

"Will do."

"Alex, you and MacMillan give me a hand. Let's see what gives with the station. Tolenberg, help Grumann."

"Roger."

Gore saw Olin waiting hesitantly.

"What is it?"

"The satellite with the extra balloons . . . Shall I release them?"

"I'd forgotten about that." He hesitated a moment before answering. "No, hold off, we'll need clear radio links."

"We've got another rough passage over Russia and China before we hit Orbit Point," the astronaut observed.

"They haven't hit us on two consecutive runs yet. Let's hold off, at least for the time being."

"Okay, but I feel kind of naked," Olin replied ruefully.

"So do I."

The Spacehive was riddled. Grumann passed him the word within minutes after he'd started his inspection.

"How bad?" he asked anxiously.

"Small holes, a number of them."

"Can you patch her?"

"Sure, but it'll take time."

"Get to it. We've got to get this baby in shape," he ordered.

"Roger."

"Looks like this could be quite a party," Jastro observed.

"Yeah, we could all wind up stiff."

"Man, what a pun." The astronaut let his eyes rove over the station. "Wonder what they'll try next."

"Whatever it is, it'll be a beaut," he said grimly, letting

the question linger in his mind. The proximity warheads had failed; so had the glidetug inasmuch as destroying them was concerned. But the Reds wouldn't let it go at that. Not with the stakes what they were. He started to resume work with Jastro when Olin interrupted to announce the radio was dead. Gore sighed, thinking it never rained but it poured. What next?

"Nothing we can do about it now. We'll have to wait till we get one of the cabins operable," he told him.

"That solves Strecker's problem," Olin remarked drily.

"Yeah, a big help."

Locating the damage to the station proved far more difficult than Gore had expected. The cabin's self-sealing walls, designed as protection against small meteorite hits, and the fact the liner now hung limp from its framework, made whatever damage existed all but invisible. He found himself sweating, realizing the shrapnel tears must be either numerous or quite large, otherwise the self-sealing fabric would have prevented the rapid decompression that had occurred.

Jastro found and mended one rip with a patch provided for that purpose, then immediately located several more holes in the same area, fixing them while Gore repaired a large tear above one of the instrument panels. Finished, he hopefully ordered the cabin pressurized sufficiently to test it. Olin nodded and released a mixture of nitrogen and oxygen, watching while the pressure rose to four pounds per square inch, a gage reading of 210 millimeters of mercury. It was a scant atmosphere, but it served. Almost immediately Olin called:

"She's dropping; 200 . . . 190 . . . 180 . . "

Gore cursed and they continued the search They found and repaired two other damaged areas with the same result.

"We can't keep this up," Jastro said tersely. "We haven't the oxygen."

"No, we can't," he agreed soberly. "We'll give her one more fling." Olin announced another crossing of the Red World and he hesitated, dismayed. At the moment they were skirting the Bay of Bengal, plunging toward a corner of India. Reluc-

tantly he ordered MacMillan to stand by the weapon carrier.

"Shall we disperse?" a worried voice asked.

"No, we can't spare the time," he decided. There was silence in the phones and he returned to work. Detecting the remaining leaks proved all but impossible. The spacesuits deprived them of their sense of feel and the interior of the cabin, seen through the leaded faceplates, was dim and shadowy despite the electric torches.

Tibet and Sinkiang came up and receded and Siberia rushed underfoot, but he tried to keep them from mind. Just now the station seemed more important. Working as rapidly as possible, they combed the bulkheads inch by inch. Olin finally broke in to announce they were skirting the edge of the Kara Sea.

"As long as the radio's out, how about the balloons?" he asked.

"Might as well," Gore conceded. Then he added briskly, "Sure, let 'em loose. Fill the damned sky."

They were coming down over Canada when Grumann announced the damage to the tankage had been repaired and they were going ahead with the liner. The news cheered him. Damn, they'd whip it yet! Studying his teammate for a moment, he reached a decision.

"I think this baby's a lost cause for the time being. Let's add our muscles to Grumann's brain, help with the Spacehive."

"That's what I've been thinking," Jastro replied. He added fervently, "Lord, it's the first day of August."

"Three days to go," he grimly acknowledged. Three days —the thought appalled him. The third day of August hung over his head like a threatening sword. Morosely he followed his teammate outside.

Within moments Olin announced that Orbit Point was coming up. Most of the men stopped work and drifted around the Spacehive to watch. Strecker or Gore didn't object. It might be their last sight of home, Gore thought. The California coast, alight in a fresh dawn, lay sharply etched under

a clear sky. The men watched it silently. Only Grumann wasn't there; he had remained inside, working on the cabin liner.

"I'll bet the Old Man's on the radio, wondering what the hell," Jastro observed.

"Not when they see the damage to the balloon field," Gore replied drily. "They've probably written us off."

California receded and the men started returning to work again. Almost immediately Olin broke in to announce he had a glidetug on the visual scope.

"Oh-oh," Jastro observed softly. The information had an electrical effect and a clamor broke out in the phones until Gore shouted for silence, scanning the sky beneath him. He spotted it almost immediately.

The MEOS vehicle came fast, making a clean approach toward the rear of the yard and the pilot began jockeying as he approached the spheres. Gore ordered Jastro to the station for a mooring line and blasted up to meet it. Before he reached altitude the pilot slid the glidetug alongside the damaged Wheelhorse with an ease that evoked his admiration. A moment later the canopy slid open.

"Welcome to Tank Town," Gore saluted, zooming alongside. "I'm Gore, Major Ben Gore, C.O. of this clay pigeon in the sky."

"I'm Lieutenant Farragut, sir."

"Lord, now it's the Navy," he interrupted.

Farragut sighed. "I knew you'd say that; they always do. Bob Farragut's the name. From Space Wing Two to rescue you. What's wrong, no radio?"

"A little shrapnel trouble. We haven't had time to look at it yet."

"You're lucky. Among other things I'm an electronics expert—but that's Space Wing Two for you." Gore grinned appreciatively. "I'll have it fixed in no time . . . if it's not too bad."

"The bag's punctured, too."

"Man, you people do need help. No wonder they sent me."

"Finally got you landlubbers spaceborne, huh?" Jastro mocked, coming alongside with the mooring line. "Climb out and we'll anchor that scow you're rowing."

"Captain Alex Jastro, my teammate," Gore introduced. "He's not very bright but he's a good worker." Farragut grinned.

"What's the news from that mudball below?" asked Gore.

"They still haven't pushed the buttons but I understand the Kremlin's very irked," the newcomer explained cheerfully. "We're still on a Red alert."

"What about us?"

"There was all sorts of hell when ground lost radio contact with you. Everyone thinks you were wiped out. My mission was to count the corpses."

"Anything else?" he asked sharply.

"Yeah, in case of survivors, prepare for evacuation," Farragut answered reluctantly. "We start hauling the SPA team down when we come into re-entry position. My teammate will come up for the next load." He added by way of explanation, "The damned politicians swung this one."

"Yeah," Gore replied absently. He was thinking: *This is the first day of August.*

"Ready?" MacMillan yelled.

"Ready," Tolenberg boomed. They fired their handjets together, slowly accelerating toward the bottom of the yard with the weapon carrier in tow. Gore had ordered a watch set up below the shield during passages over the Red World, thinking they'd get a chance to strike back at any attack. But the Red glidetugs . . . .

He brooded over the orders for evacuation. Still, they hadn't lost yet, he thought. Farragut was stuck in orbit for a full day, a limitation imposed by the glidetug's restricted flight range following re-entry; it had to start from an almost precise point in orbit. And he could take but two passengers.

By the time his teammate came up and returned, another full day would have passed.

All that saved them was the damage to the Wheelhorse, he reflected, momentarily glad the vehicle was disabled.

Ground had figured to evacuate four men the first trip. He resolved to keep Grumann to the last. Maybe, just maybe . . . MacMillan and Tolenberg vanished into the canyons formed by the new balloons from the reserve Needle satellite, and he returned his attention to the jobs at hand.

The liner for the cabin had been spread out inside the tankage and Grumann, who had performed the task on model mockups on earth, was sealing its entrance to the airlock, assisted by Schwartz. It was a tedious job. After that they could inflate the cabin, start installing its equipment. But the time . . .

With both stations inoperable, Gore ordered use of the glidetug cabins for snatches of sleep, refreshments and their other needs. It was a crude arrangement, but a necessary one. Even so, he realized the crew was about shot. Strecker moved like an automaton, more often than not merely floating, staring into space, leaving almost the full responsibility to Grumann. The other SPA men weren't much better, with the exception of Tolenberg and Grumann, who had an almost inexhaustible endurance. But more and more of the work was being taken over by the astronauts who, he thought, were better able to withstand the rigorous conditions due to the highly selective process which had brought then into space in the first place.

Farragut was a bright spot in the picture. Fresh and full of energy, he quickly located and repaired the damage to the radio—a severed cable—and in the process found and patched another rip in the cabin wall. Cheered at his success, Gore pressurized the cabin again, only to see the gage slowly fall. Wearily he masked his disappointment.

"At least it'll hold up long enough to use the radio in an emergency," Olin pointed out.

"It's dangerous," he answered quietly.

"What isn't?"

"I don't want you in there without suit pressure."

"I can't operate the radio in a pressure suit," Olin snapped, showing a rare flash of irritation. Farragut broke in as if to dispel the tension.

"Let's see if I can't find the rest of the leaks," he suggested.

"Okay, give it a fling," Gore agreed. He sighed, noting they had crossed the equator on the upward leg of the next series of runs over the Red World. "I'll be down at the weapons post. Keep things going."

"Roger."

He emerged from the bottom of the shield to find the Kurile Islands racing by in the west, small dots on a sunlit sea. By the time he reached his destination they were cutting obliquely across the Kamchatka Peninsula. Beyond was the Sea of Okhotsk and the Gulf of Penzhina. Ahead was the sullen mass of Siberia. The Gydan Mountains wheeled past and within scant moments the coast of the East Siberian Sea sped by.

"Not this trip," MacMillan said softly.

"Nor the next, we hope."

"A dreamer," Tolenberg scoffed. "We won't get off that easy."

"You're probably right," Gore replied. "Back to work." As they zoomed through the shield, Grumann's voice crackled in the phones, asking for assistance.

"What's wrong?" Gore barked.

"Schwartz. He fell asleep again. We're shot to hell."

"We should be," Strecker broke in. Gore and Tolenberg zoomed alongside the tankage, leaving MacMillan to care for the weapon carrier. Grumann was floating outside, next to Schwartz's inert form.

"We'll take care of him," Gore offered. He looked at the sleeping form. "It's getting to be a habit."

"Okay, but I need help inside."

"Tolenberg will give you a hand." Gore nodded toward the giant, then pulled Schwartz to the Wheelhorse, where

Anderson was napping, and pounded on the canopy. The man awoke with a start, shaking his head dazedly before closing his faceplate and pressurizing. Finished, he opened the canopy.

"I'll have to wake him," Gore explained, eyeing Schwartz as Anderson emerged wearily from the cockpit. He thumped the man's helmet until he finally opened his eyes, looking at them bewilderedly.

"You need sleep," Gore explained. A look of comprehension spread over the SPA man's face.

"Jesus, I'm dead." They helped him into the cockpit and Gore reminded him to pressurize the cabin before opening his faceplate, waiting until he had done so. No sooner had he finished than he slumped back against the seat, sound asleep. Gore studied Anderson.

"How do you feel?"

"Stiff . . . a little tired but okay."

"You might give Grumann a hand in the tankage."

"Sure." The little man raised his handjet and propelled himself toward the Spacehive.

Around and around.

Europe, Asia, the Americas and the island lands spun beneath them on a world split between night and day. The passes over the Red World were made without event and Gore felt a surge of hope. The lack of hostilities elicited new life in the SPA crew and the work began picking up. Or was it because the men knew they were going down? Strecker had returned to preparing assemblies for the cabin which, Grumann announced, was nearly ready for inflation. Soon—too soon from Gore's viewpoint—it would be time for Farragut's re-entry run. Despite the astronaut's enthusiasm, he'd failed to find the remaining leaks in the station, leaving them still dependent upon the glidetug's cabins. Gore reached a decision.

"Let's pressurize the station long enough to get off a message," he instructed Olin.

"We can't, the shield."

Damn, he'd forgotten that. He hesitated, then called astro.

"Destroy enough balloons below the station for us to get a message through," he ordered.

"Roger."

"First you want them, then you don't," Strecker mocked. Gore disregarded him and turned to Olin.

"I'm going to hold Farragut in orbit. We need the glidetug's cabin facilities."

"I thought the Spacehive cabin was about ready," Olin observed quizzically.

"It's not ready yet," he pointed out. The astronaut weighed the matter.

"I guess it's the only course, but ground might crucify you. The evacuation was a firm order."

"To hell with ground. Here's the message."

The yard was hurtling down over the Arctic when the North Eye tracker on Prince Albert Peninsula relayed a message from Big Strip. Despite the cost in oxygen, Gore had kept the station pressurized, realizing his decision was certain to bring an immediate reply. It did. The speaker turned out to be Colonel Willy, Deputy Commander of Space Wing One. Gore grimaced. Willy, no astronaut, was an administrative type; in Gore's language, a paper shuffler.

"Major Gore," he started pompously, "the evacuation glidetug slated for orbit today has been delayed."

"That's good," he cut in. There was an instant of startled silence before Willy spoke again.

"Now what's this about holding the glidetugs in orbit?"

"That's right."

"They're due down. Those are orders."

"Is General Bryant there?" Gore asked obliquely.

"He's in Washington trying to straighten this mess out," Willy retorted acidly. His tone implied the mess was due to Gore. "Now what about the glidetugs?"

"I'm holding one glidetug. We need its cabin facilities . . ."

"You have two," the Colonel interrupted.

"One," he said firmly. "The Wheelhorse is disabled. You had a message to that effect."

"What about the one?" Willy snapped.

"Neither of the stations is operable," he replied. He briefly explained their situation, pausing once to wait while they were switched to the Slave Lake station. He concluded his explanation.

"The orders explicitly stated that Lieutenant Farragut was to return at this time," Willy replied tersely.

"We can't do it," he said flatly. Willy's voice took on a thin edge.

"The orders came from high up."

"Not as high as we are," Gore cracked. "We see things from a different viewpoint." There was a startled silence and the noise spectrum began to rise. Willy shouted to make himself heard.

"Major Gore, you'll bear the responsibility!"

"What the hell do you think I'm doing?" he snarled. Colonel Willy's answer, if there was one, was lost in a burst of static. He swung toward Olin.

"If that fathead calls back through the Spokane station, tell him I'm out getting a haircut," he gritted. Olin and Farragut grinned appreciatively as he snapped his faceplate shut, pressurized and went outside.

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2 AUGUST 1969.

The winged ships came up.

They rose from somewhere out of the bleak wilderness of Siberia north of the Cherski Mountains as Tank Town plunged down from the pole. MacMillan, floating alongside the weapon carrier, spotted them first and shouted a warning. Gore's eyes followed his pointing hand and caught three small triangular shapes moving up toward the rear of the yard.

"This is it," said Tolenberg solemnly.

The words had an air of finality. Gore suppressed the sudden tension that had gripped him and studied the trajectories of the oncoming craft. They didn't look as if they'd intersect the yard. Neither did they look as if they'd cut a parallel course below the station as the first glidetug had done. He was trying to grasp the meaning of what he was seeing when MacMillan put it into words.

"Looks like they're coming high over the top, off to one side." He caught the picture at the same instant.

"Pull the weapon carrier to the top of the yard," he rasped. "Take over, MacMillan. I'll be right back."

"Aye, aye, sir," the marine snapped. He motioned to Tolenberg and they grasped the tow line and began blasting their handjets against the night, slowly accelerating upward through the huge gaps left in the shield. Gore zoomed into the open.

"Stand by for enemy action. Keep the phone lines clear. Jastro?"

"Speaking."

"Get the men out of the Spacehive, out of the glidetugs. Warn Olin and Farragut in the station. Order all hands to disperse below the yard.

"Below?"

"They're coming over the top."

"Gotcha. How many?"

"Three. Three of the winged variety." He raised his voice: "Strecker?"

"I heard you." The words were lifeless. "This is your fault. You should have recommended evacuation a long time ago."

"Monitor your crew, make sure your men are properly dispersed," Gore shouted angrily. A hollow laugh echoed though the phones.

"I hope I live to be a witness at your court-martial, Major Gore."

"I'll be a witness at your funeral if you don't move. Get going," he shouted. Turning, he blasted savagely with the handjet, getting into a spin he had trouble controlling. He came out of it, cursed, and propelled himself toward the top of the shield. MacMillan and Tolenberg were milling around the weapon carrier. Zooming higher, he saw the attackers again. Larger, they hurtled upward in stepped formation, a course that would take them high over the yard, and quite a bit to one side. His companions got off a burst with the Big Stick. The rockets trailed gossamer threads through the sky. An instant later white skeins unraveled, ghostly against the starfield, two from each of the enemy craft.

"Missiles," MacMillan yelled, struggling to get back into firing position.

"Scratch those babies," Tolenberg roared. They managed to get the launchers loaded, fired, and two more silvery threads stretched into the night, one slightly behind the other. Gore saw the range was too great.

"Hold your fire," he yelled.

"What's happening?" a faint voice called. He disregarded it, watching the enemy rockets slash toward them. Strange,

the attackers couldn't have failed to see the vast, odd-shaped Spacehive in the van of the yard, yet it was out of the line of fire. The fact puzzled him. There was something else: the invaders hadn't sown the sky like the first winged ship—the fire seemed deliberately selective. At first the missiles were small arrows, catching and reflecting the sunlight. They grew rapidly and he started to cry a warning. Before the words reached his lips several of the balloons trailing the station abruptly collapsed and sagged inward, dwindling to almost nothing, and an incoherent scream came through the phones. More white skeins threaded through the sky as the enemy glidetugs bored steadily ahead, high over the top of the yard. Catching and reflecting the sun's rays, they appeared like white-sheeted ghosts. He tried to figure their strategy.

"What the hell?" MacMillan exclaimed, puzzled.

"They're scramming," Tolenberg ejaculated. "Look, they're almost past."

"Move the weapon carrier forward," Gore snapped, and at the same time propelled himself downward into the yard. He came out between the balloons and his phones immediately crackled to life.

"The station," someone was yelling. "The station . . ." A mocking laugh came through the phones, followed by Strecker's voice.

"Now what are you going to do, Major Gore?"

Startled, he whirled toward Tank Town and saw the entire forward end was a ragged, crumpled mass. Olin and Farragut—his chest constricted at the thought and he barked into the phones:

"Alex!"

"On deck," the astronaut replied.

"How about Olin and Farragut?"

"They're out, headed for the top of the yard."

"You'll pay for this," Strecker shrieked.

"Tell that sonuvabitch to shut up," someone yelled. Another voice—it sounded like Anderson—broke in.

"Something exploded aft of the Spacehive!"

Gore spoke, trying to keep his voice calm, aware his heart was thumping against his rib cage.

"What damage?"

"Don't know, looks like it struck a group of large crate-shaped payloads . . ."

"That would be life support equipment," Jastro cut in. "Grumann had them standing by for installation."

"Where's Grumann?" Gore demanded.

"I don't know. I told him to highball it out of here."

"You've failed, Gore." Strecker shrieked the words. Gore started to snap an order commanding silence and abruptly suppressed it, realizing the man sounded mad.

"You've failed, you've failed."

"He's nuts," Jastro cut in heatedly. A cold sensation swept over Gore. Jastro was cruelly right, the strain had been too great; Strecker was cracking up. He debated what he should do. The SPA chief shouted the accusation again and again until he finally yelled for attention, repeating the command until the man grew suddenly quiet.

"Check the men topside, Alex."

"Roger." The astronaut zoomed upward toward the remnant of the shield and he spoke again, this time to Strecker.

"You'd better get into the open, wherever you are."

"I'm here, by the Spacehive." The voice held a taunting quality. "You've failed, Major Gore."

"No one's failed," he stated quietly. He began moving slowly toward the great ship, fearful that Strecker might somehow damage it, if it weren't already wrecked.

"You know why you're here? Because of me," the man jeered.

"I don't mind being here." He searched the night, trying to keep his mind off the attackers, wondering what was happening, and at the same time trying to locate the SPA man without using his torch. The Spacehive grew before him, a vast, irregular shadow against the stars.

"I got you ordered here. Now you'll die."

"I don't think so." He gave a short blast with his handjet and moved faster.

"This was my life work. I devised the system for assembling the Spacehive up here. Now you've wrecked it." Strecker's voice rose sharply. "You know why I got you ordered here?"

"Why?" Gore asked curiously. The spaceship filled the night and he checked his speed, peering into the black shadows. He shivered slightly. There was something ominous about the ship just now. It was like a great ghost. He shook the thought aside and moved in.

"Bryant, General Bryant," Strecker snapped bitterly. "He said you were the best man he had, the best man to get the job done, so I put in for you, got you. My life work . . ."

"I'm glad . . ."

"You—a bungler, a damned bungler." The words came in a harsh scream. "You're a damned bungler, Gore."

"Nothing's bungled." He saw a form huddled near one end of the tankage and blasted himself to a halt.

"You'll die, you'll all die!"

"Ben?" Jastro said suddenly.

"Here, by the Spacehive."

"Grumann's not on top."

"The fool's inside trying to inflate the cabin," Strecker shrieked. "The fool, the fool . . ."

"Watch out below," Jastro shouted in alarm. Gore whirled around in time to see a section of the shield below him collapse, exposing the earth. The bright sea with the lizard form of New Guinea splashed across its breast sprang into view and he automatically realized they'd come nearly a quarter of the way around the globe since the first alarm. The Reds were committed to orbit! He struggled to think what it meant. But the spheres—they were collapsing above, below, to all sides, simply vanishing. High up he caught the fire-glint of the Big Stick rockets and abruptly saw the Wheelhorse and Farragut's Rover. It took him an instant to grasp they were moving.

"Alex, what the hell?" he snapped.

"I don't know," Jastro shot back, perplexed. "But the Reds are away up ahead, leading us."

"MacMillan?"

"Aye, sir."

"Where are they moving the glidetugs?"

"Damned if I know." His voice rose suddenly. "Watch out, another barrage!"

There was a scream, an incoherent prattle in the phones, an anxious voice, then Tolenberg booming for silence.

"I'll be up," Gore snapped abruptly. He cast a worried glance at Strecker. The man was still huddled against the Spacehive as if its bulk would protect him. To hell with him; there was no time now. Lifting his handjet he blasted savagely out, zooming in the direction of the weapon carrier. Missiles —he saw them coming, small points identifiable by the sunglints on their skins; far beyond, in the distance, a faint glimmering revealed the presence of the Red ships. Damn, the Spacehive was a sitting duck. It was a wonder it wasn't already a mass of debris.

He switched his eyes to the glidetugs. The Wheelhorse, whose damaged wing made it useless for re-entry, was unhampered in the vacuum of space. It was climbing, climbing, and off to one side the Rover followed so closely he was reminded of jets in a close order maneuver. MacMillan and Tolenberg fired toward the oncoming missiles. The Big Stick rockets threaded through the skies and vanished in the direction of the hovering Red ships. Abruptly, the remaining spheres began to burst, collapse, and someone screamed, a harsh, high wail that tingled Gore's body. The payloads would be a mass of junk, he thought bitterly. Ironically he noted Australia wheeling by underfoot as he switched his eyes to the Spacehive.

"Strecker!" It was Grumann's alarmed voice. Gore cast a worried glance toward the glidetugs, told himself Olin knew what he was doing, and blasted himself toward the spaceship. Grumann shouted again. A torch beam slashed the night, pinning a figure like a moth in the glare of a candle. It was

Strecker, propelling himself toward the earth. Gore knew it with certainty. The figure in the beam was receding, moving downward.

"Failed, failed . . ." A hollow laugh came through the phones and Grumann called again. Gore saw he was trying to overhaul the fleeing man.

"Watch yourself, Grumann. He's down too far. Don't follow him," he shouted.

"He'll kill himself," the construction man yelled. Nevertheless, he began to brake down, still calling Strecker's name.

"Failed . . ." The high, thin voice made Gore's skin tingle. Lord, everything was shot. The station, the men, the plans . . . the dreams. Ben Gore, the star king. He laughed harshly. Maybe Strecker was right.

"Cease firing," MacMillan bellowed. Gore swung around, pushing Strecker from his mind, trying to follow the battle.

"The glidetugs!" someone yelled. He snapped his head skyward, searching a few seconds before he placed the MEOS vehicles against the starfield. When he did, he suppressed a startled gasp. The big-winged ships were slanting down toward the enemy vehicles in a long, fast power dive, their rocket exhausts spitting twin streaks of flame. Far ahead he saw the distant blobs of the Red ships in the sky. Thin white threads reached out from them and for an instant the glidetugs were caught in a tracerlike pattern. Down, down . . . One of the enemy ships began jockeying erratically, attempting to move out, and the other two immediately followed. But the Red ships had been drifting; the manuever was too late and they were grouped too closely.

"They're going to—" someone screamed. Before the words were completed a mushroom of light exploded in the distance, followed by a second. Gore momentarily was blinded.

"Crashed 'em," Tolenberg ejaculated. Over and over a voice reiterated, "They're gone, they're gone . . ."

Gore's body felt tight while he searched the sky. Only small, dark jagged shadows swept across the starfield, and he felt a dullness within himself. Dullness and a cold sweat.

Olin, one of the best . . . Once he had dreamed of the moon. But part of the man had died the day Devlin rode the glide-tug to his death. His dreams had died that day too. Gore knew it. And Farragut—he wished he had known the man better. Desperately, he stifled his thoughts. There was work to do! He'd better check. The mere thought of their losses appalled him. He was lifting his handjet when MacMillan gave a startled shout.

"Men, the Reds got men up here!"

"What?" he ejaculated. Swinging around he searched the night in the direction where the winged ships had died. It was a moment before he caught it—a closer blob. Tolenberg exclaimed hoarsely: "A craft of some kind."

A red streak stabbed through space, passing a few yards over the weapon carrier. His voice became alarmed. "Take cover, Mac."

"You're telling me. This damned weapon carrier's my fox-hole in the sky."

"What was it?" Gore asked worriedly.

"Automatic rifle," the marine snapped. "Tracer fire. You can't mistake it."

"Kee-rist, what next?" Tolenberg exclaimed.

"So we get 'em," MacMillan gritted. Gore forced himself to stillness, figuring their situation. Automatic rifle, the perfect weapon in space.

"Let's get this baby moving," MacMillan barked.

"Jastro?" Gore yelled.

"Come in."

"Keep under cover."

"Man, I am."

MacMillan said sharply, "A powered sled or something. They've got rockets, too," he added needlessly. Gore saw the weapon carrier moving slowly in the direction of the strange craft.

"Careful," he warned.

"Careful, hell." There was an edge to MacMillan's voice. "If we don't get those babies now, we're cooked."

"Fix bayonets," Tolenberg yelled hoarsely. "I'm going to jam this goddamned Big Stick down their throats." The tracers ripped the sky again and he stopped speaking. A heavy breathing came through the phones. Gore felt helpless. Damned, if he only had a weapon.

"Alex, take over," he shouted.

"Whatcha goin' to do?"

"Give 'em a hand on the carrier."

"Stay away from here," MacMillan cut in. "Want to get hurt?"

"I'm coming," he answered curtly.

"There's only room for two." The weapon carrier began picking up speed.

"Missiles," someone yelled. They came from the direction of the blob, twin streaks churning toward the marine's position. They passed to one side and Gore exhaled slowly. A burst of tracers followed. Lord, they were trying to pick off the carrier when the Spacehive was a sitting duck. Suddenly he got it. The enemy's purpose struck him like a blow. Failing to destroy the giant ship, they were embarked on a still more audacious measure: to capture it. The realization startled him. It explained why the missiles had been fired wide of the big target. Shaken, he spoke tersely into the phones.

"Alex, if the Reds get past the weapon carrier, destroy the Spacehive."

"Destroy it?"

"You, Grumann, all of you . . . Don't wait. Wreck it. Slash the hull, smash the engines, wreck everything . . ."

"Gotcha."

Grumann's voice came low, "I'm standing by."

"Wait till you're sure."

"Take it easy," Jastro urged. Gore swung back. MacMillan and Tolenberg were small specks in the distance, pushing the weapon carrier toward the enemy vehicle. He started to propel himself after them when something bumped his shoulder and he looked around. A face stared at him through a faceplate—the body was gone. Graybell . . . Gore felt sick.

The head in the helmet drifted grotesquely past and he propelled himself away. Far ahead MacMillan and Tolenberg paused to fire. He saw the flame, the streak of the Big Stick rockets slashing the night. Suddenly Tolenberg's voice came in a gasp.

"Mac!"

"We're getting 'em."

An instant later there was a brief flare in the distance followed by the babble of excited voices. Off in the direction where MacMillan and Tolenberg were pushing the weapon carrier the sky was stitched with white rocket trails and the occasional savage burst of red tracers. A ball of fire exploded in the night.

"Mac . . ." Tolenberg's voice held alarm. There was no answer and the call was repeated. Gore blasted out, again and again, increasing speed and the blobs in the night grew larger. His breath was a rasp in his throat and a roar filled his ears. Ahead, he saw the crazy dance of fireflies, the angry streak of a Big Stick rocket. A white flame exploded, seared the stars and died. A few seconds later all movement ceased. He braked down slightly, searching the sky. Drifting dots. Small, black formless shapes moved against the sky. Keeping his voice calm, he called, "MacMillan . . ."

Silence. The silence of death.

"Tolenberg!" He called louder, more sharply. No one answered. Finally Jastro spoke up.

"They got 'em, stopped 'em." There was a hard edge in his voice. Gore looked toward the place where he'd last seen the enemy craft. They were gone, all gone. He caught what appeared to be drifting debris at the place where the glidetugs had crashed the winged ships. Nothing more. Only the small blobs where MacMillan and Tolenberg had gone with the Big Sticks to meet the rocket-armed Red astronauts. Nothing lived.

"Major Gore." The name was repeated several times before it crossed his consciousness that he was being called.

"Speaking," he said dully.

"Schwartz is dead. I just saw his body."

"Most people are," he replied bitterly. Grumann's next words jolted him back to reality.

"We've got to go to work."

"Work?" He laughed harshly.

"I've got the Spacehive's cabin pressurized."

"The life support equipment's gone," Anderson interrupted in a dead voice. "Remember, it was destroyed?"

"Will the engines work?" Gore snapped. He held his breath, awaiting the answer.

"They'll work," Grumann asserted confidently.

"What good will that do?" Anderson queried. "The life support equipment's gone. There's no navigation equipment, no nothing." He drifted off to one side, contemplating the Earth as he spoke.

"We can get into a higher orbit," Gore exclaimed. He propelled himself toward the ship, watching it grow in the night.

"We'll be shot down next time over," Anderson persisted.

"No, they won't know for sure their men failed to capture the Spacehive," he stated, feeling his spirits perk up. "Besides, a slight change in orbit will throw 'em off. We have time."

"Time to die . . ."

"Oxygen, food, supplies—scrounge what we can from the debris, from Tank Town, wherever we can find it," he ordered.

Jastro spoke, "We haven't lost this damned war yet."

A slight vibration came to the cabin, a vibration caused by ions being accelerated into space as the great engine came to life. Far behind them, at the opposite end of the shaft, the sky was washed into a spectral blue, outlining the radiation shield as the engine reached maximum thrust, pushing ever so gently against the forward walls of the ionization chamber. It was a small thrust, measurable in hundredths of a ton, yet exerted over long periods of time it would provide a velocity sufficient to cross the gulfs of space. It was a power born of

cesium vapor passing over a heated tungsten grid where the electrons were stripped off, and the ions accelerated to provide thrust.

Yet so gradual was the acceleration that a long time passed before the debris of the yard began to fall away. The Spacehive crossed Russia and China, crossed it again and again, and, finally, the earth was very far away. Around and around . . . The orbit was an increasing spiral

Gore's mind registered the fact: It was the third day of August.

He looked around. Grumann and Anderson were sleeping, had been for hours. Jastro was lying in his shorts, sweaty and hollow-eyed. He caught Gore's look.

"We got it made."

"Yeah, we got it made." The trackers would pick them up, he reflected. They'd stay in a high orbit, wait for the glide-tugs. It might take a few days, a week, but the Old Man would get them. Then they'd finish the Spacehive, get it ready for Venus. Maybe, just maybe . . . Jastro broke into his thoughts.

"You know, I've been thinking—the moon's not so hot after all."

"No?"

"Not compared with where this baby's going." He looked at Gore. "I got a hunch . . ."

"All ready to go, huh?"

"Not till I've had a liberty," Jastro said firmly. "Right now there's something that looks better than Venus."

"Oh?"

"Smogville," the astronaut declared. "Good old Smogville. Man, won't those gals be happy?"

EVERY NINETY MINUTES THEY WERE A TARGET FOR THE REDS

The United States was tossing the parts of Project Spacehive into orbit like bits of a jigsaw puzzle, and then orbiting astronauts to fit the pieces together and make the first spaceship. It wasn't science-fiction — just putting into operation a scheme that had been on the drawing boards since the first firings at Cape Canaveral.

But while they'd figured the mechanics involved, they hadn't counted on an unexpected problem —how do you get any work done when you're a sitting duck every ninety minutes for Russian rocket snipers?