

TOM SWIFT IN THE RACE TO THE MOON

VICTOR APPLETON II

No. 12 in the Tom Swift Jr. series.

(1958)

The Tom Swift Jr. series:

- 1 Tom Swift and his Flying Lab (1954)
- 2 Tom Swift and his Jetmarine (1954)
- 3 Tom Swift and his Rocket Ship (1954)
- 4 Tom Swift and his Giant Robot (1954)
- 5 Tom Swift and his Atomic Earth Blaster (1954)
- 6 Tom Swift and his Outpost in Space (1955)
- 7 Tom Swift and his Diving Seacopter (1956)
- 8 Tom Swift in the Caves of Nuclear Fire (1956)
- 9 Tom Swift on the Phantom Satellite (1956)
- 10 Tom Swift and his Ultrasonic Cycloplane (1957)
- 11 Tom Swift and his Deep-Sea Hydrodome (1958)
- 12 Tom Swift in the Race to the Moon (1958)
- 13 Tom Swift and his Space Solartron (1958)
- 14 Tom Swift and his Electronic Retroscope (1959)

- 15 Tom Swift and his Spectromarine Selector (1960)
- 16 Tom Swift and the Cosmic Astronauts (1960)
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CHAPTER I

SPLASH LANDING

“So Tom Swift Jr. is going to be first to reach the moon!” Bud Barclay stared in awe at the mock-up of the young inventor’s newest spaceship.

“I hope so, Bud. But it’ll be a race. Our rivals, the Brungarians, keep telling the world they’ll win out.”

It was only a few months ago that the lanky, eighteen-year-old space pioneer and his associates had defeated the Brungarians in a race to claim the phantom satellite, Nestria. Now this exciting new challenge was shaping up.

“We’re not going to let any hostile country like Brungaria beat us to the moon!” Bud remarked grimly.

Tom nodded as he ran his fingers through his blond crew cut. “An enemy on the moon could be mighty dangerous to America!”

“But, Tom, how can you beat ‘em in this space jalopy?” Bud asked. “I can’t make head or tail of it.”

Tom grinned at his friend’s puzzled stare. The new spaceship was indeed a weird-looking craft. Its huge boxlike cabin hung suspended in a spherical framework of track rails.

“Looks like a souped-up gyroscope,” Bud added, stepping back for a better view. “You sure it’ll take off?”

The young inventor laughed. “I’m hoping it’ll do a lot more than that, fly boy. This ship should be able to go anywhere in the solar system with no stops for refueling.”

“Are you kidding?” Bud gasped. “Any rocket ship burns fuel, doesn’t it?”

“Sure, but this won’t be a rocket ship. Just a spaceship drawing energy from the sun. My craft’s power units will change this energy into electric current for running a stiper-repelatron.”

Tom’s basic research had led him to the discovery of a previously unknown electromagnetic radiation given off by each element and its isotopes. As a result of this discovery, Tom had invented the Swift spectroscope. Later, he had developed a device that could reproduce this new type of radiation. Tom had found that by having this radiation out of phase with the natural radiation of the atom, a repelling force was set up. This force, when used to hold off sea water, had made it possible to tap helium-gas wells on the ocean bottom, as related in Tom Swift and His Deep-Sea Hydrodome. Now Tom was trying to use such a force to hold up an aircraft while it was in flight.

“You mean the repelatron will actually be the ship’s drive system?” Bud asked.

“You might call it that,” said Tom. “At least it will drive the ship forward by pushing us away from the earth or any other body in the solar system.”

Bud clapped Tom on the back. “Genius boy, I think you’ve got something great here!”

“Thanks, pal.” The young inventor chuckled. “I’ve hooked up one of the new repelatron to a plane to see how it works in flight. Want to come along and risk your neck while I give it a tryout?”

Bud gave a yip of excitement. “What’s a little old neck matter in the forward march of science?”

The two boys climbed into a jeep and drove across the grounds of Swift Enterprises, the experimental station where Tom and his famous father developed their new inventions. Gleaming white, ultramodern buildings, for every scientific purpose, were spread over the four square miles of Enterprises. The entire area, crisscrossed by white airstrips, was enclosed by a high concrete wall.

“What ship are we taking up?” Bud asked.

“A Pigeon Special,” Tom said, referring to a two-seater pleasure craft produced by the Swift Construction Company, owned by Tom’s father.

They pulled up in front of a small hangar and went inside, where a crew of mechanics was getting the plane ready for flight.

“Where’s the repelatron?” Bud asked.

“Installed in the luggage space behind the seats. Its antenna, or directional radiator, projects out from under the fuselage.”

In a few moments the plane was rolled out on the airstrip and fueled. The boys climbed in and donned their headsets.

“Going to use the repelatron for vertical takeoff?” asked Bud.

Tom shook his head. “We’ll take off conventionally and then switch over.”

Soon the sleek two-seater was gathering speed as it rolled down the runway. Seconds later, the boys were air-borne. Below, the flat-roofed laboratory buildings and workshops gleamed in the warm morning sunshine.

Tom waited until they had climbed to ten thousand feet. “I want enough altitude so I can restart the engine if anything goes wrong,” he said. “Here goes! Keep your fingers crossed!”

Tom turned and adjusted a vernier dial newly mounted on the panel; this fed power to the repelatron. A meter measured the power fed to the repelatron. He watched the needle on a second meter swing to the right until it registered a force equal to the weight of the plane. This repelling force, produced by the repelatron, was needed to overcome the pull of gravity. Next, he cut the engine and feathered the props.

The ship lost air speed, but remained at almost the same altitude. So smooth was the transition that Bud gave a whistle of amazement.

“Like floating on a cloud!” he exclaimed. “You mean we’re hovering here with nothing but an invisible force ray to hold us up?”

“That’s right, pal. The detector circuits in the repelatron are tuned to respond to the various kinds of soil around here. Want to go higher?”

“Can we?”

For answer, Tom rotated the dial, feeding more power to the repelatron. Instantly the ship shot upward like a rocket at blast-off.

“Wow!” Bud clutched his stomach. “I’m convinced! How about forward flight?”

“To do that we simply tilt the directional radiator backward slightly to give us a forward push,” Tom explained.

He reached for a second dial, calibrated in degrees, and slowly adjusted it to read 10 degrees. The plane responded by picking up speed. In a few moments the buildings of Shopton dwindled behind them as they soared out over the surrounding fields and farm land.

Bud bubbled with high spirits. “Congratulations, pal!” he cheered. “Looks as if the boy genius has come up with a new method of flight- the repelaplane!”

“Good name.” Tom grinned. “Well, I guess we’ve proved it works all right. Let’s go back.”

He guided the plane around in a sweeping circle of the next county, then headed for Shopton. Suddenly the sleek two-seater gave a lurch and nosed downward.

“Hey, what happened?” Bud cried out.

They were plummeting earthward!

One glance at the force dial showed that it had dropped close to zero. “Something’s gone wrong with the repelatron,” Tom reported tensely. “I’ll switch over.”

With a flick of his fingers, he turned on the ignition and gunned the starter. Nothing happened! Again he tried, with no result.

“The motor’s dead!” Tom exclaimed.

“Good night! You mean we’ve got no power at all?” Bud’s face turned pale.

“The repelatron is getting power. I can tell by the reading on the power meter,” Tom said quickly, putting the craft into a glide. “Must be the repelatron won’t work over this kind of soil.”

The young inventor maneuvered the plane’s control surfaces frantically.

Bud clutched his chair. “What do we do now- hit the silk?” he gulped, testing the straps on his parachute.

“Not yet. Let’s stick with it a while. We may have enough air speed to glide in. I’ll try to bring her down

on Lake Carlopa.”

The blue expanse of water which lay before them bordered the north edge of town. Tom tensely worked the stick and rudder pedals.

“Bud, call the police rescue squad at the head of the lake,” he urged. “Maybe they can send out a crash boat.”

A blare of static filled the cabin as Bud twirled the adjusting knobs on the radio. “Calling police rescue squad!” he cried. “Plane in trouble over Lake Carlopa! Calling police rescue squad! Can you read me?” He gave the plane’s number.

“Rescue squad!” came the answer. “What’s the trouble?”

“We’re going to ditch in the lake. Can you send a crash boat?”

“Roger. . . . Good luck!”

The plane was losing altitude fast now. Soon they were barely skimming the waves.

“Hold tight, Bud!” Tom said between clenched teeth. “This is it!”

Seconds later there was a terrific impact that jarred the boys loose from their seat belts. A cloud of spray shot high in the air.

“Outside-fast!” Tom yelled.

Bud needed no urging. He was already shoving open the door of the cabin. With a leap, he plunged into the water and Tom followed.

“Looks as if she’s going to float a while,” Tom gasped. He managed to slam the door shut to keep the cabin from becoming waterlogged.

“Here conies the crash boat!” Bud cheered, as the prow of the police launch knifed toward them.

“Ahoy there!” yelled one of the boatmen as he readied a pair of life preservers to ease the weight of the boys’ wet clothing. “Watch out, you two!”

He tossed out the life rings and the boys wriggled into them.

“Got a towline?” Tom asked the officer in charge.

“Better than that—we brought a cradle,” he called back.

It was trailing behind the police launch on a length of cable. As the steersman eased the boat around, Tom and Bud jockeyed the cradle into place under the plane’s nose and lashed it tightly to the wing struts.

“Wow—just in time!” Bud gasped. “She was sinking fast!”

Strong arms reached out to help the boys clamber into the launch.

“Thanks a million!” Tom panted, and Bud echoed his appreciation.

One of the crewmen grinned and said, “Looks like your Pigeon Special turned into a lame duck!”

“And we might have turned into fish bait if it hadn’t been for you fellows,” Bud replied.

The police launch started back to shore at moderate speed, with the plane bumping through the water behind them. A slender, distinguished-looking figure was waiting on the dock as they came alongside.

“Dad!” Tom cried.

“Thank goodness you boys are safe,” Mr. Swift greeted them. “The rescue squad recognized your plane’s identification number and radioed word to Enterprises. I got here as fast as I could.”

The two Swifts closely resembled each other, although Tom Jr. was slightly taller and lankier.

“What happened?” the elder Swift asked as the two boys jumped to the dock.

Tom explained how the repelatron’s force wave had failed. “The soil make-up in the next county must be different from the sample I used. Maybe the chemical fertilizer in the fields had something to do with it.”

“What about the plane’s engine?” “Conked out. The electromagnetic field around the repelatron must have shorted the ignition system.”

There was a tense look on Mr. Swift’s face. “This must not mean failure, Tom. You must perfect this new invention of yours in a hurry so you can make a flight soon. I’ve just heard from our space friends. They’re in trouble and need our help.”

CHAPTER II

SOS TO ENTERPRISES

A NEW and exciting message from space! Both Tom and Bud were eager to hear it.

For several months the Swifts had been in communication with beings on another planet. It had all started when a meteorlike object, etched with strange mathematical symbols, had landed on the grounds of Swift Enterprises. Tom and his father had successfully decoded the message, and had developed a device with an oscilloscope-type screen for picking up other messages. With a powerful transmitter, Tom and his father had beamed back messages of their own.

Not long before, Tom had voyaged to the phantom satellite which the space beings had moved into orbit about the earth. They had done this in the hope that Tom could set up an earth-type atmosphere for them to try living in before visiting earth itself. But, although Tom had succeeded in creating such an

atmosphere on Nestria, the unknown space beings had been frightened away from the asteroid by the Brungarians, and had not yet returned there to complete the planned experiment.

“What were the details of the message, Dad?” Tom asked eagerly.

“That’s just it—there are none,” Mr. Swift replied. “You see, only part of a message was picked up on our new electronic brain.”

This machine, the Swifts’ latest invention, monitored the space lanes at all times. Whenever a message was picked up from the space scientists, the brain translated it into English. The device could also code a written message into mathematical symbols and beam them to the Swifts’ mysterious planet friends.

“Did the space people say why they needed help?” Bud put in.

Mr. Swift shook his head. “That’s what worries me. The message broke off before it was completed.”

“Dad, we’d better get back to the plant fast and see if there’s any further word!”

“Right, son!”

Since his early teens Tom had worked closely with his father and had perfected several inventions which had been patented. His first big craft had been the Flying Lab. But nothing interested him more than creating rockets for explorations in space. Now another journey, the most daring and challenging yet, lay just ahead.

After telephoning for a salvage crew to remove the disabled Pigeon Special from the water, Tom hopped into Mr. Swift’s sedan with Bud and drove back to Enterprises. The boys quickly changed into dry clothing, then hurried over to the communications building to rejoin Tom Sr.

“Nothing yet from our planet friends,” he reported. “I sent out a message requesting more information, but so far it hasn’t been acknowledged.” Mr. Swift was striding back and forth as he waited impatiently for the bell which signaled an incoming message.

The electronic brain looked somewhat like an oversized teletype machine, with a keyboard for sending. Computer elements which did the coding or decoding were housed in the lower part of the console.

“Do you think something happened to the space people before they could finish their call for help?” Bud asked. “Maybe a disaster of some kind?”

“I wish I knew, Bud!” Mr. Swift fretted.

“How about the machine itself? Are you sure it’s working properly?” Tom asked.

The elder Swift frowned and stopped pacing. “That’s an idea, son. Perhaps we’d better check it.”

Quickly the two inventors opened the housing and tested the electronic circuits.

“Nothing wrong here,” Tom muttered.

“Then our space friends must be in trouble,” Mr. Swift added.

He and his son exchanged worried glances. A moment later Tom reached a decision. "I'm going to try combining my journey to the moon with a visit to that satellite where their scientists carry on research. If this new repelatron does what I hope, the trip is in the bag!"

"Great!" said Bud. "And suppose you tell me where I fit in."

"How'd you like to go on an errand to Fearing right now?" Tom asked. This was the Swifts' privately owned island in the Atlantic which they used as a rocket-launching site.

Bud grinned. "Top-secret message?"

"Cargo," Tom replied. "I'd like the portable model of this electronic brain carried over to Fearing. It'll do the translating of any more space messages that the men may receive there. They won't have to use the oscilloscope-type machine or figure out the symbols from our space dictionary. Also, I want to take the brain with me to the moon. It can be installed in the ship out at Fearing."

"Glad to go," said Bud. He chuckled. "Good thing my cargo is smaller than this twenty-ton elephant here. I'd sure have excess weight on my hands with that big baby. How'd you ever manage to make a portable model and get all the equipment in?"

Mr. Swift answered the question. "Tom figured out an ingenious type of storage system. Literally, there are a thousand pieces of wire to the square inch."

"Zowie! I'll ferry it at once to Fearing," Bud agreed.

Within half an hour Bud took off. Meanwhile Tom and his father, as they waited anxiously for a further message from their space friends, talked over the recent failure of the repelatron.

Suddenly they were interrupted by a startling message over the loud-speaker. It was from the radio operator in the communications center on the floor above.

"Just heard from Bud Barclay en route to Fearing," he reported excitedly. "His plane's being attacked by a masked pilot!"

"What!" Tom was thunderstruck. "Keep in touch with him! I'll be right there!"

He ran up to the radio room, two steps at a time. The operator switched on the speaker so Tom could hear Bud's voice.

"Here he comes again!" the young pilot said. Bud's next words were drowned out by the whine of a diving aircraft.

Tom grabbed the microphone. "Bud! Are you all right?"

"Whew!" They could hear Bud gasping with relief. "Yes, I'm all right, pal-so far! But I wouldn't take any bets if he keeps on buzzing me!"

"Is the plane armed?" Tom asked tensely.

"Doesn't look so. At least he hasn't fired at me yet. Just keeps riding my tail and making passes at me."

“What’s his game?”

“Search me,” Bud’s voice replied. “I called him on the radio, but he won’t answer. Looks as if he’s either trying to force me down or make me fly off course. Oh-oh-!”

Again came the roaring drone of a plane.

“Wow! Almost brushed wings that time!” Bud reported in a rage-choked voice. “If I ever get my hands on that hotrock-“

“Any idea who he is?”

“No. He’s still masked.”

“How about the plane itself?” Tom inquired.

“A Hammond Jayhawk, probably souped up.”

“Keep your chin up, Bud. I’ll come after you in a fast jet!”

“Don’t bother, skipper. I think I can-“

Bud’s voice faded and Tom waited no longer. Orders to the radio operator tumbled from his lips and he was out the door like a shot. He sped to the hangar in a jeep. An emergency jet, always kept on ready stand-by, had been rolled out into position for take-off.

Tom hastily donned a flight suit, climbed aboard, and was soon roaring down the runway. Once airborne, he set a course for Fearing.

“Tom Swift to Bud Barclay!” he called over the mike. “Can you read me. Bud?”

There was no response! Had Bud been forced down by the masked pilot? Would he be taken captive and flown to some undisclosed place? If so, was it because of Bud himself or because of the electronic brain he had on board?

Tom thrust these unpleasant thoughts aside and tuned his radio to the Fearing private wave length. “Any news of Bud?” he asked anxiously.

“No,” came the answer. “After we got the message about him, we sent up a plane. Haven’t had any word from the pilot yet.”

Clenching his jaw grimly, Tom flicked on his search radar and kept his eyes alert for aircraft. But there was no sign of either Bud or the mystery plane.

Minutes later, Tom was over the Atlantic. Fearing Island loomed ahead through the clouds. The Swift rocket base was a thumb-shaped stretch of sand dunes and scrubgrass, closely guarded by drone planes.

Nearing it, Tom again asked for news of Bud. The answer was simply, “Swift landing requested.” What did it mean? That Bud was landing, or that he himself was wanted? Tom wondered.

“I’d better go down,” he decided, his heart pounding with worry.

He asked for clearance and came down through the overlying shreds of mist. Several huge cargo rockets dominated the island, their needle noses pointing skyward. But what made Tom's heart give a joyous leap was the sight of Bud's plane reposing safely on the airfield!

Its leather-jacketed young pilot came rushing up to greet him as Tom climbed out of the jet. The two embraced in a bear hug of relief.

"Boy, am I glad to see you in one piece!" Tom exulted. "What happened after you signed off?"

"The craziest game of tag you ever saw," Bud replied. "That masked pilot tried every trick in the acrobatics book to keep me from getting to Fearing short of crashing," Bud explained. "But when old hotrock figured you'd be here soon- no doubt he heard us talking-he streaked off. I came down here pronto and suggested the veiled message to you."

"Have you notified the Civil Air Patrol?" Tom asked.

"Billing went to call them. Let's go find out if he's learned anything."

The two boys hurried over to base communications. George Billing, the Swifts' radio chief, was just signing off.

"Hello, Tom," he greeted the young inventor. "The CAA says the mysterious plane's registration numbers were faked. And the Civil Air Patrol has alerted all ships to be on the lookout."

"How about checking with the Hammond factory?" Tom suggested.

"I've already done that, skipper," Billing replied. "They'll call back as soon as they've compiled a list of purchasers. It shouldn't take long. That ship's been on the market only a few months."

"Good work, George. Bud and I will be over at the tracking center. I want to test the electronic brain after the dipsy-doodle ride it got. Let us know if anything develops."

"Roger!"

As the boys drove across the island, Bud turned to Tom who was sitting tight-lipped at the wheel. "Do you think that masked pilot was after the electronic brain?"

"Yes, I do. We'll take extra precautions here to guard it. What I'd like to know is how they found out about it."

In brooding silence the two boys completed the trip. Both kept asking themselves, "Why should anyone want to steal a device for communicating with the space people?"

The brain had already been unloaded from Bud's airplane and trucked to the communications building. Tom made several tests on incoming and outgoing messages. The brain functioned perfectly.

Bud clapped his chum on the shoulder. "Good work, genius boy. This means a flight around the universe, no matter how dipsy-doodle it may be, won't disturb this machine's brain one little bit."

As Tom grinned in satisfaction, the phone rang. George Billing was calling.

“Just heard from the Hammond factory, skipper. The people they sold Jayhawks to are all well-known pilots or reputable businessmen- with one exception.”

“Who’s the exception?” Tom asked eagerly.

“A man named Otto Jantree, who speaks with an accent. He’s not a pilot himself, but said he planned to engage one.”

“Otto Jantree,” Tom repeated thoughtfully.

“That name mean anything to you?” Billing inquired.

“Not offhand. But his accent might mean he’s a foreigner. He might even be an enemy agent. Better pass the word along to the security office at Enterprises. Ask them to see what they can dig up on him.”

“Right, skipper!” Billing said, and hung up.

At that moment the alarm bell on the electronic brain signaled an incoming message.

“Something from outer space!” Tom cried exultantly.

All eyes watched intently as the keys punched out the message on tape:

unknown disease has struck all animal life used for food supply on our planet. situation desperate. unable to find cure. can swift scientists solve problem and send help? repeat: situation desperate!

CHAPTER III

A SOLAR EXPERIMENT

TOM gasped with dismay as he read the news. If his space friends depended on animal food to sustain life, they might be wiped out!

“We’d better fly back to Shopton at once and confer with Dad,” he told Bud.

When they landed at Enterprises, the boys hurried to the Swifts’ private office. The spacious, modernistic room, which Tom shared with his father, contained two huge desks, drawing boards, and comfortable leather chairs. On display were models, tooled in plastic and metal, of Tom Sr.’s and Tom Jr.’s most famous inventions.

Mr. Swift was seated at his desk, a worried frown on his face. “This is grim news,” he said as Tom and Bud sat down.

“Perhaps we’d better call in someone who has a thorough knowledge of animal diseases,” Tom

suggested.

“I agree, son, and I think Dr. Faber would be a good man to consult.”

Dr. Anton Faber was a government zoologist. He had accompanied Tom’s Antarctic expedition when the young inventor went to drill for molten iron at the South Pole.

“How about Evan Glennon, too?” Tom suggested. “He’s professor of animal husbandry at Grandyke University.”

“I’ll contact both of them right away,” Mr. Swift offered.

Phone calls brought a promise of co-operation from both men.

The next morning the two boys drove to the station in Bud’s red convertible to pick up Professor Glennon on the nine-o’clock train.

“Snt hwyl, Tom! What cheer?” the professor greeted them, seizing Tom’s hand in a crushing grip. He was a short, thick-set, jovial Welshman with a shock of gray hair and twinkling blue eyes.

Tom, who had picked up a few words in Welsh, grinned back at him. “Da iawn, diolch! Very good, thanks. This is my friend, Bud Barclay.”

Bud stuck out his own hand and promptly winced. “Glad to know you, Professor.”

“Look you, lad! The name’s Evan and don’t you forget it!”

Soon after they reached the plant, an Air Force jet touched down on one of the airstrips, bringing Dr. Faber from Washington. The two boys greeted the elderly zoologist warmly.

“Good to have you back with us, Doctor,” Tom said with a smile as they shook hands.

The tall, keen-eyed scientist beamed at them through his thick-lensed spectacles. “Delighted to see you both!”

The boys drove him by jeep to the communications building where Mr. Swift and Professor Glennon were waiting. As the conference began, Dr. Faber said, “If we’re to help, we’ll need to know more about the symptoms of the disease.”

Evan Glennon nodded between puffs on his huge briar pipe. “Quite right. We can hardly make a diagnosis until we have the facts.”

“I suggest we call our space friends now and ask them for further details,” Mr. Swift replied. “Then you two can ask questions.”

“Excellent,” Dr. Faber agreed.

Immediately Tom beamed out a request for more information. Several minutes went by before the bell signaled a reply. But to everyone’s surprise, no message was punched out on the tape!

“Hey, what’s wrong?” said Bud.

Frowning, Tom pointed to a red light which had lit up above the keyboard. "That means the machine couldn't translate the message."

"Ask them to rephrase it, using the symbols we know," Mr. Swift suggested.

Tom did so. Finally an answer came through:

WE CANNOT DESCRIBE DISEASE WITHOUT USING NEW SYMBOLS.

The group exchanged baffled looks. "I'm afraid it's hopeless without something more to go on." Dr. Faber said. "We might tell them about our new synthetic drugs and antibiotics. However, the chance is slim that these would conquer a totally unknown disease."

Mr. Swift drummed his fingers on the conference table. "And trying to translate those unknown symbols might take days," he said, frowning.

"What do you suppose caused the outbreak, Dad?" put in Tom.

Mr. Swift shook his head. "That's what puzzles me. Our space friends are highly advanced in science, so one would expect them to have all disease-causing germs or viruses under control- unless it's something new on their planet."

"Exactly what I was thinking," Tom said. "The infection may have been picked up from another planet-perhaps from earth itself."

Evan Glennon puffed thoughtfully on his pipe. "Look you! Could your space friends send an infected animal by rocket ship for us to study? Or at least some tissue samples or germ cultures?"

"Evan, that may be the solution!" Tom looked at his father. "What do you think, Dad?"

"It's worth a try," Mr. Swift agreed.

Tom spelled out the request on the electronic brain. A few moments later the machine punched out the return message on tape:

CANNOT GIVE DEFINITE ANSWER NOW. WILL REPLY LATER.

"Whew!" Bud sighed. "This is worse than waiting to learn 'whodunnit' in a mystery story!"

Rather than stand by to wait for the message,

Mr. Swift called a radioman to watch the machine. Then he took the two guests on a tour of Enterprises. Meanwhile, Tom and Bud headed for Tom's gleaming, glass-fronted laboratory.

"What's next, genius boy?" Bud asked as they reached it.

"Back to work on my new spaceship repelatron," Tom replied.

"Brief me again on it, will you?" the husky young flier urged.

Tom grinned. "Well, if you've ever looked through a spectroscope, you know that every substance gives off its own special kind of radiation."

Bud nodded. "Sort of a rainbow trade-mark."

"The word is spectrum, remember chum?" Tom said.

"Okay, professor. And your repelatron detects this radiation and generates a counterwave which is exactly out of phase with it. So when you aim it at a substance, the counterwave acts as a repelling force. It pushes the substance away, just as opposite poles of a magnet repel each other."

"Correct, Bud."

"But," his pal objected, "the repelatrons you've built so far just repel one particular substance- like water. Now you're going to build a machine which will repel anything in the solar system?"

"Right. That's my big problem. It will have to work for all the ninety-two natural elements."

Bud whistled. "Pretty neat, pal! But what happens if you want to change course?"

Tom turned toward the mock-up of the spaceship. He pointed to the dish-shaped antennas which ran on circular tracks around the ship. "We can beam out repulsion waves on any of these three directional radiators. By swiveling them around, we can line up on any object in space and give ourselves a kick in the right direction."

"Suppose you're traveling on the dark side of the moon," Bud objected, "or some place where you can't get power from the sun to work the repelatron. Then what?"

"Chances are we'd still have enough momentum to carry us out of the moon's shadow," Tom replied. "But just in case we want to maneuver or change direction in the dark, the ship will have auxiliary rockets. They'll also be used to assist us on take-off."

Bud watched in amazement as the young inventor sat down and dashed off pages of diagrams and calculations. An hour later Tom phoned Art Wiltessa, one of the Swifts' highly rated young engineers.

"Can you drop over to the lab, Art?" he asked. "Got another hurry-up project for you."

"Sure thing, skipper," Art promised.

Wiltessa arrived five minutes later. Tom showed him the diagrams, and Art promised to develop a working model of the repelatron's control board as fast as possible.

"One thing you still haven't explained, Tom," Bud remarked after the engineer left them.

"What's that?"

"How are you going to draw power from the sun to operate your repelatron? Wouldn't your solar batteries do the job just as well?"

Tom shook his head. "They just soak up power from the sun's visible light rays. But that's only a small part of the sun's total output. For this job, I'll need to tap all the energy we can get, including the rays

above ultraviolet and below infrared.”

“You mean a lot of it’s going to waste?”

“Sure is, pal.” Tom whipped out his slide rule. “If we could harness all the sun’s energy, down here on this earth, we’d get more than three horsepower from every square foot of surface exposed to the sunshine.”

“Then grab it, Tom.” Bud grinned. “But how do you tap all this power?”

“Remember those big gadgets like searchlights on the spaceship cabin?” Tom asked.

Bud nodded.

“Well, those are the conversion units which will collect the sun’s energy and change it into electricity by photochemical action.”

“Whoa!” Bud groaned. “You’re already out of my league. Just tell me one thing. Will it work?”

Chuckling, Tom took out an electronic key and beamed open the door of a steel wall cabinet. “Stick around, chum. We’ll find out.”

He took two objects from the cabinet. The first was a regular solar battery. The other was one of his new energy-conversion cells, housed in a case made of Tom’s special catalium plastic.

“I’m going to run a test on both units,” Tom explained, “and see how their electrical output compares.”

“Sorry I can’t stay,” said Bud, glancing at a wall clock, “but I’m scheduled to test-fly that new jet of your dad’s. See you later.”

Tom went up alone to the glass-domed solar laboratory on top of the Enterprises main building. After donning a fiber-glass helmet and gauntlets, he hooked up the two units to an electrical control board. Then he pressed a switch-button control and the whole dome swung silently around until the sun’s rays were focused precisely on the conversion cell.

“Now let’s see how she reacts,” Tom muttered. His eyes widened as the wattmeter needle jumped violently across the dial. “Wow! What--”

There was a brilliant flash and explosion. Tom was jolted to the floor, unconscious!

When he revived, someone was shaking him. Blinking his eyes, Tom saw Hank Sterling, the rugged blond trouble shooter and chief patternmaking engineer of Enterprises, bending over him.

“Tom! Are you all right?”

The young inventor struggled to his feet. “I guess so. Whew!” He shook his head, still dazed.

“What in the world happened?” Hank asked.

“I was checking one of my new energy-conversion units,” Tom explained, “and-

“Does it work?”

“Too well!” Tom grinned ruefully and pointed to the shattered case and melted cables. “The cell was putting out so much energy the circuit couldn’t handle it-just blew up!”

At that moment high-heeled cowboy boots clattered on the stairway. A foghorn voice boomed up:

“Brand my prairie dogs, what’s happenin’ up thar? Have the Martians landed?”

The next moment Chow Winkler, Enterprises’ stout, bowlegged ex-ranch cook, hove into view. Wild-eyed, he was waving a pair of six-shooters. Chow wore a gaudy Western shirt, topped off by a white chef’s hat on his bald, weather-beaten head.

“Speak up, son! Where are they?”

Tom collapsed in a chair, weak with laughter. Hank was also grinning as he handed Tom a paper cup of water.

“Relax, Chow,” Tom soothed him. “No saucer men here-just myself and a solar short circuit!” He explained what had happened.

Chow glared at them, hands on his hips. “Tom, sometimes I think you oughta be hog-tied for your own good, to keep you from takin’ so many risks!”

The fat, middle-aged Texan had met the Swifts while they were doing atomic energy work in the Southwest, and he had become so attached to Tom that they had brought him East to Shopton. Now he cooked for Tom and his father at the plant and often went on trips with them as chef.

Still chuckling, Tom got up and gave the roly-poly cook an affectionate hug. “Okay, Chow. I’ll take it easy on one condition.”

“What’s that?” Chow squinted suspiciously.

“That you rustle us up some lunch pronto!”

Always proud to display his cooking skill, Chow broke into a wide smile. “Comin’ right up, podner!”

Later, as Tom and Hank enjoyed the tasty meal of vegetable soup and corned-beef hash, the phone rang. Tom answered.

“This is Billing, skipper,” said the voice at the other end of the line. “I just picked up some more information on that Otto Jantree, who bought the Hammond Jayhawk. He’s a Brungarian!”

CHAPTER IV

MYSTERIOUS RAIDERS

TOM was alarmed. Apparently his hunch about the masked pilot had been correct-the fellow had attacked Bud in hopes of stealing the electronic brain! Such a device would be highly useful to the Brungarians for learning Tom's secret communications with his space friends.

"Watch your step, skipper," Billing warned. "If Jantree's working for a Brungarian spy ring, they'll stop at nothing to get their way!"

"Right!" Tom agreed grimly. "But we'll be on guard. And thanks for letting me know."

Hank noticed Tom's worried look as he put down the phone. "Bad news?" he asked.

Tom reported the conversation, then said, "I'll call right now to notify security."

Harlan Ames, chief of the Swifts' security department, was amazed to hear the story. "I'm sure there's no spy in our organization. I believe Jan-tree x-rayed your cargo in the air, Tom!"

"So that's how he knew Bud was transporting the brain. I'll have all our planes given a special protective coat of plastic," Tom declared grimly.

After issuing several orders, the young inventor returned to his private laboratory. Here he resumed experiments with both the new energy-conversion units of the repelatron and several of his earlier designs. Hours later, he was still busy at his workbench with a jumble of electronic parts and test gear when a knock sounded on the door.

"Come in!" Tom called, without looking up. He heard the door open and close.

"Well, aren't you even going to say hello?" a girlish voice complained.

Tom whirled in surprise. "Sandy and Phyl!" he exclaimed.

The two girls giggled at his startled expression.

"So you weren't even expecting us!" Sandra Swift said accusingly. Blond and blue-eyed, Sandy was a year younger than her famous brother.

Her companion, Phyllis Newton, was the pretty daughter of "Uncle Ned" Newton, Mr. Swift's stanch friend from boyhood days and now manager of the Swift Construction Company. Phyl, who had long dark hair and laughing brown eyes, was Tom's favorite date.

"Expecting you?" Tom said uncertainly.

"Good night!" Sandy groaned. "I suppose you've forgotten about the party this evening."

Tom slapped his forehead and grinned apologetically. "I'm sorry. It slipped my mind completely!"

"Talk about absent-minded professors!" Phyl teased.

"And what about Bud?" Sandy went on.

“He made a test flight this morning, Sis. After that, he was due back at Fearing Island.”

Sandy looked disgusted. “Really, Tom,” she lectured him, “somebody ought to give you two a good shaking! Haven’t you ever heard that line about ‘all work and no play makes Jack a dull boy?’”

“But my name’s not Jack,” Tom protested with a twinkle in his eyes.

“And you’re not such a dull boy-yet.” Phyl smiled. “But if you two don’t learn to relax and have a little fun once in a while-watch out!”

“Okay, I’m warned.” Tom grinned back at the girl.

“This was supposed to be a surprise,” Sandy added, “but I’d better tell you now, so you don’t go backsliding on us again. Know who the guest of honor will be at the party?”

Tom shook his head. “I give up.”

“Jerry Walden.”

“Jerry Walden!” Tom was delighted at the news. “But I thought he was in South Africa.”

“He was,” Sandy explained, “but now he’s back home in Shopton.”

Jerry Walden, a neighbor of the Swifts, had been one of Tom’s boyhood idols. He had studied veterinary medicine and always took care of the Swifts’ family pets, including their two bloodhounds, Caesar and Brutus. As a specialist in rare animal diseases, he had gone to South Africa to do research on a new virus attacking the cattle herds there.

“That’s great news, Sandy!” Tom exclaimed. “Maybe he can help us with this trouble our space friends are having.”

“O-oh, more work!” Sandy pouted. “I know it’s important, Tom, but can’t you and Bud ever think of anything but work?”

Tom gave her a brotherly hug. “Okay, Sis. We’ll try to make up for it this evening.” A twinkle came into his eyes. “Suppose you two sit down here and read some magazines while I clean up the place. Then we’ll fly over to Fearing for Bud.”

Neither girl noticed the mischievous smile on Tom’s face as they sat down on laboratory stools and began looking through magazines which they had picked up from a nearby shelf.

“All work and no play, eh?” Tom said to himself. “We’ll see.”

Phyl leaned toward Sandy. “Here’s a magazine you ought to like. It’s an aviation digest, showing all the latest planes.”

Sandy, who had been taught to fly by Tom and her father, was an enthusiastic pilot and often demonstrated the Pigeon Special to prospective customers.

“Thanks, Phyl.” The two girls became absorbed in their reading.

Meanwhile, Tom cleared away his electronic gear, and placed the repelatron model with which he had been experimenting on a rack suspended from the ceiling.

“Be back in a jiffy,” he told the girls. “I have to make arrangements for the plane we’ll fly to Fearing.”

Several minutes went by, then a voice crackled out over the public-address speaker on the wall:

“This is Tom, girls! The plane’s all set. Hurry over to Hangar F, so we can take off!”

Sandy and Phyl started to spring up eagerly from the laboratory stools. To the girls’ dismay, neither could move an inch!

“Sandy! What’s happened?” Phyl cried out. “I seem to be paralyzed!”

“So am I!” Sandy replied in distress. “Oh, Phyl, maybe something in this room-“

Suddenly Sandy broke off, and her frightened look gave way to a vexed expression.

“It’s Tom!” she explained. “I’ll bet he did this to get even with us for scolding him! Of all the mean tricks!”

Fuming, the girls were forced to sit and wait helplessly for someone to come and free them. Soon the door opened and Tom stuck his head in the laboratory. His face was perfectly serious.

“Hey, come on, you two!” he urged. “What’s keeping you? Don’t you know we have a party date tonight?”

“Tom Swift!” Sandy exploded. “Will you please stop this funny business and let us go this instant!”

Tom could not keep a straight face any longer.

Bursting into laughter, he went over and switched off the repelatron.

Now that they were free again, the girls giggled at the trick he had played on them. Phyl tried to assume a straight face, although her dark eyes danced with laughter. “We ought to leave you flat, Tom,” she declared. “But we’ll forgive you if you tell us how the trick was done.”

“I aimed this repelatron straight at you, and switched it on before I left the lab,” Tom explained. “It’s tuned to repel the cotton fabric in your dresses-so naturally you couldn’t move. The force wave held you pinned in place.”

“Someday I’ll invent something to hold my big brother down!” Sandy scolded jokingly. “But never mind that now. Let’s go get Bud.”

Tom laughed. “Okay, we’re on our way.”

They hurried to the airfield and boarded Tom’s heliplane, a sleek craft which could take off vertically by rotors, and then convert to a speedy jet for forward flight.

In less than half an hour they landed at Fearing Island. The control tower informed Tom that Bud was at the tracking center. There, they found the young pilot seated in front of the electronic brain.

“Time to quit! We have a date tonight,” Tom announced.

Bud spun around, instantly jumped up, and said, “Hi, everybody!” Then he added excitedly, “I just picked up a new message from space! Or rather, part of a message.”

Tom’s eyes blazed with interest. “What was it?”

“Just two symbols appeared on the scope, then the message stopped.” Bud handed him a piece of tape. “Here’s the translation.”

Tom studied the tape as Sandy and Phyl looked on anxiously. The interrupted message said:

SITUATION DESPERATE. SENDING OUT----

“It’s a shame the message was interrupted,” said Sandy.

“Somehow the Brungarians must be able to interfere with our space friends’ frequency,” her brother said thoughtfully.

“What can you do, Tom?” Phyl asked.

“Not a thing, I guess, except keep on waiting for the rest of the message.”

“But we can’t wait,” Sandy protested. “Not if we want to get back for the party!”

“How much time do we have?” Bud asked.

“Well, we’re due at seven,” Sandy replied, “and we have to go home and dress.”

Bud grinned. “We’d better work this out on one of Tom’s Little Idiots.”

These amazing miniature computers were the smallest and most compact ever built. The operator simply “talked” his problem into a microphone, and the computer then reeled off the answer on tape.

Tom laughingly produced a computer and Bud began supplying data to the machine. “Now,” declared the copilot, “this little gadget will tell us what time we’ll have to leave here.”

Sandy and Phyl giggled at some of his remarks but pretended to be hurt as he said, “Two hours for girls’ primping, ten minutes for boys to shower and change.”

With a whispered “I’ll be back,” Tom dashed off to his laboratory to pick up some special tools he wanted to take back to Shopton with him. The room, unlike many of the other laboratories, had windows in it. As Tom glanced out of one, he saw a blurred object streak by.

It traveled with an ear-splitting whine, leaving a white vapor trail! An instant later a second object passed over the island—clearly outlined against the rosy glow of the setting sun. This too left a vapor trail!

“Missiles!” Tom gasped. “Who’s firing them?”

He rushed toward the laboratory door. But halfway there, a strange drowsiness came over him.

“Wh-what’s happening to me?” he thought frantically. His limbs were so weak he could hardly move.

He rubbed his hands across his eyes and staggered another step or two. Then his legs gave way and he sank to the floor, unconscious!

All over the rocket base, the same thing was happening. Crewmen and technicians, as well as Bud and the two girls at the tracking center, slumped and fell, as if fast asleep!

Automatic alarm sirens wailed across the island. A strange cargo plane was approaching! Even with the control-tower personnel knocked out, the landing-forcer system worked and the cargo jet was taken under automatic control.

Blazing floodlights stabbed the sky and locked on the cargo jet as it swooped down for a landing. Figures clad in space suits stepped out of the mystery aircraft onto the island’s airfield.

One of them, evidently the leader, turned to the others.

“Now go for the electronic brain,” he ordered, “and any other of Tom Swift’s inventions that you can pick up in twenty minutes!”

CHAPTER V

TOM’S PRISONER

EVERYTHING went like clockwork as the raiders commandeered jeeps and trucks, and fanned out over the island. Three of the space-suited figures seized Tom’s newest electronic brain and hauled it back to their waiting aircraft. Others began a systematic search through every building on the base, scooping up whatever instruments or devices caught their eyes.

One of the raiders reached Tom’s laboratory. Ignoring the young inventor who lay sprawled on the floor, he made a quick survey of the room’s contents, deciding what to take.

Suddenly a whistle blast shrilled over the island. The noise seemed to pierce the fog that filled Tom’s brain. Groggy and still half asleep, he opened his eyes.

Meanwhile, the creature in the space suit had snatched up one of Tom’s prized inventions—a small electronic oscillator gun. He started to hurry out of the laboratory, in answer to the whistle blast. But as he stepped over the young inventor’s body, Tom reached up and grabbed his ankle. With a sudden jerk, he sent the raider sprawling!

The raider fought back viciously, trying to use the gun as a club. But Tom managed to roll out of the way and launch himself into action, butting his opponent squarely in the stomach! The figure went down again, landing heavily on his back.

Before he could get to his feet, Tom was on top of him, hammering away with rights and lefts. The raider, despite the fact that he was at a disadvantage in his cumbersome space suit, squirmed and fought like a cornered wildcat. But in a few seconds, Tom overpowered him. Then he bound his prisoner hand and foot.

“Whew!” Panting from the struggle, Tom paused to catch his breath. Everything had happened so fast, there had been no time to take stock of the situation.

Was his prisoner a space being of some kind?

“I’ll soon find out,” Tom muttered. He ripped off the raider’s helmet and found a sullen-looking man staring back at him. “So you’re just an earth dweller, after all. Okay. Start talking!”

Not a sound left the prisoner’s lips. He merely shrugged, shook his head as if he did not understand English, and glared at Tom like a captured beast.

Suddenly Tom heard the distant roar of a jet gathering power for take-off. The noise roused the young inventor from his puzzled reflections. Dashing outdoors, he was just in time to see a jet craft streak up off the airfield and disappear into the darkening sky.

“Good night! What’s happened to everybody?”

Except for the screen of circling robot planes overhead, there was not a sign of life or movement on the island!

Suddenly Tom realized what had happened. “That vapor from the missiles,” he gasped. “It must have been some kind of sleeping gas! The missiles traveled at a speed too great for the force-landing system to be effective. Someone planned this devilish scheme so he could loot the rocket base while we were all unconscious! The group wore space suits to avoid that gas.”

The thought filled Tom with helpless fury. What if they had stolen his portable electronic brain that translated messages from space!

He returned to his laboratory, dragged his prisoner out to the jeep, then sped to base headquarters. The crewmen in the office were just beginning to revive.

Tom switched on the island’s public-address system and boomed out orders over the mike. Gradually, reports began to filter in. Everyone had blacked out for about twenty minutes.

Tom left his prisoner in the custody of the headquarters personnel, and drove to the island’s infirmary. Here he picked up Doc Simpson, then headed for the tracking center.

Fortunately, Bud and the girls had all recovered without ill effects from the gas. But just as Tom had feared, his new electronic brain was gone!

“Who do you suppose pulled the raid?” Bud asked, when he heard what had happened. “The Brungarians?”

Tom shrugged despairingly. “Your guess is as good as mine, but I wouldn’t put it past them. Let’s hope we can learn something from that man I captured.”

By the time Tom and his companions reached base headquarters, the whole story was in. George Billing was compiling a list of all the equipment which had been stolen.

“There’s the bad news, chief. Read it and weep!” he said, handing Tom the list.

Tom felt like doing just that, as he realized the staggering blow Enterprises had suffered. But he clenched his fists and managed to swallow his anger. Then he turned to the prisoner who sat between two guards.

“What can you tell us about this?” he snapped.

The prisoner shrugged, glared sullenly, but made no reply.

Bud glanced at Tom. “Think he’s stalling?”

“I don’t know. Let’s search him.”

The prisoner’s pockets proved to be empty. Neither his space suit nor his inner clothing bore any clues to his nationality.

Switching on the public-address system, Tom issued a call for all personnel who spoke a foreign language to report to base headquarters at once. More than a dozen crewmen complied.

One by one, they confronted the prisoner, addressing him in Polish, Italian, Czech, and a number of other languages. But the prisoner merely shook his head to all questions and maintained a stubborn silence.

“If you ask me, the guy’s faking!” Bud declared in disgust.

“Could be,” Tom agreed in baffled anger. “For all we know, he may even be an American.”

“Maybe we ought to work him over a bit, and then see if he’ll talk!” growled one crewman who had suffered a nasty blow on the temple when he was felled by the sleeping gas.

“Nothing doing,” Tom said firmly. “The Brungarians may mistreat prisoners in their own country, but we won’t use their tactics.”

“What’ll we do with him?” Bud asked.

“Take him back to Shopton and hand him over to the police,” Tom decided. “It’s about all we can do, I guess.”

Now that he had time to turn his attention to Sandy and Phyl, Tom realized that their date for the evening was ruined. “I’m sorry,” he said. “I suppose it’s too late for the party now.”

Sandy nodded. “Don’t worry, Tom. It wasn’t your fault.”

“Maybe we should apologize for bringing you such bad luck,” Phyl added sympathetically.

“Cut it out!” Tom grinned. “If you two hadn’t prodded me to come over here to pick up Bud, we might not even have captured this one prisoner.”

Snapping his fingers, Tom turned to Bud. "Look, pal. Why don't you fly the girls back in a jet? Maybe you can get there before the party breaks up and make our apologies to Jerry."

"What about you?" Bud asked uncertainly.

"I'll take our prisoner back in the heliplane," Tom said. "It won't hold us all, anyway."

"Can you manage this guy by yourself?"

"Don't worry. He's going back in handcuffs!" Tom replied.

Bud and the girls agreed somewhat reluctantly to the arrangement and took off at once.

Half an hour later, Tom landed the heliplane on the roof of the Shopton Police Station and turned his captive over to Police Chief Slater. Then he returned to Enterprises, where he found Mr. Swift waiting anxiously in the space communications laboratory. Tom gave his father a quick report on the evening's events.

"It's a bad blow," the elder scientist agreed, frowning. "In the hands of an enemy that duplicate brain can be used to intercept all our space messages."

"True. And what's worse, they can now translate their own messages into symbols and send them out."

Mr. Swift was stunned by the news. He got up and strode to the window, hands behind his back. "Tom, this could be serious. They can foul up our space communications in all sorts of ways- and just when our space friends need help badly!"

He whirled around as the signal bell rang on the electronic brain.

"Something's coming through!" Tom cried.

They hovered over the machine eagerly and read the message off the tape. It said:

WE ARE LAUNCHING A SPACESHIP INTO ORBIT AROUND THE EARTH AND MOON.
CAN YOU INSPECT ANIMALS ABOARD AND OFFER A CURE?

Tom felt a thrill of excitement. But a moment later he was in doubt. Was the message authentic, or had it been sent by their enemies?

CHAPTER VI

BRUNGARIAN HEADLINES

"DAD, let's beam a message back and find out if our space friends really sent this request," Tom suggested.

“A wise precaution,” Mr. Swift agreed.

Tom knit his brows thoughtfully, deciding what to say. Then he began tapping out a message on the electronic brain. He explained how the duplicate translator had been stolen, and asked his space friends to confirm the earlier message. As an extra safeguard, he asked them to transmit their reply in a new set of code symbols never used before.

After completing the call, Tom turned to his father. “If they do answer in new symbols, we may have a tough time translating them, Dad.”

Mr. Swift smiled ruefully. “I’m afraid you’re right, son. But it’ll be worth it to make sure our enemies don’t mislead us.”

“Let’s hope they haven’t jammed our signal!”

Tom switched on the device with an oscilloscope-type screen which they had used for receiving space messages before the electronic brain was perfected. Then the two scientists settled down in comfortable chairs to await the reply from outer space.

“Dad, if that business about sending a rocket with animals was true, it’ll be a terrific chance to learn more about their planetary life!” Tom’s eyes lit up at the prospect.

“It’ll be risky, too,” Mr. Swift reminded him. “Don’t forget, son, those animals may be carrying a deadly disease.”

They chatted for a few minutes. Suddenly Tom leaped up from his chair as a flicker of light showed on the scope. “Here comes the reply!”

Both scientists grabbed pencil and paper, keeping their eyes glued to the screen. Tom tuned several adjusting knobs as the first symbol took shape. It looked something like the Greek letter “pi,” except that it had three legs instead of two.

The symbol faded, to be replaced by two triangles touching at their peaks. This was followed by several saw-toothed blips ending in a hook. Other symbols blossomed on the scope in quick succession. Tom and his father had to scribble at top speed to copy them on paper.

Finally the message ended.

“Wow!” Tom gasped as he laid down his pencil. “Solving this code will be a real skullcracker.”

Mr. Swift nodded, frowning at the pages of scribbled symbols. “I must confess none of this rings a bell.”

There was a long silence, during which Tom jotted down a number of mathematical formulas. At one point, he whipped out his slide rule to work out a series of equations. Mr. Swift was similarly occupied.

After twenty minutes, Tom got up and pulled a blackboard close to the table.

“Got a clue, son?” Mr. Swift inquired.

“I’m not sure, Dad. But let’s assume part of this is a repeat of the message they sent before, telling about

the rocket with the animals.”

The elder Swift nodded. “A fair assumption.”

“If my hunch is right,” Tom went on, “this elliptical curve may represent the trajectory of the rocket after leaving their base—“

“And the next symbol would represent its orbit around the earth and moon!” Mr. Swift broke in. “Tom, I think you’ve hit it!”

The young inventor paused, chalk in hand. “Trouble is, where do we go from there?”

“Remember, Tom,” his father said, “those space people no doubt are still expressing their meaning in terms of mathematical relationships. So the gravitational factor must come in either before or after the two symbols we just translated.”

He took the chalk from Tom and wrote down a series of equations, then tried to relate these to other symbols. Tom frowned and pointed out a flaw in his father’s line of reasoning.

“Hmm, you’re right, son. I was overlooking that angle.” Mr. Swift rubbed his chin thoughtfully.

The discussion went on for several hours. Time and again, either Tom or his father would cover the blackboard with formulas, equations, and symbols, only to rub them out and start over.

It was long after midnight when they finally sank back in their chairs with tired smiles.

“I’m sure we’ve got it now, Dad,” Tom said. “This translation makes sense all the way.”

Mr. Swift nodded as he read over the message. It said:

WE WILL LAUNCH A SPACESHIP CONTAINING DISEASED ANIMALS. SHIP WILL ORBIT AROUND EARTH AND MOON. CAN YOU COME ABOARD TO INSPECT AND OFFER CURE? WE DARE NOT AIM ROCKET TO LAND ON YOUR PLANET FOR FEAR OF SPREADING INFECTION.

“Yes, son, I think we’ve cracked it,” Mr. Swift said. “Incidentally, we’d better add these symbols to our space dictionary.”

Compiled by Mr. Swift, the space dictionary-contained hundreds of combinations of mathematical symbols translated into ideas.

“What about making plans for our own takeoff to meet their rocket?” Tom asked.

“Let’s talk about that tomorrow, when we’re rested,” Mr. Swift replied. “We’ll hold another conference with Dr. Faber and Evan Glennon.”

“Right, Dad. I’d like to call in Jerry Walden, too.”

The next morning Tom slept later than usual and came down to an appetizing breakfast of golden-brown flapjacks and bacon. His youthful, attractive mother sat down with him and listened to his plans.

“I hope you’ll take every precaution when you enter that rocket with the diseased animals,” she cautioned.

Tom gave her a tight hug. “Mother, this means you think I’m going to succeed in getting there. That’s just the encouragement I need. Now I can’t fail!”

Directly after breakfast Tom telephoned Jerry Walden about the proposed conference, saying he would pick him up. Then Tom drove his silver sports car out of the garage, and set off for Jerry’s house.

A honk on the horn brought the young veterinarian hurrying out. “Hi, Tom! Good to see you again!” They shook hands warmly.

“Glad you’re back from South Africa, Jerry.” Tom smiled. “Hop in!”

As the two boys drove to the plant, Tom briefed Jerry about the trouble confronting their space friends.

“Sounds like a real challenge,” Jerry said enthusiastically.

When they arrived at Enterprises, Bud Barclay was just coming out of the main building. “You’d better sit in on this meeting, too,” Tom invited him. “Something new has come up.”

“Big deal?” Bud asked.

“Plenty big.” Tom grinned. “I think you’ll want to be in on it, fly boy.”

Mr. Swift was waiting in the big double office with Professor Glennon and Dr. Faber. After giving Jerry a warm handclasp, he introduced him to the other two specialists, then said:

“Tom and I called this meeting because we’ve had another message from our space friends. Last night they informed us that they would send some living animals in a spaceship for us to inspect. The ship will orbit around the earth and moon.”

An excited babble greeted this announcement, and Bud exclaimed, “Hot rockets! Then we’ll have to go and meet it in outer space?”

“Right.” Tom nodded. “If I can get my new spaceship ready in time, the voyage itself should be easy and we could stay as long as we’re needed. But I don’t have to point out the other risks involved—for instance, the chance of becoming infected with the disease ourselves.”

Bud let out a whoop of excitement. The others were equally enthusiastic.

Jerry Walden grinned. “I’ll speak for myself right now. Infection is a danger every medical researcher must face. Wild horses couldn’t keep me from making this trip with you, Tom!”

“Yn bendant! Definitely! I agree entirely!” Professor Glennon boomed, pounding his fist on the table.

“Need I say that you can count me in, too,” Dr. Faber added firmly.

Tom and his father exchanged pleased smiles. “We appreciate your co-operation,” Mr. Swift told them. “This project may lead to new discoveries in animal medicine that will be helpful right here on earth!”

Evan Glennon stoked his pipe vigorously. "Get busy on that new spaceship, Tom lad. This is an opportunity I don't want to miss!"

"I'll do that, Evan," Tom promised. "If we're not ready to meet that interplanetary rocket, the Brungarians may beat us to it!"

Bud gave an angry snort. "They probably wouldn't do a thing to help the space beings cure those sick animals either-just take all the glory for reaching the rocket first and seeing what's inside!"

"There's a worse danger," Dr. Faber pointed out gravely. "They might even bring the animals to earth to prove they had accomplished the mission. The infection might spread and we might not know how to stop it!"

The telephone rang and Tom scooped it up. "Tom Swift Jr. speaking."

"This is Harlan Ames, Tom," said the voice at the other end of the line. "Could you drop over to the security office? I have something to show you."

Tom hesitated. "Is it important?"

"Have to judge for yourself, skipper, but it may affect your plans for reaching the moon."

"In that case, I'll be right over!"

Excusing himself, Tom hurried off to the security building. He found Harlan Ames, the slim, dark-eyed chief of Enterprises' security department, pacing back and forth with a worried frown.

"What's up?" Tom asked.

Ames picked up a foreign newspaper from his desk. "This is a Brungarian newspaper which puts out a New York edition," he explained. "One of my boys had it flown to Shopton this morning as soon as it hit the streets."

Tom glanced at the blaring headlines. "What does it say?"

"Those headlines state that the Brungarian government is sending up a group of scientists into space on a secret mission," Ames replied.

Tom was startled. "The morning after our duplicate brain was stolen!"

"Right, skipper! I'd say that's more than a coincidence."

Tom crumpled the paper angrily. "Harlan, I bet I know what prompted this announcement."

He reported the latest message from space. "This may mean they'll try to beat us to the punch and intercept that rocket!" Tom added.

Ames was furious. He waited tensely as the young inventor plunged into deep thought. Finally, Tom gave a thin smile.

"Maybe there's a way we can turn this situation to our own advantage."

“How?” Ames asked.

“By flashing these headlines at the prisoner I captured last night. We might surprise him into giving away his real identity.”

Ames slammed his fist against his palm. “It might work, Tom. Let’s try it!”

Taking the newspaper with them, they drove to Shopton Police Headquarters. Tom explained his plan to Chief Slater, who eagerly agreed to the experiment.

They found the captured raider lounging on his cot. As the three entered his cell, he looked up sullenly with no show of interest. A dark stubble of beard had sprouted on his surly, heavy-jawed face.

“Heads up, mister. You’ve got visitors!” Chief Slater jerked him upright.

The man glared but said nothing.

Suddenly Tom whipped out the Brungarian newspaper, exposing the headlines. The prisoner gave an excited gasp!

CHAPTER VII

ENEMY ROCKET

THERE WAS no doubt but that Tom had caught the prisoner off guard. Before he could recover, a gloating smirk and guttural exclamation escaped his lips!

“He’s a Brungarian, all right,” Ames snapped.

“Did you catch what he said?” Tom asked.

Ames, who had picked up a working knowledge of Brungarian to aid him in his security work, replied, “It sounded like ‘They did it.’ “

Chief Slater scowled. “Tell him we know his nationality now and he’ll face espionage charges. So he’d better start talking!”

Ames translated the chief’s words. The prisoner merely sneered and remained silent.

The police chief flushed with anger, but kept his temper. “I’ll notify the FBI. We’ll get to the bottom of this yet!”

“At least we have something to work on now,” Ames agreed.

“But not much,” said Tom. He was glum as they returned to the plant.

When Tom arrived at his office, he told his father and the other scientists, who were still there, what had happened. “Our captured raider must be a Brungarian. I’m sure now that they translated the message from space last night.”

“Then they’re going to try reaching the rocket containing the animals, just as you suspected?” Jerry Walden asked.

Tom nodded grimly. “I’m afraid it’s the only explanation, Jerry.”

A worried silence fell over the group.

Tom finally shook off his gloomy feelings. “Look,” he said, “there’s no sense letting this get us down. We’ll make all our preparations and be ready to take off as soon as we get word from our space friends. With luck, we can still get there ahead of those Brungarians!”

Evan Glennon pounded the table. “Daiawn. I mean, very good lad-that’s the spirit!”

“You’re right, son.” Mr. Swift got up and put his arm around Tom’s shoulders. “This is a challenge to all of us, and the only way to meet it is to buckle down to the job!”

“Check, Dad. I think the first thing to do is let our space friends know that a group of scientists will meet their rocket and do everything possible to combat the disease from which the animals are suffering.”

“Good idea,” Mr. Swift agreed.

Tom beamed out the message over the electronic brain. By the time the meeting broke up, everyone’s spirits had risen.

Plunging into the project with all-out enthusiasm, Tom began immediate preparations for the space voyage. Work was speeded up in all departments. Arv Hanson, head modelmaking engineer, promised to have a model of Tom’s improved super-repelatron ready in forty-eight hours. Meanwhile, the new spaceship was taking shape on Fearing Island.

The day after the meeting, Tom remarked to Bud as they drove home from work, “Are you game for a little rocket jaunt tomorrow?”

“Any time!” Bud chuckled. “What’s the deal?”

“I want to hop up to the space station and take some observations of the moon. We’ll need a lot more data for our big moon expedition.”

“Count me in, skipper!” Bud replied.

Tom’s space-station satellite had been built in the form of a huge wheel and sent into orbit 22,000 miles above the earth. One of its sections contained a gigantic telescope for carrying on astronomical observations above the haze of earth’s atmosphere.

Blast-off was scheduled for two o’clock the following afternoon. Instead of using his rocket ship, the Star Spear, in which he had first conquered outer space, Tom decided to ride one of the atomic cargo

rockets which shuttled between the space wheel and Fearing Island.

“Fuel’s all loaded,” Bud remarked as the two boys approached the launching area.

The last tank truck was driving away. Mechanics swarmed over the huge silvery projectile, checking valves and tightening connections.

As the moment for take-off approached, radar scanners swept the sky. The boys rode by conveyor up to the pilot’s compartment in the rocket’s nose, high as a five-story building.

“All hands clear the launching area!” a voice boomed over the “squawk box.”

In the flight cabin, Tom spoke into the mike. “Radar report!”

“All clear!” George Billing called back.

Tom fed the flight tape into the automatic pilot. Electric timers began ticking in the concrete blockhouse. The boys lay flat on their acceleration couches and buckled the straps.

“X minus twenty second!” blared the loudspeaker. “X minus nineteen . . . X minus eighteen . . .”

The boys exchanged grins.

“Never can figure out why my heart always thumps so loudly just before blast-off,” Bud said, chuckling.

Bo-o-o-oom! Smoke rolled over the launching area. For an instant, the rocket seemed to be poised on a pillar of fire. Then it was arrowing upward into the blue at lightning speed.

The shock of acceleration flattened the boys against their cots. Gradually the pressure eased off as Tom’s anti-G neutralator took effect. Moments later, a red light flashed and a warning buzzer sounded as the timer gun kicked loose the first stage of the rocket. A fresh blast of power shook the cabin. One by one, the other two stages were jettisoned.

The thunder of the motors was silenced now as the rocket coasted up into orbit. The boys unbuckled their seat belts, and Tom radioed his report back to base.

“And now comes the part I like,” Bud said. “A joy ride through space!”

He pressed a button. The transparent pilot’s canopy had an outside cover of metal to protect it while the ship was going through the air. This cover now slid back, revealing the starry blackness outside. Below, the earth appeared as a huge sphere, with oceans and continents clearly outlined.

“Four hours to kill before we reach the space station,” Tom remarked, glancing over the control panel, studded with dials.

“Oh, oh! I forgot to call Sandy!” Bud exclaimed. “Let’s hope she and Phyl don’t go dating some other guys tonight just to get even.”

“They warned us,” Tom said. Suddenly he gasped and pointed at the radarscope. “Bud! We have company!”

A blip had appeared on the screen. The boys watched intently.

“There it is!” Bud cried. “Another spaceship!”

“And not one of ours,” Tom muttered.

The strange craft lay several miles to starboard, steering a course parallel to the Swift cargo rocket. Tom broke out a pair of binoculars and studied it.

Bud watched uneasily. “Do you suppose it’s an enemy?”

As he spoke, a rocket port opened in the other ship’s side. There was a burst of smoke and flame, and a missile came streaking toward them!

“There’s your answer!” Flinging the binoculars aside, Tom ripped out the flight tape and grabbed the steering controls. With a quick blast on the auxiliary rockets, he managed to evade the deadly missile.

“Howlin* headwinds!” Bud gulped, clinging to a support.

Both boys had turned pale at their narrow escape.

“Here comes another!” Bud yelled as a second spurt of flame belched from the enemy ship. He was thrown off balance as Tom swerved. “Those rats! We’re not even armed!”

Before the inventor could reply, a third missile shot toward them. Tom swung the rocket about sharply and barely dodged the projectile. But the fourth one was fired before he could swivel the steering motors again.

“Look out!” Tom yelled.

With a desperate last-second blast, he succeeded in veering the rocket ship. But it was too late to avoid being hit by the missile. It grazed the cargo rocket with a jolting crash. Both boys were slammed hard against the bulkhead.

“Wow!” Bud gasped dizzily. “Are we still in one piece?”

“Thank your lucky stars the warhead didn’t explode!” Tom managed to reply.

He glanced out the view port and saw their attacker streaking away into the black reaches of space.

“Attack over!” Tom reported.

“How badly are we damaged?” Bud asked.

“Don’t know yet. We’d better go out and take a look.”

After checking the pressure gauge, Tom set the orbital calculator, and the automatic pilot eased the ship into an orbit with a series of blasts on the steering rockets. Then the boys donned space suits and helmets, and made their way out through the escape hatch.

“Don’t forget to clamp your safety cable,” Tom ordered over his suit radio.

“Roger!”

Stepping out into the bleak void, they propelled themselves astern by triggering the reaction pistols attached to their suits. Tom examined the ship’s damage. Part of the rocket fuselage had been smashed in by the missile. Fortunately, the steering motors appeared to be intact.

“Is she still spaceworthy?” Bud signaled.

“I think so,” Tom replied. “The missile didn’t hit us anywhere near the pilot’s compartment. I’ll check the gauge again inside, though, to make sure we haven’t sprung a leak.”

The two space-suited figures in their transparent bubble helmets began hauling themselves hand over hand toward the escape hatch. The rocket ship seemed to be floating motionless in the inky void, although both boys were being hurtled through space at terrific speed.

Suddenly Bud let out a startled cry. “Tom, look! They’re coming back!”

A glittering object in the distance was growing larger every second. The enemy ship was returning to the attack! Before the boys could reach the hatch, flames spurted from the enemy’s rocket port.

“Another missile!” Bud cried out.

It missed them by inches. Tom’s brain raced at lightning speed to figure a way out of their dangerous predicament. Should he and Bud cast off their safety cables and risk being marooned in space? He decided against this. Instead, Tom signaled, “Trigger your reaction pistol, Bud, but don’t unclamp!”

The blast of their pistols sent them shooting out to the full length of their cables. As the line snapped taut, both boys turned their pistols on full force. This force was sufficient to pull the rocket ship itself slightly off course. At the same instant, another missile whizzed past the ship.

“Yahoo! They missed again!” Bud yelled.

His triumph was short-lived. The next missile caught the cargo rocket squarely on the bow. With a shattering blast, the whole ship exploded!

CHAPTER VIII

STRANDED IN SPACE

FORTUNATELY, there was no concussion in airless space. Nevertheless, only the very long cables attached to the boys saved them from destruction. Both were hurled outward by the flying debris of the blasted cargo rocket.

“Oh, brother!” Bud gulped over his radio. “I’m sure glad you built these suits strong.”

“Ditto,” Tom replied.

Coils of steel wire inside the fabric gave the space suits immense strength. A puncture would have caused the boys to explode in the vacuum! The asbestalon insulation had also protected them from the searing heat of the blast.

Meanwhile, the rocket raider was streaking off again into the starry blackness. Fear gripped Tom and Bud as they realized they were helplessly marooned in outer space!

“Let’s tie our cables together,” Bud signaled, trying to sound calm. “If we’re going to have trouble, let’s have it together.”

With a burst on his suit pistol, Tom propelled himself closer to Bud. Both boys had only a short length of frayed cable left. Working clumsily with their armored space gauntlets, they knotted these cables together.

“Now what?” Bud asked anxiously.

“Stand by and hope for a quick rescue,” Tom told him.

“Any chance we could contact the space station with our suit radios?”

“Not much, I’m afraid,” Tom replied. “But let’s try, anyhow. Can’t do any harm.”

Taking turns, they beamed out repeated SOS calls. Tom knew it was useless. They could not see their space station. It was on the other side of the earth-and the earth’s atmosphere would block out the radiation, preventing it from being picked up on the surface of the earth. But Tom could not bring himself to dash Bud’s hopes.

At last they gave up. Through their transparent helmets, the boys’ eyes met.

“Give it to me straight, pal,” Bud pleaded. “Have we got any chance at all?”

“Sure we have,” Tom said firmly. “The fellows at the space station will know we’re overdue. When we don’t show up, they’re bound to start a search.”

“But will they be able to find us?” Bud asked. “Remember, we went way off course when that space pirate started slinging missiles at us.”

Tom was all too well aware of this fact.

“It may take a while, Bud,” he admitted. “There’s a lot of space out here to get lost in. But we can still hope and pray.”

How long could they hold out? The same fearful question throbbed in both boys’ minds. Even with the air-renewal system inside their suits, their supply of oxygen could last only a matter of hours.

Time dragged by. Tom and Bud swapped jokes and chattered away to keep up their spirits. From time to time they sipped at their liquid ration, which was the only way of taking nourishment inside the bulky space suits and helmets.

Hope waned as their air supply grew stale and sluggish. The two boys lapsed into gloomy silence. It was broken as Bud suddenly cried out:

“Tom! A rocket!”

A thrill of hope sent Tom’s pulse racing. Was it a rescue ship? With a whoop of joy, Tom recognized the silvery craft.

“It’s a Swift rocket, Bud!”

A second later their suit radios crackled with a call from Ken Horton, a TV man at the space wheel. “Are you all right, fellows?”

“Alive and kicking, Ken!” Tom radioed back. “Come and get us.”

“We’re doing a rock and roll!” Bud added. “Can’t you see?” Grabbing Tom around the waist of his space suit, he proceeded to cavort joyfully.

In a few moments the rescue rocket pulled into orbit alongside • them and the boys climbed in through the entry hatch. Both Tom and Bud were pale and dank with perspiration when they removed their helmets and doffed their space suits. But their broad grins instantly relieved the worried rocket crew.

“How’d you find us, Ken?” Tom asked, after explaining their plight.

“Luck, mostly. The radioman picked up some of your conversation-just a few faint words, then lost it. But we finally got a directional fix by radar.”

Ken Horton, a slender man of about thirty, with dark, close-cropped hair, had been a major in the Signal Corps. He had become interested in rocket flight while in the Army. Upon his release he had joined Swift Enterprises to help Tom build his space station. He now was in charge of its broadcasting facilities.

“Stand by for acceleration!” Ken told the crew. He gunned the steering rockets, brought the ship about, then, with a final burst of power, headed for the Swifts’ outpost in space.

Tom and Bud watched through the transparent quartz window as they approached the station. “Every time I see this thing, it gives me goose bumps,” Bud said in an awed voice.

“Same here,” Tom confessed with pride.

The huge silver space wheel, floating in the inky void, was indeed a breath-taking spectacle. Twelve spokes jutted out from the central hub. From one, a latticework telescope protruded. Others bore radar or TV antennae, along with polished mirrors to focus sunlight on the solar-battery assembly line.

“Steering check!” Ken called out. Two crewmen guided him by signals as he nosed the rocket into mooring position. Then his hand closed a switch, locking the ship to the space wheel by magnetic grapples.

One by one, the rocket voyagers disembarked through the air lock. Happy shouts greeted Tom and Bud as they entered the space station.

“Hi, skipper! You fellows sure had us worried!”

“What happened? Lose your bearings?”

“More than our bearings.” Bud grinned. “Some joker blasted our rocket into Stardust. We had to thumb a ride with Ken.”

The space station crew seethed with anger as the boys told about the mystery raider’s attack.

“Brungarians, I’ll bet!” said Bob Jeffers, a young crewman.

“Could be,” Tom agreed, “but we can’t make charges without proof.”

Tom and Bud made their way around to inspect the various sections. Each spoke of the wheel served a different purpose. Some were used for communications, tracking, and TV relay, others for battery production. There were also botanical, zoological, and other laboratories as well as crew’s quarters.

After a hearty meal, Tom went into the space platform’s observatory with Bud. The observatory, being the first one to be established outside the earth’s atmosphere-the factor that limits the magnifying power of telescopes-had been swamped with requests from other astronomers for data from interplanetary observations.

Tom, knowing the great importance of these requests, had given no priority to his own observations of the moon. Therefore many of the questions he would have liked answered had had to wait. Now, finally, he could learn some of these answers.

Tom focused the telescope. The moon shone full and clear, making conditions perfect for close study.

“Take a look, Bud,” he said. As Tom moved aside, Bud craned his head to the eyepiece. “Wow! What a sight!”

Every detail of the lunar landscape stood out sharp and clear. The moon’s surface was pocked with huge craters, and bristled with jagged peaks and ranges.

“Seems almost close enough for a landing,” Bud muttered. “Too bad it’s a dead world.”

“Barren maybe,” Tom said, “but we can’t be certain it’s completely dead.”

Bud jerked his head away from the telescope in surprise. “You mean there could be life on the moon?”

“Not the kind we’re used to, chum.”

Bud grimaced. “You had me excited there for a moment.”

“What did you expect?” Tom chuckled. “Remember, the moon has no moisture and practically no atmosphere. What there is-astronomers have learned-is less than one-ten-billionth as dense as the air we breathe on earth. And the temperature change alone would kill off all forms of life as we know it on this earth.”

“Too hot or too cold?”

“Both,” Tom replied. “On the parts exposed to direct sunlight, the temperature gets hotter than molten lead. Then, during the moon’s night, it drops to about 250 degrees below zero—as cold as liquid air.”

“Ouch!” Bud groaned. “Think I’ll stay in my nice cozy air-conditioned space suit.”

“We’ll have to if we do any exploring,” Tom told him.

Bud was thoughtful for a moment. “Seriously, Tom, what do you suppose it’ll be like when we land?”

“Rough going, that’s for sure. The surface of the moon is covered with mountains and craters, and littered with shattered rock. Also, the entire area is blanketed by some kind of dust or volcanic ash.”

“Maybe we should take stilts,” Bud joked.

Tom’s smile faded as he pondered the problems ahead. “There’ll be a lot of mysteries to solve, Bud. For instance, what the other side of the moon looks like. And what causes those bright rays streaking out from some of the craters.”

Returning to the telescope, Tom pointed out a few lunar landmarks to his friend.

“That dark smooth patch in the lower right quadrant might be a good place to land,” he remarked. “It’s called the Imbrium Mare, or Rain Sea.”

“Rain Sea?” Bud was puzzled. “I thought you said there was no moisture.”

“Just a name, pal.” Tom chuckled. “The big lunar plains are called maria or seas. But they’re not the watery kind.”

“I’m still hoping we find life up there.”

“If so, it must be underground,” Tom said. “We’d have to dig for it.”

“I’ll bring along my mole suit and pretend I’m a visiting earth cousin,” Bud quipped as he turned to leave.

Tom at once settled down to a serious discussion with young Dr. Stevens, temporarily in charge of the observatory. Magnetic and gravitational fields on the moon were checked.

“And look at this!” the astronomer said eagerly, leading Tom to one of the Swifts’ spectroscopes. “I’ve kept it a secret until you arrived.”

Upon seeing the indicator, the young inventor burst out, “Doctor, do you see what I do? An unknown hydrogen compound on the moon?”

“Exactly.”

“That’s amazing, and a great discovery, Doctor. The stuff is deeply buried, I’d guess,” Tom said.

“Yes,” Dr. Stevens agreed.

“Someday,” Tom announced, “I’m going after that compound!”

“I’m sure it would prove useful on the earth,” the astronomer remarked. He looked through the telescope for a moment, then turned to Tom. “You know,” Dr. Stevens went on, “the moon has always held great fascination for me. He smiled. “For me and many other astronomers down through the ages.”

He and Tom began to discuss the early astronomers. First, how five thousand years ago the Chinese had developed a perfect system for predicting the occurrence of eclipses. And how, in the third century B.C., Aristarchus had measured the distance from the earth to the moon with an amazing degree of accuracy. Then had come George Darwin, son of the great biologist and history’s greatest expert on tides, who had formed one of the basic hypotheses on the origin of the moon.

Other astronomers had mapped the fifty-nine per cent of the moon’s surface which is visible from the earth. They had measured and named over thirty thousand craters, and had found that some are less than one mile across, and others over one hundred and fifty miles in diameter, and their depths range from very shallow to one like Newton’s Crater, which is over 23,800 feet deep. These students of the moon had also measured the heights of its mountains and named them- some peaks being as high as Everest. They had plotted all of the rays and rills as well as the fourteen “peas.”

“We hope to see these things in person,” Tom observed as he left the astronomer.

After Tom and Bud had had a brief nap and breakfast, they were ready to take off on the return trip to earth.

“I’ll send along an armed rocket for escort,” Ken insisted.

There was no attack, however, and the boys landed on Fearing without incident. Tom immediately notified his home and reassured his family.

“Oh, Tom, I’m so relieved that you’re safe,” Mrs. Swift sighed over the phone. “George Billing reported that you’d been rescued, but we were still worried.”

“You can relax, Mother.” Tom laughed. “Bud and I are both fine. See you this evening.”

A few minutes after landing at Enterprises the boys were in Mr. Swift’s big double office. He was still seriously concerned about the attack.

“If our enemies will go this far, there may be worse trouble ahead,” he pointed out.

“Let’s talk to Ames,” Tom suggested. He phoned the security office and asked Ames to come over at once.

“Right, skipper,” Ames replied. “And I have some important news for you.”

When the security chief arrived, he told the Swifts that he believed it was a Brungarian spaceship which had attacked Tom and Bud.

Tom nodded. “How about that news you mentioned?”

Ames said that his men had learned the identity of the prisoner Tom had captured during the raid on Fearing. “His name is Nijin Devsky,” Ames revealed. “He’s a known spy and was working as a servant for Otto Jantree!”

The listeners were startled.

“Then why doesn’t the FBI arrest Jantree?” Bud demanded.

“Not enough proof yet. Anyway, we have a better plan!”

CHAPTER IX

A POWERFUL TAKE-OFF

“LET’S HEAR your plan,” Tom said eagerly.

Ames explained that a cousin of Jantree’s had been caught carrying top-secret United States government papers. “Luckily we have an agent who closely resembles this man. Name’s Josef Warturo. He was born in Brungaria and speaks the language like a native, but now he’s an American counterspy. We’ve planted him as Jantree’s new servant.”

“How’d you arrange that?” Bud asked, amazed.

Ames grinned. “Took a bit of finagling, but Jantree accepted him. This’ll give us an inside line on what they’re up to.”

“Good work, Harlan!” Tom congratulated him. “Let’s hope your plan pays off.”

The next few days were busy ones. Several reports came through from Josef Warturo, indicating that he had succeeded in gaining Jantree’s confidence. But so far he had learned nothing significant.

Meanwhile, Tom’s monstrous interplanetary ship was nearing completion on Fearing Island. The two boys flew over one afternoon to inspect it.

“Man, it’s out of this world!” Bud gasped.

“That’s where she’s headed.” Tom grinned. “Hank says she’ll be ready for the first test flight tomorrow. Still game to come along?”

“Try and stop me!” Bud said enthusiastically. “How about a guided tour right now?”

“Okay, let’s go aboard.”

More than ever the gleaming spaceship looked like a huge gyroscope, poised on four hydraulic landing struts. At the center was the cube-shaped cabin or fuselage. Auxiliary rocket tubes projected below.

“Those polished cups mounted on the cabin are the energy-conversion units,” Tom pointed out. “And as I told you, the repelatron radiators run on these outside tracks. Incidentally, a special meteor-repelling

machine will be turned on all the time.”

“Thank goodness for that,” said Bud. “I’d hate to have a meteor hit us. Say, what’s this? Looks like a front porch” he added, as they climbed up to the cabin.

“Landing platform for auxiliary ships,” Tom explained.

“You mean this ship will carry smaller craft?” said Bud.

“That’s right. They’ll be berthed in here.” Entering through an air lock, he showed Bud a large hangar compartment. “Then there’s a machine shop for emergency repairs on each side, with laboratories above them.”

They walked through the starboard shop, equipped with lathes, welders, and other tools, and entered a small elevator. Tom pressed a button and they zoomed upward.

“This is the top deck,” Tom said as they stepped out. They were in a small compartment containing banks of electronic computing gear. “These computers will feed our navigation equipment and also compute the tapes for our automatic pilot when we operate on auxiliary rocket power,” he explained.

“This ship is sure loaded with brains!” Bud grinned. “Not counting me.”

Next came the ship’s control room where the pumps, gauges, and air-conditioning equipment were installed. When they entered the flight compartment, Bud’s eyes popped when he saw the rows of gleaming dials, levers, and switches.

“What a setup!”

Bucket seats for pilot and copilot stood in front of twin quartz-glass view panes. At the left was a huge fluorescent screen and at the right a multi-dial panel labeled with names of the planets and other heavenly bodies.

“I’ll check you out on all these controls tomorrow, just before we take her up,” Tom said. “Right now, let’s see the other sections.”

Beyond the flight compartment was another small room full of mysterious dials and electronic gear. “This is the radiation-control room,” Tom explained, “for monitoring the gamma and cosmic radiation received by the ship. And this next door leads to the power room, where we handle the electrical output of our solar-conversion units.”

Gliding down in another small elevator on the ship’s portside, Tom pointed out the rooms which honeycombed the lower level. There were bunk-rooms, living quarters, and galley. On the bottom deck were air and water storage and purification plants, auxiliary engine room, and a compartment housing the repelatron gear.

“My head’s spinning, genius boy!” Bud said. “With this layout, we could fly to another galaxy!”

“I’ll be satisfied if we make the moon.” Tom chuckled, adding, “If we do, we’ll have sure proof of the whole trip. I have a tape recorder aboard.”

Bud nodded approval, then asked, “Any more word from your space friends?”

“Not yet,” Tom said. “But a message may come any time, so let’s hope this space crate passes her first test.”

The boys bunked on the island that night. Both were so eager to try out Tom’s newest invention that they got little sleep. The next morning they drove in a jeep to the special launching area laid out for the spaceship. Mechanics were putting the final touches on the glistening monster, and an air of subdued excitement pervaded the base.

“All set to go, Hank?” Tom asked the husky blond engineer. Groups of watching personnel stood around, tense and wide-eyed.

“You can take off in five minutes, skipper,” Hank reported.

The boys climbed up the accommodation ladder and entered the ship’s air lock. When they reached the flight compartment, a puzzled look swept over Bud’s face. “Hey, you’ve forgotten something, Tom!” he said.

“What’s that?”

“The acceleration cots.”

Tom chuckled. “On this ship we don’t need them.”

“What?” Bud was baffled.

“In a rocket ship you get tremendous acceleration from short blasts of power,” Tom explained. “But with our energy-conversion units we can get a steady supply of power from the sun. So we can accelerate gradually to high speed, without taking so many G’s all at once.”

“Now you’re talking!” Bud said enthusiastically. “No more getting the daylight’s crushed out of us!”

Tom nodded. “It simplifies a lot of things. For instance, we won’t need automatic tape control at blast-off, because we can adjust our steering in fine amounts any time we want to.”

“Terrific!” Bud said. “Now, how about briefing me on all these control gadgets?”

Tom pointed to a row of indicator lights and push buttons above the pilot’s windows. “This is the element selector panel,” he said. “As you can see, it lists all the ninety-two natural elements.”

“Just push the button for whatever element you want to repel?” Bud asked.

“Right. And these dial switches below let you select the exact isotope. They work through this interplugging board.”

“Pretty neat! And this is the astro-gyrocompass, eh?” Bud pointed to an instrument on the central control board.

“Yes-for steering operations after the ship is underway,” Tom told him. “And these big twin dials are the power indicators.”

He explained the various levers for operating the directional radiators and auxiliary rockets. Then Bud asked about the huge fluorescent screen on the left.

“It’s the space position finder,” Tom replied. “Sort of a space radarscope.”

He flicked a small toggle switch. As the screen lighted up with a hum, he tuned several knobs. Instantly the lower half of the screen was painted with a reddish phosphorescent glow.

“It’ll look like this whenever we’ve landed,” Tom explained. “That red area represents the earth. In flight, we’ll see the planets or other objects as round dots, and the color will show us their height above or below our orbital plane.”

“How about that panel over on the right?” Bud asked curiously. “The one with all the astro-whoozical names on it.”

Tom walked to the right-hand control board, grinning. “As you can see, these dials are labeled for the earth, moon, sun, Mars, Venus, and so on. They tell the distance and relative angle of each body from our spaceship. In other words, they give us an exact reading of the picture shown on the screen.”

“But these meters calibrated for thrust-where do they come in?”

“They tell us how much power we have to feed to the radiators for any desired acceleration,” Tom explained. A warning buzzer sounded in the compartment. “There’s Hank giving us the green light. Let’s take ‘er up, Bud!”

Quickly the boys strapped themselves into their seats.

“Do we use the auxiliary rockets this time?” Bud asked.

“Just the repelatron,” Tom replied. “If they give us enough power for take-off, we’ll know they can deliver enough thrust for space travel.”

Outside the view windows, Hank Sterling held up his thumb and forefinger circled together. Watchers and ground crew retreated from the launching area.

Tom switched on the repelatron detector and analyzer circuits. As lights lit up on the element selector panel, his hands flew busily between the isotope switches and interplugging board. Then he swiveled the three radiators into position for ground thrust and fed power to the repelatrons.

With an audible whoo-o-osh, the spaceship shot upward like a ricocheting bullet!

“Leapin’ rockets!” Bud gulped. The boys had been jarred almost senseless by the shock of takeoff!

Tom was aghast. “Something’s gone haywire!” he cried out. “Take-off should be smooth.”

As Tom maneuvered the ship hastily, Billing’s voice shrieked over the radio, “Skipper, come back! But land gently!”

The boys shot startled glances at each other. What was wrong?

The answer was instantly revealed as Tom brought the ship down and climbed out. The buildings near

the launching area looked as though they had just undergone a blitz attack! Roofs and walls were crumpled, windows shattered, and the ground nearby strewn with bricks and hunks of concrete.

“Good night!” Tom gasped.

Stunned crewmen stood gaping at the damage.

“What happened?” Bud demanded.

“That flying powerhouse you fellows took off in,” Hank replied, “practically flattened everything in sight!”

Shocked by the disaster, Tom said dolefully, “No doubt about the cause. When we rose, the buildings took an even stronger thrust from the repelatron than the ground did, because they were closer.”

“But weren’t the repelatron tuned to repel the elements in the ground?” Bud asked.

Tom nodded unhappily. “Right, but those same elements are present in the building materials and window glass, too—for instance, silicone, aluminum, iron, and so on.”

“Any way to correct it?” Hank asked.

The young inventor shrugged. “I’ll have to redesign the radiators, so they’ll direct the repulsion wave downward in a much narrower beam. But it’ll take time and we may not have much time left. Anyone hurt, Hank?”

“I think not. All the men were outside watching the take-off when the walls started to crumble. We’ll check, though.”

Fortunately, the only injuries were minor cuts and bruises from falling fragments. Hank promptly organized a work crew to clear up the debris.

Meanwhile, Tom gave orders for the repelatron radiators to be removed from the ship. As soon as they were loaded aboard a cargo jet, he and Bud took off for Shopton in it.

At Enterprises the young inventor went to work in his private laboratory, determined to correct the radiator design as quickly as possible.

By nightfall, he had worked out an improved design and turned it over to Art Wiltessa for immediate production. Yawning, Tom leaned back in his chair and stretched his weary muscles. Suddenly a voice behind him said:

“How about a nice juicy steak to warm up your innards, pardner?”

Looking around, Tom saw Chow Winkler waddling into the laboratory.

“Sounds mighty tempting, Chow, but I still have some things to attend to.”

“Now don’t argue, son,” the old Westerner protested. “Besides, I got a mystery for you to clear up.”

“A mystery?” Tom frowned.

“I sure have. First off I thought Bud was playin* another one o’ his jokes on me. But it happened again while you fellers were over on Fearin’ Island. So I figure somethin’ mighty queer is goin’ on.”

“What do you mean, Chow?” Tom asked.

“It’s my pots an’ pans-they talk to me!”

CHAPTER X

RADIO LEAK

TOM could hardly believe Chow’s statement. “Are you kidding, Chow?”

The stout old cook looked indignant.

“Brand my coyote stew, o’ course I ain’t kiddin’. I tell you my pots an’ pans have been spoutin’ all kinds o’ funny lingo. Had me thinkin’ I was goin’ plumb loco for a while!”

Tom grinned sympathetically. “Okay, I believe you, Chow. But what did they say?”

“Well, there was one voice sayin’ ‘Rocket overdue at space station-Horton will conduct search.’ Then there was some gibble-gibble about a cosmic radiator report from Wright Field Aeromedical Lab. And this mornin’ my big stew kettle starts reeling off some stuff about lox-zinc diethyl an’ solid fuel propellants or some such foolishness.”

“Foolishness!” Tom had bolted up out of his chair. “Chow, do you realize what all that stuff was?”

“Shucks, no. I couldn’t make head or tail out of it.”

“Those were top-secret radio messages coming into Swift Enterprises!” Tom asserted.

The bald-headed chef was thunderstruck. “R-r-radio mes-sages?” Chow stuttered. “But I didn’t hear this stuff over the radio. I told you my pots an’ pans was speakin’ it!”

“That’s just it-they must have been functioning as loud-speakers,” Tom said urgently. “Come on down to the galley and show me where all this happened.”

“Okey-doke, boss!”

Waddling along as fast as his paunch and high-heeled cowboy boots would permit, Chow led the way to his private white-tiled kitchen.

“They was sittin’ right there, Tom,” he said, pointing to his electronic range.

“No wonder!” Tom made a quick examination of the stove and the pans. “The electronic circuits here in

your range must have picked up the output signal from our receiving station by inductive resonance. Then the pans acted as detectors and broadcast the messages just as if they were coming through a speaker.”

Chow stared at the young inventor, open-mouthed. “Brand my skillet, I don’t savvy a word you’re sayin’, but it sure sounds bad!”

“It could be very bad,” Tom replied. “If your stove could pick up those secret messages, our enemies might do the same thing!”

Dashing to the communications building, he reported the trouble to the radio crew. “The stuff Chow heard was already decoded, so the radiation must have been coming either from our decoder output or the audio output amplifier,” Tom said.

All messages sent or received by Swift Enterprises were transmitted in scrambled form. Incoming messages were decoded automatically, then printed on Tom’s radityper, recorded on tape, or audioed directly over speaker or headphones.

“Dave Brogard installed a new decoder system for us two days ago,” one of the radiomen reported. “It may have some bugs in it.”

On Tom’s orders, he phoned Dave, one of the Swifts’ electrical engineers, to rush to the plant immediately. Meanwhile, Tom himself began to check the whole receiving system.

“There’s your trouble, Dave,” he announced twenty minutes later. “The decoder output is overdriving-putting out entirely too much voltage.”

“Sure am sorry, skipper,” Brogard replied, somewhat red-faced. “I’ll fix it right away.”

Tom reassured him, but inwardly he was worried that his enemies might have picked up some valuable information. But he was thankful that through Chow he had discovered what was going on!

“Good old Chow!” he thought. “This rates a reward.”

The next morning, when Tom returned to the plant, he delivered a package, gift wrapped, to Chow’s galley. “A little present to you for helping me discover that radio leak,” he told the surprised cook.

Chow opened the package and took out a scarlet Western-style shirt embroidered with gold threads. “Great jumpin’ Jehoshaphat!” the old chef gasped. “If that ain’t the most bee-yoo-tiful thing I ever laid eyes on!”

Gaudy shirts were Chow’s great weakness. With trembling ringers, he tried on his new prize. Then the stout, grizzled old cowpoke eyed the result, using a polished skillet as a mirror and preening himself like a fat peacock.

“By jingo, I could pass for a movie cowboy in this getup, if I do say so myself!” Chow declared. “Tom, I don’t know how to thank you. I’m plumb touched by your thoughtfulness.”

“Forget it, Chow.”

In a company jeep Tom drove to Enterprises main building. Outside the Swifts’ big double office, Miss Trent, their secretary, said, “Mr. Ames asked you to call him as soon as you came in.”

“Thanks. I’ll phone him right away.” Going into his office, Tom dialed his private wire to the security department. “What’s up, Harlan?” he asked.

“We’ve had another report from Josef Warturo. Important this time.”

“Yes?” Tom prompted.

“Warturo says Jantree got a secret message from the Brungarians yesterday. It stated that their space expedition is set to take off as soon as our space friends launch their animal rocket!”

Tom was stunned. “That’s bad-very bad,” he said. “Did Warturo find out what they plan to do with the rocket if they intercept it?”

“No word on that. But you can bet they’ll make a big propaganda victory out of it.”

“I’m afraid you’re right, Harlan,” Tom gritted. “Thanks for the warning.”

After hanging up, Tom checked with Art Wiltessa and found that the new repelatron radiators would be ready by noon. “Nice going, Art,” the young inventor said. “Have them stowed aboard a jet as soon as they’re ready. I’ll fly them over to Fearing myself.”

For the next hour or so, Tom busied himself with administrative details, checking lists of supplies and equipment needed for the coming space voyage. Then he made a phone call to the experimental division of a drug company which maintained laboratories near Shopton. As he hung up, Bud walked into the office.

“Glad you’re here,” Tom said. “Want to try another test flight in the spaceship?”

“Sure thing. How soon?”

“We’ll leave for Fearing right after lunch. Which reminds me, why don’t we take Phyl and Sandy along? Maybe it will give us a chance to get back in their good graces.” Tom chuckled.

Bud was enthusiastic, so Tom phoned the two girls at once and invited them to be at the plant by noon. Chow served them a tasty lunch in the small cozy dining room just off Tom’s private lab. Thirty-five minutes later the foursome took off by jet for Fearing Island.

“Are you sure you won’t blast the whole rocket base apart this time?” Sandy asked with a mischievous twinkle in her blue eyes.

“Now stop teasing,” Phyl reproved her. “It isn’t often they ask us out on a date, so don’t spoil it.”

“Thanks, Phyl,” Tom said, grinning.

Soon Fearing Island came into view beneath the clouds. Tom radioed the tower to neutralize the drone planes, and then circled in for a landing.

From the airfield they drove by jeep to the launching area. The girls gasped in awe and their eyes grew wider at their first sight of the gigantic space craft.

“What a fantastic shape it has!” Sandy exclaimed, staring, then remarked doubtfully, “It isn’t exactly streamlined, is it?”

“Doesn’t have to be for traveling through the space void,” Tom explained. “As for the earth’s atmosphere, we can get clear of that easily enough with our repelatrns and auxiliary rocket power.”

“We could even get through a brick wall,” Bud said jokingly.

Sandy looked around at the buildings near the field which still showed signs of damage from Tom’s first take-off. “That I can believe!”

Tom and Bud showed the girls through the interior of the spaceship, then they all took their places in the flight compartment.

“Take ‘er away, skipper!” Hank radioed. “And good luck!” This time the ground crew had retired to concrete bunkers at a safe distance.

“Here we go!” Tom told his companions.

The girls watched in fascination as the element selector lights came on and Tom manipulated the controls. As he cautiously opened the power switches, the ship rose like a huge majestic visitor from another planet.

The ground fell away below them. Soon the whole of Fearing Island was no more than a speck on the waters lapping the Atlantic coast. Higher and higher they zoomed till the earth’s curvature became noticeable. On the eastern rim they could make out the shores of Europe, clouded by drifting blankets of mist.

“My goodness,” Phyl murmured in an awestruck voice, “I never in my life imagined I’d see anything like this!”

“Good way to learn geography, eh?” Bud quipped. But he too was impressed by the ease and smoothness of the ship’s action. “Tom, this has rocket flight beat to a frazzle!”

Tom smiled, pleased with the performance of his new invention. He was busy at the controls, always trying to produce the maximum lift with the least amount of power consumption. As the ship got above the atmosphere, Tom reduced the force on iron and aluminum and increased it on nitrogen and oxygen; he also adjusted the effect on hydrogen.

“Let’s try a little globe-trotting,” he said, as he swiveled the radiators for forward motion.

Like a circling comet, they glided eastward over the face of Europe, then down across Africa, and back into full view of the continents of North and South America. By the time Tom began the return descent to Fearing, both Sandy and Phyl were breathless with excitement.

“It’s been wonderful!” Phyl told him as they landed smoothly at the rocket base.

“Brother dear, I always knew you were a genius,” Sandy added with a hug, “but this proves it!”

Hank Sterling and an excited mob of crewmen rushed out to congratulate Tom as he and the others disembarked. His radio reports had already indicated that the test had proven successful.

“What’s the verdict?” Hank asked the young inventor.

“Even better than I’d hoped,” Tom replied. He described the shakedown flight briefly, and grinned as the men crowded around to slap him on the back and shake hands. Bud, Phyl, and Sandy all beamed with reflected pride at Tom’s latest achievement.

“How about christening your new ship?” Sandy asked as they strolled away from the space craft.

“Tomorrow,” Tom promised. “But the name’s still a secret.”

Early the next morning Mr. and Mrs. Swift flew over to Fearing Island, accompanied by Uncle Ned and Mrs. Newton. A small ceremony had been planned. This time, not only Tom, Bud, and the girls went aboard, but also Mr. Swift, Uncle Ned, and Hank Sterling. They took their places and adjusted their seat belts.

“Ready for take-off!” Tom’s voice on the radio was relayed over the loud-speaker.

The count-down began. Blushing and a trifle nervous, his mother and Mrs. Newton stepped forward on the special platform which had been erected for the occasion. Each held a bottle wrapped in silver foil.

As the count reached one, Mrs. Swift said clearly, “I christen thee Challenger!” Together the two women swung their bottles against the spaceship’s outer frame. Mrs. Swift’s cracked in half.

But Mrs. Newton’s exploded, splintering into a thousand pieces and showering her with glass 1

CHAPTER XI

SURPRISE MASCOT

WITH a gasp of dismay, Mrs. Newton staggered back, holding her face. Blood oozed from her fingers and neck!

“She’s hurt!” Mrs. Swift cried out, and rushed to her injured friend.

Fortunately, she herself had escaped most of the flying glass. She supported Mrs. Newton as the shocked crewmen scrambled up on the platform to assist.

“We’ll take her to the infirmary at once,” Mrs. Swift directed, hoping that Mrs. Newton’s eyes had not been affected.

Meanwhile, Tom and his passengers were soaring high above the island, unaware of the accident. As the spaceship dwindled into the blue, an ambulance came rushing to the scene of the accident. Mrs. Newton was helped aboard with Mrs. Swift comforting her.

The ambulance sped back to the infirmary. Here, Dr. Simpson made an examination and cleaned and dressed the patient's cuts. Then she was put to bed.

As the injured woman sank into a restful slumber, Mrs. Swift turned to the doctor. "How bad are the cuts?" she asked anxiously. "Will she -will she be all right?"

Doc Simpson nodded. "I'm sure they'll heal without scars. Fortunately, none of the splinters went into Mrs. Newton's eyes. What was in the bottle?"

Mrs. Swift looked surprised. "It was supposed to be water. Why?"

At that moment a white-jacketed chemist walked in from the laboratory, holding a fragment of glass. "We're running some tests on the stuff," he reported, "but it certainly wasn't water."

Doc Simpson took the piece of glass and sniffed the traces of liquid which still clung to it. "Definitely not," he agreed. "Any idea what it might be?"

"Not sure yet, but I suspect it was some kind of explosive mixture containing an organic acid," the chemist replied.

Mrs. Swift was stunned. Had one of Tom Sr.'s or Tom Jr.'s enemies done this? Her dismay increased when the laboratory reports proved that the chemist's theory was correct.

Later, George Billing called her at the infirmary. "We've traced that liquid, Mrs. Swift," he reported. "The whole thing was an unfortunate mistake by a young stockroom helper. He got his orders mixed and filled one of the bottles with the wrong liquid. We'll dismiss him, of course." In spite of her concern over her friend's injuries, Mrs. Swift said, "Please don't do that. I'm sure the Newtons wouldn't wish it, nor my husband, nor Tom. The boy must feel terrible about what happened. That is punishment enough."

"You're right-he's all broken up," Billing said. "He's learned his lesson, and he'll be mighty grateful if we let him stay on."

"Then do!" Mrs. Swift urged.

Meanwhile, Tom's passengers were thrilled as they cruised high above the earth's atmosphere. Continents and oceans lay spread out below, while myriads of stars shone like steely points of light in the black space void all around them.

Mr. Newton put his hand on Tom's shoulders as the youth sat in the pilot's seat, manipulating the controls. "Tom, it's hard to say which one of your inventions is the greatest," he murmured, "but I honestly believe this outranks all the rest!"

"Thanks, Uncle Ned," Tom said. He deeply valued the older man's praise, remembering how many thrilling adventures his father and Uncle Ned had shared, and the high achievements they had produced in the days when they had often faced heavy odds.

Mr. Swift was particularly interested in the operation of the element selectors and isotope switches. "Any bugs show up yet, son, in your repelatron system?" he asked.

"No, Dad. With the new radiators installed, everything seems to be working perfectly," Tom replied. "How about trying the controls yourself?"

Mr. Swift took over eagerly. With the practiced hand of an ace pilot, he was soon guiding the ship smoothly through all sorts of maneuvers.

“And now for a surprise,” Tom said, his face breaking into a wide smile. “Meet Nicky.” He opened a small compartment and took out a rhesus monkey, half asleep.

“Oh, isn’t he cute!” Sandy exclaimed, as everyone gathered around, grinning, to inspect the little animal. The girls were delighted.

“He’s our ship’s new mascot,” Tom explained. “I’m hoping he’ll bring us good luck in the race to the moon. Also, besides being a mascot, his reactions in space may reveal valuable scientific data zoologically.”

“Let me hold him,” Phyl begged.

As Tom started to hand him over, the monkey suddenly came wide awake. He sprang out of Tom’s grasp and landed on Bud’s shoulder.

“Hey! He likes me!” the copilot cried. But a second later, Bud let out a yelp as the monkey twisted his ear and started to climb over his head.

Before Bud could pull him off, the tiny creature squirmed free and leaped to the top of the space-position-finder screen. When Uncle Ned tried to coax him down, he gave another jump, scrambled across several heads and shoulders, and shinned up a stanchion!

A few moments later the cabin was a scene of wild confusion. Darting from spot to spot, the monkey finally landed on Mr. Swift’s lap. The scientist let go the controls to capture him, only to have Nicky clamber up the control panel, throwing levers and jerking switches right and left!

The ship veered and plunged, with the passengers grabbing for any support they could reach. As Mr. Swift brought the ship under control, everyone lunged desperately for the monkey.

But Nicky seemed determined not to be captured! He darted toward the radiation-control room. Hank Sterling went after him, lost his balance, and almost slammed head-on into a bank of gauge dials.

Finally, at the risk of being bitten, Tom managed to capture his new pet. As he tried to soothe him, Tom could feel the little animal’s heart beating wildly.

“Good night! What’s wrong with him?” gasped Sandy, breathless from all the excitement.

“I got him from a laboratory,” Tom explained. “They were using him for some experiments. I imagine he must be feeling the aftereffects of some drug they tried out on him.”

“Poor little thing,” Phyl said sympathetically. She tried to pet him, but the monkey huddled down in Tom’s arms as though he did not want to be touched. He soon became completely docile and perched on Tom’s shoulder.

When the spaceship landed, the young inventor decided to stay aboard and check charts automatically produced, recording some of the characteristics of hydraulic systems. “Go ahead, everybody,” he told the others. “I’ll be with you in ten minutes.”

Phyl took Nicky, and the passengers trooped off the ship. The girls were fascinated with the little monkey.

“I’m going to make a space suit for him,” Sandy declared, “so he won’t have to stay inside the ship all the time.”

Bud waited around the launching area, chatting with Hank Sterling and other crewmen. Half an hour went by. Still Tom did not emerge from the ship.

“I’ll bet he’s redesigning the whole crate,” Bud thought with a chuckle. “I’d better go haul him out before he starts inventing a new ship!”

He climbed the accommodation ladder and went aboard. Tom was not in the flight compartment. The doors had all been latched by hydraulic control, after a final sight-seeing tour by the passengers.

Bud went down in the port elevator to the lower deck, thinking Tom might be tinkering with the ship’s drive system in the repelatron gear room. But the young inventor was nowhere in sight.

Puzzled, Bud switched on the intercom system and called over the mike, “Hey, genius boy! Where are you hiding?” There was no reply.

By this time, Bud was beginning to worry. He unlatched the door of each room and looked inside, working his way upward from the bottom deck. Every compartment was empty. When he tried the computer room, its door was tightly latched and refused to budge.

“Hey, Tom! Are you in there?”

Again there was no answer. Bud hammered on the door and tried desperately to free the latch. A pang of fear shot through him.

Was Tom a prisoner inside? And if so, was he still alive in the airtight compartment?

CHAPTER XII

A STARTLING MESSAGE

BUD tried to think coolly, as his mind raced over the situation. Tom must be a prisoner in his own spaceship!

The air-conditioning system in each compartment was triggered by the opening of the door latch, Bud knew. When the room was closed again, the blower was automatically turned off, unless an occupant remaining inside pressed a manual switch. This arrangement was designed to conserve the ship’s oxygen supply.

Bud held his ear to the door. He could hear no whir of the blower inside.

“There’s bound to be a master switch somewhere for operating all the blowers on the ship,” he reasoned, “but where is it?”

There was no time to search. Bud struggled frantically with the hydraulic door-latch control. It seemed to be hopelessly jammed. In desperation, he grabbed a heavy wrench from the tool locker and pounded the latch handle. It loosened and finally came free!

Bud ripped the door open and plunged inside, gasping. The air in the compartment was heavy and stale. Tom lay sprawled on the deck!

“Tom!” Bud cried in panic. “Tom, are you all right?”

He raised the young inventor’s head. Tom’s face was pale and glistened with perspiration. As Bud slapped his cheeks and chafed his wrists, Tom’s eyes finally blinked open.

Bud darted back to the first-aid cabinet in the flight compartment and returned with a bottle of smelling salts. “Here, sniff some of this!”

A few moments later Tom was able to struggle to his feet with his friend’s assistance.

“Whew! Thank heavens you’re all right, Tom. You really gave me a scare. What happened?”

“I was checking the hydraulic system,” Tom explained. “I noticed the latch control on this door wasn’t working right, so I started tinkering with it from this side. But, like a dope, I forgot to switch on the blower after I closed the door.”

Bud shook his head, grinning wryly. “Professor, you really are getting absent-minded!”

In spite of Tom’s protests, Bud insisted upon driving him to the infirmary. Doc Simpson checked the youth’s pulse and general condition, and advised him to lie down for an hour or so. Tom fumed, but obeyed orders.

When his rest period was over, Mrs. Swift came into the room, wheeling a lunch tray. Her husband and Sandy followed.

“Hey, what is this—a delegation?” Tom exclaimed in surprise. “I thought you folks were all back in Shopton by now!”

“We didn’t want to disturb you while you were resting.” Mrs. Swift smiled. In a more serious tone, she said, “Besides, there’s another invalid in the infirmary.”

Tom was shocked when he heard about Mrs. Newton’s unfortunate accident. “I’m certainly sorry. If I’d known, I’d have brought the spaceship back to earth immediately. Will she be all right?”

“Yes. Dr. Simpson says the cuts will heal soon without scars,” his mother reassured him. “Uncle Ned and Phyl are with her now. She’s awake and feeling fine.”

As Tom ate with a hearty appetite, Sandy went to get the new mascot, Nicky, then she laughingly described some of his antics. Tom fed him a few morsels off the tray as Mr. and Mrs. Swift looked on,

smiling.

“Your new spaceship is a tremendous achievement, son,” Mrs. Swift said. “It may help America win victory in the race to the moon.”

“I hope so, Mother,” the young inventor replied soberly. “And I’m hoping it will let us reach the animal rocket first, too, when our space friends launch it.”

Mr. Swift spoke up. “I’m beginning to wonder why we haven’t heard from them,” he said with a thoughtful frown.

“Let’s hope word comes soon,” Tom replied.

After he finished his meal, Tom slipped into his loafers and went to see Mrs. Newton in her room down the hall. He was glad to find her in good spirits and ready to leave the infirmary.

Both families prepared to fly back to Shopton, with the exception of Tom. He decided to remain on the island in order to complete his study of the chart recordings made in the test flight.

Bud offered to help. With a wise nod of his head, he remarked, “I want to be around to turn on that blower if you get on the wrong side of the door!”

After the faulty latch control was repaired, the boys went back to check the hydraulic charts. Presently Tom pronounced himself satisfied with the findings and he and Bud made their way out through the ship’s air lock. They were just climbing down the accommodation ladder when a voice blared out over the loud-speaker:

“Tom Swift, please call the main switchboard immediately!”

Tom hurried to the phone in the nearest bunker. The operator informed him that someone was calling on the private line from Shopton. It turned out to be Harlan Ames.

“Just received another tip from Warturo,” the security chief reported. “He told us to watch out for a startling message.”

“A startling message?” Tom was puzzled. “Didn’t he say what kind of message?”

“No, it was a hurried call,” Ames replied. “Apparently he had no time to say more-or perhaps he doesn’t know himself. But I thought I’d better alert you.”

“Thanks, Harlan,” Tom said. “Looks as if that counterspy plan of yours is paying off!”

As soon as Ames had hung up, Tom issued orders by phone to all Swift communications personnel, both at Enterprises and the rocket base, to be on constant alert. Every type of receiver was to be manned on a twenty-four-hour basis.

Bud whistled when he heard the news. “What do you suppose it means?”

“Haven’t the foggiest idea,” Tom admitted.

Acting on a hunch, he hurried over to the tracking center. His hunch proved correct. Within twenty

minutes after the two boys arrived, the signal bell rang on the electronic brain. As a stream of weird symbols flashed on the space oscilloscope, the brain promptly reeled off the translation:

CALLING SWIFTS' SPACE FRIENDS. DO NOT LAUNCH ROCKET CONTAINING SICK ANIMALS INTO ORBIT AROUND EARTH AND MOON. AIM ROCKET TO ORBIT AROUND MOON ONLY.

The message ended with no clue to the sender.

Bud was thunderstruck. "Hey, what goes on here?" he asked Tom. "If your space friends pick up that message, they'll think it came from you or your father!"

Tom nodded grimly. "I imagine that's just what the sender wants them to think."

"You figure the Brungarians beamed it?"

"Who else?" Tom replied with a shrug. "That warning call from Warturo is a pretty clear indication of who's responsible. Besides, with the duplicate brain in their possession, the Brungarians probably are the only people on earth outside the Swift organization who could fake such a message."

"The sneaks!" Bud exploded. "But why did they do it? What's their game?"

"No telling-just yet, anyhow. Maybe they figure the moon orbit will be safer, since it won't be so easy for observers on earth to watch what they're up to. It'll be a simpler orbit, too, for intercepting the rocket. They may even be planning to crash-land the rocket on the moon."

Tom's face hardened as he paced back and forth. "Bud, we mustn't let this happen. We must win that race to the moon!"

Bud stared in angry puzzlement. "Do you mean you're going to let that message stand-that you're not going to countermand the orders they just sent?"

Tom plowed his fingers through his hair with a harried gesture. "I'm afraid to, Bud. I'm afraid it might confuse our space friends to the point where they wouldn't know what messages to trust. They might even give up the whole project and we'd lose all chance of helping them!"

"Mm, I see what you mean," Bud reflected.

"One thing we can do, though," Tom went on. "I'll ask Dad to phone Washington and lodge a protest against the Brungarians through the State Department."

When Mr. Swift heard this, he laid a hand on Tom's shoulder. "The Brungarian Embassy would deny all knowledge of the matter and refuse to accept the protest. They'd label it ridiculous."

Tom's eyes flashed angrily. "They'd have plenty to say if we ever pulled such a trick on them as stealing a highly secret electronic brain!"

Mr. Swift nodded understandingly. "I know, son, it's pretty maddening. But there's no point in letting it upset us. If we do, our enemies have scored another advantage."

"You're right, Dad." Tom forced a wry grin. "I just wish I could take these things as calmly as you do."

He remained upset. When he went to bed, Tom tossed restlessly for hours before he finally fell asleep.

Somewhat later he was awakened by a slight noise. Opening his eyes, Tom saw a stealthy figure, silhouetted in the moonlight, climbing in through his open bedroom window!

CHAPTER XIII

THE MIDNIGHT VISITOR

SCARCELY breathing, Tom closed his eyes to mere slits. He waited until the intruder was well inside the room. Then, in a flash, he leaped out of bed and grabbed the prowler in a tight arm-lock!

Taken by surprise, the man floundered wildly. Grappling and swinging, he managed to butt Tom in the stomach and they tumbled to the floor in a heap.

As Tom tightened his grip, the man hissed, "I'm Warturo! But don't get up yet or turn on the light. I'm being watched!"

Tom was amazed. He did not know whether to believe his midnight visitor or not. Was it just a trick?

"It's the truth!" the man gasped. "You've got to believe me!"

Tom stopped struggling and loosened his wrestling hold just enough to let the man speak more freely. "All right, keep talking," he said grimly.

"I think I'm suspected," the man explained, "because someone planted a secret radio transmitter in the midget tape recorder I have with me. I found the transmitter turned on. But," he added quickly, "I turned it off."

"But why come here if you're being watched?" Tom demanded.

"Jantree ordered me to," was the whispered reply. "I'm supposed to threaten you with a gun and force some secrets out of you. Then I'm to hold this under your nose"-he managed to extract a small vial from his pocket-"and put you to sleep."

Tom's heart pounded nervously, his thoughts racing. Was this a madman, a spy, a counterspy, or what? Could he be the real Josef Warturo?

Stalling for time, and still suspicious, Tom asked, "How did you get past our alarm system?"

The entire Swift house and grounds were surrounded by a controlled magnetic field. Any person entering the field automatically touched off an alarm inside the house, unless he carried a deactivator mechanism.

"Ames gave me one of your special wrist watches," the man explained. The watches contained tiny units

which neutralized the alarm system. “But Jantree thinks I stole this watch in order to get through the warning zone without being caught.”

Still Tom was not completely convinced. There was too much at stake to risk falling victim to a clever impostor. “What’s today’s password?” he demanded.

“Cherry tree,” the man answered promptly. He paused a moment, then added, “Mine needs pruning.”

Tom let out a faint sigh of relief. A spy might have ferreted out the Swifts’ current password, but only Josef Warturo would have known enough to identify himself with the extra remark.

“Okay,” Tom murmured, releasing the other from his wiry grip. “Sorry if I handled you a bit roughly.”

Warturo heaved himself up on one elbow and mopped his forehead. “I don’t blame you,” he muttered. “In this game, it doesn’t pay to take chances!”

“Any new developments?” Tom asked.

“Plenty,” Warturo replied. “The Brungarians are planning to make a big propaganda coup by capturing the rocket and bringing it to their country. Naturally they’re not concerned with helping your space friends.”

“I figured as much,” Tom gritted.

“After they get all the pictures and data they want,” Warturo went on, “they won’t bother finding any cure for the diseased animals. But listen to this. They’re planning to use the disease germs for experiments in their germ warfare program!”

Tom’s throat tightened as he realized the deadly weapon this might prove to be in an enemy’s hands. “Do you know what their experiments will be, or how they expect to use the germs?”

Warturo shook his head. “Not yet. So far that’s all I’ve been able to find out.” He drew out a tiny pocket transmitter. “I don’t dare leave this off any longer. We’ll stand up in plain sight of the window. I’ll be covering you with my gun, as though I’ve just managed to subdue you after a struggle. Then I’ll start pumping you for secret information. Make your answers sound good.”

“Okay. Do you know anything about science?”

“Very little,” Warturo answered.

“I’m sure,” said Tom, “that the reason you were sent here was to test your loyalty to Jantree, not to get any secrets from me. The Brungarians would know, even under the threat of death, I wouldn’t tell anything vital. Well, here goes. I’ll cover up for you with something that makes sense.”

Warturo flicked on the radio and slipped it back into his pocket. He and Tom got to their feet, with Warturo holding his gun in the young inventor’s ribs.

“Okay, Swift,” he snarled. “Now give me the answers!” His voice had assumed a heavy accent.

“Wh-what do you want to know?” Tom replied in a husky, frightened tone.

“That new spaceship of yours-how does it work?”

“I’ve developed a new meson engine, working on a system of pion propulsion. The power transmission depends upon a reflex baffle chamber.”

“Have you tested the ship?” Warturo went on.

Tom pretended to hesitate. “N-no-not exactly. You see, it’s not really perfected yet.”

“Come on, quit stalling!” Warturo growled. “We know different, so tell the truth.”

“All right, I-I admit we’ve flown it once or twice. But not beyond the atmosphere. Some bugs showed up.”

“Like for instance?”

“Well, the neutrons are charged in the high velocity plasma and can’t be held back.” Tom faltered. “I souped it up with a small hydrogen reactor, but the fusion got out of control and overdrove the tweeter. So now I am trying to fix it by adding a compensator and a cathode follower.”

As Tom continued, he could hardly stifle his mirth and keep a straight face. Finally Warturo pretended to be satisfied. “Okay. Now inhale this, you lowbrow egghead!” he ordered, thrusting the vial under Tom’s nose.

Tom pretended to be overcome by the drug. He swayed and staggered forward, then collapsed limply to the floor. As he lay there, quaking with silent mirth, Warturo crawled out the window. He climbed down a light, collapsible metal ladder which he had placed against the side of the house.

Tom waited for several moments, then cautiously pulled himself to his feet, out of range of the window. He stood behind the drapes, well out of the moonlight so as not to be visible, and peered out.

A man was standing on the roadway, beyond the hedge which bordered the grounds of the Swifts’ residence. He was Warturo. His back was turned to the house, as though he was waiting to be picked up.

Suddenly a car roared into view. Instead of slowing down, it sped past, striking Warturo with its right fender, and knocking him to the side of the road! It roared off.

Tom was horrified. His first inclination was to dash out of the house and help the unconscious counterspy, who lay without moving, perhaps seriously injured.

“But I’d better not,” Tom decided as another thought struck him. This might be a trick of Jantree’s to find out which side Warturo was on! The Brungarians were certainly ruthless enough to use such tactics. It was possible that the occupants of the car were watching even now from some vantage point farther down the street. If Tom appeared, Warturo’s life might be at stake!

Tom hesitated in fearful uncertainty. What should he do?

CHAPTER XIV

THE FLYING CARPET

SUDDENLY Tom had an idea. He remembered that a bachelor dinner had been planned that evening for an Enterprises employee named Dick Hampton, who was about to be married. The party was being held at the Stacy Hotel.

Tom glanced at his watch. "Maybe I can get Dick to help me!" he said to himself, and grabbed his bedside phone. He dialed the hotel's number. Fortunately, the party was just ending.

"What's up?" Dick asked when he heard who was calling.

"Will you do me a favor?" Tom said. "It's urgent!"

"Sure. Just name it."

"There's no time to explain, but please drive past my house-pronto! If you see an injured man lying alongside the road, act surprised. Get out and help him. Whisper to him I sent you, and if he has any message, call me back as soon as possible!"

Though puzzled, Dick promised to comply. He hurried out to the hotel parking lot, warmed up his car, and sped off toward the Swift home.

Tom was watching anxiously from his bedroom window. Ten minutes later he saw the lights of an oncoming car. As it slowed to a halt near the Swifts' driveway, he recognized Dick's hardtop coupe.

The driver sprang out and bent over the prostrate figure which lay sprawled in the glare of his headlights. Dick picked up the unconscious counterspy in his arms, lugged him back to the car, and drove away.

Tom waited tensely. Minutes later, the phone rang. Tom scooped up the receiver. Dick Hampton was calling from the hospital.

"The man's okay," Dick reported. "Just shaken up. He said to tell you he's glad you figured out Jantree's ruse and didn't fall for it. Said you'd understand what he meant."

"I do, Dick. And thanks a million. Tell you later what it's all about."

Relieved, Tom went back to bed and slept soundly, exhausted by the excitement and emotional strain of the night's adventure.

The next morning, as he showered and dressed, Tom decided to report the matter to Harlan Ames immediately. He was eager to check the truth of Warturo's story.

When he phoned the security office, Ames said that he had given Warturo the special wrist watch. "What Josef told you was on the up and up, skipper. In fact, I've already had the whole story on what happened last night,"

“Warturo called you?”

“No, but our secret contact who acts as go-between did,” Ames replied. “What’s more, that little act you and Warturo put on really went over big. Jantree is convinced that Warturo is really loyal to him.”

Tom burst out laughing. “Thank goodness for that! Don’t think I wasn’t plenty worried for a while.”

The security chief roared. “Tom Swift, inventor and actor.”

In high good humor over the outcome of the whole incident, Tom ate a hearty breakfast of bacon and eggs and drove off to the plant. Here he plunged into work at his desk. Last-minute parts, supplies, and equipment had to be ordered and checked.

“Because of that fake message the Brungarians sent our space friends, we’re going to have to make a number of changes in our plans,” he thought. “But maybe it will be better if they do launch their animal rocket into orbit around the moon.”

The Swifts’ rescue mission and the moon expedition now would be combined into a single project. This meant that many more items would be needed immediately.

“I certainly hope I can get the decks cleared here and concentrate on work in the lab this afternoon,” he told himself.

Toward noon the young inventor called Miss Trent and dictated numerous letters and telegrams. Then he broke off for lunch with Evan Glennon, Dr. Faber, and Jerry Walden. The animal specialists were eager to confer on the serums and vaccines to be taken on the trip.

Tom laughed. “That’s out of my department!” he confessed. “I’ll just eat and listen.”

Lunch over, Tom hurried to his private laboratory, eager to resume his experiments on a brand-new device. It was designed especially for moon exploration.

He had just laid down a rivet gun, after putting together an assembly of metal parts, when he heard the laboratory door open. Tom looked up, then started violently at the sight that met his eyes!

Was he dreaming?

A tiny figure in a green space suit was waddling into the laboratory! Tom felt the hairs at the nape of his neck bristle. Was this a visitor from Mars, or one of his space friends who had finally dared to come to Earth?

Through the thick glass view pane of his weird visitor’s helmet, Tom could make out two beady, glittering little eyes. As the figure drew closer, Tom’s own eyes widened. Then he gave a roar of laughter!

“Nicky!” Reaching down, Tom grabbed the tiny space-suited monkey and swept it up into his arms.

At that moment his own laughter was echoed outside the door. Sandy and Phyl rushed into the lab, giggling and choking with merriment.

“All right, brother dear, admit it!” Sandy chortled. “We had you fooled there for a moment, didn’t we?”

“You sure did.” Tom chuckled. “One look at him, and I just about conked out!”

“And we almost strangled out there, trying not to give ourselves away,” Phyl added merrily.

The girls watched as Tom unscrewed the tiny helmet. When he removed the space suit, he inspected it admiringly.

“Don’t tell me you two made this?”

“Who else?” Sandy said proudly.

“Sandy did most of the work,” Phyl added. “I just watched and offered helpful hints.”

“How about the air-conditioning mechanism?” Tom asked.

“We got Art Willessa to do that,” Sandy explained. “He thought we were goofy when we first asked him-said it was impossible. Then he sat down and turned it out practically overnight.”

“Smart work,” Tom commented. “Must have used transistors. It’s really an amazing job. A perfect miniature.”

“The suit is practical, too,” Sandy told him. “Dad lent me the designs you used for your regular space suits.”

Tom reached up and shook hands with the monkey, who had perched on his left shoulder. “Moon, here we come!” he said jauntily.

Later that afternoon, after the girls had left, Chow Winkler came into the laboratory, bringing a cup of hot chocolate. “Somethin’ to perk you up, pardner,” he announced.

“Thanks.” Tom grinned. He took a few sips. “Really hits the spot, Chow!” He gave the cook a quizzical smile. “What brought this about?” he needed.

The old cowpoke did not change expression. He waited until he felt his young boss was in the proper mood, then he announced the purpose of his visit. “Real reason I came around, Tom, is to ask you a favor.”

“Probably granted,” said Tom. “But let’s hear it.”

“Then how about takin’ me with you on this here trail drive to the moon?” Chow pleaded.

Tom looked at the stout, elderly cook. In spite of his paunch and bowlegs, Chow had proven tough and useful on previous expeditions-not only in outer space, but also in the frozen Antarctic, tropic jungles, and the depths of the ocean.

“I guess that can be arranged, Chow, if you really want to go.”

The old Texan’s leathery face burst into smiles and he let out a loud “Yippee-ee!” But suddenly his jaw sagged as Tom added:

“But there won’t be any cooking to do.”

“Shootin’ stars, why not?” Chow protested plaintively. “A feller still has to eat, don’t he, even if he is ridin’ herd up there for the man in the moon?”

“That’s right, Chow.” Tom grinned. “But remember, in space suits we can only take liquid nourishment.”

“You mean we’ll have to wear them things all the time?” The old Westerner looked dismayed.

“Sure. There’ll be no artificial atmosphere as we created on Little Luna. And even if we built a special airdome or shelter, we’d probably still use dehydrated rations.”

“Oh, well. Reckon I can still whip up a few Winkler specials in the ship’s galley,” Chow reflected cheerfully. “She’s got a galley, ain’t she?”

“Sure does, Chow,” Tom said. “A fine one. You’ll like it.”

“Brand my li’l ole cookstove, I can hardly wait!” The chef rubbed his hands excitedly and clomped about in his high-heeled cowboy boots. “You know, boss, I’m wonderin’ what it’s goin’ to feel like to get earthstruck!”

“Earthstruck? What do you mean?” Tom asked.

“Wai, I been moonstruck lots o’ times back in Texas when I was ridin’ night herd, lookin’ up at the sky an’ talkin’ to keep myself company. But up there, gallopin’ around on the moon, I figure a feller could only get earthstruck.” Chow paused as his eye fell on the new device Tom was making. “Say, what’s this do-jigger yo’re workin’ on now? Somethin’ new?”

The young inventor nodded. “I’ve decided to call it a ‘flying carpet’-or maybe a ‘repelatron donkey.’”

Chow squinted at Tom suspiciously. “Brand my buffalo stew, if I didn’t know the things you cook up sometimes, I’d think you was pullin’ my leg. What’s this contraption supposed to do?”

It consisted of a flat, thin-metal platform about three feet square, with a six-foot length of wire leading to a small pocket-size control box. A metal housing built into the platform contained electronic gear.

Tom smiled at the look on Chow’s face. “I wouldn’t kid you, old-timer. That’s really what it is-a sort of flying carpet. It’s for use on the moon, to transport persons or supplies. You see, the terrain’s pretty rugged up there, with lots of clefts and crevasses, so ground travel will be difficult.”

“How’s this thing work?”

“Well, the housing here contains a repelatron. Underneath there’s a fixed radiator to direct the repulsion beam downward so as to hold its passenger suspended above the ground. There’s also a swivel-mounted radiator for steering the platform in any direction.”

“How about that li’l ole box on the end of the wire?”

“That’s the control box,” Tom explained. “The operator will hold it in his hand while he’s standing on the flying carpet.”

Chow scratched his bald head. “Sounds pretty neat, Tom. Only ain’t that metal kind o’ thin for haulin’

heavy loads?”

“Not on the moon, Chow. Up there, the pull of gravity is six times weaker than on earth. So objects will only weigh one-sixth as much.”

“Hot ziggety!” The cook snapped his fingers. “Why, up there I’ll be a reg’lar gazelle. Even with this bay window I tote around with me, I’ll run like a ole deer. When you goin’ to try ‘er out, boss?”

“Soon as I finish making a few circuit checks. As a matter of fact,” Tom added, “I intend to take it outside for a remote-control test flight.”

“How do you mean-remote control?”

“I’ll operate it from inside the lab here by radio wave,” Tom replied. “I might want to use that method some time while the Challenger is hovering over the moon’s surface.”

Within half an hour, the device was ready for its first test. Bud, who had wandered in to see what was going on, helped Tom and Chow trundle it to a freight elevator and take it downstairs. Then they wheeled the platform to a clear area outside the building.

A group of curious workmen gathered to watch. Tom warned them to stay off the platform until he had given it a tryout. “Might be an accident if it doesn’t work right,” he explained.

Chow, meanwhile, was looking on with intense interest. “Brand my sagebrush ‘n’ saddles,” he muttered to himself, “I’d sure like to get me a ride on that there flyin’ carpet!”

CHAPTER XV

RIDE ‘EM, COWBOY!

BEFORE making the remote-control test, Tom decided to try a short flight and use the manual control box. Stepping onto the repelatron donkey, he opened the switch cautiously.

Before the amazed eyes of the onlookers, the device rose several feet off the ground and floated in mid-air!

“So far, so good,” Tom muttered. He moved the switch a little farther until he was above the watchers’ heads. “Now for a steering check.”

Tom set a small lever on the control box for forward motion, then flicked a second switch which controlled the swivel-mounted radiator. The platform responded smoothly. Tom found it a bit hard to maintain his balance, but was soon maneuvering through the air at will.

“Nice going, pal!” Bud cheered, as the group of workmen applauded enthusiastically.

Employees crowded to the windows of the nearby buildings to watch. Tom, smiling with satisfaction, finally brought the aerial donkey back to earth.

“How about me trying it?” Bud suggested.

“Good idea,” Tom agreed. “You’ll be using it on the moon. But first let me check you out on this control box.” He explained the function of the two switches and the steering lever, adding, “You may find it a bit tricky at first, so watch yourself.”

“Looks easy enough,” Bud remarked. “How about setting the repelatron for different materials?”

“The detector does that automatically,” Tom explained. “Of course it only works for the common mineral elements.”

“Okay, here goes!”

Bud took the control box and mounted the donkey. In his eagerness he opened the switch too far and shot up so suddenly that he almost lost his balance.

“Easy does it, boy!” Tom called up to him.

“You can say that again.” With a rueful grin, Bud operated the altitude switch more cautiously, moving the platform up or down only a foot or so at a time.

Feeling that he had mastered this phase of operation, Bud tried steering. The first few glides went smoothly. But then he made too fast a turn.

An audible gasp went up from his audience as the platform tilted sharply. Bud was thrown off balance and had to drop to his hands and knees to keep from sliding off!

As the platform righted itself, Bud struggled to his feet again, mopping his forehead. His heart was still pounding. “Wow! Talk about buckin’ broncos!” he gasped.

After a few more minutes of practice he was steering the platform as easily as Tom had done. When he finally landed, Bud shook the young inventor’s hand.

“A swell invention, genius boy! Should come in mighty handy up on the moon.”

“Thanks.” Tom grinned. “Guess a handrail might help, but it would make loading difficult.”

Deciding that it was now time for the remote-control test, Tom returned to his laboratory. The onlookers, outside, waited expectantly. In a few moments they saw the repelatron donkey start to rise off the ground.

Chow was grinning with excitement. “Now’s my chance!” he thought. Dashing up to the platform, he hopped aboard. “Yippee!” he shouted, like an air-borne rodeo rider. “Let ‘er rip!”

Bud was aghast. “Chow, are you nuts?” he yelled. “Get down off there!”

The workmen added their pleas. But Chow was unperturbed. “You think an ole cowpoke like me can’t stick to this li’l ole donkey?” he snorted. “Well, I’ll show you how a real Texas bronco-buster does it.

Yahoo! Ride ‘em, cowboy!”

His enthusiasm faded as the flying carpet continued to rise. Soon he was at second-floor height. Then the device began to buck! The onlookers stared in horror as Chow teetered and wobbled frantically. His face was rapidly assuming a greenish tinge.

“Howlin” prairie winds!” Bud gasped. “This is awful! We must do something before Chow breaks his neck!”

Dashing over to the nearest outlet of the public-address system, Bud switched on the microphone.

“Tom! Bring it down quick!” he cried.

As Bud’s words came over the loud-speaker in the laboratory, Tom was just turning on his TV viewer, designed to scan any area of Enterprises. He aimed at the test site and brought the picture into focus. On the screen was Chow, skimming high above the crowd of watchers, and flapping his arms like an hysterical eagle!

Tom was convulsed with laughter at the scene. But fearing that Chow might lose his balance and fall, he maneuvered the platform gently back to the ground.

The young inventor was still chuckling when he went outside to greet the frightened, panting cowpoke. “Your first solo aboard the donkey, Chow!” he said, slapping him on the back. “You’ve earned your wings!”

“You can keep ‘em, boss,” Chow replied ruefully. “I’ll stick to broncs!”

When the excitement was over, Tom headed back to his laboratory with Bud.

“Something on your mind?” Bud asked, noticing that Tom was in deep thought.

“Bud, I’ve just decided that we’ll take off in the Challenger tomorrow.”

His copilot let out a whoop of excitement. “You’ve had word from our space friends?”

“Not yet. But I think we’d better stand by at the space station. Frankly, I’m afraid our friends may already have tried to contact us and the Brungarians are jamming the messages. I believe I can learn more up there.”

As soon as he reached a phone, Tom called Miss Trent. He requested her to alert all his passengers and crew for take-off the next morning. Next, he called the flight department and passed word to move all necessary equipment to Fearing Island by cargo plane. The last item of business was to summon Art Wiltessa to the laboratory and show him the repelatron donkey.

“Sorry to keep you jumping this way, Art,” he apologized, “but I want two more of these gadgets turned out overnight. Can you put on an extra shift for the job?”

“Sure thing, skipper,” Art promised. “These won’t take long.”

At seven the next morning, Tom, Bud, Chow, and the three animal experts boarded a jet plane for Fearing Island. At the rocket base they found everything in readiness, with the Challenger checked and

tuned for take-off.

As the last items were loaded aboard, Tom spoke to Hank Sterling. "Got a top crew picked out, Hank?"

The modelmaker, who was to accompany Tom, nodded, grinning. "There were so many volunteers who wanted to make a trip to the moon, the Challenger never would have gotten off the ground! But I picked out five of the best."

When he named the crew he had chosen—all experienced spacemen—Tom nodded approval.

Twenty minutes later the eager travelers boarded the Challenger and the air lock was sealed. Nicky perched himself on Tom's shoulder as he took his place at the controls, with Bud in the copilot's seat.

"Okay, buckle your seat belts, everybody," Tom said, looking around. He was glad to see that neither Dr. Faber nor Evan Glennon appeared the slightest bit nervous at the prospect of spearing off into space. "Everything all right?" Tom asked them.

Dr. Faber nodded and smiled, his keen gray eyes twinkling behind his spectacles. Evan Glennon beamed at the young skipper with jovial heartiness. "Gad I ni fynd, lad! In other words, let's go!"

The ground crew signaled clearance for takeoff, and George Billing's voice came over the radio, "Good luck, fellows!"

"Thanks, George," Tom replied. "We may need it to win this race!"

He switched on the repelatrions. Lights flashed along the element selector panel, and Tom adjusted the element selectors for maximum lift, watching the needles as he fed power to the radiators. The mighty spaceship zoomed upward.

Later, when the Challenger settled smoothly on its skyward course, the passengers gathered to stare out the view panes at the earth, fast receding below.

"Brand my flyin' chuck wagon," Chow gabbled excitedly, "this sure is some buckboard, Tom!"

Jerry Walden whistled in amazement. "I thought my trip to South Africa was unusually interesting, but this—Tom, it's something I never visualized in my wildest dreams!"

"Even our polar expedition seems pale by comparison," Dr. Faber added, a trifle breathlessly.

In another hour they neared the space station. Again the passengers gaped in awe, overcome by the spectacle of the silver space wheel orbiting in the void.

"Magnificent!" declared Dr. Faber.

Tom smiled but had no time to respond to their comments. As he guided the ship into orbit and lined up the radiators for a gentle approach, the spaceship gave a sudden surge. Ship and space wheel seemed to rush together!

"Whoa!" Tom gulped, swiveling the radiators frantically. He managed to veer off just as the gap was narrowing to the danger point.

“What’s the problem?” Bud gasped.

“I’m having trouble bringing the big ship up to the space station at a low enough relative velocity to prevent damage. Up here the gravitational pull of our two ships tends to bring us together, and I don’t want to use a repelatron beam on the station. It will throw the station out of orbit.”

“What can you do?”

“I’ll have to get the ship into the same orbit as the station, but with a slightly higher velocity, and then catch up with it from the back. Guess we’ll have to use some compression rods to absorb the impact and hold us apart.”

Turning over the controls to Bud, Tom hastily supervised the construction of two powerful magnesium rods and a plastic ramp. Then he, Hank, and two crewmen donned space suits. They went out through the air lock, and quickly attached themselves to the ship by safety cables.

Working with electric rivet guns, powered by solar-charged batteries, they soon anchored the rods to the outer framework of the spaceship. Bud watched through the copilot’s window, his hands on the controls.

After climbing onto the landing platform with his companions, Tom signaled Bud to try the approach once more. Now in the same orbit, the ship and the space wheel came together more gradually. This time the compression rods absorbed the impact and prevented a collision.

“Good work, pal,” Bud said, as Tom returned to the flight compartment and loosened his space helmet.

“We still have to lay the ramp,” Tom replied. “In the meantime, all of you please get into your space suits, so we’ll be ready to cross over to the station. That goes for you too, Nicky,” he added with a grin.

In a few minutes all was in readiness and the crew prepared to troop across the ramp, one by one. Dr. Faber, Evan, and Jerry admitted they were a trifle nervous at their first venture into the space void.

Nicky, the monkey, was allowed to go first as a joke on the space station crew. He waddled so slowly that Jerry gave him a playful push. “Hurry up there, you slowpoke!”

To his horror, the mascot was catapulted off into space!

CHAPTER XVI

MOON HO!

JERRY tried to lunge after the monkey, but Tom grabbed him just in time.

“Hold it!” the young inventor cried out, fearful of another mishap. “You and I, Bud! The rest of you stay

here!”

The two boys triggered their jet pistols and launched themselves in pursuit. Already the tiny space-suited creature was whipping far off into the black void. Only their jet speed enabled the boys to catch up.

“I’ve got him!” Bud called through his mike, reaching out with his clumsy space gauntlets. But he reckoned without Nicky’s skittishness.

Half scared, half playful, the monkey bounded away from Bud. Tom veered to catch him, only to have the tiny animal go flying off in a new direction! A frantic chase followed. Tom perspired nervously at the thought running through his head. What if the little monkey went caroming beyond reach of their safety cables?

Luckily, the two boys finally managed to corral Nicky within their circled arms. Tom grabbed his pet and hugged him close.

“Whew!” Bud panted over the radio, as they started back to the ship. “Talk about fielding a hot grounder-that little joker’s livelier than a rabbit ball!”

Much relieved by the mascot’s rescue, the group now trooped across the ramp and entered the space wheel. The station crew, who had been watching the frantic scene, were mystified by the tiny figure in the green space suit.

“Don’t tell us you’ve already voyaged to another planet and brought back an inhabitant!” Ken Horton remarked.

Tom removed the monkey’s helmet. “Meet Nick, our space simian!”

The crewmen grinned halfheartedly, but Tom noticed an awkward silence.

“Anything wrong?” he asked Horton.

“Bad news, skipper,” Ken replied glumly. “We picked up a Brungarian broadcast just before you got here. They announced that their moon rocket has already taken off.”

The group from the Challenger were stunned. “Then they’ve beaten us before we even start,” Bud groaned. “They’ll grab those sick animals, and they’ll also claim the moon for the Brungarian government!”

His words drove home the seriousness of the situation. But Tom refused to be stampeded.

“They’ve issued fake claims before,” he pointed out. “Let’s check on that announcement before we start tossing in the towel.”

He hurried into the radio compartment and ordered the operator to signal Fearing Island. When Billing responded, Tom asked him to contact Harlan Ames at Enterprises.

“Wilco,” Billing acknowledged.

In a few minutes Ames’s voice was relayed to the space station.

“Bid you catch that Brungarian announcement?” Tom asked the security chief.

“We certainly did,” Ames said. “But I’m fairly sure there’s nothing to it.”

“How come?”

“I checked with United States Intelligence in Washington, and they have no knowledge of a Brungarian space rocket being launched,” Ames explained. “We asked Warturo too, via our secret contact. He says Jantree seems to know nothing about the rocket, either. So it’s probably all a hoax.”

Tom heaved a sigh of relief. “Just what I suspected, Harlan. But I’m glad you checked.”

Both the station crew and Tom’s group from the Challenger cheered when they heard the news.

“Next time I fall for one of their tricks just bop me,” Bud apologized.

“We all fell, except Tom,” Ken Horton added.

Though relieved, the young inventor was still worried. He might have missed a signal from his space friends due to jamming by the Brungarians. “I’d better check with them, too,” he decided.

Using the wheel’s powerful space transmitter, Tom beamed out a code call, asking his space friends to let him know their plans. An air of suspense pervaded the station as the men awaited the reply.

“Better relax,” Tom said wryly. “This may take a while.”

“Is it true that you have a zoology lab here in your space station?” Anton Faber inquired.

“Indeed we do,” Tom told him. “We use it for space medicine experiments, in studying the effects of vacuum, cosmic radiation, and lack of gravity on various types of living creatures. Perhaps you and your colleagues would like to see it?”

“Da iawn!” Evan Glennon agreed. “Very good!” And Jerry Walden also expressed interest.

Tom led the three animal experts into one of the lab compartments and introduced them to the technicians on duty. The visitors were amazed by the wheel’s research facilities. Soon all three men became engrossed in a discussion of serums and other measures which might aid the diseased animals.

Meanwhile, time passed slowly for the rest of the group. “This waiting gets me down,” Bud grumbled after several hours had gone by.

“Wai, don’t let it get you too far down or you’ll go droppin’ out o’ orbit,” Chow joked.

The three were seated in the crew’s bunk-room. Suddenly a voice spoke over the intercom: “Tom Swift, please report to the tracking compartment!”

Tom rushed to comply. “What’s up?” he asked the radar operator on duty.

The crewman pointed to the gleaming bank of scopes. “We’ve picked up something, skipper. Take a look.”

A tiny blip of light was visible on one of the screens.

“Can you make it out?” Tom asked.

The operator studied several dials and adjusted the signal for maximum strength. “She’s traveling fast,” he reported. “Apparently it’s some kind of rocket or space missile just launched from the earth.”

Every antenna on the space wheel was tuned to monitor the object’s signals. Its course gradually became clear.

“Heading for the moon!” Tom gritted. “We’d better take off immediately!”

He leaped to the intercom and barked out orders. A bustle of activity followed as the Challenger’s passengers hastily donned their space suits. The sudden break in tension seemed to fill everyone with new vim and enthusiasm.

“Good luck, Tom,” said Ken Horton, exchanging a final handclasp. “Sure wish I were going with you.”

“If we make the moon safely, this won’t be our final voyage,” Tom told him. “You’ll be on the next expedition, Ken.”

Helmets were clamped on, and the group filed through the air lock to board the Challenger. Tom took his place in the flight compartment.

“Here goes!” he murmured.

As he fed power to the repelatrions, the ship took off like a comet, beaming its thrust against the earth. Even at the space station, they had been hurtling along at a high orbital velocity. Tom directed the repelation force in such a way that the ship left the orbit and started on a long, graceful curve, accelerated toward the moon.

Suddenly the intercom crackled. “We’ve picked up that rocket, skipper,” a crewman reported.

“Where?”

The operator read off the relative angle from his instruments. Both Tom and Bud peered through their view panes.

“There she is!” Bud cried out.

The rival rocket was little more than a glittering speck in the distance. Tom veered course and increased power to bring it within closer range. Soon they were racing neck and neck.

“Brand my space boots, what kind o’ contraption d’ya call that?” Chow muttered.

The silvery missile was round and bulging at the forward end, with polished reflectors opening out like petals on all sides. The ship tapered aft, then flared out again in a funnel-shaped stern, which emitted a faint, luminous exhaust, trail.

“Ton rocket probably,” Tom replied, “powered by solar turbine or batteries.”

“Brungarian?” Bud asked.

Tom nodded grimly. “Must be.” As he spoke, he opened the throttle levers wider, gunning the repelatrongs still more.

The race to the moon was on as the two ships roared through the void at unthinkable speed!

“Take over, Bud,” Tom ordered a short time later. Leaving the controls, he relieved the radioman at his post and beamed out a code message:

TOM SWIFT TO SPACE FRIENDS. WE HAVE TAKEN OFF FOR THE MOON. ENEMY SHIP ALSO ON THE WAY. PLEASE INFORM US OF PLANS FOR ANIMAL ROCKET.

If only they would reply and break the puzzling curtain of silence! Tom waited hopefully, eyes glued to the space oscilloscope. Suddenly his heart leaped as a symbol flashed on the screen. Others followed. Even as the electronic brain was working out the message, Tom translated it.

ROCKET CONTAINING SICK ANIMALS WILL BE LAUNCHED SOON INTO ORBIT AROUND YOUR MOON.

The answer filled Tom with fresh determination. He must reach the rocket first to save his space friends from possible starvation.

Mulling over the situation, he decided to try communicating with the Brungarian ship. After all, the men aboard were scientists themselves. Maybe they would co-operate if asked in a friendly fashion.

He radioed a call signal across the void. But repeated efforts brought no response. Finally Tom gave up. After telling the others on his ship about the launching of the animal rocket, he returned to the controls.

“We’re gaining on ‘em!” Bud reported. “The enemy ship has fallen considerably astern.”

“Let’s step up the pace!” Tom fed more power to the repelatrongs. Slowly but steadily, the Brungarian ship dwindled in the distance.

“Brand the Bull constellation, we’ll lick them space rustlers yet!” Chow whooped.

Tom flicked on the space position finder. The earth had shrunken now on the screen to a small disk, while the moon was growing rapidly in size. Fifty minutes later it loomed ahead through their view panes, immense and radiant.

“Incredible!” Dr. Faber gasped, almost in a whisper.

Numerous features were clearly visible to the naked eye—jagged mountain ranges, yawning cracks and craters, great darkened plains. Jerry Walden and Evan Glennon erected the ship’s telescope to study the surface more closely.

“Skipper,” Jerry exclaimed, “something’s going on down there!”

Tom left the pilot’s seat to look. He could make out a dark spreading cloud. The others took turns examining it and offered various theories as to the cause.

“Maybe there’s life on the moon after all,”

Bud said. “Could be a flock of moon creatures rushing for cover now that they’ve seen us.”

Tom felt that more likely it was a storm of rock fragments or volcanic ash churned up by waves from their repulsion beam. Tom had started to slow down his ship by repelling his target—the moon.

As they drew closer and closer, a wave of excitement surged through the crew. When they were within a hundred miles of the moon’s surface, Tom eased off on the repeltrons and began a slow descent.

An awed hush fell over the space travelers. They stared ahead, as if spellbound, until Tom brought the ship to a hovering halt just above the Crater of Copernicus.

“Well, we’re here, boys.”

The young inventor’s simple announcement broke the silence, and instantly the Challenger reverberated with wild cheers from its crew.

“Yippee!” yelled Chow as he and Bud grabbed Tom and hugged him excitedly.

“Tom Swift, first earthman to reach the moon!” Bud exclaimed. “You’re a wonder, pal!”

Tom grinned, both pleased and touched. “Thanks, fellows.” Then he grew serious. “But I just want to say that everyone here has helped me to reach our destination.”

Then he and the others went to take a closer look at the enormous crater below them. Stretching fifty or sixty miles across, it was rimmed by towering rock walls. The inner bowl seemed filled with gritty debris and rubble from ancient landslides, a probable deathtrap for anyone falling into it.

Tom gave orders for the depth of the dust layer to be checked by radar. Then he turned to Bud. “Like to do a little exploring by flying carpet?”

“Would I!” Bud grinned enthusiastically. “Pal, I can hardly wait!”

Leaving Hank in charge, Tom descended to the hangar compartment with Bud, Chow, and several others. Here they donned space suits and hauled two of the repelatron donkeys out through the air lock to the landing platform. Chow brought a long, light-metal rod to check the dust layer by his own methods.

“Sort of a longhorn-size cake tester.” The old Westerner chuckled.

The boys mounted their repelatron donkeys and took off in the brilliant sunlight. Bud seethed with excitement.

“Just think, Tom,” he exclaimed over the radio, “we’re actually on the moon! I never thought—“

Bud stopped speaking. His flying platform had suddenly tilted. The next instant it spilled Bud toward disaster!

CHAPTER XVII

AN AMAZING MANEUVER

FRANTICALLY Bud clawed for the nearest support. By luck he managed to grab the repelatron housing and cling to it. But the platform refused to right itself! Bud's position was indeed perilous.

"Here! Grab hold o' this, pardner!" Chow urged, leaning out to shove his depth-tester rod as far down as possible.

Bud maneuvered the donkey awkwardly, but could not get within reach.

"Cut your steering repelatron and try hovering!" Tom radioed. "I'll pick you up!"

He jockeyed his own platform under Bud's and helped his friend slither down. Tom headed back to the ship's landing stage, with Bud towing his donkey behind them by means of the switch cable.

"Brand my octopus soup, you had a mighty close call, Buddy boy!" Chow remarked, helping him in through the air lock.

"You're telling me!" Bud gulped. "What went wrong with that thing, Tom?" he asked a few moments later as the young inventor, now inside the hangar compartment, checked the faulty platform.

"Repelatron needs adjusting," Tom muttered, reaching for his tool kit. "Must have been jolted out of whack on the way up here."

After tuning and testing the electronic circuits, Tom pronounced the platform safe and the boys ventured out again. Nicky, who had jumped to Tom's shoulder, insisted on going with them.

They cruised about the crater in the dazzling sunlight and descended to inspect the terraced inner slopes of the rim's walls.

When they rose above the mountains again, Tom gave a gasp over his suit radio. "Bud, the Brungarian rocket's coming!"

The ship was arrowing in just over the horizon. It swooped down toward the boys. The next moment, fire spurted from the gun ports as their enemy loosed a volley of small missiles.

The two boys had to maneuver their platforms frantically to avoid being struck. This was doubly difficult for Tom, who had to steer with one hand and cling to Nicky with the other. But, as the missiles continued whizzing past the boys, Tom decided that the onslaught was intended chiefly to frighten them. "Otherwise, they could've hit us long before this," he thought.

"Challenger calling Tom!" The operator's voice came over his suit radio, choking with anger. "The Brungarians just flashed us a message. It said: 'This attack is only to show you that we will not stand for any interference. Return to earth at once or face a real battle here!'"

Tom thought fast, trying not to let his own rage get the better of him. "Tell them we'll leave!" he radioed back.

"Tom, do you mean that?" Bud interrupted unbelievably. "Can't we-"

Tom cut him short. "Relay the message!" he told the operator.

The boys scooted back to the ship and maneuvered their platforms into the hangar compartment. Bud was red-faced as he jerked off his helmet.

"Tom, do you mean we're going to let those phonies scare us off the moon?" he stormed. Other crewmen in the compartment added their protests to Bud's.

"I said we'd leave," Tom replied. "That just means leave here-not the moon."

Grins broke out on the crewmen's faces as they realized the young inventor had a plan in mind. With Tom in the lead, they hurried up to the flight compartment. Hank flashed a questioning look as he turned over the controls.

"What cooks, skipper?"

"We'll try a new type of defense-repulsion wave," Tom explained. He turned up the anti-meteor repelatron full blast and the repelling force shot out from a mass of tiny radiators which studded the ship's hull. Tom also aimed two of his main repelatron radiators toward the enemy craft.

Apparently the Brungarians were not satisfied that Tom was leaving soon enough. They circled off to a distance, then made a pass toward the Challenger and loosed another missile-big enough to blow the ship to bits!

To the enemy's amazement, the projectile came to a stop a hundred feet from the Challenger, then rebounded and plunged into the crater!

"Oh, brother!" Bud roared. "I can just see those guys' faces!"

The entire crew rocked with laughter.

Tom grinned as he swiveled the radiators for take-off. A few seconds later the Challenger was speeding toward the moon's umbra. As they rounded out of the dazzling sunshine into the area of lunar night, Tom switched on the auxiliary rocket motors, using barely enough power to keep the ship aloft.

"What's next?" Bud asked.

"We'll lie low here in the darkness until it's time to intercept the animal rocket," Tom explained. "I'm sure our enemy doesn't have the facilities for keeping aloft very long out of range of solar radiation, so they won't bother us."

The Brungarians did not attempt to follow.

Tom, after arranging for various members of the expedition to stand watch, advised the crew to get some sleep. He and a radioman took the first trick.

Soon the ship settled into silence, except for the steady drone of the rocket motors. Half an hour later, Chow called up grumpily from the bunkroom below.

“Brand my nightshirt, boss, I jest can’t sleep with them jets blastin’ away. If that racket don’t stop, I reckon I’ll start howlin’ like a coyote!”

Tom chuckled. “If you can keep the ship from crashing with that bellowing voice of yours, Chow, I’ll turn off the engines. Otherwise, I’m afraid you’ll have to put up with it.”

A few soothing words sent the old cowpoke back to his bunk. But Tom had hardly switched off the mike when the intercom buzzer sounded again. This time it was the radioman.

“Get down here fast, skipper,” he cried. “Something’s coming through on the space oscilloscope!”

Tom rushed to the operator’s side and watched as the symbols appeared on the scope. In a few moments words in English began appearing on the tape of the electronic translator.

Together the two men read excitedly:

SPACE PEOPLE TO TOM SWIFT. WE HAVE JUST LAUNCHED OUR ANIMAL ROCKET.

CHAPTER XVIII

THE CAPTURED ARK

REALIZING it might be some time yet before the rocket arrived in orbit, Tom decided not to rouse his passengers. It was better to let them sleep, he felt, while the chance permitted.

At the changing of the watch, however, the whispered word spread like wildfire. Soon Tom’s excited companions were tumbling from their bunks to rush up to the flight compartment.

“Hey, skipper! Is it true?” Bud gasped.

Tom nodded. “A message came an hour ago from our space friends, saying they’d launched their rocket.”

The news was greeted by a noisy babble. But the chatter ceased when the men realized that Tom was now facing a hard choice.

“What have you decided, lad?” Evan Glennon asked softly. “Will we go after the rocket when it comes into orbit?”

“That’s what we’re here for, isn’t it?” Bud spoke up.

The thick-set Welshman chuckled jovially.

“Don’t worry, Bud bach-I’m not proposing that we turn tail, lad. Speaking for myself, I want a look at those animals!”

“Ditto for me!” Jerry Walden declared.

Tom smiled grimly. “Glad you’re with me. But let’s face it. If we do try to intercept the rocket, we’re in for a fight with the Brungarians. That could mean disaster, even death, for all of us.”

“We stopped ‘em once, didn’t we?” Bud insisted defiantly.

“But they may try other ways of attack,” Tom pointed out. “I suggest that you all talk it over.”

A heated discussion broke out. Most of the men aboard wanted to go ahead with their mission, although two of the crew seemed unwilling.

“Why not call the Brungarians and parley?” Dr. Faber suggested in a quiet voice. “If we offer to share the scientific honors and the chance to work with the infected animals, perhaps they’ll reconsider.”

Tom shrugged. “I tried it once and got no reply, but it certainly won’t do any harm to repeat the offer.”

The young inventor remained in the flight compartment, keeping the telescope trained on the sky, as Dr. Faber, Evan Glennon, and Jerry Walden hurried off to the radio room. Dr. Faber, who spoke the language, transmitted the message in Brungarian. Everyone hoped this might have some psychological effect on their rivals.

But the Brungarian ship promptly returned a negative answer. “We will make no bargains. Again you are warned to return to earth or face the consequences!”

Gloomily, the three scientists returned to the flight compartment. Bud read the outcome from their faces.

“No luck, eh?” He turned to Tom, who was sighting intently through the telescope. “Then I say let’s fight ‘em now and get it over with. I’m sure you can outsmart ‘em!”

Tom made no reply for a moment. Finally he faced the assembled group, eyes blazing with excitement.

“Bud, we won’t start hostilities,” he said. “That’s against everything Dad taught me and everything the Swift name stands for in science. But I’m willing to go ahead with our mission if the rest of you men will risk it. How about it?”

There was a loud chorus of “ayes.”

Tom grinned. “Then let’s go!”

His words caught the crew by surprise.

“You mean the rocket’s in sight already?” Bud gasped.

Tom pointed out the pilot’s window. “Take a look!”

Shouts of excitement arose. A tiny glittering speck was coming into view far out in space.

“Brand my six-shooters, what’re we waitin’ for?” Chow whooped. “Let’s saddle up this jet bronc an’ get movin’, buckaroos!”

As all the men rushed to their posts, Tom and Bud buckled themselves into the pilot’s and copilot’s seats. Tom took the controls and gunned the rocket motors. Soon they were roaring outward to meet the space visitor!

It grew in size with amazing speed.

“Looks as if she’s going to orbit around the bright side of the moon first,” Bud remarked tensely.

Tom nodded. “We’ll intercept it on an elliptical course.” His hands moved over the control panel, flicking switches and punching various buttons as he fed information to the computers.

In split-second time, an electronic brain in the computer room calculated the necessary interception path. A stream of impulses flowed back to the automatic pilot, taking over the steering and locking the ship on course.

Meanwhile, Tom and Bud watched in fascination as the glittering object came closer and closer. The other passengers clustered behind them to stare out through the view panes.

Suddenly Bud gave a gasp as he glanced starboard. “Skipper, look!”

Another ship was racing into view. It was bulb-nosed and funnel-tailed, and emitted a ghostly stream of radiance.

“The Brungarians!” Tom gritted. His jaw clamped stubbornly.

Their own ship was coming out of the night umbra now. As they passed into the blazing sunlight, Tom’s hands flew over the controls. The element selector lights flashed on. The young inventor watched them tensely, darting a glance now and then at various dials as he fed power to the repelatrns.

The Challenger roared ahead at blazing speed. But the Brungarian ship had seized the lead! The rival space craft was close enough now for Tom and his crew to see that it was circular in shape and pancake-flat on top and bottom, like two saucers pressed together.

“They’re going to beat us to it!” Bud cried frantically, his eyes following the Brungarian ship.

Tom, sick at heart, made no reply. He poured more power to the repelatrns, but realized that his copilot was right. At their present rate, the Brungarians were sure to intercept the rocket with the animals first!

Then another thought struck him. Any moment now the enemy ship might let go another volley of missiles!

At the risk of cutting down speed, Tom switched over to rocket power and beamed his repelatrns at the rival ship. At the same time he turned on his antimeteor radiators.

The Brungarian craft veered slightly, and evidently was unable to fire. But the angle between the Brungarian ship and the rocket was so narrow now that Tom was able to hold off only the rocket.

Groans went up from the Challenger's crew. "No luck!" Bud wailed.

Helpless to intervene, the Americans could only watch intently as the Brungarians closed in on the prize.

"How can they board or enter it?" Jerry Walden asked. No hatches or openings of any kind were visible on the hurtling space "ark."

"Good question," Tom said. "But I doubt if that'll stump the Brungarians very long. They'll blast it open if they can't find any other way."

He himself was gunning his own rocket motors full blast. The Challenger drew closer and closer to the other two craft. Maybe there was still a chance to rescue the animals from the space beings' planet!

But suddenly Tom's hopes were dashed. Long octopuslike tentacles, apparently grapples, shot out from the Brungarian ship. They clamped tightly to the space ark. Then the enemy craft streaked away, holding its prize in a firm and deadly grip.

"Brand my blunderbuss, you got to stop them space rustlers, boss!" Chow quavered, wringing his hands desperately.

The rest of the crew added their pleas. "Can't we do something, pal?" Bud begged.

Tom's face was bleak as he watched the Brungarians make their getaway. They were heading toward the darkened umbra from which the Challenger had just emerged.

Suddenly, to everyone's amazement, Tom's lips curved into a grin. "Get ready for a rescue!" he said mysteriously.

CHAPTER XIX

SECRET SYMBOLS

TOM steered the Challenger in a sweeping turn and roared off in pursuit of the Brungarians and their prize.

"What's going on in that twenty-four-carat brain of yours, pal?" Bud asked tensely.

The young inventor parried the question, not wanting to raise his crew's hopes prematurely. "Just a hunch, Bud, but it's worth a try."

Suddenly the radioman's voice crackled over the intercom. "Another message from space, skipper!"

Tom released the controls. "Take over, Bud!" Unbuckling his seat belt, he hurried to the electronic translator.

The last of the message was just appearing on the scope. It said:

ANIMALS CANNOT LIVE LONG. FOOD SITUATION ON OUR PLANET DESPERATE.
REQUEST YOU CARRY OUT OPERATIONS WITH GREATEST POSSIBLE SPEED.

The radioman's eyes met Tom's. Both sensed the desperate urgency of the plea.

"Any chance?" the crewman asked.

"I hope so," Tom replied. "But keep your fingers crossed!"

Dashing back to the flight compartment, Tom reported the message to the others.

"We can't let the space people down, Tom!" Bud said earnestly. "We must save their animals!"

"I intend to, if it's humanly possible," Tom vowed.

As he spoke, the Brungarian ship suddenly soared out of orbit, taking the space ark with it.

"They're heading back to earth!" Jerry Walden groaned. "Now we'll never stop them! They'll take the ship back to Brungaria!"

Tom said nothing, but watched the enemy ship intently. They were in the darkness of the umbra now. Reaching out, Tom threw a switch on the control panel that turned on the giant searchlight invented by his father.

Bud gave a sharp cry. "They're in trouble!"

Something had happened. The Brungarian ship and its captured ark seemed to have lost their earthward momentum. They were falling back toward the moon's surface!

"They'll crash!" Hank Sterling muttered.

"This is what I was banking on-the chance that they might lose power," Tom said.

Bud stared at him in amazement. "How come?"

"Since their ship operates on solar energy, they can't use their main drive here in the darkness," Tom explained. "And apparently their auxiliary power supply isn't strong enough to support both their own ship and the space saucer."

As he spoke, Tom was gunning ahead full speed, seeking to maneuver the Challenger between the two falling craft and the moon's surface.

"Tom, are you nuts?" Bud gasped. "They'll crash on top of us!"

“Not if our repelatron work properly,” Tom replied.

“But we have no solar power, either!”

“Not from direct sunlight,” Tom said. “But take a look down in the repelatron room and you’ll find a bank of special solar batteries for emergency use.”

The others held their breaths as Tom put his daring plan to the test. The other two ships, completely out of control, were plunging straight toward the Challenger which by now was resting on the surface of the moon. In seconds would come the crash!

But Tom had already switched on the repelatron and aimed them upward. Gasps and cheers sounded from the Challenger’s crew as the Brungarian rocket ship and its prize slowed and then froze motionless. The repelatron beam was holding them off successfully!

The Brungarian ship immediately uncoupled the ark, but made no attempt at a fresh take-off now that it was free of its extra load.

Jerry Walden watched suspiciously. “I don’t trust those fellows, Tom,” he warned.

A crewman chimed in. “Let ‘em drop on the moon while they’re still helpless!”

Others urged the same course, but Tom shook his head. “As long as they’re in our power, we can’t let them crash to their deaths. Some day we may teach the Brungarians to play square.”

Meanwhile, he switched on the Challenger’s magnetic grapples and drew the ark toward his own ship by invisible lines of force.

Turning to Bud and the three scientists, he said, “There’s no time to waste, fellows. This may be our only chance to help save the space beings from starvation. Are you ready to go aboard?”

“We will be pronto!” Bud declared, and Dr. Faber, Evan, and Jerry echoed his enthusiasm.

Hastily they donned their space suits, while Hank Sterling took over the controls. Then, as the rest of the crew watched in tense suspense, the group made its way out through the ship’s air lock and hooked up their safety cables.

Tom and Bud carried various tools to force an entrance into the rocket, while the three scientists brought bags of serums, vaccines, and other equipment. The animal experts waited on the landing platform, while the two boys moved toward the ark on their repelatron donkeys.

Tom and Bud maneuvered around the entire surface of the saucer. It was made of a shiny bluish-green metal which Tom could not identify.

But there was no sign of any opening or means of access in the mirrorlike smooth surface.

The boys exchanged baffled glances through their transparent helmets.

“What do we do now?” Bud queried over his suit radio.

Tom frowned thoughtfully. “Let’s go back to the Challenger and get some portable test equipment,” he

decided. "It may show up something we can't see with the naked eye."

"Smart idea!"

Tom signaled the ship to have the equipment ready. Then they returned to the landing platform and brought the gear out through the ship's air lock.

"Need any help?" Jerry Walden asked.

"Not yet, Jerry, but stand by," Tom told him.

He and Bud went back to the ark and began checking every square inch of its surface with ultraviolet rays, knowing that they make certain materials fluoresce.

Suddenly Bud cried out over the radio, "Tom, look! Something's showing up!"

Tom nodded, watching intently. Under the continued bombardment of the ultraviolet, a series of symbols gradually became visible along the hull of the ship. They glowed weirdly with an orange radiance.

Bud watched, pop-eyed with interest. "Can you read what they mean?"

"I think so," Tom replied. He translated slowly to himself, then aloud to Bud. "It says that if we beam a certain frequency and modulation of radio waves at this point, we'll be able to enter."

"Tom, you're a genius. Or have I said that before?"

Tom grinned and called back to the Challenger, ordering the radio operator to follow his directions. "Better write 'em down," he added, then proceeded to explain the exact frequency and modulation of the signals.

"Roger . . . Wilco," the operator replied.

The boys stepped back and waited while the radio impulses were beamed toward the ark. Moments later they gasped as a sliding panel opened in the hull of the saucer.

"Open sesame!" Bud exclaimed. "I wonder what's inside?" The interior was too dark to reveal much.

"We'll soon find out!" Tom said in quiet exultation. But first he radioed Jerry, Evan Glennon, and Dr. Faber to join them.

Taking off from the landing platform somewhat gingerly, the three animal experts moved toward the ark on repelatron donkeys. Their movements were somewhat awkward and erratic at first, but they finally reached the spot where the boys were waiting.

"Here we go," Tom greeted them, unhooking his life line. "Got everything you need?"

"Let us hope so, lad," Evan Glennon replied as the other two murmured agreement. "Between us, we'll cure those infected animals if earth science knows how!"

Tom led the way, stepping in first through the opening in the ark. He turned to assist Dr. Faber, then gasped in surprise. The panel had slid shut behind him!

“Hey, what gives here?” he muttered uneasily. He waited for the panel to reopen, but nothing happened. Had the radio operator failed to write down the signals and forgotten them?

“But he couldn’t be so lax,” Tom decided.

Then another thought struck him. The Brungarians might be jamming the radio waves! If this kept up indefinitely, the door might never be opened from the exterior.

Tom tried using his own radio, but received no answer and assumed that the beams were not going through the hull of the rocket.

“This is serious,” Tom concluded. “Well, I’ll try to push the door sideways from in here.”

Switching on the battery light attached to his suit, Tom pried along the wall with his armored space gauntlets, seeking to locate the edge of the sliding panel. But once again, the whole surface seemed smooth as glass! Tom was seized by a growing pang of alarm.

“Relax, boy, relax,” he told himself. “If this rocket opened once, it’ll open again.”

He continued his search. Still the secret of opening the panel manually eluded him. Inside his helmet, Tom could feel beads of sweat on his forehead. He waited anxiously, thinking his friends surely would figure how to outwit the Brungarians if they were responsible for the trouble. Minutes went by, but there was nothing but deadly stillness.

In dismay, Tom clawed and hammered at the inner wall of the ark. The full peril of his position became fearfully clear.

He was a prisoner in a spaceship from a strange planet, full of diseased animals!

CHAPTER XX

MINIATURE MONSTERS

REALIZING that panic would only make his plight worse, Tom stopped his frantic pounding. As always, when in trouble, he asked himself, “What would Dad do in this situation?”

“He’d try to collect his wits, that’s for sure!” Tom muttered ruefully. In a moment he felt calmer. “Now that I’m in here, I may as well take a look at those animals,” he decided.

Turning, Tom flashed his beam around the rocket’s interior. He was in a narrow passageway. Slowly he made his way along it, carefully examining the walls for symbols which might provide a clue.

Suddenly the inner wall became transparent, as if lit by some inner radiance. Tom did not touch the wall, guessing that it became transparent when a current was passing through it. When not charged, it was

opaque.

Tom gasped at the sight revealed beyond the wall. A huge zoo garden lay spread out before his eyes—a garden from the distant planet of his space friends. Some of the plant life was familiar to Tom from another rocket sent by his space friends. Using his diving seacopter, Tom had recovered the rocket from a crash landing in the ocean.

Here, as before, were curious plants glistening with a red metallic sheen and seeming to grow directly out of rocks. Some looked like honeycombed tulips or inverted mushrooms. Others bore flowers with long spikes, dripping an oily liquid.

“But those animals!” Tom gasped as he gazed at the animals in the fantastic “space zoo.” The creatures lay among the rocks, or moved about in slow, sickly fashion, scarcely turning their heads to look at Tom.

Though no larger than horses, they resembled the prehistoric monsters of earth’s dim past. Tom saw what looked like a miniature edition of a brontosaurus, with its clumsy body, long neck, and tiny head. Near it was an animal which looked like a glyptodon or ancient armadillo. A small tyrannosaur squatted on its hind legs, slowly opening and closing its bone-crusher jaws.

As Tom stared in amazement, a triceratops waddled a few paces toward him. Its horned head made it look something like a rhinoceros, with a frilled bony plate around the neck. Several other species were equally weird.

“It’s strange,” Tom thought, “that the animals of the planet are so primitive in form, while their masters are so highly advanced in science.”

Turning his attention to the living conditions inside the ship, Tom checked the atmosphere meter built into his space suit. It registered almost the same pressure as earth’s atmosphere, with a high percentage of oxygen. Another mystery! Had his space friends been investigating the phantom satellite, Nestria, and learned how to create this atmosphere just for Tom and his companions to work in?

Whatever the answer, his space suit was no longer needed. Tom took it off, glad to be free of the bulky gear.

Just then he heard a series of taps on the outer wall of the space saucer. It was a signal in international code! Tom listened and read off the message: “Are you all right? Can’t open door.”

Tom explained, adding a brief description of what he had found. Bud managed to pick up the signal by holding his helmet against the ship’s hull. He translated the signals for the three scientists, who were amazed and more eager than ever to inspect the animals, after hearing Tom’s brief and tantalizing report.

“Any orders?” Bud signaled back.

Tom replied, “Stand by. Will try to find a way to let you in.”

After signing off, Tom continued along the passageway. It seemed to extend around the entire rim of the ship, completely enclosing the space zoo.

Tom was intrigued by the fact that there appeared to be no machinery of any kind. The deck, walls, and overhead were stark and bare. Tom mulled over the problem and decided that the ship must be built of sensitive metals which enabled the craft to be remote-controlled—probably from the special satellite on

which his space friends carried on their scientific work.

Returning to the spot where he had left his space suit, Tom made contact again with the group outside. He ordered Bud to have one of the ship's repelatron beamed at an angle against the sliding panel. Perhaps it could be pushed back by the force of the repulsion wave.

"Wilco," Bud replied in a few seconds.

Tom donned his space suit and waited. Long minutes went by. At last the panel began to open again, inch by inch. Tom grinned as he heard Bud's cheer over his suit radio.

When the entrance was finally open to its full width, Tom's friends greeted him with anxious cries and questions. These turned into startled gasps as the newcomers caught sight of the space zoo.

"I don't believe it," Bud gulped. "There just aren't such animals!"

"I can hardly believe it myself," Dr. Faber murmured. "Their resemblance to the dinosaur forms that developed on earth is uncanny."

Smiling, Tom radioed a message back to the ship. He told Hank to turn off the repelatron beamed at the door and allow it to slam shut. "Give us an hour inside the saucer and then force it open again," Tom ordered.

"Roger!" Hank signaled back.

As the door slid shut, sealing the little group into the space ark, Bud flashed an uneasy glance at Tom. "What's the idea?" he asked over his suit radio.

"Check your atmosphere meters and you'll see," Tom replied.

The four were delighted to learn that they could doff their space suits. Apparently the saucer's oxygen system had recovered from the exposure to the void while the door was open.

"And now let's have a closer look at those animals!" Evan Glennon urged eagerly.

"Are we supposed to inspect and treat them through this transparent wall?" Jerry Walden asked with a puzzled frown.

"I imagine that was included for our own protection, in case we didn't want to get close to them," Tom replied. "But it shouldn't be too difficult to get inside."

Using a drill from among the tools which he and Bud had brought along, Tom made a small opening in the inner wall. Then he checked conditions inside by holding his suit meter close to the hole. It registered a much thinner atmosphere than that in the outer passage—equal to conditions approximately twenty thousand feet above the earth.

"We'll need oxygen masks," Tom reported.

Fortunately, their suit tanks were detachable and equipped with masks for separate use, under rarefied but above-vacuum conditions. Tom and Bud cut out a section of the transparent wall, large enough for them to squeeze through. Then they all donned oxygen masks, entered the zoo garden, and sealed up the

opening again.

“At last we can begin the real job,” Dr. Faber said with satisfaction. “Tom this project is a zoologist’s dream!”

“You sure these babies won’t bite?” Bud asked, eying the animals cautiously.

“They hardly look as if they have enough appetite,” Tom remarked.

“They probably don’t,” Professor Glennon agreed. “I’d say they’re either too sick or too docile to harm us, perhaps both. Look at the way that fellow’s ribs stick out. Probably hasn’t put away a square meal for days.”

“Well, don’t look at me-I’m no candidate!” Bud said hastily.

Chuckling, Glennon went up to one of the dinosaurs, took its head between his hands, and proceeded to inspect its heavy-lidded eyes. His gentle manner and friendly murmurings in Welsh seemed to have a soothing effect on the beast.

Tom and Bud looked at one another, grinning. “You’d think he was an old hand with these space monsters,” Bud whispered.

Meanwhile, Dr. Faber and Jerry Walden were similarly engaged. During the next half hour, they examined all the animals, conferred together, and finally reported to Tom.

“The symptoms are similar to those of Brucellosis,” Jerry announced.

“Is that good news or bad?” Tom asked.

“Both, in a way,” Jerry explained. “It’s a deadly disease which can wipe out a whole herd or species. Humans can contract it, too. On the other hand, we’re lucky because it’s a disease we’re very familiar with on earth.”

Tom glanced at the three scientists expectantly. “Any cure?”

Dr. Faber nodded. “Some of the antibiotics are quite effective. Of course with these strange animals, we’ll have to wait and see.”

Tom was cheered by the news. “Let’s hope for the best!” he said.

The three specialists now prepared to tackle the job of treatment, giving a needle injection to each animal.

Feeling that he had done all he could, Tom decided to leave the space zoo. He asked Bud to remain and help in any emergency that might arise. Tom himself was feeling anxious about the Brungarians’ next move.

In the outer passageway, Tom donned his space suit and waited. Before long, Hank opened the sliding panel by repelatron beam and Tom emerged into the space void.

Already the moon had shifted considerably. Soon they would be exposed once more to the direct rays

of the sun, which meant the Brungarian rocket ship would regain its normal power supply and mobility.

Returning to the Challenger, Tom found his crew anxiously waiting to learn what had transpired aboard the space ark. He found it hard to repress a smile at their gasps of disbelief when he described the queer animals aboard.

“This time I’m plumb sure yo’re pullin’ my leg, boss!” Chow Winkler declared.

Tom chuckled and shrugged. “Wait and see.”

Meanwhile, they were all uneasy about the Brungarian craft which hung suspended above them like a waiting stroke of doom.

“We’d better do something soon, skipper,” Hank advised. “If we stall around too long, we may find ourselves at their mercy.”

Tom frowned and rubbed his chin thoughtfully. “I have an idea, Hank. So far we’ve been using just enough repulsion force to keep them from falling back on the moon. Let’s try giving them a full dose. We might be able to force them beyond the umbra and too far out of range to harm us.”

Hank and the others felt the plan was a good one. “At least they won’t have us right up close to them like sitting ducks if they are planning a blitz attack,” Hank remarked.

Tom took the controls and focused all the repelatron power he could, squarely on the Brungarian rocket ship. To the delight of everyone aboard the Challenger, the enemy craft was hurled outward by the force of the repulsion beam!

“Yippee! The sneakin’ foxes are beaten!” Chow cheered. “Now this here star-studded sky ranch is ours!”

The others were not so sure of this and kept a close watch on the enemy ship for any attempt to renew hostilities. But, after a few minutes, the Brungarians suddenly veered their rocket about and sped off earthward.

Bud heaved a great sigh. “Guess you’re right, Chow. Looks as if they’ve finally given up.”

Hank Sterling agreed. “Your repelatron was too much for those guys, Tom! Maybe they’re even grateful you saved them from crashing into the moon.”

“Humph!” Chow snorted in disbelief. “Grateful? Them underhanded critters? Nope. They’re givin’ up cause Tom got to that there space ark first.”

Tom smiled. “Which reminds me-you all want to take a look at the space zoo?”

Eagerly, in relays, the crew went to observe the strange menagerie. A test proved that the sliding panel now opened easily by the radio method.

“The Brungarians must have been jamming our signals,” Tom decided.

Chow’s face was a study in horrified amazement when he finally saw the miniature dinosaurs. “Sufferin’ horned toads!” he exclaimed. “You mean your space friends eat them critters?”

“I guess so.” Tom chuckled.

The old cowpoke shuddered. “It’s enough to give an hombre ind-ee-jestion jest lookin’ at ‘em! An’ to think Bud claims some o’ my concoctions taste funny!”

Tom burst out laughing. Chow’s penchant for experimenting with strange new dishes was an old joke at Enterprises. Even now, as he studied the animals a bit longer, a look of interest began to gleam in the cook’s eyes.

“Y’know, mebbe I was jumpin’ to conclusions, Tom,” he murmured thoughtfully. “With the right kind o’ barbecue sauce, them critters might not taste so-“

“Okay, okay, Chow,” Tom interrupted jokingly. “Back to the Challenger before you go getting any bright ideas!”

Twenty-four hours later the three scientists emerged from their long vigil in the space zoo, their faces triumphant.

“You can inform your space friends the animals are responding to treatment,” Dr. Faber reported with a smile. “They should be ready to go back to their own planet within three days. And we’ll send along a quantity of vaccine.”

Tom wrung their hands gratefully. “You’ve all done wonders!” he congratulated them.

A code message was flashed to the space people who sent back grateful thanks. Exactly three days later the ark suddenly started to move. Soon it was whisking out of sight in the distant space void.

Tom looked after the space saucer enviously. “Guess I have a long way to go,” he sighed, “before I can catch up to my space friends and develop a remote-controlled spaceship.”

Chow consoled him. “Don’t worry, son. You’re still the first earthman to land on the moon.” The cook gazed out longingly at the huge ball of earth, hanging low in the sky. “And I’m sure feelin’ earthstruck, jest like I wanted to be. Let’s go back home pronto, Tom!”

The youthful inventor was willing. He had several ideas which needed to be worked out on the drawing board. One day, as he pored over a problem in his lab, it suddenly occurred to him how valuable the solution to it would be in solving a challenging scientific mystery, to be related in the next volume, Tom Swift and His Space Solartron.

Tom slapped his old friend Chow on the back. “I’m earthstruck, too, Chow. Let’s return to terra firma. Maybe a new adventure is waiting for us down there-or should I say up?”

THE END

TOM SWIFT IN THE RACE TO THE MOON

By VICTOR APPLETON II

No. 12 in the Tom Swift Jr. series.