

TOM SWIFT #35: TOM SWIFT AND HIS PARAMAGNETIC  
INITIALIZER

CHAPTER 1: A SECRET DESTINATION

Tom Swift Sr. walked down the dark corridors of Swift Enterprises. It was about 1:30 in the morning. Only a few maintenance men were around.

Mr. Swift entered an elevator and pressed the button for the basement. Once down there, he walked along the main corridor, dimly lit with old-fashioned light bulbs. It was purposely dim down here. Pipes and ventilation ducts crisscrossed the walls and ceilings. Every so often he'd pass a hissing steam pipe. There was no one down here. But he wasn't expecting anyone to be. He turned down one cross-corridor, then another. Finally he stopped in front of a locked door. He pulled out his keys and used one on the lock.

Inside was the usual mess of mops, brooms, shelves loaded with cleaners, solvents, rags, gloves and other tools. Mr. Swift stepped inside the custodial closet and shut the door. He twisted the door's lock one way, then another, then back again. He heard the thick restraining bolts that were built into the top, sides, and bottom of the durastress-reinforced door quietly slide home. Nothing short of a tank would be able to penetrate the closet now. The sequence of knob-twisting also activated the security devices as well. He walked to the end of the closet, which wasn't far. Facing the wall, he spoke: "I am Tom Swift Senior. Rain has begun to fall."

Speakers built into the wall recorded the password and compared Mr. Swift's voice to the one on file. A moment later the latter half of the floor where Mr. Swift was standing began to sink. It didn't sink far, perhaps five feet. Mr. Swift had to stoop over a bit in order to walk into the short, cube-shaped room ahead of him. As he did so, the floor rose once again, leaving him in darkness.

Tom Swift Sr. slowly counted to thirty. Then he approached the wall and, using his knuckles, tapped a code onto the wall. He winced as he did so: the wall was solid concrete. But he knew the sensors embedded into it would register the vibrations. He also knew that if he didn't do this at the precise time, and use the precise code, the ceiling would lower all the way down. Gruesome, but necessary.

After a short delay, a panel opened up to his side. Still hunched over, he made his way out into a well-lit corridor. He continued until he reached midway. Without warning, a series of cross-bars with razor-sharp points sprung out just inches in front of his face. He could feel other such points just barely touching his back. Very calmly, he recited a limerick, then waited. Moments later the bars withdrew in a flash. Mr. Swift continued on.

He stopped in front of a massive metal door. The door was an alloy of beryllium, iridium and durastress. Even a tank would have a hard time breaching this door. Off to the side was a large array, twenty by twenty, of featureless square white buttons. There were two

small lights on top, one red, one green. Currently the red light was lit.

Tom Swift Sr. began punching in the thirty seven digit code he'd held in his memory all these years. He'd hoped he would never have to use it. Once the final button was pressed, the red light went out and the green lit up. The massive doors slid open. But Mr. Swift made no move to enter. Once again he waited, counting up to forty-five. Quickly he punched in a number sequence three times. The first two were identical; the third one had the final button in a different location. The green light blinked three times then held steady. Now the repelatron that had been aimed at his back since the first sequence of numbers had been pressed switched off. Had Mr. Swift made the slightest move toward the entrance without punching in those finally three sequences of buttons, the repelatron would have kicked on full force, smashing him literally flat against the wall. He wasn't worried about the wall: it was even more heavily reinforced than the doors were.

The room he entered wasn't particularly big. There was a fairly large Transmittaton tank against the opposite wall. A console with a computer terminal stood in front of it. Mr. Swift inserted a special key into the console. He twisted the key this way and that, then punched it all the way in. The console lit up, the computer screen came to life. Any other sequence and the console would have self-destruct.

Mr. Swift typed in a few commands, pulling up the master file. The screen showed:

<b>BARCLAY, BUD</b>	<b>AGE: 18</b>	<b>TIME LAPSE: 10 YEARS, 3 MONTHS 2 DAYS, 5 HOURS</b>
<b>SWIFT JR., TOM</b>	<b>AGE: 18</b>	<b>TIME LAPSE: 10 YEARS, 3 MONTHS, 2 DAYS, 5 HOURS</b>

Below them, his name, Mary's, the girls', Harlan Ames and Phil Radnor's were listed as well. Using a light pen, Mr. Swift highlighted both names. Next to the word **COMMAND?** he typed **RETRIEVE**. A moment later the computer screen read:

**FILES RETRIEVED.**

With a sigh, he punched a large red button on the console. There was a flash of light. In the Transmittaton tank stood Tom Swift Jr. and Bud Barclay - both at age 18.

They stepped off the platform with smiles. "Okay, Dad, that's done," Tom said. "So now our patterns are stored in the computer for a while. Sure hope we don't have to use this for any - " he broke off with a gasp. "D-Dad?" he said, eyes bulging.

"Mr. Swift?" Bud asked, incredulous.

Mr. Swift seemed to have aged in the blink of an eye.

Tom Swift Sr. managed a wry smile. "Welcome back, boys."

## CHAPTER TWO: AT THE COBRA'S LAIR

The Black Cobra strode down one of the many corridors in the Kranjovian secret laboratory. *Secret*, he thought with a snort. *Might as well erect a large, neon-lit sign on the mountainside above pointing out the lab's location.* The Swifts and America's CIA now knew exactly where it was. And if they did, most of the other intelligence agencies the world over knew of it by now. Still, until the *Ashtorath's Revenge* was fit to be launched again, there was no place else to go.

The Black Cobra unlocked the entrance to his private office. Inside, he stared again at the space where his computer used to be. He thought back to the day several years ago when he met one of the Tekili-li starships and it had taken him to their homeworld. It was his first visit there. Previously, he'd simply met with one of their starship out in space, and they would exchange data. This time they wanted him to meet with them. The Cobra still shuddered at that first encounter. Tough and ruthless as he was, he felt like a child in the presence of such incredible intelligence and evil. It had taken every bit of control he had to remain calm and not give into the screaming horrors. Merely being in the proximity of the Tekili-li felt like ever nightmare he'd ever had as a child brought to life.

This time, rather than more of their incredibly complex math to aid with his star drive, they presented him with a computer, a computer unlike anything he'd ever seen before, modified for human use. They instructed him on how to use it and gave him the data crystals. Then they returned him to his back-up spaceship. The Black Cobra had returned to their planet a few more times, but had not looked forward to any of them. He did ask them, during one of the visits, why they didn't just give him one of their starships and let it go at that. Turns out the ones they had were in a bad state of disrepair - he'd noticed that himself - and were none too reliable. It was the main reason they wanted him to build one of his own.

Back at the Kranjovian secret lab, they'd gone over the computer with a fine-tooth comb, yet understood very little about it. The computer itself was more advanced than anything the Black Cobra or his allies had ever seen before, yet he got the distinct impression that the Tekili-li considered it to be hopelessly antiquated. But it was also the most modern computer they possessed. Somewhere along the course of their evolution, they passed beyond the need for computers or similar machines. Yet, in doing so, they also lost a lot of knowledge, like an over-specialized scientist forgetting basic algebra. That was the primary reason they needed the Cobra to give them the math behind disrupting stars. Further, they insisted that he needed to present the knowledge to them in person. Which he currently wasn't able to do, since the math he needed was in his computer. And the computer was in the Swifts' hands.

*I must get it back*, he thought. Somehow he had to lead a raid into Enterprises and retrieve his computer. Work on the *Ashtorath's*

Revenge had been very slow with out it.

The Black Cobra knew that retrieving the computer wouldn't be easy. Swift Enterprises had been raided or broken into many times in the past. Now their security was almost second to none. The old method of using security bracelets had long since been replaced with brain-wave pattern identifiers: while on Enterprises ground (or Fearing Island, for that matter) hidden sensors kept a monitor on the unique pattern of brainwaves each individual had. There was no way to disguise or hide these waves. Further, should someone try an airborne gas attack - as the Brungarians did on Fearing Island many years ago when they stole a portable version of the Swift's space code translator - the sensors could project delta-wave patterns directly on the intruders, essentially putting them to sleep. And they could project alpha-wave patterns on the people knocked out, waking them back up. The Cobra himself had wrestled with the problem many times without coming up with an answer. He thought about inserting a set of his own brainwave patterns - under an assumed name, of course - into the central computer. Only problem was the central computer was located on Enterprises grounds and wasn't connected to any outside network. *No*, he thought to himself. *About the only way to retrieve the computer was for it to somehow be moved to another location - say, CIA headquarters or Fearing Island. Then intercept it en route.* But how to do that? He mulled the problem over as he left his office and returned to the main workshops.

The *Ashtorath's Revenge* was mounted on girders, technicians and workmen scrambling all over it. The vaguely cylindrical ship was partially disassembled as the Kranjovians and Brungarians tried to route out all of Tom's and Bud's sabotage. When they saw the Cobra enter, some couldn't resist shouting and cheering. Even after six months, they still couldn't quite get over the deaths of Tom Swift Jr. and Bud Barclay.

The Black Cobra bowed his head slightly in recognition. He himself had a hard time accepting victory over his arch enemy. Once again, the Black Cobra thought back to the day it happened...

The Cobra strode out of the control room and down to the weapons room. "Remove one of the fusion missiles!" he ordered his men. They saluted him, but one of them, a Brungarian, replied, "We - we can't, sir. All of the missiles were fired - and now they're jammed in their tubes!" He pointed to where the missile's backlash had blown out the tube ports. Several men had been caught in the blast and had been vaporized.

The Black Cobra glared at him, then thought. "Wait. Where are the spares?"

"O - over there, sir!" the man pointed again.

The Black Cobra strode over to the missile rack. He removed one of the missiles. Fusion missiles weren't very big, and not too heavy - say fifty pounds or so. With some difficulty the Black Cobra was able to remove one from the rack, and carry it a distance to a close-by airlock. The airlock faced away from the *Cosmotron II*. Hastily donning a space suit, the Cobra also grabbed a large black tarpaulin that had been tossed on the ship for some reason or other. Once out in space, he would use the tarp as a sort of deflector for both radar and sight. Here, far away from the sun, no large planets close by, it

was very, very dark. He, the fusion missile, and the tarp just barely fit in the airlock. Moments later he was out in space.

It had been an awkward few moments as the Cobra adjusted to a zero-g environment. He knew he didn't have anywhere near the experience in free fall that Swift and Barclay did. Somehow, though, he managed to wrap the black tarp around him and the missile. Somehow he managed to fire the suit's small jets with just enough power to get them to the other side of the ship and headed towards the *Cosmotron II*. Somehow the speed was just slow enough so that they didn't set off any warnings on the Swift's radar. As it was, though, by the time he peeked under the tarp to see where the *Cosmotron II* was, he found himself way past it. But he was now looking at the ship's backside. Quickly but carefully, he fired the suit's jets in the opposite direction, enough to bring him to a halt - or as close to one as possible. Very carefully, he pulled himself along the length of the missile, trying not to have it turn or otherwise move off target. Then he reached the access hatch to the missile's controls. He switched on the suit's external lights, confident he couldn't be seen. He adjusted the targeting system, he flicked a switch, activating the missile's engine. It took off without a sound, the light from the jet plume almost blinding him. The Black Cobra grabbed the tarp and wrapped himself in it. He activated the suit's jets again, fighting the instinct to go at full throttle, aware that if he did, he'd shoot past the *Ashtorath's Revenge*, or possibly slam right into it. As it was, the debris from the *Cosmotron II*'s explosion ripped the tarp to shreds. But by then he was close enough to his ship that he could safely jettison it and make his way back around to the airlock.

Thinking back on it all, the Black Cobra knew he'd been extraordinarily lucky. Even now, months later, he'd still wake up nights in a sweat, seeing a huge chunk of debris flying straight at him. And sometimes that chunk of debris would contain two flaming, grinning corpses, arms reaching towards him, eyes burning with desire for revenge...

The Black Cobra shook his head. This train of thought was for weaklings. He had a job to do - get the *Revenge* back in shape. Time he got back on it.

He looked over some of the lists of damage. It was extraordinary what Swift and Barclay had accomplished - right under their very noses! In an odd way, he felt a grudging admiration for the extent of subtle damage Swift and Barclay had managed to inflict. His own spies should be this good. And some of the sabotage was breathtaking: Swift had actually altered the gravwell equations from which the schematics were derived!

The gravwell engine was the spatial displacement drive the Tekili-li used themselves. They refused to give the plans to the Black Cobra; instead, they gave him rather broad hints on which to develop the plans himself. It had taken the Cobra years before he finally understood what the aliens had been driving at: creating an artificial gravity well - something similar to a black hole - and allowing it to surround the ship. The laws of physics were distorted within the gravity well, so the ship could exceed what was considered to be the speed of light. Actually, the ship was still travelling below light speed, but the gravity well was now exceeding it. Or

something like that. There were times when the n-space topology involved gave even the Cobra a splitting headache.

Navigating in this gravity well would normally be impossible for any human to perform, so it had to be taken care of by computer. The computers were programmed with information retrieved from his own probes. Much like Tom Swift, the Black Cobra had to launch many probes far out in the depths of space. The probes reviewed the surrounding area to see where they'd popped out, then reversed their course and returned to the solar system. Some of the probes never made it back. But enough returned so that the Cobra had a fairly decent map of three dimensional space surrounding the solar system. The Tekili-li helped as well, sending the Cobra even more navigational data he could program into the computer. He knew where their home star was. Or rather, he did. Past tense. Because all of the information was stored in his computer, along with the plans for world conquest. All of it in Swift Senior's hands.

This was the major obstacle. The Cobra could try to reconstruct the data from scratch, but it would take years. Once he'd tried to copy the information into his own computers, but the data was so vast it filled the memory banks to overflowing, without even transferring a third of the vital data to the computers. The Tekili-li's computer was the only one that could handle that much information. And the fact that there was plenty of memory left over spoke volumes about their knowledge of computers - or what it had been back in their hey day. The Cobra had asked for a back-up computer just in case, but oddly, the Tekili-li had balked. The Cobra could never quite pin them down as to why, making him wonder if this computer was the only surviving one they'd had left. Which made it even more invaluable. There really was only one recourse: he had to recover the computer. Pulling out a pad and pencil, he began to make plans.

### CHAPTER THREE: BACK FROM THE DEAD

"M-Mr. Swift?" asked Bud Barclay. Like Tom, his eyes were bulging. He couldn't get over Tom Swift Sr.'s hair being whiter, and the appearance of age lines.

Tom Swift Sr. sighed. "Yes, boys, it's me. And to answer your unasked second question, the answer is also yes: you are file copies. The sad truth is, your older, original selves are dead."

Their eyes grew even wider.

"I had no choice but to bring you back. The earth may be in deadly peril soon. I need your help. Badly. And, after all, this is why we made duplicates of yourselves to begin with."

His mind still reeling from what his father told him, Tom knew this was true.

Long ago - only a short few months ago, from his point of view - while working out the bugs in the original Transmittaton, Tom had tried to send a mushroom from Point A to Point B. It worked - then a second mushroom appeared. And a third, and a fourth. The Transmittaton began reproducing mushrooms so fast that the boys had been almost buried under an avalanche of the things. They managed to get Chow to take care of the surplus. Bud still became queasy at the thought of any dish with mushrooms. Even pizza.

It didn't take long to see the implications: the Transmittaton could not only teleport objects from one location to another, it could duplicate them as well. Shortly after the affair with the Galaxy Ghosts and the frozen mastodon had been taken care of, the boys and Mr. Swift held a secret conference one night to discuss the matter.

"What we have here," Mr. Swift told them, "is the means to end world hunger. Shortages - of any kind - will become a thing of the past. The need to go to war for those kind of things, or for dictatorships to rise to power over them, will vanish. That's the good news. The bad news, however..."

Tom nodded. "I know, Dad. I've been thinking the same thing."

Bud looked at them, amazed. "Bad? What could possibly be bad about bringing an end to hunger, or running out of things?"

"The Transmittaton will not only end the need for transportation as we know it - putting hundreds, if not thousands of people out of jobs - it will utterly destroy our economic system," Tom Swift Sr. told him. "And, very likely, our political system as well."

"And not just ours," Tom told his friend. "Everyone's. I've been thinking about this myself, Bud, ever since I perfected the Space Solartron. That, in itself, could wreck more havoc on the economy than I ever dreamed."

Bud gave him a puzzled look. "How, Skipper?"

"Do you realize, Bud, that not only can it produce simple molecular products, like air, water, or sugar, but complex molecules like rubber, nylon, and mineral ores. Gold? Silver? Diamonds? I can make them all, Bud. How about synthetic oil, indistinguishable from the real thing?"

"But Tom, the Solartron takes tons of energy to run!" Bud exclaimed. "And costs a small fortune to build. You know this. So why are you worried about it?"

"For now it does," his friend replied. "But that doesn't mean it will stay that way. I've already come up with several ways to build more compact, energy-efficient versions."

"Think of the way computers are now, Bud," Mr. Swift interjected. "When they first came out, they were huge beasts that took up three or four floors, had thousands of tubes, and consumed electricity by the megawatt. Now they're small enough and cheap enough for even a small business to afford."

"We've had students from the University of Brazil, others from Europe, Japan and China, write in and ask for more information on how the Solartron runs. Seems they're attempting to build their own versions," Tom said.

Mr. Swift nodded. "I'm afraid that once something like this gets invented, it shows others that it can be done. Then others find ways of creating improved models."

"Don't the Swifts had some sort of lawyers to go after people like them?" Bud asked.

Mr. Swift gave a wry grin. "You mean patent attorneys. Yes, we employ many of them. But it wouldn't do any good, Bud. The students and inventors in other countries aren't stealing from us. They're creating machines of their own design. As I said, once someone shows that something can be invented, it's not long before everyone is making one."

"Which brings us back to the Transmittaton," Tom said. "Its potential for disruption is even greater than the Solartron. Mass production of *anything*, Bud! Even people!"

"People? But how..." Bud's voice trailed off as he remembered. "Oh, the mushroom! You mean, they were *all* identical?"

"I ran a test on their DNA - fortunately I was able to steal a few from Chow," Mr. Swift said with a chuckle. Then he turned serious. "They all matched, Bud. Identical to the last molecule. While you two were down in South America, I had a Transmittaton built that contained the same flaw. I was able to make identical guinea pigs, rabbits, cats, and birds. But that wasn't all. I could reproduce money, diamonds, even the small chunk of gold I've kept as a souvenir for years. Theoretically, I could have used that one small piece of gold to create a massive fortune in the metal. You see, I was able to store the pattern for it on a computer. It takes up surprisingly little memory. Not just the gold, but anything that goes through the Transmittaton."

"Plus, there's yet another side that I never thought of when I first invented the Transmittaton, but Harlan Ames saw it immediately," said Tom.

"What's that?" Bud asked.

"Picture this, Bud: a terrorist creates a bomb. He Lektromags himself to a certain destination. The bomb has a detonator set to five seconds. He drops off the bomb and Lektromags himself out."

Bud whistled. "The ultimate escape! And neither the police or FBI could ever find out where he went, much less how he got in!"

"That's if you assume countries like Brungaria or Kranjovia keeps it a secret," Tom said. "Suppose we set up Transmittaton booths all over the world, like bus terminals. Imagine people use them every day, like elevators or subways. Even if they're common, a terrorist could still plant a bomb, then play hop-scotch all over the planet. No one could trace him."

Bud nodded, speechless at the thought.

"So, much as we hate the thought of it, Tom and I decided that we're going to keep the Transmittaton off of the market. Just use it on a limited basis, here at Swift Enterprises, Fearing Island, the Citadel, and the Outpost In Space."

"We've taken further precautions," Tom told him. "I've already destroyed all of the blueprints and Magic Mirror files for the Transmittaton. Further, each machine and control console is rigged with packs of highly concentrated acid. Should anyone poke around on the insides without a proper access code, the packs will be triggered, melting every last wire, transistor, and integrated circuit."

"Hopefully that won't happen," Mr. Swift said. "But Swift Enterprises had been infiltrated far too many times in the past. We're taking every precaution this time." He frowned. "Which reminds



me - Tom, I have an idea about making Enterprises and Fearing Island a great deal safer. It's a vast improvement on our old identification bracelets."

"What is it, Dad?" Tom asked.

Mr. Swift shook his head. "Not yet. We'll talk about it at another time. For right now, though, I plan to keep a working model of the 'flawed' Transmittaton. I want to do something with it that you might find ethically questionable. But it really should be done."

"What, Mr. Swift?" Bud asked before Tom could.

"Make duplicates of you two. All of us, in fact. Myself, Mary, Sandy, Ned, and Phyllis. Just in case something should ever happen."

Tom and Bud both gaped. "You mean, you want two or more of us running around?" Bud asked.

Mr. Swift laughed. "No, Bud! But I want to keep you on file in a computer."

Tom shook his head in wonder. "Dad, if what you say is true, that would mean that anyone, in the near or far future, could, in a manner of speaking, bring us back to life any time they wanted!"

Mr. Swift shook his head. "No, Tom, I thought of that as well. A limit can be set on the computer. After a given period of time, say seventy-five years, the tape will erase itself. Or better still, the computer will self-destruct. Assuming the computer itself lasts that long." He shook his head again. "No, no coming back from the dead a hundred years from now for us - though I have to admit I find the idea intriguing! But in the short term, it could make a difference."

"How do you plan to do this without the outside world finding out, Dad?" Tom asked, though he could probably guess the answer.

"First, you two, then Mary and the others, will simply be Lektromagged from one place to another. I'll use the flawed machine to receive you. Don't worry, it will only make duplicates to the computer. Once this is completed, the Transmittaton and the computer will be moved to a very top secret location that's currently under construction. Only myself, Harlan Ames, Phil Radnor, and you two will know the location. There's no mention of it in the blueprints. To further insure secrecy, I'm using the robots - giant and otherwise - to build the secret room. Their memories will be erased once the job is complete. And that shouldn't be long. The robots have been working day and night."

"Which they probably don't mind a bit!" Bud said with a chuckle.

"I'll tell you about some of the traps I've rigged, once the job is finished," Tom Sr. said.

"What if someone uses the Transmittaton to zap themselves into the secret room?" Tom asked his father.

Tom Sr. shook his head. "Good point, Tom, but I already thought of that. Apart from the computer, the Transmittaton tank will be rigged to only *send*, not *receive*. No one's going into that room other than through the main doorway."

Tom nodded. "Yes, Dad, that's what we built it for. And hoped it would never have to be used."

"Unfortunately, circumstances proved otherwise. And, at the same time, proved we did the right thing when we used the machine for duplication. Because now I have you back, and at a critical time."

Tom and Bud exchanged glances. "Okay, Dad, what's happened?"

Mr. Swift punched a button on the console. "First, let's get out of here and back to the lab. For now, you two are going to keep a very low profile. Your enemy - I'll tell you who he is in a minute - has assumed you're dead. Let's keep him thinking that way for a while."

The three stepped back on the Transmittaton platform. A moment later they were back in Tom's main lab.

Tom looked around and blinked. "Well, it still looks the same. Glad to see that little has changed around - " he broke off, and went to examine his usual drafting table. "What in the world? Where's my drafting tools?" The table was completely bare of any instruments.

Tom Sr. grinned. "You don't need any. This is the computerized drafting table you invented a few years back. It doesn't need any tools. Sandy calls it a 'Magic Mirror'. When there's time, I'll show you how it works. Right now, though, I need to bring you two up to date. And that's going to take a while."

Bud, in the meantime, had found the Cobra's computer. "Say, Mr. Swift, before you begin, what's this thing over here?"

Mr. Swift nodded. "Glad you asked, Bud. That's part of the reason you're back." He turned back to his son. "Especially you, Tom. I'm counting on you to figure out how the machine works. You see, it belongs to the Black Cobra."

Tom was electrified. "The Black Cobra? But Dad, he died only a short time ago! After the affair with the Green Orb."

Mr. Swift shook his head. "Sorry, Tom, but he just faked his death once again and laid low for a while. Now he's back. And he has a plan to destroy most of the planet and enslave what is left. Let's start at the beginning with your latest invention, the transphotonic engine."

For several hours, taking only occasional breaks, Mr. Swift informed Tom and Bud of everything that had happened the past nine months, including their older selves' activities at the Cobra's lair. Then, with sadness in his voice, he told them about the showdown far out in space between the *Cosmotron II* and the Black Cobra's ship *Ashtorath's Revenge*.

"Your older self didn't see any problems - he believed the sabotage alone would take care of the Cobra. Still, he loaded the *Cosmotron II* with weapons, and even had a final contingency plan."

"What was that?" Tom asked.

"We rigged a life cap with superrepelatron engines and a Transmittaton reception tank, big enough for two. It was slaved to the *Cosmotron II*'s computers, but set to follow at a distance of about a half mile. It was painted with a non-reflective black Inertite paint. As well as Tomasite plastic, of course. Completely immune to radar or infrared. In case the Cobra boarded her, or some other disaster, you and the older Bud could escape to the undetected life cap and get out of there."

"So what went wrong?" Tom asked.

"We don't know," Mr. Swift replied, shaking his head. "The *Cosmotron II* was destroyed. How is unknown. Where's the life cap? Again, we don't know. No signal was ever received from it. After the Black Cobra returned to his base, I sent up search parties to the general area. They looked all over, but no trace of you two was ever found. So, finally, after six months, we had to assume you were dead."

Keep in mind, though, that no bodies were ever found. So there's a marginally slim chance your older selves are still alive. But with each passing day, that margin becomes thinner still."

Tom nodded soberly. Bud shivered. *Talk about someone walking over your own grave!* he thought.

"Now," Mr. Swift continued, "I'd like to take you on a tour of Enterprises. A lot has changed in the past ten years. Then I'm going to take you two to Fearing Island, as well as the Outpost."

Tom nodded, then stopped. "But Dad! Won't we be spotted?"

Mr. Swift smiled. "I have your disguises over here. I'll let Harlan and Phil know who you are. But that's all for now. Later on, your mother, sister and your fiancé. But not just yet."

"You're probably right, Dad," Tom said. "It would probably come as a complete shock for Mother to see me at this age. I'll bet she -" he broke off and did a beautiful double-take. "*Fiancé??*"

Mr. Swift smiled once again. "That's right, Tom. You and Phil are engaged to be married. As are you and Sandy," he concluded, turning to Bud.

"Wow!" Bud said. "I'll finally be part of the family!" He grinned at Tom. Then his grin faded. "At least, I-I would have been," he said with a note of sadness.

"I know," Mr. Swift told them. "Your coming back from the dead, ten years younger, is going to be hard and strange on our friends and family. The girls are already mourning your loss. I honestly don't know how they are going to react to your presence."

"Dad," Tom asked, "why didn't our older selves make more current copies? And why not do an update every few years?"

Mr. Swift shook his head. "To answer your first question, son: overconfidence. I mentioned to your older self that he and Bud might want to update the files. But he was confident his sabotage of the Cobra's ship, plus the weapons he had on board, would be enough to handle the Cobra with ease. As it turns out, he was wrong. As for updates ... I guess that's all of our fault. None of us has done so since the first duplication. All of us found the idea of continually making duplicates to be ... well, eerie. Even if all we were doing was just updating it. So we never used the Transmittaton for that purpose again." He shook his head again. "Looking back at it, I guess we were very short-sighted. We should have done so, anyway."

Tom sighed, then waved his hand. "Well, it looks as though it's too late for recriminations." He turned to his friend. "C'mon, Bud, let's get our disguises on. I'm curious as to see what else has changed around here."

One of the first things the two boys noticed was the jeep they usually drove around Enterprises: It didn't use gas. Nor did it use a Swift solar battery. Or an atomic capsule. Instead, it used a G-Force Inverter.

"Your Inverter has revolutionized the transportation industry, Tom," his father told him. "Today, there's hardly an automobile on the road that doesn't use one. All means of transportation do, from jet liners to railways to yachts. Even repelatronns are becoming obsolete, since the G-Force Converter allows vertical movement as well as horizontal."

Tom whistled. "That must have put a lot of oil workers out of work!"

Tom Sr. nodded. "I'm afraid so. The oil industry has all but collapsed. A gallon of oil is worth about two cents. Even plastics has been replaced with Durastress. There's some good to come out of this, apart from the disappearance of pollution and noise: the CIA caught wind of a planned oil embargo by the Middle East nations some years ago. Needless to say, that fell through. They're desperate to unload all of that oil, and now hardly anyone wants it."

They stopped by the main office, where their efficient secretary Miss Trent still worked. Mr. Swift introduced the boys as Jack and Steve, distant cousins of the family. Tom wore a black wig and wore thick glasses. He talked with a bit of an accent, too. Bud wore a red-haired wig, and deliberately slumped his shoulders. He faked a Brooklyn accent.

Tom noticed that Miss Trent's typewriter had been replaced with a computer screen and keyboard. The white letters on the screen glowed brightly against the dark background. She showed them how she could edit and rearrange the text on the screen with ease. "So much more efficient than the old typewriters," she told them. When she finished, she touched a button on the keyboard, causing the letter to print out on a nearby printer.

Mr. Swift explained to her that they'd never seen a computer before. "Short for 'computerized typewriter,' of course," he told the boys. They entered the main lab.

Everywhere, the signs of computerization could be seen. Many of Tom's old analog measuring devices had been replaced with ones that used the newer Light-Emitting Diodes.

While Mr. Swift was showing his son around, Bud couldn't resist breaking away and sneaking off to look up his old buddy Charles Winkler, or Chow, the head cook. As he snuck through the kitchen door, he was puzzled to hear someone humming. It certainly wasn't a male doing that. Bud crept closer. He was all set to pounce when he came upon a very pretty red-headed girl carrying a tray of food. She let out a squeak of surprise, dropped the tray and backed away. Bud jumped back as well.

"I-I'm sorry," he stammered, and reached down to pick up the tray. "I was expecting someone else. Did Chow hire some new workers?"

"No, he didn't," said a voice from behind. Bud whirled around

and saw Mr. Swift standing there, a look of disapproval on his face. "This is his granddaughter, Wendy Winkler. She's the new cook around here, and has been for several years." Taking the tray from Bud, he turned and presented it to Wendy. "I apologize, Wendy. This is one of my remote nephews, Steve. I'm giving him and his brother Jack a tour of the facilities. We'll be having lunch in the cafeteria later on."

"Okay, Mr. Swift," Wendy replied. She gave Bud a warm smile. "Welcome to Swift Enterprises, 'Steve'." Bud looked closely. There was a definite twinkle in her eyes. Wendy hadn't been born yesterday, and knew this person wasn't who Mr. Swift claimed he was. But if he wanted her to believe this person was "Steve", she'd play along for now. Later, though, she'd want answers. Especially if the young man in front of her was who she thought it was - even though it couldn't possibly be.

As they left the kitchen, Mr. Swift admonished Bud for sneaking off like that. "You don't yet know your way around here, Bud. And you could come upon someone who recognizes you. Wendy there almost did. I'm going to have to have a talk with her later."

Tom, who had been standing behind his father, had stared in amazement at Wendy. As they walked down the corridor, Tom said, "I had no idea that Chow had a family, let alone grandchildren. Yet I thought I knew him pretty well."

Mr. Swift nodded. "I know. Chow told us about them a few years after the Galaxy Ghost affair. Came as a shock to us as well. Turns out he'd been married for years. His wife Abby had often accompanied him on the panhandle roundups. Turns out she passed away about a year before you met him, Tom."

Tom nodded. "I see. Now I understand why he wanted so eagerly to join us. He must have been pretty lonely by then."

The three kept silent for a bit. Mr. Swift drove the jeep over to the hanger where the Whirling Ducks - Tom's hybrid jet plane/helicopter - were usually kept. It also was the entrance to the *Sky Queen II*'s hidden underground hanger.

The hanger also included many of Tom's other aircraft: the TV-shaped graphicopter, which Tom had used for his repelatron skyway in Africa; the Pigeon Specials, Swift Enterprises' best-selling private jet planes, the *Drumhawk*, Tom's ultrasonic cycloplane - another Vertical Take-Off and Landing aircraft which could also be driven along the road like an automobile; the flying-saucer shaped *Ocean Arrow*, his first diving seacopter; a triphibian atomicar; a "repelatron donkey" - basically a square platform with a repelatron attached underneath, used to transport cargo and people on the moon. Finally, an assortment of Swift cargo jets. Most of these, Tom was pleased to see, were still there. But Mr. Swift informed him that they were seldom used. New models of the Pigeon Specials and Whirling Ducks now used the G-Force Inverter to propel them. The old, familiar jet-fueled models had been converted to them. "And, as you well remember," Mr. Swift said, "even before we started installing the Inverters, we were starting to use repelatrons in place of jet engines." Tom nodded, recalling how his own rockets were using the silent repelatrons. Even the *Sky Queen*'s jet lifters, which had caused so many headaches before he perfected the metal alloy which could withstand the fierce heat, had been replaced with the super-

silent repelatrions. It was sad, in a way, seeing the older models mothballed, covered with tarpaulins. But it was, Tom knew, the inevitable price of progress.

"Now," Mr. Swift said with a smile, "let me introduce you to the new *Sky Queen II!*"

"*Sky Queen II?*" both boys echoed.

"Indeed," Mr. Swift replied.

The threesome walked over to a hidden elevator, and rode it down to the underground hanger. There, a huge, three-decker aircraft stood, ready for take off.

Superficially, the *Sky Queen II* resembled the old *Sky Queen*. But Tom could see some differences. First, the *Sky Queen II* was about fifty feet longer, and a good twenty feet taller. The overall shape was more aerodynamic. Gone were the jet lifters sticking out from the bottom. The wheels and landing gear were about the same, though.

As Mr. Swift and the boys approached the ship, the bottom hatch opened and swung down. Rather than a ladder, it was in the form of a large ramp. "Makes it easier to walk in, or load vehicles and other mobile equipment," Mr. Swift explain.

"Did you press a button somewhere, Dad?" Tom asked. "Or is there someone on board?"

Mr. Swift shook his head, smiling. "Neither, Tom. The *Sky Queen II* uses the same sort of brain-wave identification that's in use around Enterprises itself. It's just one of many improvements your older self made to the original *Queen*."

Tom paused at the start of the ramp. "Dad, what happened to the *Sky Queen*? Why did I replace it with a new one?"

Mr. Swift gave his son a sad look. "Radiation, Tom. Even with the Tomasite plastic to help, the level of radioactivity inside the nuclear engines finally began to penetrate the shielding. It was only by pure dumb luck you happened to be running an experiment in the lab area that dealt with minute levels of radiation, and therefore picked up the leak from the engines. We came up with all sorts of ideas to stop the penetration, but it was evident that the *Sky Queen's* engine room was becoming a hazard. You really hated to do it, but in the end, the entire plane was Lektromagged to a location on the moon, where the radiation wouldn't harm anyone. And it was getting bad. By the time your older self made his good-byes to the ship, you and Bud had to wear radiation suits even in the forward compartments. Most of the electronics wouldn't even work."

Tom let out a low whistle. "That's bad all right. We'd never had any trouble from the engines. I-I guess it never occurred to me that this would happen." He looked up the ramp at the interior. "So, I went ahead and built another." He turned back to his father and gave a wry grin. "I hope I designed the atomic engines better this time."

Mr. Swift shook his head. "You didn't even bother with it, Tom.

The *Sky Queen II* uses one of your atomic capsules for power, but for propulsion, it uses the new Mark IV G-Force Inverter. And that for both horizontal and vertical propulsion, though you do have repelatrions as well in case of an emergency. Come on, I'll show you the rest of it."

They walked up the ramp, which closed up behind them. The lowermost level contained an improved version of Mr. Swift's famous

searchlight, various parts and miscellaneous cargo, and the hangers for the two smaller aircraft: the *Kangaroo Kub*, a small jet plane and the *Skeeter*, a midget helicopter. Only, they weren't there. Instead, Tom found two other aircraft.

"Meet the *Seagull*, a hybrid," Mr. Swift told them. "It's a combination of a cycloplane and a jetmarine. It's basically used as a scout for air and sea. It's very nimble, and much more quiet than either a seacopter or a regular jetmarine. Plus, its cycloplane features gives it tremendous stability in either a storm or undersea currents. It, too, uses a small atomic capsule for power, and a G-Force Inverter for propulsion. As does the *Gopher*." Mr. Swift gestured to the other vehicle, an odd, diamond-shaped aircraft. The vehicle was pockmarked with tiny, cup-shaped indentations. Tom peered at the closely. "Say, are those repelatrions by chance?"

Mr. Swift nodded. "Correct, son. The *Gopher* is, essentially, a slimmed-down version of your Subocean Geotron. You use it for penetrating the earth's mantel. Unlike the Geotron, though, the *Gopher* can't go quite as deep. But it's much speedier, seats five, and is loaded with sensor equipment. You even used it once to save a boy and girl who had been lost in some caves outside of Shopton. Or should I say, your older self used it."

Bud shook his head. "They're nice. Odd, but nice. Still, I'm going to miss the *Skeeter*, if nothing else."

Tom nodded. "Me too, Bud."

They took the lift to the next level. Tom found out that the *Sky Queen II* had both lifts and, in case of power failure, ladders. The ladders were just rungs mounted flush against the skin of the fuselage. The levels were separated by air-tight hatches that opened manually.

The second level contained the main lab itself. Tom was amazed to see how much larger it was. The engine room, by contrast, was much smaller than the one in the original *Queen*. The atomic capsule, about the size of a breadbox, was tucked away in the corner. So was the latest generation G-Force Inverter; it wasn't much bigger. The rest of the room contained some gauges and electronic displays. That was all. The engine room itself wasn't much bigger than a small bedroom. Small wonder, Tom thought, that the rest of the lab is so huge.

Tom shook his head in wonder. "It really should have occurred to me that the G-Force Inverter could be used for a lot more than just the *MonoSwift*," he muttered. "But I was so caught up with beating *Cosmos Enterprises* to the punch, I never had time to give it much thought."

"I know, son," Mr. Swift said, laying a hand on his son's shoulder. "But, as you can see, you certainly did later."

Tom chuckled. "I guess I did at that."

"Say," Bud spoke up, "what's become of *Cosmo Kinkaid* and *Cosmos Enterprises*, anyway?"

"Ritt's running it now. *Cosmos Enterprises* filed for bankruptcy shortly after they lost the contract to us, and their assets were liquidated. We bought them up and added them to *Enterprises* for a while. Then, shortly after *Cosmo Kinkaid* passed away, Ritt approached me about starting up a new *Cosmos Enterprises*. So I helped him to form a new one. He soon acquired other business, and *Cosmo Enterprises* was reborn. The new *Cosmos Enterprises* is a lot better

run than the old one. Ritt and your older selves got along just fine. Keep in mind, though, that we're still rivals!"

Back in the lab, Tom marveled at all of the up-to-date equipment and tools. Then they went up to the third level. As in the original *Queen*, the third level held the lounge, the kitchen and the cockpit. The lounge was every bit as comfortable as the old one. The kitchen was fully up-to-date as well. The cockpit took Tom's breath away. Many of the old analog instruments had been replaced with LED or computer-screen readouts. Mr. Swift pointed to two computer screens.

"Those are for incoming messages from your space friends. The one on the left will show the original symbols. The one on the right, the translation." Mr. Swift had already shown Tom and Bud the new computerized translators back at Enterprise's communications room.

Tom had already seated himself at the controls, Bud likewise. Almost at once, Tom began to develop a feel for the controls. He nodded with approval at the locations of various instruments - they were, of course, exactly where he himself would have placed them. "Dad, what's the *Sky Queen II*'s top speed?"

Mr. Swift grinned. "I knew you'd ask that, Tom!" His grin faded. "Truth be told, we don't know."

Tom turned and gaped at his father. "Huh?"

Mr. Swift nodded. "I'm afraid it's true, son. We can reach Mach 10 with ease. Mach 20? 30? The G-Force Inverter allows us to reach those as well. The only limit we have is the melting point of the lunite alloy. And with the Sonic Boom Trap in place, we can do so without shattering windows everywhere. Just before this present crisis developed, it's been felt by all of us that the new Mark IV G-Force Inverter will soon replace even the superrepelatrns for speed. The upper limit for the Mark IV might be just a few percentage points under the speed of light."

Bud let out a whistle. Then something occurred to him: "Mr. Swift, did you say that all automobiles now use a G-Force Inverter?" Mr. Swift nodded. "Isn't that dangerous?"

"It sure would be, Bud! Don't worry, though. Each engine has a speed inhibitor build it. It can't go over 120 miles per hour."

"What if it's tampered with?" Tom asked.

"We made sure it can't be. The speed inhibitors are linked to a self-destruct mechanism. Any attempts to modify it and the engine dissolves into a melted pool of metals. You rigged up something similar for the faster-than-light probe's transphotonic engine."

"The what?" both boys asked about the same time.

"Your faster-than-light engine, Tom. And the main reason I brought you two back to life," Mr. Swift told them. "The engine still needs to be fine-tuned. Plus, the Black Cobra's computer needs to be examined to find out how it works." Tom started to object, but his father held up his hands. "Don't worry, I don't mean right this minute. You still need to be oriented to this time period. They can wait a few days. For right now, let's take you over to Fearing Island."

"Do we get to fly the *Sky Queen II*?" Bud asked eagerly.

Mr. Swift shook his head. "No, Bud. I have another way of reaching Fearing," he said with a mysterious smile.

"What's that, Dad?" Tom asked.

"As I always tell you, Tom: if I told you what it was, it



wouldn't remain a secret! Follow me, boys."

They left the *Sky Queen II* and followed Mr. Swift to the other side of the hanger. They entered what appeared to be the hanger's electrical room. It was filled with breaker boxes and huge conduit pipes. Mr. Swift walked up to a breaker box, took out a key and removed the padlock on the box. He pulled it open, flipped several circuit breakers in order. "Don't worry," he told the boys. "As you might expect, these are fakes. You always throw them in this order: one, three, and six on this side, two, four and five on this side." A panel slid down. A beam of green light hit Mr. Swift in the face. "A retinal scanner," he told them. "Few people know about this entrance. Even with the brain wave scanner, I still don't believe in taking chances."

The corner of the room next to the breaker box swung open, each wall of the corner obviously was hinged. A narrow corridor lit up. The boys followed Mr. Swift inside. The corner closed back up.

Tom let out a gasp as he came out of the corridor and into a large area. "The MonoSwift!" he shouted. But even as he did so, he could see it wasn't quite true.

The MonoSwift the train which first used the G-Force Inverter. It utilized a floating track filled with Serptilium, and was anchored using pylons that, in turn, used Tom's Gravitex gravitational generator. Tom had first used the Gravitex in his space kite. The Gravitex hadn't worked as well as Tom had hoped, stranding Tom and Bud in space. But here, on Earth, it worked just fine holding the track in place.

This version of the MonoSwift was somewhat different. There was no observation dome. And the cable it used as a guideline was down below the floor level. The MonoSwift faced a large circular tunnel, lit by two lights on either side. The lights stretched off into the distance, then seemed to descend.

Tom turned to his father. "You mean, you use the MonoSwift for transport to Fearing?"

Mr. Swift nodded. "It's for when we don't want anyone to know we're going there. Incidentally, the tunnel doesn't stop at Fearing. It also runs out to Aurum City, then to the helium wells, before circling back to Fearing."

Aurum City was the lost city of gold Tom had discovered years earlier, and cleaned up with his Spectromarine Selector. Mr. Swift told them that access to the city was still by invitation only. The helium wells were located further to the east. Both they and Aurum City used Tom's repelatrons to hold off the ocean. "In case of an emergency, we have Transmittaton tanks set for sending only," Mr. Swift said. "They send to a huge receptor tank here at Enterprises. But most secret cargo - there really isn't all that much these days - is sent via the *Sea Eel* - the name of this MonoSwift, of course."

"So it stays underground the whole way?" Bud asked.

"No, Bud, it stays underground the first mile, then comes up until the top of the tunnel is just a few feet above the ocean floor. We found it was easier that way."

Tom frowned. "But won't it be visible?"

Mr. Swift chuckled. "You'd think so, wouldn't you? But we used a variation of your 3D Telejector. Small telejectors set at intervals project an image of the sea floor around the top of the tunnel which

is, by the way, transparent - it utilizes transparent Durastress. The Durastress has a special wavelength polarizer that cancels out the Telejector's image from one side. This allows you to see out, but no one to see in or even realize the tunnel's there."

They climbed aboard the *Sea Eel*, and Tom made his way to the cockpit. By now, he wasn't too surprised to find that many of the instruments had been updated. Glowing blue and red LED readouts took the place of old analog gauges. Even so, it took him only a few minutes to get the feel of the new controls. Once his father and Bud were strapped in, he shoved the throttle open a few notches.

The lights on either side of the tunnel created an almost hypnotic effect as the *Sea Eel* moved through the tunnel in almost total silence. Only the air rushing by created any noise. Soon the tunnel began to go up at a 20 degree angle. Moments later the boys gasped as they saw the dimly lit ocean bottom. Tom glanced at the speed readout. It read 120 MPH.

Outside, most of the ocean bottom was just silt, with the occasional clumps of sea plants. Various kinds of fish could be seen, swimming tranquilly around, oblivious to the powerful machine moving almost amongst them.

"Dad, this is really amazing!" Tom declared, his eyes shining. "I know Bud and I have been on the bottom of the ocean many times before, but still - it's like having a grand tour!"

Mr. Swift grinned. "I kind of thought you'd enjoy it!"

"And you say this runs all the way out to Aurum City and the helium mines?" Bud asked.

"Correct, Bud. We don't have a lot of time to do any serious sight-seeing, but if time permits, I'll be happy to run you two out there," Tom's father told them.

"Sounds great, Dad," Tom replied.

Moments later, the tunnel began to dip back underground. Soon it leveled out, then rose once more. A beeping noise sounded, and a panel lit up on the control console, showing the approach of a station. Expertly, Tom slowed the *Sea Eel* down, bringing the subterranean vehicle to a gentle halt right where the screen showed him to.

The platform for the *Sea Eel* extended to both sides of the station. Tom punched several buttons, opening doors on either side. "This way, boys," Mr. Swift said to them.

Out on the platform, Tom watched as several employees get aboard the *Sea Eel*. Overhead, a pleasant female voice announced, "The *Sea Eel* is now available for passengers to Aurum City and the helium fields. Passengers will please board now. Departure time is X minus fifteen minutes." Tom and Bud exchanged grins: the recorded voice, though slightly more mature, was unmistakably that of Sandy's.

Tom Sr. led the boys through a maze of corridors and elevators. They'd gone up at least ten floors, but were still a good two hundred feet below the surface of Fearing. Mr. Swift finally stopped before a nondescript door and knocked. "Come in," a familiar voice rang out. When they stepped into the office, the voice said, "Welcome back, Tom. Good to see you again, Bud!" There, in a leather chair, looking somewhat older, sat Phil Radnor, Fearing Island's chief of security.

## CHAPTER FIVE: DANGER AT THE HELIUM MINES

"Hello, Phil," Tom greeted his old friend. "Hardly seems like any time has passed since we last saw you."

"It's been about six months since I saw..." Phil let the sentence trail off, uncertain how to finish it.

"Our older selves?" Tom completed for him with a grin.

Radnor smiled back. "Yes, your older selves. A strange way to put it, but I guess there isn't any other way. Anyway, your father told me, of course, about his plans to bring you back so you could help us. Harlan knows as well."

"When will the rest of our families, sir?" Bud asked him.

Phil and Mr. Swift shook their heads. "We're not too certain about that, Bud. Yes, they're going to have to be told. But not just yet. For one thing, we have no idea how they'll react. Your mother, sister and Phyllis have already mourned your death. Seeing you like this, and knowing how we brought you back ... well, it's anyone's guess what their reaction will be. At any event, we need you to look at both the Cobra's computer, and your transphotonic engine. We've also spent the past six months attempting to contact your space friends - the Vashanti. But there's been no response. We don't know why."

Tom pondered that for a few moments. "Maybe they know what happened to Bud and I. Maybe they're uncertain who to trust on Earth anymore."

"That could be, Tom," his father spoke up. "Later on today, I'd like you to send a message out to them. Let's see if they respond this time."

Tom nodded. "OK, I will. For now, though, I'd like to see the, uh, transphotonic engine. And the Black Cobra's new computer!"

"Come with us, boys," Mr. Swift said.

Both he and Harlan Ames led the way through more corridors and up elevators. Finally, Mr. Swift told them that they were just below the administrative buildings.

Mr. Swift beamed his electronic key at a pair of wide double doors. They slid aside like elevator doors. The group stepped inside. The door slid shut.

"Over here, Tom," Mr. Swift said. Tom followed him over to a massive worktable. On it a large object - strange looking, even by Tom's standards.

At first, Tom had trouble making out the overall shape. Rather than being square-shaped, or somewhat round, the way most engines were, this one looked like a collision between two drunk pieces of wallpaper! Or some bizarre French *objet de' art*. At the center lay

a somewhat ovoid-shaped bottle, roughly the size of a two bowling balls stuck together. Support trusses and conduit bars linked the bottle and the weird ribbons together. It took Tom several minutes before he realized the ribbons were actually two Mobius strips joined together. Once he realized that, he also recognized the odd-looking bottle at the center: a Klein's bottle. Both the Mobius strip and the Klein's bottle had the unique property of having neither an inside or an outside. There was curiously little by way of electronics imbedded in the bottle or the ribbons. Tom wondered what controlled the engine. He said as much to his father.

"That's why you're here, Tom," Mr. Swift told him. "That's what we need you to find out."

"And as soon as possible," Phil said. "We need to stay one jump ahead of the Black Cobra." He turned to Mr. Swift. "Did you tell him about the Black Cobra's overall plan?"

Mr. Swift shook his head. "Not yet. But now's as good a time as any."

Tom looked puzzled. "Isn't the Cobra's plan what it's always been: world conquest?"

Mr. Swift shook his head again. "Not any more, son. His new plans are far worse. They're in his computer, so you can read them later. These new plans involve causing solar flares in the sun, heating up our atmosphere, causing wide-spread flooding and deaths, toppling governments and creating chaos. It would then be child's play to for the Cobra to take over and unite what was left of humanity under his rule - especially if he promised and delivered on just the basic necessities: fresh water, food, shelter, electricity."

Tom nodded. "Yes, with just that alone, humanity would rush to his side all right. But that still amounts to just world conquest."

"Oh, there's more, Skipper," Radnor assured him. "The Cobra may not even be on this planet when he establishes his domain."

Tom stared at Radnor. "What do you mean?"

"We think he may begin to colonize Mars. Or, if not that, construct a giant spaceship from which to rule not just Earth, but a number of other worlds. Very possibly the Vashanti. Or even the Tekili-li."

Bud gasped. "You mean, the very aliens that are helping him?"

Phil nodded. "That's right, Bud. The Black Cobra has no intentions of remaining subservient to them for very long. Don't ask me how he plans to conquer an alien race that's older, wiser, and far more powerful than the human race. But the Cobra is nothing if not ambitious. And with the Tekili-li's weapons at his disposal..." Radnor's voice trailed off.

Bud whistled. "Man, there'd be *nothing* he couldn't conquer!"

Tom Sr. nodded. "Correct, Bud." He turned back to his son. "You begin to see the urgency behind figuring out how your older self's transphotonic engine works. You must stop the Cobra's faster than light ship from reaching the Tekili-li and giving them the information necessary to construct a solar destabilizer."

Tom shot his father a quizzical look. "Wouldn't an alien race already have that kind of information?"

His father shrugged. "We wondered about that as well. But if we're right, a lot of the Tekili-li's information about our sun is hopelessly out of date. It's been at least several eons or so since

they last paid us a visit."

Tom stood silent for a few minutes, still looking at the transphotonic engine. Then he shook his head. "I can't help but to wonder," he commented, "what my space friends," he paused a moment, "- the Vanshanti, I mean - are thinking about all of this."

Mr. Swift nodded. "So do we, Tom. But as I told you earlier, they've been completely silent for the past six months. We can use the transmitter here at Fearing to try again, if you wish."

Tom was tempted to do so. But he remembered what his father told him about the subocean monorail going out to Aurum City and the helium wells. He wasn't too certain why, but he had a nagging feeling he should see those two places again before he plunged to work on the transphotonic engine.

"Dad, let's continue the tour, okay? I'd like to see the surface of Fearing. Then go out to Aurum City and the helium wells."

Bud raised an eyebrow. It wasn't like Tom to turn down a chance to talk with his space friends, or work on some new gadget - especially something like this faster-than-light engine. Or the Cobra's computer. He noticed, though, that Tom wore a worried look. Something must be troubling him.

Mr. Swift frowned as well, but nodded agreement. "Okay, Tom, that's fine with me. If you're finished looking, we can take an elevator to the surface."

"Yes, Dad, I'm through. For now."

A few minutes later they were up on Fearing's surface. They took a jeep and drove around the thumb-shaped island. Most of it hadn't changed much in the past ten years. The gantries with repelatron - powered supply rockets for Nestria, the Outpost in Space, and the planetoid colonies were in place. He found the *Challenger*, his first repelatron space craft, in its usual space. The *Cosmotron I* was in its place as well. The next landing area for the *Cosmotron II* was, sadly, empty. A reminder of what had happened. Most of the barracks and playing fields were there. Tom Sr. drove the boys out to a new launch center. Here were supply rockets for the new colonies being set up on the moon, and Mars. "We have set probes down on Venus," he told them. "Turns out you didn't miss much, Bud. The place is a vast, wind-swept desert with temperatures approaching eight hundred degrees Fahrenheit."

"Jumpin' jets!" Bud exclaimed. "That's a bit too hot for me!" He well remembered the ill-fated expedition to the planet by Astro-Dynamics, and how it never got close to the planet. For his part, Tom recalled the showdown with Dr. Stang, where the *Cosmotron I* fought the *Cosmotron II*. Even after the battle, they didn't get a chance to return and explore the planet. It sounded as though his older self finally managed it. Or someone did.

Mr. Swift continued. "Even so, there's been talk about terraforming Venus. Some of the proposals have been rather wild, but others make sense. And there's the plants I've cultivated to grow in severe climates like Venus's. From what we can tell, they've flourishing pretty well, though there still aren't enough of them to start affecting the atmosphere. We've been planning on planting even more. Even so, it may still take decades before Venus has a breathable atmosphere."

Soon they made their way back to the subterranean platform. With

a quiet *woosh*, the *Sea Eel* pulled up to a stop. It took Tom and Bud a moment to realize that that the Eel had just completed a round-trip journey to Aurum City, the helium wells, Swift Enterprises, and back to Fearing! A few minutes later, with Tom at the controls once more, they were on their way.

They reached Aurum City ten minutes later. The threesome emerged from a roped-off area marked "Under Reconstruction." "It's just camouflage," Mr. Swift informed them. "The building you see here is fake. We use it to hide the entrance to the *Sea Eel*."

Tom nodded. "I understand. But apart from the *Sea Eel*, is there any other means of escaping?" He remembered only too well what happened when his Spectromarine Selector caused the plastic dome to shatter.

"Yes, indeed," his father replied. "There are carefully concealed Transmittaton tanks at several locations. Only authorized personal know of them. But they can be used to evacuate the tourists if necessary.

Tom stopped short. "Tourists? What tourists?"

His father laughed. "At the moment, rich tourists. They're the only ones who can afford the fifteen hundred per day visitation fee. Archeologists and anthropologists can get in cheaper, of course."

"Well, you did mention opening the place to tourists one day, Skipper," Bud reminded him.

Tom nodded, "True, I did." He looked back at his father. "Why are we charging so much, Dad?"

"We have to, at first. Part of it is to actually discourage the more common tourists until the place has been carefully explored by archeologists. Even after ten years, there's still so much left to do. Some archeologists have told me that they could spend centuries in this place and still not have enough time to cover everything that needs to be investigated. Still, one day I hope to bring the price down, so that it will be affordable enough for everyone to enjoy."

They didn't spend too much time there, but after inspecting some of the more prominent buildings - unchanged a decade later - and looking at an improved model of the Spectromarine Selector, they took off again for the helium wells. There, Tom found much had changed.

The hydrodome had been expanded, and there were many others nearby, linked by tunnels of transparent plastic. The site had become a small city. An atomiccapsule took care of the power. All of the cars and trucks contained G-Force Inverters. Worries about sea pollution had dropped down to a minimum.

Pollution caused by land run-offs, oil spills, and trash dumping had all but vanished. All trash, on land or at sea, was fed into a variation on his Gravitex machine. Instead of firing outward, the Gravitex Intensifier focused on a single point, creating an enormous gravitational pull. Acres of trash fed into the gravitational vortex was crushed into a superdense point the size of a marble. The marble was, in turn, fed into a Space Solartron, which utilized its density to create new material. Slowly at first, then with greater speed, the 20th Century problems with trash and where to keep it all vanished.

The helium wells, like Aurum City and Fearing Island, also used the Gravitex Intensifier to deal with their trash problems. The result was a neat, well-kept undersea city.

Tom was amazed to see how many wells there now were. "It

surprises me that the need for helium still exists," he remarked. "You'd think that repelatrns and the G-Force Inverter would soon alevieate the need for it."

"It has, to some degree," his father answered. "But not in others. Frozen helium is still in use throughout the world. In some cases demand has tripled the past five years. That's why we had to add more wells. Come with me, you two. I want to show you an experiment that's running."

"What is it?" Tom asked.

"You'll see!" Mr. Swift replied with a mysterious grin. He started walking over to one of the smaller buildings. As he did so, a man suddenly burst out, looking this way and that. He caught sight of Tom Sr. and yelled, "Mr. Swift! Come quickly! It's out of control!"

## CHAPTER SIX: THE TRANSPHOTONIC ENGINE

Mr. Swift and the boys raced into the building. "What is it, Jerry?" Mr. Swift asked. "What's out of control?" Then he gasped. "You mean the - " Jerry interrupted him before he could finish.

"Yes sir! It suddenly began attacking everything in reach. First crewman Slater, then the chief!"

"Have you tried to shut it down?" Mr. Swift asked.

"Yes sir!" the man replied. "But it won't accept any orders. And I can't shut it down, the remote won't work."

"Shut what down?" Tom was asking. "What is he - " Then Bud tapped him on the shoulder and pointed at a viewscreen. They were in a control room, and one wall was lined with monitors. Tom gasped as he took in the sight of a Fat Man suit wandering around, attacking anything that got near it. The image was coming from someone who was also in a Fat Man suit. Tom was amazed to see that the inside of the berserk Fat Man suit was empty. There was no one inside!

Bud was equally amazed. "Skipper! They turned one of the Fat Men suits into a robot!"

Mr. Swift looked up from the control board. "Quite correct, Bud." He shot his son a wry grin. "That's the experiment I'd wanted to show you, Tom. We'd installed the electronic brain from one of your Giant Robots into the Fat Man suit, and programmed it to aid the workers around here with general maintenance, as well as security patrol."

Tom nodded, seeing the possibilities at once: "Great idea, Dad! A twenty-four-hour guard that would never tire or grow bored. So

what's gone wrong?"

Mr. Swift looked at the control board once more. There were more than a few red lights blinking. He looked at a small computer read-out. "Something keeps tripping its 'enemy invaders' sensors. That's why it's attacking everyone. Fortunately, it's not armed. But it is strong, and carries a built-in welding torch. Further, the remote-control device isn't working."

"When does its batteries run down?" asked Bud.

Mr. Swift grimaced. "They don't. It uses a small atomic capsule." He sighed. "I guess I went a little overboard in making it maintenance-free."

Tom shot his father a grin. "Never thought I'd hear you say that, Dad!" He quickly sobered. "So, we're obviously going to have to go out there and shut it down the hard way. What's the procedure for doing that, Dad?"

"Near the bottom of the suit, near the right leg, is a hidden panel. Open it and you'll find the 'On-Off' knob. Flip it to the right," Mr. Swift told them.

Tom sighed. "That's not going to be easy!" He thought for a moment. "It's going to take two of us to stop it, at the very least."

Tom Sr. nodded. "Yes - one to distract it while the other gets close enough to shut it off."

"Then let's get into our Fat Man suits, Bud," Tom said.

"And I'll join you as well," Mr. Swift said.

"Are you sure, Dad?" Tom asked him.

Mr. Swift nodded. "Having two people out there to distract it will help all the more." He grimaced once again. "Keep in mind that its sensors work in a three hundred sixty degree sphere. So it's going to know when you try to sneak up on it."

Tom sighed. "That's not the greatest thing to hear!" he said. "Well, we'd better get suited up."

They left the control room and made their way to a building close to one of the dome flaps. The deep-sea hydrodome that surrounded the helium wells used repelatrions to keep the enormous force of the ocean away. A plastic dome in turn kept the temperature and humidity at a comfortable level. Hence, there was no need for air locks. That worried Tom. The robotic Fat Man suit had made no attempt to approach the dome, but if it did, there wasn't much of anything anyone could do to stop it. It would be able to wreck havoc among the workers. And if it destroyed the repelatrions...

Tom popped open the pneumatically-sealed quartz porthole. He turned around, facing away, and, reaching up, grabbed the lift bar and swung himself into the suit. He flipped down the Fat Man's control panel and punched a button. The porthole closed and sealed, causing the suit to power up. Tom blinked in amazement: the arm and leg controls were gone! He looked around, then smiled. Above and below him were tubular encasings for his arms and legs. This was something Tom had long thought about: total pantographic controls for the arms and legs. Clamped on, they worked a bit like a puppeteer's control rods. Movement inside the encasings was mimicked by the arms and legs outside.

Tom clamped the encasings onto his arms and legs. His legs were no longer in front of him, but on each side, as though he were in a



saddle. Punching a few buttons, he began to walk towards the dome flap. It slid to one side as he made his way through. A TV screen inside the suit showed his reverse view. He could see his father and Bud waddling after him.

Once he passed through the literal wall of water, his movements became slower. But Tom was used to this, having used the Fat Man suits many times. It wasn't long before the renegade Fat Man suit came into view.

"Okay, Tom, we'll start distracting it," his father radioed. "Just do your best to get close to enough to it to reach the hidden panel."

"Right, Dad," Tom replied.

Tom stayed where he was. The robot Fat Man suit began approaching all three. Then Mr. Swift and Bud began to walk towards the suit. When they closed to within thirty yards, they moved off to the side. The robot Fat Man suit ignored Tom, and began to approach the twosome. At once, their radios came to life: "Warning! Intruders! This is a high-security area! Leave this area at once or you will be attacked!"

Doesn't mince words, Tom mused. Mr. Swift and Bud continued to lead the suit off to one side. As soon as its back was turned, Tom began walking towards it. He was fully aware that he'd soon be in sensor range. Sure enough, moments later the suit whirled about, detecting Tom's approach. Its claws opened menacingly and it walked quickly towards him. Tom found himself having to backpedal.

At once, Mr. Swift and Bud approached, hoping they'd be able to reach the hidden hatch. But the suit turned on them just as fast.

For a while, they were like men trying to capture an angry, snarling dog. But unlike a dog, this one wasn't wearing down. No matter how fast the boys and Mr. Swift tried to reach the suit, the suit reacted faster, blocking any attempts to close in on it. Bud and Mr. Swift tried to clamp their claws on the arms to hold them at bay, but it was useless. The suit batted their arms aside, and once came close to injuring Bud's suit with its welding torch. Finally, Tom said, "Dad, this is getting us nowhere."

"Agreed, son," Mr. Swift replied. "Do you have any other ideas?"

"Yes, I think I do," Tom told him. "I'm going to try using one of my hydrolungs. With the jet motor, I should be able to get in fast enough to reach the hatch and switch it off."

The deep-sea hydrolung had been invented years back by Tom. He used it to help retrieve a valuable probe containing data from the planet Jupiter. The rig, which consisted of a plastic mask, a scrubber that extracted oxygen straight from the ocean, and an undersea jet cylinder, freed deep-sea swimmers from cumbersome diving or scuba suits, allowing them to move through the ocean at incredible speeds. Further refinements included immunity to sonar, as well as a built-in hypersonic wrist attachment for detecting other subs, and a radiophone for communicating with other hydrolung users. Tom wondered what other improvements had been made over the past ten years.

Tom returned his Fat Man suit to the building, then looked around for the hydrolungs. Curiously, there weren't any. He asked one of the personal if they had any hydrolungs on base. The man told him no, that they'd been able to get by with just Fat Man suits. Tom thanked him and hurried to communications. He contacted Phil Radnor at

Fearing and told him to ship over a hydrolung as fast as possible.

"We won't even send it via the *Sea Eel*," Phil told him. "I know we told you that the Transmittaton tanks are 'send' only, but truth to tell there's a hidden 'receive' cargo tank nearby. It's right below the control shack. There's a lift concealed behind the wall of the men's room. Look for a tile with a splash of white paint. Tap the tile in this pattern." Phil went on to inform him what to do.

"Thanks, Phil," Tom said, cutting the conversation. He hurried over to the control room, went in to the men's room (which was empty), located the tile and tapped in the combination. The wall in front of him sunk inward a few inches, then slid to one side. Tom wasted no time punching the down button. He'd hardly stepped out of the lift and faced the Transmittation reception tank when there was a burst of light. The tank now held the hydrolung apparatus.

As Tom changed out of his clothes and into the hydrolung, he noticed that the wrist radar unit was gone. He puzzled over that until he strapped his facemask on. Larger than such masks normally are, it allowed a wider range of vision. Tom was further surprised when large, three-dimensional letters suddenly appeared in the air several feet in front of his face!

<b>FUNCTION</b>	<b>STATUS</b>
HYDROLUNG	STANDBY
SONAR	OFF
JET	OFF
BATTERY	100%

KNOTS	DIRECTION
0	ESE 40 DEGREES

As Tom moved his head around, the letters and numbers changed color, brightening against darker backgrounds, and becoming darker against light backgrounds. He waved his hand in front of him, and his hand appeared to go right through the letters and numbers. It took him a few moments to realize that the projection was inside the face mask, not outside. But it created the illusion of being outside.

Tom raised the face mask up and hurried back to the lift. A few minutes later he was back at the dome flap. He lowered the mask over his face again and stepped through into the ocean.

"Bud? Dad?" Tom spoke through the radiophone.

"We hear you, Tom," his father replied.

"Tom!" Bud shouted. "Hurry up! It's almost closed in on us a few times."

"Hang in there, Bud," Tom said. He switched on the jet and took off. It had been a few months - from his perspective - since he'd used the hydrolung, but it quickly came back to him. An image of a sonar screen suddenly appeared before him, and the status indicator now said "ON".

"I love this display!" Tom said with glee.

"I thought you would," Tom's father replied. "Your older self got the idea from the latest navy jet fighters. They use what's referred to as a 'Head's-Up Display', a way to keep an eye on your status and your target. You took the idea even further by incorporating a tiny Telejector unit in the face mask, giving the

display readout even greater depth and clarity. There's a few small visual 'buttons' at the bottom of the display that will allow you to switch off the display if it gets in the way. The buttons will remain, so you can switch the display back on at need. Further, as you've probably noticed, you can control the jet's speed and direction as well."

"But how?" Tom asked.

"Just blink at them," his father informed him.

Tom did so, and all of the displays vanished. He blinked at the button again, and they came back. *Ought to be a way to refine this even further, so I can switch off various parts of the display without all of them vanishing. Have to work on that if I can get a chance.* He also used the controls for the jet. They worked fine, though Tom still preferred the manual controls on the hydrolung's belt. For now, though, Tom concentrated on the robot Fat Man suit, which he was rapidly closing on.

The Fat Man suit detected his approach, but this time it was far too slow. The jet allowed Tom to approach at almost lightning speed. Further, to his amazement, the display abruptly showed him an outline where the hidden hatch was, saving Tom the trouble of trying to find it. Quickly, Tom pushed the panel in, causing it to pop back out. He had to grab the end of the small opening as the robot Fat Man went into a spin, trying to shake Tom off. Its claws couldn't reach behind itself to grab Tom. Tom hung on with all his strength and used his jet to compensate. Then, when the robot paused a moment to shift strategies, Tom reached in, found the switch, and flipped it to the right. The robot Fat Man suit came to an abrupt halt.

"Good work, Tom!" his father cried out.

"Stopped it dead in its tracks!" Bud said with glee.

All that came from Tom was a "Hmmm," as he examined the suit. Suddenly he noticed, up near the top of the quartz hatch, a tiny crack. Then Tom found out that the face mask had both magnifying and zoom focus features. He used the former to look into the suit's interior.

"What's up, Skipper?" Bud asked.

"I think I've found out what went wrong, Bud," he replied.

"C'mon, let's get the suit back to a lab at Fearing. The helium wells don't have much by way of a mechanics lab, at least, not the last time we were here." He shot his father a look. Mr. Swift nodded. "Nor do they have one now," he told his son.

Tom nodded. "That's what I figured. Let's get this back to Fearing."

Bud and Mr. Swift used their powerful Fat Man suits to carry the deactivated robot suit back to the helium wells. From there, they placed it aboard the *Sea Eel*, and took off for Fearing Island.

Back at his lab, Tom went over every inch of the suit. Everything else seemed to be in good shape, so he returned to the small crack in the quartz hatch he'd notice earlier. "Dad, Bud, look at this!" he exclaimed. The crack was tiny, and they had to use a magnifying glass to observe it. Mr. Swift looked at his son with a satisfied smile. "Ah, that must be it!"

But looked puzzled. "That tiny crack? How can that be, Skipper? It hardly looks big enough to let in a droplet of water!"

Smiling, Tom shook his head. "You're forgetting that the suit

was under tremendous pressure, Bud. A crack that small would allow a tiny, almost invisible stream of high-pressure water to shoot into the suit. That tiny stream of water would be as hard as a bar of tempered steel. And that small, it would bore through just about anything. From where the crack is located, I'm pretty certain it was drilling straight into both the remote control and the intruder detection circuitry, causing them to short. We should be able to fix this without any trouble, and get it back out on patrol again. In fact, I can redesign the remote control circuits so that they'll have two back-up systems in case the primary fails again."

Mr. Swift nodded. "Yes, that sounds good, son. Even better: we can replace the hatch with one made of transparent Durastress. It's almost a hundred times more rugged than the older-style quartz."

They spent the rest of the afternoon working on the specs for both the hatch and the new shut-down circuitry. Tom based the remote shut-down transmitter and receiver on his Private Ear, which used an anti-inverse-square-law to prevent radio waves from spreading, keeping them tightly focused, much like a laser beam. Afterwards, they returned the robot Fat Man suit to the repair shop, where the technicians would install the new hatch and other features. Ordinarily, Tom would do this himself. But now he wanted to focus on the transphotonic engine.

Before that happened, though, Mr. Swift thought it was time to reintroduce him and Bud to the rest of the family. So he invited Mrs. Swift, Sandy, Phyllis and Wendy to Fearing Island later on that evening.

The women had still been quietly mourning the loss of Tom and Bud for the past several months. So, in spite of a warning from Mr. Swift to prepare themselves for a shock, they all let out gasps when they came into the lab and saw Tom and Bud standing there.

All four threw themselves at the boys, smothering them with hugs and kisses. Then Mrs. Swift whirled almost angrily on her husband: "Tom! Why didn't you tell me they'd been found alive?"

"Mary, I think you'd better look at them again," he quietly replied.

By now, even Sandy and Phyllis had noticed something different. So did Wendy. "It is just me, or did you two shrink a bit while you were out in space?" Sandy half-joked.

Tom Junior shook his head. "Sorry, Sandy. That Tom and that Bud are still missing, very possibly dead I'm afraid."

All three gasped once more. "Y'all are duplicates!" Wendy exclaimed. It was almost an accusation.

"Yes Wendy, they are," Mr. Swift said, still in a gentle tone of voice. "You know full well I've made copies of all of you. This ability to create as many duplicates as we wish is almost God-like ... too much so, in fact. So it's not to be used lightly. Believe me, unless circumstances were very grave, I would not have done so. That said, I wish we'd thought to kept our files up to date. Then the age difference would have been very slight."

Mrs. Swift nodded. She turned and flashed the boys a bright smile. "Tom, Bud, I'm sorry." She walked over and gave them both hugs, causing them to blush. "Duplicates or not, you're still family to me.

"We agree!" the other three women sang out. Sandy and Phyllis

gave their respective intendeds kisses as well, causing them to blush further. As they recovered, Mr. Swift informed his wife about the crisis with the Black Cobra. "So I needed them here," he concluded.

"I'm sorry you can't come home for dinner," Mrs. Swift told the boys. "I would have loved to throw a party in your honor!"

"I know, Mother," Tom replied. "But the fewer people who know we're back from the dead - so to speak - the better."

"Hmmm," Mr. Swift mused. "Still, I think a low-key party, with just a few minor guests, might not be out of order. We can look into having it, say, the night after tomorrow night. That's a Friday, and a perfect night for a quiet get-together."

The women were overjoyed. "We'll get started on it at once!" Sandy declared.

As things turned out, though, the party was delayed for about a week. Tom plunged into the daunting tasks of trying to figure out both how his older self's transphotonic engine and the Cobra's alien-designed computer worked. For days, Tom barely took breaks to eat, and scarcely snatched more than a few hours rest on a cot he'd had installed in the lab. Often, he had equipment from his lab at Enterprises either transported via the *Sea Eel*, or Lektromagged over to him. He had six or seven portable chalkboards brought in. Bud found them crammed with equations and diagrams.

Finally, a week later, Bud found Tom conked out on his cot. A tray of food, brought in by Wendy, lay cold and untouched.

"Tom?" Bud said, shaking him. "Tom?"

Tom woke up with a start. "Huh? What? Bud?"

"Yeah, it's me," his friend replied. "Tom, you've got to slow down some. You've been pushing yourself way too hard. I've seen you do this before, and you know what happens when you do."

Tom seemed to be staring at something off in the distance. Bud knew his friend was still working on the problems. But Tom surprised him when he replied, "Oh, don't worry about that, Bud. I had a breakthrough last night. I know how the transphotonic engine works. And how the Cobra's computer works, too. We should be able to construct a large-scale starship pretty soon. Won't be that hard, now that I know what to do." He sat on the edge of the cot, still thinking. "Bud, I'm going to get cleaned up and have some breakfast. Feels like I haven't eaten anything in days." Bud refrained from telling him that he hadn't! "I want to try something first, though. You tell mother and the girls to start the party tonight. I'll definitely be there. And I'll tell them everything I know."

Puzzled but pleased, Bud went on to relay the information to Mrs. Swift. She was overjoyed to hear about it, and quickly contacted Sandy, Phyllis and Wendy. Plans for the party got underway at once.

Meanwhile, after putting away a hearty breakfast, Tom began constructing a test model for his theory. When Bud came in later, he found an ordinary cube made of Durastress, about three feet on each side, the walls of the cube an inch thick. One of the walls had a small window made of transparent Durastress. Inside the cube was a miniature version of the transphotonic engine, along with some other circuitry. It was all powered by a tiny Swift solar battery.

"What is this, Tom?" he asked.

"A test prototype," Tom replied. He brought over what looked like a small but elaborate camera and quickly installed it. Then he

used a special tool to completely seal the box.

"Come over here, Bud," Tom asked him. Tom had walked over to a control panel. He flicked a switch. "Ready?" he asked his friend.

"Ready for what?" Bud replied.

"That's what I'm about to find out!" Tom replied with a grin. He punched a button.

The box vanished, as though it had been Lektromagged.

"So far, so good," Tom muttered. He waited about a minute, then punched another button.

Neither of the boys was prepared for the sudden screeching sound that hurt their ears, or deep *THUD* of impact against the far laboratory wall. And the thudding sound continued for several moments before stopping.

The boys uncovered their ears and stared. Like something out of a cartoon, there was an almost perfect square hole in the wall of the lab. They raced over to it, and saw a series of holes receding in the distance. Tom and Bud raced out of the lab and down the corridor to the last room. Tom was thankful that none of these rooms - mostly machine shops or design labs - were currently occupied. The last room butted up against solid rock, the bedrock of the island. Even so, the Durastress cube had punched a hole at least thirty feet deep. Tom let out a low whistle after he and Bud had measured the depth of the hole with some steel tape.

"What do you make of this, Tom?" Bud asked. "Was this supposed to have happened?"

Tom shook his head. "Not really, though it was a side effect I'd considered possible. I guess I should be grateful that the latent kinetic energy wasn't higher."

"What do you mean, Tom?" asked Bud, still baffled.

"I'll explain later at the party tonight, Bud. For now, let's get some help to get this cube out of here, and the adjoining rooms cleaned up and fixed."

Bud telephoned for some lab assistants, and soon the cube was carefully removed.

Back in the lab, Tom examined the cube using both regular and an electron microscope. He was pleased to see that the Durastress had held up so well, in spite of the impact. There were no cracks or deformities. Best of all was the reading from the sensors he'd installed, plus the pictures. Tom spent some time checking the photos against star maps in various astronomy books. Then he checked them against star charts found on the Cobra's computer. In all cases, none of them matched. By 5:00, he was well-pleased with the experiment. He and Bud showered and changed into more casual clothes.

"How are we going to get to your house, Tom?" Bud asked. "The *Sea Eel*? Or something else?"

"Something else, I think," Tom replied. "Dad said he'd arrange things."

A few minutes later Mr. Swift showed up. He smiled at the boys.

"All set?" They nodded. "Great. Come with me." He led them down to an ordinary office. Inside, he turned and locked the door. Going over to a desk, he unlocked a bottom drawer. The boys watched as a section of the metal drawer swung up, revealing a milk-white platform. Mr. Swift put his palm on it, and it lit up. "Tom Swift Senior, fourteen-forty-nine and three plus three," he said cryptically. In

the bottom drawer, the platform stopped glowing and swung down. The drawer slid shut. And the paneled wall behind them pulled back, then slid to the side. Ahead of them lay an Transmittaton tank. "Oh," Tom said with a grin. "So *this* is where you keep it!"

"Indeed," his father answered. "We took great pains to make sure it was in a location that didn't call attention to itself. Placing it behind a massive metal door, for example, would have been much too obvious."

He walked up to the console and punched a button. "It's all set," he told them. "I'm going to take the *Sea Eel* back to Enterprises, and drive home from there. See you two in a bit."

They waved goodbye to Mr. Swift, then got on the platform. Mr. Swift punched another button. The Transmittaton room vanished, replaced by another Transmittaton room. Tom and Bud stepped off the platform. "Hmmm, wonder where we are?" Bud asked.

Tom grinned. "I think I can guess." He walked over and pressed a button by an obvious door. Once again, the wall moved inwards a short distance, then slid to the side. The boys stepped out into the Swift's basement. As they made their way upstairs, the wall slid back into place. Further, a worktable rotated back into position as well. There was nothing to give away the position of the Transmittaton tank.

Upstairs, they were greeted warmly by Mrs. Swift and the women. Music was playing on the stereo, though when Tom took a moment to examine it, he noticed that it had a very futuristic look to it, and used *four* speakers instead of two! "You designed this yourself, Tom," Phyllis told him with a grin. "You named it the 'tessereo'. From Latin for 'four'.

"Bud thought it ought to be called the 'quad'," Sandy put in. "But we agreed the name sounded horrible! Too much like British money. But the 'tessereo' rolled off of people's tongues very nicely."

"Now it's a standard, much like the old stereos were," Phyllis said.

"Everyone has one now," Sandy informed them.

Tom shook his head. "I had never thought of consumer electronics before. Is there a reason I - or should I say, my older self - decided to do this?"

Sandy nodded. "It occurred to you some years ago, after we attended a symphony in a music hall. I remember you muttering about how the walls and the ceiling were like a focusing lens, distributing the sound to everyone present, regardless of location. You said that there should be a way to do this with stereo equipment as well."

"So you worked on the problem for a few weeks before coming up with the idea of using four speakers to distribute the sound around the room evenly. You then redesigned the equipment itself, using the most up-to-date parts. That's why it looks so streamlined. Then you persuaded various recording studios to start using your new recording techniques. The results pleased everyone, and soon all studios were using your four-way recording technique."

Tom raised his eyebrows. "All of them?"

Sandy grinned. "We-ell, there were a few companies in Japan and Europe who came out with their own form of four-way recording, but really, who can compete against Swift Enterprises?" she asked with more than a touch of pride. "The others soon had to give it up, and

the tessero was here to stay."

Tom felt his face grow hot with embarrassment. He didn't want to have dominance over all the technological advances. Changing the subject a bit, he asked, "Do I have any other inventions like this hidden someplace?"

Sandy answered at once. "You sure do! You've long been critical of the scratchiness of records, and the way they often skip. So, you mentioned something about 'reducing the recordings to data' and storing them on a tape, doing away with the vinyl LPs completely. The music would be read back via a computer, which would 'translate the data into music', according to you."

Tom nodded. He remembered reading about attempts at this a few years back, but lack of computing power always defeated such schemes before they could get very far. Fascinated by the idea, he'd jotted down some equations on the idea before dismissing it as a pipe dream: it would take a supercomputer to process that much data - something that was hardly in the range of the average consumer. All the same, it was an intriguing idea.

"Did I ever sketch a design or build a prototype?" he asked.

Sandy shrugged. "Sorry, Tom, but I have no idea. I had always wanted to ask you about it, but never got the chance."

Tom shook his head. He'd have to look into it later. For now, though, he wanted to get something to eat. And maybe get to dance with Phyllis a little.

Just then the doorbell rang. Tom walked to the entry hall at once and glanced at the metal detector meter out of habit. He already knew that whoever the visitor was, it was a friend: the alarm didn't go off. The Swifts had a special sensor field surround the house. Friends had a neutralizer built in to their watches which deactivated the alarm. Over the front door was a large dial which indicated how much metal a person carried on him. Tom, however, was amazed to see, next to the dial, two additional TV screens mounted flush to the wall. Next to the door were three buttons. Punching one, the first screen lit up. Tom stared at the curious image, which seemed to be a patchwork of blues, reds, yellows and whites. It took several moments before he realized that he was seeing a thermographic image of the person outside. Punching the second button, a full-color image appeared. Tom recognized his father immediately. The third button was marked, simply, "repelatron". *Not hard to guess what that's for*, Tom thought wryly. Any intruder who attempted a forceful entry was in for an unpleasant surprise.

Tom opened the door and let his father in. "I see my older self has made a few improvements to the front door security system," he said.

Mr. Swift nodded and grinned. "Yes, I figured you were checking out the latest enhancements to the system. Do you approve?" he asked his son.

Tom nodded. "Definitely. The sort of thing *I* should have thought of!" he said with a laugh.

Soon the family was eating snacks in the family room, listening to music. After a delicious dinner in the dining room, they soon retired to the den to discuss what Tom had learned so far about the Cobra's computer and the transphotonic engine.

The den contained a large chalkboard concealed behind a bookcase.



Tom flipped a switch, causing the bookcase to swing open. He walked over to it and picked up a piece of chalk. Then he turned back to his family, all of whom were sitting either on the couch or in some comfortable chairs. Even Mrs. Swift was there, though she often had no idea what her son or husband might be talking about!

"Okay, everyone ready?" Tom asked. They all answered that they were. "Now, this is what I've figured out about the transphotonic engine. In a nutshell, it exploits a flaw in the speed of light."

Tom Swift Sr. frowned. "You mean a flaw in Einstein's theory of relativity?"

His son shook his head. "No, Dad. I mean a literal *flaw* in the speed of light itself!"

Bud looked puzzled. "Skipper, how can the speed of light have a flaw in it?"

Tom grinned. "Excellent question, Mr. Barclay! You get ten points just for asking it!"

Bud laughed. "Guess I'll have to ask some more questions like that one, then!"

They all laughed. After a moment, Tom continued: "Bud asks a very good question: how can the speed of light have a flaw in it, and what sort of flaw might that be?"

"To answer that question, we have to consider a subatomic particle called a *tachyon*. Now, a tachyon is supposed to exist at speeds faster than light. It's considered to be just a theoretical particle, and for good reasons: existing at speeds faster than light, there's no practical way to find out if it really exists. Or so it seemed for a long time. Then my older self, with some help from our space friends the Vashanti, began to find out otherwise. Eons earlier, the Vashanti began to discover particles called *psi mesons* appearing out of nowhere. Now, particle physics has many flavors for mesons, but these, the psi mesons, were really strange. No one could account their odd appearances. Further, they started out at very high relativistic speeds - meaning: very, very close to the speed of light - then lost energy and slowed down. Why did they have such high velocities, the Vashanti wondered? Well, to squeeze years of research into a nutshell, it would appear that psi mesons are actually tachyons! Tachyons that had, for mysterious reasons, lost a lot of their energy and appeared on this side of the speed of light.

"The Vashanti confirmed this theory by accelerating psi mesons to ninety-nine point nine nine nine - well, let's just say 'nine' raised to the twentieth power. At that point, the psi meson simply vanished. It had crossed back over to the other side of the speed of light. Okay, still more years of research followed before the first faster-than-light prototype engine was invented. Needless to say, it worked. Before long, the Vashanti were exploring the galaxy. Including, as we've found out, our world - and more than just a few times!"

"True enough, Tom," Bud said. "But just how does the faster-than-light doohicky work, anyway?"

"Yes!" Phyllis said with a laugh. "You still haven't explained that yet, Tom."

Tom grinned at them. "Hey, give me time! I had to lay some groundwork first." He went back to the chalkboard. "Okay, my older self was given hints - not told all of this outright - by the Vashanti about the nature of psi mesons. He investigated, and found out the

same thing the Vashanti did: psi mesons, when accelerated to just a hair under the speed of light, disappear. They cross over somehow to faster-than-light speeds."

"Skipper," Bud interrupted, "I still don't get that. How can something go faster than light without having reached the speed of light first? I mean, that's like saying someone is going a hundred twenty miles an hour without first reaching one hundred miles per hour!"

Tom nodded. "True enough, Bud, and this about drove my older self nuts, trying to figure out that very thing."

Mrs. Swift nodded in turn. "I well remember that, Tom. You stayed in the lab at Swift Enterprises for weeks, and even when you did come home, you were often distracted, muttering to yourself and jotting down equations on the napkins or bits of paper. I'd never seen you so tense before, not even that time Congress held up your planned landing on the Mystery Comet."

Tom gave his mother an apologetic grin. "I imagine I must have been a bear to live with, Mother. It took my older self a while to see the solution, but once he did, everything fell into place: it turns out that the speed of light is, in itself, something of a barrier. It's not even an actual velocity itself, though it's often convenient to think of it that way. But what really caught my older self's attention - and mine as well - is that the usual phenomenon associated with relativity - time slowing, length decreasing, mass increasing - is symmetrical on both sides of the barrier."

"How do you mean, son?" his father asked.

"Well, look at it this way, Dad," Tom said, going to the chalkboard. He drew intersecting horizontal and vertical lines, forming X and Y coordinates. The horizontal axis he labeled "velocity". The vertical Y axis was labeled "The Speed of Light". The quadrant to the left Tom labeled "sublight". The right quadrant, "transphotonic." "Meaning," he told them, "speeds faster than light." Then he drew curves on both sides. The curve on the left started at the far left, almost touching the horizontal axis, then, as it approached the Y axis, it suddenly curved upwards until it was going vertical. And almost, but not quite, touching the Y axis. He did the same on the right quadrant, but coming in from right to left, so that both curves headed straight up: almost, but not quite, touching the Y axis. "This," Tom informed them, "is what's called an *asymptote*. Basically, a pair of symmetrical curves that that never quite touch the plot's axis. They get very, very close, but never touch it.

"Anyway, as you go up the curve, you get all of relativity's goodies: time slows down outside the ship, the ship's mass increases, its length decreases. But a funny thing happens when you reach a particular velocity: you find yourself suddenly going faster than light!" Tom drew a short line between the two curves. "And you do this *without ever reaching the speed of light itself!*" He waited a few moments for that to sink in. "Now, just *why* this happens, not even my space friends - the Vashanti - really know for sure. And they've been investigating it for a long, long time. One theory they have is that's sort of a 'release valve' for particles that travel at very high velocities."

"That doesn't sound very credible," Tom Sr. remarked.

"No it doesn't, Dad," Tom answered. "And the Vashanti doesn't

give it much credit either. It's just a hypothesis. But, the important thing is, this weird flaw can be exploited."

"How, Skipper?" Bud asked. "It sounds to me as if you have to go at very high speeds just to utilize it!"

"Unless," Tom replied with a grin, "you can *trick* it!"

"Trick it?" Sandy asked, baffled. "How can you trick a flaw like that?"

"Surprisingly, Sandy," her brother replied, "it's easier than you might think."

Tom drew what looked like donut on the blackboard. Then he added some lines with arrows, all going in the same direction. "What you do is to accelerate the psi mesons to near-light velocities, causing them to cross over and become tachyons once again. What the transphotonic engine does is to expand the *field of influence*, such that not only do the particles cross over, but anything within the field does as well. The neat trick here is that only the particles themselves have to be at a near-light velocity; *anything inside the field - including the ship - doesn't!* Now, keep in mind that my older self has already proved this works. That's what the probe was he launched almost a year ago, the one the Black Cobra stole. So we know the transphotonic engine is a reality. But a certain problem remains."

"What, Tom?" Bud asked. "It sounds as though all of the bugs have been worked out!"

Tom gave Bud a wry grin. "Yes, Bud, they have. The problem is no longer with the drive itself - it's with the universe in particular!"

"Huh?" Bud said, and the others looked puzzled as well.

Tom nodded. "I'm afraid so. You see, in once sense, the transphotonic engine works almost *too well!*" He went back to the chalkboard. "When you cross over to the transphotonic quadrant, say right here - " Tom indicated a point on the curve just as it started to bend upwards " - the effects of relativity are fairly small. Your spaceship may be a bit shorter, time running a bit slower - backwards, it's presumed - and so on. On this side of the quadrant, you see, it's pretty much the same as on the sublight side."

Bud scratched his head. "Skipper, I'm still not certain I understand that part. How can they be the same on either side?"

Tom stared at his friend for a moment. Then he smiled. "Tell you what, Fly-Boy, let's put this in a way you *will* understand!" He erased the graph and drew what quickly became a football field. "Bud, imagine the 50 yard line as the speed of light. How are the numbers on either side of it?"

Bud nodded, his eyes lighting up. "Oh, I see! Yes, they go from zero - the end zone - to the 50, then reverse themselves on the other side!"

Tom nodded with approval. "Right! That's a good analogy for the way the relativity phenomenon exist, both at sublight and at transphotonic speeds. The flaw itself is like this:" Tom drew a small curved line connecting the 49 yard line on one side to the 49 yard line on the other, via the sideline area. "The transphotonic engine allows us to do it like this:" Tom drew another curved line from the 30 yard line on one side to the 30 yard line on the other. "Anyway, what I was going to point out, is that while the effects of relativity decrease as you move away from the speed-of-light limit, the velocity

itself *doesn't*. In short, you're going many, *many* times the speed of light. Which creates all sort of problems."

"How so, Tom?" Phyllis asked. But it was Bud, not Tom, that answered.

With a sigh, he said, "I know what he means, Phyl. Going from Earth to any near-by stars would be like strapping a rocket engine to your car and going from here to the supermarket at Mach 10."

Phyllis held a hand to her mouth. "Oh! I hadn't thought of that!" She turned back to Tom. "Isn't there a way to go any slower?"

Tom shrugged. "Not without the relativity effects raising their heads. Further, it's actually more efficient to go at faster speeds than slower ones. Which brings us to an experiment I tried just today."

"Oh, was that what the box was all about?" Bud asked, astonished.

Tom nodded. "Right, Bud." He looked at the others. "I created a small transphotonic engine and placed it in a container built from Durastress. I included a camera as well. I needed to see how fast it would go from dead zero velocity to transphotonic velocities and back again." He paused, and added almost parenthetically, "Well, it wouldn't be from *absolute* zero. After all, the Earth is revolving around the sun, which in turn is revolving around the galaxy, which in turn is moving through space. So there's a lot of velocities involved already. All the same, it was close enough. The box crossed over into the transphotonic quadrant for a few seconds, dropped back to sublight, snapped a few pictures, then returned to its original location. Even so, coming back it had more momentum that I'd counted on, and it buried itself deep into the Fearing Island base rock. Fortunately, the Durastress held up well, and nothing was damaged." Tom removed a package from one of his pockets. "Here's some of the pictures it took." The high-speed photography allowed more than a few stars to show up. "I checked them against some of our star maps; not surprisingly, they didn't match anything."

Mr. Swift nodded appreciatively. "This looks like a global cluster!"

Tom nodded. "It probably is. We may never know quite where, though. The speed of the probe through the transphotonic quadrant was ... well, as close to the word *infinite* as we can get, minus a little bit. Still, it came out *somewhere*. And was able to return as well."

"How did it find its way back, Skipper?" Bud asked.

"Very simple, Bud: I had a homing beacon in the lab for it to get a lock on."

Sandy sighed. "So, I guess exploring the stars is going to be a lot more difficult than we thought."

Unexpectedly, Tom grinned. "Ordinarily I'd agree with you, Sis. I've pretty much given you the bad news about using the transphotonic engine to explore space: the lack of any means of knowing where we would be. But here's the good news: the Black Cobra's done most of the work for us!"

All of them stared at Tom, slack-jawed. "What?" Bud cried out, incredulous. "Why would the Black Cobra do anything for - " then he stopped, suddenly understanding what Tom was saying. "Oh, of course! The Black Cobra's computer! It must have all that information from those Tekili-li creatures."

Tom nodded. "Plus data from probes the Cobra's sent out on his

own."

"The Black Cobra has his own faster-than-light drive?" Mrs. Swift asked.

"Yes, Mother," Tom replied. "But it works differently from the transphotonic engine. Instead of going faster than light, it creates an enormous bend - or warp - in space. It's a method that's been talked about many times, so it's hardly anything new. But the Black Cobra seems to be the only person who's ever actually built a device that can do it.

"It works by folding space upon itself, creating a meeting point between two separate regions of space, not unlike folding a piece of cloth together and stepping from one side to another. It's a method I considered once myself, but rejected it as too inefficient. And that's what the Cobra's warp engine is, I'm afraid: inefficient. It takes a tremendous amount of power to run. And even then, sometimes it doesn't work."

"It doesn't?" Mr. Swift asked.

"No Dad. Not always. In his notes, the Cobra likens it to picking up something with just the tip of your finger. Most of the time, your fingertip will contain just enough moisture to make it slightly sticky, so you can press it against something and pick it up. But sometimes that won't work. Likewise, after space has been folded upon itself, most of the time the transfer will occur. But sometimes the ship - or, in this case, the probe - will remain right where it started from. And the 'folding' procedure has to be initiated again, using up a lot of power."

"Just what does the Cobra use for a power source?" Mr. Swift asked.

Tom stood there, thoughtful for a moment. "Near as I can tell, it's some form of highly condensed matter - the Cobra refers to it as 'dark matter', a phrase he seems to have borrowed from the Tekili-li. Anyway, the condensed matter focuses high-energy particles: x-ray, gamma rays, and even cosmic rays - into a cyclotron-like device, and forces them to shift down to lower energy levels. This releases a tremendous amount of energy. But it takes quite a while to generate the condensed matter, let alone use it to create the space fold, sometimes hours. And, as I said, it works somewhat erratically at best. Small wonder he was interested in the transphotonic engine!" Tom shook his head. "I really thought he would use some sort of anti-matter engine. That, after all, was one of his specialties. In fact, it looks as though he started to pursue that line of research, then gave it up as being too unstable and hence, too dangerous."

"What can you tell us about the Cobra's computer, Tom?" his father asked.

Tom shook his head, almost in bafflement. "It uses some of the strangest circuitry I've ever seen. Forget integrated circuits! This goes way, way beyond them. It contains transistors the size of molecules, circuits shaped like super-tiny cityscapes, a power source the size of a pin head, able to last for months or years. All of the circuits are arranged in arcs and circles - some even in spirals!

"The screen uses some sort of organic light, like a firefly's. It's arranged in tiny, overlapping dots of blue, green and white, much like a color photograph's. But the dot pitch is far, far tinier - way down in the nanometer scale. That's why the pictures we see on it are

so breathtakingly real. And the crystal storage cubes - Dad, they alone will revolutionize the whole computer industry! They actually use a very small, low-powered laser to read from and store to the crystals. There's something in the crystal lattice that allows the data to be overwritten when the laser alters the charge on the nodal points."

Mr. Swift nodded. "Sounds very promising, Tom - if we can ever figure out how it works."

Tom sighed. "I guess we'll soon be finding out."

"How so, Tom?" Wendy asked.

"We're going to be going into space pretty soon," he told them. "Now that I know how the transphotonic engine works, there's no reason for me not to build a full-scale starship. My older self already had some preliminary plans drawn up. I can probably build upon them from there. With all of the resources of Swift Enterprises thrown in, it shouldn't take more than four or five months to complete. And we have nothing to worry about from the Black Cobra. As long as his computer's in our hands, he's going to have to almost start from scratch."

Mr. Swift frowned. "But couldn't he have made backup copies of the plans from the computer?"

Tom shook his head. "I very seriously doubt that, Dad. Even assuming that there was a way to make the Tekili-Li's computer compatible with our own, the information stored on the computer would easily run into the terabyte range, at minimum."

"The *what* range?" Bud asked.

"Terabytes. A byte is a given amount of storage for data a computer can hold. 'Tera' means a trillion. In short, trillions of bytes of data. All of the earth's computer linked together couldn't hold that much information."

"Could the Cobra have backups of the most critical information?" Mr. Swift persisted.

Tom shrugged, but shook his head again. "Maybe, but once again I doubt it. Hidden inside the Kranjovian's secret lab, and locked away in his office, I'm willing to bet that the Black Cobra must have felt mighty secure. Then, too, if he had backups on the Kranjovian or Brungarian computers, he would probably have felt paranoid about one of them stealing them for their respective governments. No, the only way he'd feel safe is if he, and only he, had access to the data on the computer."

"Could he request a new computer from the Tekili-li?" Bud asked. "Or, could he already have one hidden someplace - you know, in case something happened to his main computer?"

Tom gave Bud a nod. "I worried about that too, Bud. And I certainly can't say it's impossible. But it goes back to what I just said about his paranoia: he's not likely to have a second computer lying around where it might accidentally be found and used by the Kranjovians or Brungarians. And as for requesting a second computer: sure, he could do that, but it's not going to do him much good without the data cubes. Further, admitting the loss of the first computer to the Tekili-Li would only make him look bad. I doubt seriously he wants that to happen. No, I'd say that the only thing we have to worry about is how much of the data he might have committed to memory."

"All the more reason for getting started on the new starship, Tom!" Bud exclaimed.

Tom grinned at his friend. "Right, Bud!"

Mrs. Swift looked at the clock on the wall. "Well, if you're planning on getting an early start on your new project, I suggest you two go on to bed. It's already ten o'clock."

The boys laughed. "Yes, Mother!" Tom gave his mother a kiss on the cheek. "Bud, we'll fix you up your usual bed in the guest bedroom." Bud had often slept over at the Swift's house. "Mom's right, though. I'm going to want to get started on this as soon as possible." He gave his mother an apologetic look. "I'll probably be eating and sleeping at Enterprises again. It makes me all the more grateful you threw this party tonight. Heaven knows when we'll have time to make another one."

Sandy and Phyllis groaned. "Just like the old days!" Sandy said with a laugh.

It wasn't long before the boys had retired for the night. Just before Tom climbed into bed, he thought he caught a glimpse of something moving in the back yard. Grabbing a flashlight, he turned it on and jammed it against the window. But he could see nothing. Then he thought he heard a strange sound, something like a baby crying. He looked all over, but again could see nothing. Puzzled, he turned out his light and crawled into bed.

The bed felt the same, but oddly different as well. Plus, his mind was still whirling with plans for the new starship, its overall design, what to call it, and if the Black Cobra remembered enough to start reconstructing his own starship. Slowly, his thoughts quieted down, and he began to drift off. He came back to startled wakefulness when something landed with a distinct *THUD* on his bed. In the dim moonlight, he could make out two red eyes glaring at him.

## CHAPTER SEVEN: A CALL FROM TOM'S SPACE FRIENDS

The next morning, the Swift family and Bud were gathered around the breakfast table, waiting for Tom. Tom appeared a few minutes later, in his bathrobe, carrying a strange black-and-gray object. This object let out a warm purring noise as Tom scratched it gently between its ears.

Tom glanced at his family with a wry grin. "Since *when* did we have a cat in our family?"

Sandy let out a delighted gasp. "Oh, Tao Zia! You naughty cat! Did you go in and wake Tom up last night?"

The cat glanced in Sandy's direction, and let out a muffled "miaow" that might have been a yes, and might have been a no. A

moment or two later he began to wiggle, and Tom set him down on the floor. The cat dashed over to Sandy and rubbed against her leg. She reached down and scratched his head and back, causing the cat to purr even louder.

"To answer your question, Sis, yes he did!" Tom said. "I thought I saw something go over the fence last night. I assume that was our furry friend here coming home."

Sandy nodded, looking a bit sheepish. "Yes, Tao Zia often explores the neighborhood for hours. I really meant to mention him to you last night, Tom, but we got caught up talking about so many other things!" She frowned at her pet. "I'm surprised he went to your room last night. Usually, he comes to mine."

"Guess he wanted a change of pace, Sandy!" Bud said with a laugh. He pretended to duck as she threw her napkin at him. He turned back to Tom. "What happened after he made your acquaintance, Tom?"

Sitting down at the table, Tom began to eat. Between bites, he told them: "Well, I was about to fall asleep, so he scared the living daylights out of me. And all I could make out were his two red eyes! But a moment later I remembered reading that Siamese cats were actually albino cats, and have eyes that glow red when light is shined into them. So I just talked soothingly to him, and he calmed down almost at once. Then he curled up next to my stomach and went to sleep. Sounded like a good idea to me, so I joined him. He was on the other side of the bed when I got up a few minutes ago. So, when and how did we get him, Sandy?"

Sandy soon told Tom the story of tracking down one of her missing bloodhounds in the woods, hearing a car race by as she approached a road, watching something being tossed out of the window as she did so, seeing the poor, three-legged kitten lying in the road, crying in fear and pain, taking it to the vet's and hearing the vet saying it would be better to put the kitten to sleep, taking the kitten home and nursing it back to health. Now Tao Zia was practically her own devoted guardian, though, as Tom found out, he got along with the rest of the Swift family just fine.

Tom looked grim. "You did the right thing, Sandy. Anyone who would do that to a helpless creature like a kitten - " Tom bit back on some harsh words. He looked down at the cat. "Tao Zia, you're more than welcome at our home," he said in an almost formal tone.

The cat looked up at Tom as though he'd understood every word. He left Sandy and walked over to Tom, then rubbed his head against Tom's leg. Even with three legs, Tao Zia didn't hobble the way a dog might. He moved in a smooth, flowing motion akin to a dolphin's bob-and-dive than anything else. Tom reached down and scratched the cat's head, then stroked his back. Tao Zia let out a loud purr of contentment.

The conversation turned towards more pleasant topics. Tom was amazed to learn that Rance Gorman, who'd once played such great practical jokes on Tom (like placing a goat on top of Enterprise's administrative building, or spiking the hot chocolate with Tabasco sauce) was now the head of the pattern making shop. And was now married and had two kids. "He hopes they'll come to work for Enterprises after they graduate from high school," Mr. Swift informed him. "As you already know, we have a great for-pay internship and a college fund. But it's a bit early yet. His kids are only four and



five right now."

"I wonder if they'll turn out to be practical jokers like their dad!" Tom said with a laugh.

The phone rang a few moments later. Mr. Swift answered. "Hello, Harlan ... what's that? ... say that again?" Tom and the rest of the family looked over at Mr. Swift. His eyes were wide with shock. "We'll be right over!"

"What is it, Dad?" Tom asked.

Mr. Swift turned to him. "Tom, finish your breakfast as quickly as you can. You too, Bud. Our space friends - the Vashanti - have finally sent us a message!"

All of them let out a gasp. "They did?" "What did they say?" "Why have they waited so long before contacting us?" The questions came thick and fast.

Mr. Swift held up a hand. "Sorry, Harlan didn't go into any details. He just said we'd better get over there fast."

The boys wasted no time gobbling down the rest of their breakfast. They were washed, dressed, and ready to go inside of fifteen minutes. So as not to rouse any suspicion, Mr. Swift drove back to Enterprises at a normal rate of speed. The boys were already there ahead of him, having Lektromagged back.

Mr. Swift found them in the space communications room, going over the message. It wasn't long, and read:

WE, THE VASHANTI, HAVE DECIDED TO SEND YOU ANOTHER ENTITY TO EXAMINE PROGRESS ON TRANSPHOTONIC DRIVE. THIS ENTITY WILL COME EQUIPPED WITH ITS OWN CONTAINER. ALLOW IT TO EXAMINE YOUR FACILITIES THOROUGHLY. WE NEED TO KNOW ABOUT ALL OF YOUR LATEST PROJECTS. PLEASE EXTEND COURTESIES TO IT AS YOU HAD THE ENTITY YOU NAMED EXMAN. THE ENTITY WILL ARRIVE IN - and here followed a series of numbers and figures - AND WILL DEPART ON - more numbers and figures.

"That's about three hours from now!" Bud exclaimed.

"Assuming they're on time," Tom commented. "You remember how long we had to wait until Exman finally showed up."

Bud nodded. "Oh, yeah. What was it, about four in the morning?"

And when it did arrive, it practically caused an avalanche!"

The boys had been stationed near a cliff side. The energy put out by Exman's arrival hadn't been narrowly focused, and cause a hillside to collapsed. Fortunately, the boys hadn't been in any danger.

"I hope they know how to navigate better this time!" Bud said.

Tom nodded. "It sounds like they're going to be landing right on Fearing Island. Take the print-out with us, Bud. We're going over there right now."

This time, the boys decided to take the *Sky Queen II*. Mr. Swift agreed. Wendy came along as well.

Down in its underground hanger, the huge, triple-decker aircraft waited. The group walked up the ramp and took an elevator to the flight deck. While Mr. Swift and Wendy made themselves comfortable in the lounge, Tom and Bud strapped themselves in the cockpit. Tom studied the control layouts carefully. Although newer than the old *Queen's* controls, most of them were self-explanatory. Further, they

were exactly where Tom would have thought to place them.

Tom pressed the main power button. At once the cockpit lit up as LED and readout screens came to life. Various other lights came on as well. Tom pressed another button, causing the ceiling overhead to split in two, and raise the *Sky Queen II* up via a hydraulic lift. Both Tom and Bud clamped their headphones over their heads. Tom switched on the radio and soon received clearance from the tower. He grabbed ahold of a set of levers that, ordinarily, would have activated the jet lifters (and, later, the repelatrons). This time, though, the levers controlled the G-Force Inverter's vertical lift. With hardly a sound, the *Sky Queen II* lifted off from the ceramic pavement. Soon, all of Shopton could be seen, stretched out for miles. Tom was pleased to see a few more skyscrapers had been built, improving the city's look. He also saw the building his telesampler had once almost sliced in half, due to action of an enemy. Tom gave a wry grin, remembering the day he first lifted off in the original *Sky Queen*, how it tied up traffic for miles as people gawked at it. Now they hardly gave it a glance. Tom snapped himself out of his memory. Bringing the *Queen II* to a halt about fifteen hundred feet, he engaged the forward motion. The *Sky Queen II* took off at once, and soon was flying at almost Mach I. Tom realized that the *Queen II*'s top speed was far in excess of Mach IV, but he hardly needed that much speed to reach Fearing Island. In fact, he'd hardly had time to switch on the autopilot and have a brief snack in the lounge with Mr. Swift and Wendy, when the navigational computer began to beep, letting them know they were closing on Fearing. A few moments later they received clearance from Fearing, and set down on a special pad at the airstrip.

They waited inside the administration building. Tom had both the Outpost In Space and several of his Megascopic Space Probers focused on an area in space where his space friends usually have sent their probes or spaceships from. It came as something of a shock, then, when the probe - already dubbed Exman II by everyone - came in on a nearly flat trajectory and landed near the administrative building.

Tom and the others stared in surprise. At once, Tom got on a phone and called the tower. He talked with Steve Alpin, one of the communication engineers. "Steve, did we receive anything from the Outpost? Surely they should have seen the probe's approach!"

Steve replied, "No, they never called, Skipper. I'll call them now and see what they have to say." A few minutes later, as the others continued to stare out the windows at the new probe, Steve told Tom: "Nope, not a thing, Tom. They have no idea how the probe managed to get past them and the Probers. Do your space friends have some sort of radar and Prober-proof camouflage?"

Tom shook his head, puzzled. "Not that I'm aware of, Steve. Still, it has been ten years. They could easily have developed it by now. Maybe they're just being overly cautious."

Tom hung up and joined the others at the window. Exman II was much bigger than the first Exman body, built by Tom himself. Tom wondered how he was going to be able to get it inside the labs and other areas it wished to see.

The probe stood about eight feet tall and was vaguely shaped like a hexagonal tube. Multiple arms projected from all sides. The head also had a star-shape, though, as Bud pointed out, it was more like a starfish than anything else. The "points" had multiple arms or

tentacles as well. Seeing the probe made Tom somewhat uneasy, though he couldn't say why. Almost at once, though, one of the space translators came to life:

EXMAN II TO THE SWIFTS.

Tom walked over to the console and typed in: THIS IS TOM SWIFT. GREETINGS FROM EARTH ONCE AGAIN! IS THIS THE FIRST EXMAN ENTITY THAT HAD VISITED BEFORE?

Exman II responded:

NEGATIVE. PLEASE COMMENSE WITH THE TOUR AT ONCE. THERE IS LITTLE TIME FOR UNNECESSARY CONVERSATION.

"Well!" Wendy said. "A bit on the curt side, aren't we?"

Tom nodded, frowning. The usual friendliness of his space friends was definitely lacking. Still, they were right about wasting time. The window for inspection wasn't very wide. With a shrug, he typed back in: WE CAN START THE TOUR IN THE ADMINISTRATIVE BUILDING, WHICH IS THIS ONE RIGHT HERE.

Exman II replied: NEGATIVE. I NEED TO EXAMINE YOUR LABORATORIES FIRST.

Tom looked at the others and shrugged. "Okay, I guess we'll start there, then." He typed back: VERY WELL, FOLLOW ME. CAN I TALK WITH YOU DIRECTLY?

Exman replied: YES. I AM EQUIPPED FOR AUDIO. DUE TO INFORMATION OBTAINED BY THE FIRST EXMAN, WE CAN UNDERSTAND YOUR SPEECH. I AM EQUIPPED WITH SPEAKERS, AND CAN RESPOND AS REQUIRED.

"Well, why didn't he say that to begin with?" Wendy fumed. "We coulda' been out there talking to him, instead of bein' in here, typin' it into a computer!"

Tom nodded. "Good question, Wendy. Perhaps he thought we'd be more comfortable this way to start with." Tom shrugged. "Well, let's get the tour started."

Outside, the imposing figure of Exman II gave a curious lurch when Tom and the others appeared. Tom stared at it a moment, wondering what caused it to make the odd motion.

"Follow me," he said. "I'll take you directly to the labs."

Yet Exman II hesitated to follow. It remained motionless for several minutes. Tom stared at it, unable to comprehend its strange behavior. For a moment he wondered if the body's audio inputs weren't working. Or did it have a link back to his space friends, and they were exchanging information. If so, about what? They hadn't even started the tour yet.

Abruptly, Exman II rose into the air and began to follow them to the labs. It didn't use any kind of mechanical transport, but simply floated about a foot above the ground. Exman II didn't say very much as Tom began to show them the various workrooms and experiments. In fact, after a time, Tom began to sense a growing impatience on the

part of Exman II. Tom showed him various interesting experiments in progress, but Exman II barely paid them any attention. The huge machine, which had compacted itself somewhat so it could fit inside the building, would wander around the labs, looking at this and that. Tom began to get the feeling it was searching for something. He could hardly say so to the others, since he had no idea how powerful its "hearing" might be.

Finally, as the tour began to near its end, Tom showed him his main lab, where the transphotonic engine lay. Also, the Black Cobra's computer. As he explained the workings of the engine, Tom began to feel a growing sense of unease. He had a feeling he'd made a bad mistake allowing Exman II in here. As Exman II began examining the engine Tom, for the first time, began to examine Exman II in turn.

Exman II still hovered about a foot off the floor. Tom began to realize that he was hearing a very familiar humming sound. Faint, but definitely there. And some of the metal parts of Exman II looked just as familiar. Tom had seen that sort of metal before, and it wasn't from his space friends. In fact, it looked suspiciously like the metal the Brungarians used. In a wreck on the ocean bottom, Tom had once found some tools that had been made in Brungaria by a company called Varda Steel Works. The metal had a certain tint to it. So did Exman II's metal. And the humming sound? Suspiciously like one of his own repelatrions...

Tom began to think of a way to get Exman II out of the lab without revealing anything further, but before he could, Bud pointed out: "And this is the computer that holds all of the Black Cobra's secrets!"

Exman II was in motion at once. It came to a halt in front of the computer, and a large panel opened in its side. The tentacles came down and gently seized the computer, the glove, and box with the data crystals in it.

Tom cried out: "Hey, what are you doing - ?" But he scarcely needed to. It was obvious. Just as it was obvious who really controlled Exman II. Even as Tom scrambled for the alarm switch, he felt his legs beginning to give out from under him. Too late he noticed the small vents at the top and bottom of Exman II. Too late he heard the very faint hissing sound. Bud, Wendy, and Mr. Swift were likewise toppling to the floor. The last thing Tom noticed was "Exman II" floating over to the model of the transphotonic engine...

## CHAPTER EIGHT: THE ROBOT'S ESCAPE

The Black Cobra lay in a van in Fernwood, a town not far from Shopton. Fernwood was a costal community, and as close to Fearing

Island as the Cobra could get. He was connected to his recovery robot, the one the Swifts referred to as "Exman II." The Cobra didn't mind the name; it added a nice touch of irony to his whole plan.

It had taken him months to come up with what, in retrospect, was a rather obvious idea. Since neither he nor anyone else could penetrate the brain-wave security at Enterprises or Fearing Island, and any attempts to conceal their brainwaves would show up just as clearly, that left only one other approach: a remote-operated robot.

The Cobra's first plan was to just drop the robot into the Swift's compound and have it tear apart the laboratories until he found the computer. But he had no idea where the computer was located, and the Swifts would probably find a way to jam the signal or destroy the robot long before he got anywhere near it. Plus, he could end up damaging the computer. Unless, of course, the Swifts had a reason for showing the robot around. Before long, he came up with the notion of fooling the Swifts into thinking the robot came from their friends the Vashanti. From what little he could find out, the Swifts hadn't heard from the Vashanti in quite some time. So, sending them another "messenger" would doubtless thrill them. They would probably be too excited to question the robot for a while. He set the Kranjovian labs to work at once. The result was a hybrid: a robot that was part Kranjovian, part Brungarian. The design was based to an extent on the first Exman, which had been in Brungaria for several weeks before they discovered that it was spying on them. But it owed more to the appearance of the Tekili-Li than to Swift. It used Swift's repelatrions for movement. The Black Cobra hoped to have reacquired the computer before anyone at Swift Enterprises or Fearing Island noticed.

The robot was secretly flown over to the United States. It was loaded into a van which parked at a beach house in Fernwood.

The next morning, the Black Cobra used an updated version of the portable translation computer the Brungarians had once stolen from Fearing Island. With it, he composed and beamed a message up to a Brungarian satellite, which rebroadcast it back to Swift Enterprises. After that it was only a matter of waiting and intercepting their reply. The Cobra was taking a risk here, because in spite of their best efforts to jam an outgoing message, without the Swifts knowing it was being jammed, some of it might escape and alert the Vashanti that something odd was going on. Still, it paid off. Once the Swifts had acknowledged the message, the Cobra set his small team of technicians into action. They brought out the robot and launched it. The trajectory was flatter than the Cobra would have liked, but the robot wasn't exactly radar-proof - not at this stage, anyway - and he had to make sure it wasn't picked up by the radars on Fearing Island until it had reached the point where it no longer mattered.

It didn't take long for the island's personal to attempt contact. When Tom Swift replied, the Black Cobra wasn't surprised. He thought it was simply Tom Swift Sr. The shock came a few minutes later when Tom Swift Jr. walked out of the building, along with Bud Barclay, and *both of them looked as they had ten years ago*. The Black Cobra was so stunned he clutched all of the controls, causing the robot to lurch slightly. He stared and stared as young Tom Swift motioned him to follow. Finally, remembering why he was (in a sense) there, and knowing the "Exman II" could be exposed as a fraud any time now, he

set the robot in motion.

The Black Cobra barely paid any attention to the labs or Swift's lecture - it was all being recorded on videotape anyway - as he continued to ponder the strange contradiction before him. How could this be possible? Were they robots of some sort? Not likely, even Swift's robots weren't this sophisticated. And to what purpose, anyway? Were they some sort of clones (the Cobra had studied the subject, curious if such a technique could be used on himself so that there would always be a Black Cobra around)? But the technique of cloning wasn't even past the hypothetical stage yet. No one had ever succeeded in creating one. And even if they had, how could such a clone be aged so fast? Let alone have the same personality as the host. The Cobra dismissed the idea of clones. Which left the young Swift and Barclay a complete mystery. Unless... The Black Cobra suddenly had a wild idea. The Swift's Transmittaton teleporter. They sure hadn't expanded its use throughout the world. When asked, they would simply say that there were a lot of technical problems to be ironed out. Yet the teleporter was in use around Enterprises and their Outpost in Space to a considerable degree, as he'd found out for himself last year. Surely if they had problems with it, it wouldn't be used so much. And equally odd: after ten years of use, wouldn't most of the problems be fixed by now?

The Black Cobra frowned. *What if...* he wondered. What if they found more than one use for the thing? What if it did more than just transport people and objects from one location to another? What if they stumbled across the fact that it could not only teleport, but *replicate* the item being transported? The Cobra mulled that idea over, liking how it felt. Yes, replication as well as teleportation. If introduced too suddenly into the world, economic systems throughout the world would collapse overnight. And you could replicate yourself - or anyone you wanted. As many times as you wanted. He wasn't too certain about that last part, but could think of no technical reason why that shouldn't be so. If this were true - and it was all still conjecture - then Tom, Bud, and probably other key personal and family, had their "images" stored on a computer somewhere. The Black Cobra debated searching for the machine, then gave up on that idea. The Transmittaton tank and the computer used for storing and retrieving such files was probably buried away somewhere remote, under high security. After all, that's what the Cobra himself would have done with such a machine. There just wasn't time to look. Recovering his computer and the data crystals would be enough.

As it turned out, the plan worked even better than he hoped. Swift soon took him to the main lab where the transphotonic engine was being worked on. And young Barclay pointed out right where his computer and crystals were. At once the Cobra released a silent, odorless knockout gas. He'd been tempted to use a neurotoxin and just kill everyone in sight. But there was always the chance he might need one of them alive, to be captured and interrogated at a later date. And this was well before he knew Tom Swift Jr. had come back from the dead somehow. Now he was glad he was just knocking them out. He definitely wanted to question Swift and find out how he'd accomplished his Lazarus trick.

So far he was safe. No one had sounded any alarms. He floated over to the transphotonic engine. He thought about destroying it, but

by now Swift probably had other working models. So he just examined it closely. Of course, without knowing the math or physics model behind it, he had no idea how the thing was supposed to work. And, once again, his time was limited. He had to take the computer and leave before someone came looking for Tom or Tom Sr. Now that he had his computer back, he could start making plans again. Before he left the room, he noticed a square-shaped hole in one of the walls in the lab. He floated over to it and examined it. He noticed the almost concentric nature of the holes, denoting something having passed through the series of walls. Whatever it was had considerable power: the walls weren't made of flimsy sheetrock, but heavily reinforced concrete, wire mesh, and solid steel girders. Yet the object had passed through them as though they were made of Japanese rice paper. Nearby, he found a box made of the Swift's famous Durastress. The box was of the same size as the holes. Apparently, this was the cause. Without hesitation, the Black Cobra opened another panel, reached out with a claw and picked up the box, then stored it inside the robot's body. He could examine it later. Right now it was time to go. He was pressing his luck as it was.

He made the robot leave the labs as quickly as possible. At first he had the robot float along at a leisurely pace. Insofar as he was still considered "Exman II", no one called for him to halt, or asked him any questions. An elevator returned him to the surface. Moments later he floated out of an exit.

At once, he began heading towards the beach. He hadn't gone far when an alarm went off. Tom's voice boomed over a loud speaker, warning the employees that Exman II was a fraud, a trick being played by the Black Cobra. And he was to be stopped at any cost.

The Black Cobra didn't bother to stick around and hear the rest. Once over water, the robot underwent a startling transformation. The star-shaped head receded, replaced by a thin cone-shaped head, the apex of which narrowed down to needle-thinness. Long, equally razor-thin wings emerged. Inside the robot switched on a G-Force Inverter that the Cobra had obtained. At the same time, power was fed into the repelatrions as well. The robot body collapsed, became thinner, allowing for a more aerodynamic shape. With both repelatrions and a G-Force Inverter, the robot silently moved past the sound barrier, accelerating to Mach Four. It was possible to move faster, but even the Brungarian's much-vaunted heat-resistant steel would begin to melt at higher speeds. Besides, Mach Four was fast enough to reach the Cobra's retrieval point.

Tom woke up with his head pounding. It pounded for two very good reasons: the Black Cobra's knockout gas was wearing off. And he'd hit his head when he fell over backwards.

Tom didn't waste any further thought on it. As soon as his limbs would obey him, he scrambled to his feet and raced over to the intercom. He hit the button for the PA.

"Attention everyone! That robot isn't from our space friends. Repeat, NOT from our space friends! It's from the Black Cobra. Stop it anyway you have to! Do not let it escape from this island!" Behind him, Tom could hear Bud, Mr. Swift and Wendy getting back to their feet.

Tom wanted - needed - to pursue the robot. Before he did, though, he looked around the lab. His worst fears were confirmed: the Black Cobra's computer and data crystals were gone. And if that wasn't enough, so was the test cube containing the miniature transphotonic engine.

Mr. Swift's face wore a grim expression. "We were foolish, Tom. We should have thought to confirm this so-called 'Exman''s approach from the Outpost."

Tom nodded. "True enough, Dad. But this is hardly a time for recriminations. Let's get back to the *Queen*, and see if we can chase the thing."

"Has it left the island already?" Wendy asked.

Tom shrugged. "I don't know yet. But I think it's a pretty safe bet. The Cobra's hardly going to hang around here, now that he's got his computer back."

"That robot hardly looks built for speed," Bud muttered. Then a thought hit him. "Unless..."

Tom nodded. "Right, Bud. I'll lay you odds that there's more to that robot than meets the eye!"

"Wal, let's not hang around here jawing about it!" Wendy exclaimed.

Mr. Swift was already moving towards the door. "Let's go, we'll talk about it later."

"Right, Dad," replied Tom.

They hurried to the stairs, not bothering with the elevator. Moments later they raced across the various fields to the hanger area.

The hatch was already lowering as Tom and the others raced up the ramp. Moments later they were all strapped in. Tom kicked the power on, got clearance from the tower, and kicked the G-Force Inverter into gear. The *Sky Queen II* rose rapidly from its pad. At one thousand feet, Tom switched it to horizontal movement. The *Sky Queen II* tore through the sky at Mach Two.

Tom had the radar and other sensors switched on. One was a variation of his Aquatomic Tracker, which could track objects underwater by identifying their chemical compositions. Tom was gratified to see that his older self came up with one that did the same in the air. He punched in the numbers for the elements the Brungarian metal was composed of. Almost at once the scope lit up, a green pip identifying the robot. The pip didn't stay on the screens



for very long. Tom punched another button, and the screen showed course and speed. Tom let out a whistle. "Mach Four!"

"You weren't kidding about him not hanging around!" Bud said with a wry grin.

"He's going to have to fly a lot faster than that if he thinks he's going to get away from me!" Tom exclaimed. At once he shoved the throttle forward. The LEDs displaying Mach speeds began to increase: 2.10, 2.50, 2.90... It took only moments to reach mach five. Tom put the *Sky Queen II* into a steep dive. The Black Cobra's robot was flying low over the ocean - a mere fifteen feet above the surface, enough to raise "rooster tails" off the water - in order to avoid radar detection. This was useless now that the *Queen* had a lock on the robot's flight path.

But the Cobra wasn't without resources of his own. As soon as he realized that the *Sky Queen II* was about to catch up, he began zig-zagging the robot, making it turn at almost perfect ninety degree angles.

Tom was amazed at the robot's maneuverability. He began to try and match the robot, but the *Queen*, as agile as she was, was no match for the small robot. So Tom returned to the sky where he could do a better job of keeping the robot in sight.

The Black Cobra had prepared for that as well. *Time*, he thought, *to see if this feature actually works.* He flicked a switch, and the skin surface of the robot changed.

Tom gasped in amazement as the robot seemed to vanish. It disappeared from both the Aquatomic Tracker and radar as well. And, since it used a G-Force Inverter, there was nothing on infrared either.

The Black Cobra breathed a silent sigh of relief. The invisibility shield had worked. Neither he or his allies had invented it - the shield came straight from the Tekili-li. At first, the Cobra hadn't been too certain just what to use it for. Then, during the building of the robot, he had to recall the design specs from memory. And he'd only viewed the design, and the math behind it, a few times. It would seem he remembered it quite well. The shield worked much the way Swift's sonar mask did - by utilizing millions of tiny optical cables that broadcast the image from the far side of an object to the near side - in all directions. The object effectively vanished. The optical cables covered the metal, preventing detection by the Aquatomic (or should that be "aeroatomic"?, the Cobra mused) Tracker. It was transparent to radar as well.

On board the *Sky Queen II*, Bud turned to his friend. "Tom?"

Tom shook his head. "I don't know what he did, Bud. It has to be something like I used on the plane to make it immune to radar. Remember?"

Bud nodded. Phyllis and Sandy had flown that particular plane, and later ended up captured by enemy agents when they set down to have a picnic. Fortunately, they'd been spotted by Tom using his Megascopic Space Prober.

Tom searched the control panel, but apparently the *Sky Queen II* didn't have one built in. Tom clucked his tongue. *I guess my older self felt he didn't need one*, he thought. Fine time to find out otherwise!

Bud's shout broke through his thoughts: "Hey Skipper! Look at

this!" Bud was pointing to one of the view screens. On it, parallel plumes of water were clearly visible, even if nothing else was. Tom let out a whoop. "He's forgotten how close he is to the surface! Keep tracking him, Bud. I'm going to take the *Queen* up even higher, so that he can't detect us."

Below, the Black Cobra frowned. The *Sky Queen II* had disappeared from his sensors. Had Swift given up? Not very likely, he thought. What was he up to?

Suspicious, the Cobra continued to zig-zag and circle. His sensors indicated that shore was not very far away. Even so, he could tell he was way off course. But that was probably just as well.

It was during the final circle before he headed to shore that he realized his trouble. The circle had been short and tight: at once he saw the rooster tails the robot had been raising off the ocean's surface. *Blast!* he thought. *I've been giving away my location the whole time. Small wonder Swift took to the sky: to avoid letting me know my mistake.*

The Black Cobra remedied the situation at once. The robot climbed to a thousand feet.

Once again the boys lost contact with the robot. "Tom!" Bud said. "What happened? Where did he go?"

Tom shook his head grimly. "That last circle, Bud. He must have spotted the robot's rooster tail and realized we were tracking him. So he went skyward. Hmmm..." Tom's voice trailed off as a thought occurred to him. Maybe it was possible to track the invisible robot by its wake. The robot was too small to give off much of a shockwave, but at Mach Four, it would still create a considerable amount of turbulence.

Tom checked over the computer readouts, looking for one in particular. Sure enough, there was a readout for severe air turbulence. Only problem was the range: just a thousand feet. From what Tom could tell, it used something called *Doppler Radar* to register wind sheers: deadly up or down drafts that could cause a plane to crash. Tom punched a few buttons and adjusted the knobs for range. At once, twin pressure waves appeared on the green screen, heading in a circle.

"Tom!" exclaimed Bud. "That must be the robot!"

"Right, Bud," Tom answered. Then he noticed where he was: over a suburban area of Maryland. At once, Tom pressed a button. The noise of the *Sky Queen II* flying through air dimmed.

"What did you do, Tom?" Bud asked.

"Activated the Sonic Boom Trap," Tom replied. "We're over land now. No point in scaring the neighborhoods!"

Tom continued the search for the robot. Every now and then it would fly back into the Doppler Radar as the Black Cobra continued his evasive maneuvers.

For his part, the Black Cobra was baffled by the *Sky Queen II*'s continued pursuit. To say nothing of how it kept picking up his trail. *How is he doing that?* the Cobra wondered. *I'm invisible, there's no ocean to give me away ... or is there?* he wondered. Abruptly, the Cobra throttled back, dropping the robot to sub-sonic speeds. He could eyeball the *Sky Queen II* shooting past him overhead. The Cobra caused the robot to drop in altitude as well, until it was about a hundred feet off the ground, cruising at seventy-five miles

per hour. He knew this would cause the robot to take several hours to return to base, but now he had the advantage of almost complete invisibility. That he was correct in his assumption was proven by the *Queen II*'s circling back and searching. He'd vanished from their Doppler Radar sensors.

*You have to hand it to Swift, the Black Cobra thought with grudging admiration, he really gave it a try. But in the end, I proved to have the superior mind!*

Tom bit back on several choice curses. Somehow, the Cobra had been able to double-guess his strategy. He spent several more hours fruitlessly flying back and forth, trying to pick up some sign of the robot. But there was nothing to be found.

"Son," Mr. Swift spoke up as he came into the cockpit, "you might as well quit."

Tom let out a sigh. "I know, Dad. The Cobra must have slowed down and dropped altitude. He's probably long gone from here." Sadly, hating to admit defeat, Tom banked the *Sky Queen II* and began the flight back to Fearing Island.

For a long time they flew in silence. Then Bud spoke up. "What now, Skipper?" he asked quietly.

"Well, the Black Cobra now has his computer back. Plus a working model of the transphonic engine that won't self-destruct. It probably won't take him long to complete repairs to his ship. And he now knows I'm alive again. So there's only one thing left to do, Bud: I'm going to have to construct a full-sized starship, and do it in the next few months. One way or another, we've got to beat the Cobra into space, and stop him from going to the Tekili-li!"

Bud let out a whistle. "That's a tall order, Tom!" He punched Tom gently on the shoulder. "But if anyone can get pull it off, that's you! I well remember the other times we've had to work with a close deadline, but you managed to beat it every time!"

Tom grinned. "Thanks, pal! I can remember those times too. But this is going to have to be one of the fastest jobs I've ever attempted. There's going to be very little room for error. Once we land at Fearing, I'll meet with all of the department heads and we'll hash out a time table." The *Sky Queen II* flew back to Fearing Island like a streak of lightning.

In the woods outside of Fernwood, the Black Cobra continued to lay on his couch, maneuvering the robot until his van came into site. Silently, the robot landed on the ground, then converted back to its original cylindrical shape. The Black Cobra disconnected himself from his visual aide and control apparatus. He didn't have to give any orders, his men already knew enough to take the robot aboard the van. Both the computer and the durastress box were left alone. The Cobra would remove them later, once they'd regained the secret Kranjovian lab. For now, he would have to hurry. There literally wasn't a moment to be spared. Swift knew the consequences of losing both the computer and the transphonic engine. He wouldn't waste any time building a full-scale starship and try to block the Cobra from leaving the solar system. So the Cobra knew he would have to speed up repairs to the *Ashtorath's Revenge*. *One of us will lose the race the leave the solar system first, he thought. And it's not going to be me...*

## CHAPTER TEN: THE PARAMAGNETIC INITIALIZER

Three days later, all of Swift Enterprises was humming at top speed. In that time, Tom had sketched out the design of his prototype starship: the *Ad Astra*. "From an old latin saying," Tom told Bud and the others. "'*Per Aspera Ad Astra*' - 'Through difficulties to the stars.' I thought it appropriate." None of them disagreed. Tom burned the midnight oil for two days straight, hardly touching Wendy's delicious snacks. She fussed at Tom as much as Sandy or Phyll, but Tom simply didn't have time to do more than nibble. Calling upon everything he knew about spaceship construction, and what he could learn from his older self's thumbnail sketches of a starship, he worked feverishly on the design of the starship. But that wasn't all. Tom started work on another invention, one he hoped would thwart the designs of the Black Cobra and the Tekili-li: he called it his Paramagnetic Initializer.

"What it does," he explained to Bud and his father a day after they'd returned from the chase, "is to cancel out the effects of the Cobra's solar disrupter ray. Utilizing a form of magnetism I call 'paramagnetic', it causes the sun's magnetic fields to reinitialize themselves after something like the Cobra's beams try to cause them to become unstable. Every time the Cobra's ray hits the sun, causing instability, mine hits it at the same time, forcing the magnetic fields to go back to the way they were."

"So the sun is unstable one moment, then stable the next?" Bud asked.

"Wouldn't that cause secondary harmonics in the magnetic fields?" Mr. Swift pointed out. "Couldn't that lead to further instabilities?"

Tom nodded. "Sure, Dad, if we let it. But I have no intentions of starting a push-pull war with the Cobra. And I doubt if he'll just sit there doing nothing to us. The Paramagnetic Initializer can also be used on the Cobra's ship!"

Mr. Swift looked at his son in surprise. "Tom, are you sure? In what way can it - " he paused a moment. Then nodded. "Oh, I see: you mean on the ship's fusion generator."

Tom nodded, grinning. "Exactly! His ship's main power generator gets its supply from the fusion generator, which depends upon a plasma field with shifting magnetic fields. One blast from the Paramagnetic Initializer, and the magnetic field of the fusion generator conforms to a rigid torus - a perfect ring if you will. Ordinarily, this is what you'd want in a fusion reactor. But not the Cobra's. It has to let its magnetic fields shift and flex in order to reach maximum power. The Paramagnetic Initializer won't let it. The fields keep resetting to normal. So the ship never has enough power to create the

space warp."

Mr. Swift beamed with approval. "Very good, son! Well, I'll let you get back to work. How's the *Ad Astra's* design coming along?"

Tom sighed. "I think I about have it." He nodded towards a wastebasket full of wadded up pieces of paper. "I must have tried hundreds of designs." He went over to the electronic drafting table and punched some buttons. "Finally, I settled on this." Both Bud and Mr. Swift crowded the table.

"Wow, Tom!" Bud said, his eyes dancing. "I can't wait to pilot it!"

Mr. Swift shook his head, grinning. "You certainly haven't lost your touch with unique-looking spaceships, son!"

The *Ad Astra* was indeed a unique craft. At each end was a large wedge-shape flight module. Flight wings, though folded flush against the fuselage, were clearly visible. In the middle, seven base-to-base tetraroids linked together gave it the shape of diamonds. The middle tetraroid was larger than the others.

"Much like my diving seacopter, this ship can be operated from either end. These tetraroids here - " he pointed at them " - contain cargo, labs, extra rooms, anything else we might need. The large tetraroid in the middle contains the crew quarters, Wendy's galley, entertainment and recreational facilities, and a conference room. Now, out of necessity, the first *Ad Astra* will only contain two tetraroids, not counting the middle."

"Why, Skipper?" asked Bud.

"Very simple: we just don't have enough time to build the others. Besides, I designed these sections to be modular. We're going to use the shortened *Ad Astra* to defeat the Black Cobra. Later on, when we're ready to explore the stars, the other sections will be waiting at the Outpost, ready to connect."

"Why are the middle sections shaped like diamonds, though?" Bud asked again.

"Because the triangle shape is one of the simplest and strongest geometric shapes known to man," Tom informed him.

"Do the ends detach? They sure look like it," Bud commented.

"Yes indeed, Bud. Either one can be used for a surface landing. Although, with the G-Force Inverter, we'll have vertical take off or landing, there may be times when we wish to conceal that fact, or just glide. The wings extend outward, allowing for better lift. But, as you might guess, the G-Force Inverter will be doing most of the work."

"Well, it looks like you have another winner on hand," Mr. Swift informed him.

"I've already sent the blueprints to Hank," Tom said. Hank Sterling was the Swift's chief model maker.

A few hours later, Hank showed up with a scale model of the *Ad Astra*.

"Beautiful job, Hank!" Tom praised him.

Hank Sterling beamed. "This one was a pleasure, Tom. So this is how we're going tame the stars, huh?"

Tom laughed. "I sure hope so! Let's get the construction crews to work on this."

"Right, Tom."

Construction began within hours. The work crews at Enterprises were old hands at rush jobs like this. The crews worked in shifts, so

the work went on twenty-four hours a day, six days a week. Mr. Swift still insisted on Sunday being a day of rest. He knew the Black Cobra was under no such constraints. But he also knew better than to push his own crew too hard.

Slowly, the *Ad Astra* began to take shape. Tom alternated between the work shops and the Magic Mirror in his office. By the end of the first week, he was looking haggard. The crews could work in shifts; Tom did not have that luxury. He was constantly refining and updating the schematics. Fortunately, the electronic drafting table made that easy. Unfortunately, constant changes to the blueprints meant time wasted as sections of the ship had to be revised or scrapped entirely. Still, progress continued.

As the end of the third month approached, Tom was no longer pushing himself so hard. The ship was nearing completion. Revisions were minor and easily implemented. Even so, Tom was almost a nervous wreck, wondering about the Black Cobra.

"How close is he to launching, Bud?" Tom would mutter as they ate in Tom's office. "How close? I wish my older self had left some way of snooping in on the Kranjovina lab, so we could monitor his progress."

"Well, we don't, Skipper," Bud replied. Changing the subject, he asked: "How's work on your Paramagnetic Whatzit coming along?"

"Paramagnetic Initializer, you mean," Tom replied with a smile. "As soon as we're through eating, let's get back to the lab. I've just finished creating a working prototype."

A short time later, the boys were back in Tom's lab. Bud stared at the curious contraption on one of the benches. "Tom, you've come up with some way-out gadgets before, but this one really takes the cake!"

Tom grinned. "Yes, it does make for a great conversation piece, doesn't it?"

The Paramagnetic Initializer resembled a three-way collision between a merry-go-round, a bazooka, and half a dozen public address speakers.

Tom explained how the magnetic sampler - the merry-go-round part - was used to analyze what sort of shape an object's magnetic field was in, then the correction unit - the "bazooka" - immediately began to create counter-waves, which it projected via the output projectors - the horns.

"Here's what we'll test it on, Bud," Tom said. He pointed to a transparent cube full of metal objects. Several needle-sharp probes poked their way into the cube. "Those probes you see will create a fluctuating magnetic field. Then we'll try to the Paramagnetic Initializer. It should cause the objects to settle back down again."

"Go ahead, Skipper," Bud said, intrigued.

Tom punched a button on a control panel. At once, the metal objects in the cube began to move this way and that, pulled to one probe, then to another as each probe's field either weakened or strengthened. Tom let it go on for a few minutes, then switched on the Paramagnetic Initializer.

To the boy's surprise, the metal objects in the cube suddenly pulled together into a rough sphere. Then the sphere began spinning. Tom and Bud exchanged baffled looks. "Tom...?" Bud asked.

Tom shook his head. "I have no idea, Bud. Never seen anything

like this before. Not even with the magnetic deflector I used on the Cobra's antimatter field." He stuck his head close to the cube. The metallic sphere had constricted and was spinning even faster. As Tom watched, it began rapidly vibrating back and forth. "Hmmm, what could be causing it to - " Tom broke off with a gasp. The side-to-side vibrations were getting wilder, and started to impact against the cube walls. "Bud! Get down!" he cried, hitting the floor at once. Bud didn't waste any time either. There was a sudden shattering sound and pieces of plastic flew in all directions. Then the compacted ball flew across the lab and shattered against one of the walls. At once, the overhead fluorescent lights popped, knocking down the plastic panels beneath them and showering the boys with sparks. Tom leaped to his feet and punched the off button. Things quieted down at once.

Tom turned to his friend. "Bud! You all right?"

"Fine, Skipper," Bud replied. "Glad you called out like that! But what happened? What caused it to - to do whatever it just did?"

Tom rubbed his chin a moment. "You know, Bud, I think I can claim a victory here!"

Bud looked at his friend. "You can?"

Tom nodded. "Crazy as it seems, yes. Once the PI sampled the fluctuating magnetic, it attempted to restore them to normal by forcing the fields into an equilibrium - the sphere you saw. The fluctuating fields kept getting stronger, forcing the PI to apply more power in return. But it wasn't focused properly, which resulted in the side-to-side movement. After the cube broke, the PI began to search for the next fluctuating fields - in this case, the overhead fluorescent lights. Good thing I didn't have the range very large, or it might have tried to 'reset' the power lines themselves! That could have resulted in a major short circuit."

"So what now, Tom?" Bud asked.

Tom sighed. "Well, I now know the principle is correct. Like most prototypes, however, it does need to be adjusted a bit."

Tom went back to work on the Paramagnetic Initializer. Within a few days, he tried the experiment again, with both Bud and Mr. Swift present.

"Will it work, or should I just go ahead and duck beforehand?" Bud joked.

Tom gave his friend a mock-glare. "Go ahead and duck, I won't stop you! But you'll miss the fun if you do!"

Once again Tom turned on the fluctuating magnetic field. The metallic objects flew or moved around at random. Then Tom turned on the Paramagnetic Initializer. At once, the objects not only stopped moving, but returned to their original positions. Tom began varying the strength and intensity of the probes. The objects would start to move, then stop. Tom jotted down notes on a notepad, then tinkered with the PI some more. Soon the objects were scarcely moving at all.

"Looks like a success, son!" Mr. Swift praised him.

Tom nodded. "So far, so good anyway. But I'm going to have to build a much larger prototype and test it on something with much stronger magnetic fields."

"Do you have anything in mind?" Mr. Swift asked.

"Yes, I do: Jupiter and Io," came the startling reply.

"Jupiter and Io?" Bud said. "Who are they?"

Tom punched Bud in the shoulder. "Very funny, fly-boy." Tom

walked over to a blackboard and quickly drew pictures of Jupiter and a few of its moons. "Now, Ioa, one of Jupiter's moons, flies through Jupiter's massive magnetic fields all the time. It builds up a charge on it. Every so often, there's a huge discharge of electricity between them. The magnetic fields go into flux afterwards. So I plan to take the *Cosmotron I* out there and test the Paramagnetic Initializer on it."

Mr. Swift nodded. "Sounds like a reasonable test, son."

Bud looked puzzled. "Won't this have some sort of effect on the Jupiter and Io?"

Tom shook his head. "Not very much, Bud. I'm going to use the PI on it after the discharge. At worst, it'll slow down the charge build-up by a few hours. That should have no effect of any kind in the long run. Jupiter and Io will soon be trading shocks like they always do."

The next morning, Tom, Bud, and Mr. Swift departed in the *Cosmotron I*. As with most of his machines, Tom noted that the *Cosmotron Express* had been continually updated. Most of the old analog dials had been replaced with LEDs and computer readouts. The steering controls were easier to use, more responsive. Bud loved it.

Pushing the superrepelatrions to their maximum speed, they reached Jupiter in just under three hours. From there, it took some hunting to find the tiny moon of Io. As they matched its speed and orbit, the computer reported that another static build-up was about to discharge. Tom was careful to keep the *Cosmotron I* at a considerable distance. Even so, they had to shield their eyes from the incredibly blinding funnel of lightning that stretched from Jupiter's upper atmosphere to the moon itself. It made earth's lightning look feeble and dim. Tom had the radios shut off, otherwise the static would have burned them out.

Once the discharge faded away, Tom wasted no time engaging the Paramagnetic Initializer. Punching another button, a large glass cube began to glow. A 3-D Telejector image of the magnetic tunnel between Io and Jupiter showed up in the cube. The computer model showed the magnetic flux lines to still be in chaos. Tom began adjusting knobs. The magnetic tunnel showed some changes, but the image still remained chaotic. Tom frowned. He moved the *Cosmotron I* closer and tried again. This time the results were better. The chaotic flux lines began to settle down. Tom moved in closer still. Now the magnetic tunnel appeared smooth, almost artificial. Tom nodded, satisfied. "We're definitely on the right track, guys."

Mr. Swift frowned. "But you have to be pretty close for it to work, son."

"I know," Tom admitted. "I'll have to find a way to extend the range. I'm not too certain how close the Black Cobra has to be in order for his device to have an effect on the sun. But I'd better have a way to counteract it from a pretty good distance - at least the orbit of Venus."

They flew back to Earth mostly in silence, as Tom turned over one idea after another to extend the PI's range. He knew that a major part of the problem lay in the inverse-square-law principle: the intensity of light and electromagnetism tended to be chopped in half with each square of the distance. That was why the PI didn't work very well until he moved in closer. Tom pondered his own anti-



inverse-square-law machines he used for his Private Ears. Could something like that be utilized for the Paramagnetic Initializer? He wasn't too certain.

Several days of experimentation later, he found out that it would work - but the results were not what he wanted.

"What's wrong with it this time, Skipper?" Bud asked. "I thought your Private Ear anti-whatsit would work!"

Tom gave a slow grin. "Anti-inverse-square-law you mean, Bud." He sighed. "Well, it does. It keeps the paramagnetic waves focused, as it should. So now I can use it from any distance."

"So what's wrong with that?" Bud asked again.

Tom shook his head. "It only affects a tiny area, Bud. The waves are *too* focused. I've got to find a way to spread them out, without them losing any of their intensity. And I'm not certain just how to go about it."

"You'll think of something, Skipper," Bud assured him. Tom only hoped that Bud was right.

That night, as he lay tossing and turning in the dorm bunk, he kept thinking about his Megascopic Space Prober. It was the device that first utilized the anti-inverse-square-law principle. The device emitted a third, out-of-phase wave that would cancel out the original waves, and thereby allowing an object to be scanned. The Megascopic Space Prober could view the depths of the universe, though it had only one drawback - it was limited to the speed of light. Views of Jupiter, Saturn, and the outer planets could take hours or days. Views of nearby stars would take years. Now that he had a way to reach faster-than-light velocities, Tom wondered if there was a way to use the transphotonic engine principle to expand the Space Prober's range. And with that, Tom suddenly realized he had his answer to the Paramagnetic Initializer's distance problem.

Hardly taking time to get dressed, Tom sprang from his bed and raced into his office. The rest of the night he brainstormed and sketched. Chalkboards were covered with equations and diagrams. By the time had Wendy reached Enterprises and started making breakfast, around 6:00 AM, Tom was dozing against his electronic drafting table.

"Tom!" she cried out in alarm. "Wake up! Were you here all night?"

Tom woke up with a jerk. "Huh? What? Oh, hi Wendy! Sure feels like it." Tom looked down at the image the drafting board was displaying. It was something of a blur. "Uh, yeah, I guess I was." He rubbed his eyes; the image remained blurry. He stood up from the work stool and rubbed his back. "Ohhh, remind me never to fall asleep on a drafting stool! My back aches!"

"I should think so!" she reprimanded him. "Well, you go get cleaned up, and I'll womp you up some breakfast!" Tom grinned, hearing an echo of Chow's voice in her statement. He staggered back to the dorm's bathroom.

A half hour later, shaved, showered, and considerably more alert, Tom dined on Wendy's delicious Tex-Mex breakfast of burritos, eggs, sausages, coffee, and funnel cake. Bud soon came in and helped him to devour whatever was left.

"How's it coming, Skipper?" he asked.

Tom nodded as he drank the last of his coffee. "I've got it, Bud!" he exclaimed. "I should have thought of this to begin with."

He paused for a moment in reflection.

"Well, give, Tom!" Bud grinned. "Don't keep me in suspense!"

Tom shook his head. "Not yet. Let's get Dad and Hank in here as well. Then I'll explain."

A short time later, Mr. Swift and Hank Sterling were seated in Tom's and his father's office. Tom walked up to the blackboard. "The idea is simple," he began, "though the execution might not be. Forget about using the anti-inverse-square-law generator. While it keeps the Paramagnetic Initializer from losing its intensity, the area covered is simply too small. Instead, we're going to use a hybrid of the PI plus the transphotonic engine. The PI remains untouched, but the TP engine is used to open a small gateway between one location and the next - only for a few microseconds. The rays pass through right to the target without losing any intensity."

Mr. Swift blinked. "Tom, can you actually open a hole in space like that?"

Hank nodded. "It sounds as though you're trying to create a space warp, like the Cobra's method."

Tom shook his head. "No, indeed. And yes, I can create a small hole like that - just not for very long. But I can get around that by strobing the opening and closing."

"Strobing it?" asked Bud.

Tom nodded. "By adjusting the time the crossover gap activated, I can keep it open long enough for the paramagnetic field to pass through and reinitialize the sun's magnetic field. The crossover gap is never open long enough to create a strain on the transphotonic engine, and never off long enough to stop the magnetic field from passing through."

Mr. Swift frowned. "I don't know, Tom," he said. "It sounds as though the field is still going to be chopped as it comes out the other side of the TP hole."

Hank nodded. "Your father's right, Tom. The paramagnetic field is going to be strobed as well."

Tom smiled. "True. But that's what I mean about adjusting the timing of the hole. If it's fast enough, the field intensity will hold up enough to make it seem continuous."

The conversation from there was soon lost among four-dimensional matrix equations and timing diagrams. Bud tried valiantly to follow it all, but soon lost interest. Fortunately, before his eyes had a chance to close, the meeting broke up.

"Wake up, fly-boy!" Tom ribbed him. "We're going to be flying back out to Jupiter again."

Bud stared at his friend. "Don't you have to make a prototype first?"

Tom shook his head, still grinning. "I'll do that on the *Cosmotron*, Bud. That's why I put a full-scale lab on board!"

A few hours later, the *Cosmotron I* was in space, heading for Jupiter. Tom had brought stripped-down versions of the transphotonic engine and the paramagnetic initializer. As the hours went by, Tom worked on the hybrid prototype. Bud lent assistance where he could. By the time the proximity alarm beeped, letting them know they were close to Io again, Tom had completed work on it. He quickly connected the power leads to it and switched it on. Once again they waited patiently for another planetary discharge to end. Tom backed the

*Cosmotron I* away from Io, until they were at least four times farther than when he first tried the device. "Now," he said, "let's see what happens." Tom switched the device on and began to adjust it, constantly monitoring the computer display. There was a constant *hrummping* sound in the air. The image on the screen stayed chaotic. Then, abruptly, it began to smooth out.

"Looks like its working, Tom!" Bud cried.

Tom nodded. "Let's back out some more."

The *Cosmotron I* backed off twice as far. Once again, adjustments were made, and the discharge tunnel smoothed out. Soon Tom had the *Cosmotron I* backed out farther than Jupiter's outermost moon. Once again adjustments were made, and the flux tunnel smoothed out. From what Tom could tell, they'd even prevented another discharge from taking place.

"Looks like we've about got it, Bud!" Tom announced. "I'm getting the hang of adjusting it correctly. Soon I'll be able to program it into a computer, which will be able to do the adjustments faster and more accurately. Let's try it from a considerable distance and see what happens."

Backing off until Jupiter itself looked small, Tom used his Megascopic Space Prober to help focus the Paramagnetic Initializer on the moon of Io. They had to wait several hours until another discharge took place. Once again Tom punched the button. He watched in satisfaction as even from a distance of several million miles, the flux tunnel smoothed out once again.

"You did it, Tom!" Bud shouted. "Now that we know the PI works, it won't matter what the Black Cobra tries, we'll be able to stop him in his - " he broke off as an alarm began to shriek. At the same time, there was a screeching sound as air began to be sucked into the general area of the Paramagnetic Initializer.

"Tom!" cried Bud. "What's happening?"

"It's the transphotonic tunnel!" Tom yelled back, looking at the computer readouts. "It's jammed open! If I don't find a way to shut it down, all of the air is going to be sucked out in a manner of minutes!"

## CHAPTER ELEVEN: A STARTLING DISCOVERY

Tom's mind went into overdrive. Part of him couldn't believe the tunnel was staying open - in the event of a problem, it should have squeezed shut. What was keeping it that way? And how was the tunnel reaching back into the *Cosmotron I*, anyway? It should have been confined to paramagnetic emitters, which were on the outside of the

ship. Tom knew there was a connection between the two. But what?

Then he had it. Both problem and solution were obvious. Fighting the gale-force wind tugging at his clothes, starting to gasp for air, Tom raced over to the Paramagnetic Initializer controls. He looked for a knob, found it, and nodded. The air pressure was becoming so low that he could feel himself starting to hallucinate. Concentrating with all of his strength, he twisted the knob to the right. All at once the wind died down. Knowing he wouldn't have time to return to the ship's control console, Tom staggered over to the locker and removed a breathing mask that was equipped with air bottles. He slipped it on and started it. A few minutes later, his head began to clear. He grabbed another one and put it on Bud's head, then turned it on.

While Tom waited for Bud to revive, he went back to the control console and turned the air on high. A roaring sound filled the room as oxygen began to flood back in. Tom turned back to Bud, who was just getting up. "What'd you do, Skipper?" he asked. "How'd you fix it?"

Tom shook his head and sighed. "Sorry, Bud, it was my fault. Somehow, in adjusting the strobe rate of the PI, I touched a knob without realizing it, slowing the strobe's rate to something like once every ten minutes. Amazingly, that kept the transphotonic tunnel open longer than I would have thought possible. Hmmm..." Tom went off into thought. Keeping the faster-than-light tunnel open between two points could be very advantageous, under the right circumstances. And what if you set the speed of transmission to nearly infinite? You'd have a near-instantaneous means of travel between one location and the next. Hook it up to a Transmittaton - which was limited to the speed of light - and you could zap yourself from one star system to another in nothing flat. For that matter, ships wouldn't have to worry about navigating between the stars - they could just enter a transphotonic portal and pop out the other side.

"Hey Tom!" he heard Bud yell. "Snap out of it! I still don't understand why the PI tried to suck air out of the ship. Aren't the transmitter deelines outside?"

Tom nodded, still half in thought. "Yes, but when the strobe rate is slow, the tunnel tends to expand in both directions a little."

Tom repeated the experiment yet again, from a further distances, this time making sure the strobe rate was back to normal. The PI continued to work without any problems. After entering the adjustments into the computer, Tom turned the ship around and headed back to Earth.

Once back at Fearing Island, Tom worked feverishly on an improved model. He also told his father about the discovery with the transphotonic tunnel.

"A permanent opening between points in space?" Tom Sr. asked, astonished.

Tom nodded. "And without all of that clumsy space-folding the Black Cobra uses. Or the submarine-style of entering transphotonic space and emerging at random." He tapped his piece of chalk against the diagram he'd drawn on the chalkboard. "Now we can send probes at relatively low speeds - say, twenty or thirty times the speed of light - to nearby stars or star clusters, establish a permanent link, then set up a transphotonic tunnel to them. Once inside the tunnel, the

speed can be set to near infinite - meaning very low power required - and in the blink of an eye, you're at your destination. What's really astonishing is the ability to do this right here on the Earth itself. The experiment with the Durastress box proved that it's possible to enter transphotonic space from a planet. If I hook up a Transmittaton transmitter at one end and a receiver tank at the other, you could go from one world to another almost as fast as thought itself!"

Mr. Swift nodded. "Just imagine - a literal star gate from one world to another. Tom, once this crisis with the Black Cobra is finally resolved, we must work on this! This could be one of the greatest boons to mankind since fire itself!"

Tom grinned, then sobered. "Yes, but first we have to deal with the Black Cobra."

"How soon will the *Ad Astra* be ready?" Mr. Swift asked.

"Not long," Tom answered. "A week and a half, maybe. I'm installing some unique defenses, much like my older self did to the *Cosmotron II*."

Tom Sr. shook his head, sadly. "We still don't know how the *Cosmotron II* was destroyed."

Tom nodded. "I know. So I have to take a lot of precautions. That's one of the main reasons it's taking so long."

Work continued apace on the *Ad Astra*. Tom revised the design for the Paramagnetic Initializer several times. Finally, just two days before the launch, he had it optimized as much as possible. Swift Construction crews burned the midnight oil as they tore out the older model and installed yet again the new one.

The night before the launch, the Swifts had another party at their house. Tom and Bud did their best to keep the conversation lively, but a feeling of dread still overshadowed the affair.

As the clock neared ten, they were about to wind down the party and put it to bed, when the phone rang. It was Harlan Ames.

"What's up, Harlan?" Tom asked, his stomach clenching in fear. Harlan would hardly have called if it wasn't an emergency.

"Tom, I've just received word from our sources in Europe that the Black Cobra's ship has just launched!" exclaimed Harlan.

"What?" Tom said, his worst fears now realized. "Could this be a false alarm, like that time the Brungarians claimed to have launched their ship to Nestria?"

"Sorry, Tom," Harlan replied. "We have visual confirmation on our satellites."

Tom sighed. "Okay, good work, Harlan. I'll handle it from here."

"What do you plan on doing?" Harlan asked.

"What else? We're going to have to launch tonight," Tom replied. "I'm just grateful that most of the work has been finished. There were a few other minor details I would have taken care of tomorrow, but now there's no time."

"Good luck, Skipper," Harlan Ames replied.

"Thanks, Harlan." Tom hung up. He raced back into the family room and broke the news. "So we're going to have to get ready, right now!"

"But Tom," Mr. Swift said, "you haven't even had time to test the transphotonic engine, or the new Paramagnetic Initializer!"

Tom nodded. "I know, Dad. But I've always trusted Swift

Construction. I'll continue to do so." He turned to the girls and his mother. "Sorry everyone, looks like I won't be sleeping here tonight. I'm going to phone Fearing Island, and tell them to get the Ad Astra ready. We're launching in three hours."

Tom and Bud made their good-byes to his mothers and the girls. They kissed both boys and wished them well.

On a whim, Tom decided to drive the Swift's atomicar back to Enterprises, rather than use the Transmittaton.

"Why, Tom?" Bud asked him as they went out to the garage.

Tom grinned. "Well, it's been ages since I've used ours. And it should get us there in plenty of time. We no longer have to hide from the Black Cobra any more. Sure, the Transmittaton is faster and more efficient, but this is more fun! And once we get to Fearing, we're probably not going to have another chance for fun for a long time."

"I'm with you, Skipper!" Bud replied.

The Swift's atomicar was an original, complete with the middle fin sweeping back rakishly to the rear, as designed by their friend Orton Throme. Tom was aware that modern atomicars now used steering wheels instead of the all-in-one joystick his cars had originally been equipped with. His father told him that the joysticks hadn't gone over well with the public, so his older self restored the steering wheel, accelerator and brake pedals to the cars. The fin and bubble roof were gone as well, replaced with more typical, if sleeker, roofs. Inside, many of the new dashboards used bright LED readouts in place of old-style speedometers. Unicassette players were standard. The Swift's car, however, still used a speedometer, and just had an AM-FM radio. Nothing had been updated, which pleased Tom. He punched a button, starting the car's atomic capsule. Moments later they were on their way.

It was a pleasant ride through the countryside. Both boys enjoyed it immensely. Tom had the car going about ninety when they spotted something up on the road. Tom pulled back on the joystick, slowing the car down.

"Looks like there's been an accident, Tom!" exclaimed Bud.

Tom nodded. A car lay on its side. One of the passengers, a male, had been thrown free. Tom stopped the atomicar and punched a button, causing the bubble roof to slide back.

The boys ran over to inspect the passenger. "Careful, Bud," Tom cautioned. "He might be hurt pretty badly."

Just then they heard two loud clicks. A person with a foreign accent spoke. "Oh, you needn't worry about Gamerial here. It's yourselves that should be doing the worry."

The "passenger" rolled over on his back, adding a third gun to the two that were pointed at the boy's backs. Then another man spoke. His voice was unmistakable. "Tie them up and put them in the car! And make sure they're watched at all times. This time, there will be no miraculous escapes for Tom Swift and Bud Barclay!" Both boys were turned around to stare into the ice-cold eyes of the Tall One.

## CHAPTER TWELVE: THE BATTLE FOR THE SUN

"I do not know how you escaped from the destruction of the *Cosmotron II*, or why you look much younger than you ought to," the Tall One continued. "Those answers and more will soon be found out. You're going back to the Kranjovian secret labs," the Tall One said the last part with a certain amount of distaste. "There you will be interrogated in length."

Both boys knew of the visits their older selves had made to the labs, so they were aware of the Black Cobra could do to them. Tom had no intentions of letting that happen. He was now wearing one of the repelatron watches that his older self had. But how could he use it with the Tall One's gun trained on him? While the other Brungarian held a gun on them as well, Gamerial took out some rope and tied up Bud's wrists. Tom's mind whirled. He needed a distraction. But what?

The answer came in the form of ten pounds of spitting, yowling fury. The Tall One let out a cry of pain and surprise as something landed on his head, screamed in his ear and clawed his scalp. Tom, Bud, and the other Brungarians stared in amazement as the Tall One went crazy, trying to use his gun to knock off what looked like a cap made of charcoal black and silver gray fur. The Tall One used his gun repeatedly to strike the thing on top of his head, but it seemed to read his every move and dodge fluidly to the side, causing the Tall One to hit his own head. Then it would repeatedly scream like a banshee or bite his ears.

Tom had no idea what Tao Zia was doing there, other than the cat must have stowed away in the car somehow. Anyway, here was a hand-delivered distraction and, once he got past his own surprise, Tom put it to good use. He punched the tiny button activating the repelatron and adjusted the width of the beam. Gamerial suddenly flew away from Tom as if he'd been yanked by a rope. He collided with the bottom of the car used to fake the accident with such force that the car flipped over on its roof. By the time that took place, Tom had already used the repelatron on the other Brungarian, knocking him against a tree ten feet away.

"Jump off him, Tao Zia!" Tom cried out, and the cat complied immediately. Tom hit the Tall One with the invisible beam, and Tokatyan flew back against the atomicar's bumper. He collapsed, completely out. Tom raced over to Bud and untied him. They used the rope on the Brungarian henchmen, and some rope from the trunk of the atomicar for the Tall One. While Bud tied them up, Tom called Harlan Ames, who promised to be there in five minutes. As it was, it only took him three.

Once back at Enterprises, Tom left the interrogation to Harlan. He and Bud got the *Sky Queen II* ready for flight. Tao Zia he left in the administrative office with Miss Trent, who promised to call Sandy. Tom knew that the Tall One would probably pull diplomatic immunity, or some other legal trick to get him off. Even if he was convicted, the

worst he could face would be expulsion. Although he was curious about how the Tall One knew how to find him, Tom wasn't expecting Harlan to come up with anything of value.

The *Sky Queen II* flew over the Atlantic at Mach Two, and reached Fearing Island within twenty minutes. Even from the air they could make out the commotion as the *Ad Astra* was made ready.

In the crew quarters, the boys changed into their flight uniforms. They met up with Wendy, who had changed into hers as well. She would be fixing the meals on board the ship, as her grandfather had so often done so on many of the boy's earlier adventures. Finally, all the checks were done, all cargo loaded, and the ship was ready to take off.

Tom, Bud, and Wendy climbed aboard. Before they left, Mrs. Swift cracked a bottle of champagne across the bow, saying: "I christen thee 'Ad Astra'!" None of them noticed the other presence that had crept aboard the ship just before it was sealed up...

The boys and Wendy strapped themselves in the left cockpit. Tom activated the G-Force Inverter and the starship rose into the sky. As he had on the *Challenger*, his repelatron-powered spaceship that took him to the moon, Tom kept the acceleration at a constant 1-G, until they broke free of the Earth's gravity. Then Tom activated the superrepelatrons.

Before long, they were out near Mar's orbit. There Tom brought the *Ad Astra* to a halt. He punched several buttons, activating computer monitors. They gave numerical data on the sun's current state of being.

"What now, Skipper?" Bud asked.

"Yeah, what's up, Tom?" Wendy asked as she came forward from the galley. She handed to boys some sandwiches and cups of coffee. "Aren't we supposed to be chasin' after the Black Cobra?"

Munching on his sandwich, Tom shook his head. "Sorry, Wendy, but we can't. I have no idea where the Black Cobra will launch his assault on the sun from. The solar system is just too darn big to try and search. Instead, we're going to let the Cobra do the work for us. When he starts firing his disrupter into the sun, we'll know it almost instantly. I'll turn on the Paramagnetic Initializer. Being magnetic in origin, it won't take the Cobra long to be able to trace it back to its origin - namely, us. So, we'll just sit back, relax, and let the Black Cobra come to us."

While they waited, Tom took Bud and Wendy on a tour of the *Ad Astra*. Aside from the cockpit, each end section contained a galley, which Wendy had used, a double-sealed cargo area for specimens, lots of storage compartments for space suit, environment suits, and other gear. There was a small, dome-covered tank, the kind designed for Nestria, also used in the Caves of Nuclear Fire. Also, several Mark III repelatron donkeys - circular platforms with repelatrons underneath. Tom's older self had improved their stability over the years, making them much safer than the "donkey"-like early, square-platform models that tended to pitch and buck over ground with varying elements. Those models had no guardrails, for one thing. The new ones had guardrails that could telescope in for loading of cargo. The end sections of the *Ad Astra* even had their own small laboratories. In the next section, they found more storage space. The middle section contained a full-sized galley, sleep quarters, full-sized lab,



recreational area, and even a library. The next section was just another storage area with extra supplies and parts. It also contained a Transmittion send/receive tank (Tom showed them the locator hidden on his belt that could be used to teleport them out of any potentially dangerous situation. "I can adjust the focus at will," he told them, "but the limit so far is ten people maximum"). Finally, they found themselves in the other end section, identical to the first one they were in.

They were just passing back through the mid section when a siren went off. All of the froze for a moment. Then Tom spoke up: "Let's move, guys! That's the solar alarm. The Black Cobra is using his disrupter on the sun!"

They raced back to the end section. Tom scanned the various computer readouts and sucked his breath.

"What's wrong, Skipper?" Bud asked, noting the worried look on Tom's face.

Tom shook his head. "It's the Cobra's disrupter. It's working faster than I thought. The sun's heat output readings are already way up. Time to do something about that."

Tom activated the Paramagnetic Initializer and set it to full intensity. He began watching the computer screens. Bud and Wendy watched the computer readouts as well, though neither one could understand what was being printed on the screen. After a bit Tom smiled. "You can relax. The sun is returning to normal!"

Bud and Wendy let out cheers. They heard further cheers from Fearing as Tom relayed the message over his Private Ear.

"That's great news, son!" his father said. "Though no doubt you'll be hearing from the Cobra soon."

"We'll be ready," Tom promised.

On board the *Ashtaroth's Revenge*, one of the Kranjovian crewmen let out a gasp. "S-sir!" he called over the intercom. "The sun - it's returning to normal! It's impossible!"

The Black Cobra, who was down in engineering, blinked. His jade eyes focused on the readings from the computer. They confirmed what the crewman had said. His agate-green eyes narrowed and he spat a curse. "Swift! This must be his doing!" He turned back to the intercom. "Begin to trace the magnetic surge that is preventing the sun's surface from expanding. Now! It will lead us back to Swift!"

The Brungarians and Kranjovians went to work. It didn't take them long to find a curious stream of magnetism that seemed to come from nowhere.

"Here it is, sir!" said the science officer. "But I can't trace it back to its source. It's - it's just appearing there. I don't understand it."

"Hmmm," the Black Cobra frowned. He studied the computer screens. This was indeed baffling. How was Swift accomplishing this? He remembered how puzzled he'd been when Swift's ship the *Challenger* had passed through his antimatter barrier around Nestia years ago. It wasn't until he saw the odd-looking device mounted on the *Challenger's* flight deck that he realized Swift was using an electromagnetic pulse of some kind to deflect the antimatter barrier around his ship. The Cobra mulled that one over as well. Yes, he thought. Swift must be doing something similar. Using a form of electromagnetic radiation to

dampen the effects of his disrupter. As to how it was appearing out of nowhere like it was, he wasn't too certain. Some sort of variation on his transphotonic generator, no doubt, he thought. Still, that might make it easier to trace.

The Black Cobra pulled out a chart of the solar system and placed it on the navigation table. Using a pencil and a T-square, he drew in the lines of magnetic waves to the sun, then traced backwards. While it was true that Swift's ship could be anywhere, he was betting that Tom was still thinking in terms of two dimensions. Tom would still be along the line of the ecliptic. He brought the chart over to his navigator. "Begin scanning along this line," he commanded. "Yes sir!" the navigator replied.

It wasn't long before the Black Cobra heard: "Sir! I found them!"

The computer screen showed Swift's ship midway between the orbits of the Earth and Venus. "Alright," the Black Cobra said. "Switch off the solar disrupter. Set course for them and prepare weapons. Open fire as soon as we're within range. Don't give them any chance to defend themselves!"

The nuclear-powered engines of the *Ashtorath's Revenge* allowed them to accelerate to a tenth of the speed of light: 18,600 miles per second. Even so, the vastness of the solar system resulted in the journey taking hours. Further, the Black Cobra's ship had to decelerate as well, lest it speed by Swift's ship too fast to cause any damage. Even so, the Cobra was careful not to use up all of his velocity. He would need it to dodge any possible retaliation.

Finally, hours later, they passed the orbit of the Earth. Soon Tom's new ship began to come into view. Without hesitation, the *Ashtorath's Revenge* launched several missiles.

Aboard the *Ad Astra*, alarms began to scream. "He's here, Skipper!" Bud cried as the radar showed one large blip and several small ones. "He's launched missiles at us!"

It had been a long eight hours of waiting. Tom continued to use the Paramagnetic Initializer on the sun, even though it was already back to normal. He needed to make sure the Black Cobra wouldn't miss it. Tom knew that it could take hours or days before the Black Cobra arrived. The *Ashtorath's Revenge* was nuclear powered, and had nothing like Tom's superrepelatrns. So the sudden arrival of the Cobra's ship wasn't entirely a surprise.

"Oh he has, huh?" Tom said in response to Bud's statement. Calmly, Tom rotated both the ship and the Paramagnetic Initializer. Then he switched on the repelatrns. The missiles began to slow down at once. Even if they had proximity detonators, it wouldn't matter. From the moment they came in contact with the PI field, the internal electronics were fused into molten junk. Soon the missiles went off to either side of the *Ad Astra*.

But the Cobra was hardly finished. As before, he used his phalanx cannons on Tom's ship. Then he opened fire with his lasers.

Tom was prepared, though. The repelatrns handled the phalanx shells with ease. The lasers bounced harmlessly off of the ship's fractionated skin coating. The coating was composed of tiny bits of refractive Durastress, causing the laser beam to scatter in thousands of different directions, not allowing it to focus.

As the *Ashtorath's Revenge* began closing in on the *Ad Astra*, Tom launched his own attack. First, he opened fire with the X-Razor. The X-Razor focused X-rays in the same manner that lasers focus light. But lasers use low-energy light, way down around the microwave region. The X-Razor utilized high-energy X-rays. It punched through the *Ashtorath's Revenge* like a bullet through a cobweb, slicing off pieces of skin. Tom also used his other energy weapons. And one other weapon he'd only recently had time to develop: these were small "missiles" that contained warheads of a particular type of "acid." Once the "acid" made contact with an object, it would spread all over. The "acid" was a liquid form of the antiproton gas Tom had discovered in the Caves of Nuclear Fire. The "acid" would spread for yards, dissolving everything in its path, before finally slowing down.

The X-Razor punched holes and cut slices off of the Cobra's ship. The other energy weapon melted one of the *Ashtorath's Revenge's* antenna arrays. But the acid missiles did the most damage. Tom aimed them at the ship's stern, where the engines were located. They ate straight through the skin, damaging the nuclear engines. Moments later the ship switched to emergency power.

Tom gasped as he looked at the computer screens. "Bud! Take a look at this!"

"What is it, Skipper?" Bud asked. Then added, a moment later: "Oh no! He can't do that!"

"What is it, guys?" Wendy asked, looking over their shoulders.

"He's engaging his space warp engines!" replied Tom.

"But how?" Bud asked. "He's only on emergency power. That's not enough to get those other engines working. Is it?"

Tom shook his head. "I wouldn't think so. He's up to something, Bud. Bet on it."

It was pure chaos inside the *Ashtorath's Revenge* main engineering. The crew had to wear space suits, since the air had been vented off into space. The Black Cobra was having them try something extremely dangerous and nearly impossible: use the fusion missiles to manually start the fusion reactor. He rode herd on his men as they removed the deuteronium core from each missile and began rigging them up in series. That would produce the power needed. It could also go out of control and detonate. With ten deuteronium cores, there wouldn't even be subatomic particles left for Swift to trace...

Working with the cores was safe. As long as they lacked power to operate, there could be no detonation. But the suits slowed down the work; it became cumbersome and tedious. Mistakes were made and then corrected. Finally, they were ready to give it a try.

"Go ahead," the Black Cobra told them, and mentally crossed his fingers.

There was a sputtering sound. Several lines of wire let out bright electrical arcs. Then it took hold. The pre-ignition engines came on. The main warp engine lit up.

"Activate the warp!" The Black Cobra commanded. There was no telling how long this jerry-rigged system would hold together.

Outside the viewport, gravitational distortion caused the stars to seem to elongate or flatten out. Then it reversed and became normal again.

"Status!" the Black Cobra commanded from navigation.

"Sir, we're in the Tekili-li system!" the chief navigator responded, letting out a whoop of joy.

"Calm yourself, Petronski," the Black Cobra said, though inwardly he was quite pleased as well. "Under my leadership, there was little doubt we would reach the system of our allies alive and relatively unharmed. Now, we must watch out for Swift. It won't take him long to figure out where we went to. And since he has all of the computer's data, he will soon arrive. Let us contact our allies so we can arrange a warm welcome..."

### CHAPTER THIRTEEN: THE AMBUSH

"They did it, Tom!" Bud cried out. "They're gone!"

Tom nodded, impressed in spite of himself. Regardless of the damage from the X-Razor and the acid missiles, the Black Cobra had managed to activate his warp engine and vanished. It had been an eerie sight: a strange rainbow aura wrapped itself around the ship as space distorted itself, then everything disappeared. There were no further traces of the *Ashtorath's Revenge*.

"Now what, Tom?" asked Wendy.

"Now we take the fight to them, Wendy," Tom said. "I've little doubt about their current location: they obviously went to the Tekili-li home system. They'll soon have the ship fixed up, to say nothing of having delivered the plans for the solar disrupter to the Tekili-li. And once they return, they may bring some of the Tekili-li with them for protection. We can't risk that happening.

"Fortunately, both my older self and I have managed to extract all of the navigational coordinates from the Cobra's computer. We can reach anywhere they can." Tom turned back to the console and began typing in numbers. A few moments later, the coordinates of the Tekili-li home system appeared. Tom saved the information to the ship's navigational computer.

"All right," Tom said. "Let's get strapped in. We're going to use the full-scale Transphotonic Engine for the first time. All of our test animals survived it without any side effects. So I'm not expecting any problems. It's time for Swift Enterprises to reach for the stars!"

"Right, Tom!" Bud said, and Wendy clapped.

Once they were strapped in, Tom punched a large red button.

Without transition, they found themselves moving through a large pipeline. Beautiful streaks of light and color raced by all around them. For long moments no one said a word; they were too entranced by

the sight.

Finally, though, Bud had to speak. He cleared his throat several times. "Tom? How can we be seeing anything? I thought we were going faster than light!"

Tom shook his head. "I don't know, Bud. I wasn't expecting to really see anything either. I think our eyes are reacting to tachyons particles. But our brains have no means of interpreting the particles as anything other than light and color. So we're seeing one thing, but the truth might be something completely different."

"It's beautiful!" Wendy exclaimed.

"Yes, it is," Tom agreed. Nearby, Bud nodded as well.

They all jumped slightly when a light began to blink on the console, together with a beeping sound. "We're about to reach the Tekili-li home system." Moments later, the light tunnel vanished, to be replaced with normal stars.

Tom, Bud, and Wendy gasped at the sight of the huge red sun that was now dominating the scene. The *Ad Astra's* windows partially polarized the massive star so they wouldn't be blinded. Tom pulled up more information from the computer. "We're about two-thirds of the way around the galaxy from what I can tell. The Tekili-li home planet is the third planet out, though I imagine it was the sixth or seventh before their sun began to swell up. It's about an hour's trip from here."

"Then let's get going, Skipper!" Bud said.

Tom switched on the superreplators and typed in the coordinates for the Tekili-li's home planet. Wendy soon fixed them some lunch, and they talked about what they would do when they reached the alien's world.

"What's your plan, Tom?" Bud asked.

"Simple: I'm going to let the Tekili-li know about the Black Cobra's plans to turn them into his slaves, and to use their technology for galaxy-wide conquest."

"Will they believe you?" asked Wendy.

"They probably wouldn't without the information from the Cobra's computer that confirms it," Tom replied. "I think things will get interesting for the Cobra once they know what he really has in mind for them."

"But how are you going to get the information, Tom?" Bud asked.

"The Cobra's hardly going to give it to you!"

"Not willingly, anyway," Tom replied with a grin. "But I think he's overlooked something."

"What?" Both Wendy and Bud asked together.

"Only that - " Tom broke off as something *CRASHED!* against the hull of the *Ad Astra*. All three were knocked off their feet.

"Tom! What - ?" Bud's question was drowned out by the shriek of alarms. Computer screens lit up, red lights began flashing across the control console.

Tom leaped to his feet and shouted, "Strap yourselves in! I think we're being attacked!" He was regaining his seat and yanking the restraining straps around him when another *CRASH!* ripped through the *Ad Astra*.

Tom stared at the radar and other scanners in dismay. There was nothing on them. Computer readouts indicated structural damage near the other control cabin. Someone apparently thought they were in

there.

Wendy suddenly screamed and Bud cried out, "Tom! Look!" Bud was pointing out the window. Tom looked up and gasped. Directly ahead, not more than three hundred feet away, was an enormous, strangely-designed spacecraft. It was hard to take in the overall shape: sections of the ship seemed to move in and out of sight, as though it was some weird kaleidoscope.

The ship was joined by another one. And a third. Then the radar registered a blip. It was the Black Cobra's ship. None of the others showed up on the screen.

All three ships opened fire once more. Whatever type of energy weapon it was, it had a dull-gray color, making it very hard to distinguish against the blackness of space.

Tom wasn't sitting around. He engaged the superrepeltrons in an effort to get out of the way. But the response was sluggish, the ship moving with only a fraction of its normal speed. Tom checked the damage board again. Many of the superrepeltrons had been damaged in the opening salvos. There was just enough speed to dodge the first two blasts. The third clipped the *Ad Astra* on its side, sending it spinning.

Tom shut off the superrepeltrons and kicked in the G-Force Inverter. Since it was contained inside the ship, it was protected from the damage. The *Ad Astra* responded at once.

Tom plunged the ship below the ecliptic plane of the solar system, causing the next blasts to miss completely. However, the Tekili-li ships gave chase and began to close in at once. The huge, otherworldly ships were capable of astonishing speed.

Tom began moving the *Ad Astra* around in random directions, upsetting the Tekili-li's aim. Pausing once, he tried to use the X-Razor, but a warning light came on. A computer readout confirmed it: the X-Razor had been damaged. Most of the acid missile ports were crumpled; only three remained whole. Tom knew he would have only one chance to damage each Tekili-li ship. And he wasn't even certain just where the control or engineering rooms were. Of if the ships were even built with those concepts in mind. The interior design might be based on completely non-human ideas. Still, he had to try something.

Tom moved the *Ad Astra* in closer to the first pursuit ship. He began circling the ship in a tight spiral pattern, looking for something resembling a thrust port. He was inwardly gratified when the alien ship was hit by blasts from the two other Tekili-li ships. He wondered for a moment why the Black Cobra's ship didn't open fire on his, then realized that it was still badly damaged from the earlier fight. In the meantime, he couldn't see anything that might be a thrust port. He asked Bud and Wendy to look as well.

The Tekili-li ship turned this way and that in an effort to shake the *Ad Astra*, but this was one case where its own mass worked against it: it simply couldn't match the *Ad Astra*'s agility. But none of the three within could spot anything that looked like a vulnerable target. They were hard pressed to see where the gray beams emerged from.

"Tom...?" Bud asked tentatively.

Still maneuvering the *Ad Astra* around in a spiral pattern, Tom shook his head. He knew he didn't dare keep this up for long; the Tekili-li computers would soon analyze his pattern and predict where he would be. Tom began some zig-zag maneuvers as well to keep from

being predictable. Finally, with resignation, he fired the missile at a random spot.

It never reached the ship. Fifty feet from the ship, it hit a force field of some sort which caused it to disintegrate. The alien ship fired back, but Tom was able to dodge the beam easily. He tried one of the energy beams, but the ship's power went out as soon as he fired. It came back on moments later, but more red lights lit up. Somehow the energy beam was drawing more power than it should. Already, the beam emitter was badly warped from its own heat. But at least it caused a small groove along the alien ship's hull. Tom wasn't able to tell if that resulted in any damage or not. Clearly, the energy beam wasn't very effective, though.

"Hold on to your stomachs!" Tom warned as he began maneuvering the *Ad Astra* between the ships. Tom would pause his ship for a few seconds, allowing the Tekili-li ships to take aim, then dart out of the way at the last second. The alien ships began to gouge deep holes into each other.

It didn't take them long to catch on, though. After one pause, as Tom slid to the side of one beam, the *Ad Astra* was suddenly hit by another. And then a third.

Alarms screamed all over the control cabin, then went silent as power went out completely.

"Tom...?" There was no mistaking the fear in Bud's voice.

Tom didn't answer. As soon as the power went out, Tom pulled himself to the floor (internal gravity was off) and yanked open a floor plate. At once he flipped a massive switch and the lights came back on."

"I've switched on emergency power," he told them. "It should last us - " he was interrupted by Bud.

"Tom! Look at this!" His friend's voice was filled with glee.

"Wow!" was all Wendy could say.

Tom regained his chair and looked out. His face broke out into a grin.

In its effort to hit the *Ad Astra*, one of the Tekili-li ships had maneuvered too close to its sister ship, and the two collided. Worse, the collision had caused the second ship to rotate out of control and into the third ship. All three were trying to bring themselves back under control.

"Okay," Tom said calmly, "it looks as though our enemies have bought us some breathing room. Let's not squander it."

Tom surveyed the computer screens, his heart sinking. The damage was extensive: the hull had been breached in two of the other modules, and the other control cabin was virtually destroyed. Their cabin had miraculously escaped any damage, but both the superrepelatrns and the G-Force Inverter were out. So were the weapons. There was a faint chance of restoring the G-Force Inverter, but until he saw how bad it was, he couldn't say for sure. Still, he was going to have to try.

Tom unbuckled himself from his seat and made his way to a space suit locker. Within minutes he was suited up. Bud wanted to join him, but Tom turned him down. "I'm going to need you to tell me what the computers are saying," he told him. "Wendy, you help out with that as well. Further, keep an eye on our unfriendly friends out there. They're probably doing damage assessments as well. There's no telling how long it will be before the next attack. But I doubt it's

going to be very long." With that, Tom opened the door leading back into the damaged module. At once, air began to be sucked out of the control cabin. Tom hastily shut the door behind him.

He moved quickly through the damaged module and into the third, large module where the G-Force Inverter was. The large module still had air, but, removing his helmet, Tom could sense a drop in pressure. There was a small leak someplace. But Tom had no time to try and track it down. He moved at once to another part of the module and opened an access hatch. The space was narrow, making it difficult to move through with his suit on. But Tom didn't dare to remove it. Once he reached the G-Force Inverter, though, he did remove his gloves in order to use his tools.

Tom was pleased to see that the G-Force Inverter itself was undamaged. It was the relay board for the control boards that was wrecked. Well, he need worry about restoring only half of it - the other control cabin was too damaged to be used. It was also where the air leak was. Tom could make out a small hole the size of a baseball in the side next to the relay board.

First, Tom went to a small cupboard and removed a large, concave disk. He slid it into place over the hole, stopping the leak. Next, Tom went to work with a torch, cable splicers and a soldering gun. However, before even a quarter of the wires had been spliced back together, he heard Bud cry out, "Tom! They're coming back here again!"

Tom sighed. He knew they were finished. There weren't enough cables reconnected to give the ship any kind of maneuverability. Still, if he spliced these three together, which shouldn't take but a few minutes...

"Bud," he called back. "When I tell you to, engage the G-Force Inverter and do what you can to disrupt their aim!"

"Okay, Skipper," Bud responded slowly. "Only, I don't think they're going to give us the - " he broke off, and Tom braced himself for another round of impacts, possibly the killing stroke. But that didn't happen. Instead, he heard Bud let out a startled "Huh?" and Wendy added, "What in the name of Sam Houston - ??"

There followed a long silence as Tom continued to work. Then he heard, "Tom! Get back up here!" Bud's voice was alive with hope and unconcealed joy. "I think the cavalry's arrived!"

"Bud?" Tom called out. Rather than leave, he continued to work on the cables. "Tell me what's going on up there! I'm going to keep working down here."

"Some other ships, Tom!" Bud replied. "Never seen the like of 'em. But they're firing on the Tekili-li ships... Wow! One of them just went up! ... uh-oh ... Tom, brace yourself for the shockwave!"

Moments later the engineering room shook violently as the shockwave passed through the ship. Then it was quiet again. Tom went back to work on the control cables. Then - "Hang on Tom, there goes the second ship!" The ship shook once more.

"Bud, what about those other ships?" he asked.

"They're our space friends, Tom, no questions about that! Same shining blue-green finish, but they're spinning around like a buzzsaw! And they're throwing off some sort projectiles. Whatever they are, the things are moving so fast the Tekili-li ships can't avoid them or do anything about them."



"How many of them are there?"

"A good twenty or thirty that I can see. They're all over the third ship. But they're letting it retreat."

"Yes, it's left, Bud," Wendy added.

Tom finally had enough control cables respliced. He said, "Bud, what's the status of the G-Force Inverter?"

"Hold on a moment, Tom," Bud answered as his eyes swept over the computer readouts. "Hey, it's up and running again, Tom!"

"Great, I'll be right up." Tom left engineering and worked his way back to the control cabin as quickly as he could.

As soon as he stepped in, he noticed at least five of the new alien ships hovering right outside the cabin windows. A computer screen lit up, and very familiar mathematical symbols began to appear. A second screen lit up, showing the translation.

SPACE FRIENDS [VASHANTI] TO TOM SWIFT. WE ARE READY TO ESCORT YOU TO OUR HOME WORLD. WE ARE SO PLEASED TO FINALLY MEET YOU FACE TO FACE!

#### CHAPTER FOURTEEN: THE VASHANTI

Tom typed back in: YES, IT IS WONDERFUL TO FINALLY MEET YOU AFTER ALL THESE YEARS. UNFORTUNATELY, MY TRANSPHOTONIC ENGINE HAS BEEN DAMAGED AND REQUIRES EXTENSIVE REPAIRS. IT WILL BE SEVERAL DAYS BEFORE I WILL BE ABLE TO REACH YOUR HOME WORLD.

The reply came fast: DO NOT WORRY. IF YOU STAY HERE YOU WILL LIKELY BE ATTACKED ONCE MORE. SO WE WILL TOW YOUR SHIP TO OUR HOME PLANET WHERE OUR TECHNICIANS WILL BE HAPPY TO REPAIR YOUR SHIP.

Tom typed: WE ACCEPT YOUR KIND OFFER. YOU MAY START YOUR TOW WHENEVER YOU ARE READY.

The Vashanti replied: WE WILL START TOWING NOW.

Tom, Bud and Wendy exchanged glances. Tom began removing his space suit.

Bud expected to see a tow cable fired at the ship. Instead, the *Ad Astra* gave a slight lurch, then began to move behind one of the Vashanti saucer ships.

As Tom regained his seat and strapped in, both the Vashanti ship and the *Ad Astra* entered a transphotonic tunnel. Two or three minutes later, they emerged into the light of a golden sun, much like Earth's own. Below them lay a green-brown planet.

WELCOME TO SISSANICK, THE VASHANTI HOME WORLD! the computer screen displayed.

All three stared at the world below, the first human beings to ever see another planet outside of the solar system.

One of the first things Tom noticed was how much more land mass Sissanick held, compared to Earth. Most of the water areas were akin to seas, rather than oceans. The polar areas were smaller as well, the tropic areas larger.

Tom typed in some instructions on the computer. The response came shortly: Sissanick was closer in to the sun than Earth; its orbit would place it between Earth and Venus. Further, its axis tilt was about twelve degrees to the ecliptic, as opposed to Earth's twenty-three point five, resulting in shorter, milder seasons. Like Earth, it had only one moon, which was about a quarter larger than the Earth's moon. It appeared to be airless as well.

The Vashanti fleet soon docked at a large space station - one of many, Tom was to find out. "Hey Tom!" Wendy exclaimed. "It kinda looks like yours!" Tom and Bud exchanged startled glances. This was the station they had seen some time back, when Tom's Outpost in Space was under construction. Tom had seen an image of the station sent to him when they scouted a spot over the Earth's equator for the location of the Outpost. Tom never did learn why the image had been sent to him, or why it had vanished so quickly. Maybe he would finally learn some answers.

The mysterious force beam towing the *Ad Astra* was released, and Tom maneuvered it into a parking dock using the G-Force Inverter. A transparent tube of some unknown material was extended to the ship's airlock and secured in place. Now came the time for the first face-to-face meeting with the Vashanti.

Tom looked at Bud and shrugged. "Guess it's time to go meet our Space Friends."

"'Bout time I say!" Wendy said with a grin.

They opened the airlock, it gave a short hiss as the slight pressure difference between the two atmospheres equalized. Then they walked through the tube. The outer airlock door opened, they stepped inside the space station. And even Tom let out a slight gasp as he came face to face with - a giant cat!

"Greetings, Tom Swift! Greetings, Bud Barclay! Greetings, Wendy Winkler! I am OwYawwNDisS." The cat creature bowed to each, and released an unmistakable purr. Then it stuck out large, hand-like paw. "I believe you greet each other like this."

Tom grinned, "Yes, we - " and broke off. The OwYawwNDisS recoiled from him, then stopped.

"Your pardon!" he said. "I am not quite used to your baring your teeth in a friendly way. In our culture, that is often the prelude to a fight."

The three humans exchanged glances. "We're sorry as well, Owyawwndis," Tom said. "I realize we have much to learn of your culture. And we have many questions as well." In fact, Tom was brimming over with questions, not the least of which was why his space friends had never visited Earth before.

OwYawwNDisS was dressed in a loose-fitting set of clothes that covered much of his body. The clothes appeared to be synthetic, like polyester. The Vashanti had short fur covering his skin. It was in alternating stripes of grey and black, much like a tabby's. The head and the face were very cat-like, with triangular ears on the top and

sides of the head, whiskers, eyes with vertical slits. The Vashanti even had a long, whip-like tail. The legs and feet were more like a human's, though, allowing them to walk upright. Even so, Tom could see the whip-like muscles under the fur where it wasn't covered by the pants.

OwYawwNDisS shook hands with Bud and Wendy. The Vashanti's grip was strong, they notice. Further, they noticed the razor-sharp claws that flicked in and out of skin flaps between the fingers.

As the Vashanti turned around to lead them into the space station, they were stopped by an ear-splitting "YOW!" All four whirled around and stared in astonishment.

Tao Zia sat in the tube and stared up into the face of this distant cousin, his glowing blue eyes focused on the other's yellow ones.

OwYawwNDisS stared in astonishment. With a quick movement, he looked up at Tom and the others. Tom continued to stare at the cat. "Tao Zia, what are you doing here?" he asked, amazed. How had the cat managed to get aboard the *Ad Astra*? And how had it kept itself hidden for the whole voyage, including the battle?

"YOW!" the cat said again in a very regal tone.

To the surprise of the humans, OwYawwNDisS came forward and got on his knees in front of the small cat. He let out a purring sound, then the two touched noses. Next, they rubbed heads, and Tao Zia even licked the Vashanti's fur. Slowly, the Vashanti regained his feet, then gently picked up Tao Zia. He stared at his human friend, his face alive with joy. "He allows me to do this! Your friend has done me a great honor!"

The interior of the space station was almost lost on Tom and the others, as they puzzled over OwYawwNDisS's reaction to the small cat.

Wendy, however, noticed how different the Vashanti space station was from Tom's Outpost: it was very plush, with deep, soft carpets; bright walls, not with pictures, but some sort of displays that showed constantly moving object and geometric shapes. Unusually-shaped trees and shrubbery were everywhere. There were no chairs, but comfortable-looking hassocks and couches were scattered around. There were no hints of metal. It was like being in the lobby of a five-star hotel.

OwYawwNDisS soon met up with some other Vashanti. Each came forward to meet the three humans. For the first time, they were able to see a female Vashanti.

"I am ArRRllasPeRR," she said, bowing, then shaking their hands. This time the humans were careful to smile, not grin. Her figure was slender, which denoted her sex. Like OwYawwNDisS, she wore a set of synthetic clothes that covered her pitch-black fur. Two yellow eyes stared back at theirs. It was like meeting the human equivalent of a Halloween cat.

OwYawwNDisS introduced them to his other colleagues: HaWkissNRurL, an engineer; GrRRllisnICKisS, a pilot; and SsImorrLLasP, an astronomer. ArRRllasPeRR was an exobiologist, one who studied the biology of other species.

They were all happy to meet the humans, of which they had heard so much about. Yet their gaze would constantly turn to Tao Zia, who continued to purr with contentment in OwYawwNDisS's arms. Tom wondered about the effect Tao Zia was having on the Vashanti. Still, if a group of aliens showed up with a chimpanzee in their company,

would not humans also wonder at it? But Tom wasn't certain the analogy was valid: this seemed to be something far deeper than just the recognition of a similar biological species. Why did OwYawwNDisS necessarily feel honored to carry Tao Zia? Tom's head spun from all the unanswered questions.

"Come, you must refresh yourselves," OwYawwNDisS told them. "Then eat." Tom was suddenly aware that it had been hours since Wendy's last meal.

"Come with me, Wendy," ArRRllasPeRR said with a soft smile. "I will show you where we ladies freshen up. OwYawwNDisS will take care of Tom and Bud."

Tom looked at her a moment. "You seem to be quite at ease with our names," he told her.

She gave a soft laugh like a chirruping sound. "Are you so surprised? Did not MiEEowasPuRL not visit your world in his mental form, then return to us with knowledge of your culture?"

"The Visitor from Planet X!" Tom and Bud exclaimed. "Though Planet X is really SSisANick," Tom added.

"That is correct," she replied. She led Wendy off in another direction. OwYawwNDisS led the boys down another corridor. Like the others, it was very plush. Several times they saw other Vashanti walking along the walls or ceiling, the claws on their feet giving them secure purchase.

As Tom and Bud were shown a washroom, Tom noticed for the first time that there were no doors. Anywhere. Tom remarked on this to OwYawwNDisS. He nodded. "Yes, Tom, that is correct. Other than the airlocks, we Vashanti have no use for doors. It was one of the many things that puzzled us about your culture, that you insist on these strange artificial barriers."

Tom and Bud exchanged glances, but said nothing.

Later on, after having cleaned up (Vashanti washrooms, they were glad to see, weren't much different than ones on Earth), they met with Wendy and ArRRllasPeRR in the space station's eating area. Here, they were surprised to learn, they were to eat alone. Neither Vashanti would be joining them.

"We realize that you humans eat together," ArRRllasPeRR said, "so we adjusted our eating booths to allow for this. Normally, we all eat in private."

"Why is that?" Tom asked, hoping the subject wasn't taboo.

"It ... is a holdover from our more primitive times," she answered with notable reluctance. "As we became more civilized, it was very hard for us to eat together without fighting over the kill. Even in families this is so. We are very aggressive hunters, and that is still true today, though we do our best to control such impulses." She sighed. "There are those of us who are trying to change this, to foster more civilized behavior by eating together. So far, though, we can only eat together for limited amounts of time."

The three humans sat down at a rather ordinary-looking table. There were napkins, eating utensils, salt and pepper shakers. It was rather like a restaurant. Even more surprising was the meal: hamburgers, fried chicken, salad, potatoes, both french fried and baked, chocolate malt shakes and coffee, plus cookies, cherry pie, chocolate cake and strawberry ice cream for dessert.

Bud gulped. "You, ah, you Vashanti eat the same things we do?"

OwYawwNDisS laughed. "Of course not! Unlike you humans, we eat our meals after we kill them, when the blood is freshest. We have never seen the need to cook them as you do."

ArRRllasPeRR nodded. "But we thought you would like a more home-like meal. We hope there is enough for you to eat. If not, we can fix much more. It is such an honor to be able to fix it for you. After all, you saved our world from famine during the time of the Great Infection."

It took Tom a moment to remember the incident with the space ark the Vashanti had sent to Earth, and how Drs. Anton Faber and Jerry Walden managed to save the small reptilian animals. That made Tom curious.

"Those animals you sent us," he said. "They looked much like small versions of the great dinosaurs that once roamed the Earth. Further, they seemed to need a colder atmosphere that was richer in carbon dioxide."

OwYawwNDisS nodded. "Yes, they are genetically engineered to be small. Many worlds like your own once had the giant lizards roam their planets. We took some from such a planet, but this planet was smaller, and further from its sun. We were able to create smaller versions of the creatures, but they had to be kept in a special environment similar to their home planet."

ArRRllasPeRR put in: "You must understand that by the time we became a space-faring race, most of our prey had been hunted to extinction. So we soon became reliant on other creatures from nearby worlds. Unfortunately, we became over-dependent on the species from one planet alone, and when it became infected by accident, we were at a loss as to what to do."

OwYawwNDisS took over. "So our scientists contacted your world in hope that you might have the knowledge necessary to combat the disease."

"We were so grateful that you did!" ArRRllasPeRR exclaimed, letting out a loud purr.

Tom was still puzzled. "But if you know so much about genetic engineering, why were you unable to come up with a cure yourselves?"

OwYawwNDisS shook his head. "The strain of disease was unknown to us. Our bioengineering is great, but not perfect. We asked several other races to help, but none of them had ever seen the disease before, except for you humans."

Tom gave the Vashanti a quizzical look. "That brings me to another point: you Vashanti have been to Earth before, several thousand years ago. We came across evidence of it down in the Yucatan Peninsula, which is near our equator. Further, we found one of your ships in our Atlantic Ocean. Can you tell us more about these visits?"

OwYawwNDisS and ArRRllasPeRR exchanged swift glances. "No, not at the moment," OwYawwNDisS replied, "but later on, perhaps tomorrow, your questions will be answered. We intend to take you to our homeworld while your starship is being repaired. There, you will meet with our various councils. They can give you the answers you seek."

"Your councils?" Tom asked. "What about your government?"

Again the look between OwYawwNDisS and ArRRllasPeRR. "We know to what you refer. At least, we understand that humans have this need for higher authorities to tell them what to do and what not to do. It

is not so among us. In fact, such an authoritarian government would be impossible for us. We are far too independent for such things. Instead, we form various councils at need. When the need for the council is over, it is dissolved, and the members move on to other councils. I will be the first to admit that such groups are not always very effective at accomplishing goals, but it allows us to work together fairly well while not surrendering any of our freedoms.

"Freedom, like hunting, is ingrained into our very being. It is why we chose to send our first message, engraved in - " and here she used a word that could not be translated " - to you Swifts, rather than such freedom-hating cultures as the Brungarians."

Tom nodded. "Yes, I understand. Then you moved a small planetoid into orbit around the Earth. We named it Nestria, in honor of my mother. We thought you planned on settling it, so we could finally meet."

OwYawwNDisS sighed. "Yes, that was the plan at first. We even ventured near it once. Then we saw that the Brungarians were there. Though we were far superior to them in technology, we dared not risk our technology falling into their hands, and so we retreated. Although you soon got rid of the Brungarians, the plans to settle Nestria were soon abandoned. Several times we thought to go back, but most of us felt it was wise to leave it alone.

"Then came the anti-matter barrier erected by the one you call the Black Cobra. Again, our lack of coordination worked against us, and you. Committees and councils were formed, plans of action proposed. At least we were able to give your men some help, by pointing out where the Caves of Health lay. Several of us came up with the same idea you did, Tom: use electromagnetic pulses to shove the anti-matter barrier out of the way. But the ideas were bogged down in detail as we tried to come up with a power-efficient way to accomplish this. All of us were quite chagrined when you not only came up with the idea yourself, but implemented it right away. For all of our advanced technology, you have surpassed us in more than a few ways."

Tom looked at the Vashanti in surprise. It never occurred to him that some of his own inventions were better than his space friends! Embarrassed, he was about to change the subject when Wendy did it for him: "Say, where's Tao Zia?" she asked.

ArRRllasPeRR looked at Wendy and smiled. "Ah, your distinguished companion. Before you begin eating, come with us!"

The three humans got up and followed the two Vashanti back through several corridors, then up several ramps. Tom and the others noticed that there were no stairs, only ramps. They reached an open well at the center of the station. Ramps were everywhere, but in the center of the well a glowing platform rose slowly up and down. It contained boxes and various other items. Several Vashanti rode on the platform, jumping and moving the items off as they passed by a particular floor. The slowness of the platform, plus the quickness of the Vashanti, allowed such feats.

The humans had a harder time with the ramps: some of them were very steep, and there were no handrails. They had no choice but to jump and sink their fingernails into the carpet-like floor, then pull themselves up on their knees. Moments later, though, ArRRllasPeRR turned around and helped them.

"My apologies!" she cried. "I had forgotten that you do not have extendable claws like us, but these weak imitations you call 'fingernails'. We should have taken the lift, though it is very slow."

"That's all right," Tom assured her. "Fortunately, the gravity is fairly low here, which helps."

They continued up several more ramps. ArRRllasPeRR led up ramps that weren't quite as steep. Finally, near the top of the station, they were shown to a room even more plush and ornate any they'd seen before. There, on sky-blue cushions that matched his eyes perfectly, sat Tao Zia. The cat was purring with contentment, as well he might. The Vashanti were waiting on him hand and foot!

"Where does he get off, gettin' such high-falutin' treatment!" Wendy exclaimed with mock indignation.

Tom grinned, puzzled as well. "Beats me, Wendy. I'm still not certain just why they are treating him like royalty."

OwYawwNDisS turned around and stared at them. "Do you not know? Do you not understand?" He broke off as Bud walked over to Tao Zia and rubbed his head, then stroked his fur. There was a gasp of amazement and shock among the Vashanti. They stared at Bud, almost angrily. But the anger vanished at once as they saw how pleased Tao Zia was. They were even more amazed when the small cat licked Bud's fingers.

"Your friend took a great risk!" ArRRllasPeRR informed them.

"How so?" Tom asked her.

"And you still haven't told us why everyone fusses over that cat!" Wendy exclaimed.

ArRRllasPeRR shook her head sadly. "It is obvious to us that you do not know. Yes, that is to be expected from a young race just starting to venture outside of its solar system.

"We are aware that the species you call 'cats' exists on your world, in sizes large and small. MiEEowasPuRL had hoped to meet some before he left. But other priorities got in the way. Then he had to leave.

"We have found cats on several other planets. These planets also worshipped the cat, as your world did once. All that do so seem to prosper mightily. We the Vashanti are evolved from our feline ancestors of long ago. But were those felines natural, or were they brought here by an ancient race? We have found evidence for an elder race that is NOT the Tekili-li. The ancient race may have been feline themselves. We believe they distributed cats in different sizes and colors to multiple planets. It is for this reason that we hold our smaller cousins in such high regard, and are flattered when they allow us to hold them or feed them."

OwYawwNDisS nodded, then spoke with Bud, who had returned to the group. "It is well that your friend welcomed you as he did. It would have angered his attendants had he reacted otherwise!"

Bud looked questioningly at Tom and Wendy. They quickly informed him about the high status that cats had among the Vashanti, and why.

Bud turned to OwYawwNDisS. "So the Vashanti think that cats didn't evolve on Earth? That they came from some other planet a long time ago?"

OwYawwNDisS nodded. "That is so, Bud Barclay. There may have been a certain amount of felines on your planet thousands of years

ago, but chances are they soon died off, and were replaced by the extraplanetary felines."

They continued to stare at Tao Zia for a few moments. Then ArRRllasPeRR spoke again: "Come! We will lead you back to your meal. You must be very hungry."

But even as they started to leave, Tao Zia hopped down from the cushions and raced over to Tom. Tom cradled his arms, and Tao Zia leaped up lightly into them. He purred some more as Tom scratched behind his ears. The Vashanti attendents were speechless.

This time they took the lift back down. Tao Zia remained in Tom's arms until they reached the eating area once more. The cat sniffed at the various items of food, then began to nibble on a piece of hamburger. Bud broke it off and let him eat.

The Vashanti soon left, leaving the three humans to talk.

"Well, Tom, I sure wasn't expecting the Vashanti to be a race of cats!" Bud said.

"Me either, Bud," Tom replied. As he ate, he mulled it over. "It does explain things, though," he said.

"How do you mean, Tom?" Wendy asked.

"I think I understand now why the Vashanti have been so reluctant to visit the Earth," Tom answered. "If nothing else," he went on, "Exman's original activities make sense now."

"In what way, Tom?" asked Bud.

"Bud, remember how Exman acted when we left him alone that first night?"

Bud nodded. "Yeah, he was all over the place, knocking things over and stuff until you ordered him to stop. Makes you think of... " Bud's eyes opened wide as the realization struck him. "Makes you think of a kitten exploring his environment!"

Tom beamed at his friend. "Right on the nose, Bud! Very much like a mischievous kitten. MiEEowasPuRL must have been very young when they sent him to Earth."

"Why would they send someone so young, Tom?" Wendy asked.

"Less preconceived notions, I imagine," Tom replied. "Young minds are more open to new ideas and concepts."

"Anyway," Bud said, "why didn't they come to Earth more often, Tom?"

Tom continued eating for a moment. "I'm just guessing at this point, Bud. We'll probably find out more tomorrow. But I can't help but wonder if they're oversensitive to the Earth's strong magnetic fields."

"The Earth's magnetic fields?" both Bud and Wendy exclaimed. Of all the answers, they sure hadn't expected that!

Tom nodded. "It's been established that cats can sense magnetic fields. This is how they are always able to find their way back home so easily, and almost never get lost. Someone once created a maze and placed high-powered electromagnets at various points. With the electromagnets on, the cats placed in the maze became confused and were unable to find their way out. With the electromagnets off, the cats navigated the maze with ease.

"I suspect the planet below us has a very weak magnetic field, just enough to prevent radiation from their sun from being deadly, but no where near as strong as the Earth's. If this is the case, it's possible that they didn't shield their ships strong enough during



their first visit to Earth."

"I see!" Bud exclaimed. "So Earth's magnetic field overpowered them when they first arrived, and caused the crash in the Yucatan!"

"And in the Atlantic Ocean, some time after Atlantis - or whatever city Aurum City was previously - sank," Tom added. "Again, we'll see what the Vashanti say tomorrow."

"Uh, Tom?" Wendy spoke up. "If the SSisANicK magnetic field is really that weak, won't we be in danger of a very bad sunburn?"

Tom stared at her. He hadn't thought of that! "Right you are, Wendy! We'll have to bring that up with the Vashanti before we go down there tomorrow."

Once they had finished eating, OwYawwNDisS led them to some sleeping quarters. ArRRllasPeRR led Wendy to the women's quarters. The next day, they ate breakfast - a typical terrestrial breakfast of eggs, bacon, cereal, coffee and toast - in the same area as before. OwYawwNDisS was back among them as they were finishing up. "After you have groomed yourselves, we will lead you to a shuttle that will soon depart for the homeworld," he told them.

Tom brought up Wendy's concern about the weak magnetic field. The Vashanti stared at them, astonished once more. "That is correct! We were going to discuss this with you when you brought up the ancient armada and why it never returned."

Tom nodded. "I thought that might well be the reason you have been so reluctant to visit the Earth. Isn't there some way for you to shield yourselves from Earth's magnetic field?"

OwYawwNDisS sighed. "We have tried, but most ways come out clumsy and awkward." He paused. "We must look into a means of shielding you from solar radiation once you are on the ground."

A half hour later they met at one of the airlocks. A sleek-looking shuttle awaited them. "You may sit up front if you wish," OwYawwNDisS told them. "We have installed seats more accommodating to your form."

The three humans went forward. Once again, there were no doors separating the passenger compartment from the flight deck. Inside, for the first time Tom was able to study the Vashanti controls.

The light inside the cockpit was dim, but Tom knew that most felines didn't require much by way of light. The joystick and yoke were similar to what would be found in any aircraft, but the control panel was very different. Familiar symbols flowed across the panel via a multi-colored strip of lights, much as one would find in Times Square. There were no buttons, knobs, or switches. Instead, there were small groups of lights that the Vashanti covered with their fingers. *Interesting!* Tom thought. *Controls that have no moving parts.* Then he forgot about the controls as the ship moved away from the space station, and started on its decent towards the planet.

## CHAPTER FIFTEEN: SISSANICK

Even as the ship entered the atmosphere, there were very little by way of vibrations. Tom learned later that part of this was due to Sissanick being a fairly dry world: the skies were mostly clear of moisture-induced turbulence. And part of it was due to the superb skill of the pilots. They dodged around jet streams and what storm clouds there were with the grace of a cat walking on a table full of fine china.

Soon they were in the lower atmosphere. There were no continents to pick out: all of the land was joined together. Here and there could be seen seas and very large lakes. But no oceans.

The shuttle soon joined other aircraft moving through the sky. Many of the aircraft bore the unmistakable bluish-green saucer shape so familiar to Tom and Bud over the years.

After about a half-hour's travel, they began dropping once more, approaching a large city. For the first time, the three humans were able to see what Vashanti architecture looked like. All three let out whistles when they saw the buildings.

The Vashanti building soared into the air, hundreds and even thousands of feet high. They weren't quite as bulky as human buildings, but tended to be slender and graceful. There was, Tom and the other noticed, very little by way of glass. Instead, openings of many different geometrical shapes could be seen. And, as the shuttle flew nearer, they let out gasps when they saw that the Vashanti were *walking or climbing up and down the buildings' exterior!* Further, there were skybridges connecting the buildings. Vashanti could be seen walking along the bridges, completely at ease with the heights; some of the Vashanti were even upside-down, walking along the bottom of the bridges. Finally, as the shuttle flew by one huge skyscraper, Tom noted that the building's exterior was covered with the same carpet-like substance the space station used. Tom gave a mental gulp, wondering if he and his friends were expected to navigate those skybridges! *If so, he thought, I sure hope those bridges are wider than they look!*

The shuttle soon landed at a large airport. There were no runways. The shuttle simply located its landing bay, slowed to a stop directly over it, then gently set down. A walkway was extended over to the hatch, not unlike those at Earth airports.

Inside the airport, Vashanti could be seen hustling from one area to another, many burdened down with luggage. But all stopped to gape at the three humans and Tao Zia as they emerged from the shuttle. Conversations died, but whispers could be heard as they oggled the visitors from another world. After a short time, though, the Vashanti went about their business. Unlike Earth, visitors from other worlds weren't completely unknown, so there wasn't too much awe.

Outside the airport, they found a conveyer-like mass transit means of transportation. There were no individual vehicles, as on

Earth. "We tried that once," OwYawwNDisS informed them. "But we were too individualistic for our own good, and far too many deaths occurred because we refused to give ground to one another. A computer-controlled automated system seemed the only fair way to get around."

"What about outside the city, or from one city to another?" asked Tom.

"We use aircraft, low or high flying depending on the circumstances."

They sat in comfortable cars, not unlike a roller coaster car. But these moved around smoothly, without the jerks and starts of a roller coaster. They were also fairly swift.

It wasn't long before they stopped in front of one very tall building. "Hold on to the handlebars a moment," OwYawwNDisS instructed them. As they did so, the car underwent a transformation from horizontal to vertical. Moments later, the car was streaking up the side of the building. They passed many Vashanti who were climbing along either up or down.

"Wow, this is something!" Bud exclaimed. Tom was thankful that he, too, had no fear of heights. Wendy, though she looked a bit pale.

"Are you all right?" Tom asked her. She just smiled and nodded. The car continued its journey up, until the city began to look like a child's toy.

The car finally came to a stop at the tower. Tom wasn't certain, but he guessed they were about a mile, maybe a mile and a half up.

When the car stopped, it abruptly rotated on its vertical axis. Now the passengers were facing the inside of the building. OwYawwNDisS stepped off with ease. Tom and the others stepped off with wobbly legs! But they soon got control of themselves and followed OwYawwNDisS into a center room.

There, seated around a large table, were a large group of Vashanti. Tom counted fifteen, male and female.

OwYawwNDisS approached them, bobbed his head and purred. Then, in English, he introduced Tom and his friends. A large Vashanti rose up and bobbed his head as well. He let out a warm purr.

"Greetings, Tom Swift, Tao Zia, Bud Barclay and Wendy Winkler! Once again we welcome you to SSisANicK! We are honored to meet with you at last. I am RoWNissnNeNN."

Tom wasn't too certain what the protocol was, but he bowed his head. The others did the same. Tao Zia, though, hopped down from Tom's arms, hobbled his way over to the table, then lightly leaped up on it. SSisANicK's lower gravity didn't bother him at all. Letting out loud purrs, he marched proudly over to the RoWNissnNeNN and stared up at the Vashanti, his blue eyes focused on the face in front of him: RoWNissnNeNN had the same blue eyes, the same wedge face, the same charcoal-and-platinum shaded furr. RoWNissnNeNN bowed down and touched noses with Tao Zia.

After the ceremonies (which were quite sparse, Tom noted. Apparently, the Vashanti got down to the business fast), RoWNissnNeNN introduced his colleagues. Tom memorized the names, but Bud and Wendy were lost after the first few.

"We are the group that deals with threats from other worlds. In the past, we have handled the plague that infected our food and the strange energy creatures you referred to as the 'Galaxy Ghosts.' We are still amazed that you were able to not only make contact with

them, but befriend them and turn them aside from invading your planet! As you know, we tried to find out who and what they were, but they ambushed our scout team and killed the members."

Tom nodded, remembering the message they'd received years back. "It's possible it wasn't an ambush, but a clumsy attempt at trying to communicate with you. At least, they didn't seem to be deliberately hostile once I started talking with them."

RoWNissnNeNN bobbed his head in acknowledgement. "You may be correct. But now we face an even greater threat: the Tekili-li and the Black Cobra."

"Yes, indeed," Tom replied. "Oh, and many thanks for your rescue of us. How did you know we were there?"

"We have hidden monitoring posts that use transphotonic tunnels to relay messages. We knew that the ship which emerged from transphotonic space wasn't one of ours, so it could only be yours. And if that were the case, it was likely the Tekili-li would have an ambush planned. As I stated, our group is in charge of situations like this, so we had our starships launched at once. Once we arrived in the Tekili-li system, it took a bit of time to find you."

"Fortunately for us, not too long," Tom said with a wry grin, though he was careful not to bare his teeth.

"Indeed," RoWNissnNeNN bobbed his head once more. "Now we must make plans for dealing with the Tekili-li and the Black Cobra once and for all. First, though, we must have the necessary facts. Tell us, Tom Swift, what you know about the Black Cobra's plans."

So Tom explained what he'd learned from his older self's observations of the Black Cobra, and what was revealed on the Cobra's computer up until the time it was recaptured.

The Vashanti began talking among themselves when he finished. Their own language seemed to be a mixture of looks, body gestures, chirps and mews. *Not unlike Earth cats*, Tom thought. Which certainly seemed to be the case: even Tao Zia chimed in once in a while! And when he did, the Vashanti listened.

RoWNissnNeNN covered a group of lights on the table. At once, the windows and doorways darkened, and an image of stars appeared over the table, much like an image from Tom's 3-D Telejector. The Vashanti picked up a pointer.

"This is the Tekili-li's home system," he said. At once, one of the stars glowed red. "This is our system," he continued, and a star glowed bright blue. It was a considerable distance from the Tekili-li's, which was located close to the galactic center. "And here is your system," he concluded. The Earth's sun lit up, a bright orange. It was also a considerable distance from the other two.

"The Black Cobra wishes to disrupt your sun, resulting in massive flooding and dangerous weather on your world, killing millions. He then plans to conquer what is left and use them for slaves. Once your world has been dominated, he plans to do the same to ours. And all other civilized worlds. Even the Tekili-li. How, exactly, are we to stop him?"

"My plan was simple," Tom answered. "Inform the Tekili-li that their erstwhile ally plans to conquer them, once he is finished with everyone else. Presumably, they will deal with him."

The Vashanti exchanged glances and words. Then they turned back to Tom. "Your plan makes sense, though we are not too certain just

how the Tekili-li will react. They are a strange, old race, and their thoughts move in directions unknown to others. They may not act as you expect them to. Still, it is an idea worth trying. But we would like to have a contingency plan in case your plan fails."

Tom nodded. "You are correct. And while you were talking, such a plan occurred to me. Consider this for a moment..." Tom explained his backup plan. When he finished, RoWNissnNeNN nodded his approval. "Yes, that should work well. We will begin preparations at once!"

Tom raised an eyebrow in surprise. It would seem that however much time they wasted in committees, once the Vashanti made their plans, they didn't waste any time implementing them.

RoWNissnNeNN covered some more lights. At once, the image of the galaxy was replaced by one of another Vashanti. This was obviously taking place out in space: the *Ad Astra* could clearly be seen. The Vashanti engaged in conversation. Then RoWNissnNeNN turned back to Tom: "PeRRlsassLiLK has informed me that your ship should be ready to go in about another - " he paused, searching for the right word - "week, I believe."

"Great! I'd like to come up there and help out as well," Tom said.

RoWNissnNeNN bobbed his head. "Your help will be most welcomed. There are other inventions of yours we would like to know about."

Tom nodded. "Gladly. First, though, I can't help but to ask you about an armada you once sent to Earth many years ago." Tom went on to explain about what he'd learned down in the jungles of the Yucatan, and the bottom of the Atlantic Ocean.

"We have a council that deals with past history, both recorded and legend. Hmmm, let me see..."

The Vashanti covered some lights, and the image of another Vashanti soon appeared. This one was in the manner of an Abyssinian cat. The Vashanti exchanged head bobs. RoWNissnNeNN explained what Tom wanted.

"Yes, I should be able to help with that," he said with a smile. "Have our new friends come over to visit me in Tonnesann."

"Very well," RoWNissnNeNN said, and switched off the display. "Tonnesann is a small city some distance from here. OwYawwNDisS will accompany you on your flight over to SiNNarlsLApD's council."

Tom and the others bowed their thanks. As if sensing the meeting was over, Tao Zia jumped back into Tom's arms. They made their way back to the mass transit car, which was still in place. The ride back down was a dizzying as the ride up. They were soon back at the airport, where a smaller shuttle, this time much like the saucer ships Tom was familiar with.

Inside, though, it was very different: the same plush interiors, allowing the Vashanti to sit or curl up comfortably. View screens surrounding the cabin walls allowed them to see out at the passing countryside. Tom figured their air speed to be about Mach Three.

Tonnesann turned out to be smaller than the Vashanti's central city of Accuronn, but the buildings, though fewer, were no less small. The same sort of mass transit took them up midway up a four hundred story building. As with the other buildings, Vashanti could be seen making their way up or down the exterior.

Inside, SinnArslApD welcomed them, and bowed respectfully to Tao Zia. Once again Tom explained what he knew about the armada.

SinnArLsLapD covered some lights on the table. A three dimensional image sprung to life.

"About thirty-three hundred of our years ago - about three thousand of yours - we were still exploring the galaxy when we stumbled across your planet, almost by accident. The scout reported what she found, and an expedition was soon sent out. That expedition was the armada. We only have the reports they sent us from time to time.

"They arrived in your solar system without any trouble. There was fifty in all. Twenty-five of the ships descended into your atmosphere. Almost at once, they ran into difficulties: severe weather, oppressive humidity. And a fierce magnetic field that began causing brain damage, as well as interfering with the ship controls. They were soon lost. After trying to contact the ships on the ground without results, the remaining ships went down as well. From what we can tell, they crashed in the jungles. The twenty-five ships could not take off. Apparently, they were able to befriend a local tribe of humans, and carved on the rocks a message, in case a rescue party was ever sent. One such attempt was tried a few years later. The ship was reinforced against magnetism. They were able to locate the armada's party - that's how we learned about the ones in the jungle. But before rescue efforts could get underway, your world underwent a terrible cataclysm as an entire continent sank beneath the waves. From what little we could get from the rescue ship, it was caught in the cataclysm while it was over the ocean, and crashed into the waves. We never learned anything else."

Tom and the others were saddened to learn the fate of the armada and the rescuers. "Later on, after we take care of the Black Cobra and the Tekili-li," he told them, "I'll see what I can do about returning the rescue ship to you. Also, there's a good chance we might be able to find remains of the first ships down in the Yucatan. What I'd really like to do is to come up with a way to shield you from the effects of the Earth's magnetic field. You are long overdue a safe visit to our planet."

SinnArLsLapD bobbed his head. "All the Vashanti would enjoy that very much. But first you must take care of the Black Cobra."

Tom nodded. He fixed the Vashanti with a grim expression. "Believe me, SinnArLsLapD, I plan to do just that! Once and for all, the Black Cobra is going to be brought to justice."

## CHAPTER SIXTEEN: COBRA AND ALIENS

The Black Cobra stared in dismay as the other alien ships began

to appear and open fire on the Tekili-li ship. *No, he thought, this can't be! Not when I'm so close to destroying Tom Swift for good!* But two of the Tekili-li ships were destroyed, and the third broke off. The Cobra watched as Tom's ship was towed away and vanished into transphotonic space. At once, his own ship shuddered as the third Tekili-li ship began to tow his own.

They returned to the Tekili-li's current home world, a planet that was once on the far outskirts of the solar system, but now was among the few left to circle the bloated red star.

The planet itself was a dismal affair. Almost twice the size of Earth, it rotated slowly, so days and nights lasted about two and a half months. Neither was much to look forward to. A small, distant moon cast very little by way of light on the planet's dark side. The atmosphere was choked with fumes from volcanic eruptions. Ruins of once-proud cities were found here and there. The rest was a harsh desert and salt lakes, all that remained of the oceans and seas. The Black Cobra had seen the planet several times before, during his first contacts with the Tekili-li. Even he found the planet oppressive. Still, it was paradise compared to the mountains of Nib-Subboth, where the Tekili-li lived.

Nothing grew on the mountains, they were like the mountains of Earth's moon. Harsh and stark, their peaks hit repeatedly by bolts of lightning from storms that never seemed to end. Flash floods were frequent. Nothing grew on them. They reminded the Black Cobra of his first lair, down in South America. So he, if no one else, didn't mind the terrain.

To reach the Tekili-li, they had to walk through the murky, barely breathable atmosphere to the base of the mountains, climb along a three mile trail half-choked with fallen rock and debris, then enter a large cave guarded by the hairy Shaggoths. The Shaggoths, huge, man-shaped beasts covered with hair and possessing four arms and hands with six fingers, were the ones who piloted the ambush ships. They also attended the Tekili-li. Apart from that, the Cobra knew little about them. They never spoke, not even to growl. They just gestured. The Cobra often wondered how intelligent they were. Surely they had to possess some amount of brainpower in order to run the ships. Unless the Tekili-li controlled the Shaggoths telepathically, like so many puppets. The Cobra didn't dismiss the idea as impossible.

The Shaggoth came forward and sniffed him. Apparently, scent identification was all that was needed. The Shaggoth allowed them to pass. Then came another long hike deep into the mountain caverns. They were allowed a small red light to guide their way, since the Tekili-li did not care for bright lights. The trail led over narrow, icy bridges crossing bottomless gulfs and through some very tight passageways. This wasn't the kind of trail one took if you suffered from fear of heights or small spaces. The Black Cobra had neither, and he expected the same from the Brungarians and Kranjovians who followed him.

Finally, they emerged into a large, almost pitch-black cavern. There, on their thrones of pure obsidian, were the Tekili-li.

The Tekili-li had no mouths. They "spoke" entirely by telepathy. They had a limited emotional range: all of it dark. Just now, they weren't happy with the Black Cobra.

*You have not succeeded in expanding the Earth's star, one of them*

thought at the Cobra.

The Tekili-li were almost all alike: cylindrical, about eight feet tall, whip-like tentacles sprouting midway up their bodies; a squid-like head, and tentacles for feet as well. Their skin color was dark gray. There was nothing particularly appealing about them. The Black Cobra, however, could tell that of the seven Tekilil-li present (were there others, he often wondered. He had never met any others than the ones present. Yet he often detected hints that other Tekili-li were around, possibly in the lower caverns, or other locations on the planet. But he could never really be sure) the one in the middle seemed to be the leader. If "leader" was the right word. He had no idea what sort of government the Tekili-li used, or if they even knew of the concept of government. It might be considered as ancient as the computer he'd been given. Still, *someone* had to make the decisions among them. And this particular Tekili-li, who didn't seem to have a name (nor did the others, for that matter), was always the one who "spoke" the most frequent with the Cobra. Occasionally the others would contribute something, or ask questions. But this one dealt with the Black Cobra most often. Until he learned otherwise, the Cobra assumed him to be their leader.

"Tom Swift interfered with us," he said aloud. He knew he could just as easily have thought the answer to them, but speaking out loud was a form of defiance on his part, a way of demonstrating that he wasn't going to be intimidated by these aliens. Even though, deep down, he was, and he knew his men were as well. You couldn't stand in front of the Tekili-li and not be. But you didn't have to show it, either.

The Tekili-li's tentacle waved about in an uncertain manner. *You told us Tom Swift was destroyed.*

"He was." The Black Cobra was tempted to add: *he got better.* But flippancy - or any kind of humor, for that matter - was wasted on the Tekili-li. "But it would appear that the matter transmitter he'd invented some years ago has an interesting side effect: the ability to reproduce a scanned object as many times as necessary. Whether the object is organic or not. Why the Swifts chose to reproduce a younger version of Tom, I don't know. Possibly they haven't scanned him recently. At any rate, a version of Tom Swift and Bud Barclay, as I knew them when we first met, are now taking over where the older Swift and Barclay left off. They may not have the experience of their older selves, but it can't be denied that they lack the intelligence. Swift has already designed a machine that restores the sun to its correct magnetic configuration. The exact opposite of my machine, in fact."

*What do you propose to do about it?* the Tekili-li asked.

The Black Cobra shrugged (though he had no way of knowing if the Tekili-li could even detect such a gesture, let alone understand it). "First, I need to repair my spaceship. That's going to take a while, the damage was extensive. I need to come up with some ways to counteract Swift's weapons. Fortunately, you damaged his ship pretty badly, so he's going to be out of commission for a while. I will also need a way to counteract the Vashanti weapons as well. Then, of course, I will kill him."

*They will only make new copies of him,* the Tekili-li reminded him.

"Not if they don't know he's dead," the Cobra replied. "And by



the time they do, it's going to be too late: the expansion of the sun and the enlarging of the Van Allen belts will already be taking place."

*Swift's machine may be able to restore the sun's size, even after you have started it,* thought the Tekili-li.

*And he may have the Vashanti helping to protect the ships or areas that fire the beams to restore the sun,* another Tekili-li thought at him.

Once again the Black Cobra shrugged. "I didn't say it would be easy. Naturally, I'm going to need your ships to help me with this. And we must invade Swift Enterprises and Fearing Island, to track down the Transmittaton replicaters and destroy them. I'm sure that with the weapons at your command, such things should be easy to accomplish." The Cobra wasn't certain what effect flattery had on the Tekili-li, but it didn't hurt to try.

There was a long pause as the Tekili-li talked - or rather, thought - among themselves. The Cobra waited patiently, though he really wanted to get out of the place. It was cold inside the cavern chamber, for one thing. *Must be about twenty degrees,* he thought. Or maybe it was just being in the presence of the Tekili-li. They gave him the creeps.

*Very well, they finally answered. We will allow you to repair your starship at one of our old bases. We will provide you with the tools and some of our weapons. You must make the repairs on your own.* Which came as no surprise to the Black Cobra, he more than expected it. *Now the time has come for you to supply us with the mathematics and schematics for the solar disrupter,* it continued. This was the part the Black Cobra dreaded. When the bargain had first been proposed, he had assumed he would turn over papers with the math and diagrams necessary to construct a solar disrupter. *I should have known better,* he thought. The Tekili-li had no visual organs. At least, none that he was aware of. That was the main reason why he couldn't just place the information in, say, a capsule and let it be taken back to the Tekili-li. Instead, he had to deliver the information personally. He could have done so during earlier visits, but the technique still hadn't been fully developed. Now it was ready. But the means of extraction left the Black Cobra distinctly queasy: they lifted the information telepathically directly from a person's mind. The Black Cobra loathed the thought of an alien intelligence probing around in his mind: would they also discover the other plans he'd made while they transferred the information? Well, too late to back out now.

*Picture the information in your mind,* he was ordered. The Cobra did so, focusing his mind only on the math and the schematics, shutting everything else out. Even so, the Tekili-li invading his mind (it was impossible to tell if it was just one, or all of them) felt like ooze from the blackest pit of Hades: mind-numbing cold and repulsively slimy at the same time. About the only good thing to said about it was that it didn't last long. *We have what we need,* he heard in his brain. Then a picture appeared: a map, showing where their ship could be taken for repairs. *Now leave us.*

"I thank you," the Black Cobra said, and bowed. Then he motioned to his men to follow him once more. Carefully, they made their way out of the caverns, down the mountain, and back to the *Ashtorath's*

Revenge.

The ship was only able to fly using chemical rockets. It limped along to the destination the Tekili-li had implanted in his mind.

The ship set down in a large, circular bay. Outside, they found various machines and robots they could use for repairs. A lot of the equipment would have to be recalibrated to the metric system.

The Black Cobra wasn't certain if the idea of menial work was simply beneath the Tekili-li, or if they considered his ship so hopelessly primitive that they would be unable to physically help even if they wished to: picture the engineer of a modern aircraft carrier trying to help repair a Viking longboat. Either way, the Brungarians and Kranjovians were on their own.

Looking around at the tools and equipment, most of it in surprisingly good condition, the Cobra shrugged once more. "All right. Let's start off with familiarizing ourselves with the tools here. That may take a while, but once we do, repairs should move along pretty fast. I predict it will take no more than a week and a half before we're up and running again. Then let Swift and his allies beware!"

## CHAPTER SEVENTEEN: ADRIFT

"Tom!" Tom Swift moaned as he heard Bud's voice pierce the veil of darkness. "Wake up! It's your turn."

Tom's eyes felt gummed up. Slowly, he opened them to stare at the grimy, disheveled face of his friend. With a moan he sat up.

"How much?" Neither Tom or Bud spoke very much. They didn't dare use up the oxygen, which was fading all the time.

"About one quarter," Bud answered grimly. "Nothing in sight. Correct the course?"

Tom shook his head, then winced. His head rang like a bell and he felt nauseated. He fought down the waves of vertigo.

Tom staggered out of the improvised cold-sleep tank he and Bud had rigged months ago. He floated over to the cracked windshield of the life cap. It was a good thing he'd had it made of transparent Durastress. Otherwise...

They'd just barely made it. The Black Cobra's fusion missile detonated against the *Cosmotron II*'s hull hardly a second after Tom and Bud had raced to the Transmittaton tank and teleported to the life cap Tom had following the ship at a distance of five hundred miles. It was camouflaged with Tom's anti-radar system. The life cap was the first contingency plan Tom had talked about with his father just before they left - replicating themselves using the Transmittaton was

the second. And the first plan would have worked, too, save for one thing: Tom hadn't taken into account the *Cosmotron II* being destroyed like that. Debris from the explosion, plus the shockwave, pummeled the tiny life cap. A huge chunk of the *Cosmotron II* impacted against the front of the life cap, smashing in its front end, destroying the control systems and cracking the transparent Durastress. When it was all over, they had no communications, steering, or even power. Both men had been hurt in the collision as well.

Tom surveyed the damage with a sinking heart. It was so severe he wondered if the only thing the contingency plan had bought them was a coffin in space.

Bud broke out the first aid kits and patched them up as best he could. "Tom?" he asked. "Any chance of getting out of this one alive?"

Tom sighed. "I don't know, Bud. All of the controls are damaged. Life support isn't working. It won't be long before the oxygen is gone. And it's going to get cold in a hurry. I have no means of communicating with the Outpost or anyone else. We're completely adrift. So, I just don't know."

Bud punched Tom lightly on the shoulder. "Cheer up, Skipper! We've been through worse than this and managed to pull through somehow."

Tom gave a feeble grin. "Yeah, that's true. But I have a feeling that this may be the worst scrape we've ever been in. We need to reach a safe place and get out of this life cap."

"Where's the nearest safe place, Tom?" Bud asked.

Tom shook his head. "Near as I can figure it, it's one of the planetoids we transformed into a space station. In fact, it's the one Curly just came home from a couple of months ago. But I have only a hazy idea of the planetoid's location."

"How far away is it?" asked Bud.

"From our current location, at least six to eight months. Assuming I can even get the life cap moving again!"

"You can, Tom," Bud assured him. "Believe me, no one else could do it but you."

Tom gave him a lopsided grin. "Thanks for the vote of confidence, pal. But even I have to wonder this time."

The men were silent for a while. Tom thought back to the time he and his father had been trapped aboard the Swift's research aircraft carrier, the *Sea Charger*. What had his father said? A true scientist uses whatever tools come to hand. *So do engineers*, Tom thought. *And inventors*.

The lack of air, heat and food were going to be bad. As for steering the life cap...

Tom pulled out a tool kit from under one of the seats. This particular life cap had been modified a bit: it was a little larger than normal. Most lifecaps were just one-man affairs; a seat and controls and nothing else. This one had two seats and some storage space in the back. That gave Tom an idea - but he put it aside for the moment.

Tom soon removed the access cover in the floor for the controls. Soon, with Bud's help, he was stripping off the control panel, salvaging what instruments he could. But when he checked the battery compartment up front, he let out a hiss of frustration. Two of the

three Swift solar batteries were badly damaged. Only one remained. Fortunately, there was also a spare. But the engine controls required all three batteries in order to power up. Unless...

Tom checked the middle battery. On second examination, it wasn't as badly damaged as the one next to it. Using his ohmmeter, he was able to detect some current, though it wasn't up to full power. "We may be able to make this work," he told Bud. Bud nodded, relieved.

Tom soon rigged some manual controls for the engines, and built an amplifier for the third battery. With it, he was able to restart the engines. But they sputtered and lurched. Tom found he had to ride the engines constantly. The CO<sub>2</sub> air scrubbers were working again. So was the heater. But having them work was diverting power from the engines. Tom realized it was going to be a delicate juggle. That's where the other part of his plan came in.

"The scrubbers won't last for long, Bud," he explained.

"Probably a couple of months at best. Unless we help prolong them."

"How, Skipper?"

"I plan to turn the back area into a cold storage compartment. Each of us will take turns going in there. I'll lower the temperature to just under forty degrees Fahrenheit. Any colder could cause cellular damage. Plus, I'll lower the amount of air to the point where it will put us to sleep. This will further help reduce our dependency on air. It's not going to be a lot of fun for the one who stays awake. You're going to have to have strict rationing of food and water. As well as monitor the controls constantly. You're going to have to learn how to 'shoot the stars' as they did on ocean voyages. I can rig a solar sextant for us to use. And probably an astrolabe of sorts. Plus, there's going to be no one to talk to, so be prepared for a very boring ride."

"How long will be our sleep periods?" Bud asked.

"A month if I can help it," Tom replied. "We'll have to use our watches to keep time. Thank goodness that they show the month and date! Anyway, the sooner we begin, the sooner we can reach the planetoid."

Tom took the first "watch," allowing Bud to sleep. It was a long, difficult watch. His improvised sextant and astrolabe helped keep track of their position, but the life cap was moving about three hundred miles per hour. For the most part he just coasted along. He dared not use up too much fuel: he would need an equal amount in order to decelerate when the time came. So the life cap "inched" along towards its problematical destination.

Now, months later, Tom took over the controls once again. Bud began to make his way to the rear compartment. Cold sleep wasn't particularly pleasant, either. Strange, unnerving dreams often took place, leaving one disheartened upon awakening. Tom's head was pounding as he began to make adjustments to their course. The life cap was often off course, due to engine irregularities and their lack of experience with the sextant and astrolabe. Neither of which worked all that well in the depths of space.

*Hard to believe it had been eight months now, Tom thought. We should have come upon the planetoid by now, he thought. Maybe we did, and one of us missed it. The air scrubbers are about used up, and it's getting harder to concentrate. Or we could be thousands of miles off course.* Tom dully in the chair and began to try and get a fix

using the sextant. Bud began to crawl back into the cold storage compartment. Neither one noticed a huge chunk of rock that, relative to the ship, hung almost directly above them, about twenty miles away.

## CHAPTER EIGHTEEN: CONVERSING WITH THE TEKILI-LI

In less than a week, the *Ad Astra* was restored to off-the-factory-floor newness. It had been equipped with the best weapons the Vashanti had to offer. Tom was ready to take it back to the Tekili-li system.

"It's time to inform them of the Black Cobra's plans," he told the Vashanti.

OwYawwNDisS nodded. "Yes, you are correct. It will still be a risky journey. The Black Cobra and his ship are still there, somewhere. And the Tekili-li are not likely to be open to listening to you."

Tom shrugged. "I'll have to figure out a way once I get there. For now, let's get going. There's no telling when the Black Cobra's ship will be repaired, and thus able to launch his attack on the Earth's sun."

Tom, Bud, Wendy and Tao Zia were flown back up to the same Vashanti space station. Tom knew that the Vashanti had several of the space stations at various altitudes orbiting the planet. One intriguing station actually had a tether that reached all the way down to the planet. Rather than fly up material to the station, it used a series of elevators to do the job. But now that Tom had shown them how to build a Transmittaton, the tethered space station would soon become a novelty. Pity. Tom thought it was a stupendous engineering achievement.

From there, they made their way to the docking bay of the *Ad Astra*. The three human and two Vashantis strapped themselves in. A small hammock had been rigged for Tao Zia, and he was soon secured.

Tom received permission from the space station to leave. Docking clamps were released. Carefully, Tom steered the *Ad Astra* out the bay doors. Once free of the station, he turned on the superrepelatrns and poured on the power. SSisANicK disappeared rapidly from view.

Once again Tom pulled up the coordinates for the Tekili-li home system, then engaged the transphotonic engine. A short time later, they arrived near the Tekili-li home world.

"Where do we land, Tom?" Wendy asked.

They stared down into the dirty, smoke-filled atmosphere.

Tom sighed. "I'm not really sure, Wendy. I'll try flying under the clouds and see if I can spot something."

The *Ad Astra* descended like an elevator until Tom broke through the cloud layer. He kept going until he reached about five hundred feet.

Bud let out a whistle. "Man, that's not the most hospitable of planets!"

No one argued.

Where it broke through the clouds, the reddish light of the giant sun cast eerie shadows over the ruins of desolate cities. Here and there, the remains of huge skyscrapers poked out of the ground. Many were lopsided or twisted, as though caught in a terrible explosion of heat.

"They wouldn't still be living in those cities, would they Tom?" Bud asked.

Tom turned to OwYawwNDisS. The Vashanti shook his head. "No. From what we understand, they live in some mountains not far from here. Try the ones over there," he told them, pointing to some mountains not far away.

Moments later the *Ad Astra* reached the mountain range, which ran from the southwest to the northeast. Tom headed southwest first. Failing to find anything, he flipped the *Ad Astra* around and headed northeast. Not far from where they first reached the mountains, they found what looked like a crude landing strip. Carefully, Tom landed the *Ad Astra*.

Tom checked the atmosphere. "It's breathable, just barely. Might not hurt to wear some oxygen masks. And, as you can already feel, the gravity's higher than on Earth. So we're going to have to be careful."

"But where are we going, Tom?" asked Bud.

Tom pointed out the window. "See that opening about halfway up the mountain?"

"Yeah, kind of."

"We'll start there. I have a feeling that's the cave we're looking for. This landing strip proves that, if nothing else."

Tom, Bud, and Wendy took some repelatron rifles, and the boys still had the repelatron wrist watches that belonged to their older selves.

Wearing oxygen masks, they made their way over the rough countryside. After a week on Sissanick, they seemed to weight almost three times what they normally did. Further, the atmosphere was hot and oppressive.

It took Tom and his party a good half-hour of looking before they found the path leading up to the cave. Like the Cobra and his men, they, too had to deal with rock and debris choking the path. In a few cases, Tom used his repelatron rifle to move the rocks. But he had to be careful, lest more rock fell in their place. There were frequent rests. Going uphill weighing almost three times as much was grueling. Finally, over two hours later, they reached the cave.

Wendy let out a scream as a huge, hairy creature with four arms reared up and roared at them. But she, Tom and Bud used their repelatron rifles on the creature, knocking it against the far wall. There they kept it pinned until they reached the far caverns. Wendy

let out a gasp as their flashlights revealed a huge precipice spanned by a narrow bridge of stone. For a moment, the three humans clutched each other, uncertain about going on. But the Vashanti didn't hesitate. Even at nearly three times their weight, they were nimbly walked along the narrow bridge as if they were walking on a street somewhere.

"Well, if they can..." Bud said with an uneasy smile.

The three humans walked single file: Tom led, Wendy was in the middle, and Bud followed up in the rear. The stone bridge was about a foot wide. Keeping their eyes focused on the stone landing about two hundred yards away, they carefully walked along, arms outstretched for balance. But they were unable to keep that up for long: their arms began aching after a while. After what seemed like hours, they reached the stone landing. From there another, even longer stretch of bridge flung out to another cave.

The journey became a nightmare of thin stone bridges, some as narrow as an inch wide and stretching a good hundred feet. The chasms remained bottomless. In contrast to the air outside, the air in the caverns was freezing, and gusts could come out of nowhere. One hit Wendy on the side as she was crossing a narrow bridge. At once she fell forward and grabbed the ridge before she could topple over. Then she just inched along on all four limbs. She was shaking like a leaf when Bud joined her. Still, she refused to give up, and they pressed on. They made their way through tunnels, some normal-sized, others skin-scraping narrow. Still others they had to crawl on their bellies. Finally, one skinny stone bridge that sloped downward and was covered with ice (Tom blasted the ice off using his repelatron rifle), led them into the chamber of the Tekili-li.

Both humans and Vashanti alike gasped at the sight of the ancient race. For a moment the humans stood there, unable to say a word. Then Tom ventured: "Hello? I'm Tom Swift - "

*We know who you are* came the reply.

"I heard that, Skipper!" Bud exclaimed. "In my head!"

"We all heard them," ArRRllasPeRR stated.

Tom waved a hand at his friends to be quiet. "Look, I came here to let you know what the Black Cobra was *really* up to. He isn't just planning to conquer our world or even the Vashanti, as he may have told you. You see, he fully plans to conquer you as well! He plans to steal your technology and use it against you. The Tekili-li will either be enslaved or slaughtered. Then he can use your technology as he pleases. I'm not just making this up. I have proof. It's on the computer you gave him." Tom stopped, almost out of breath.

The Tekili-li were silent for a moment. Then they began to talk among themselves: *The Black Cobra reminds me of ourselves at a much earlier age.*

*Yes, it is certainly what we would have done back then.*

*Were we actually that young and foolish?*

*All races are when they first start out. I have no reason to think that we were otherwise.*

*His ambition is delightful. How refreshing to learn that the Cobra knows how to think on a large scale.*

*Could he truly succeed?*

*It is possible. The young often have boundless resources and energy. The old like us must soon fade away.*

*But not just yet. The Black Cobra may have energy and cunning, but he still lacks much in the way of intelligence or experience. Why his race still has not even invented that small, archaic computing device we loaned him!*

*But ones like this Tom Swift have already perfected antigravity devices, teletransportation and [here they used a word Tom couldn't translate, though he suspected it was "transphotonic"]- space transfers.*

*And do not forget his defeat of the [here another word was used. Tom thought it meant "photo-essence"; in other words, the galaxy ghosts].*

*Yes, they both represent potential dangers to us. Perhaps we have indulged this Black Cobra too much.*

*Perhaps, but we know him better than these others. And the Vashanti have always been a pain in our sides.*

*We must let the Black Cobra go through with his plans to destroy or diminish the humans and Vashanti. We can always handle him when the time comes.*

Tom was becoming worried: this wasn't how he hoped it would turn out!

*Agreed, came the response. He is cunning and treacherous, much like ourselves. We can easily anticipate any plans he might have to betray and conquer us.*

*Correct. For now, let him have these others. He can dispose of them as he likes.*

"T-Tom," Bud spoke up, shivering with cold. "I th-think we've worn out our w-welcome here!"

Tom nodded. The plan to turn the Tekili-li against the Black Cobra had failed. They were in even graver danger than before. "Sorry, g-guys. Guess my p-plan didn't w-work out after all. B-back to the sh-ship. We'll have to th-think of s-something else."

They ran into trouble almost at once. A group of Shaggoths marched into the cave. Tom, Wendy and Bud let loose with the repelatron rifles. The Shaggoths flew backward out from the caves as though pulled by ropes. "C'mon!" Tom shouted. As he ran, he noticed that the Vashanti also had weapons of some sort.

Their retreat was short-lived, however. First, they found they'd left via the wrong entrance. They faced another narrow bridge of stone, sloping upwards about forty degrees, covered with ice. As Tom started to use the repelatron rifle on the ice, shots rang out. The repelatron rifle was knocked out of his arms and into the abyss.

The humans and Vashanti looked around wildly. Then ArRRllasPeRR shouted, "Up there!" She pointed over to the right.

Tom noticed for the first time that the cavern the Tekili-li lived in was actually a huge column of stone at the center of a series of stone bridges leading in from many directions. The column was situated in an even vaster cavern, with openings and bridges both above and below where their current location. In the dim light, he could vaguely make out movement where ArRRllasPeRR was pointing. No doubt the Vashanti, with their superior vision, could see who was shooting at them.

Blasts from both regular and energy weapons struck the stone floor around them. The Vashanti began firing back, bursts of yellow-green light erupting from their weapons. But their unseen attackers



didn't seem interested in killing them. They could have done that easily enough, Tom realized. Instead, they seemed intent on disabling or destroying the group's weapons. Bud's was soon disabled from an energy blast, leaving his arms numb. Wendy's was knocked aside as well. Even the agile Vashanti were slow, the cold and higher gravity rendering their super fast reflexes sluggish. They kept firing back at their attackers. Then something ripped the weapons out of their hands. They looked startled. Tom wondered if the Tekili-li had used some form of telekinesis on the weapons.

Tom realized that trying to make their way back through the maze of caverns and bridges was pointless: they would be picked off easily while trying to walk along the stone bridges. It was time to use the contingency plan.

"Everyone back into the cavern!" he ordered. "Time to use the Transmittaton!"

Everyone raced back into the Tekili-li chamber. The Shaggoths were just getting back on their feet. As they marched toward the group, Tom said, "Stay close!" They all pressed against one another. Tom activated the locator on his belt, which allowed the Transmittaton to lock onto their location. He already had the amount of people pre-adjusted.

Nothing happened.

Tom felt a stab of anxiety and pressed the button again. Still nothing.

"Tom?" asked Bud. "Sh-shouldn't we be, y-you know, s-someplace else?"

"L-like the *Ad Astra*?" Wendy threw in.

"S-sorry, guys," Tom told them. "It's n-not working. I-I'm not c-certain why, unless w-we're so deep in th-the caverns that the s-signal is being b-blocked!"

"Or there might be another reason, Swift!" They turned around fast. There, at one of the entrances, stood the Black Cobra. Also, Tokatyan and Bronich. The Black Cobra was holding a small, odd-looking device in his hands. He tossed it over to Tom. Tom caught it and looked at it. He already knew what it was: part of the signal receiver circuit from the *Ad Astra*'s Transmittaton tank. Tom stuffed it into his pocket.

The Black Cobra stood there, seemingly immune to the cold. His green cat-like eyes glittered with a mixture of malice and triumph. "Yes, you are now under my power once again, Swift," he said with a laugh. "But you needn't worry. I have no intentions of harming you or your friends - yet. Instead, you will come with me back to the *Ashtorath's Revenge*. We will return to our solar system. And there you will be forced to watch as I expand the sun's size, wiping out most of the life on Earth!"

## CHAPTER NINETEEN: THE COBRA VICTORIUS

Tom considered using his repelatron wrist watch on the Cobra, then dismissed it. The Cobra was bound to be on his guard. And besides, even if they did succeed against the Cobra, they would be in the same dilemma as before: easy to pick off on the stone bridges, and no knowledge on how to get out of the caves anyway. *I'll let the Black Cobra do that for me*, Tom thought.

Tom quietly told the others to surrender without further fighting, and why. Bud hated the thought of giving in to the Cobra, but he could see Tom's point. The Vashanti also realized that it was better to wait for a more opportune moment to attack.

"All r-right, we s-surrender, Cobra," Tom told him. "Looks l-like you've w-won."

"I always win, Swift!" The Cobra replied. The Tall One and the Kranjovian motioned with their weapons. Tom and his group walked over towards them.

As they passed by, The Tall One and Bronich reached and grabbed Tom's and Bud's arms. At once they removed the repelatron wrist watches.

"Did you think I'd forgotten, Swift?" the Black Cobra laughed. "Not likely! Now come with us!"

Dispirited, the group marched back across the stone bridge Tom had earlier cleared of ice. Even so, travel up the sloped bridge was precarious for the humans. Even the Cobra walked slowly.

The nightmare of bridges and caverns repeated itself as they made their way back to the mountain's entrance. The gravity, the cold, and the sense of defeat caused Wendy and Bud to almost fall off several times. They had to go down on their hands and knees, causing their enemies to laugh at them. But Tom noticed that they became grim-faced themselves when it was their turn to transverse the bridge. Finally, they crossed the last bridge, and found themselves in the entrance cavern with the Shaggoth.

The creature eyed them maliciously, but made no move to attack as the Cobra led them back outside. Tom and his group was allowed to don their air masks along with the Cobra's men. Their skins grew slick with sweat. After the caverns, the humid, oppressive air felt good at first. But it soon became another burden.

Compared to the stone bridges, the mountain path was almost easy. They made better time, though they still had to be careful not to move too fast, lest their legs slide out from under them. Such an accident could easily result in sprains or broken bones.

When they reached the landing sight, Tom wasn't surprised to see the *Ashtorath's Revenge* sitting close to the *Ad Astra*. Several of the Cobra's men could be seen going into her. Tom's heart sank as he thought of the fate that was in store for his beautiful ship and he cursed himself for not having thought to install a brainwave identifier, such as the *Sky Queen II* had. But he'd been in too much of a rush, and the identifier had been one of those last-minute details they'd had to skip.

Once inside the *Ashtorath's Revenge*, Tom and the others removed their gas masks. "I suppose," Tom began, "that you plan to destroy

the *Ad Astra*."

The Black Cobra gave him a look of mock horror. "Why Swift! How could you think such a thing! Me, hurt such a magnificent ship? For shame!" He laughed. So did the Brungarians and Kranjovians. Tom gritted his teeth in anger. "Just get it over with, Cobra."

But the Cobra shook his head. "Ah, but I wasn't lying to you, Swift. I have no intentions of destroying the *Ad Astra*. I have a far better purpose in mind for her."

Tom shot him a puzzled look. "What?"

"Take a look outside," the Cobra said, motioning to Tom with his gun.

Tom looked out the windows of the *Ashtorath's Revenge*. He let out a gasp as he saw the Cobra's men carrying out parts of the paramagnetic initializer. And watched as other men struggled with what could only be *the Cobra's magnetic field disrupter!*

"Tom!" Bud said in a low voice. "He must be planning to... " Bud's voice trailed off, unable to complete the thought.

But the Black Cobra heard him perfectly. "Use your ship to help expand the sun's radius!" he said, completing Bud's sentence. "And why not? Our two ships working together should get the job done with considerable more efficiency. And less power. Plus the delicious poetic justice of using your ship to help expand the sun!"

"What do you plan to do with us after you accomplish all of this?" Tom asked. Inside, he was churning with anger at the Cobra's plans. But he knew it wouldn't help to give in to the anger. He needed to remain calm if he was to find a way to defeat him. And he wouldn't give the Cobra the satisfaction of seeing him angry.

The Cobra shrugged. "You will be killed, of course." They all gasped at the rather nonchalant way the Cobra proclaimed their fate. "Oh, you needn't be fearful. You have been a most worthy adversary, Swift, so I will make all of your deaths painless. One by one, you will be placed in the airlock, and the air drained out at a steady rate. I am told it is rather like going to sleep. Your bodies will be sent off into space, to float among the stars for all eternity. It is, on the whole, a much more peaceful death than most people get. And certainly more so than the people on Earth will soon undergo."

The Black Cobra had his men lead Tom and the others down several floors. Apparently, the *Ashtorath's Revenge* had been designed with prisoners in mind. They were placed in separate cells, each isolated from the others, so no talking could be permitted. The Cobra even removed Tom's colored pencils - and the tools hidden in them.

Undismayed, Tom began thumping on the side of the cell with his knuckle. He was rewarded at once with muffled thumps in return. It was Wendy. She, in turn, was close enough to contact Bud. He could thump to the Vashanti, but he had no idea if they knew Morse Code. Bud did so anyway. He heard one of them thump back, and let Wendy and Tom know. Still, apart from sending some words of comfort, there was little they could do.

After what seemed to be a long time, they heard the muffled sounds of the engines starting up. All of the humans lay on their bunks, bracing themselves. There was no way to strap themselves in. The ship lurched, and their weight seemed to double yet again. For long moments they lay there, hardly able to breathe. Then came a moment when the acceleration eased off. All of them, even the

Vashanti, had to reswallow their stomachs again. Fortunately, Tom and Bud were old hands at weightlessness, and soon adjusted. OwYawwNDisS and ArRRllasPeRR adapted to zero-g quickly as well. Wendy had to struggle on her own. Soon an artificial gravity field came on, and their stomachs settled down once again.

Time passed. No one brought them anything to eat or drink. Then they all felt a curious, slightly dizzy feeling. It went away quickly. Tom realized at once that the Cobra must have activated his warp field. He quickly tapped out to the others his hypothesis. The others agreed. So they were puzzled when, some time later, they felt the dizzy feeling once more.

Abruptly, the doors to their cells opened, and they were marched back up to the bridge.

"Ah, Swift, nice and rested I trust?" The Cobra said with a laugh.

"Are we back in our solar system?" Tom asked in return.

"Indeed. It is to be our first stop," the Cobra answered.

"Then why did you activate the warp engine twice? Unless..." Tom's voice trailed off as he realized the answer. "It didn't work the first time!"

The Black Cobra gave him a sour look. "Correct. I hadn't compensated for the mass of your ship, so the warp wasn't dilated enough to allow both ships to pass through. I had to wait for the engines to recharge before attempting it again. But, we're here now, and ready to begin expanding the sun. Incidentally, before we move on to the Vashanti system, I fully plan to install your transphotonic engine into my ship. It is obviously far more efficient than the warp engine. More reliable as well."

"Thanks," Tom said through gritted teeth.

"Now, let us move into position."

It didn't take long. The *Ashtorath's Revenge* rotated, and the magnetic field disrupter was placed on standby. The *Ad Astra*, with the Tall One in command, was over on the other side of the sun. Even with the superreplelatrons, it took several hours to move into position - both ships were out near the orbit of Saturn, so as to minimize the lethal energies released when the sun began to swell. Finally, several green lights lit up on the control panel, and a message was received from the Tall One stating that he was now in place.

The Black Cobra nodded. "Very well. Once again, let the firing commence!"

It was now or never, Tom thought. If the Black Cobra was to be stopped, they had to attack at once.

But even as Tom started to lash out at the nearest Kranjovian guard, the Black Cobra made a dismissive wave with his hand. "Forget it, Swift." Guns were immediately jammed against their foreheads. The Cobra finished adjusting his radio to the *Ad Astra's* main frequency, picked up the mike and told Tokatyan to start the disrupter at his end, then turned back to Tom and the others. "Do not insult my intelligence like this. I fully anticipated you attacking me as I activated the magnetic field disrupter. Just accept that I've won this time, and it will go a lot easier on all of - " he broke off with a gasp as a voice spoke over the radio. "Not this time, Cobra. Not now. Not ever!" It was a very familiar voice.

All of them, friend and foe alike, turned and stared out the window of the *Ashtorath's Revenge* in complete amazement. Outside, hardly ten yards distant, lay the *Cosmotron I*. And in command, fully visible through the other ship's window were - *Tom Swift Jr. and Bud Barclay!*

## CHAPTER TWENTY: THE FINAL SHOWDOWN

There was total silence aboard the *Ashtorath's Revenge* as both sides tried desperately to understand what they were seeing. The Black Cobra spoke before the others. For the first time, Tom heard fear in his voice. "N-no! It can't be. It-it must be some kind of nightmare. *You're dead!!*" He shouted the last sentence as if in hopes it would banish the image in front of him.

"Well, you know the old expression about 'reports of our deaths' and all that," the other Bud replied with a hard grin.

"Surrender, Cobra," the other Tom ordered. "Let our friends go. Believe me when I tell you, I didn't come here alone!"

All of them rushed to the windows. The Black Cobra barely heard as his radar man reported, "Sir! There are at least four other space craft coming towards us. From all sides!"

The younger Tom Swift bit back a grin. Looks like the contingency plan he'd outline to RoWNissnNeNN succeeded, though he'd originally meant for the Vashanti to contact his father in case something went wrong with his main plan. He had no idea how his older self became involved with it.

"Fool!" The Cobra replied. "I can see that!" Indeed, the Vashanti ships could clearly be made out. They were the saucers-shaped ships so familiar to Tom over the years. They moved in with their typical quickness.

As the ships closed in, the Cobra's look of fear melted away, to be replaced by one of cunning. He turned back to the radio. "Swift! You seem to have more lives than a cat! But it hardly matters." He turned to the others. "I happen to have some valuable hostages. Human and Vashanti. I believe that puts me in control of the situation!" He laughed. "Now, you will permit me to continue using the magnetic disrupter on the sun, or your friends here will suffer - one at a time!"

Through the glass, Tom had noticed his older self surreptitiously pushing buttons and making slight gestures at the older Bud. With a final slight nod to his friend, the older Tom looked the Black Cobra in the eye. "Very well," he said, "it's clear you have the upper hand. We will withdraw."

But the Black Cobra frowned. "What are you up to, Swift? You

never give in this easy!"

Before the older Tom could reply, his younger self cried out: "Tom! The Tall One! He's on the other side of the su- " Before Tom could complete his reply, he was slammed hard by the Cobra himself. Tom crumpled to the ground, unconscious.

At once, Bud, Wendy, and the two Vashanti tried to move. But their captors held the guns right next to their heads. "Kill the next one who tries anything stupid," the Black Cobra said in an annoyed voice. "Now, Swift, you will tell me what you are planning!"

The older Tom shrugged. "Simply, this!" and pressed a button.

There was a large flash of light inside the *Ashtorath's Revenge* bridge. The older Tom, the older Bud, Tom Swift Sr., Harlan Ames, Phil Radnor, Hank Sterling, a group of armed Vashanti, and Chow Winkler all appeared in an eyeblink.

Fists were thrown, repelatron guns fired. And Tom Swift Jr. fired a can of Durastress webbing at the Black Cobra, winding him up tighter than any fly in a spider's web. The fight was soon over. At once, the older Tom ran to the control panel, studied it, then pushed a few buttons. The Cobra's magnetic field disrupter was shut off.

As Wendy went over to hug her grandfather, Tom Sr. and the two Buds worked on reviving the younger Tom Jr. He soon opened his eyes, and stared into the blue eyes of his older self. "And they talk about me returning from the dead!" he said with a wry grin. "Sure love to hear how you pulled that one off."

His older self grinned. "It's a long story. And I admit, we almost didn't. We came about as close to death as I ever want to get!"

"Hey, we came pretty close that time in our cosmic kite, you know," his younger self said.

"Or that time we nearly drowned in the Caribbean, when we were chasing Sidney Dansitt and his pirates?" older Tom replied.

Both Toms laughed. His older self helped him back to his feet. "Say," the older Tom said, "what were you about to say before the Cobra knocked you out?"

A look of alarm crossed the younger Tom's face. "I was - " He was interrupted by the Black Cobra, who was quietly laughing to himself. "Your younger self," he said, getting his laughter under control, "was about to warn you that the Tokatyan is using a magnetic field disrupter mounted in your ship, on the far side of the sun! So it really doesn't matter what you do now. You're way too late. Even if you leave this instant, it will take you hours to get across to the far side, let alone locate and disable the disrupter. Long before then, the chain reaction will have started, the sun's photosphere will expand by tens of thousands of miles, the Van Allen belts will expand, and the ionosphere along with it, resulting in intense heating on Earth. The Earth is doomed, Swift, and there's absolutely nothing you can do about it!" The Black Cobra collapsed into manic laughter.

With a look of pure horror, both Toms raced back to the control panel. They worked as one, punching buttons, pulling up sensor readings to the computer screens. They read the results. Then, puzzled, they read them again. Mr. Swift joined them. All three read the results. Puzzled looks were exchanged once more.

"There's just one problem with your gloomy picture, Cobra," the younger Tom said, grinning.

The Black Cobra gave him a wary look. "Eh? What's that?"  
"It's not happening. The sun's perfectly normal!"

On the far side of the sun, the Tall One maneuvered the *Ad Astra* until it was about a distance somewhere between the orbits of Jupiter and Saturn. Not that he was anywhere near the planets, or even in the same plane. The *Ad Astra* was about forty degrees above the ecliptic plane. The Cobra had picked that spot because it was not easily found. Further, he'd be able to receive signals from the Cobra's ship. If they'd really been on opposite sides of the sun, it would have blocked any possible reception. As it was, it took about a few hours before he received the message from the *Ashtorath's Revenge* telling him to switch on the magnetic field disrupter.

Tokatyan punched the button. "Now, comrades," he said, turning back to his crew, a mixture of Brungarians and Kranjovians. "It is time for a new era to begin. An era that will see the end of the Swifts, the United States of America, and the hope for freedom as the glorious republics of Brungaria and Kranjovia rules over what is left of the Earth after the polar ice caps melt!"

"But will not the Black Cobra rule over us?" asked Bronich.

"Hah!" the Tall One snorted. "He will be disposed of when the time comes. We are the natural rulers of this planet, not the likes of *him!*"

"YOW!" came a cry that froze them all. It was followed by a low growling noise.

They all whirled around to stare at the control panel. Sitting on top of it, one slender black paw on the button that switched off the magnetic field disrupter, was Tao Zia. His blue eyes blazed with anger as he stared at the Tall One. Then, with deliberation, the cat pressed down on the button. A red light came on, indicating that the disrupter was off.

"No!" the Tall One cried out. "Wretched beast! *Get off of there!!*" Tokatyan's face still had half-healed scratches from his earlier encounter with the cat. He flung himself at Tao Zia.

With contemptuous ease, the cat leaped into the air, came straight down on the Tall One's scalp and left more scratches as he leaped off once more. He landed on one of the Kranjovians, reached down and scratched the nose and cheeks of the man. The man let out a scream of anger and pain, then raised his gun and began pounding at the cat. But Tao Zia had already leaped off, so the man just pounded his own head.

One by one, the cat hit all of the crew aboard the *Ad Astra*. They ran around, banging into one another, trying desperately to catch a blur of coal black and platinum white. Finally the cat came to a rest, panting, near the control panel once more.

His face covered with scratches, wincing in renewed pain, the Tall One slowly pulled out his weapon and aimed it at the cat.

"Now I have you," he hissed, "you beast from the lowermost depths of - " and with that, he began firing. But Tao Zia was already on the move.

"Sir! No! Don't!" cried his crew. It was too late. The Brungarian's shot hit the *Ad Astra's* front windows.

The windows weren't ordinary glass. They were made from transparent Durastress. But the Tall One's gun didn't fire

projectiles. It was a heat weapon, not unlike Tom's own energy gun. And, after all, Durastress was a type of plastic.

The windows melted. Huge gaping holes were formed. Explosive decompression sucked out every living soul. Save for one.

As the Black Cobra predicted, even with the superrepelatrions on full, it took hours to get around to the other side of the sun, then track down the *Ad Astra*. The Vashanti ships helped as well. As they came within range of the *Ad Astra*, they managed to encounter a few of the drifting bodies. They reported to Tom of the bodies' condition.

"You might as well leave them out here," older Tom said, and the others concurred. "They're hardly in any shape to be returned to Earth."

"What happened to them, Tom?" Both Buds wondered.

"We'll soon find out," Both Toms answered.

Everyone on board the *Cosmotron I* was shocked to see the large holes in the *Ad Astra*'s front windows. But now they understood what happened to the bodies.

Wendy let out a scream. "Tao Zia! He was on board, in the this flight compartment. You don't suppose he's - he's - ?" She couldn't complete the sentence. Tears were already filling her eyes. The Vashanti were equally appalled.

Tom brought the *Cosmotron I* next to the *Ad Astra*, and adjusted the velocity. The *Ad Astra* wasn't stationary, but in orbit around the sun. Next, while his older self stayed on board the *Cosmotron I*, the rest of them donned space suits. They used the *Cosmotron I*'s Transmittaton tank to transport to the *Ad Astra*'s middle section. It was still pressurized. The team didn't waste any time making their way to the flight deck. Tom had depressurized the compartment they were in, in order to get inside the flight deck. Once inside, they found Tao Zia's portable carrier was open.

"Tom, how did he get it open?" the younger Bud wondered. "I thought you designed that to be unlocked only from the outside!"

"Beats me, Bud," Tom replied. "I've heard about how intelligent Siamese cats are, but nothing like this."

"I told you two that he was of the noble races!" OwYawwNDisS told them.

"I guess he's gone now," Tom said with sadness. "Poor Sandy! I wonder how I'm going to break it to her. She's going to be so heartbroken."

"Do you suppose he had something to do with the windows being melted like that?" Wendy asked.

"Seems likely, Wendy," Tom replied. "Somehow he managed to get out and annoy them. One of them must have opened fire on him and hit the windows instead." He sighed. "Let's get these windows fixed, Bud."

"How, Skipper?" Bud asked.

"I have some extra sheets of transparent Durastress, plus some liquid Durastress we can use to glue the sheets over the holes. Then we can repressurize the cabin."

They went to work at once, and before long the holes were shut. Tom was pleased to find that the controls still worked. The cabin soon filled with air and heat as well. As they began to put the tools back up, Wendy noticed something in one of the space suit lockers: one



of the legs of a space suit looked lumpy.

"Hey Tom, what've you got in here, anyway?" she asked. "Did you stuff a pillow in this leg?" she asked with a grin.

"Hmmm?" Tom looked at the suit, puzzled. "No, I sure didn't, Wendy. What *is* that, anyway?" He walked over to it and touched it. All were startled to hear a faint "Mewrrr!"

"Tao Zia!" they both cried.

Carefully, Tom removed the suit from the locker and laid it on the floor. He raced to the intercom. "Bud! OwYawwNDisS! ArRRllasPeRR! Get up here at once!"

With tender care, Tom removed the cat from the folds of the space suit. Tao Zia opened a gummed-up eye, then closed it.

"He's still alive!" Bud exclaimed. "But how - ?"

Tom shook his head. "Somehow, he managed to make it to this suit before all of the air escaped. I'm just guessing, but I think he let out all of the air in his lungs - which probably wasn't much to begin with. He was curled up with his eyes shut and his paws over them, so they were protected."

"But Tom," the older Bud said, "we took *hours* getting here. He couldn't possibly have survived the cold and lack of air for that long!"

Tom shook his head. "I don't know. He was inside the suit, which would have kept him warm enough, I guess. As for the air ... possibly a trifle remained inside the suit, the way water can get trapped in pipes. Was it enough to keep him alive? All I can do is point at the results. All the same, we need to get him to a vet to be checked over."

"Let us take him to our world," OwYawwNDisS said. "We have medical facilities more advanced than yours. We can scan him most efficiently!"

Tom was agreeable, and they soon activated the transphotonic drive.

Back at SSisANicK, Tao Zia was carefully taken to the best medical facilities on the planet. By now, however, the cat had revived to a considerable degree, and complained about the journey all the way down. He didn't understand all of the fuss that was made over him. The Vashanti found only small traces of frostbite here and there, and his lungs and other internal organs seemed to be in great shape. The cat's survival in the spacesuit for over five hours was the talk of the planet for days.

During their stay, the older Tom and Bud told their younger counterparts about their using the Transmittaton to teleport to the modified life cap, then the damage the small ship had sustained from the debris, and the risky plan Tom had used to get them out to the general location of the planetoid space station.

"It was really Bud who saved us," older Tom pointed out. "He was just going to put himself back to sleep, when he looked straight up and saw the planetoid overhead!"

"Barely saw it, you mean!" older Bud said with a wry grin. "If it hadn't eclipsed a few stars just then... And I was still wasn't really all that certain just what I was seeing."

"So he called out to me to look as well. Of course, one planetoid pretty much looks like another. But then we had another stroke of luck..."

Older Bud picked up the conversation: "Yeah, it was pure dumb luck that, as we passed out from 'underneath' it, we caught a glimpse of the landing lights surrounding the entrance to the planetoid. So we knew it was the right place."

"I knew we were still in danger, unless we happened to catch their attention. Keep in mind that we had no radio equipment to do so with. Instead, I used the one thing we did have: the fuel. I set it off in a series of short, bright bursts."

Younger Tom nodded, catching on: "I see! In Morse Code, no doubt. Like the time we first tried the transAtlantic crossing."

Older Tom nodded right back. "Exactly! And it did the trick. The men on the planetoid investigated at once. They soon had us back aboard."

Older Bud took over: "We decided to keep the whole quiet about our being alive. Tom already guessed that Dad would have brought you two back to life, so to speak."

Older Tom nodded. "That, after all, was the other contingency plan I'd discussed with him before going after the Black Cobra. Anyway, we wanted to keep our being alive quiet for a while, until we knew what the status of yourselves currently was. We used the Private Ear to send a message to Dad. He immediately launched the *Cosmotron I* and raced up to the planetoid to bring us back. After we brought Dad up to date, he did likewise. Once we got back to Earth, we went to work modifying the *Cosmotron I*, knowing full well that the Black Cobra would try another attack on the sun if your plan fell through. We even had a reasonable guess as to where it would take place. We could easily have been wrong, but I didn't think so. Then RoWNissnNeNN contacted us and told us about your contingency plan. The Vashanti soon showed up here in our solar system. They had some sort of sensors that could tell where space was being warped. So when the Cobra's ship appeared, we knew right away that your original plan had fallen through and it was time to switch to Plan B. One thing we were really wondering about, apart from you guys and Wendy: where was Tao Zia? He'd been missing for days. Tao Zia had never run away before. Poor Sandy had been extremely worried."

"And he turns out to be the hero of the whole affair!" younger Bud put in. "If not for him, the Black Cobra's plans to distort the sun would have succeeded, and much of the Earth destroyed by flooding. I'm so glad he's going to be okay. They ought to have a parade for him when he gets back!"

"He'd probably agree!" older Bud said. The others laughed and nodded.

Back on Earth, the Black Cobra and his remaining Brungarian henchmen were being transported to prison until their trial came up.

"They'll be tried before the World Court," John Thurston, their CIA friend informed them. They were talking in the Swift's main office. "The Cobra's frantically trying to get ahold of a good lawyer."

"I can't imagine anyone wanting to defend him," Bud said with a grin, "now that we've recaptured his computer."

"And since we did it, not a police force of any kind, it's admissible as evidence," young Tom stated.

"Correct," Thurston concurred. "You guys, both older and younger

versions, did a great job! You not only saved both the sun and the Earth, but finally made contact with your mysterious space friends."

"And found a potential enemy in the Tekili-li," Mr. Swift added.

"Yes. Keep in mind, they still have the solar disrupter math and schematics," OwYawwNDisS threw in. Both Vashanti were slightly uncomfortable in Earth's great gravity, but compared to the Tekili-li's home world, it was endurable. Both Vashanti were wearing metal suits not unlike the kind Tom used for his Zero-G Chamber. The metal helped to insulate the Vashanti from the Earth's stronger magnetic field. Tom hoped to be able to redesign the suits to make them less cumbersome. "However," he continued, "Also keep in mind that the Tekili-li mind works on a different time scale than ours. They may plan to conquer or destroy both our worlds - but it might not happen for centuries, or even eons. Or they may have something much different planned. We do not know."

"But we'll keep watch on them all the same," Tom Sr. said. "We won't be taken by surprise." Then he turned to the older Tom and Bud with a smile. "Now, as I seemed to recall, you two have weddings to get ready for."

Both the older Tom and Bud broke out into sheepish grins. "Right you are, Dad," Tom said. "Sandy and Phyl will never forgive us for showing up late *this* time!"

And so, three months later, the older Tom and Bud were married. They planned to stay on Earth and let their younger counterparts live on Sissanick for a while, as trade negotiations were being hammered out. And with them were two other younger counterparts: Sandy and Phyll! Mr. Swift thought it only fair to bring them in as well, "Just so you'll have someone to keep you on your toes!"

Both Toms planned to work on the younger Tom's idea of attaching the Transmittaton to the transphotonic engine and use it to open gateways between Earth and Vashanti, plus setting them up on other worlds for colonization and exploration. And younger Tom was already helping his older self with the design and construction of the Outpost In Space II.

With the threat of the Black Cobra behind them, the Earth now had much to look forward too.

## EPILOGUE

The Black Cobra stood defiantly in the courthouse. He had just been found guilty of crimes against humanity, and had been sentenced by the UN tribunal to life imprisonment without parole. The judge had asked him if he had anything further to say.

"So, you seek to pass judgement on me, do you?" he asked with a low growl. "Just be aware that I am not so easily confined! Behold my greatness and be dismayed!"

The Cobra's hands had been manacled behind his back, along with his legs. Even so, he was able push his left thumbnail with his right hand.

Almost at once, there was an explosion from the roof overhead. The Cobra ducked beneath the defense table as debris rained down,

followed by men on ropes. They quickly grabbed ahold of the Cobra and hoisted him high into the air to the helicopter that had been hovering overhead. It was disguised as a TV news copter.

By the time the police and military copters gave chase, the phony news copter had been abandoned several miles away. It was obvious that the Cobra had been taken by a car or van.

In spite of the cordon of US Coast Guard and border patrols, the Cobra was smuggled out of the country and back to Kranjovia. From there, he was blasted off back into space. The Brungarians matched orbit with the Outpost In Space. They quickly overthrew the few technicians and guards on board the *Ashtorath's Revenge*. The technicians had been studying the warp engine, the guards on alert in case the Cobra tried to reclaim his ship. But they were too few. All of them were jettisoned into space.

When older Tom caught word of the Cobra's escape, he had a pretty good hunch he knew where the Cobra was going. He had the *Cosmotron I*, which was now outfitted with a transphotonic drive of its own, prepped and ready. He ordered guards to be ready in case the Cobra came for his ship. But the Cobra had struck during the changing of the guards, and met with little resistance.

Tom and Bud, Phyl, Sandy, as well as their younger counterparts and Wendy, took off in pursuit. Tom had no intentions of letting the Cobra escape this time. Nor was it much of a chase: as fast as the *Ashtorath's Revenge* was, the *Cosmotron I*, with its superrepelatrions and G-Force Inverter working together, was far faster. As soon as they came in range, Tom radioed the Cobra's ship, ordering him to surrender. The Black Cobra refused to even answer. Instead, he had his men prepare the warp engine.

"But sir!" one of the Brungarians objected. "We're still too close to the Earth. Its gravity field could profoundly effect our place of exit!"

The Black Cobra was tempted to shoot the man, but he needed his officers too badly. "I'm aware of the risks," he growled. "But we are out of time. There's no Tekili-li ships to come to our rescue this time. And our own ship barely survived its encounters with Swift's ship before. We need to disappear - now!"

So the warp engine was engaged.

"Tom," Bud said. "They're powering up their warp engine!"

"The Black Cobra's not escaping this time, Bud! Use the X-razor on them!"

Bud activated the high energy weapon and began firing on the *Ashtorath's Revenge*. He scored hits, but the partially activated warp field began causing the beam to miss. Finally, he hit the engine directly.

However, instead of shutting down, the warp engine caused space to fold around the ship - but in a strange way. Space flickered with odd, red-colored light, then a startling burst of bluish-purple. When that passed, the *Ashtorath's Revenge* was gone.

Tom felt crushed. He had failed. But then he thought about the strange warp of space around the craft, which certainly didn't match what his younger self had described when they watched the Cobra's ship enter the warp.

"Tom, did something happen to the ship?" Phyllis asked.

Tom turned to his wife and shook his head. "I don't know, honey."

I'm glad I recorded it all on 3-D tape: we can watch it later and speculate. I'll see what our younger selves has to say about it: they're the one who watched it disappear before. But consider how close they were to the Earth when they activated the field. And what damage the X-Razor might have done to it. Unless he comes back here somehow, I doubt if we'll ever know the Black Cobra's eventual fate."

Bud shook his head. "I don't know, Tom. Like a bad penny, people like that have a way of turning back up again."

Tom nodded. "Well, until he does, I'm not going to worry about him too much. He's already in an exile far worse than anything he might have faced on Earth!"

Had he heard Tom Swift, the Black Cobra may well have agreed. The warp transition felt very odd. And when they emerged, the stars were far different than anything he'd observed, or found on the computer, before.

There was even worse news: the last X-Razor blast had damaged the warp engine beyond repair - or, at least, beyond their ability to repair it where they were. They had to find their way back to the Tekili-li's home world where such repairs could be made. And if that wasn't bad enough, several of the computers had been damaged by earlier hits. His men weren't certain if the memory banks that held the files were working or not.

"If they are damaged, there's no way for us to find out where we are, or how to get back to the star systems we know!"

"Then I suggest you start finding out if the files were damaged," The Black Cobra replied coldly. "And see what we can do to bypass the damage to the warp engine. We *must* find a way to get it running again! And we will, or so help me, bodies will find themselves on the other side of the air lock!"

But in his heart, the Black Cobra knew it might be a waste of effort. The damage had probably been too severe. Still, he did have one small advantage: the working model of Swift's transphotonic engine. Somehow, amidst all the excitement, Swift never did get around to recovering it. The Cobra still had it locked away in a hidden safe in his cabin. Would they be able to utilize it if they were unable to repair the warp engine? Only time would tell. Time would tell...

JUST THE BEGINNING!