TOM SWIFT

And The

Electricity Vampires

BY

Victor Appleton II

Made in The United States of America

THE NEW TOM SWIFT INVENTION SERIES

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Tom Swift has built a revolutionary sailing vessel that uses sun power and a new, solar power system to gently wave the sail providing its own wind. No system inside the boat uses fossil fuel other than the auxiliary drive; it generates enough power during the day to run all night long. Until something like a bolt of lightning strikes the mast, explodes the solar array and every battery is totally drained and ruined.

Once the boat is rescued he is determined to figure out just what has happened and is intent on his work when another occurrence, this time at a small power substation in Connecticut, where another lightning attack happens and it seems to rip away every electron from the station tripping every safety circuit and plunging a nearby community into chaos.

There is no way in Tom's mind this could be anything other than an outright attack!

This leaves the inventor with a two-edged sword to come up against: find a way to protect electricity from being removed in one violent process, and discover a way to track down the culprits and put and end to their scheme.

One problem is, nobody can figure out why they are taking electricity and what they plan to do with it!

This book is dedicated to Nicola Tesla who argued with Thomas Edison that Alternating Current and not Direct Current was the way to go so far as electricity was concerned. Edison gave in to other pressures. Look what now powers everything we carry around or play with or drive. The book is anti-dedicated to the man who then killed an elephant trying to prove how horrible Alternating Current could be. Way to go, Edison. Jerk!

This wasn't the sort of tame electricity school kids experienced at science museums with small Tesla coils; it was most deadly!

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AUTHOR'S NOTE

In many areas of our lives there are milestones. You turn 13 and are suddenly a "teen." Turn 21 and you are at the milestone where you can drink yourself stupid—many do. Turn 65 and you are put out to pasture. Turn 80 and all young girls consider you to be "absolutely no danger," and think you are cute if you try to flirt!

In the book world just getting out your second novel is a milestone. An even dozen? Big milestones. But, twenty? HUGE!

And, that is where we all are with this book. The twentieth in this new, fan-authored series. It took me over seven years to get here, but it has been a fun adventure for your faithful author. One that has kept me occupied and out of my wife's hair by day and off the streets and out of the bars by night.

With series such as this, the total number that will be produced is usually not known when you start out. You do a few and see how many keep coming until the publisher gets tired of you, or the public slows down their purchases.

But, I have always had the number "20" in my head. I have reached that point. Over the years I have had anywhere from "loads of title ideas" to "I'm now officially in trouble over the next title." Will this be it? Will there be more Tom Swift stories from my fingers? I may take a year off, but I certainly hope more will come!

The number 24 has a nice ring to it. Then again, so does 30!

Copies of all of this author's works in paperbound and hardbound editions may be found at:

http://www.lulu.com/spotlight/tedwardfoxatyahoodotcom

My Tom Swift novels and collections are also available on Amazon in paperbound and Kindle editions. Barnes and Noble sells Nook ebook editions of these same works.

Tom Swift and the Electricity Vampires

FOREWORD

It happened! Twenty new Tom Swift adventures in a little over seven years. By one author. It took everything the *original* team of Tom Jr. authors had to get to that number in under 8 years, and they had enormous amounts of help!

Writing these original adventures of the boy and man I know of as Tom is a labor of love, and nothing I did with plans to reap monetary gain. Such is not the case with the self-publishing world. Oh, authors make a few dollars here and there, and each time a satisfied reader introduces some friend to these books they might gain a few sales, but such people actually do this for the love of writing and to try to keep the world of Tom Swift in front of people's eyes.

Far too often truly great series of books for the younger reader come and go. Where are the new Rick Brants, the new Ken Holts or Dig Allens or Brains Bentons? Well, there are some new Brains Bentons courtesy of a few fan authors. More importantly *where are the new Tom Swifts*?

That is an easy one to answer. Not in the hands of a major publisher but in the careful and gentle hands of (not a pun) a mere *handful* of writers who also have a love and appreciation for the young inventor, writing stories to honor him.

Certainly, this series of twenty has seen Tom become a more mature man, someone who can take advantage of today's science and technology, another series concentrates on his sister's exploits, and one author even made him a woman in a set of adventures. With more to come!

No matter what form Tom comes in, we have made him a shining example of what you can do when you write for fun and love and not for the almighty dollar.

Isn't it about time the old-time publishers just let go and say, "Take these characters and do good things with them!?"

Victor Appleton II

CHAPTER 1 /
DEAD IN THE WATER

TOM SWIFT, twenty-six year old inventor, sat back in the seat enjoying the sea breeze as it brushed his face. His hand rested on the joystick of the one hundred and sixty foot long sailing yacht he currently was piloting across the waters of Nantucket Sound just a few miles south of Hyannis on Cape Cod.

The boat, soon to be christened *The Arlene Deere*, was the first of a new line of vessels the Swifts were building on Fearing Island off the coast of Georgia. Now that the world's financial situation seemed to be back to a more stable state, and people with money were spending their money on more than basic food and shelter, such luxuries were coming back into style.

* * * * *

With the recent decision to curtail building additional Jetmarine submarines, the production line for them was about to go dark when a wealthy industrialist and one-time competitor to Swift Enterprises had contacted them three months earlier with a request.

"Okay, Damon," Joshua Westerly began the conversation with Tom's father, "you and I buried the hatchet, so to speak, a year or more ago when I sold Continental Electronics Manufacturing. Made an absolute bundle out of that sale and then watched, as I assume you and everyone else did, as the new owners made a complete mess of everything. But, that isn't why I called you."

"What can I do for you, Josh?" Mr. Swift asked.

Laughter came from his receiver. "Straight to the point, huh? Okay. Here it is. I have a bucket load of money and a desire to sail all around the world. Every shipbuilder I've contacted either wants three to four years to make what I want or outright refuses to work from my design because they have their own model for a private yacht they want to push. Here's what I have in mind…" and he spent the next hour describing a sizable yacht made not from steel or even aluminum, but a sandwich of materials including carbon fibers and a type of acrylic his former company had developed and for which he owned the patent.

When the design plans—extremely complete with every possible detail included—arrived the next morning, Damon and Tom had gone into conference to talk about whether they wanted to start taking on private one-time contracts.

Tom was philosophical about it. “First, it *is* money coming in, and good money at that. Second, and probably more important for us is it keeps about fifty people busy for a couple months. Oh, sure we might have found other things for them to do, but these are skilled craftspeople who have been building submarines for seven years for us. They like what they do and we like them.”

“And, Joshua’s desire to use his own materials?”

Tom took a deep breath. “Well, any contract would have to stipulate that we get to destruct test it and share the results with him. If it doesn’t pass our tests we offer one of our alternatives, If it does, then all he has to do is make certain he actually has the rights to use his polymer.”

“That will see us at the desk of our favorite company lawyer, Jackson Rimmer,” Damon said with a smile.

Tom spent an hour looking through the specifications, sizes, and equipment proposed for the yacht. It would be powered by wind when available, and solar energy using a foredeck covered with solar cells all feeding into a pair of storage battery packs. After looking at the calculations, Tom made a note in a margin to the effect that the proposed 1.27 kilowatt hour array was not going to ever fully charge the pair of 6 KwH batteries, even on the longest day of the year or on the equator. It would fall far short, in fact.

The young inventor grinned as a thought occurred to him and he made a second note. He then excused himself and walked from the office.

Damon, seeing his son had left the papers on his desk, walked over casually and took a look.

He saw Tom’s second note and he, too, grinned.

Tom left the Administration building by the side doors and climbed into one of the small, electric runabouts kept at Swift Enterprises for the use of employees who needed to get around the four-mile-square facility a little quicker than walking would allow.

Before driving away he touched a button on the dash and spoke his name. There was a soft *ping*, and a pleasant computer-generated female voice announced, “Car seventeen checked out by Tom Swift.”

Even if he parked the car, anyone else trying to check it out would be informed he had it other than in case of a declared emergency.

He swung the two-seater around and headed toward the cluster of large hangars that covered much of the northeast corner of the company grounds. His destination was the Uniforms department

that occupied half of one of the smaller hangars these days. That department was managed by a formidable woman, Marjorie Morning-Eagle, who ran her team with a combination iron fist and ready hug.

When Tom entered, she looked at him and held up a hand. He stopped and waited. As he did, he was able to watch ten of the seamstresses carefully picking up a delicate piece of gossamer fabric that he knew would become part of a solar sail for his father's upcoming project to sail a three hundred pound satellite between Earth and the orbital path of a small planet just beyond Neptune.

When the fabric had been folded twice, Marjorie announced it was break time and came over to see Tom.

"And, what can I do for the cutest boss an old woman might ever have?" she asked with a wink.

"I've got a question for you, Major," he said using her nickname. "What can you tell me about sewing a good, heavy-duty sail running about forty feet across the bottom and perhaps as much as one hundred-twenty feet tall. And, I'm not talking about nylon or sailcloth. I'm thinking about a materials that will act like a solar panel and generate a lot of electricity."

"That will require me sitting this broad backside of mine in a comfortable chair. I suggest my office. Come."

She turned and walked to the slightly raised and fully enclosed office over against one wall. Inside, she offered Tom a cold water which he took. She sat down and steepled her fingers under her nose, her eyes narrowed. He gave her plenty of time to contemplate things knowing that to try to hurry the Major was to shoot himself in the foot.

Finally, she looked over at him and smiled.

"There is a wonderful fabric used in space on something called a solartron from some New England company. Familiar with it?" she asked with a hint of mirth.

Of course Tom was. He'd invented it. It was his space solartron that used it. *Why*, he now thought, *didn't I think about that?*

"Yes, Major. And, you're already familiar with it. I should have come up with that myself."

"Well, get it out of your mind! There is something a lot better. It's just not from you or your father."

He looked at her, stunned and she smiled back at him. Finally he had to ask, "Then, who makes it?"

"A nearly unknown company in England called Rawlins and

Swift." She looked at him meaningfully. "Ever heard of them?"

Tom had, but knew very little other than the coincidental name.

"Dad and I have both run into listings for their company but I've never looked into anything other than the name coincidence. They are small so we haven't suggested changing their company name yet. They make crystal displays and micro-cabling I think. The only thing I know is that dad tells me there is no family relation over there."

"Well, no matter. They have some incredible patented cloth that is both strong and nearly eighty-percent solar conversion efficient from what I've read."

Tom's mouth dropped open. Even the best solar materials from Enterprises' own Solar department were just barely beyond forty-eight percent efficient at turning sunshine into power.

"Close the trap, Tom. It gets better. That cloth interconnects to itself so all you do is sew it together and you have a continuous solar panel. Any shape or size is their claim. The only addition is a converter box they custom build to meet the output of what you are making."

The inventor was at a loss for what to say. Finally, he managed to get out, "Just sew it together?"

Marjorie nodded. "Yeah. They do say you should use a polymer sealant for high-stress applications and also sew it to a stronger under-fabric in those cases. I'm going out on a limb here, but I'd say a sail for a boat would need that stronger under-fabric. Heavy rip-stop nylon would be a favorite for strength and lightness."

"Can you look into what it would take to order that material? I'd like to keep our company name out of things for the time being so can you use our address down in Key West? I'll let them know they might need to forward a call or letter or two."

When he left, Tom was almost dizzy from anticipation of possibilities such a solar fabric might mean. If Swift Enterprises could license it for their own internal use, his space solartron panels, now sized in the tens of thousands of square yards, could be downsized to about a third, making them easier to place out and bring back in.

Or, for applications such as his smaller spaceships, like his flying saucer ones, a tight roll of such a fabric could be a great emergency power source.

If I put a small channel in the perimeter that could be inflated, all you'd need do is have someone take it out, unroll it and then turn a valve to make it stretch to full size and be rigid.

He was still contemplating possible uses when he pulled the runabout back into the parking spot by the Administration building and checked it back into the pool.

Up in the office his father was just finishing a call from their favorite senator, Peter Quintana of New Mexico. A long-time friend, he had been instrumental more than a decade earlier in obtaining land and permission to build the Swift's nuclear power plant and research center, the Citadel, and had brokered the endless lease for Fearing Island off the coast of Georgia. The man was a legend and the second longest-serving man in Washington, D.C., and he was one of the few people who regularly stood up to the Vice President and his ignorance, bluster and threats.

"Fine, Pete. I'll go ahead and write that change up. Hopefully, once your fellow senator sees the impact in time, funding and added launch needs, she will back down. Personally I'm with you. I thought the whole idea of self-shot images went out a decade ago. To think she wants to get as series of Earth shots on the trip out and believes it will make a good coffee table book that will pay any of the added expense. Madness and I wish you well in convincing her of the folly. Bye."

He turned his head and saw Tom. A smile broke out on the older man's face making him look years younger. These days it could no longer be said that Damon Swift could have been the older brother of Tom, but he still looked years younger than his actual age.

One year earlier Damon Swift had been dying, or nearly so, from a malignant brain tumor situated in a place inaccessible to surgeons. It was only through the efforts of his son and an incredible army of nanobots—piloted by an even more impressive team of video game players who believed they were beta testing a new whole-body super surgery game—that the tumor had been completely removed and he had regained his former robust health.

Every time Tom saw his father he looked for signs of anything being "off," but there were only good signs. Even Doc Simpson, Enterprises' chief physician, claimed that there was no residual issue from either the tumor or the surgery scars.

* * * * *

Tom looked up, now slightly worried, at the gathering clouds. It wasn't that the yacht couldn't handle a bit of rough weather, it was so unlikely at this time of year and in this area it concerned him.

A bolt of electricity lanced down and struck the waves just a hundred feet off his port bow.

Now, Tom was really worried. *That wasn't lightning!* he told himself. *That was a nearly straight bolt and came from a cloud*

that wants to remain right above this boat.

He swung the boat around and kicked in the auxiliary electric motor and propeller. The next bolt came closer and the third one struck the top of the mast.

Fascinated at what happened next, Tom sat watching as the bolt end traveled down the mast until it reached the deck and then moved, almost methodically as if feeling its way, along the deck until it reached the solar collector array.

Suddenly, a sucking, tearing sound came from the array and the bolt grew in size until it was five times wider. Then, in an instant, the bolt withdrew as if being pulled back and the boat went dead in the water.

All power had been lost!

Tom looked with dismay at the solar panels. Every one of them had been shattered and the array was now a twisted wreck. A scorch mark wandered from the base of the mast to the dead panels, but that wasn't what suddenly frightened him.

The batteries!

He jumped up and raced to the ladder going down into the cabins below.

The acrid smell of burning electrical equipment assailed his nose. But, there was another smell. Burning Swift solar batteries. He knew that smell. The liquid inside the batteries wasn't toxic, but inhaling the hot vapors could make a person violently sick.

Tom backed out and turned his head away from the opening trying to get in several large lungs full of fresh air. He dropped down into the passageway and grabbed a respirator mask from an emergency box on the wall.

With that in place he could wander through the boat. Knowing he would find some fire in a few possible locations, he grabbed a handful of extinguisher pods. Like his larger throwable fire suppressors, these had a small tab and string that could be pulled, arming the pod like a hand grenade and giving the user five-seconds of time to throw or place them.

As he progressed down the hall the smoke became thicker and more difficult to see through. In under twenty-seconds he reached the secondary ladder down to the power room. The door was warm to the touch but not hot, and he saw no hint of flames through the small round window in it.

He cautiously opened the door. A wave of warm air hit him but it wasn't too bad. Stepping inside he closed the door behind himself and went quickly down the fifteen steps to the floor below.

He knew the batteries were divided evenly on the port and starboard sides of the boat and the stairs ran exactly down the middle, so he mentally flipped a coin and came up with, *starboard.*

To his immediate right he knew would be an emergency light and the switch to turn on the ventilation, but when he found them, the light was not on and the switch refused to energize the fans. With a mental shrug, he made his way to the row of storage batteries. They were mounted inside a sleek Durastress shell on the wall. Smoke was coming out of a pressure relief port that had popped open.

By design, that same port was the perfect size to shove one of his extinguisher pods into. He pulled the arming string and put it inside the case. In clanked as it fell partway down, but a *whooshing* sound came followed by a small geyser of the fire fighting foam as it filled the case and came back out the relief hole.

That one done he went to the other side of the boat and repeated the process.

At the very back of the room, and the back of the boat, was a manual vent and hand-cranked fan. He opened the vent and spent the next three minutes drawing the majority of the smoke from the room and to the outside.

After sealing the vent he made his way back up and out of the power room. In the lower passage there was still a lot of smoke, but he went into a few of the cabins and opened their sliding glass doors. Almost immediately air began to come into the boat, and by the time he got back to the topside deck he could see that the smoke was being driven up and out.

Tom sat down, opening up a refrigerated cooler on the deck and pulling out a cold bottle of water. He drank it down and retrieved another. After a few minutes he pushed himself back up and headed for the control room.

There he found that no electrical power remained in the boat's systems. Main battery power—dead. Auxiliary power supply—dead. Batteries to start the small turbine engine to power the hydrojets—dead.

Out of curiosity, he looked at his watch. It was still running. He reached up and tapped the TeleVoc communications pin he wore under his collar. It gave a reassuring *ping* but announced, "*Out of communication range.*"

There was just one thing to do. Well, several things to do, but one objective. He moved forward and manually released the anchor. It played out over one hundred feet before going slack. He used a hand crank to tighten it and locked it down. At least the boat

would remain in one place.

Next he locked the two doors down into the boat. He had the key on a chain around his neck. A thought came to him and he opened the main door, found some paper and a marker pen, and wrote a note:

> This boat is not abandoned. An emergency has forced crew to go ashore but we will return within twenty-four hours. This vessel is declared to NOT be up for maritime salvage.

...and he signed it giving the date and time.

The yacht carried four lifeboat pods and one inflatable launch sitting at the back of the upper deck. He unlashed it and lowered it to the water. Climbing down the ladder he got into the small boat, primed and started the five horsepower engine with its pull-starter, and cast off.

He was only eighteen miles from shore and he headed straight for Lewis Bay and the town of Hyannis. As he got to within ten miles his TeleVoc announced signal acquisition so he tapped it and asked for his father.

“Yes, son. What can I do for our day sailor?” Tom explained what had happened.

Dismayed, Damon promised to have a helicopter with one fresh battery pack and some technicians to his location within two hours.

“I’m going to get something from the truck and then I’ll go back out. Have the helo contact me on the pin when they are ten minutes out. Oh, and the boat’s at anchor at GPS location 41, 30, 53.09 by 70, 20, 38.71.”

After making it to the marina Tom retrieved a portable TeleVoc repeater, an empty one-gallon bottle, a length of nylon line and a weight. The repeater went into the empty bottle and was sealed inside. The line was tied through the built-in handle and the weight added to the end of the line.

When Tom got back to the point he acquired a TeleVoc signal, he dropped the repeater into the water. The signal remained connected even when he got back to the boat.

In less than two hours a Whirling Duck helicopter came into view and Tom took a deep breath and relaxed.

An hour later, with the old and damaged battery packs removed and the one fresh one installed, Tom was able to get the turbine started and the hydrojets going. The anchor was pulled up and he

along with two techs headed for port at nearly twenty knots. With the main sail torn by the bolt, it was the only way to move the large sailing vessel.

On the way in he stopped long enough to retrieve the TeleVoc repeater buoy he'd fashioned. In port he expertly pulled up to the dock near where a portable crane had been hired to put the boat into and get it from the water waited.

The Duck sat nearby.

"Skipper? You go ahead and fly back. We'll get this beast repaired with the extras on the flatbed. I've already called for the Fearing Island crew to come sail her back to port."

Tom thanked the men and women there and climbed into the helo. It lifted a moment later and disappeared over the peninsula heading north.

On the way home he had a thought. He already knew—despite the electrical accident—that the current commercial solar panels were inadequate for the boat's needs. There wasn't enough deck room to add any more. Even Enterprises' own solar materials would fall short of the needs by thirty percent.

But, after his talk with the Major, he believed he had a plan to fix that!

CHAPTER 2 /
IT'S ALL RELATIVE..... *SURPRISE!*

TOM FLEW to England with Bud in one of the newest Toad jets. The LH, or Long Haul, version could easily make the New York to Manchester trip with eighty minutes of fuel to spare.

It was with some apprehension they took a cab from the airport, around the almost serpentine road system and then out onto one of the nearby M roads. Fifty minutes later the auto pulled over to the side of the road and they got out.

The building in front of them was taking the notion of nondescript to the point of being ridiculous. It was roughly a cube of about fifty feet per side and almost that tall. There was no landscaping to be found anywhere close to it, and other than three ventilation fan installations high on the front wall, the only other feature on the front was a single, metal door with a pair of electronic cypher locks.

Tom walked up to the door and noticed a small doorbell-type button set above one of the locks. He pressed it. They waited. A minute later he pressed it again.

"We heard you the first time, whomever you are. Please restrain your eagerness to interrupt our work. One of us shall be with you in a tic," came a very cultured female voice.

Tom looked at Bud who grinned back at him. "We've just been told off in the most pleasant way I can think of."

A buzz came from the door and at least three *snap* sounds of bolts being drawn back came from inside. The speaker fizzed a little and the same woman told them to open the door, come in and up the stairs.

"Stand on the upper landing, please, while we determine whether to allow you in or send you on your way. Go ahead... step in."

Tom took the handle and pulled. It opened easily. They looked inside and could see a four-foot-square lower landing with a similarly wide set of stairs heading up to their left.

"In and up we go, flyboy."

The door closed behind them and lights came on in the stairwell. The same three bolts now slammed back into place.

Bud looked at Tom and said, "So, with that we are at their

mercy."

They walked up the stairs and came to the landing about thirty steps later.

"Please face the door and smile for the little box above it."

They obeyed and a few seconds later the speaker, that obviously was still attached to a live mike, sounded out with, "Bloody hell! It's Tom Swift, no less. Tommy! Come look!"

Hoping the communication was two-way, Tom spoke up. "Yes, it is Tom Swift and his faithful companion, Bud Barclay. I know we don't have an invitation to be here—"

The door unlocked and two quite pretty women—one, an attractive and toned blond about twenty-six or twenty-seven and the other a more petite brunette perhaps one year older—were standing there, silly grins on their faces.

"Come in, come in," the blond suggested. "I'm Tommy and this is Betty. That would be Swift for me and Rawlins for her." They held out their hands and the young men shook them.

"Golly," Betty said as she and Tommy turned around to take their visitors to a more comfortable place. "I mean, absolutely golly."

Tommy stopped and turned back to face Tom. "Officially I am Thomasina Mary Swift and she is Elizabeth Suzanne Rawlins. We're sort of it as far as employees here and I have to tell you I am so chuffed to finally meet you, Tom. You as well, Bud."

She turned back around and they finished the walk to a spacious office in the far corner where everyone sat down at a table.

Tommy took a deep breath and looked at Tom. "I suppose you've come about the family thing?"

He stared at her not certain what she meant or how to respond. "As far as I've ever been told, we share similar names but not a family connection. Am I missing some information?"

She bit her lower lip and nodded. "Afraid to tell you, but you are. Betty? Please get us all a little sherry and I'll try to explain." Once the small glasses had been set down and filled with a deep amber liquid from a crystal decanter, Tommy took another breath and began in a nervous voice.

"Your great, great grandfather was Barton Swift and his son, the man whose name you also bear, was Thomas Swift. And he had a son named George Swift who was married and had a son named Damon. But then, his wife passed away, cancer I believe, he was rightfully despondent, and came to England for a vacation. Once

here he met a very lovely woman, Elizabeth Anne Dunwell, and they had a brief but, as some might say, fruitful relationship. Elizabeth was my grandmother and the result of their… erm… encounter, was my mother, Anne Elizabeth."

"Dunwell?" Tom asked.

"No. You see she did tell George about the baby while she was only a few months into the pregnancy. He sent her about five hundred Pounds and a letter to sign absolving him of future responsibility."

Tom groaned. His grandfather, George, had been a difficult man to love but he had not been a mean spirited man. At least not to his family. *Family? If what she is saying is true, then I have to adjust my attitude about him.*

"And so, my grandmother wrote him back, offered to send the money back if only she could give my mother the Swift family name. Nothing else. Just the chance in life that the name might bring her unborn child. My granny explained to me there was a lot of paperwork going both directions but just before my mother was born the final agreement came through. She could name the baby with the family name of Swift but had to promise to not try to ply that into special considerations."

"So," Tom took up the narrative, "your mother married and she had a baby and that is you? She rightfully passed the family name along I see."

"All except for the married part. I'm afraid the Dunwell women are not very good about marrying before they get with child, so to speak. But, mostly that is correct. She named me Thomasina Mary Swift after your great grandfather and his wife."

Tom picked up his sherry and downed it in a gulp. It was both sweet and dry at the same time and the result was not at all unpleasant.

Tommy did the same while Bud and Betty looked at each other, shrugged, and followed suit.

Our great grandparents it would seem, Tom thought to himself as they sat looking at one another.

Over the next hour they learned a lot about each other and they agreed that though circumstances were a bit odd and nontraditional, a friendship was going to be built and quickly.

Tommy wanted to meet Bashalli and little Bart but hesitated as she looked at Tom to judge his feelings.

"If you don't mind being aunty Tommy to a very bright and

inquisitive young boy who will try to get as much information from you as possible, you are always welcome. I'll have to break this to dad and mom—"

"Don't forget Sandy," Bud said.

"Yeah. And my sister, Sandy, but the invitation goes for the pair of you. Now, all this is not why we came over here."

He launched into his desire to purchase enough of their solar cloth to make the double-sided sail for his client's sailing yacht.

"While we would love to sell you all you require," Betty said once Tommy gave her a certain look, "the truth is we work on a shoestring budget here and make our day-to-day operating capital from our patents. We could certainly let you make the material—and gratis as far as I'm concerned since you are family—we have only ever made about a square meter of the stuff using a small electric loom I've had since university."

Tommy smiled. "Betty's right. And, I'm sorry if you are disappointed, but we will gladly let you use the patent for this project, and might even work with you to be our manufacturer for a percentage of sales, but our meter sits in a glass-enclosed frame on the roof and makes enough power to operate that small refrigerator in the corner." She pointed to the three-foot-cube.

"That's pretty darned good," Tom stated. "You run on two-twenty at fifty hertz over here and I'll bet that draws at least two hundred and fifty kilowatt hours a year. All from a yard of your solar cloth?"

"Well, about fifty-five percent of that. Nights it goes back on the mains."

"As it obviously would. Still, that much power and that level of efficiency is incredible. I have to congratulate you both."

Tommy beamed and Betty smiled at Tom, and then again at Bud.

Tommy offered to take the men around and give them a tour of, as she put it, "Our shambles of a work place." The inventor gladly accepted the offer while Bud and Betty both declined.

"I've see far too many workspaces, large and small, to be honestly interested," the flyer admitted. Inside, he realized the two Swifts needed some alone bonding time.

As the two T. Swifts left the room, Bud held out his right arm, a fist at the end. Betty saw it and fist bumped him. "To sidekicks," the flyer declared.

"Here, here!" Betty added. "I have to say that your Tom is an

incredibly handsome man, as are you." Realizing how much of an obvious flirtation that had been, she blushed mightily. "Sorry. I know you are involved with Tom's sister. Oh, yes, we do pay attention to what goes on in the rest of the Swift family. Congratulations on marrying Sandra."

Bud leaned over closer to her and said in a low voice, "Betty, the flirtation was welcome. I've found that once married, or at least until a man gets to be old enough to be thought of as 'that cute old man who is so funny when he tries to flirt,' that there is mostly harmless and fun flirtation, flirtation meant to lure a man into a very bad situation, and then no flirting at all. So, thanks!"

They sat in silent contemplation for a moment before he asked, "If it isn't too much of a nosey question, are you or Tommy involved with someone? Some*ones*, that is."

Her laugh was like the tinkling of a glass bell. "Oh, my. Straight and to the point. Well, that deserves a straight answer. Tommy is too busy for that sort of thing and I think she can't stand the idea of a romance with someone who will likely be intellectually inferior to her. As for me, I was briefly married just out of uni—that's university—but we went separate ways a year later when we decided neither of us wanted to go the direction the other one was beginning to take. Since then, some mostly harmless dating and one whirlwind romance that ended rather badly the evening the police came to take him away for having embezzled from two former companies."

"Good riddance?"

She nodded emphatically. "Absolutely. So, tell me the Bud Barclay story."

As he began to relate the tale of how he and Tom came to be friends, the inventors were looking at one of the many workstations in the main room.

"Is that what I think it is?" Tom asked.

Tommy laughed. "That would depend on what you think it might be. If you believe you are looking at a new flavoring agent for ice cream, then you would be incorrect. However, if you think you are seeing a micro-graphene extruder, then a blue ribbon to the winner."

"What sort of uses do you put micro-threads of graphene to? Circuitry of some type?"

"Yes and no, Tom. We make incredibly strong micro cables from that thread that can transmit great amounts of power. If we, for example, twist three strands together into something about the

thickness of one of my rather hefty hairs and then coat it in a thin polymer, and repeat that two more times before braiding those into a half-millimeter cable, we get something capable of holding about seven hundred pounds and that can be used to transmit up to three hundred volts of electricity at ten amps of power. Braid three of those and everything goes up by a factor of more than nine"

Tom admitted he was stunned. "I've never really considered the advantages of graphene other than in a few small applications, and yet I can now see hundreds of possibilities. Of course, I am incredibly interested in your solar cloth. How do you even start that?"

Tommy pointed at the device in front of them. "That meter we made consists of a combination of nylon threads, graphene threads, metallic threads and a coating of a proprietary liquid that absorbs sunlight and turns the heat into electricity."

"Wait! You're not going the route that turns the actual light rays into electricity?"

She shook her head. "As you no doubt know that way is inefficient. Nobody will ever get to fifty percent efficiency."

By the time Tom and Bud left four hours later, friendships had been cemented as had a relationship between their companies.

Both ladies promised to take some time out to come visit when they were able to, and Tom promised to come over to fly them back in the *Sky Queen*.

"If nothing else, it'll impress the socks off of your feet," Bud said as he and Tom were heading for the stairs.

After hearing the door below close and lock, Tommy turned to her best friend.

"Betts? Why can the Yanks make a genius like him and we Brits only make football hooligans?"

Betty smiled. "Don't you dare develop feeling for the man who is both your cousin, but also your doppelgänger!"

"What in the dickens do you mean by that?"

Betty placed her hands on her hips. "Sister, and in case you can't see it, other than your rather expansive chest and soft curvy hips and other girly attributes, you *are* Tom Swift!"

* * * * *

The men had a similar exchange on the way back to the airport.

"What in the world do you mean by that, Bud?"

The flyer looked at his best friend and tilted his head to the side.

“Well, other that her being built very substantially along girl lines and you are not, the two of you could be twins. I mean, you are both six feet tall, blond hair and steely blue eyes and are scientific geniuses. And, if that isn’t enough to convince you, the clincher ought to be that you both have incredibly good looking, witty and brilliant in our own way, dark-haired companions.”

They landed at five in the afternoon and Tom had Bud take the jet back to its hangar while he hurried to the shared office.

“Your father left for home about ten minutes ago, Tom,” Trent told him as the inventor crossed the secretary’s outer office.

“Oh. Okay. Thanks, Trent. I need to talk to him so I’ll head over to the house in a few. Uhhh,” he said looking curious, “if he’s gone why are you hanging around?”

Munford Trent, who kept one of the most organized desks and offices around, looked down at the mess of papers strewn on the desktop.

“I was trying to refile some things earlier when our favorite western character and chef came around the corner with his little cart and knocked me over. Don’t worry. He was apologetic and offered to help, but I think I can do it better and, well, *safer* on my own.”

He took about thirty pages from one stack, found a folder he liked, and shoved them inside setting the folder on his side table.

“See!”

Tom left a minute later giving his wife a call on his way down the hall. “Bash? I have to head over to dad and mom’s for a half hour or so. I’ll gladly pick up something for dinner if you want.”

She laughed. “You will never guess where Bart and I are at this very minute, and here comes your father through the front door right now.”

“Then,” he said with a little chuckle, “I’ll see you in ten minutes or so.”

When he arrived his parents, wife and son were sitting in the living room. He let himself in and went over to kiss Bashalli.

“Good trip, Tom?” his mother, Anne, asked.

With a good deal more mystery in his tone than he planned, Tom replied, “I learned more on that short trip than I have in years!”

Although everyone wanted to hear more, he said he’d tell all during dinner. “Speaking of that, what are we having smells like roasted chicken.”

Anne shook her head. “If you’re not talking then I’m not except to say that is definitely not roast chicken. So there!”

“I give,” Tom said raising his hands. “But, I do have some serious news that I think will go better if we are sitting down, so I promise not to ask about dinner now, but will tell all as soon as we sit.”

Five minutes later Anne and Bashalli brought out the four plates for them and a special plate for Bart with crunchy things like carrot sticks, apple slices and sticks of jicama. It wasn’t the best dinner for him but would keep him happy and quiet while the adults ate.

“Okay,” Tom said looking around at the others. As you know Bud and I went to England for the day to look over a possible supplier. If I told you that one of the two principals of the company has the last name of Swift, what would you think?”

That began a conversation filled with doubt, at first, amazement next, and ended with many, many questions about how such a thing might have come to be.

“Well, as I said, grandpa George is supposed to be the link after grandma passed away.”

Damon shook his head slowly. “I knew dad went to England for a month, but he never said a thing about this. Are you truly certain this isn’t some sort of hoax, son?”

Tom pulled out his cell phone and brought up a picture Bud had taken of Tom and Tommy standing together.

“But… I mean…” Anne stammered, “She’s *you*!”

Tom shrugged. “So Bud claims as well. You can’t deny the similarity between us.”

Bashalli, who had taken the phone and was studying the picture exclaimed, “She’s beautiful, Tom. And, mother Swift is right. If she weren’t a girl, she’d be you.”

“And you say she’s an invention genius as well?” Damon asked.

“Yes.” He told his father about the solar cloth and the novel approach Tommy and Betty were taking to converting not light but heat into power.

“You realize what this could mean? Homes could be covered in this and generate huge amounts of power by day and then things such as water heaters and furnaces could continue into the night,” the older inventor said.

“Any source of heat will make electricity, so wrapping a furnace or water heater or even a chimney flue will do from what Betty told Bud,” Tom stated.

“The problem is, Tommy and Betty have limited resources and so they have only managed to weave a square meter of this fabric.”

“Oh,” Damon sounded disappointed. “I suppose it was too good to be practical.”

“It isn’t that, Dad. It’s just that the equipment they have is not geared for mass production. The good news is they would like to make a deal. We create a larger machine for extruding their graphene threads and a loom to weave everything together, and in return for a certain amount of the resulting solar cloth, they will let us make what we need for that sailboat project and any internal uses for free.”

Damon had a determined look in his eyes. “That hardly sounds fair to them. I would very much like to invite the two of them over. Firstly, I want very much to meet my niece and her friend, but also because I want to offer them a more lucrative deal than a simple trade.”

Tom had a huge smile. “I was hoping you would feel that way. They arrive a week from Friday!”

CHAPTER 3 /

SAILING ALONG

BY THE time Tom got back to work after the weekend, the crew bringing the stricken yacht back to Fearing Island had arrived there. A jetmarine had met them part way south and towed them in faster than they could have managed with the torn mainsail. There, a team of technicians swarmed all over it. Nothing having any electricity running through or close to it was ignored.

Their report was lengthy and complete, and Tom sat down on the sofa in his underground office to read it.

Along with the two large battery packs that had been drained of every microvolt and milliamp of power—something just about impossible as batteries, even "dead" ones, still had some electricity in them—the smaller backup battery pack for starting the turbine engine, the emergency power supply for the computers, and the twenty emergency battery-powered lights had been emptied and were in no condition to ever act as storage batteries in the future.

Every circuit breaker in the power/drive room as well as those in the cockpit had been tripped and most showed signs of some interior melting.

Luckily, all gauges and mechanical systems had been spared by these fast-acting fuses or their own built-in trip switches. Nevertheless, all were being removed and thoroughly tested before reinstallation.

The entire solar array, as Tom had already seen, was shattered and useless. And there was the telling scar of blackened mast and deck where the end of the lightning bolt had touched down and traveled along.

Only the thin tomasite coating that had been sprayed on all exterior surfaces had protected these areas of attack. And, that is exactly what the inventor saw this as… an attack.

"Lightning never acts like that," he told Bud as they sat having lunch a couple hours later. "It has been known to seek out tall places to ground and even has followed people into doorways and zapped their metal belt buckles, but it isn't methodical like this bolt was."

Slightly smirking, Bud said, "I heard of a man wearing polyester underwear who got zapped and had his shorts melt onto his skin. Ouch!"

Tom nodded. “Possibly an urban myth, but plausible, Bud. One of the hazards of wearing man made fibers, I suppose. My point was that this streak of power was too uniform and too, uh, directed to a specific point. Then, it lasted long enough for me to see it travel down the mast, over to the solar panels and blow them apart.”

“So, this wasn’t a one-of-a-kind freak bolt from the blue?”

Tom shook his head. “I spent Sunday studying everything the National Weather Service could provide on conditions within a hundred miles of the attack point that day. There was nothing atmospherically that would have supported the generation of lightning. Heck, Bud, there wasn’t another cloud around or above the boat out at least twenty miles!”

Bud looked concerned and said, “Then what in the world could have done that?”

The inventor shrugged. He had no ready answer and really disliked not having answers or even educated guesses.

“I wish I had put some sort of sensor pack on that boat, but who could have seen that coming. So, about the only thing to do is to do a very complete forensic examination of everything. Feel like coming out to Fearing with me for a couple days? We could, you know,” Tom said with a little grin, “do it next weekend and take the wives?”

Bud grinned. With warmer weather coming he had been looking forward to the time Sandy Swift-Barclay would bring out her bikinis and start wearing them out boating or sailing or just picnicking on Lake Carlopa. At twenty-four she still had the same shapely and athletic body as when she was seventeen or eighteen.

Tom’s wife, Bashalli, who was now about three months pregnant with their second child had already decided to retire her two-piece bating suits in favor of something with a little more coverage, especially around the middle, but Tom still found her to his great liking even in the more sedate ones.

“Jetz! Sandy will go for that, especially if we throw in at least one dinner over in Georgia at that French place in downtown Savannah. What’s it called?”

Tom thought, then replied, “*L’élégant Lièvre*? The Elegant Hare?”

“Yeah,” the flyer grinned. “That’s the one. Should we try to get a table or do you think Trent has a better magic touch?”

Tom promised to ask when he passed by the man’s desk later that afternoon. When word came back from Trent, it was with a laugh.

“I simply stated that Tom Swift was looking to secure a table for four, preferably a quiet one away from the kitchen, and the woman I spoke with practically fell over herself with assurances they would make it happen. So, you are on for seven on Saturday evening. Ties and sports jackets for men and dresses only for women, no slacks.”

Where many people bridled at the return of dress codes for places such as fancy restaurants and live theater performances in recent years, Tom actually preferred it to seeing hordes of tourists in shorts, t-shirts and sandals dining in places that still used hand-laundered fine linen napkins and crystal glasses.

The ladies were also very much in favor of the trip. The only naysayer was little Bart. Once he had been informed of the forthcoming arrival of a little brother or sister—and no, they would not know which until he or she was born—he had spent a lot of time looking at his mother’s slightly bulging tummy.

Now, on hearing he would be staying with grandma Prandit, he frowned and crossed his arms over his chest.

“No! Don’t want you to take my brother with you! Leave him here!”

That prompted a much deeper discussion about babies and where and how they grew. In the end, he had asked Tom if what his mother said was the truth, and got the answer that she was correct. After that he brooded a little and made them promise to come back really soon.

Sandy generally worked full time Monday through Thursday and half days on Fridays for George Dilling in the Communications department and then flew demonstration flights for potential customers of the smaller non-commercial planes and jets designed and built by Swift Enterprises and the Construction Company in the afternoon.

On hearing that she and Bud might be going out of town, Red Jones offered to cover for her with the single client they were expecting to have on Friday.

“You go have a good time, Sandy,” he told her and she gave him a warm hug by way of a thank you.

The foursome flew out at noon on Friday and arrived on Fearing two hours later. After taking their bags to the guest quarters, the ladies headed off to say hello to many people they knew around the island while the men went to the docks.

There was no outward sign of any damage or something out of the ordinary with the large private yacht. The only visible change was that the official name, *The Mary Deere*, was now in process of

being painted on her stern.

That wasn't technically the only difference. For one thing, the large mainsail was still missing. Until the small British company owned by Thomasina and Betty could get Enterprises up and running and turning out the incredible solar cloth, the ladies in the Uniforms department were making a replacement that would be well-grounded using a steel cable running through all the seams and down to a grounding point.

Inside the hollow mast there now resided what amounted to a lightning rod that also grounded into the water beneath the boat. A special inch-thick non-conductive collar was wrapped around the base so nothing could travel down and then out from it.

"You can still smell some of the burnt insulation," Bud commented as they headed down the ladder to the lower deck. "Not too bad and I suppose a good air freshener would mask it, but we've both smelled that odor before."

"Yeah, it's pretty unmistakable, flyboy. But, one of the final things to do will be a complete wipe down of all walls and ceilings. Take a sniff in here," he said opening a door to one of the cabins. "This room's had the treatment."

With the door now closed Bud took a deep inhale through his nose. A smile broke out on his face and he nodded. "Yep! nice and fresh. I, uhhh, guess this cleanup included a good carpet shampoo and washing of all the upholstery and the bedding?"

"Yes. It will take a lot, but we have a special crew coming in from the mainland in five days. They have some sort of wonderful extraction machine that can to everything from smooth surfaces to mattresses. Their agent came out a few days ago to do this room as a sample and said it was a one-day process for, and I quote, 'Something as small as this boat. We typically deal with large mansions and even hotels where there has been some nastiness.' End quote."

A five-person team was working in the lower power room. Having suffered the worst of the problems it had the worst of the cleanup to be done, but a lot had been finished. The walls no longer were sooty and smelly. Like they had been originally, they gleamed. The battery packs were installed on the walls but not yet connected to the boat's power network.

Huge new power breakers were to be installed in between the packs and the main wiring that were guaranteed to trip in under one thousandth of a second.

Tom saw the tell-take green LED lights blinking in the upper-left of each one showing they had a full charge and would be ready

when needed.

"How goes it?" Tom asked the only woman on the team.

She stood up and pulled a wisp of hair back over her left ear. "Going pretty well, skipper," she reported. "I assume you've read the complete report so you know what we've been up against, but the circuit breakers protected many things down here. We have a lot of heat damage and distortion to deal with, but I'd have to say if she needed to sail as quickly as possible, we'll have all this ship shape before the new mainsail arrives this coming Friday."

Tom patted her on the shoulder and thanked her for the report. As she went back to work, the two young men went back up the short ladder to the main living deck.

They spent a little time looking into all the cabins and other spaces noting that much work had been completed. As they climbed back topside, Bud pointed up.

"So, something just got into my peabrain. This boat has two masts and three sails." He was right. As a modified two-masted ketch, she had a jib up front of the main mast, the mainsail that had taken the most damage behind the mast and the aft sail from the shorter, second mast sitting about two-thirds of the way back from the bow.

"Well spotted, Bud," Tom teased. "Now, tell me where this is going."

"It is going to the why the heck didn't the second mast also get hit and that sail plus the jib take some damage? It's as if that lightning or whatever it was just ignored them."

That was one of the things bothering Tom and a key reason he believed the electrical bolt had not been natural.

"I've got no good reason for that, Bud, other than to say the attack was directed and whatever it was is maneuverable. And that," he said looking worried, "bothers me greatly. That puts this thing in league with other weapons. *Offensive* weapons, Bud. Weapons of planned and directed attack!"

When Bud asked who Tom thought could be behind such a dastardly thing, the inventor shook his head.

"I have absolutely no idea. Now, if I asked you what my reaction would have been to that lightning bolt, or whatever it was, striking the boat, what would you believe I did?"

The flyer thought a moment. He and Tom had known each other about a decade. They had been through just about everything two people can endure and each knew the other inside and out.

"You would have probably noticed the bolt was not affecting you and then looked up to see where it came from. Right?" Tom's smile told him he was spot on. "So, bolt hits, Tom looks up and studies the sky trying to find where it originated. But, you said you didn't see anything."

"That's right. Other than the thin layer of clouds probably at thirty thousand feet or so, there was nothing in the sky. Not even a recent contrail from a jetliner passing overhead. Just the ones to the north heading into Boston, and they had to be at least forty miles away!"

"How far can lightning travel?"

"Most go about five miles but a few have been photographed and measured at nearly ten miles. Nothing beyond that, though. Which means whatever sent that bolt down would not have been any higher that about fifty-two thousand feet!"

Bud suggested that was a bit high for an airliner but not a military or performance jet and Tom agreed.

"Here's the thing, Bud. That much power is far too high for a small jet to generate or carry. Even that old Boeing 747 the Air Force put the high-powered laser in could only make enough power for a three-mile zap. So, it had to have been a lighter than air aircraft of some sort, and huge, or else it was the impossible, and that was really a freak lightning strike."

"Or, aliens?" Bud asked.

"I think not, but nothing is impossible, flyboy."

Grinning, Bud asked, "So, which one do I put my money on?"

In spite of the tenseness of the matter, Tom grinned back. "Right now I'd spread that money around and get good odds on all sides."

After TeleVocing the ladies, Tom and Bud changed into coveralls and assisted the repair team with some repairs and cleanup. Most of the afternoon was spent in the cockpit where all navigation equipment had to be put to the test as well as controls for the automatic systems that included the winches for the sails, rudder control, satellite systems and anything else the computers or the boat's pilot would interact with.

One piece of equipment that had not fared at all well was the RADAR. The small rotating antenna at the top of the mast had taken the initial contact with the bolt and a shock wave of power had traveled down it's cables and directly into the RADAR equipment. By the time the circuit breakers flipped, it was too late and the computer controller as well as the solid state klystron emitter had practically melted.

While Tom continued working Bud offered to take a list to the Stores building and bring back replacements.

He came back in a jeep with several large boxes of parts and components forty minutes later.

“They sent a wiring harness to run up the mast in case that was fried,” he told the inventor.

“Good thing they did.” Tom reached over and into the equipment rack grabbing and pulling out a cable. The end was just nine feet up and at that point the cable had been melted completely apart. “I was going to call you but you got back in record time.” He sighed. “Want to climb the mast for this?”

Bud, never bothered by heights, nodded. “Sure. The only question I have is do I need to shinny up that thing or is there some sort of crane or cherry picker that I can use?”

“None of the above, flyboy. There is a winch up there that can drop a cable down along with the controller. Luckily, it had not been installed before the attack, but was put up there a couple days ago. Get into a safety harness and up you go.”

He told his friend about the five things that would need replacing beginning with the actual RADAR antenna and its rotational motor. Next would come the wiring line that could be dropped down through the hollow mast using a special weight that would make certain it reached the access hatch that exited just under the top deck.

The final two items were the anemometer—the wind gauge and direction pointer—and the replacement light for the mast top.

Five minutes later Bud gave Tom a salute as he hooked himself to the winch cable and rose up to the top at a steady pace. Thirty-two minutes later he was back down and reporting that everything was finished.

Tom was just snaking the RADAR cable into the back of the equipment bay and attaching it to the new computer and scope.

The next day saw a lot more of the same sort of things going on but with less need for Tom and Bud to assist, so they spent all afternoon with their wives. As five o’clock approached, Tom announced it was time to get ready for their dinner. The ladies raced back to their rooms and got into stylish black dresses while Tom and Bud took a more leisurely walk back before showering and getting into their slacks and shirts.

The short flight to the Hilton Head Airport was filled with Bashalli and Sandy trying to decide if they were in the mood for something different or if they wanted the same things they had on

two previous dinners at the restaurant.

Their taxi ride took nearly twenty minutes with the driver explaining that work on the usual and more direct route meant an access highway was closed so they had to keep to city streets where the traffic lights never had been synchronized so it seemed they were stopping about every block.

After about five minutes of stop and go traffic, their driver reached over and shut off his meter.

"I'm just gonna charge you for getting to this point, which is, truthfully, at least five bucks more than the trip ought ta cost. It's just that I think I recognize you," he said looking across at Tom who was sitting in front with him. "You're that Swift guy, am I right?"

"Yes, I'm Tom Swift," the inventor told him.

"Pleasure to have you in my cab." He reached over with his right hand and shook Tom's. "If ya want me to, I can come pick ya up once you're finished eating. I'll give you my card when we come to the next stop."

Dinner was quite an adventure with everyone deciding to try new dishes. So, along with entrees of rabbit and Spanish mackerel they tried a cream soup with tripe and potatoes, escargots, and chocolate meringue dessert floating on a shallow pool of warm vanilla cream.

As dessert was being served Tom excused himself and went to an alcove to call their taxi driver. The man promised to be at the restaurant door in twenty minutes.

When the taxi set off the man turned to Tom and said, "I've found a way around things, at least at this time of night. Have you back at the airport in record time."

And, he did. It was slightly roundabout but was almost all on freeways. Tom gave the man a generous tip.

"Keep that card. Next time you're coming here, give me a call. If I'm not on duty that night, I'll get my brother-in-law to pick you up. Night, folks!"

After he drove away, Bud remarked, "Isn't it a nice thing to have a good brother-in-law to rely on?"

"Wouldn't have it any other way," Tom replied.

They checked through the small security gate at the civilian air terminal and walked out across the tarmac to the waiting SE-11 jet they had checked out from Fearing's fleet. Unlike Tom's Toad version, this one was a production model and featured the standard model 3 turbines. It was a bit slower than Tom's but perfectly

serviceable.

As they climbed to their flight altitude of ten thousand feet, Tom spotted a momentary blip on his forward **RADAR** scope. It disappeared a second later and he was puzzled by it. Normally a real contact remained on screen as a steady point of light, and even a false contact often "painted" three to five times, but this had been a single pass of the beam.

"I saw it, too, skipper," Bud said from the side of his mouth. "That isn't normal."

Tom agreed but it never reappeared for the duration of the flight back.

Nor, did they see anything on the flight to Shopton on Sunday afternoon. If it had been something, it was not reported by any other aircraft or by any control facility, so Tom decided it was a freak signal.

The only thing he couldn't get over was that it appeared to have been at an altitude of over forty thousand feet!

CHAPTER 4 /

NO BREEZE REQUIRED

THE SMALL regional jet's door opened and the stairs unfolded nearly to the ground. As a young man rushed forward to shove a wide wooden box under the end to both stabilize the metal steps and act as the final one before the ground, an attractive blond woman stuck her face out letting the late afternoon sun catch it.

She was smiling. That smile broadened when the flight attendant tapped her on the shoulder saying it was okay to deplane.

Tommy Swift came down the seven steps, her shoulder-length hair blowing in the slight breeze as she turned and waved to the pilot. The two ladies had refused Tom's kind offer to come get them in favor of paying their own way. "Besides," as she pointed out, "we get travel miles flying the regular airlines."

Betty came out and followed her across the tarmac to the waiting room where the Swifts and Barclay-Swifts were waiting to meet them both.

Even little Bart got in on things as hugs and a few tears of joy came out. He stood next to Bashalli's legs looking and looking at Tommy, his eyes wide with wonder. Finally, as the noise and general hubbub calmed down, he said in a loud and clear voice, "She's a girl daddy!"

Tom turned and replied, "Yes, she is a girl, Bart. And, she is a cousin to all of us."

Bart shook his head and very firmly repeated what he's already said. "She's a girl *daddy*!"

Bud began laughing and everyone turned to look at him.

"What is so darned funny, *Budworth*?" Sandy asked in a hissed whisper.

"Bart. He's spotted it right off. She *is* a girl version of Tom. A *girl* daddy." He howled with laughter and Bart nodded, happy someone was finally intelligent enough to understand him.

Tommy walked over to Bart and asked, "Can I pick you up and hug you? I think you are a very special little boy."

"Yes, please," he told her holding up his arms.

She brought him up and whispered in his ear, "I only look a little like your daddy, but I'm very happy that you noticed we look a bit alike. Uhhh, you do understand that, don't you?"

Bart nodded. Even at just three years old, plus three months of

course, his vocabulary was far above an average four-year-old and his ability to grasp concepts amazed his pediatrician, and his mother, father, grandparents, and just about everyone he came into contact with.

"I'm Bart. Who are you?"

"I'm Tommy. Thomasina Swift, from across the ocean in a place called England. And, she," she turned so Betty could wave at the boy, "is Betty. She is my very best friend in the world and is almost like family to me."

Betty, who had caught up with the pair added, "That's because Tommy doesn't have a mommy or daddy anymore."

"But," Bashalli stated, "she does have family now, and I'm sure we'll all love each other before we even get home!"

They collected the ladies' three suitcases and headed for the small parking lot where Damon and Anne had arrived in their 4-door sedan along with Bud and Sandy. Tom and family came in an atomicar parked next to the automobile.

Their two guests were astounded at the sight of the large flying car and begged to be given a complete tour as soon as they got settled at their motel.

"Not on your Nellie!" Anne declared. "Family and *almost* family stay *with* family. We have Tom and Sandy's old rooms at our house and I've already got a pot roast in the oven. Hope you ladies like beef with roasted potatoes, root vegetables and I'm even dusted off an old Yorkshire Pudding recipe I used to make when the kids were younger."

Tommy walked over and kissed Anne on the right cheek.

"I haven't had a good Yorkshire Pud in ages. I'm sure it will be perfect."

Tommy took the second front seat while Bashalli and Bart joined Betty in the second row of the atomicar. As Damon and the others drove off on the street, Tom sent the atomicar skyward eliciting surprised "ooo's" from the ladies.

"Ever flown?" Tom asked as they soared over the northern tip of Lake Carlopa. "As a pilot, I mean."

"I've had all the ground school and two instructor flights, but never solo flown. I had a combination of cool feet and empty bank account."

As they made a quick circle over Shopton he promised to get her some flight time the following day so she could be trusted with an atomicar to go sightseeing in.

Over their meal Tommy and Betty filled everyone in on what both knew of Tommy's background, about their first meeting in what would equate to the fifth grade in the U.S., and where their mutual interest in technology quickly led to forming their own company after university.

"Nobody wanted to build Tommy's first invention," Betty explained. "She came up with a flexible, roll-up-able liquid crystal screen material she hoped to make and sell. It might have revolutionized cellular phones. I mean, imagine a cell phone that sits on your wrist and at a press the screen rolls out from the side and becomes five times larger. About a current standard screen size."

Tommy smiled and added, "We had interviews with twenty-nine companies and all ended with, 'Well, thanks for that but we'll pass… no market for that sort of thing.' Thankfully, Betty inherited a little money and wanted to have a company of her own, and that she was foolish enough to believe partnering up with me, Tommy the Dreamer, might make her wealthy beyond her wildest dreams."

Betty smiled and said, "Confidentially, I had *some* money and *no* idea what to do to increase it, and Tommy has had some other great ideas. One special product we make goes straight to the military in the U.K. We bring in a tidy packet from that and it is enough to keep us from living on the street, keeping us in our building, and enough left over for quality tea and biscuits at the office."

Bashalli, who had been introduced to "biscuits" as in the ones from the southern U.S. states looked confused and Tommy picked up on it.

"We mean cookies when we say biscuits, Bashalli. As Shaw once said, the United States and England are two countries divided by a common language. Personally, I like the word cookie. It sounds friendlier and like something that might give a pleasurable amount of sugar."

After dinner they all sat out on the back deck looking at the garden Anne kept and even Tom's old work shed where he had come up with some of his very early inventions.

Over a bottle of excellent sherry they talked about what Tommy and Betty might be able to do in conjunctions with Enterprises.

"I would never think of suggesting you sell out to us," Damon said, "unless that is absolutely what you hope to do, but I would love to make arrangements to look over your inventory of inventions and decide if some or all might find a manufacturing home here. With, of course, extremely lucrative licensing fees going to you two."

Tom spoke for the first time in about ten minutes. “That solar cloth of yours, for example. I have a real need to get about four hundred square meters of it to make a double-sided sail for a sun-powered yacht. The sail would be larger, but the effective area would be about two hundred meters on each side.”

As Betty bit her lip, Tommy sadly nodded. “Right. And that is fine and I want you to have that, but our little machine, as I mentioned on your visit, just can’t turn out the necessary fibers very quickly.”

Tom smiled and that momentarily confused them both. “Tommy and Betty, tomorrow I want to take you to Enterprises and then to the Swift Construction Company so you can see at what scale we do things. Unless you tell me your fiber extruder is as large as humanly possible, I think we might surprise you with what we do.”

The next morning Damon drove the ladies into work where they caught up with Tom after receiving their own temporary TeleVoc pins. Tommy was still fingering hers as she listened to the young inventor describe the day he had planned.

A few minutes later they were outside climbing into a smaller atomicar than the one they’d flown in from the airport. This one, a Model 3, was a four-seat, more teardrop-shaped model with even more wraparound view for the passengers.

After clearing the walls of Enterprise Tom gave a brief explanation of how easy it was to fly.

“And, it can go along the freeways—your motorways—a top speed and even underwater by about a hundred meters.”

“I am gobsmacked!” Betty admitted. “Truly.”

When they landed at the Construction Company, and almost in front of the main office building, Jake Aturian was just coming out to greet them.

“I’ll be switched!” he exclaimed. “Damon was right, She’s you, Tom. I mean, and pardon me, Miss Swift, but you two could have been twins separated at birth. Incredible!”

“Dress him up in drag and we probably could go as sisters,” she teased.

Everything they saw impressed the ladies, but the single most impressive items were the trio of giant vacuu-form machines capable of creating their own mold, covering it with any combination of nine different fiber materials, injecting one of five polymers and vacuuming out the excess. The finished piece could be as small as a foot and as large as a ninety-six-foot long, twenty-foot-wide and six-foot-deep airplane wings or fuselage part.

They watched the latest wing assembly coming from one of the flat bed machines and being automatically trimmed of anything excess before being inserted into the curing oven.

"In an hour that will come out stronger than steel or any carbon fiber composite," he told them.

Tommy reached out without looking away from the oven and found his shoulder. "Start to finish time?"

"Eighty-two minutes up to three-hours-five minutes."

Tommy, who had a rather wide vocabulary, let out an expression that made Tom turn beet red.

"Sorry," Betty hastened. "She forgets herself when she is in love!"

On the way back, Tommy found her voice again. "So, you could take our little hand-built machine that makes the graphene nano fibers, turn them into threads and then come up with a loom to turn them into our solar fabric?"

Tom said he believed so but they were going to make a stop at the Uniforms department before he could be certain.

As he dropped down next to a medium-sized hangar out to the northeast of the main building cluster Betty asked if they were going to see more aircraft.

"We can, but we moved the Uniforms folks out here years ago when we all discovered some of the things they have been sewing cover more space than a cricket pitch."

He referred to the inflatable habitats used at the Mars colony plus a few other large-scale things like solartron panels for spaceships.

As they walked inside the hangar and the formidable manager spun around, her mouth open to yell for whoever was invading the space to get out, but stopped and it all turned into a big smile on seeing Tom and his companions.

"This," he said pointing to the woman of American Indian descent as she came toward them, "is Marjorie Morning-Eagle, the head of this department. Major, say hello to Betty Rawlins and Thomasina *Swift*."

They looked at her face to see what her reaction would be.

"Damon's right. She's the spitting image of you, or if she is older than you are, then you're the spit of her."

Talk turned quickly to the solar fabric and the Major asked a number of important questions. With each answer—even the ones she already knew—such as, "It may be cut and stitched in any shape

and still maintain electrical connection," her smile grew and grew.

"I'd heard all that via the grapevine, but you know how unreliable that can be. Nice to hear it from your lips. It needs some sort of special threads?"

"Yes," answered Tommy. "The big question is, if we can supply a large number of spools to you, can you get hold of a loom to weave it into a fairly tight cloth?"

The Major's face looked puzzled but she asked, "Just how wide should the fabric be?"

Tommy stepped forward. "Ideally, it should be at least three meters, plus or minus any multiple of one hundred millimeters more or less. Even though we said it can be cut into any shape, it needs to have a special border of a larger-diameter graphene fiber up and down all sides and again every square meter. That acts as the main power transmission lines."

Marjorie made a "come with me" motion with her right index finger and the all walked to the back of the hangar and into a separate room.

"Golly," Betty gasped, "is that a Glimåkra?"

The Major smiled. "Best damn Swedish loom on the market! I like people who know and obviously appreciate fine things. You may call me Major if you want. We bought this a couple years ago when we needed to make a special fire-resistant fabric and here it sits most days. Only has a two-meter bed but it runs off a computer and we can dictate a special fiber edging and even get parts off the thing in the exact shapes we need!"

With one probable fix for the yacht's problems Tom wanted to go back down and see what progress was being made on her repair. It would be an excellent day trip for Tommy and Betty as well.

His cousin was obviously the more adventurous of the pair so she took the copilot's seat in the Toad for the trip down the Atlantic coastline.

Betty was more than happy to look down at the expanse of ocean on one side and the shore passing by on the other from her seat behind them.

"In all my years of living in England I've only been off the British isle twice," she said wistfully. "Both times to the Continent and both times via the Channel Tunnel, so I've never really seen much ocean other than the little bit you can glimpse at the seashore. This is astounding!"

By this time Tommy was concentrating on watching Tom flying.

As soon as they reached altitude and turned on their southerly heading Tom nodded at the control stick on her side and let her take control of the jet.

"It's pretty easy, especially if you've ever used a joystick on a game machine," he explained. He described the basic uses of that control and how she would coordinate using the foot pedals when he asked her to perform a turn.

Five minutes later she felt the tension leave her arm and her shoulders relaxed and she found that she was enjoying the sensation of being able to make minute corrections with the controller in her right hand.

"These buttons?" she asked pointing at the pair on the upper portion of the joystick.

"Top one is autopilot—press once it is on, press twice it is off—and the lower one is your radio transmission button. Press and hold to talk and releases to listen."

Before landing he had Tommy make a complete circuit of the island as he pointed out the various areas of the private base that was technically owned by the United States Government but operated solely by the Swifts under a perpetual lease agreement. As long as they operated beneficially to the nation, they had full, complete and secure control of the former scrub grass thumb of land off Georgia.

They borrowed a jeep from the motor pool and headed first for the Administration office where Tom introduced the ladies to the base's Assistant Director, Anders Jansen.

"For such pretty ladies with those incredible accents, I ask that you call me Andy J. Everyone else does regardless of what I want, but it will be a pleasure to hear that from either of you. So," he said turning his attention to Tom, "I assume you're here to inspect the boat?"

"Yes, plus give my cousin and Betty a tour. In the future we may well be working with them on a few projects so I need them to be familiar with everything we have, or at least on this coast. Maybe next time they come over we do the Citadel and the space stations."

Betty's eyes grew wide and round as saucers at the idea of traveling up into space.

When they left Anders' office they tried going straight for the docks but it seemed the word had spread about the female version of their young boss. Everywhere they turned employees in small groups were waiting to greet them and get a good look at Tommy.

"Golly," she said after the fifth encounter, "a girl could really get

her head turned with all this attention."

It hadn't all been one-sided either. More than a few men spent a lot of time looking at Betty. She was a very pretty woman even if she tried to minimize the effects by using practically no makeup or wearing flashy clothing.

They eventually got to the dock where the yacht sat and went onboard.

One tech gave Tom a quick rundown on the status. It took a couple minutes because there had been so much to do, but the list of things to do was short, perhaps two days to finish.

"We're holding off on permanently replacing the solar panels as you asked, skipper, but to give this hulk power we've put in temporary panels on the bow. The Solar department sent these down to use for now. They are only lightly bolted down."

Tom thanked the man and took the women on a tour of the long and luxurious yacht. Although furled, it now sported a temporary sail provided by the Uniforms' ladies.

"She can sleep twelve passengers in four-star hotel comfort," he explained. "Under sail she can do about twenty-two knots but she has a hidden talent. With no breeze at all she can hit twenty-five using a jet turbine drive system. Or, the sails can sort of flap themselves and give you ten knots."

"What about the crew?" came from Betty, seemingly more interested in that sort of thing than in the technical aspects.

"Well, our client wanted a yacht he could manage himself. As in, if he wishes to, he can run the entire boat right from the pilot's seat in the cockpit or at the outside aft pilot's seat. All work with the sails is controlled from there via computer, and he has everything running through automatic winches. It is about as easy as driving a car except he does need to take into consideration the wind direction and strength."

Although he would have liked to take them out for a couple hours, there was work going on below deck on the auxiliary turbine and hydrojet drive that powered.

They spent an hour on the boat before they walked over to the next docks and the seacopters, jetmarines, the huge submarine, *Demeter*, and all other submersible craft built right on the island. Next, he drove them around to look at the spaceport with its hangars and all the spacecraft in their inventory.

Both women nearly swooned at the close up sight of the *Goliath*, and even the tall and thin *TransSpace Dart*, resting on its side in a special cradle, gave them gooseflesh.

Both could see the pride Tom took in his accomplishments but were especially complimentary when they saw the special gleam in his eyes as he showed them his very first space ship, the *Star Spear*.

"She made the first privately funded orbits of the Earth," he told them. "One of my early, special moments."

* * * * *

By the time the ladies left a week later, five things had been accomplished:

1) Both Tommy and Betty had received enough flight training to let them make a couple unescorted forays out in an atomicar. They returned in awe. They were even more ecstatic when Tom loaned them his Toad which they took out on a full-day trip over New England.

2) Swift Enterprises had become the primary vendor for Rawlins-Swift Plc and its European entity, Rawlins Swift GmbH, with all worldwide manufacturing rights for all products, current and future. They also had invested enough to warrant being given thirty-percent ownership in the company, giving the ladies more than five years of operating capital in the bank.

3) The exact designs for the graphene fiber extruder equipment had been delivered and were being adapted by a team of engineers for the much higher capacity output needed by Enterprises. It was currently believed the fibers could start coming out of the machine in under two weeks.

4) The very first contract for another of Tommy and Betty's inventions had been submitted by a computer manufacturer who, after being contacted by Damon, wanted to make a large-screen version of their roll-up monitor.

5) Thomasina Swift had been fully accepted as a real, honest-to-gosh Swift and Betty was immediately an honorary family member. Both were pleased to tears.

Tom took them back to the Shopton Regional Airport and waved goodbye to them. They would be flown to Newark Liberty International in New Jersey from where they would take a jet back to London that late morning.

As the young inventor was driving back, this time in his 4-door sedan, his TeleVoc pin pinged and announced, "*Damon Swift*." He thought and subvocalized, "Answer," and immediately heard his father's voice.

"Tom. There has been a terrible accident or possible attack on a power station at the Bridgeport generating station in Connecticut. They've been having pretty clear weather the past few days, but an

hour ago a cloud suddenly formed over them and a bolt of lightning lanced down and hit the station. Now, *they've gone completely dead!*"

CHAPTER 5 /
THAT MUST BE STOPPED

TOM, BUD and a crack team of electricians and engineers flew down in the *Sky Queen* as soon as he returned from the airport. They touched down at the Igor Sikorsky Memorial Airport forty minutes later and flew over to the power station in the pair of atomicars they'd brought along in the hangar of the giant aircraft.

Crossing over the harbor they could plainly see the smoke still rising from the stricken power station. And, as they drew near, several of them gasped on seeing the large hole in the roof of the main building.

A well-meaning fireman tried to signal them to leave the area, and when they continued to descend directed one of the fifteen or more hoses to be aimed at the atomicars.

"Think they're trying to tell us something?" Bud asked as he dodged the arc of water and set the atomicar he, Tom and Hank were riding in over in a nearby parking spot.

Hank chuckled. "Little do they know the power of the Swift Tommycar," he said using the nickname Sandy had given them. "I'll go over and explain the situation. My large size comes in handy in cases such as this."

Tom popped the top of the vehicle and Hank stepped out, jogging toward the now startled fire fighter. The man plainly didn't know how to handle the situation and was frozen in his place. Before the large engineer got to him he actually looked down at the hose nozzle as if trying to decide whether to shoot water at Hank.

Fortunately for him, he never got the chance.

Hank draped a gigantic and very muscular arm around the man's shoulders as he explained that Tom Swift and crew had been specifically requested by the Governor, and that they had a large load of fire suppressant "bombs" that were to be shot into the stricken building and not do the damage the water was inflicting.

A minute later all hoses had been shut down. Hank turned and made a signal to the second atomicar. Five seconds later the top rolled back and what appeared to be a wide-mouthed bazooka extended from the back seat.

Over the following three minutes Tom's devices came out of the bazooka at the rate of one each five-seconds. The three-pound coffee can-sized bombs gracefully arced up and over the extremely wet parking lot and into various spots inside the building. Seconds

after the first one hit inside, popping noises could be heard and several streams of foam shot into the air only to settle down inside the building.

And then, one minute later, it was over.

No more smoke came out and no further evidence of flames could be detected.

"If anyone asks me," Bud stated as he and Tom got out, "I'm going to tell them it was magic!"

The power station manager, a very harried and panicked man in his seventies, came bustling out of a trailer set to one side and came to see Tom and his team.

Following a brief conversation where he tried to explain he'd asked the fire fighters to not use water, he suggested those same men and women go into the building, wade through Tom's foam and come back with a report about any hot spots.

"They won't find any," Bud said as a small group of wet firefighters trudged off on their task. "Tom's fire fighting bombs smother everything, cut off all oxygen, absorb a heck of a lot of heat and then disintegrate leaving behind carbon dioxide and a film that can be wiped away using rubbing alcohol."

"What he said," Tom responded seeing the manager's disbelieving face. "The Governor should be here in the next fifteen minutes. He called for us to come here. In the meantime, can you please tell us everything you know about what happened, even in the fifteen to thirty minutes before the attack."

"I need to sit down. I feel ill," the manager said. Hank on one side and Bud on the other helped him get to the trailer, evidently an office space, while Tom called for an ambulance.

He began to look a little better once he was sitting down and had a cup of cold water in his hands. But, he was shaking all over and was pale. Even so, he tried to give Tom as much information as possible.

"I was outside having a smoke with some of the men when a bunch of clouds started to form right above the plant. Musta been thirty or forty thousand feet up and all compact in an area maybe a half mile across. Strange because we've had nothing but unseasonable clear skies for weeks around here. Jimmy, that's Jimmy Washington, said it's about time we got some rain. Then—" he stopped talking and his eyes grew wide.

The manager clutched at his chest, made a sickening gurgle sound and slumped in his seat.

“Get him on the floor!” Tom ordered. Bud and Hank eased the man down and Tom ripped open his shirt. In just a few seconds he was performing CPR. In between compressions he told the others to find a portable defibrillator. “They have to have one by law!”

It was found sitting in a shelf at the other end of the trailer and soon Bud had it open, the pads unwrapped and in place.

“Stand clear…” the automated voice told them. “*Shock in three, two, one, NOW!*”

The manager’s entire upper body convulsed but settled back to the floor, lifeless.

“Press the repeat button, Bud,” Hank told him. The flyer did and five-seconds later the process repeated.

This time, the man took a gasping breath. The machine reported a semi-regular heartbeat and the **REPEAT** button went dim telling them it had been disabled.

Outside the sounds of sirens, different from those used in fire trucks, could be heard. Bud sprang to his feet and went outside to flag them down.

A group of employees had gathered around the trailer door and many of them shouted questions at Bud. He yelled back, “Get back and give the medics a chance to get in. Don’t go too far. Tom Swift needs to interview as many of you as possible, but make a lane. NOW!”

A minute later an ambulance and a Paramedic Fire Truck pulled up. The three people in the ambulance jumped out, and opened storage compartments on the side of the truck.

Bud yelled out to them. “Heart attack. He’s been shocked twice, got a pulse, and he’s breathing.”

That helped the medics pick what they needed to bring in and soon they had pushed past the flyer.

They were very efficient and had the manager on a gurney within four minutes, hooked up to their own combination defibrillator and EKG machine, and were wheeling him out.

As the ambulance rushed away, Tom and Bud came out and got the crowd’s attention.

“I need to talk to anyone who was out here and saw the strange clouds. Hank over there wants to interview anyone who was inside the building when it was hit, and Bud, here, needs to get some information from the rest of you.”

An hour later Tom believed he had a good idea of the sequence of events.

Unlike the attack on the sailboat, this one had been actively watched by about fifteen men and women who had gathered outside. It was this break time gathering that possibly saved the lives of some of them who worked inside the part of the buildings that suffered the most damage. And, as fortune would have it, only one man, an electrician who was standing close to the cluster of amplifying capacitors and was knocked nearly fifteen feet backward into a wire mesh fence meant to keep people away from the dangerous equipment.

When the firefighters who had gone in to check for any signs of fire—there were none as Tom's firefighting bombs did a thorough job—they discovered him trying to stand up. He'd nearly choked on the carbon dioxide but managed to pull on a clear smoke hood over his head.

Fortunately, Tom's bombs cleared out quickly.

Everybody outside agreed on the basic sequence of events, but not on what they saw. A few believed they had seen a giant attacking bomber jet streaking overhead just above the clouds.

"How else could be have been bombed and attacked if it wasn't the Ruskies or someone in a bomber?" one man insisted.

One of the two women in the group said she believed it was a sign from above that mankind had reached the limits of his patience. She was going to leave for the day and prepare for "the coming." When everyone laughed at her and scoffed at the very idea, she stomped away, red-faced.

What they did agree on was that the clouds appeared and grew from something very small, perhaps a few hundred feet across—and all depending on how high they believed them to be—before practically billowing out to cover a very large yet concentrated area.

Moments later something lanced Earthward described as being either like a laser beam that periodically did a little zig-zag, or as out and out lightning.

"Except, it was all sort of concentrated, you see? I've been in lots of lightning storms and the bolts go all over the place!"

After hearing from everyone, Tom had a single question.

"Did you hear thunder?"

This stunned them all and they answered in the negative.

He thanked them all and suggested they go inside to see what might be done with the power plant.

Bud tapped Tom on the shoulder. "Why the thunder question?"

Tom tried to grin but was not very successful. "Well, lightning

superheats the air it passes through shoving to so violently to the side that a vacuum is created. The air rushing back in slams into more air causing the thunder. I never heard a thing when the boat was attacked and these folks didn't either. I have to conclude, flyboy, that this was no lightning strike!"

"Then, maybe it *was* some sort of laser."

Tom shook his head. "I don't think it was that, either, Bud. I can't say for certain, but my impression is that this, let's call it an energy beam, did come down slightly jagged. That was born out by these folks. A laser would not do what this did in two ways. First, the beam would be just that, a direct point-to-point beam, not a 'bolt.' Then, there is the things about light passing through the atmosphere all the time and it never causes pressure waves that are detectable or destructive."

"And, a laser is just light, right"

The inventor nodded. "Exactly. Whatever it is has become more than a nuisance; it can be downright deadly, and it must be stopped!"

"Here, here!" Bud said raising an imaginary glass, He soon brought his hand down. "But, how?" The last thing he expected was Tom's reply.

"You guess is as good as mine."

The Governor landed a few minutes later and stayed only long enough to talk to Tom a few minutes and get his picture taken looking sad and concerned. An hour later word came that the manager pulled through and was under careful observation but was expected to recover.

"That's a relief," Bud stated as the three Enterprises men climbed into the first atomicar. The second one had taken back off shortly after delivering its cargo of fire fighting canisters, heading back to Enterprises in case they needed to resupply and come back.

When Tom arrived back at the shared office his father was sitting in the conference area, an odd expression on his face.

Tom sat down and looked worriedly at him.

When it registered on the older inventor that his son was sitting there, expectantly watching him, his face changed into a grin.

"I heard about the life-saving thing. Good work, son, and pass that along to everyone for me. Now, tell me about this attack. Did you have any good eye witnesses?"

Tom nodded and told his father about the interviews with

everyone that had been outside when the attack occurred.

"They were all pretty close," he explained, "both in what they say they saw and to what I did see. And that is just the almost bolt. I really wish the darned thing zigged and zagged like a real lightning bolt, but then we'd all have heard the thunder clap."

"And, there isn't one," Damon declared.

"Not a sound."

"Perhaps there was a sound but it was either too soft to be heard by the naked ear, or it was at such a low or, possibly, high frequency that it couldn't be detected by the human ear."

Tom now smiled. "So, that means I need to come up with something that hears very quiet things and/or noises above or below human range. Personally I doubt it is a low tone. People would have felt that. My guess is to go for something above twenty-five thousand Hertz for a start."

Damon mentioned a new product on the market that could "hear" things up to about fifty thousand Hertz.

"It is from Chritendon Sonics down in Kentucky. I've kind of known their founder, Robert Chritendon, for perhaps fifteen years. Sort of an odd duck, as we used to say, but a reasonable man. If you call him, mention I said hello and then ask what range of products they have."

"Do I mention the attacks?"

His father shook his head. "If he brings the subject up, tell him it is not something you can discuss, but don't outright deny it. Just tell him you have some special sonic communication system on the drawing board. That ought to get his mind onto his equipment."

Tom was a little surprised to be put right through to the President of the company.

"Well, Tom Swift. I'll ask about you later, but how's your old man? Haven't seen Damon in donkey's years, but I heard through the grapevine about his health scare a year or more ago. Is he truly over that?"

"As a matter of fact, he is just fine, Mr. Chritendon. I'm not sure what your end of that grapevine had to say but he had a major, probably terminal tumor inside his brain, and we got every bit of it out. He sends his regards, by the way."

Chritendon let out a heavy sigh. "You don't know how good that news makes me feel, Tom. Congratulations on your outstanding achievement. So, now how are you doing?"

Tom told him he was fine but a little under pressure on a new

project.

"I was wondering if you could fill my knowledge gaps in on your very high frequency listening and processing chips?"

"Of course. For starters, they are programmable. We used to have five different ones, but the newest ones coming out in a month combine all the various ranges. If you like I can have a half dozen of them sent to you for delivery tomorrow. And, while I may know the why of it, I will not ask, so don't feel you have to tell me anything. All I would like in return is some sort of report as to how they ultimately were used and the effectiveness of them."

"I can certainly do that for you, sir. And, if you wish we can return them as soon as we are finished."

Chritendon laughed. "Naw. Just let your dad know that someday I'll want to get something back for free. Maybe a nice lunch to talk over old times."

Tom told him how to label the shipment so it would get to him as quickly as possible, thanked the generosity of the man, and hung up.

That evening Tom decided to confide in his wife. She sat on the sofa, listening carefully and only asking one question before he stopped and looked at her.

"Ideas?"

She slowly shook her head. "Nothing that is very nice or helpful, I'm afraid. I want you to hunt those bad men down and knock them from the sky, but I have absolutely no idea how to go about it. I like the idea of these new sonic chips. Perhaps if you could float them high above a likely target, way above any noises from the ground or even jet airliners."

Tom nodded. He'd had that thought as well.

"I'll need to build a listening, recording and transmitting device to go around the chips, and assuming either we or the Government people can find some sort of pattern in their attacks, I might be able to place one at the five or six most likely next targets." He sighed. "Even if all we get is some sort of sizzle noise as the beam goes down through the clouds that might help me find out what the beam really is."

"What do you mean?"

"Well, if there is a telltale sizzle, then I believe that would mean the beam or bolt is electrical in nature, rather than light. That might lead us to figuring a way to detect the equipment generating it." He

looked at her a little sadly. “It might be a long shot, but right now short of stationing fighters aircraft above each and every power generating plant, it is probably our best chance.”

She stood up and leaned over to kiss him.

“I am going to get dinner on the table while you figure everything out. Oh, and if you don’t mind, play with Bart a little. I can see him sitting in his playpen looking expectantly at his daddy.”

When Bashalli returned from the kitchen she stopped at the door watching the two men in her life and smiled. Tom was sitting in his favorite easy chair reading a technical manual and Bart was in his lap looking quite seriously at a paperback book on the history of the airplane.

Tom saw her and smiled, nodded at their son, and mouthed, “I think he’s actually reading!”

She came over to them and leaned down to kiss their son on his forehead. “What are you reading, Bart?”

He looked at her quite seriously and replied, “About airplanes, mamma.” His head swung up to look at Tom. “Dadda? You make airplanes?”

Tom set his journal aside. “Well, our company makes airplanes. I don’t do it all by myself, but I suppose the answer is yes.”

Bart looked back at his book then at Tom. “Why?”

That took him by surprise. “Uhh, well, this might be a bit beyond you, but we build airplanes because some people want to have one of their own.”

“No! Not that. Why do airplanes go in da air?”

Now it made sense. He turned Bart around so the boy was facing him. Bashalli perched on the arm of the chair as Tom tried to explain the concepts of lift and flight.

Bart listened intently until Tom asked him if he had any idea what he’d just been told.

Bart closed his book and held his hands out, palms touching. One hand was flat and the one on top was cupped.

“Wind goes over and under the wing and the puffy top makes it pull airplane up. Right?”

With a chuckle that reminded Tom of a similar situation sitting in his own father’s lap as a young boy, he said, “You know, that is just about the best description I’ve heard. Good boy!”

Bashalli stood up. “Just do not engage our son in designing any of your jets or space ships until he is at least finished with the first grade. Until he turned three I still held out hope he would find alphabet blocks fascinating for at least a few weeks at some point.” She leaned down and kissed them both before saying she was going to call her parents.

CHAPTER 6 /
WHERE? WHAT? HOW?

TOMMY AND Betty were sitting sipping tea when someone rang the bell downstairs. Betty sighed and rose from her comfortable chair.

"My turn; you got the delivery man yesterday," she said in a sigh heading for the office door.

"If this one is cute, bring him up!" Tommy called out.

Two minutes later a bemused Betty came back.

"No cute delivery man?" Tommy asked.

"No, just a rather plain woman from the Royal Mail. Red truck, rather poor posture and all. Look what she gave me." She handed a large "Overnight" padded envelope to Tommy.

They sat while it was opened. Inside was another envelope, all golden and very official looking. Their names were printed in a frame-like box on the front. There was no other writing on either side.

"Could that be some sort of infernal explosive device or filled with toxic chemicals?" Betty asked. She honestly seemed nervous where Tommy was very curious.

"No. Nothing like that. I feel a couple items inside that are possibly more envelopes. One for each of us?" She arched an eyebrow. "Well, for safety and security sake come around here behind me and I'll open this away from us."

Betty moved around and stood with her hands on Tommy's shoulders as the blonde pulled a notched tab on the golden envelope. As she expected, nothing came out. She turned the open side around and extracted two sheets of paper and, as she predicted, two large envelopes. Each of those had one of their names on it.

The top sheet of paper was what appeared to be a form letter. She decided to look at the second page before tackling the first one. When she read it to herself, she began laughing.

"Oh, Betty, listen to this!"

"What is it?"

"As I just said, listen. All will make itself known."

"Thomasina Mary Swift

Elizabeth Suzanne Rawlins

Ladies,

Well, as I mentioned when you were over here we are about to formally dedicate and open our second space station, and I want the two of you to be up there with all the rest of the Swift clan for the event.

The envelopes contain three things:

1) Special Access badges with your info and a photographic scan on an embedded chip

2) An official TeleVoc pin for each of you to have forever; more about what it can do later

3) A letter explaining what I hope you can and will do both with and for us

Actually, they also contain notes from Sandy and Bashalli saying how much they have missed you and also have a picture of little Bart along with Bashalli's latest scan of the forthcoming baby. It is courtesy of a little something I came up with a few years back called the SimpsonScope.

Today should be the 17th if your mail service honors "next day" mail deliveries. We will take off in one of my newest spacecraft on the 22nd. Please call me if you cannot make it to your nearest major airport, London Heathrow would be it, I believe, either the day before or that early morning. I will send Bud and perhaps Zimby Cox to pick you up in my *Sky Queen* at noon that day. No arguments about the flight. We've checked and there are just no good flights that connect to get you here for at least three days before and a day after."

"There's a bit more but nothing germane. So, what do you think, Betty? Up to a little jaunt into outer space?" She smiled and then laughed, a telling sign she was exceptionally excited by the prospect.

Tommy could see the barely disguised concern in her best friend's face. She gently grabbed the other woman's wrist and pulled her into her lap.

"Tell Aunty Tommy about it," she said in a soothing voice.

Betty sniffled but was not crying. She was slightly shaking as she said, "I'm afraid, Tommy. Just plain fear. And, I think a little of my childhood claustrophobia might be trying to rear its ugly head. You

see such horrid things in movies and on the telly about accidents in space." Sniffle. "I suppose that's silly of me and your cousin, Tom, has it all well in hand." Another sniffle.

As she was speaking Tommy had reached over and opened her envelope. She looked through the items inside and now let out a little chuckle.

Betty was horrified and she pulled back thinking her friend was laughing at her fear. Instead, Tommy rotated around a piece of paper that turned out to be a photograph. Betty took it and sat up, then eased out of Tommy's lap and starred at the photo.

"Is… is this it?" she hoarsely whispered.

Tommy nodded. "Look at the note on the back."

In what she knew to be Tom's handwriting, Betty read the note.

> Show this to Betty if she thinks a space station is a crowded and sterile "Movie" sort of thing. This was taken day before yesterday. Up there!

"Oh! But I thought…" was all Betty could get out before she, too, was chuckling. The photo showed the inside of the station—a giant tube of six hundred feet in diameter and more than double that in length—with its curved surface that had already been planted with trees, grass, flowers, and food crops all around the circumference of the station wherever there were no buildings. It evoked thoughts of science fiction mega-stations and entire worlds of people traveling through space. But, this one was different; this one was real!

Tommy finally turned to the first page. It was a basic press release with a final paragraph stating that they were to be the official guests of Damon and Tom Swift and that a formal RSVP was expected by the following day.

Tommy picked up the phone, checked her watch to see if it was a reasonable hour in New York, and dialed the number listed on the first page. When a pleasant-sounding woman answered, "Station christening," she read out the confirmation number, stated their names and said they were officially accepting the offer.

"Oh, that will please Tom no end," the woman told her. "He also asked that I forward your call when it came in. Please hold…"

"This is Tom," came over the line as soon as he picked up his receiver. "Is this Tommy or Betty?"

"It's Tommy, Tom. I must say we were both gobsmacked at the invite. And, your photograph came in very handy. What a wonderful-looking station."

Tom laughed. “It is much more impressive in real life! In fact, it is so stunning and the air is so clean and pure we had to do a little photo retouching to make it look *real*. So, can you two be at Heathrow when Bud gets there?”

“Depends,” Tommy said teasingly, “on what the inflight meal service is going to be like.” She laughed to show she wasn’t really serious.

Tom replied, “I’ll have Chow marinate a couple of giant rib eye steaks and broil them to your liking in his galley on the jet.”

Arrangements were made for the pick up to be an hour later than the inventor suggested, as they would need to clear through International Security before being allowed to take a flying bus across the tarmac to where Tom’s jet was likely to be directed to park.

Any earlier and the ladies would run into the noontime crush of outgoing flights.

“Got it! He’s anxious to see you two again and tells me he’s thinking of letting *you* two fly the *Queen* back so he and Zimby can grab a nap. You both did really well with the atomicar flights you took and the *Queen* isn’t much harder to fly.”

After hanging up, Tom’s outer smile disappeared and was replace by the scowl he had been sporting the past five days. Another power station attack had come and gone with nothing being spotted by anyone other than the downward bolt—though not exactly a bolt—or what might or might not be lightning lancing through a recently-formed cloud. The unknowns were exasperating!

He had tried recreating a special video enhancement system originally built to detect his totally undetectable coupe of invisibility. It worked then only because the alignment of the invisibility cameras and projectors had been microscopically off. His hope was this attack from the skies was mechanical and had some human-induced flaw.

Nothing had come of it, but that might be explained by it being flown around almost randomly and may have missed being in the same spot as the vampire ship—or what ever it was—had been at any given moment.

His plan now included the design and creation of a special detection and cutoff switch to shut off all electricity generation at any power plant under attack. It was something all SwiftPower stations already had, and ought to be capable of shutting down all electrical power coming from the generators faster than the blink of an eye.

“I can’t believe that the incredible power suction these people can exert really gets to the dangerous point in the first couple of seconds,” he explained to Hank Sterling who had dropped by along with Bud a few minutes earlier. “On the sailboat, I watched for at least three-seconds before there was any hint of damage or danger.”

“Probably why most of the gauges tripped and were not damaged. Too bad we didn’t have a master power cutout before the attack.”

“Obviously, in theory I understand what the purpose is, but how do these detecto-shutty-off things work?” Bud said.

Tom looked at his friend. “Well, basically a circuit breaker detects a whopping great amount of power suddenly surging through it. Like an old fashioned fuse, only a lot faster. The old screw-in fuses often took so long for the metal strip inside to melt and break that whatever was plugged got pretty fried, but at least the electricity to that part of the house or building was shut off.”

“So, damage done but maybe no big fire?”

“Yes. Pretty much. Anyway, when circuit breakers came in they could react a lot sooner. The inside holds a tight spring that is ready to snap the two leads apart in about a tenth of a second. Really good, but if you very gently increase the draw of power through one, it holds off too long. They were designed to react to a sudden surge, like fuses only faster.”

“I see. And yours?”

“What we are creating for these power stations is actually a computer-based mechanism. They are based on my smallest L’il Idiot line, those ones you said looked like a circuit board for a mouse. They have a small back-up battery but draw from whatever they are connected to so they can run practically forever. What is special is they scan the power draw four hundred and eighty times a second and make decisions based on individual inputs. They control a special breaker that can cut power in as little as a hundredth or a second, and reinstate it in case of a faulty input. But, my guess is, and this is borne out by the generator stations that have it installed and have been hit, is it is pretty foolproof.”

“How fast again?”

Hank cleared his throat and Tom let him explain. “The human eye blinks in about three- or four-tenths of a second. The circuitry could turn the power off or on dozens of time in the same time it takes you to blink once. If they shut things down and then make the decision to turn it back on even ten checks farther out, you would never see your lights blink.”

Bud grinned and rubbed his hands together. “What about those sonic listening chips?” he asked turning back to Tom.

The inventor shrugged. “They work like a charm, it is just they only work listening out to about fifty feet. Unless we just happen to get one in the exact right position, they are kind of a dead end.”

Hank nodded. “I was more thinking about stationing them on the roofs of some of the generating stations, or at least off to the side where we believe these power vampires might send that beam of theirs.”

The inventor leaned forward. “I wonder if we could enhance their range by adding a sort of hearing aid,” he said.

“Tell me more. Electronic?”

Tom shook his head. “I was just picturing an old-fashioned ear trumpet. Or, at least a parabolic dish to collect sound waves and send them to the chip above the center. What do you think?”

Hank smiled. “I think it is worth a try. I mean, I can pump out a —what—three-foot dish? Unless my memory is faulty that ought to at least quadruple the range of sound pickup. Then, they could be mounted to the side of the roof where they are less likely to be hit by the incoming beam.”

It was agreed to do just that with at least four of the chips.

While Hank went off to do that, Tom finished up the circuitry he’d started earlier in the day before he’d given up. Now, with renewed mental energy, he finished the things necessary to build a complete listening/recording/transmitting device.

He called Linda Ming, Enterprises’ expert an miniaturization of electronics, and asked if she had a few hours to spare.

“Sure, Tom. My place or yours?”

“I think I’ll amble over your way in a half hour or so, Linda. As a heads-up, I have a two-board device I need built—four of them actually—before end of the day tomorrow, so if you need to make a call to the Electronics Fabrication folks and bring in one or two of their best, go ahead and start that ball rolling. Thanks!”

Hank excused himself and left the office a moment later.

When he arrived, the inventor was pleased to see both Linda and Hank sitting, waiting for him with a steaming cup of coffee on the table in front of the chair where he would sit.

“Glad you are here,” he told them taking a sip and closing his eyes a moment to savor the hot and slightly bitter drink. “As I mentioned to Linda, and Hank knows all about this, we have an invisible and potentially deadly enemy lurking somewhere in the

sky. For all we know it might be over Enterprises right this minute!"

That proclamation even startled Hank a little.

"The truth is we just don't know where they are until they strike. They are, as I said, invisible, but they might not be totally quiet. That is why we need to build at least four high-intensity listening stations. I'm hoping, at least at first, to listen to the bolt or whatever it is they send down. If we can get a good recording of that I can either match it to something already known, or figure a way to duplicate it."

"If you are just listening to the results, what does that buy us?" Linda asked.

"If we can find a way to understand how they generate and, well, fling that bolt down, that may lead us to discover how it is they seemingly control it. Then, we either find a way to disrupt it—cancel it out maybe—or even a way to make something akin to a lightning rod. Let them fling it but it doesn't do anything."

They talked about the limited number of the sonic listening chips available, and Linda asked about getting more.

"If we have any success Dad'll get us as many as we need. But, if we come up empty-handed on this first try it could be a dead end and we won't need those chips."

Hank pulled up a preliminary drawing of the parabolas he would be making later that day.

"So, I'll have them ready to go tomorrow by noon or one. All I need to have is some indication of the mounts for the underside—if Tom intends to stick your electronics to the antenna—or what sort of basic mount the dishes need."

Linda, who had been perusing the specifications for the sonic chips looked up and over to Tom. "These really don't need much, do they?" He shook his head at her. "Okay. Then, I have a single chip recorder with transmitter sitting in one of my storage bins. I believe we can pair those with a very simple board and add a couple connectors for power and the antenna as well. Then, add power and we should be in business."

"How does the transmission go out?" Hank asked.

Linda bit her lower lip as she thought about that. Finally, she said, "We either have to add a second antenna, or redirect the big parabola to a satellite and uplink anything they've recorded. What do you think, Tom?"

"I was thinking that we have a simple telephone hook-up. The circuit you make connects to a phone line and calls into one of our

computers." The other two looked at him in amazement as the simplicity of it hit them. "The computer not only stores and analyzes the incoming data, it also notifies me or a team of the exact moment of attack. If we get really good that could even be an auto-notification to a waiting Air Force fighter squadron."

He smiled at them but secretly wasn't at all pleased to be thinking along the lines of setting things up for what might be a deadly military attack. In his mind he realized these electrical pirates exhibited nothing but evil toward everyone in the United States, but to be contemplating blasting them from the sky?

Hank saw the look on his face.

"If you are thinking along the lines of, 'I wonder if we can set a trap and just capture them,' then the answer is likely to be 'No.' You do understand that, don't you, skipper?"

Tom nodded but closed his eyes. He had a sudden headache. "You're right, of course, but if they are shot down I may never get a chance to learn how they are accomplishing what they are. The scientist in me wants to have that opportunity. The realist in me wants them taken care of, and the humanist in me wants to find a way to disable them, get them to the ground in one piece and capture whoever is in that air vessel."

Linda placed a hand on his right forearm. "There is a saying in China my grandmother used to tell me when I was little. It goes along the lines of, 'The robin and the fox may both wish that no harm will befall either of them, and they might live in harmony, but they understand that one must perish if the other is to survive,' I used to ask her if it was the robin or the fox who should live, and she told me it was whichever of them deserved to live. I don't actually think the parable is of much help now, but I think the rough and crude translation of 'it's either them or us' applies."

Tom could see that and he thanked them. "Okay, now let's get that circuit and antenna combination built. While you two concentrate on that I have a call to make to my contact in Washington. Hopefully he has some news for us."

When he got back to his office and called Senator Quintana's office, his daughter/secretary said he was currently speaking with another senior Government official.

"For you, Tom, and since dad told me to read you in, he's with the Secretary of Defense and the Vice President. And, yes, he wishes the higher office holder were not involved, but word came down from one step higher this is the way it has to be."

"Thanks for the info. When he gets back tell him we have a package we need to deliver to the four most likely targets to be

attacked starting any time day after tomorrow. If he can., have him get back to me with the locations he believes might be best."

"Can I tell him what it is you have that you want to put in those spots?"

"Sure. They are meant to sit and listen for these electrical vampires." When he heard her giggle at the name, he told her, "That's what we're calling them for now. At least until we have some indication of which national power or evil mastermind is behind them."

"I'll let dad know about your call as soon as he texts me to say the meeting is over and he hasn't killed the most annoying man in the room."

"Right. If he has, ask him to make his call to me the one he gets from jail. Talk to you later!"

CHAPTER 7 /

LESSON LEARNED

HISTORICAL INFORMATION:

Following the end of the Second World War, and while Russia was busying itself consuming more small nations than the Germans had ever invaded, all the while calling it a "consolidation" into what would become the Union of Soviet Socialist Republics (*USSR* to the West and *CCCP* to the Soviets) there were some who kept to the back alleys, staying invisible to the Russians.

There were two areas that escaped both the Soviet annexation and even their notice. One, an area on the north coast of the Black Sea that was to eventually divide, allowing the new nation of Moldova to form, was so poor that Russia actually scoffed at the idea of wasting any money in taking it over. But, a few military exiles thought better and soon christened it Kranjovia.

The second area was located on the Caspian Sea. Again, for purely financial reasons it was overlooked. This area became Brungaria. Like Kranjovia it jealously looked at the Western world and the strides free enterprise made in both profitability and the welfare of such people.

Unlike any Western nation its officials cared very little about its own people, placing their welfare far below the economic gains of the elite members of government.

Even with the Soviet expansion and tightening of its iron grip, the two small nations remained independent. There was one very good reason for this.

Both nations had come under the control of megalomaniacs with fairly strong financial backing and even greater technological (read: weaponry) power than anyone in the Soviet Council of Ministers along with whatever man was serving as the Chairman of the Party felt it prudent to attack.

Over the past seven plus years both had been active in attacking Tom Swift and some of his projects. This was for a single, simple reason. Their leaders felt the Swifts offered the best chances at the absolute best technology, even better than industrial espionage could ever get them—although they actively engaged in that as well.

But, the decades had been cruel to the Soviet Union and it had fallen apart. Times had been very tough to one of the two

independent nations and only mildly rough on the other. So it was that in these modern times, Kranjovia was listed on the United Nations' role of nations–arranged by their potential to be a threat to any neighboring nation or the world–just behind Burkina Faso and The Ivory Coast and only slight ahead (by virtue of the Western alphabet) of Lesotho.

Brungaria, on the other hand, still wielded some power even though it had been kept mostly hidden to the world for several years.

* * * * *

With Bud leaning slightly over Tommy's right shoulder and Betty leaning back a little to look at his rear end, the *Sky Queen* came over the small town of Pottersville at two thousand feet.

"Let's throttle back to just ninety knots," he suggested and Tommy's fingers slid the image of the thruster controls back. The big jet slowed down quickly but not before they slightly overshot the turn to Enterprises.

"It's a heck of a lot different than the small single-engine planes I've been in," she commented as she made a course correction bringing them around to their left and over the town of Shopton.

"We need to skedaddle back south," he said. "The town folk don't take kindly to this huge flying object being right over their heads."

"Oops! Sorry, Bud. Do I radio in now?"

He shook his head. "Naw. You keep slowing her down and point the nose at the control tower in the middle of Enterprises. Not the one up the hill. I'll make the call." He keyed his microphone. "*Sky Queen* to Enterprises control. It's Bud. You guys awake?"

"Funny, Barclay. Really funny. I just got off the phone with Chief Slater at the P.D. He claims you did a no-no. But…" the man paused and Bud could picture him chuckling, "our very own Mr. Barclay wouldn't do something like that. Would you?"

"No. Wasn't me, but I let it happen. I'll call once we get down and explain that we have the Queen of England onboard and she requested the royal tour. Unless it is going to be busy I'd like to park the ship out between hangars six and eight. We took a bird strike coming out of England and I'd like the guys to check the right wing and scrape off the goo."

"Roger that. Bring her in on runway two-seven East. Take first taxiway and backtrack to destination. Winds are on your nose at three. No relative barometrics for you today. Tell *her majesty* I said to say hello."

"Roger. Coming in for slow and short roll out. Barclay, out."

Tommy had the jet over the north wall by now and at just fifty feet. She slowed them even more and increased the lifters. Soon, they were barely moving forward and she touched a button Bud had pointed out allowing the ship to settle to the runway's tarmac. They rolled forward three hundred feet to the turn-off and she maneuvered them with almost expert east until Bud told her, "Cut everything. We're here! Hopefully, you both have your TeleVoc pins."

They showed him they did and he helped Betty reposition hers for best results.

They deplaned three minutes later, and Bud stopped to tell one of the maintenance workers about the avian hit. The ladies had retrieved their luggage from the lounge and joined him. He took their suitcases and they walked the two hundred feet to the open end of hangar 6, where he kept his office.

As he made a call to apologize to the police chief, they walked around inside marveling at the sheer size of the space and photographs of most of the Swift aircraft that had graced the interior at one time or another.

Bud came back out two minutes later, a sheepish grin on his face.

"Hated to lie to the police, but I told our esteemed chief a VIP from England was at the controls. He sort of jumped to the conclusion it must be one of the royals, and I didn't exactly tell him he was wrong." He sighed. "Can either of you sound all Princess-y? He asked that I have our important guest call him or let him come out for an official welcome to Shopton."

Betty, who had initially gone to university with an eye toward theater dramatics offered to become "Princess Bettina of Cromwell." It was harmless fun and the four-minute call made Chief Slater's entire day.

They hopped into a small electric runabout and headed for the Administration building. There, they walked into the shared office just in time to see Damon Swift setting the phone back down.

After greetings and hugs, he stood back, a small smirk on his face. "And, is the *Princess* comfortable?" he asked. "No, don't say anything. I didn't kill your little jape. I did have to tell the Chief you were here for only a few minutes before we all whisk away to Fearing so you would not be able to come down and give him a photo opportunity." Now, he smiled.

The door opened again and Tom stepped in. He rushed over and gave Tommy a hug and a small welcome kiss and repeated it all with Betty.

"Golly, it's good to see you both. I hear the *Queen* might have a small bit of damage or at least something stuck to the wing, so I just stopped to have the Toad pulled out and she's being fueled and warmed up for us." He turned to his father. "Is mom coming soon?"

Damon nodded. "Your wife if picking her up right now and they are dropping Bart off at Bashalli's parents. They said they'd be here any time. Oh," he said slightly startled as the door opened and the two women stepped inside, "there they are now!"

More hugs were exchanged before Trent stuck his head in to tell them the Toad was ready.

As they walked to the waiting commuter jet, Betty asked, "Are we taking your giant cube in rails ship, Tom?"

"The *Challenger*? Not this trip. The new space station has several kinds of airlocks and passageways, but nothing for her. And, I don't want you to have to do the float through the enormity of space thing. You'll get enough of that inside. No, for this trip we're taking one of our flying saucers."

Bud met them at the Barn and they all climbed into the small aircraft.

The flight out to Fearing Island was smooth and fairly short but the touchdown was a little rough as a tropical storm was attempting to build up and the winds were unpredictable.

"Sorry for the bumps," Bud said as they came to a halt in front of the island's Admin building. It doubled as the terminal for non-supply aircraft. The men took the ladies' bags and gave them to a technician who promised to get them stowed.

"You're really not going to need much by way of outerwear. Up at the station everyone wears a special outer coverall that won't allow any lint to drift free of normal fabrics, and most people find they feel better just wearing it over their underwear."

Tommy stopped and so did the rest of the party. "So, knickers, bras and nothing else?"

Tom grinned. "Like I said, *most* people. It's a personal preference thing. You do what feels best under the coverall."

When they walked into a nearby hangar both Tommy and Betty stopped again. This time they also went slightly bug-eyed and slack-jawed. In front of them was one of Tom's flying saucers. A combination of light gray and an almost indiscernible outer skin made it difficult to focus their eyes on.

"You are probably noticing," Bud told them, "the outer skin and the little weird image thing, right?" They both slowly nodded. "Well,

the skipper has this alternating positive and negative ionization charge thing that makes the outer hull slick as whale boogers. Someone came over and turned her on otherwise you'd just see the surface. Pretty impressive, though."

As they walked to the ship and Tom showed them where to slightly duck under the bottom to get to the stairs running up one of the three support legs, Anne Swift asked, "How in the world do you get from inside that to inside the station?"

Tom laughed. "Well, Momsie, just like any good airport we have a maneuverable gangway that comes out, sort of accordion-like, and the end mates with the bottom of the saucer. Right over the entrance and exit strut. The seal is made, the inner door swings back as the strut extends and we sort of float out and into the corridor. Then it's a little push and we float to the airlock. No suits required by the way; inside will be a full atmosphere."

The flight was uneventful other that Betty nearly swooning when Tom lowered five of the screens at the "front" of the saucer and she could see they were already well above the atmosphere. Tom popped up a seat and she dropped into it with Tommy standing by her side, transfixed by the sights she was seeing. Ten minutes later they adapted.

But, neither of them were prepared for the interior of the station.

As they stepped inside the main airlock onto the platform at one end of the huge tube, both had to reach out and grab something.

Tommy grabbed Bud and Betty grabbed Bud and the three of them started to lift off from the deck. Tom and Damon took firm grips on the threesome and pulled them back down before they could get themselves into trouble.

"And, then there's that," Bud said as the ladies let go of his coverall.

They had all changed into the moderately loose but still form-fitting apparel on the way past the orbit of the old Outpost. Tommy, being more statuesque than Betty, was going to be garnering a lot of appreciative looks from the male members of the station crew.

Tom had already pressed a button to call for an elevator and it arrived within a minute of the flying threesome act coming to an end.

"All in. Next stop inside of the outer hull which also happens to be the ground in this giant pipe, no matter where you look," Bud quipped as they entered the cage.

Tom explained, "The closer we get to the ground the more apparent gravity you will feel. It won't ever be as much as we are all

used to on Earth, but it gets to about three-quarters of that. So, if you weight one hundred pounds back home, you will be about seventy-five and a quarter up here. And," he said pointing into the distance, "you can see one of the benefits of the near zero gravity up at the axis point."

About a thousand feet out someone was flying in what appeared to be a human-powered butterfly. Both the ladies made "ooooohhh" and "ahhhhhh" sounds of appreciation.

"It is truly magnificent, Tom," Betty said. "So, from purely a physics point, that man, or woman, isn't so much keeping themselves up this high as they are enjoying the lack of gravity and sort of power soaring around?"

"Right. And, I nearly forgot the two of you are actually quite knowledgeable so I won't try to explain little things to you unless you ask. The only thing I will say is this is the first of what might be three or four such tubes. I haven't made up my mind whether to cluster them or make them one very long tube. My first thought was to make this about three times larger, but the logistics of doing that this first time out were nearly insurmountable."

"I'd say you did a great job *mounting* this one," Tommy said with a very Swift-like grin.

As the elevator reached the ground, Bud swung the door open in time to catch a beautiful blond woman in his arms.

"Hey, Sandy!" everyone called out. She and her manager, George Dilling, had come up the day before to prepare everything for the christening event. She'd just come from getting their final shipment of visitors into their day rooms, getting them outfitted with their coveralls, and supplying each with an information packet about the station.

"Hey, back to you all. I am so-o-o-o glad you are finally here, Tomonomo. You as well, Daddy. I am about to go crazy from all the 'when do we get to talk to the real people' stuff that has been slinging around. I hope you don't mind but I've arranged for a little meeting with the important people in conference auditorium two in about an hour. And, while you two are doing your magic stuff, I'll take the ladies and mother around and show off the best bits of the station nobody else will get to visit." She smiled at the four she would be taking around.

"Sounds acceptable," Damon told her. "Standard twenty-minute with 'it's round and long and holds this many and this much' sort of address?"

Sandy nodded. "Please. Most of it is in their packets but you know how these *important* people are. Can't be bothered."

The address went over very well and was followed by a thirty minute question and answer period during which both men answered questions that had already been answered a few moments before. Finally, Bud—who had been standing in the wings—came out and waved his arms to get the audience to look his direction.

"We really want to thank you all for coming and asking those insightful question, even the ones Mr. Swift had already answered for someone else, but it is time to get you all to the dining hall where you will get a chance to sample some of the foods you can see in the gardens outside all around and above you as they are grown. Dinner in ten minutes followed by a tour of the air and water recirculation facilities in about an hour. After that, in—" he looked at this watch, "—two hours and five minutes we do the ceremony."

He took Tom and Damon by their elbows and ushered them off the right side of the stage. "Thank you, Bud," Damon told the younger man. "Both for getting us off and for voicing some of the frustrations Tom and I feel in these sort of situations. We tell them we are going to be constantly updating this station, and perhaps adding to it, the first question is, 'Do you have any plans for adding onto this thing?' " He snorted as they walked out the side door.

"At least they weren't asking the old, 'Will you be using this to subject the rest of the Earth to your rule?'" Bud said both sarcastically as well as somewhat bitterly.

Five minutes before the actual ceremony, the entire Swift/Barclay/Rawlins contingent walked from the main Administration structure and to the waiting crowd of nearly one hundred politicians from around the globe, key news agency reporters and their cameras, and a few industry movers and shakers who were already, or would soon be, in residence manufacturing things or doing vital research in the giant station.

Damon keyed the microphone he had clipped to his collar.

"If I might have the audience's attention…" he said. The conversations began to cease, but a few people just could not get the idea they were to be silent. "We can do this with all of you paying attention, or we can do a private ceremony without you," he said.

This got a few people hissing to the chatty ones to "Shut up!" In a few seconds, there was silence.

"Thank you. Now, while you have all been treated to tours, talks and information packets, this is what I believe you came for. We are about to officially dedicate and open this station. To do that, I present my son, Tom Swift, who was and is the man behind this magnificent structure. Tom?"

The inventor approached his father to tremendous applause,

hundreds of flashing strobes from cameras that really didn't need to use them, and cheers from a lot of people, mostly station personnel.

He gave everyone a brief account of why the station was built, told them he was not sure what would happen to the older station and then asked his mother to come forward. As she came to him, a wrapped bottle in her hands, stage crew moved a solid metal structure over beside them.

"It is with great pleasure that I christen this station, the *Space Queen*. May she always do the great things she was built for!" With that, the bottle was smashed on the metal and the crowd went wild.

* * * * *

"Skipper?" Bud was sitting on his favorite stool in the large lab and had been, without Tom's notice, for about five minutes. They had returned from the *Space Queen* the evening before and both Tommy and Betty had been delivered back to England by Red and Zimby.

"Huh? Oh, Bud. Ummm… what was that?"

"Hadn't actually asked anything, just trying to get your attention. But, since you asked, I was wondering whether your space friends might be able to use their scientific magic and see what the heck these power bandits look like?"

Tom put the circuit board he had been studying down and turned to his friend. "You know, it has been a couple years since we had any meaningful communication with them. They sort of got more and more quiet after we managed to get them down to the Earth. But—" He stood up and stretched. "I suppose there would be no harm, and maybe an answer, if we do. Good question."

He made a "come with me" motion and they left the lab, walked down the hall, down the stairs and out the side doors. Moments later they arrived at the Communications building and walked inside.

"Hey, Tom, and hey to you as well, Bud," the receptionist greeted them with a bright smile.

"Hello, Angela," Tom replied to the girl who had taken over the desk two months earlier when their regular receptionist had gone on maternity leave.

"Is George in?"

"Well, he is in, but he's talking with your father at the moment. Should I buzz them?"

Tom thought. "Yes. Please do. I actually want to talk to both of them. Just let them know I only need three minutes or so."

A couple minutes later they walked down the hall and into the

Communications Director's office where they were offered chairs.

"What's up, Tom?" George asked.

Tom explained Bud's suggestion of calling on the space friends to see if they might shed some light on things going on.

Damon frowned. "They have sort of been reticent to communicate with us lately. I say go for it, but don't be too surprised if they either don't answer or put you off. I can't begin to think what might be going on, but they did tell us a couple years ago of a sort of uprising back on their home planet and a power struggle." He paused, then inquired, "What are you going to say or ask?"

Tom thought a moment before answering. "First I want to tell them we have missed their communications. Then, I will ask if they have been watching the attacks on our power generating stations. Then… I wait."

George spoke up. "Tell Harry in the Comms room to give you accelerated access, Tom. If you have the message already written out, he can even help transmit it."

Tom thanked them and he and Bud slipped back out the door.

After saying hello to the duty operator, Tom sat down at the transmitter. Quite a leap forward from the old oscilloscope he and his father first used, this one featured a standard keyboard and monitor, and also had a touch pad where other, impromptu, symbols could be drawn out using just an index finger.

He composed the message, edited it, and read it out loud to Bud.

To Space Friends from Tom Swift.
Have had no communications with
you for a long time period, and hope
you are in positive health and have
no issues. We do have an issue.

If you have been observing our portion
of this planet you will have seen one
or many electrical events mostly above
our power generating stations. If you
have, do you have any insight?

"Let's hope they get that and can help," he said to Bud.

Harry offered to be on the lookout for a return message and would TeleVoc Tom as soon as it came through.

He and Bud had no more than entered the Administration building again when the call came to Tom.

“Skipper, it’s Harry. We have an answer. Brief, but they did call back. Want to come see it or have me read it?”

“Go ahead and read it but we’re coming back.”

“Okay. Here goes:

Tom Swift. Acknowledge receipt of
your message. Dangerous to
communicate now. Old Masters
replaced and new Masters
are unpleased by interaction with you.

“That’s it, Skipper. You still coming back?”

Tom told him he was. When they arrived he sat back down and sent a brief message.

When can you communicate?

He and Bud waited fifteen minutes before giving up.

“Keep me appraised if anything else comes through. Thanks, Harry.”

CHAPTER 8 /
UNDER SAIL ONCE AGAIN

WITH THE *Arlene Deere* now fully repaired, tested, and special insulation added to prevent any stray electrical discharges from ravaging it again, Tom asked Bud if he might like to accompany him on the second inaugural sail.

"Like to? Heck, skipper, I'd *love* to!" came the response Tom expected. "When do we go, what are we going to take for food, and how do I break the news to Sandy that she isn't invited on this boys-only trip?"

Tom set his lips in a straight line. "First, we go day after tomorrow. Second, Chow is coming along to try out the galley he designed and give it his seal of approval. As to either of our wives, they will have to be let down gently. Bash ought to be okay as she can stand the water on Lake Carlopa but admits she gets pretty seasick on anything more than about six-inch waves. That just leaves Sandy."

"Unfair," Bud protested looking at Tom as if he truly felt he was in trouble. "You have the easy stuff and leave me with the immovable object." He looked helplessly at the inventor. "What am I going to do?"

Tom lay a hand on his friend's right shoulder. "What has worked in the past—and hopefully we haven't used it too many times. George Dilling is sending your wife, my sister, to Paris and Rome and Madrid to do presentations on the joys of purchasing and flying the *Pigeon Commander*. She, Zimby Cox and Slim Davis are taking a cargo jet over with three of them, where she'll do an hour or so at a meeting room at each of their airports and then the three of them will do demonstrations and hands-on flights for the most serious there. They leave tomorrow and we don't need to tell her or Bash until after she is winging her way across the Atlantic."

Bud's grin reappeared. "Thanks, Tom. Really. All we have to do is not let her know that we knew about the sail until then."

"Dad and the buyer are going to do that for us, flyboy. Tomorrow, he arrives at ten and he and dad and I have a meeting where we are going to show him a detailed video. He's already seen the boat in its slip right after repairs were finished, so this is just for show. Sandy and the guys leave at noon so word will have *leaked* to them about his 'demand' for us to give it a weeklong shakedown and the sooner the better."

Both of the Swift children and their spouses were invited to

dinner at Damon and Anne's that evening. The topics of conversation ranged from the near completion of the giant space station and the news and public relations triumph of its dedication ceremony, all the way to how Bashalli was coping with full-time motherhood of little Bart *and* preparations for his little sibling in another five months, two weeks, four days and as few hours as possible, or so she told them she hoped.

"It is pretty uncomfortable being filled with an ever-expanding little being inside, and Tom and I believe this is the last one, but I have to admit being a mother is very… well, satisfying." She looked at Anne who smiled and nodded.

"She's handling things like a champ," Tom told them, "except the queasiness is lasting longer this time around."

"Must be a girl, then," Bud joked earning him an elbow in the ribs from Sandy.

Bashalli came to his rescue before Sandy could administer another shot. "I hope you're correct, Bud. I believe every boy needs a little sister to protect, and every little sister needs a big brother to look up to. Right, Sandy?"

The blond's head swiveled around to stare at her sister-in-law. "Uh… well, sure. Now that you sort of force me to think about it I have to admit Tom has been a great brother. Only small amounts of torture when we were young, just enough to cause a few tears and some hurt feelings, but I eventually stopped and he got over it."

They all chuckled. Under normal conditions it was brothers who teased and badgered their sisters, but in Sandy's case she had been such a prima donna Tom soon learned to just stand back and let her go until she ran down or one of their parents told her to stop.

Clearing his throat and trying to change the subject, Damon asked, "So, Tom, what do you suppose our friend Josh Westerly want to discuss at tomorrow morning's meeting?"

"Well, probably just the usual, 'When can I cast off and take her away?' sort of thing. He's been pretty calm about the damage and all, but I guess if I were in his shoes I'd want to take delivery as soon as possible."

"Will you be taking him out on a training run?" Bud asked trying to be helpful.

Tom rolled his eyes. "I don't know. I have been hoping that the computer simulation we sent him a month ago will have already made him ready to take immediate command. We'll see."

Later, as they were leaving, Bud whispered, "Sorry. I thought it might be useful."

"Don't worry, Bud. I just wanted to drop the subject once Josh Westerly's name had been mentioned." In a louder voice he called over to Bashalli and Sandy. "Hey, San. I hear you and Zimby and Slim are taking a European vacation. When do you go?"

She groaned. "Tomorrow after lunch. I really wish George would come to me with the things a week before the fact so I could shop for some nice new clothes." She sighed.

On the drive to their house, Bashalli leaned over and placed her head on Tom's right upper arm. "So, what is up? I don't think Sandy noticed but the whole thing about this sailboat guy and all seemed pretty, well, I can't think of the word but not a real conversation."

Tom had to smile. His wife was a brilliant woman and very perceptive. "Keep a secret?"

"Absolutely. I always do."

He told her about the planned sailing that would take about four days. "Mad I didn't ask you to come?"

She snorted. "Right. Sally Seasick here in the ocean and with the morning queasiness I already have. No thanks! I'll spend a couple days with your mother and the others with mine. Mother Swift and I will knit and talk, and my mother and I will probably cook far too many things to fill our freezer, and hers, and also talk."

They pulled into their driveway, got out and went inside where her mother had been babysitting. Instead of Bart being down for the night, he was sitting in his grandmother's lap giggling.

Bashalli tutted. "Mother, he really should be in his bed. You know that."

"Yes, my daughter, I do, but we were talking about things that seemed very important to him, so I decided to allow him to talk himself out. He was just telling me a joke as you came in. It was a knock-knock joke that had a cat inside a box, or something."

Tom looked disbelievingly at his mother-in-law. She saw this and laughed.

"Oh, Thomas. It was not completely perfect English but he does know quite a lot of words. So young and such a… ummm, a vo-cab-u-lar-y," she said slowly. "I actually was following what he was trying to tell me most of the time."

She handed the infant to his mother and stood up to hug them.

"Thank you, mother," Bashalli told her. "I would normally ask Tom to take you home but ever since you informed father that you have had your driving license for eight years, and he got over the

shock and bought you that little car, I guess you don't need the Tom Taxi."

Her mother raised her eyebrows and smiled. "It is not what could be called a speedy car, but it gets me around. And it is so nice to have the freedom. Bashi, I truly envy you for having adapted to this nation of ours so quickly. Well," she said as her eyes misted up a little, "must go home and see if your father was able to feed himself the chicken pot pie I left for him to heat up. Good bye."

As Bashalli turned to go upstairs with Bart, Tom looked at his son. "Were you telling Grammie P about Schrodenger's Cat?"

Bart's head bobbed up and down and even as close to sleep as he was, he smiled. "Shroder's cat in a box."

His mother shook her head and went upstairs to put him to bed.

The next morning she kissed Tom goodbye and asked that he please call her at least twice a day while out on the ocean.

"You know I'll do it when I can," he assured her and kissed her in return.

The meeting went very well with Joshua Westerly having only a very short list of wishes.

"Is there some way to outfit a delivery tube up to the control station so if I am really occupied I can still have a can of soda or a snack pulled from stores and sent to me?"

Tom and Damon looked at each other before the younger inventor spoke.

"Well, that sort of means the refrigerator and small microwave we installed in the control room are no longer needed, plus I'm pretty certain we'd have to reroute a lot of the ducting and electrical wires to accommodate that."

Westerly blushed. "Well, color me forgetful. It completely skipped my mind about those two things. So, forget that one." He made a big show of scratching it from his list. "That just leaves the idea I had about installing a voice-activated emergency system in case I take a bad fall and need help. I suppose one of those things you wear around your neck would do it."

Tom's face scrunched in deep thought.

"It shouldn't be too difficult to do," he stated. "Would it be only for emergencies? As in making the 'Mayday' call automatically along with position?"

Damon had an idea. "Why not tie that into the computer so if there is an emergency, the sails can be pulled down and a sea-anchor dropped to keep the boat from being knocked over if she

gets catty-wompus?"

Joshua beamed. "Excellent! If that can be added before I take her I'd be obliged. Plus, I'll cover all added expenses, of course."

Tom invited the boat owner out on what would be a four day sail up and down the Eastern Seaboard, but Westerly declined.

"Oldest daughter's daughter is getting married on Saturday and since her father is not longer in the picture, she's asked me to give her away. Got to do that as a priority. So, thanks but no. You call me the moment you get back in and tell me what a wonderful boat she is. I'll arrange to take her as soon as any final refinements are complete. Thanks, you two, for yeoman's service on this."

They invited him to remain for lunch explaining how Sandy needed to be on her way to Europe before the emerged and she caught wind of the sailing trip.

Joshua laughed. "Oh, golly, I've got one of those myself. The youngest girl. So, certainly I will stay for lunch."

Chow wheeled in their steaks, roasted potatoes and broccoli ten minutes later.

As they were finishing their meal Bud poked his head into the large office.

"Sandy, Zimby and Slim took off five minutes ago. Thought you'd like to know."

Late in the afternoon, Tom, along with Bud, Hank Sterling, Chow and another technician, Jake Aster, climbed into Tom's Toad jet and flew down to Fearing Island. They arrived in time to watch as the large sailing vessel was lowered back into the water after some recent work she'd undergone to her lower hull.

"Looks a heck of a lot bigger out of the water, skipper," Hank stated. "Oh, and forgive me if I didn't read the sales brochure, but why no huge and dangling keel? I thought all sailboats needed those."

Tom smiled. "She has a keel, but it is an electronic one. Three Attractatrons are mounted along the centerline that are attuned to water. I figured out that unless all the surrounding water gets picked up and moved, lancing down about twenty feet or so holds her upright as well as any metal-filled keel. A little better to tell the truth."

"Why didn't she flop over when the electricity was all sucked out? Wouldn't that have de-energized the Attractatrons?" the flyer asked.

Tom nodded. "Normally, yes. The truth is, and I can't recall why

we did this, but the electric keel is self-powered and that battery pack is not connected to any of the rest of the ship until it needs to be recharged. When running along a small generator prop about six-inches wide spins with the forward movement of the boat and generates a trickle charge."

Hank stated, "It's that Swift genius thing that works when they are asleep, when they aren't thinking about things, and now, underwater."

Bud grinned and added, hoping it would make him sound intelligent, "Tom told me that it also will hold the boat onto the water in case of giant waves. This one isn't going to get tossed around and bashed apart!"

They decided to sleep onboard that evening, and Chow made his first meal in the kitchen he'd personally designed. It was very small but the chef only had to turn slightly to access everything.

He'd brought a lasagna with him along with garlic bread which he heated up. Then, from the refrigerated storage compartment he brought out the makings for a tossed salad.

"Tom here even put in one o' them little dishwashers that look like a big ole' drawer," the cook said. "Uses no soap at all. Purty neat little thing."

"No soap?" Jake asked.

Tom shook his head. "No. We can't send that overboard so the washer uses hot seawater at first to blast things clean, then they get a thorough rinse in fresh water and ultrasonic waves. Five minutes later the drier goes on and ten minutes after that the dishes and pots and pans are clean."

When the sun came up Tom's crew was already making ready to cast off. He made a final check of all systems including their fresh water tanks—which were full—and their emergency battery pack—which was completely charged.

Everything was ready, so he gave the command, "Cast off forward." A man on the dock repeated his order and unwrapped the line around a heavy-duty cleat, carefully tossing the rope to Hank who coiled it up and dropped it into a watertight box at the bow.

"Cast off aft!" This time it was Slim Davis who did the honors with the line.

Using the auxiliary engine, Tom moved the boat away from the dock before turning her nose to the ocean and heading out. The radio crackled as they passed the first marker buoy.

"Skipper? It's Leo in the control tower. Your weather outlook is

excellent with winds coming over the tower at eleven knots right on bearing two-nine-five. I've swept the area and there are no boats, ships or obstacles to be seen. Have a nice sail."

Tom thanked the man, one of the first to have volunteered to move to Fearing when his father was first putting the island base together.

They turned *The Arlene Deere* to the north and allowed the prevailing winds to push them along at a nice clip for more than five hours.

"I wish we had the final sail made with Tommy and Betty's incredible solar cloth," the young inventor told Bud, "but we won't have that available until a week from yesterday."

"Yeah, but you do have that fifteen by fifteen foot piece stretched out on the front so you can at least get a good measurement of what it is putting out. Right?"

Tom agreed.

As they neared Wilmington, North Carolina, Tom turned the bit more to the north and east so they would scoot around the Outer Banks and not make another change until they were even with historical Kitty Hawk. His intent was to follow the shoreline from that point just about thirty miles to sea.

His charts had been marked with this course all the way to within one hundred miles of Nova Scotia. At that time they would turn around and work their way into the wind landing in Boston Harbor late on day four.

Hank, Bud and Zimby would spell him and each other at four hour intervals so nobody would grow weary at the helm.

Eight hours north of Fearing he called his other pilots into the control room. As all were highly experienced pilots they immediately understood the different instruments, but Zimby was a little weak on actual sailing experience.

"Which is why you will not be manning the control room at night. Of course, the computer system will take care of everything, but I don't want anyone out of their comfort zone."

He showed them the electronic keel controls that could be overridden from computer management and adjusted by the pilot if it were felt necessary.

"That's a darned good RADAR display," Slim stated.

"Best system available. Gives good, accurate and unhindered views from the surface all the way up to twenty-nine degrees elevation and out to one hundred miles."

The cockpit of the boat was very much like that of a Swift jet. The single wraparound all-glass panel displayed all instruments and could be rearranged to suit the individual pilot's desires. The only instrument not part of this display panel was the electrical output from the solar cloth up on the bow. It sat on a special bracket to his right.

Tom smiled to himself as he saw the numbers coming from that 150 square foot piece. A stable and solid two hundred-ten volts at just above two kilowatts. It wasn't quite enough to run the ship, but it would be feeding into the main battery pack below which would power them through the night. Once the main sail was made of the same incredible cloth, all the boat's power needs would be more than met, even in cloudy conditions.

Chow, not completely stable in his cowboy boot heels, finally changed into boat deck shoes with some tread. He had brought out a lunch of sandwiches around one and was down in his galley preparing their dinner when the first hint of danger made itself known.

An unexpected gust of wind caught the sails absolutely dead from the side and the electronic keel was unable to keep them from tipping over about thirty degrees for the first seven-seconds. It was only the free-flowing gimbal mount of the cooktop that kept the Westerner's pot of chili from spilling all over and possibly scalding him in the process.

"Sorry, everybody," came Zimby's voice over the announcing system. "I'm pretty sure I have us trimmed now but that was a freak fifty MPH gust that caught us. Oh, and the RADAR is showing five object inbound at high speed. Skipper? Can you come up please?"

The inventor rushed up the ladder from his cabin where he had been working on the circuit design for Westerly's emergency system.

"Where are they now?" he asked as he slipped in behind Zimby.

"Our two-six-zero at ten miles. They're coming it at about four hundred so they will be here in six-seconds."

Tom's hand flicked out and he hit a switch. The RADAR was extinguished. "Sorry, gang. Precaution," was all he had time to say before five fighter jets roared overhead, possibly as low as fifty feet off the water. With their main mast sticking up ninety-three feet, Tom realized what terrible things might happen if one of the pilots got a little too close.

He checked the boat's transponder before picking up the microphone.

“To whoever that was that just overflew us, you were too close. We are squawking zero-three-six-seven with ident. Do you read?”

“Sorry, folks,” came the radio reply. “State who you are, please.”

“Tom Swift and five other souls on a sailing boat. Why did you nearly knock us over?”

“Sorry, Swift party. Airbase at Norfolk did not register you on RADAR, they only got your squawk. In fact, we can’t get a reading on you. We’re coming back on another pass. Slower and higher this time, but explain.”

Tom told him the hull was made from a non-RADAR-reflective material.

“Are you a *special project*?”

Tom looked at Zimby who shrugged. Neither had heard the term, but Tom answered, “Negative. We are civilian.”

There was a two-minute pause during which three of the five aircraft passed overhead while the other two circled farther out to sea. When the man on the other end of the radio came back, he did not sound happy.

“Suggest you immediately put into Norfolk for search. *And*, seizure if you are carrying contraband.

“Please contact Admiral Hopkins at the Pentagon immediately. He will vouch for Swift Enterprises and our reputation. We will remain in the area for one hour before proceeding on our original course. Call the Admiral before you do something stupid.”

The radio went dead for more than twenty minutes while all five aircraft circled them at a range of less than four miles.

When the radio came to live again, it was Damon Swift.

“Request to speak to Tom.”

“It’s me, Dad. What gives?”

“Ah, son. I spoke with our friend the Admiral who tells me there is a large-scale smuggling operation going on off the coast. The jets around you are just trying to keep tabs on all surface traffic, and especially on a boat that is not viewable on RADAR. He is having them recalled but a helicopter from the Naval Air Station will be with you in about twenty minutes. Let their man be lowered aboard and cooperate. He will also have a new IFF code for you to squawk so this doesn’t happen again.”

When the large seagoing helo came overhead, Tom allowed the single person to be lowered to the aft deck. Taking off the protective helmet, Tom’s eyes widened at the sight. Not only was it a woman,

and a darned attractive one, but it was someone he knew.

"Angie Jackson!" he shouted over the sound of the helicopter as it headed back to shore.

She smiled broadly and came over giving him a tight hug. "Let's get inside so we can talk."

Once in the main room of the ship she shed the rest of her protective suit. Underneath she wore her Navy uniform. It now sported the insignia of a full Commander, one large step up from when she had been involved with the recovery efforts to find and bring back all sunken nuclear materials around the world.

"Boy, you're looking all sorts of good," Bud said as he received a hug from her.

"Thank you. A couple years have made a world of difference in you two. You are definitely not teenage boys any more," she complimented them.

"So," Tom said getting to the point, "why the flyover and why—even as happy as I am to see you—this visit?"

She sighed. "The truth is there is a smuggling problem, but there is also something worse going on. You've heard about the power plant in Connecticut? I see that you have. Well, that is not an isolated case. Three power stations have been attacked, and yes, this is an attack, in the just past four weeks."

"Who is doing it?" Bud asked.

Angie shook her head. "That's the problem, Bud. We have absolutely no idea. We could really use your assistance on this, Tom. As in *desperately need it*."

CHAPTER 9 /
A LITTLE HELP FROM A FRIEND

FOR A moment, Tom couldn't find anything to say. Then, he asked, "So is this a coincidence or were you planning to intercept us all along?"

"It was a beneficial effect. The Navy pilots called the base, the base called Washington and got the Admiral and he called me back at Norfolk NAS and told me he would be also calling your father. Our running into each other wasn't planned for today, but one way of the other I was going to be searching for you in the next three days. Sorry if the flyover was sloppy and dangerous."

Bud, still a bit miffed said, "Too bad there isn't a phone number to call to report bad flying, like there is in most states for lousy drivers."

Angie reached down and opened her purse. She fingered through some items until her had came back out with a business card that she handed to Bud. "This is the number for you to call to complain about the far-too-close overflight. Use it if you feel the need, but I'd recommend against it."

Tom reached over and plucked the card from his friend's fingers and handed it back to her. "No need, Angie. Or, should we be calling you Commander?"

The pretty officer smiled.

"On my ground it needs to be Commander but on yours…? Heck, you could call me Cleethorps and there's really nothing I can do. Angie is best, though." She laughed.

Neither Bud nor Tom understood the reference to a seaside village in England where her grandmother lived, but they joined in with her.

Following a bit more discussion Tom realized he was needed elsewhere so he contacted his father and filled him in.

"I agree, son. Go with Commander Jackson. Take Bud along if you think he'll come in handy. I'll call Fearing and have them shuttle up a couple well trained seamen to take your place. I think Hank is the obvious choice to take command."

Tom agreed and was told to run in closer to the shore and anchor until the pair of transfers could be managed.

"Probably in three hours, son. Fearing will send the men up in a seacopter."

Looking at his watch the young inventor realized it would be mostly dark by the time the seacopter arrived. He mentioned this to Angie.

"Our helo pilots are tops in good weather," she told him, "but I was hoping to be off in the next hour. A rather gusty windstorm is due in by six. Could your seacopter just drop them off and take us back in?"

"Just what the skipper was about to suggest, if I'm any judge," Bud responded.

"Extra special sauce on Bud's next hamburger," Tom said with a grin.

Angie pulled a tablet computer from her purse and tapped a few commands to bring up a chart.

"This is the Eastern Seaboard, as you will recognize. And these —" she swiped the image to the left, "—are the five different power stations that have been attacked."

"Six," stated Bud. When she looked askance at him, the flyer told her about Tom's encounter.

"That's incredible," she stated. "I didn't know about that. When was that?"

"Five weeks and three days ago," Tom told her. He pointed to the basic location on her map. Next, he told her about the encounter. Nothing to see, nothing to hear, just the lancing down of what looked a bit like, but was not, a lightning bolt that was obviously directed by something."

She seemed to be pondering something. "Well, that makes your attack the second one. The old Keystone power plant in Pennsylvania got hit the previous week. She was about to undergo a significant upgrade to her pollution abatement equipment and was slowly shutting down. But, whatever hit came in between her two smokestacks and practically blew the central part of the building apart."

"Injuries?"

"None, thankfully as that part of the plant is automated. *Was* automated. Now it is rubble. So, they hit that a little over six weeks ago, really did only damage and disappeared until they got you and this boat about three days later. We thought there was a huge gap, but you filled that. You see, every seven to nine days since then another power station has been struck."

"But, why?" Tom asked.

"Ah, that is something we, or at least the Energy Commission,

have been trying to figure out. All we know is massive amounts of power were suddenly… well, for lack of a better term, sucked back out of the entire grid. Fortunately in all but two cases safeguards kept the withdrawals to a very small area around the plants."

"So," Tom muttered, "somebody wants electricity, but why? What could they need megawatts of power for unless it is to power their lightning gun, or whatever it is?" He looked at Bud an Angie and they all shrugged.

"Oh, there is one more thing I maybe should mention. Other than your encounter, all of the others were at either coal fired or natural gas fired power plants. We hope it stays limited to those because I can't bear to think about the destruction and deaths if they hit a nuclear plant and breech the reactor."

That statement had them sitting in silence for nearly three minutes.

Bud looked curious about something so he asked, "How long were these plants offline, or were they all damaged so badly they can't supply power any longer?"

When Angie looked at him he added, "What I'm getting at is… was this just someone or something needing massive amounts of power or is this an attack to kill of the United States' power supply?"

Angie suddenly looked very ill. Even Tom was shocked at Bud's question and the implications it brought with it.

When the seacopter arrived two hours later the transfer of personnel only took five minutes and then the boat hauled up anchor and the seacopter made a swing around and headed for Norfolk.

Back on shore she took Tom and Bud to a secure room, keyed them in, and then pulled out a large map of the United States. On it were all instances of the electrical attacks. She carefully erased the line between the first two instances, added Tom's position when the *Arlene Deere* was attacked and replaced the lines.

"Well, given how much power you say this power pirate got from your boat, and the distances and days between hits, it is starting to look like they are using about thirty Megawatts a day. Surely they can't be just storing everything they are taking in some giant set of batteries to be taken away at some future date!"

"I agree," the inventor said looking at the pattern of the attacked locations. "If that is their burn rate then it is only by chance they decided to hit the *Deere* and not another power plant a bit farther down the coast. What do you think, Bud?"

The flyer snorted. “First, I think I don’t like these guys at all. Second, I believe calling them pirates makes them sound too noble. They’re more like electricity *vampires*. Third, I say we or the Air Force or someone needs to start flying around all possible new points of attack and blast them out of the sky!”

Angie sighed. “Tried that. Failed miserably. We believed we were getting the same sort of pattern recognition you’ve spotted and felt the next plant would be either back up the coast or into Kentucky. So, the Air Force and Air National Guard were on high alert all around Kentucky. And, they did hit another plant there.” She referenced a piece of paper she had to one side. “The Trimby County Coal Power Plant.”

“Let me guess,” Tom said. “The fighter pilots saw nothing, not even on RADAR, and once the attack came they still could not track whatever it was.”

“Worse than that, Tom. All aircraft within two miles lost electrical power for about five-seconds. Total system’s shutdown, including their turbines. Fortunately all were able to restart and landed without incident. But, whatever it was up there got away Scott free.”

Tom picked up the straight arm of the swing-around ruler and placed a compass scribe tool against it measuring out the distance the attacker—Bud’s vampires—could travel. He then swung an arc around the latest energy plant to be struck.

It crossed two power plants exactly and another seven to within about two hundred miles. At least to the north which was the general direction of travel based on the previous three hits.

“They could always turn to the west or the east or head back to the south,” Angie said in a resigned tone. “Unless they are being completely systematic, they could be heading anywhere.”

“What can we do, skipper?” Bud asked, also seeming dejected.

“Well,” Tom replied turning to Angie, “first you need to get the Navy’s very best person at pattern spotting and understanding deviations from any norm. He, she or they need to compute all possibilities and assign likelihoods to each power station. Bud and I have to get back to Enterprises to work on some way to detect them. It’s not going to be easy because we have zero starting point other than something that needs and store enough electricity to power a city of about five thousand people for a full day.”

He suddenly looked shocked at what that might mean.

“What is it, Tom?” Angie asked seeing the look in his eyes.

“It’s just that this points to either some super scientist with some

unknown plan, or a concerted attack by an unfriendly nation. And it just hit me there are three or more likely suspects."

Bud held up his right hand and began counting fingers as he said, "Russia, Kranjovia, and Brungaria come to my mind."

"Mine as well, flyboy, but add in North Korea as a nation and then we have several renegade billionaires who either hate our nation or hate me who would have the means to mount something like this. It's the whole invisibility thing that made me blanch. We know what is RADAR invisible as far as building materials, tomasite, and we also know about the Navy's secret project." He looked at Bud to warn him not to speak. Angie nodded.

"Best not to discuss the TS, even in here," she cautioned.

TS, or *TruStealth*, technology allowed ships to be truly invisible. RADAR technology made them seem to be minuscule, but the stealthiest ships were still visible during daylight. Tom's way around this was to mount a combination of high-definition cameras and 3D telejectors at specific locations all over the ship. The camera looked out, sent that image to a master computer that decided which of the opposite-side units needed to be projecting that image. Even underway, the 3D imaged sat nearly ten feet out from the ship so bow wake and most of the propeller wake behind were covered.

The addition of a special heavy metal plate just under the waterline at the rear of the ship smoothed that out. The result was that it was just about impossible to see a *TrueStealth* equipped ship twenty-four-hours a day.

"You've been briefed?" Tom asked her.

"Admiral Hopkins has the notion that someone might have duplicated your TS system, so he wants it on the table up front that is his suspicion and wishes that you would prove him wrong. Given, in his words, *the incident*." She smiled, raised an eyebrow and shrugged. "I'm only the message bearer and have no idea what he is talking about."

Of course he meant the test vehicle that had been stolen right with Tom inside of it, whisked away and was finally recovered—minus the computer system—in New York City.

"And the skipper can't really tell you about it," Bud stated sparing Tom from trying to politely tell her she was not "in the loop."

"Fully understood. So, while I route out the best people for my side of things, what do you believe you can do?"

Tom looked as if he were thinking hard about something, rubbed his chin a couple of times, and then sighed. "We'll go back and try

to find out if there is any other RADAR-absorbing material out there. It might be some sort of coating, and they obviously have some incredible damping device or coating keeping all that electricity from being spotted. I mean, power plants are so easy to spot from space… even from the Moon, by their power leakage signatures."

"Assuming you have the right equipment," Angie stated.

"Correct. And, we do have that at Enterprises and up at our two space stations. I'm going to have them divide the country into about six regions and then scan the one in which the most recent attack has occurred plus the likely region or regions adjacent. With luck whoever this is cannot completely contain the electricity and we can get a trace on them."

Five days later and there still had been no sightings from the stations, nor had there been any sightings from the ground.

All FAA control stations around North America had been notified they needed to begin searching the skies above the normal 45,000 feet, perhaps all the way up to 60,000. They, too, had no luck spotting anything.

It was getting close to the time the enemy must renew its energy supplies, at least according to what had happened over the previous weeks. With the path of damaged stations now pointing back to the north, Tom made a careful study of every coal and natural gas power station north of the Tennessee-Kentucky border. What he saw was of great dismay.

Kentucky had eighteen operating stations but only seven of them had outputs of greater than 1,000 Megawatts. Indiana had nineteen plants with nine of them in what Tom considered the target output zone. Ohio had ten plants in the danger range. Illinois, five. Even Michigan, at the very edge of the probable range, offered three of their plants to attack.

He decided to discount another Kentucky attack and also had a feeling West Virginia was not in danger unless the enemy was intelligent enough to start laying a false trail.

Or had some reason they had not traveled on from the most recent attack.

What Tom had not taken into account were the fourteen old-style nuclear power generating stations within range of the previous attack, or the fifteen SwiftPower reactors and generating stations in that same area.

He had thought about them but figured the SwiftPower stations would be safe as nothing short of a nearby nuclear warhead

explosion could breach those reactors, and the power generating systems automatically disconnected if trouble was detected, all within one-fiftieth of a second.

Now, as the hours wore down and he began to cross off other possible power stations, he began to realize his decision to discount an attack on a reactor-based station might have been hasty. Just because there had been no previous attack did not mean there might not be one in the future.

He picked up his phone, put it back down, and picked it back up again.

"Trent? Could you get me through to Senator Peter Quintana, and also try to get Admiral Hopkins in on the call? Tell them it absolutely vital we talk in the next hour or so, and this is in regards to the electrical attacks. Thanks!"

His phone beeped two minutes later.

"I have both gentlemen on line five."

Tom pressed the button. "Gentlemen. I appreciate you making yourselves available without notice. We may have a real disaster coming our way. So far the attackers, we have started calling the electricity vampires, have kept themselves contained to medium- and high-output coal and gas-fired generating stations. The big problem is they recently have been travelling north and getting into an area with fewer and fewer of these stations, but with some level of concentration of *nuclear* stations."

He heard two gasps on the line.

"But, they wouldn't! They *couldn't*!" the Admiral sputtered. "Think of the millions of lives at stake?"

Pete Quintana, a long time friend of Damon and Tom, spoke up. "Admiral? I don't think we can discount the idea this has all been just the precursor to an all-out attack on our nation, and one that could lead to massive loss of life. We have no idea who these jackals are, but we cannot assume anything but the very worst from them."

"My god!" Admiral Hopkins muttered. "What can we do, Tom? What can you do?"

"Well, Senator and Admiral, first we need to find a way to detect them. So far they have never been spotted. At the same time I feel it vital to curtail some of the power output at these stations. The lower the output the more likely they have been to simply pass overhead. I am also going to have our Construction Company start manufacturing fast overload sensor and cutoffs that can be shipped to all such stations and installed within a half day. It will mean each station needs to go totally off line for that period, but the alternative

is worse. Far worse."

"What's this about cutting the power output, Tom?" the Senator asked.

"Well, as I said, I believe they have been ignoring the smaller power stations mostly because it isn't worth their time or energy. Remember, we've seen this energy lance come down. That has to take a tremendous amount of power to generate. Perhaps, as dad and I have discussed, they don't believe they recover enough power from the lower-level facilities to cover what it takes to get that energy lance down. So, my thought is it to make it untenable for them to attack the more likely stations and to aim for others."

The Admiral let out an appreciative chuckle. "I think I see where this is going, Tom and Senator Quintana. Correct me if I'm heading on a bad course, but if we can control what targets look appealing, or even possible to them, we might be able to drive them like cattle."

"Right, and if we can do that maybe I can get to their next target before they do and set up things so we can try to figure a way to spot them before an attack."

The two powerful men agreed and told the younger inventor to do what it might take.

"I'll clear the way with the NRC and government channels to allow you to dictate what stations drop their output," Pete told them.

After thanking the two men, Tom hung up and pulled up the details on more than seventy-six hundred power generating stations across the United States.

When Chow wheeled in his lunch cart and set up a plate for Tom, the inventor asked him to come over to his desk and take a seat.

"I ain't in trouble, am I, Tom?" Chow asked in earnest. His face wore a concerned look.

"Heck, no, Chow. I just need my favorite sounding board right now and hope you can give me a suggestion or two. Let me explain."

For more than ten minutes Tom carefully explained the attacks, the destruction and the possible future damages that could come their way. Chow nodded his head many times and even asked a couple thoughtful questions. Once Tom believed the chef had the basic idea, he asked a question.

"If you were our bad guys and absolutely had to resupply, let's say once a week, and had about seven thousand supply depots

available, would you try to form some plan of action ahead of time and mark up a map showing the best and alternate depots, or would you just move around and take advantage of what comes your way? Always assuming that you know some of those depots can't supply you with what you want or need."

Chow had removed his ten-gallon hat and it was sitting in his lap. Recently, and with his weight loss, his habit of using it to fan his face to cool down had really dropped off. But, now he picked it up by the brim in his right hand and the fanning started.

Seeing the almost amused look on his young boss' face he smiled. "Thinkin' makes my brain heat up and I got ta cool it down." A moment later he set it on Tom's desk. "Okay. If it were me I'd have a real good plan o' action with some o' them con-tin-gen-sees but I'd fer sure be makin' my way from the start to a specific target spot. That help ya any?"

Tom nodded. "Yes, and it tells me that my thoughts about this being all for one specific purpose might be exactly what our bad guys are doing. Any thoughts how to stop them?"

Chow stood up and shook his head. "Not really, Tom. But, I'm a-thinkin' these hombre's might be the sort that need ta be taken out o' action, no matter what ya gotta do!"

CHAPTER 10 /
TRAGEDY IN DETROIT

THE NEXT attack on a power generating site came the following day. Just as the morning shift was coming in and the midnight shift was exiting the Gladfelther plant outside of Chillicothe, Ohio, a police officer cruising nearby saw a bolt of lightning lance down, hitting in the parking lot next to the main building.

As he told a military investigator an hour later, "It hit and blew three cars apart. Just *BLAM!* Little bitty pieces, I tell you. Must have hit their gas tanks. Then, it sort of got pulled back up, like when you cast out a fishing line and then have to reel it back in? Anyway, down it came again. That time it hit the corner of the big equipment building as sort of stayed there for, oh, maybe ten seconds before it got pulled back up, too."

"Was there a third strike," the U.S. Army Major asked.

"Funny that. Yeah, there was a third bolt coming down, only this one barely touched the top of the building before a little bolt shot up into it and they both fizzled out."

The power station manager told the Major that they has sustained a small amount of structural damage but the main generating equipment had been spared, as had all employees.

"We only installed that special Swift Enterprises system breaker computer last night," he explained. "It shut things down as soon as it detected the bolt that hit the side of the building. The only thing that happened after that was whatever the generators had as they continued to spin got—" he looked at the Major as if even he couldn't believe what he was about to say. "It sort of got sucked up like milkshake in a straw. There wasn't much to be had. Sort of like sucking the bottom of the glass only no slurping sounds."

When the Major reported to his superiors, and one of them turned out to be Senator Peter Quintana, he asked that Tom and Damon be brought into the call.

"All we've been able to ascertain, Mr. and Mr. Swift, is that this attack was just about their minimum number of days between strikes and they got practically nothing usable."

"What does that mean in terms of likely reality, Tom?" the senator asked.

"Well, if our assumption is correct they must resupply their power and that to send that power lance down they use a lot, it might seem to indicate they are in trouble if they can't find a

suitable substitute for that station's power. And, I mean in the next twelve to twenty-four hours. Neither of you can see the map I'm looking at with my father, but I've added two circles around the Chillicothe plant at what might be their twelve hour range and full-day range."

"If I may, based on what data?" the Major asked.

"Based on the distances they have traveled between all other strikes giving us an assumed airspeed of about forty-one knots an hour. In other words between four hundred ninety and nine hundred eighty miles, give or take. That means they are within range of nearly fifty coal or natural gas facilities and several nuclear ones. Oh-oh! It just hit me that most of the traditional fueled plants are fairly small on the output. I don't see more than six of them capable of outputs over a thousand megawatts."

"Why the 'oh-oh?"

"Because that might just drive them to attack one of the nuclear facilities," Damon answered for the two Swifts.

After a pause, Pete asked, "What is the biggest target for them?

"That would be the Cook Nuclear Power Plant in the lower-west corner of the state."

"Major?"

"Sir?"

"Get on the horn and have the Air Force on red alert within five hundred miles of that location. On second thought, make it eight hundred miles for alert and I want three to five jets in the air standing off of that plant by about fifty miles to the north but ready to be running full speed directly there if we have an attack. Clear."

Yes, sir!" The Major's line clicked and it left the senator talking to Tom and Damon.

"I didn't want to get him too hot and bothered, but what is the likelihood they might perform a series of small attacks on their way to something bigger and nastier?"

"The problem in answering that, Pete," Damon said, "is that we haven't enough data to know how much power they have actually consumed. There is no giant backward-running meter at any of these plants. We can guess that is it in the neighborhood of what the plants have sent out in the minute prior to the attack, and that would be about three hundred thousand kilowatts of power. What it takes to operate that power lance is completely unknown."

Pete sucked his next breath through his clenched teeth.

"Okay, tell me, Tom, is it at all possible to determine what sort of

power it takes to run that lance, if that is what we're going to be calling it?"

"I could try to duplicate it, but that might take months or years. The only other way would be to have monitoring equipment at each and every possible station and that would be a logistical impossibility. And, now that I think about it, they just might add hydroelectric dams and even wind and large-scale solar farms to their list of targets. After all, they attacked my solar powered sailboat, but that may have only been a test."

Pete Quintana groaned and then swore. "Sorry. Keep me in the loop. I have to go talk to the President."

Damon turned to Tom. "What is the largest power dam in their vicinity?"

Tom looked at the map, then typed in a few search words.

"The one on the Niagara River near New York. Over twenty-five hundred megawatts."

"We have to find a way to stop them," Damon declared.

"Find them?" Tom asked.

His only answer was a sad shake of his father's head.

The longer it took for the electricity vampires to strike, Tom knew the higher the likelihood they were going to need to go for an energy rich target. And, when the twenty-hour mark passed he called Pete Quintana's office.

"I believe we have to assume they are either in grave trouble, or they are heading for one of three sites, perhaps at a slower speed than we originally thought."

"There are more than a hundred fast attack jets and tankers either in the air or ready to go at a moment's notice, Tom. Are you thinking this is going to be at the nuclear plant or one of the other ones?"

"They may not have ever tested their equipment against a nuclear station before, and might need to keep safe. Their largest target would be the coal-fired plant straight to the east in Monroe, Michigan. Thirty-four hundred megawatts would be a tempting target."

"Well, I've got Kellogg Air National Guard ready to protect the nuclear plant and the base up in Warren for the east side of the state. Wish there were fewer places for them to strike. Can you come over to see if you can give chase?"

Tom chuckled. "I am in the *Sky Queen* passing over Sandusky Bay right now on my way. I'm not at all certain what good I might

be, but dad agrees I might find out a bit more about them if I am there."

The call came in three minutes later.

"Monroe was just hit. Completely leveled the facility. Possibly as many as thirty dead."

Straight ahead Tom could see the rising smoke from the fire that had been caused by the dastardly strike. Knowing he could do nothing for the plant Tom hit the repelatron lifters sending the giant jet skyward. The remnants of a cloud were just scattering up at about thirty-two thousand feet. He arrived within three minutes of the attack but his instruments showed nothing.

No RADAR contact was to be found. Not even the cloud was visible on that instrument.

Tom had a notion and wanted to try it out.

He maneuvered the *Queen* into the middle of the dissipating cloud and took an outside temperature reading. A small grin appeared at the corners of his mouth.

Bud looked over and saw it. "What?"

"I believe I know how they are generating their cloud cover and I am almost certain I know why they do it. The outside air temp in what people have seen as a cloud is at least thirty degrees colder than the area outside it. I'm taking an air sample, but I think it is going to show they may be concentrating carbon dioxide… like in my firefighting seacopter, and spraying that out just before they become visible."

He went on to say he believed they could not maintain invisibility—however they were achieving that—and make an attack.

When the results of the air sample came up he smiled again. "Yes. Heavy CO_2 concentration and very cold. It must flood out and freeze any moisture in the air around it. Otherwise it would just drop away and reveal the airship in a few seconds."

Tom called his father with the news.

Damon was saddened by the senseless deaths but congratulated Tom on making some positive from a very bad negative situation.

"I'll let Pete know. You go see if there is anything to be done to help survivors of the plant."

"I was going to start a search pattern—" Tom began to protest, but Damon cut him short.

"You are going to let the Air Force do that. Now that the enemy has evidently resupplied there's no telling if they can aim their

weapon at things in the air. No chances, Tom. Understood?"

"Yes, I do. I don't like it but I do. I'll call again with any info I get."

Fifteen fire trucks were at the scene and had the main building fires put out. The large storage bed of coal, possibly as much as four acres of it, was smoldering at the end nearest the building and a couple trucks were playing water over it.

"Think they got to that in time to keep it all from burning?" Bud asked.

"I hope so. That's a lot of coal and a lot of hydrocarbons going into the air otherwise."

There was a field some seven hundred feet to the north of the plant and Tom set the *Sky Queen* down on it. It seemed to take the weight but Tom asked Zimby Cox, who had come along as a possible relief pilot, to keep the ship ready to lift off at the first signs of settling.

"We're going over in the atomicar," Tom told him.

The smaller model atomicar, more teardrop-shaped than a regular car and half the size of the first model, rolled out from the hangar at the back of the jet and made a sharp right turn. They needed to clear some power lines but Tom had them on the ground at the power plant fifteen seconds later.

They walked the last hundred feet looking at the destruction. One of the two main buildings was barely more than a pile of rubble while the other one was missing it's eastern side. Both smokestacks behind these building were on the ground and several of the other buildings had taken substantial damage.

A man, his eyes wide as saucers, came running at them.

"What did you do? WHAT DID YOU DO!!?" he screamed at them.

Without consideration for what might happen, Bud jumped in front of Tom and dove into the man's legs. If he'd been on the football field he would have incurred a penalty for a low hit, but it did the trick and the man lay on the ground even after the flyer rose to his feet.

"What did you do?" the man asked pleadingly turning his head to look at Tom.

"Sir, we did nothing. You were attacked by an invisible airship from some unknown enemy. Surely you've heard about the other attacks."

The man began to cry. It was obvious to them both he had

become unhinged by the attack.

Looking up, another man was approaching them. He appeared to be in his sixties and was bleeding from a gash in his forehead.

Tom helped the man get seated on the ground while Bud rad back to the atomicar for the first aid kit. A minute later the man was sporting a head bandage that looked to be stemming the blood flow.

"I'm Franklin Dexter," he introduced himself. "Manager of this… former power plant. Can you tell me what the hell happened?"

"I'm Tom Swift and this is Bud Barclay. You must have heard of the people who are being called the electricity vampires?" The man nodded. "They attacked this plant. We were trying to find a pattern and had things narrowed down to several plants in Michigan as possible targets. Most, like yours, were fueled by coal or gas. The one we hoped they would avoid is the nuclear plant on the other side of the state. Hadn't you installed the power cut-off we supplied?"

If it were possible, the man turned even whiter than he already was and Tom feared he might start to go into shock, so he gently lay the man down on his back, placing the first aid bag under his head.

As they watched five ambulances pulled out and headed across the short land bridge to the main road before they turned on their sirens and raced off toward the nearby freeway.

Bud looked at Tom questioningly. "Good sign?"

"Might be. They seemed to be in a hurry to get out of here as if they held live victims."

An Emergency Medical Tech came jogging over to them and without a word knelt down to look at the man on the ground.

"Thanks to whoever bandaged his head. Nice job, by the way. And, getting him down and flat. Name's Brian Heglund. Monroe Fire and Rescue. I think I recognize one of you. Tom Swift… right?"

"Yes. How bad is it?"

"Him? He'll live. Five didn't make it and we have seventeen in various states. The worst ten just went off in our five ambulances. They'll get to the hospital in three or four minutes. Then, as soon as they offload, they'll come back and take the rest, including this man." He stopped and looked around at Tom and Bud. "It's really bad in there. Lots of electrical burns and two heart stoppages due to electrocution. Those are two who didn't make it. I hope you can get the sons of… the people who did this!" He rocked forward on his feet and rose.

He walked over to the man who had tried attacking Tom and

pushed him with the toe of his left shoe.

"Ouch!" the man exclaimed. "You don't have to kick me, Brian," he said, sitting up.

"Tom Swift, and friend, meet Arthur Blakesley, our fair town's one and only, 'I got hurt in that whatever it was, too,' serial fake victim. Arthur? You get on your feet and get the heck out of here before I have you arrested. We have real hurt and dead and do not need you today!"

The man got to his feet, brushed himself off and started to walk away, but turned around. "That dark-haired one hit me real hard. Must've cracked every rib I got. Maybe I ought ta go to the hospital?"

Brian took a step toward the man who flinched away. "Don't hit me, Brian. I'm going!" He turned and walked briskly toward the land bridge.

"Arthur lives in some apartments over on Sheridan Drive, about a block from the hospital. He's a hypochondriac, the town drunk and about the biggest baby ever. Oh, and he's also the nicest. Gives half his Social Security check each month to charity." He walked back toward the rubble.

Tom looked at Bud, and they both shrugged.

Nine minutes later as he was about to raise the *Sky Queen*, Tom had a thought.

"Let's go up and do something I should have done right when we got here. I want to make a slow circle around where that cloud formed to see if there is any residual cool air up there that might give us an approximate heading for that airship."

They headed back up and stopped at the same location they'd been in before.

Tom went aft to one of his small scientific cubicles—the reason the ship was known as his Flying Lab—and picked up a thermo-laser instrument. He headed up to a small observation bubble in the top of the ship, extended it up its full two feet and climbed the ladder. Next he took air readings straight out and slowly turned a complete circle.

He tapped his TeleVoc pin. When Bud answered he told him, "Head two-three-five, slowly, Bud. Maybe fifteen miles per hour. I am getting a very slightly cooler reading that way. I'll let you know when to stop or change course."

The ship immediately set out in the requested direction. For the next fifteen minutes Tom struggled to get good readings but by the

end of that time all the surrounding air was identical in temperature to everything at that altitude.

"We can stop, Bud. I lost them, but try to get the Air Force on the radio, I have something to tell them when I get back down."

Once on the radio Tom gave the Air Commander a heading from directly over the power station.

"It might not be a good trail, and they certainly could turn at any time, sir, but there is an indication that is the direction they headed after the recent attack."

The man promised to get several fast attack jets scrambled back into the air.

"Actually, sir, something slower and a lot less likely to overshoot them in the first minute of pursuit might be better."

The man agreed and Tom signed off.

"Now what?"

"Back to Enterprises I think," he said and allowed Zimby to take over as co-pilot while Bud took control of the jet. Tom was mentally exhausted and felt it best if he were not at the controls at the moment.

When they touched down he headed for the big office but detoured as soon as he received a TeleVoc from Harlan Ames.

Walking into the Security man's office, Tom spotted his father as well as Senator Quintana.

"Gosh. The gang's all here I see. Want me to tell you what we encountered or sit and listen?"

"We need to hear what you have to tell us, Tom. There has been a… well, a little twist."

Tom's imagination was piqued but he went ahead and told the others about the near encounter and the damage to the plant. He finished with, "About an hour out from home we got word the final dead count was nine. It's terrible but could have been three times that number."

"Why the severe damage, Tom?" Harlan asked.

"My best guess is they were so starved for electricity they made a now-or-never stab down so they would not have to try a second time. That, and this particular plant had received one of our shut-off circuits but had not installed it. They weren't going to 'find the time' for another couple weeks." He sounded disgusted about that.

"Who the hell made that boneheaded and deadly decision?" Demanded the senator.

Tom sighed. “One of your own. Senator Cromwell from the State of Michigan told the manager there to hold off until she told him otherwise. Told him it was a needless half day of downtime and with the election coming she didn’t want her voters to suffer…” he left the rest unsaid as he could see the anger in Peter Quintana’s face.

Slowly, almost as if each word put him very close to screaming, Pete angrily told them, “I will have that woman’s job! And, I’ll have her up on charges of manslaughter! By god, see if I don’t!”

CHAPTER 11 /
A SIZZLE IN THE NIGHT

AS TOM had figured, there was no longer a trail to be found anywhere close to the heading he'd given the Air Force. He also found out that in spite of his warning and suggestion that a fast aircraft would only disturb any faint trace and would overshoot their possible target, the first aircraft on scene had been a jet.

"They just have zero clue," he complained to Bud the following morning. "Of course they found nothing because they managed to scatter anything that might have been there!"

Bud put his right hand on Tom's left forearm and patted it. "They have only one way that I've ever seen or found, skipper. That's throttle to the wall and damn the consequences. Finesse is only a seven-letter word starting with an F as far as they are concerned."

A mid-morning call from Washington and Senator Quintana made Tom feel a little better.

"That nasty piece of work from Michigan was so unapologetic over her actions that the leader of the Senate's committee on Member Conduct and Behavior has voted to officially reprimand her and to send the Michigan Governor a letter asking for her to be replaced. She keeps saying things like, 'In my frank opinion…' and 'Well, someone else messed up because I…' and that sort of rot. However, that is not the reason for my call."

When Pete stopped speaking for a few seconds, Tom asked, "So, am I supposed to ask you what else?"

"Oh, sorry. My secretary just slid a note under my nose. Turns out we were just speaking of the *ex*-Senator from Michigan, Cromwell. She has submitted her resignation, effective immediately, to the President and to her Governor. To get back to the subject at hand, I called to say the nuclear plant on the opposite side of the state went on highest alert and it may have paid off last night or very early this morning."

He went on to tell Tom about something the parabolic antenna and sonic chip set had recorded shortly after midnight.

"But, we received nothing from that unit," Tom complained.

"And, you would not have because some genius disconnected it from the phone system. Saw a non-standard line plugged into a jack and pulled it out thinking it might be some sort of spy device."

"At least the unit records everything. Can we get them to plug

things in so I can remotely access it?"

"Done as of ten minutes ago. Can you listen to that while I have you on this line?"

Tom said he could and typed a string of commands into his computer. A minute later he said, "I have the connection and am downloading the last twelve hours which is about what the buffer will hold. Give me just…a…few……..got it! Okay, I'll turn my speaker up and hope you can hear this."

Fifteen seconds of silence came and went as Tom fast-forwarded the information to midnight. "Do you have a more concrete idea as to the time?" he inquired.

"Between midnight and twelve-forty is all I was told. Go right ahead and scan through. I have another note here I need to peruse so call out when you find anything."

It required another three minutes to scan at a slower speed than before until Tom stopped the recording as both a noise came from his speaker and the application he was using registered audible spikes of something other than background rumblings.

"Okay, Peter, I have it. Ready?"

"I am. Go ahead."

They both listened to the sounds. What began as a very weakhigh-pitched noise soon became a crackling, sizzling noise. It lasted a full seven minutes before it faded away into nothingness.

"What was that," Pete Quintana asked.

Tom had a smile on his face. "That, my friend, was the sound of loose electricity. If you ever have the opportunity to stand in the middle of a power sub-station, not the generating sort but the amplification and resending of power down a line, and it is very quiet you will hear almost exactly that. Plus, your hair will stand on end with the static electricity all around you."

"I see. No, I don't, but you'll tell me."

"I will. Those noises mean that something—and I'm betting it's our vampires—flew not all that high overhead and that their equipment is leaking power. Hence, the sizzling."

"Hmmm. Is that normal? I mean is that something we ought to be listening for and might use to track them?"

"I really don't know. It might be normal and thus something we can go after, or it might be they sustained some damage. They did suck up a huge amount of power at the plant the other day and that could have damaged something. Or, it might be they did suck up more than they can adequately handle and some of the excess is

either leaking or they are bleeding it off. I can't say why they might have been at a lower altitude except in case they were having problems."

Damon came back to the office at about that moment and stood, listening to the conversation. Once Tom noticed him he said, "Dad's back so give me a second to bring him up to speed."

Four minutes later Damon said, "I agree with Tom's assessment, Pete. That sound just like electrical leakage, not full on discharge to me. I also concur that this could be a way to trace them, although this much noise might be a fluke and not to be detected if they are flying higher."

Pete encouraged them to see what else might be possible for tracking this enemy and then had to go.

"I am quite saddened to hear about Amanda Cromwell's decision to stonewall the very thing that might have saved lives," Damon stated, "and her downfall over it. I've spoken with her on several occasions, and other than seeming a bit too interested in aiming for the next election rather than the job at hand, she was always pleasant."

As he turned to go to his desk, the intercom buzzed.

"Yes, Trent?" Tom answered.

"The control tower just called to say a U.S. Navy aircraft is incoming. Something called a C-26 I believe. No idea on who might be in it but they are being asked to circle south of here until you or your father give the okay."

"Hang on a moment," the younger inventor requested. He looked at his father.

"I believe that is a small passenger variant of a Fairchild aircraft. Turboprop if I recall," Damon stated as he punched the intercom button. "Trent? Call the tower and tell them to let them in and to go park at the civilian terminal. Tom and I will notify Harlan and then go out to see who it is."

Harlan advised them to remain in their office but relented when Tom suggested they could both hold back half a mile or so.

"Fine, but you don't drive a foot closer until I say it's okay. Okay?"

"Okay!" Tom and Damon chorused.

They arrived at the "hold" point while Harlan and a couple of his Security team headed for the small terminal where visiting aircraft could park. Three minutes later the dark gray aircraft swooped down from the north and touched the runway only a hundred feet

from the threshold.

Both inventors heard the props as they reversed pitch and revved up to slow the plane. It turned off the runway and was soon stopping in front of the terminal building.

The Security team stood behind their SUV until the door opened and three people exited.

"Well, that looks good," Tom said as Harlan stood up and walked to the group his hand extended to shake theirs. Both could see him touching his collar and Tom's TeleVoc pinged him.

"It's okay. You'll like who just arrived," he said mysteriously and cut the connection.

When they drove up, Tom got a huge smile on his face and called out the open window, "Hey, Angie!"

The Navy woman smiled and waved and started to come over to the car as Tom and Damon got out.

"I thought I'd drop in and talk to you about a few things, not the least of which was the Air Force's ham-fisted refusal to go track what you told them about."

Tom invited her to climb in. "How about the others?"

"My pilots," she said. "They are supposed to wait with the aircraft unless this stretches to overnight. However, if we could drive over to them…"

When they got close she leaned out and told them to take full advantage of the hospitality of the terminal.

Tom leaned over and said, "I'll have our chef come over with some food and beverages for you both in about twenty minutes. Make yourselves comfortable."

The two officers smiled and thanked him for the offer.

Once they got into the office Angie Jackson took off her uniform jacket, undid her tie and settled down into one of the conference area chairs.

"First, apologies from the Admiral over how the Air Force botched things."

"Which," Damon said, "might not be necessary. Even Tom believes there was little chance of tracking what he found." Tom nodded.

"Nonetheless, they were asked nicely to not send a jet there and that's the first thing they did. We also found out that pilot had orders to shoot anything they found out of the air and ask for ID later." She seemed disgusted. "So, that brings me to number two

which is, do you think there is a way to tactfully, safely and with minimal disturbance track that cold stuff Tom found?"

"You left out unerringly and with total coverage," Tom said ruefully. "But, the answer is maybe." When Damon looked curiously at his son, Tom continued. "We have our little non-rotor helo, the Wasp. It doesn't make much in the way of downwash because it uses the physics of air pressure to pull it into the air. I think we might outfit five or even ten of them with thermal sensors, station them right next to that many power stations and send them into the air as often as possible to search the surrounding area for signs."

"Can you be up there to catch them in the act of building their little clouds?"

Tom shook his head. "I believe the best chances are to keep them on standby ready to jump in a few seconds, watching for the formation of those clouds. Then, they race up as fast as possible and as high as they can go which, with a light pilot and the winglettes fully extended, to just over twenty thousand feet. If the attack comes they focus their attention right on that cloud and sweep around to see if anything is leaving its cover."

He mentioned he believed the traces of cold would be visible to the detection instruments for up to ten minutes giving them a good idea of both the direction of travel and the speed.

"Possibly even the actual altitude."

"To what good, Tom, if I might ask?" she inquired.

"Well, if we know altitude and speed then the Air Force or Air National Guard in the area can send something to fly slightly above, below and in front of what might be out there. Their turbulence wakes might cause these electricity vampires a lot of troubles. Might even make them lose control."

He looked at his father who was not happy but he was nodding.

"Okay," she told them. "The Admiral says to send the Air Force the bill for whatever is necessary and asks how long before you might have something."

"Tell him three days ought to do it. The Wasps are easy to build and then we'll ship the lot of them out. I'm thinking to Chicago so they can spread out south and west. The next targets ought to be, if they are holding their pattern, within nine hundred miles of Chicago."

They asked her to stay for dinner at the senior Swift home but she had to beg off. "Important stuff and a meeting tonight in D.C. But, thanks!"

While Tom drove her back to her waiting jet Damon made

several phone calls, so by the time the younger inventor returned, the ball was already rolling on building an even dozen new Wasps.

"Jake at the Construction Company tells me he has a more powerful motor he'll put in these that will give them an additional five thousand feet of operating altitude and thirty knots of forward speed. He says to expect delivery in three days just like you mentioned to Commander Angie Jackson. I also asked Bud to find twelve of our smaller and smartest pilots to take them up. And," he said with a small sigh, "just in case there is any attack, each pilot will be wearing a parachute. Oh, how I hope and pray they will not be necessary."

With thermal detection getting addressed, Tom decided he needed to look for the aftermath signature of electrical discharge to see if there was any residual leakage that might be tracked. Over a period of just two days, and with a little help from Bud, he built a large Tesla Coil and set it up next to an outbuilding at the western end of Enterprises and arranged numerous sensors around it.

"When do you give it a go, skipper?" the eager flyer asked.

Tom grinned. "It isn't at all impressive during the day, flyboy. However," he said holding up a finger, "it most certainly is at night which is why we both come back here after dark, let's say around nine, and fire this thing up."

Now, Bud had a huge grin on his face. "How far will that thing shoot electricity?"

Tom pondered the question a moment, "Probably only about fifteen or twenty feet, Bud. The distance is not important. What is will be in seeing if there is enough residual electricity in the generator itself to send out a traceable signature, and for how long."

Bud's face lit up. "Ah. Now I see, or at least I think I do. If there is a signature that remains for a few seconds, or whatever, then you might be able to come up with something that can capture that, at a distance, and… uhh, then what?" He looked confused.

With a grim chuckle, Tom replied, "Then, we see if we can get any hint of direction and distance, and, if that signature remains as our vampires are powering down their equipment, can we get any indication of it traveling? By that I mean their ship. If we can, we might be able to set up a trap or something in their path."

When they got back to Enterprises that evening Tom arrived first and was powering up the diesel generator that would power his Tesla coil. Bud stood back watching his friend until Tom turned to

him and gave a thumb's up sign.

As the inventor came over to him Bud noticed a small box in his right hand.

"What's that? Remote control," he said somewhat jokingly. When Tom nodded, Bud became serious. "Okay, and I guess that means we are not going to be standing right here when you energize that. Right?"

"Correct. It isn't that a Tesla coil is dangerous at much more than perhaps twenty feet, and even closer if you are inside an insulated and grounded metal cage, or those suits the people who demonstrate these things climb into, but there have been stray arcs of electricity that have surprised—once that I know of in a deadly way—people who were too close. Which is why you and I are going to be a hundred feet away and nowhere near any metal."

Tom began walking in a very direct line for something Bud could barely make out. When they arrived he could see it was a large rubber mat sitting on the ground.

"Our insulation?"

"Our insulation," Tom agreed as first he then Bud stepped onto it.

As Tom manipulated the small controller in his hand they heard the diesel generator inside the shed thirty feet behind the coil rev up and settle at a very high speed.

Tom was watching a small readout on his controller and when it hit a certain level he nudged Bud. "Get ready, flyboy. Oh, and would you reach into my jacket pocket and take out the other remote, please?" When Bud had it in his hands Tom instructed him to flip the three toggle switches and depress the one-and-only button.

"Done. Now what?"

"Now we send power to that coil." A second later the first of hundreds, even thousands, of small bits of what appeared to be purple-tinged lightning bolts came off the coil and disappeared into the air.

"Jetz!" Bud exclaimed as the air around them became charged with static electricity. One incredibly long bolt lanced out to the left of the coil hitting the ground, perhaps, thirty feet away.

Tom grinned. He knew it would happen. He also knew it was a good thing they were this far away. This wasn't the sort of tame electricity school kids experienced at science museums with small Tesla coils or Van de Graff generators that made your hair stand on end; it was most deadly!

While Bud looked on, he also detected other lights flashing around them. He turned and could spot at least a dozen areas where small, red lights would come on and go out in the blink of an eye. At least two of the placements went to a steady light as he looked in their direction.

"Tell me when you can see fifteen steady lights out there, please. Those are acquisition lights."

While the flyer watched more and more of the lights became steady until he thought he had fourteen of them counted.

"I'm only getting fourteen, skipper and no final one flashing."

Tom took his eyes off the coil and the wild electricity show it was displaying long enough to look around. He let out a small groan.

"Well, there is supposed to be one right over there, on about our nine o'clock. Must have burned out or blown a fuse. We'll make do with the ones we have." With a flick of his thumb, the Tesla coil fizzled out and was quiet and dark a second later.

In almost a whisper, he stated, "If their equipment takes that second to settle down and shut off, we might have a way to track them, Bud."

Also in a whisper, Bud responded with, "Neat!"

The following morning Tom sat at his desk in the shared office reviewing the results of the fifteen sensor packages he had set up around the test area. Bud had dropped in a few minutes earlier and was mentally counting the lines with results.

"I'm seeing double on one of those, Tom," he said.

With a small shake of his head, the inventor told him, "No, you aren't. We did have all fifteen sensors, just one of them had an LED that got bent and broken as the pack was being assembled. I have all the inputs I hoped for."

Damon Swift looked up from his computer. "Anything good, son?"

"I'll say! If we assume they are generating electricity in any similar manner to the Tesla coil, then we have an electrical signal that trails off once everything is shut off over about three seconds. We also have little spikes of power that sort of, well, pop as they are being let loose from the surface, Not enough power to shove them out, but they have to escape somewhere so my guess is they find a pathway to a little bit of moisture in the air."

"Can you hear them?" Bud asked, amazed.

"Yes. Those sonic detector chips and circuits of Linda's and the parabolic antenna's Hank put together sure can. So, now we have

the thermal signature thing as well as the probable small discharge leakage to go after. I'm starting to feel as if there is a light at the end of this horrible tunnel!"

"What about the Wasps you are outfitting?" Damon asked,

Tom shook his head. "Unless I can mount the antenna to the top of the rotating disk, they may be thermal detectors only, or a dead end."

CHAPTER 12 /
HOW CAN THEY BE INVISIBLE?

TOM ORDERED another fifty of the sonic chips and asked Linda to be involved in creating the small circuit boxes. “I want to mount these in a series of high-altitude drones, something that can stay aloft overnight and get up to about fifty thousand feet.”

“I wish you all sorts of luck with that, Tom, but get me those chips and I can have the Electronics folks mass produce the boards in about a day.”

Tom told her with some confidence, “I may have an ace up my sleeve on that, Linda. I’ll let you know if I’m overestimating something I worked on several years ago, or not.”

He still intended to build and fly the Wasps, only now we hoped they would be effective in cases where the electricity vampires got closer to the ground or for shadowing them if they were detected.

Sitting at his desk he pulled up files on a particular device he’d helped overcome years earlier. Some called it a sonic screaming machine and others called it less complimentary names, the small, ring-shaped three-propeller drones sent into cities to disrupt lives and extort money, had been defeated, but he had played around with the basic platform several times.

The biggest obstacle? Power. At only about eighteen inches across, and with a trio of tri-bladed rotors to spin at nearly ten thousand RPMs, the batteries in the little things lasted only about four hours.

He made a call.

“Jim? Can you and one or more of your solar ladies come over to the big office? I have a powerful need for your expertise in coaxing as much electricity from the sun as possible.”

“Be there in ten.”

When Jim English arrived it was in the company of all four of his “girls,” as he called the young women who had once each owned twelve percent of Pilot Rock Solar out of Southern Oregon. The ladies had decided to stay with Jim when they collectively sold their solar materials company to Swift Enterprises nearly three years earlier.

“So, what have you got for us, Tom,” Patty asked.

He showed them the photo of the small drone on his screen and described its actual dimensions. Then, he detailed what he was up against and his hope to turn the simple device into a sophisticated

drone.

“Well, for starters, I’m guessing that about half to two-thirds on the interior is going to be taken up with all the circuitry you need. As for battery, can I guess that your shapeable wafer battery would make up the shell and then we need to come up with something thin, flexible and lightweight to coat the outside with?” Jim enquired.

“And for Jim’s next magic act he will guess the combined weights of us all without insulting a single one of us,” another of the ladies, Dianna, said with a bright smile.

As Jim studied the photo he asked a string of questions regarding its performance.

How fast is it?

How high can it go?

What wind tolerance does it have?

Will this new one be RADAR visible?

And others. Tom answered them all only making a guess at a few of them. In the end the biggest question was, “How much real estate do we have for a solar covering?”

“I’m thinking the final product might be slightly larger than this one with the ring diameter being correspondingly wider or even more so. But, my first pass at the math was approximately one-point-nine square feet of upper body space. If you add in the motor pylons that increases to just over two-point-one-two feet.”

Jim and all four of the ladies pulled out their tablet computers and began calculating a number of things. They huddled and whispered a couple times, and all Tom could do was wait. It took them twelve minutes to come to a nodding conclusion. Lindsey spoke for the group.

“If that is the top amount of space we can get, then you are going to need to do three things to keep these in the air. First, the battery you say will be about forty-eight hundred milliamps will need to be tripled. Second, the electric motors will have to be able to run on about twenty percent less amperage. And third,” she looked to see how Tom was taking things so far, “the overall weight needs to be about four ounces lighter. Including our solar coating.”

“And,” Darla added, “the daylight charging time needs to be at least twelve hours of bright, unshaded sunlight, although fourteen would be better. Also, to get them to fly and remain up for any great time, they will need to be released at their cruising altitude and not need to rely on their own power to get off the ground.”

The Solar team looked at their young boss. He looked at them and shook his head.

"Well, that is that, I suppose. I thought we had a winner here, but it appears my approach of smaller is best, well, isn't!"

Lindsey came over and draped an arm around Tom's shoulders and gave him a small squeeze.

"It's really too bad your OzoNuts couldn't be called in for this. They are huge and have great solar real estate." She removed her arm and the group was about to go when Tom suddenly grabbed her.

"If I wasn't married I swear I'd plant a kiss on your lips, Lindsey! Of course the Ozone Revivicators could be used. They can stay up at high altitudes for weeks or months at a time. And, if we aren't using the power to run the ionized cleaning vanes, then we have more than ample power to run the equipment I want to use."

He mentioned that the Construction Company was creating a new group of more than one hundred of them for use over several cities in China, such as Beijing with its deadly pollution troubles that made noontime seem like twilight about two hundred days of the year.

"Jake can pop out a few more for us. What you folks can do is skin the top with your best solar producing materials to give us top power."

The team went away to study the design of the donut-shaped ring devices Tom first had built to try to clean the air and rebuild the ozone layer that was being destroyed over the South Pole.

He called Hank and Linda and asked them to meet him at Arv Hanson's workshop.

Twenty minutes later he was outlining the new use for what Bud had immediately nicknamed OzoNuts.

"That is actually rather brilliant, skipper," Hank was saying as Arv and Linda nodded their agreement. "Lots of power and maneuverability to boot. And, with the vanes not there, along with removing the cleaning robot, you can hang about twenty-three pounds of equipment on the thing."

"The parabolic antenna for listening could be mounted on a gimbal underneath if these can fly above the vampire ship, or sit on top if you think they will only be able to fly below the altitude we believe they travel," Linda stated.

Arv inquired if there was anything he could do for the project, "Other than supply this fine meeting venue."

“Funny you should ask, Arv. I’m afraid these will hit areas where high winds might affect them, so I would like to have you make a three hundred-sixty degree, rotatable electric motor pod with a high-pitch prop. Something that will scud these along at up to forty miles per hour or thereabouts.”

“Just to keep position?”

“Well, that plus who knows if we might be able to have one of these tag along and follow the vampires.”

Linda asked, “Would it be possible to let me try to increase the listening power of the sonic chips?”

Tom looked at her. “In what manner?”

“Well, as I look at the specifications it seems to me the manufacturer is throttling back their capabilities. Sort of like the old way of limiting a microprocessor’s speed in a desktop computer. A lot of people did what was called over-clocking and could nearly double the speed in some cases.”

Tom was familiar with the concept but that practice had all but disappeared a decade earlier when computer companies realized they needed to offer more and more speed right out of the box in order to compete.

“What sort of additional functionality do you believe you can get?”

“I’ll probably have to destruct test one of the chips, but I think I can get sixty percent more audio processing out of them. That means more sensitivity and a longer listening range. Not here at ground level, but that high up with the circuits being kept below zero, it ought to be possible.”

“Hmmm,” Tom was thinking it over. “Will the higher altitude and less dense air work against that? Actually, if it does have a negative effect, will this change to the chips overcome that and at least give us what we have at ground level?”

The group discussed many aspects of sound propagation at altitude and decided that by keeping the new flying detectors under forty thousand feet there should be ample air molecules for sound to move through and see some increase by Linda’s proposed tinkering. Fifty thousand might be pushing it.

“This is going to mean I need to do something with the thermal detection equipment. If they really are striking from ten thousand feet higher than we run our… I wonder what Bud is going to call them. Anyway, the max detection range right now is about six thousand feet.” They all thought over what might need to be done and the meeting broke up with the promise of getting back together

on Monday morning, three days away.

Tom left the meeting and headed for hangar 6 where Bud kept his small office. The flyer wasn't in so he headed back to the Administration building. About half way there he stopped and started laughing as he saw Bud driving his direction in another of the small electrical runabouts employees used to get around the four-mile-square grounds.

They rolled their windows down and smiled at each other.

"You just go out to try to find me?" Bud asked.

Tom nodded. "You?"

"Same thing. Haven't seen you for a couple days so I thought I'd suggest coffee and conversation. If, that is, you have the time."

"I do. Let's drive around and park by the cafeteria. First inside buys!"

With his car pointed in a better direction, Bud easily made it there, but Tom spotted a closer parking spot and it turned out to be a tie.

Once they sat down at an empty table Tom asked, "What's new in the skies?"

Bud grinned. "You tell me. I hear from a little birdie you might be building something interesting to go after our vampires with. What's going on?"

Tom described the repurposing of the basic Revivicator helium enclosure but with many new pieces of equipment.

"You're turning OzoNuts into SpyNuts, huh? All I'd heard about were the sonic boom ring things."

Tom made a mental note to let his small team know how quickly Bud came up with a pun name. "Something like that. The one problem we are going to have is the jet stream. If we run these at forty thousand feet that puts us in the upper mile or so of those high-speed winds. If we go much higher we run the risk of visual detection because our enemy is running in that upper area, and they probably do that so they remain unaffected by the winds as they are trying to aim a shot."

"How about adding your little *TruStealth* to the things and make them invisible?"

"We can't, Bud. The contract with the Navy says we cannot repurpose that technology for anything. Besides, what would we do if one of these crashed? We would almost need to have each one escorted and there goes any possibility of stealth. They will be tomacoat covered so no RADAR detection."

* * * * *

When Tom, Linda, Arv and Hank met on Monday the first thing any of them said was, "SpyNuts?"

"Yes, Hank. Bud came up with that one in under two seconds. Almost a record even for our Mr. Barclay. The sad thing is I can't think of anything better at the moment. So I guess we go with it for now."

"I'm thinking about the low-level attack they recently made versus all the others that appear to be from around forty thousand feet," Arv said. "I know Hank and Linda are working on the detection setup, and you mentioned mounting it either on top—if it needs to look up—or hang underneath but I believe I can build a mount that can flip the thing to face up or down in about five-seconds, and the great things is it ought to weigh only a pound more than the standard mounting hardware."

This brought smiles from his companions.

"It solves a huge problem, Tom," Linda commented.

"Yes, it certainly does," he agreed. "So, you work on that and the maneuvering pod… hmmm. Would the pod be also attached to the center part and move to the opposite side when the antenna and the electronics move?"

Arv nodded. "That was sort of my thinking. It'll be fairly low profile so having it on top or underneath won't really affect how it moves the overall device."

When the meeting broke up ten minutes later Tom asked Linda to hang around.

"The new set of chips ought to be on my desk in about an hour. I'll bring them over as soon as they arrive so you can get going on this."

"Well," she countered, "I have to meet with the folks in Legal in fifteen minutes. How about I drop by the office and pick them up after that?"

Tom looked at her, concern showing on his face. "I shouldn't pry, but you need to see our lawyers?"

She nodded. "Yes. You know your father sponsored me to come live in the U.S. years ago, and as a resident alien I need to do paperwork every few years. But something has changed recently." She looked into his eyes and smiled. "I'm going to become a U.S. citizen, Tom. Isn't it great?"

"It sure is," he told her and gave her a hug. "I'm very proud of you, Linda and not just for this. For everything you do here and for your bravery and… well, everything. Does dad know?"

“No, and that is another reason for me to drop by the office. I want to tell him about it, and then invite you both to come to the swearing in ceremony down in Albany next Friday.”

When she knocked on the office door, Damon called out for her to enter.

She did and had a huge smile on her pretty face.

“Please come in, Linda and tell me what the heck is going on. My son has been sitting here with a smug look on his face and will tell me nothing. I was about to threaten him as the President of the company. So, first tell me if this concerns you.”

Linda looked at Tom who was struggling to keep a straight face. She turned to Damon. “Yes, it does and in a delightful way.” She took the offered seat and Tom came over to join them in the conference area.

She began by outlining her joys at coming to Swift Enterprises and becoming an employee, then, after a failed romance in another state she told him of her happiness at being asked to come back to the company.

“From the moment you helped rescue my family over in Asia and your kindness to us here, I have wanted to be part of all of this. And so, as Tom knows and I thank him for not spilling the beans—which I still do not quite understand the meaning of—I am becoming a United States of America citizen in ten days!”

“Oh, goodness,” Damon said jumping to his feet and pulling the now startled woman to hers and embracing her. “You cannot believe how proud I am of you, Linda. Oh, wow! But, are you becoming a citizen using the Linda Ming name or your original one, Tsu Lin Min?”

“The folks up in Legal just finished making the name change totally legal. And, since my Americanized name is derived from my Chinese name, I am officially Linda Sue Ming. And,” she looked into his eyes with tears of joy in hers, “it would never have happened without you. Thank you.”

Both Tom and Damon felt their eyes misting over and sought to cover it by clearing their throats and pretending to scratch an itch on their foreheads.

She told them about the time and place of the ceremony and both agreed to make it a top priority.

“I will understand if this electricity vampire thing gets in the way,” she told them but both realized she truly wanted them to share her joy at the ceremony.

"As I said, it is a priority, Linda, and that means only an order from the President will keep us away! That is a promise."

Once she left them, Damon turned to Tom. "You know something? I've felt a little like a surrogate father since her own parents passed, but today I feel the full pride I would if this were you or Sandy."

Tom nodded. "Yeah, I know."

Harlan Ames called mid-afternoon. "I wonder if I can come over and have you educate me a little, Tom? I'm dealing with people, organizations and politicians right and left and actually have almost no idea what we are discussing."

"I need to stretch my legs so I'll walk over to you in ten minutes," the inventor offered.

"I'll be waiting with bated breath and a mug of coffee."

On his way between buildings Tom stopped to say hello to Darla and Patty from the Solar department.

"Any forward progress?"

Darla tilted her head to the right. "If it weren't progress would it be backward instead of forward?"

Tom thought a moment and laughed. "By George, you're right. So, any progress?"

"Yes. Jim has had it in mind to make our materials more a paint on product, and this is giving us all the incentive to make that happen. And, the good news is it seems to be just as efficient as our solid products."

Tom told them that was good news and excused himself.

He walked into Harlan's office to find hundreds of sheets of paper strewn across the man's desk.

"Sorting your recyclables, Harlan?"

"No. Trying to make heads and tails of this entire thing and coming to grips why this dastardly enemy is being referred to as 'Electricity Vampires.' I'll assume that was one of Barclay's." Tom nodded. "Figures. So, take a seat and tell me just the salient facts I need to know about so I stop coming off as some sort of out-of-the-loop idiot."

Tom took a chair.

"Well, for starters Bud's name is actually very descriptive of what these people are doing. They hover over a power station like Dracula hovered over a young woman's throat, and then strike; instead of drawing out blood, they draw away—suck it if you will—

electrical power."

"Oh. I suppose there is nothing to be done like putting a non-conductive blanket over these places. Don't answer that; I'm not *that* clueless. I know these are huge facilities. Tell me this… if they send something down, how does that take power back up?"

"All dad or I have figured out is they are doing something like I do with the Attractatron. I send a beam out to touch something and generate another beam around it, sort of like a straw. The difference is, these people have devised a way to actually use that hollow straw to pull in electricity."

"Do you believe you can figure it out?"

Tom pondered that a moment. "Perhaps. I'd like to find a way to disrupt it even if I can't understand it. Then, I want to capture their ship so I can take it apart to find out their secrets."

"Okay, one last little detail. How in the world can these people and what is probably some giant hovering aircraft make themselves invisible?"

Tom looked into Harlan's eyes and shook his head slowly. "I only wish I knew the answer to that. If they have managed to steal my *TruStealth* technology, then either we or someone or someones in the United States Navy have a lot of answering to do!"

Harlan sighed. "I guess I *do* have to work with Naval Intelligence."

Tom looked at him and asked why.

"Because our favorite Admiral thinks this *is* the *TruStealth*, and he just won't admit any of his Navy people might have leaked it."

CHAPTER 13 /
INTO STALKING MODE

THE FIRST SET of a dozen of Tom's SpyNuts were released from the rear hangar of the *Sky Queen* four days later. One was dropped off at each of the main possible target facilities in the greater Illinois and Wisconsin area. It wasn't going to be total coverage, but at least the top output facilities would now be "wearing a cap."

Each one, the color of the sky around it, floated off the extended ramp before it activated and scooted away to take up station circling its assigned power station. Because, at this time of year, a lot of the jet stream dipped down over states like Kansas and Missouri Tom decided to let them loose at forty-five thousand feet with the idea that even with the enhancements, that extra almost-mile might make a huge difference.

Tom's new hope was for the sonic detectors to locate the vampires and his Wasps—covering between two or three facilities—would go in pursuit of them.

The most distant power generating station of any target output was the one over Sioux City, Iowa, their George Neal North plant. Technically outside the range Tom believed possible to travel, it could still be a good place to station one of the tracking devices.

"I just wish we knew their plans and any possible destination," Bud said as Tom turned the *Queen* back to the east.

"Other than the dip they once took into the southern states they have been heading relatively west, Bud. And, while there are fewer and fewer plants the more you get into the middle of the country, things pick up as you travel into the western states. Dad mentioned something the other evening I hadn't thought about. What if they are traveling to, say, the Pacific Northwest and all the hydroelectric dams along the Columbia River? If their intent is to do almost irreparable damage, then they might attack and blow holes in enough of the major dams to both flood out the cities of Portland and Vancouver, Washington across the river. And, if at least the last three dams, the John Day, The Dalles and one I think is called Bonneville are taken out, that cuts a huge amount of electricity that is sent all the way to Southern California. If they take out a couple farther up river, the flooding could also tear apart the big three."

"Jetz! But, what then?"

"Then, and if these electricity vampires are from North Korea and as many government people suspect, they work their way up the West Coast and across the narrowest part of the Pacific Ocean

and back home."

They sat in silence as the giant jet crossed over Michigan heading for Shopton.

As soon as he returned to Shopton Tom went down to his underground office next to the normal parking spot for the *Sky Queen*, took a couple deep breaths and made the call he was dreading. Usually he enjoyed speaking with Admiral Hopkins. When the man was in charge of a goodly portion of the Atlantic fleet he was much more relaxed than he had been this past year sitting at a desk in the Pentagon.

"The Admiral does want to speak with you, Mr. Swift, and asks if you can hold for about twenty minutes. The woman sounded as if she really didn't want to have to ask that.

"No, not really," Tom told her. "When he gets a moment please tell him I do not appreciate him telling my Security Chief that we must be at fault over something the Navy now exclusively is in control of. Also, while we want to be as open and cooperative as possible, neither I nor my father will let the military bully us. Good-bye."

He got up, heading for the shared office to tell his father what he had just done and said.

"We might have need of his help at some time in the future, but I happen to agree with you on this accusation of his. If it is true, then he needs to be told to stop it. We did everything possible to destroy all the designs for your detection set-up, and have not built a *TruStealth* rig after the thirty-nine complete systems we made up through last year."

"You know he is going to demand to know what they are doing if it is not *TruStealth*, don't you?"

Damon nodded. "Yes, and I have an answer for him. When he calls I'll take it."

Admiral Hopkins called four minutes later. Before he could vent a good head of steam Damon told him he would hang up at the first sign of a threat or hint this might be a Swift Enterprises problem.

There was silence at the other end of the line for half a minute before the Admiral, now seemingly calm, said, "You do know how much I dislike having that son of yours hang up on me."

"And, you and I know he did nothing of the sort. Your secretary said you wanted him to hold for a half hour. I don't blame him because I would do the same, even if it was the President himself."

“Well, Damon, in this case it is not the President but that thorn in everyone’s side, his V.P. I now understand the old joke about what is the first thing the Secret Service is told to do in case the President is assassinated. Shoot the Vice President between the eyes. He has been riding my back for weeks over this. I guess I was venting at you folks. Won’t happen again. What can you or Tom tell me about this invisibility of the attackers?”

“Right now, and until we can bring that thing down and study it, the best guess is that they really aren’t invisible, but their ship is one giant monitor. They move slowly enough that a wide-angle camera on top could send a picture through a computer, enhance it a little and broadcast it underneath. You look up and you see sky. They have some soft of coating or the same sort of angular construction as stealth ships that keeps RADAR from seeing them.”

“I see. Then, why do they become visible before they shoot that infernal bolt thing down?”

“Again, this is pure guesswork, but perhaps it is to avoid damaging their giant monitor.”

“Oh. Never thought about that.”

They talked another three minutes before the Admiral, again, told the inventor he was sorry and asked the message be passed along to Tom.

Tom remembered something that had been in the back of his mind for weeks. He picked up he phone and dialed Angie’s cell phone and asked for the gaps between each of the power plant attacks.

“And, hello to you, Tom. Is started out at nine days in most cases when they hit a large plant, but now you mention it, when they siphoned off power from a smaller plant, the interval was less. Seven days has been typical, but as more and more of the stations get your shut off technology, that interval has dropped to about three days, Like in when they hit the Gladsden Plant in Alabama. It is small compared to the next one they got to in Georgia, the Harlee Branch Coal plant. By a factor of about twelve, and they hit the larger plant just two days later.”

“Could that be because it was their actual target but the needed a bit of power to get there?” Tom asked.

“That’s what we are thinking, but one thing is certain. The more stations that can shut off the supply before they sustain damage, the more stations these vampires hit.”

“And,” Tom said more to himself than to the Navy woman, “the

more we can try to steer them into a corner."

"There is certainly that possibility. How are your little spy devices getting on?"

He told her about the unseasonable winds at the altitudes they were flying, "But, the good news is we had one in position to at least get a small measurement of electrical discharge over the most recent plant hit. It isn't a ton of information, but it does say they are not entirely untraceable."

She paused before asking her next question. "What would make it possible to keep a good track on them?"

With a little laugh he said, "Oh, only having one about every two miles across the entire sky, Angie. Then we could track them down to about a fifty-foot radius." He became more serious. "Of course, thinking about it, if we had a group of about six hundred or so of them we could move along to new locations as these people move their destruction device, it might be possible—"

"At what cost? And, by the way, that is a serious question."

Tom asked for a minute to do some calculations.

"Six hundred of them would cost us—that's our raw costs—about four-point-eight million, but would take at least five months to complete. We have to do something else and a lot sooner, Angie. But, you said it was a serious question."

"I did. If, let's say, you have nothing else you can think to do, it may be something to shoot for."

Tom sighed. "Yeah, but think of the months and months of destruction. I have to believe they will step up their attacks as we make it more and more difficult on them.

They ended the call with nothing really decided except Tom agreed to talk the matter over with his father.

When he did, Damon shook his head. "I spoke with Bob Chritendon the other day to tell him about your bit of success. He had bad news. They have discovered a flaw in the chips and are in the process of recalling the two hundred or so they've produced. I talked him out of insisting ours go back, and he has promised to replace them in about three months, but there will be no more of them at least until then."

Tom understood that meant either building the SpyNuts now with the hope they could eventually be used, or waiting to see if the electronics supplier was able to make good on his promise.

"Are we going to have troubles with our current chips?"

Damon shook his head. "Not that Bob could tell, it is just that the

data traces can get overwhelmed as the chips heat up."

Tom smiled. "Well, we're running these things up high enough they do not build up heat. Would that make a difference to him over getting us more?"

"I brought just that point up, and while he wants to see our performance data, he just has his hands tied by his Board of Directors who feel they must play it all very safe. So, I am afraid we can't count on any more of those chips in the near future."

So, Tom thought as he rose to leave the office, *that answers that line of inquiry. I'll need to see what else we can do to trace these criminals.*

He headed down the hall to his large lab. Inside, he took a seat at the computer and started looking up several things. All had to do with electricity and both the handling of it and the dampening of it.

Perhaps there was some way to make it less viable? He pushed himself away from the keyboard.

"No," he said aloud, "that is just going to make them attack more and more power stations. It's too bad we can't entice them to stop and suckle at a single point for a while."

He next called up both the pattern of attacks as well as the U.S. Navy's statisticians' report regarding the likely series of targets. When Bud came by an hour later he was deep in concentration and was shaking his head.

"Sorry to interrupt, skipper, but why the head shakes?"

Tom turned around to look at his friend and brother-in-law. "Just trying to see any patterns the Navy isn't picking up on. I'm afraid their people are too tunnel-visioned and are coming up with way too many targets that are not what the vampires have been going for. Look."

The inventor pointed at the screen, so Bud pulled over a chair and took a look. On the wide monitor were two maps. The first one had hundreds and hundreds of symbols showing locations of a variety of power plants. The one on the right was a simplified map of the zig-zag pattern of flights and strikes that had happened.

"Uhh, not sure what I'm supposed to see, Tom."

"Oh, let me change the right side map to what the Navy thinks will be the next hit."

When it came up Bud looked at it and said, "That can't be right. Is it?"

With another shake of his head, Tom said, "No. It can't. I'm seeing them taking what a lawyer might call facts not in evidence

when they are trying to spot the next locations. They seem to be taking into account power stations that either have been mothballed, like that one in Illinois, or ones with such a small output—" he tapped the screen in five locations, "—they wouldn't give our vampires enough to cover what they must use just sending down the power lance."

They both looked at the charts a moment before Bud asked for the first actual strikes map be brought back.

"If it were me I'd say the targets are all the blue and green ones. Not the yellow solar farms or the red nuclear plants. And, if I recall their normal range that would mean one of those seven coal plants should be next." He pointed at an arc of power stations nearer to St Louis.

"Those would be my guesses as well. I've got to call Angie again to tell her about this."

He picked up the phone and was speaking to her in a minute. After telling her of the discrepancies, he told her what both he and Bud thought would come next.

"If the vampires hit one of your suggestions and not the Navy boy's and girl's, Admiral Hopkins is going to hit the ceiling. He's placing a lot of faith in them and has, as I hear, gone out on a limb with the Secretary of the Navy."

"So, what happens if we are right and they are wrong?"

Angie sighed. "Probably it will be explained as a blip in the data and he'll come down on the statistical analysis team hard giving them one more chance. If they can't come up with anything accurate then, he'll take the hit himself, even if he shouldn't need to do that."

After hanging up he made one more call, asking how long it might take to get the current SpyNuts from one location to another more than eight hundred miles away and spread out in a semi-circle.

"If we can pull them into the *Sky Queen* then about five hours."

Tom thanked the man and hung up.

"So?" Bud asked.

"So, we wait for three days if the Navy is right or two days if you and I are, and then either face the fact that we might not have all the information they have, or that we are going to need to help Admiral Hopkins out of a pretty uncomfortable situation."

"How do we do that?"

"I don't know, except that it includes finding not just the

electrical leakage of the airship, but also tracking it and keeping close tabs on where it is going. If we can do that, we can warn the one, three or ten stations that might be the next target well in advance. I just wish all of the stations had installed those power shut-off circuits we've been sending out. The rate right now is about forty percent." He looked disgusted.

"Why so low?"

"Mostly the excuses are they have to provide so much electricity to such a large area that it would be a burden on them and their subscribers to have to be without power for five to seven hours. Even when we've said it can and should be accomplished overnight, they still balk at doing it."

Bud snorted. "They sound worse that politicians."

"Don't kid yourself, flyboy. They are both cut from the same cloth and both play cover-their-butts politics over anything that might make them less popular. No, it's going to take a Presidential order for them all to protect themselves. Or, getting the insurance companies to refuse to cover any damage they might have prevented. Let's go upstairs for a moment."

The flyer stood up. "Can't. Lunch date with a feisty blond woman. You understand."

Up in Legal the reaction was not what Tom hoped for.

"Legally they can't do that, just like they can't tell people who haul trailer homes into Tornado Alley year after year and get blown to smithereens. Sorry, Tom. But, the Presidential thing might work."

Next, he returned to the big office and put in a call to Senator Quintana's office.

"How the heck do you know when I'm back here for the only five minutes in my entire day?" Peter asked with what Tom believe was a smile.

When told about the appalling lack of follow through he promised to get on the President's schedule within the next day and would report back any progress, "Or, otherwise."

The next attack came just as Tom and Bud predicted and even hit one of the power plants in the arc they had charted.

Tom immediately ordered the repositioning of the SpyNuts to cover the next anticipate arc of targets. They would go into tracking mode and be the silent sentries of the skies.

As he expected, Admiral Hopkins' call came through within the

hour of the attack.

"My people blew it big time, Tom. Commander Jackson tells me she spoke with you the other day and you were spot on." He paused and blew his nose. "Tell me what we did wrong."

Tom described how they were not ignoring the shuttered plants and also were taking many that were too small to be considered into their calculations.

"I tried to duplicate what they believed they were working with and came up with something different from both their initial report and from ours."

"How close to yours and how far from theirs?"

"About seventy percent closer to what they figured than my arc of targets. Again, their calculations were based on far too many non-relative targets. But, I spent some time with our own Statistical Analysis folks and they tell me that is standard for military analysis. So, I can offer either to take this over completely, or if you need to have your team involved I'll like to offer to have our top three Stats people visit your team and show them how they might tune their way of looking at things."

"Thank you, Tom. After the fuss I made over the *TruStealth* stuff, I am not sure why you are being so generous, but I'll take it. Now, I need to go answer to a committee on the Hill."

Tom promised to have his people ready to travel in the next twenty-four hours.

When told, Damon asked if Tom was still going to go ahead and position the SpyNuts where he decided they needed to be.

"Yes, at least until their calculations and ours line up. Or get close. We have a few of the sonic chips around so I'd like to build another five SpyNuts. We can place those closer to the target possibilities the Navy's team come up with so it at least appears we are listening to them."

Damon gave his go-ahead and several calls were made.

"They can be in the air in three days," Hank told Tom once he had delivery schedules from all concerned. "Where do they go?"

Tom had to say he didn't yet know, and gave him a brief outline of the Navy's issues.

"Until we get their next set of potential targets and can check them against what we are predicting, we'll get those five close to where they think the next attack will be. Even then, if they are incorrect those five will go into long-range stalking mode like the others until they acquire some data."

“Then what?” It was a simple question from his father with a lot of inferences. Tom picked up on many of them so he took his time answering.

“I believe that we are under more than a little time pressure as well as political pressure. I would hate to jump into things feet first only to find a bottomless pit under us, but I know I need to come up with something that might be used to either disable these criminals, or make it impossible for them to do anything more to attack this country and our electrical grid. It’s the how part I’m still working on.”

Now it was Damon’s turn to think over his next words carefully. “And, what do we do if you can find them?’

His son’s head tilted forward until his chin was nearly on his chest. He looked up into his father’s searching eyes.

“Then, if we can’t stop them, we need to let the military handle the situation. I don’t want to be involved in anything like trying to shoot them out of the sky.”

CHAPTER 14 /
"WE MAY HAVE SEEN... SOMETHING"

TOM RECEIVED a call late the following afternoon.

"Mr. Tom Swift?"

"Yes, who is calling and what can I do for you, sir?"

"This is Chief of Police, Hardy Hanford over in Muscatine, Iowa. We've had the darndest experience here today that I was told to report to you. Not sure why, but here goes. See, we have a power plant here in town, the Muscatine Plant Number One down here along the river. That's the Mississippi River, of course. So, anyway, we've all been told about the big guys getting hit by some sort of lightning causing all sorts of damage, and to be on the lookout, except our Plant One is kind of small. Like under three hundred megawatts and we've been told they are hitting the gigawatt sites."

"Okay, but I'm not sure what it is you are trying to tell me. Did your power plant get attacked?"

"No, sir."

When the man did not amplify this, Tom took a deep breath and asked, "Then what did happen to have you on the phone to me?"

"What? Oh, right. Sorry. Well, the plant is down, like I said, along the river and they were doing something called a carbon burnout on some of their transfer linkages when there was all sorts of sparking and electricity shooting out and upwards."

Now alarmed, Tom asked for more details.

"Not a lot to tell you except for this. One of the men outside having a smoke said he looked up and could have sworn he saw a shadow pass over the clouds up there. Not a little shadow. He told me those clouds must have been about thirty thousand feet up and whatever it was must have been three times the size of one of those giant 747 jetliners, except it wasn't moving along. Just hung there making the shadow for at least three minutes. Then he says before he could get someone else out to look at it, it moved along."

"He saw this shadow move?"

"Yes. It went to the edge of the clouds and disappeared. As in, nothing came out of the clouds. Just that as the nose got to the edge nothing making that shadow came poking out. Thirty second later the shadow and the cloud were gone and nothing was up there. Spooky, huh?"

"Yes, that was spooky. Any chance he could tell what direction it

was pointing and moving toward?"

"Hmm. Well, he said it was going away from the river, west-ish, and maybe toward the old Distribution Center over by Highway Sixty-One. That would almost be due West."

"Is there anything else you can tell me? Did the plant sustain any damage?"

"No, sir. Not a lick. All I know is we may have seen something here, but the witness, Charlie Davis, can't be more specific."

Tom thanked the Chief and asked him to ring with any new information.

When Damon came back to the office twenty minutes later Tom told him about the possible sighting.

"Well, that would go along with the basic direction of travel whoever this is has been taking, although a bit farther south than I anticipated. Too bad this witness didn't think to take a picture with his cell phone. It might be nice to at least see the outline of what we can't see."

Tom thought a moment before picking up his phone and dialing the call-back sequence. The Chief picked the line up.

"Yes?"

Tom explained that he needed one additional piece of information. "If you can get this Mr. Davis to sit down and draw the shape of the shadow he saw, and stress it needs to be as accurate as he can make it, and then if you will send that to me it could go a long way to helping us."

The Chief agreed to go to the power plant and take a sketch pad with him. "I ought ta have it sent to you in the next two hours," he promised.

It came through via an email just before six as Tom was preparing to go home. He opened the file and found himself sitting back down.

Whatever it was had to be nearly four times longer than it was wide, gave the impression of being fairly tall, and was not shaped like any dirigible or zeppelin he'd ever seen. It was more like a blunt-nosed cruise ship. Narrower and rounded in front and nearly straight at the back.

He looked at the picture several moments before forwarding the image to his father's mail. He made a quick call.

"Momsie? When dad gets there tell him I've sent him the drawing of our possible electrical attacker. I think he'll find it fascinating."

Damon did indeed find the picture fascinating. He called Tom and got him part way home. The young inventor pulled to the side of the road to answer his cellphone.

"Does that look like anything you remember seeing, son?"

Tom had been trying to dredge up a memory and it finally hit him. "It sort of looks like a giant version of the first airship I made for our space friends. The one that interloper crashed into destroying it and killing herself while we were testing it. But, this can't be that."

"I agree, but the basic outline is reminiscent, isn't it?"

Tom had to agree, but told his father this one would appear to be three times the size.

"That's pretty heavy, Dad. If they are using helium, even the ultra-pure stuff from Helium City, I can't see how they can be lifting much more than, oh… perhaps ten or twelve tons of electrical equipment. Wait!" he said suddenly. "Could that be why they have to hit power plants frequently? Could they really have an objective but can't get there without a lot of refueling stops? And, if they decided to use hydrogen and must make more by breaking down water in the air?"

"That would be my immediate interpretation of it, son. You go ahead and head home and we'll meet first thing in the morning. Maybe something will come to one of us in the middle of the night as to how to use this image to help us find them."

With renewed energy, the young inventor set about trying to come up with some sort of way to disable the enemy airship.

For three days he attempted to build a device that could siphon off electricity, but the closest he managed to get was a power-hungry storage battery. Ultimately it had no use for this set of attacks, but it had given him several ideas for batteries that could be charged in seconds, rather that hours or minutes.

That, however, was for a later time.

For now he was stumped as to how the electricity vampires were doing what they did.

On a whim he tried creating a containment field such as he used in his e-guns. This overlapping field kept the electrical shock energy in a tight bundle rather than allowing it to naturally spread out.

When Arv Hanson dropped by the large lab he asked Tom how whatever he was making was supposed to work.

"My thinking is these vampires are creating a sort of straw out of energy of some kind, and then influencing electricity into being

dragged up inside it. Perhaps by completing a DC-type circuit. So, I've built a sort of e-gun without the actual gun part, only the surrounding field. I want to see if electricity will flow up into it."

Everything was set up in the safety chamber in one corner of the larger room and Tom finished making the necessary connections.

"Now, we give this a good try," he said as he closed and locked the clear tomasite door of the chamber. Far too many times experiments had gotten out of hand and only the combination of super strength tomasite along with a spring mounting of the outer wall that would swing open if pressure built up inside the chamber now prevented explosions from doing any damage other than to what was inside.

Tom had Arv watch a set of digital gauges. "Tell me if and when you see negative energy flow out of gauge one and positive from gauge two. If you have a chance, see if it is equal."

He typed in a command to release the safety circuits and began the experiment.

They both watched as the dual horseshoe-shaped energy fields built, overlapped and shot out at a target circuit filled with high-energy capacitors.

"Staring now," Tom announced and Arv looked intently at the gauges.

"I'm seeing something going out, skipper. Registers negative twenty-two hundred. Only about a third of that is actually registering as positive flow in the fields."

Tom tried several setting but the results were the same. Far too much energy was being consumed in the creating of the energy containment fields and the electricity being expended in the target circuits.

Five minutes later he shut things down

"Well, not very impressive, huh?"

Art smile and shook his head. "No, not as such, but at least you are trying and my old third grade teacher told me, 'Even if you can't do all the arithmetic now, Arvid, the important thing is you are trying.' So, I kept trying and now look where I am."

He was about to excuse himself when Tom had a thought. "Hang on a second. I want to reset something in there." He walked over to the test chamber door, opened it and stepped inside. As Arv watched he approached the circuits, reaching out for a cutoff switch to their right.

Suddenly, Tom's body was picked up and thrown across the

chamber. He slammed into the opposite wall, hard, and slumped to the floor.

Arv hit the emergency button, grabbed a pair of heavy rubber gloves and crawled into the chamber. He checked Tom over and decided he didn't have a neck or back break, so he slowly and carefully dragged the unconscious inventor from the chamber. They were just clearing the doorway when the outer door flung open and Damon Swift, Chow and even Munford Trent raced in.

In as few words as necessary Arv told them what happened.

"Doc and his team are on the way. He is breathing okay, isn't he?" Damon asked.

Arv nodded. "Yes. Strong heartbeat as well. He just took a shock and then hit his head on the wall. I hope he didn't get a concussion."

They could hear Doc's people pelting down the ride/walk belt in the corridor. It let them get the nearly one thousand feet from the far end to the lab in under twenty-five seconds.

Following a quick check the inventor was put on a gurney and carried from the building. His father promised to be over to check on him within fifteen minutes.

When he arrived Tom was conscious and looking like he knew he'd done something foolish. He explained what happened.

"I didn't count on the capacitors taking back all the power they'd given off once I shut things down. I got close enough and they arced their power into me and back I went. It wasn't enough to hurt me, but I banged my head pretty bad. Doc says no concussion this time, just a walloping headache for a day or so."

"And you will be getting twenty-four hours of rest at home. I'm sure your wife will appreciate the opportunity to take care or you," Doc said as he peeked into the exam room.

Two days later Tom dismantled his experiment and went to the underground office to do some research, It was delightfully quiet and cool down there and he always felt he did more and better work there than in the bright lights and tightly controlled air conditioning and heating of the big office.

He located the piece he wanted to review and spent half an hour going through it and making a few notes. In the end it appeared it would be another dead end but he had to try as many things a he could.

Tom was about to leave his small underground office when the

intercom buzzed.

"Tom, I have a call for you on line two. It's someone from the office of Naval Communications. She says it is confidential."

Okay, I'll take it. If dad is around or comes in, let him know about this."

After taking a breath and pondering what this call might be about, he pressed the button. "This is Tom Swift."

"This a Vanessa Bretnor. I'm not certain but your assistant may have mentioned I am with the Naval Communications office. I am a civilian working for the military."

"He did mention some of that although I wasn't aware civilians did the work your department is responsible for without being in the service."

"Not many people do. The reason for this call, and it comes at the direction of someone at a much higher level that the people for whom I work, and I am making this call from my personal phone from offsite. I hope you can see that this is not an authorized call and I will be in huge amounts of trouble should its fact become known."

"Well, nobody ever asks who we speak with, and if they do, unless it is a trusted individual, I have no reason to disclose any of this. So, how many I help you?"

"Actually, Mr. Swift, it is I who might help you. You see, if is my duty to monitor certain channels used by foreign powers. I intercepted something day before yesterday and my superiors want me—no, they've ordered me—to sit on it. The thing is, I know from a very close friend in the Navy that you are spearheading the counter attack on these electrical grid attackers."

"I thank you for your trust in me and can guess who our common friend is, but please, tell me what you wish to."

He heard her take a deep breath and let it out. It sounded as if she was scared or very nervous. Finally, she told him, "I monitor Eastern European frequencies and conversations. My specialties are the Kranjovian and Brungarian languages."

Tom felt his chest tighten and his face drain of color. "Go on…"

"The conversation I intercepted was in Brungarian and contained such phrases as, 'total power drain,' and 'internal breakdown.' When I told my boss he told me to keep it all to myself. National security and that sort of excuse. Listen, I'm going to need to hang up in case someone is tapping my cell phone. I can't call anyone else, but if you have someone high up you trust, please try

to get the word to them. But, tell them I might need some type of protection. Good-bye."

Tom set the receiver in the cradle and stared at the phone for five minutes before getting up. He definitely needed to speak to his father.

"That is both incredible, and also dismaying," he said a few minutes later. "Do you believe this woman was telling you the truth? Not just about the communication but about her bosses?"

All Tom could do was shrug. "She sounded in earnest, but maybe that's what I wanted to hear. I do have the recording of the call," he held up a memory stick, "so maybe someone over in Communications can run it through their voice stress analyzer. We should get Harlan in on this as well."

Mr. Swift agreed and made two calls. Fifteen minutes he, Tom, Harlan, George Dilling and a technician met in one of the fully-outfitted communications gear rooms. Here, everything from communications with the Swift's space friends to top secret calls from the President were handled. The stick was slotted and copied into the computer before the stress application was opened.

They all listened to the conversation as the algorithms did their processing. A moment later a small *ping* was heard and the screen changed to a series of charted lines. The tech pointed at one area.

"Either she is exceptional, or she is actually very scared. That, plus her tone is that of someone telling the truth. With about a five percent margin either way, I'd say she is ninety-two percent certain to be telling the truth?"

Harlan looked at Damon, "What now? She did leave the door open to our calling in some higher help."

"I'd say we ask Senator Quintana what he thinks," Tom stated.

"And, I agree," Damon said. "George, can you connect to his telejector system in his private office. If he's there we can talk. If not, then we call the regular way and set something up."

The video call was made and they could see Peter Quintana as he sat behind his desk speaking to someone out of the shot. There was no sound and he was making a "wait one" signal with his right index finger.

When it appeared he was thanking the individual, and reached out to shake his or her hand, Tom and Damon knew it would be only a few seconds. But, whoever it was must have kept speaking because as Pete sat back down, he rolled his eyes and tried to continue looking interested. A full minute later he made a "shoo" motion with his hands and looked directly into the video pickup

built into a picture frame on his desk.

"Finally," he said as he activated the audio. "The Undersecretary for Education can talk your ear off. No wonder he went into politics. If he'd been a teacher, even first graders would have rioted over his non-stop yammering. So, enough of my troubles this particular hour of this day. What's on your mind?"

Tom told him of the private call and the woman's nervousness over breaking the rules. As he got into details, the senator looked glum and then downright angry.

"Preposterous!" he said. "I have to find out who she works for and then drag him or her in kicking and screaming all the way if necessary. Withholding something as important as that?"

George, who had been working on a computer, interrupted them. "I have just traced where her phone was when that call was made. Appears to be an apartment complex down in Dam Neck." He gave the senator the address."

"Makes sense. The office she works at is down there as well. Okay. I'm sending out the Marines to check on her welfare and to drag her manager up here to see me. It's 1:20, so you should be hearing from me before 5:00. Got to go!"

The call came in at 5:10 and straight to the shared office and their telejector unit.

"Sit down and I'll fill you in on everything. First, the woman is safe. She was so scared she took a couple tranquilizers and fell asleep. Second, her manager claims that the orders to not distribute that particular piece of info came from high up. As in Vice President high up. As in I am meeting with the top guy himself in one hour to discuss how his underling could be allowed to clamp down on such important data."

He said the manager was temporarily being held in a room at the Capitol Building under guard and was both nervous and full of bravado. "We'll get one of those out of his system. If you can both be at Damon's place tonight, I'll call you as soon as my meeting is over."

They agreed and the two Swifts left a few minutes later.

"I'll can your mother to get something ready. You call Bashalli and see if she feels up to a few hours of nonstop adoration of your son and forthcoming baby." He smiled at Tom.

Anne said she was making one of Chow 's recipes, something Damon had to ask her to repeat.

"Yes, I said *miced* pork. Supposedly he and Wanda were in Oswego and ate at a Chinese restaurant that had misspelled minced as miced. It's really good. All I need to do is cook more rice when it gets to be that time."

It was a delicious but tense dinner interrupted just as dessert got to the table by the phone.

"Damon, it's Pete. Oh, boy, do we have a bag of worms! Bottom line is the President went ballistic and screamed into the phone for five minutes. Words like, 'This is it for you, you clown,' were bandied about and in the end Mr. President smiled at me and uttered one word. 'Finally!' The upshot of our meeting is that woman, Bretnor, is to be personally thanked by his nibs tomorrow, the manager notified that if word does not come from the top office about censoring anything, it damn well better not be, and our favorite VP is about to find he is no longer going to be trusted with very much to do these next two years. Oh, and the sum total of the intercepted message very strongly points to Brungaria. Well, have a better night, I'm going home to have a good single malt and then to bed before midnight for a change!"

CHAPTER 15 /

TAKE TIME FOR SPACE

WITH NOTHING really working in trying to spot the enemy's airship—and Tom was convinced it had to be as opposed to a conventional aircraft—he decided to head up to the new *Space Queen* station and see if their Megascope might be able to detect something. He wasn't too hopeful as satellite imaging had failed so far.

His hope was the alternate way the Megascope looked at things might provide a breakthrough.

With Bud sitting in the co-pilot's seat of one of Tom's flying saucers they made the half-hour flight, attached to the lower end and floated to the giant station inside the extendable gangway.

Now permanently transferred to the large station as her full-time commander, Ken Horton met them at the bottom of the elevator.

"Welcome to paradise!" he said as he shook their hands. "I have to tell you, skipper, that when I first met you way back on that beach, I never imagined I'd be in charge of something as magnificent as all this." His right arm swept up and around at the incredible view.

The young men looked around and had to agree. Now that most of the unbuilt areas—all carefully balanced with the weight of anything along the lines of a building—were green or in their first full bloom, the view was more beautiful and breathtaking wherever you looked.

Having the opposite side of the giant tube only some six hundred feet away and being able to look "up" and see "down" on people over there was difficult to get used to at first. Most people adapted after a day or so, but one scientist from a research lab in Florida had developed such a bad case of vertigo he kept crouching close to the ground so he would not fall off.

He'd gone home three days after arriving.

Tom, Bud and Ken walked over to the two-story building that served as the main administration offices for the station. Inside, Ken poured them coffee and inquired about Tom's reason for coming up.

"Not that we aren't glad to see you, and even you, Bud, it's just that you were here a few weeks ago for the ceremony. Come up with good or bad news?"

"Neither, really, other than the bad news of the electrical power

station attacks. I need to speak to all the operators of the downward telescopes and Megascope to see if anyone spotted anything we might use to track these people down."

They spoke about a few other things including the slightly faster than normal consumption of oxygen inside the station. Tom suggested it might be the newness of the atmosphere and the system refreshing equipment while Bud said he saw a lot of people trying to see how high they could jump. "That has to burn a lot of O2," he stated.

Tom looked at Ken and smiled. "If that is the case, then as soon as the newness wears off—and you might make a little suggestion that it stops fairly soon—you may see that number drop into the normal range."

Ken had an appointment with another of their visiting researchers so the young men headed for the observation department. The people on duty there controlled a set of four telescopes of varying strengths that ran around the perimeter of the station on a set of tubular rails so they could remain focused on something even with the rotation of the station. There was also a SuperSight system performing mostly weather watches around the globe.

This track system wasn't used for the Megascope Space Prober, one of Tom's earlier inventions. It was positioned about fifty feet away from the station and could be swung around to point at anything from something on Earth to a distant galaxy a million light years away.

None of the four telescope and SuperSight operators had seen anything even though Jerry Springfield had been watching a very large sailboat off the New England coast when it was attacked a few months earlier.

"Gosh, skipper. I had no idea that was you down there. But, all I saw was the lightning or whatever it was shot down and hit your boat. Came right out of a cloud as you'd suspect. Funny, though. I had a good shot of you from about eleven degrees east of your position and I'd swear on my granny's grave that cloud wasn't there a minute before the attack."

Both Bud and Tom thought it was anything else other than funny, but said nothing.

"Did you notice any hint of a shadow?"

The operator thought then shook his head. "Well, actually I might have but I put it down to a higher cloud. Maybe there wasn't one."

Tom thanked Jerry before going next door to the Megascope tracking room.

None of the three women who ran the Megascope had seen anything but they also told him they really hadn't been looking.

"If you want, we can scan a pretty good area each time we pass over," Janice Simpson offered.

"That would be great, and I'll try to make it easy by sending you up reports on where we suspect they will strike next. Just be certain to record all of your sweeps so I can look at things later. Even if you see nothing, I might be able to coax some data out of things."

They spent another few hours at the station walking all around the inside admiring the incredible growing fields filled with everything from beds of low flowers to grains to leafy dwarf trees. The flowers had been selected for their exceptionally low pollen counts while the grain chaff and the leaves from the trees would be mulched and used as fertilizer a few months down the line.

Both agreed it was odd to always be walking on what appeared to be upward-sloped ground but was actually flat.

"I can't get over the clarity of the air in here, skipper," Bud told him. "It is almost too clear. Now I understand why you fiddled with that picture you sent Tommy and Betty."

It was true. Even at the farthest distance there was nothing to get in the way of perfectly seeing things. The relatively small level of moisture in the air was carefully mixed with what was constantly being filtered so there were no pockets of greater or less of it to impede the views. It was the epitome of a crystal clear view.

When it came time to depart, Ken hustled out of the nearby building to shake their hands and to ride up to the center of the axis to see them off.

"Thanks for coming up, and I hear you've given the vision teams a little homework. I hope we can get you what you need."

Tom stopped and looked at his friend. "I hope so, too, Ken. These electricity vampires are doing bad things and have even been taking lives. It has to stop, and it seems everyone is looking to Enterprises to do the magic trick. We'll see…"

"Yeah. Bon voyage, skipper, and you as well, Bud. See you when you have a chance to come back. Maybe bring the ladies and spend a night."

Tom disconnected the flexible gangway and backed the saucer away from the station before energizing the repelatrons and carefully aiming them at a large "X" on the end marking the balance

point to be used to push against.

On the way down, Bud inquired if the inventor felt they would get their first good look at the interlopers.

Tom made sure the ship was on course and turned to face his friend.

"We can't be certain. I'd love it if we discover the entire top of their aircraft is nicely visible, but doubt it. I would not be bothered if the space prober waves find it but cannot get a good lock on. If they have achieved some level of invisibility, or have incredible camouflage, the truth is they also have nearly or zero **RADAR** signature. If they are there, it may only be by some sort of fluke we ever do see them."

Bud slumped in his seat. "It's just not fair, Tom. You are the greatest inventor in the world, and nobody should be able to fool you or do things you can't figure out."

"Actually, Bud, I am not the greatest inventor, I am good at what I do and I think we both realize I tend to look at problems from a bit different of an angle. Maybe that helps me. All I do know is whoever is behind this invisibility system, if it actually is one, has a better grasp on the dynamics of vision than I do."

They spent the rest of the trip in silence and only took up the discussion on the flight back to Shopton from Fearing Island.

"Okay," Bud said as soon as they reached cruising altitude. "Let's say these guys have developed something like, but not exactly, *TruStealth*. How much of their power drain do you believe that accounts for?"

Tom thought a moment before answering. "If they need to resupply their electricity storage banks as often as they appear, it must take a tremendous level of power. Obviously, we don't know what they have inside, but let's go on the notion that one worker had when he saw the errant shadow. If the ship is about four hundred feet long and maybe one-twenty wide, and we go with normal physics that say they lose stability and might be prone to rotating around their axis if the ship is too tall, let's put that height at seventy-five feet."

Okay. I'll take your numbers as being as precise as we're likely to get."

"Fine. So we have an envelope that must hold enough helium or hydrogen—and I hope they aren't using the explosive one—so the interior of that ship needs to be nearly eighty percent lifting envelope. Which means they have perhaps an area the size of one of our transcontinental bullet train cargo cars for everything else. That

isn't a lot of room for equipment, storage and living quarters. I guess it isn't any wonder they have to siphon off power as often as they do."

"All right, so why build something that is that incapable of sustaining flight very long, and sending it up over our heads?"

"I've said it before, both dad and I think they have a single objective. Now that we hear this is likely to be Brungarians, I have to wonder how they hope to return after doing whatever it is they intent to do."

Neither wanted to consider this might be a one-way mission of a small crew, but that did bring up the possibility it was a robotic ship with no humans inside.

"The problem I have believing that," Tom explained as he and Bud walked outside along the meandering pathway between buildings the next morning, "is that there are some heavy decisions that are being made based on new and changing information. Many of the more cautious stations are listening to us and installing the shut-off circuitry, and when we tell them they are a potential target they start really paying attention. If it were up to a robotic pilot the ship would just go from place to place and strike."

"So," Bud said as he opened the cafeteria door for his friend, "too complicated for a computer to handle? Even if it is one of yours?" He raised an eyebrow. More than once Tom or Enterprises had been the subject of an attack by something using a Swift product inside such as a Solar Battery or one of the inventor's off-the-shelf L'il Idiot computers.

Tom stopped inside the door and thought about that. He shook his head, saying, "No, or at least I'm nearly certain. It would take a really massive collective of computers, a super-computer, to have enough computing power and room for some very sophisticated programming to make those types of decisions."

"But," the flyer said not to be dissuaded from his line of questioning, "not impossible?"

"Think about it, Bud. A massive collection of computers all using electricity, all day and all night long. Even given they could be cooled using outside air, they still would burn a lot of amps. Amps they need to power their weapon."

"Fine. You win," Bud said with a grin. "I surrender to total and irrefutable logic. So, how many in the crew?"

They arrived at the beverage station, each selecting a mug and filling it with hot coffee.

"If you take even the minimum heating and air supply needs,

and match that against available space, I'd say two, but not more than three people up there." As they sat down Tom stopped with his rump hovering above the chair. "I just thought of something. People mean food and that means garbage. So, how come nobody has reported garbage being dumped on their house or land?"

"Maybe if you track where they've been and their path to each next spot the police or military can go look for anything dropped overboard. It might have some marking or at least give us some idea who is up there."

Tom agreed, and later that day he drew up an electronic map of the routes the electricity vampires would have traveled. Before heading home he wrote a small program that would check with the National Weather Service for what was going on in those areas during the time periods the airship would have traversed those locations.

By the next morning his route map was complete. It now included wind influences starting as high as forty thousand feet all the way to near ground level and adjusted the map accordingly.

When Tom called Angie Jackson and explained what he had, he also needed to tell her it was based on the assumption nothing was more than about a pound in weight.

"Even at that I am probably overestimating things," he said. "They haven't touched down at a convenience store so we have to believe they took all their food with them. If they are smart that would include minimal packaging. I doubt they have frozen foods."

"Why is that, Tom?"

"Power. They won't have the extra to run a large deep freeze."

"Are you certain you are Damon's son and not the son of Sherlock Holmes?" she said laughing. "Your powers of deductive reasoning are truly magnificent, Tom."

Tom made a humming sound.

"What?"

"Well, everybody says *deductive* reasoning but Holmes mostly used *inductive* reasoning. Even Doyle got it wrong. But, that really doesn't matter and is only me being a bit too persnickety."

"Enough with the five dollar words. I'll see if we can get people on this possible trail of garbage. Heck. Even if we only find a few odds and ends we might figure out what they are eating and how many are consuming stuff. I'll let you know in a few days or once we locate anything. Oh, and thanks, Tom. I really mean that."

He thanked her and hung up.

With that now off his mind, the inventor turned to coming up with a plan for what to do once the enemy was finally located.

As he made a few notes he muttered to himself, “If only I knew how they were flying that thing, what they are using to keep themselves aloft, and their whole invisibility thing.”

He hoped they were not using hydrogen, although infinitely more available than helium. It was half as dense as helium but the relative lifting power differences were negligible. The truly horrible thing about hydrogen was that in the presence of oxygen it was explosively flammable.

He sat back and wondered if the lower air pressure and lack of oxygen at high altitudes made it relatively safe to use.

There was little research on the subject that had happened in more than ninety years and even then, the altitude used was a mere fifteen thousand feet.

This prompted a call to the supplies people who promised a cylinder of hydrogen would be delivered to the altitude test chamber in a special building close to Bud’s hangar 6.

“It’ll be there in an hour, Tom,” the man promised.

He headed out there early knowing he had several things to set up. When he arrived the chamber was undergoing a cleaning cycle with a special high-pressure washer inside making certain every speck of dust, dirt and contaminants was gone.

It would be an easy set of tests. He brought ten balloons with him from his lab in the Administration building. Each one could be inflated to about three-feet across, plenty of room for enough hydrogen to give him realistic results. He began, once the cylinder was wheeled in, to fill five of them. Four he tethered to a chair using some string he’d found in a cupboard.

The first balloon was placed inside the chamber. He taped an igniter to once side being certain it was in a specific location so he could duplicate placement on the rest of the balloons.

With the chamber door tightly sealed he turned on several instruments. One was a temperature sensor with the power to take one thousand measurements each second and immediately graph them on a monitor. Another was a pressure sensor to tell what increase might be made by each subject.

Finally, he focused a high-speed camera on the balloon so he could go back and watch in very slow motion how the balloon tore open and what the pattern of burn might be.

Balloon one was ignited and exploded in a half-second. It was his

baseline test and did pretty much as he suspected it would.

The next four balloons, each set up like the first and all old used air replaced by fresh, exploded in different ways with the notable thing being the less the air pressure and lower the oxygen level, the longer it took to fully explode and the less resulting outward pressure.

Those had been exploded at five thousand foot intervals so he now had everything from one hundred-ninety feet above sea level—where Enterprises was located—up to twenty thousand feet.

Now he would increase the distance by ten thousand feet for the rest of his balloons.

The differences were startling, even to Tom who expected them. At thirty thousand feet the balloon popped open where the igniter burned through the plastic, but the gas that whooshed out—relatively slowly because of the lower pressure exerting itself on the envelope—and didn't as much explode as it burned furiously.

This was even more evident at forty thousand feet.

At fifty thousand, the air pressure pushed so lightly the hydrogen only leaked out until enough oxygen mixed with it causing it to flame up after nearly five-seconds.

There was no fire at either sixty- or seventy thousand feet.

When he reported his findings to his father, he had to say, "If they are flying at forty thousand feet or higher, they actually might not be in the danger zone if they're using hydrogen. And, as I thought about it, if they have some way to suck in moisture from clouds, they might be able to use a bit of power and separate the water and get more hydrogen for the lift envelope and oxygen for their consumption."

Damon nodded. "Not quite self-sufficient, but it would help them. And, given that the hydrogen might need to be released on those couple times they descended, it could explain how they were able to get back up."

"Or, they have some terrific drive units that can power them up or down as long as they maintain basic neutral buoyancy."

"Ah yes, like any good submarine. No matter what, good job thinking to investigate that. As a little side note, since you say there isn't a lot of research out there, I'd suggest spending a couple hours putting that together into something to be published. You do realize it has been nearly five months since you have an article in one of the journals, don't you?" He smiled at his son.

Both knew it wasn't all that important to publish. University and

college professors did it to prove they were still alive once they got tenure, and many other scientists did it to say, “Hey, look at me!” Neither Swift, or any of their ancestors, had engaged in ‘publishing for personal glory,’ as the original Tom had once put it.

“So, what do you intend to do with that information?”

Tom shrugged. “I suppose I need to pass it along to the military, both the fact that airship might be filled with hydrogen, but I’m not certain if them knowing about the high-altitude lack of explosions would be a good thing or make them reckless and more likely to shoot first.”

The sat in silent contemplation for fifteen minutes before Damon tapped Tom on his shoulder.

“Personally, I’d suggest keeping that little tidbit to yourself, son.”

CHAPTER 16 /
ALMOST ENOUGH DATA FOR A CONCLUSION

DURING THE week after Tom's conversation with Angie Jackson, most of the Eastern Region National Guard units had been activated and sent out along the lines of travel to search for debris. Quite a bit of what was located during the two-day search turned out to be trash dumped at ground level by uncaring people. And, for some unknown reason, a broken toilet seat sitting high in a larch tree in North Carolina.

However, by the time the airship's track headed back up from lower Kentucky there were objects and packaging that could not be explained. In all five small weighted bags of trash were found over an eleven hundred mile path, and all within less than a quarter mile of the route from Tom's computations.

In the bags were a combination of small plastic pull tabs and clear wrappers. Or, they appeared to be plastic. What it turned out to be was a cornstarch product that would biodegrade once wet and disappear in as little as twenty-four hours.

Stuck to many were traces of proteins and starches such as you might find in concentrated food bars.

"Luckily, where they dropped things there wasn't any rain," Tom stated in a meeting with Hank and Linda. "Otherwise, these would have dissolved. That is probably what happened to things they dropped on the way south."

"Is that something you've seen before," she asked.

With a shake of his head, he stated, "Not this one, but there have been numerous products using a corn-based oil rather than petroleum to make a type of eco-friendly plastic. To make this, my guess is it takes a lot of pressure, perhaps tens of thousands of pounds of it, mashing down a powder mixture. Also in there is some sort of binder… minute traces of wheat gluten."

"Does it get us any closer to finding them," came Hank's question.

"Perhaps and maybe not. We know they are either concerned for our ecology or just hoped to have evidence of their passing disappear. But, we also know there is some hint they toss garbage overboard about once a day based on the distances between finds and between power stations and when they were attacked. I've suggested to our Navy liaison that they might start looking near specific places I am supplying. We don't know what time of day or night they dump things, though I'll guess and say night time before

they go to sleep or in the morning before the sun rises, and also if it is the same time each day, but the spread indicates it must be within about an hour each time. So, with that I can try to tell them where to look next. If we get really accurate, then we can put a roadblock in the sky in front of them and make it difficult to get to another power station."

"Are you saying we have enough data to now track them?" Linda asked, wide eyed.

Tom looked at Enterprises newest U.S. citizen and smiled. The ceremony had been brief but meaningful as she and forty-eight others took the oath and received their documentation. He took pride in knowing she had wanted him there.

"Almost close enough to draw some conclusions about where they are going, Linda. But, we might be off a bit… for a little longer. The good news we are getting closer and closer to finding them."

"What happens then?" Hank asked.

"I wish I knew," Tom replied after a brief pause.

The next morning another power station was attacked and a phone call came in less than five minutes later.

"Tom Swift? This is Mariella Gordon at the Jeffreys Energy Center outside of St. Marys, Kansas. I was told to call you immediately. We've been attacked."

No matter how many times he heard those words Tom felt ice run down his spine.

"Tell me about it, please. Was anybody hurt, and did anyone happen to see it from outside your facility?"

She described that they had been notified they were one of seven possible targets and had all but shut down a half hour before.

"Most of our people were outside and we had moved them over near our water cooling sub-facility. When that thing came down we all saw it, but Marty Smith and Kerry Underhill both had their cell phones out and pointed at the sky.

"I even saw the cloud start up and whatever it was above it make a really distinct shadow." She sighed. "The good thing is that whatever it is came down and played across the roof of our voltage stabilizing equipment building, almost as if, and forgive me if this sounds crazy, but almost as if it was looking for something."

"That is not crazy," he assured her. "They were looking for a place to attach that power lance to and suck up electricity. I take it they went away?"

“Not really. That big sky ship shadow moved and the cloud went away, but so did it. Then, ten minutes later just as I was about to tell everyone to go back inside, another cloud sort of *poofed* into existence and another what you call a power lance came down. The thing seemed to be a lot lower that second time. It hit the generator building and tore a hole in the roof I’m looking up through right now. Maybe fifteen feet wide and fifty long.”

Tom was relieved but also concerned she was back inside the building. He mentioned that and she chuckled.

“That new cloud went away and because we have one of those antennas with your company name on it—which is where I got your number by the way so thanks for that—I went to the antenna and pressed the playback button on the back. We could all hear something revving up kind of like a really powerful fan. Haven’t you heard that?”

“Hang on, please.” He checked his application and it was just in the process of downloading the audio file. “Okay. I have your file now so let me take a quick listen.”

He did and had to shake his head in wonder. It sounded exactly like a high-speed fan coming up from no movement to possibly its top speed. In seconds it began to dwindle. He stopped the recording.

“Ms. Gordon, you can’t believe how glad I am that nobody was hurt and that you sustained minimal damage. And I give you a sincere thanks for following the guidelines and getting your power shut down. If it helps I can send you a letter we have from the President of the United States thanking any inconvenienced customers for their understanding.”

“That would be wonderful, Mr. Swift. The switchboard hasn’t stopped since I pulled the plug, so to speak. Where can I have our people send those videos they took?”

Tom gave her the proper email address and got hers. After hanging up he notified Trent to follow up on the Presidential message before he called Harlan.

“Got to put you on hold, Harlan, while I bring in Angie Jackson at the Navy.”

A minute later the three were talking. Tom told them of the attack and the immediate response by the manager and the video he expected to receive any moment.

“If we could bottle that woman and send her around to every power station we could kill any hopes of those vampires getting another watt of power!” Angie declared.

The first of the videos came in while they were talking and Tom forwarded it to the other two. As they each watched the images, well shot and with minimal shaking or things going in and out of focus, Tom stated, "The fact they are creating a shadow tells me their invisibility trick is only that… a trick and nothing that really makes them unseeable."

"How's that?" Angie asked.

"Well, think about it. Even the *TruStealth* technology has a small weakness in that if you were to put the covered vehicle between you and the rising sun and then looked just to your side of it, maybe fifteen to eighteen feet out, you would see some hint of shadow. Now, not a total one because our system is a bit too clever to allow that, but a small something. And, it only happens when the sun is a degree or two above the horizon. They are plainly visible in shadow form up there once their little cloud trick happens."

He paused, then added, "And I think they have to become visible to send down their lance." He reminded them of Damon's theory about protecting their monitor.

"Wow. That means they are not perfect and that we might just get them, doesn't it?"

"It would appear so, Angie. Harlan? You've been quiet. What are your thoughts?"

"Hmmm. Thoughts? First, there are unreasonable bits of chatter out there between military bases that tell me someone wants to make a name for themselves by blasting this out of the sky. Angie, I'm afraid that includes some Navy folks. Not as bad as the National Guard who seem to be a bunch of bloodthirsty savages, but… well I wanted you to know that *we* know."

"Then, I want to tell you that at least at Admiral Hopkins' level, the U.S. Navy has no wish to spill blood. I can't tell you who has that particular lust, but it is higher that we both communicate with. Sorry."

She sounded genuine so Tom chose to pass over that fact for the time being.

"I'd like the tracking teams to concentrate between this new attack station and the previous one which was just five days ago. My guess is they are in a bit of a panic right now and might get sloppy. If they are low on power they could have jettisoned other things."

"I'll get them right on it," she promised before hanging up.

"I'm still here, Tom."

"Yeah, I know. What are we going to do about these trigger happy people?"

He heard the Security man taking a deep breath and letting it out through his nose.

"Okay. First, we stop telling the Government types everything we are finding out. If the President himself calls you, I say go ahead, but all volunteering of info stops as of now. If and when this backfires on us and we find ourselves more and more out of the loop, then we start feeding them things we know. But for now, I'd like to not send out any more of the 'We believe they will strike here' messages. I can't make this an order, and I don't think your dad would either. It is just my opinion and based in part on my knowledge of how Washington and politicians and the military work."

Tom said it was good input and he would stop the updates as of now.

He hoped that the damage had not already been done and that plans were not being hatched by the higher powers.

As word got around to the various power generating companies and then out to the actual sites, more and more of the employees gladly had their cell phones or even a few high-resolution video cameras out and ready as they were rushed from their workspaces.

Two more times very clear video was shot and sent to Tom.

Of course, along with the good came dozens of very bad video clips, some so shaky he wondered if the person holding the phone suffered from some sort of neurological disease.

Many of the bad videos suffered from inattentiveness on the part of the employee as they would aim into the air but let the phone drop down and point at the ground as soon as they saw something up there. Doc—who Tom ran into in the cafeteria the day after getting some useable footage—explained that many people just go into freeze mode when faced with the unknown or danger.

"The fact they stopped speaking to anyone around them and their hands dropped says they were in shock over the experience."

Tom attempted to use some video stabilization but was marginally successful, so he satisfied himself with the several good videos he'd received.

When he returned to his computer it was to find a message from Hank:

> Skipper, we're having problems with those sonic chips. Most of them have died on us in the last six hours. When I checked with the manufacturer, a woman told me the darned things are supposed to be sealed inside an airtight

box and the box cooled. That any moisture that might accumulate is deadly to their function. Did we know that?

Hank

Tom's head sank to his chest. This wasn't good news. He first TeleVoc'd his father to ask if that had been mentioned at any point —the answer was a firm negative—before speaking with Linda Ming.

"No, Tom. Nothing in the rather minimal documentation they sent mentions anything about moisture or sealed cold boxes or anything. Obviously we have protected them from direct exposure, but this one takes me completely by surprise."

His next call was to Robert Chritendon at the manufacturer.

After finally getting through three levels of "don't bother the boss" employees his call was taken.

"Tom. Good of you to call. Hey, before we get into whatever you wanted to say or ask, let me apologize for not being able to accommodate you with all the sonic chips you need. But, I'm sure you understand that when a fault pops up you do whatever to make it right. So, what might I do for you today?"

The inventor told him about the dead chips. Chritendon was shocked.

"That's impossible, Tom. Those things are totally sealed as they come out of testing. You could boil them and not get a drop inside. Who did your man speak to?"

Tom looked at his brief notes. "A woman in Customer Service by the name of Melanie Simmiotti, with an S."

There was silence on the line for a few seconds. "Uh, Tom? I need to go look into this as in *right now*. Let me call you back. Maybe an hour. Bye!"

Robert called back ten minutes later. "I cannot thank you enough, Tom, for giving me that name. We've had a few, shall I say, incidents here in the past few months starting about the time we hired Miss Simmiotti. At the moment our Security people have taken her to their offices and are asking a lot of hard questions. Now, before you ask, I'll tell you that she is the person I had package those chips up so we could circumvent Sales and Shipping and get them over to you in a day.

"All I can think is she must have done something to those chips." His voice spoke of genuine concern.

"Is there any way to get us replacements? We can live with

whatever fault you're people found because it doesn't seem to affect our particular use. Unless, that is, it has to do with moisture."

Robert admitted it did not have anything to do with Tom's problems, but he could not send any new chips out because all the older ones had been destroyed to avoid any of them getting into the supply stream accidentally.

"I am so sorry, Tom. With all the news reports I kind of know what you are using them for." He gave a heavy sigh. "All I can say is you should try using a desiccant to dry them out, then cover the prongs and give them a dip in paraffin as a stop-gap measure."

Tom thanked him but said there was no time to experiment now. He would need to look elsewhere for a solution.

He headed over to speak with Linda and give her the bad news. She took it with a reluctant smile.

"Isn't it always the way? Do you believe Harlan Ames ought to know about this?"

Tom nodded. "Yes. He's my next stop, but I wanted you to hear it first. Even dad doesn't know. I'll have Harlan follow up with Chritendon to see what they find out about the woman who shipped our chips."

Harlan did not receive the information as gracefully as Linda had. In fact, he hit the corner of his desk so hard it cracked. He also uttered several oaths before taking a deep breath and simmering down. Then, he turned very pale.

"Got to stop letting my anger get my heart rate up like that," he said, sitting down and taking a small white pill from his desk and placing it under his tongue. "Gimme a minute," he asked. When he looked over at Tom, the inventor appeared very concerned.

"Just a little angina, skipper. They are a lot less frequent since I had those stents put in a couple years back, but still annoying. Doc says they are there to remind me to behave. Okay, so I need to call the Security manager down at Chritendon and see what is going on. Want to hang out here while I do that?"

Tom agreed to wait while the call was made.

After hanging up, Harlan looked at his young boss. "Illuminating, interesting, and I'll need to make a couple more calls as soon as you leave, but the upshot is this Simmiotti woman just laughed when questioned and then began singing the Brungarian national anthem. I think you see where this is going."

Tom stood. "Yeah. It would appear the Brungarians knew of the weakness around the electrical leakage noises and planted her in

the one company that might be able to help find them. At least we got enough information before they died to have a better idea where they are going and how far they can get." He stood up.

"Let dad and me know when you find out anything." With that, Tom left.

Harlan leaned back in his chair and swore under his breath. He hated when anything to do with the Swifts also got them involved in the international disputes with nations like Brungaria, Kranjovia and North Korea.

By the time Tom arrived in the shared office there was a call waiting from Linda Ming.

"I know you didn't ask me to do it, but once I heard about the moisture in a chip thing I decided to try drying one of our two reserve chips out. By the way, they also both had stopped working; we didn't notice it because we have not been using them. Anyway, I placed a chip in a warming oven filled with nitrogen and left it inside fifteen minutes. I then cooled it down and put it in one of our circuits."

"And…"

"And, it works. Whoever sabotaged these, and I put one under a microscope and found about fifteen micro holes in the coating right next to vital input and output pins, was going more for invisibility—no pun—than effectiveness. My guess is we could visit each antenna carrying SpyNut, bring it into the *Sky Queen*, and fix them if you want. It might not be a forever fix, but it can give them added life.

He promised to talk it over with his father. "If you can work up a very brief process, maybe half a page if it will fit, then we'll have that if he decides we go out for a repair run. Please don't spend more than ten or fifteen minutes on it, Linda. It might be wasted time!"

Tom walked through the outer office and Trent held up a hand to stop him. "Hold a moment, please," he said into the telephone receiver. "Tom, there is a call for you from Mr. Joshua Westerly. He is calling ship-to-shore and would like to speak with you."

"I'll take it inside. Thanks." He picked up the receiver. "Hello, Mr. Westerly. How's the sailing?"

"Oh, Tom, you can't imagine how tickled I am with *The Mary Deere*. She's a real ketch. Get it? Ketch…catch? Well, guess you had to be there. Anyway, I just wanted to call to tell you she sails like a dream and I'll be heading down to Panama in a few days. First leg of a round-the-world trip for the young lady and me." He laughed.

“I’m very happy to hear she meets with your approval. Have you had any guests onboard yet?”

“None of any note except for a very pretty State Congresswoman from my old home state of Tennessee. Had to put her to shore when she decided to anoint the decks, so to speak, in some six-inch swells. That’s the way it goes. I never had her built to haul a bunch of people around. Just wanted the cabins in case I throw a humdinger of a party in some exotic locale and don’t want folks to drive home. Anyway, thanks again, and give your old man my thanks as well. Bye!”

“Well, at least one thing is going well today!” Tom muttered as the line went dead.

CHAPTER 17 /
A LITTLE QUEEN IS BORN

"IT IS MY intent to build a brand new aircraft, based almost entirely on our smallest cargo jet. And, I happen to know Jake has one with about ninety-five percent of the inside structure complete over at the Construction Company. I've asked him to hold off on it until I clear things with you."

Damon looked at his son. "How fast can you do whatever this conversion entails, and what does it get you?"

Tom sat down at his desk and motioned for his father to come over. He turned the monitor so they could both see what was on the screen.

First, he brought up a wire diagram of what appeared to be the standard Model 3 cargo jet.

"I'm keeping her at the normal one hundred twenty-two feet long and one hundred ten foot wingspan, but there are two notable additions. Instead of the mid-plane single cluster of repelatron lifters I'm putting about ten of the standard twelve forward behind the cockpit and a second identical cluster just forward of the aft pressure bulkhead."

"Leaving you with no additional space since all the equipment and electronics currently sit under the floor."

"Leaving me with room for one, much larger nuclear power pod set dead center over the wing spar so I can power the extra lifters as well as my counter weapon which, before you ask, I am not entirely certain what that is going to be."

"But," Damon said, grinning at him, "it is certain to require a lot of power."

"It will. The second thing this jet is going to have is the ability to head up into low Earth orbit. She'll be," he said as his father's eyes went wide, "completely sealed with everything necessary to let her stay out of the atmosphere for at least a day at a time. I'm thinking that being up above any place our vampires can travel will let us not just look down on them, but I doubt, very seriously, they even try looking above them."

Damon Swift rubbed his chin in thought before asking, "So, do you truly believe they can be spotted from above and not below?"

Tom shrugged. "All I know is the one-time spotting of, well, something that spontaneously generated a cloud and then turned visible was also above the Midland Generation station above

Michigan. Then, they were nearly attacked. Or, at least the Vampires missed the mark."

"Right. As I recall the airship or whatever it is disappeared and the cloud dissipated and there was nothing up there to be seen."

Tom told his father about more of the refinements to the cargo jet including adding swing-wing technology so the actual wings might be moved backward to a sweep of about sixty degrees.

"It will make it more streamlined for re-entering the atmosphere."

They talked about the structural aspects that would need changing. For one, the vacuum of space would put many times greater strain and forces on the outer hull. For this reason Tom intended to utilize a variation of the same honeycombed, dual-skinned materials from which *The Mary Deere* sailboat was constructed. The reconfigured skin would be a half an inch thick with an outer skin of tomasite-coated Durastress and an inner layer of a Durastress-kevlar-magnetanium sheeting. Between them would be a quarter-inch series of extruded Durastress I-beams attaching to both inside surfaces every six-inches holding things apart and leaving room for the infusion of a special self-sealing gel.

In all the new skin would weigh slightly less per square foot than three-sixteenths-inch-thick aircraft grade aluminum and be about five times stronger. It would also be insulating even without the three-inches of foam insulation Tom intended to cover the entire inside with.

The great increase in repelatron lifting ability would increase the jet's cargo capability from roughly sixty-five tons to a whopping ninety-six tons, while the total body weight dropped by three thousand pounds.

But, the biggest thing was the new type of dual-power jet turbines Tom intended to have installed.

Like many jets of similar size—including the newest Swift Cargo Jet series, Tom's QuieTurbine engines would be mounted, but rather than being under the wings, they would be placed on very short pylons atop the wings. Capable of working even at altitudes surpassing fifty thousand feet, to supplement their thrust and to get the jet/spacecraft out of the atmosphere Tom intended to also have these turbines turn into rocket engines.

The front of each intake would iris shut sealing the front once the appropriate altitude was reached. Then, special high-pressure tanks of a new, safe monopropellant would be injected into the middle of the turbine, a spark igniting it, and the resulting thrust sent out the back end.

Tom had these new dual-power engines on the drawing board for more than a year and Dianne Duquesne and her Propulsion Engineering people had already built a small-sized prototype that had been successfully tested several months earlier. Even the small model, a mere fifteen inches wide at the intake end, produced an incredible twenty thousand pounds of thrust. The full-sized ones for this jet would produce more than enough to propel the new vehicle at better than Mach-2 inside the atmosphere and above the fifty thousand foot altitude. When heading into Earth orbit the repelatron lifters would do all the heavy lifting.

Those lifters would be used to hold the ship nearly stationary for as many as twenty hours—with periodic application of the rocket engines to overcome the spin of the Earth below—before Tom believed the entire ship needed to come down for either chasing the enemy or for refueling and resupplying.

"Dianne told me about your dual power turbines at a department heads meeting half a year ago, but I think it slipped my mind until now just how powerful those were. What size crew are you envisioning?"

Tom hadn't thought about it much, but he said, "I'm pretty sure two pilots, one systems operator, and then between one and five to handle whatever it is we take up to try to detect the bad guys."

"I'd plan a maximum crew size, and even create an emergency reentry pod, for up to that number plus two," his father suggested. "You can use some of the same programming as you built into the escape and reentry pods for the Outpost. I'm not saying this new jet of yours will only be flying around this side of the country, but you have Enterprises programmed as the primary destination already."

Tom was smiling and Damon knew that meant he'd already planned to do that. "It also has Chicago and Denver."

"The crew area is sealable from the rest of the jet and sits in front of the forward repelatron array. I'm going to use the curve of the fuselage to give us the cupped heat shield necessary for best entry results. It's nice to know you and I are still on the same page, Dad. Thanks!"

The following day Tom called Bud in his small office in hangar six and asked if he'd like to head over to the Construction Company.

"Sure. What are we going to look at?"

"I'll explain on the way over. It is something you will need to be intimately familiar with as it is joining our stable of flying machines, so I want you to get introduced right away."

When he picked the flyer up half an hour later Bud was

practically jumping up and down. “Tell me,” he requested. When Tom didn’t immediately, Bud’s voice went up a few notes and became a little louder. “Tell me.”

“You need to see her, but basically I’m creating a one-off jet. Something that we or a crew can take up, park over an area where those electricity vampires are likely to strike, and then watch them using the most recent version of my SuperSight.”

“Most recent version? What kind of enhancements?”

“For one, at an altitude of two hundred thousand feet the field of view can be adjusted from five-miles wide down to just one hundred feet. Then, using a special headset the operator just looks around the image and wherever they look, that part comes into crystal clear detail as if you were three hundred feet away.”

“Jetz! That’s pretty impressive. And…” Bud’s eyes bulged out when something Tom just said hit him. “Two hundred thousand feet? As in… wait! More than thirty-six miles up?”

“More like nearly thirty-eight miles up. And, yes. I did say that. This is going to be a combination super cargo jet and low orbit spacecraft!”

Bud sat in stunned silence until they were through the gate and parking in front of Building 4 at the Construction Company. They got out and headed for the small door set inside the large, roll-away end doors.

The flyer stopped inside. “But, that looks just like one of the small cargo jets. What gives?”

As they walked up to and around the fuselage, watching a team of fifteen men and women attaching the pivot points for the wings that were hovering overhead on strong cables, Tom explained the design and mission. When he finished they stopped next to the set of portable stairs.

“Want to go up?” Bud said nothing but ran up the stairs, three at a time and ducked his head going into the side doorway.

As they looked around the bare skeleton Tom described the multi-layer skin that would soon be attached and also the crew escape and reentry pod, or CRP.

“Up front it will be just like one of the cargo jets except for about nine new gauges on the big panel in front of us. “It’s not going to be possible to put everything in front of a single pilot so this will definitely be a two-person flyer,” the inventor explained. “Actually, more of a three-person show. There will be a station behind the co-pilot, like in the old days when there were Navigators in the cockpits, who will monitor all the systems once the ship goes higher

than fifty thousand. That's the point where everything goes internal and every bleed valve closes and gets locked shut."

Tom could see the wheels of his friend's mind working. "Okay, what are you thinking, Bud?"

"Huh? Well, just that with someone like Linda Ming around, I'm darned if I can think of what all you might need all that space back there for." As he mentioned the Asian woman he blushed. He still had vivid memories of the weekend Sandy and her mother had flown down to New York City for two days of shopping in preparation for Sandy's senior year in high school. He'd let Linda, who had shown more than a casual interest in him, talk him into a date that had included a bit of kissing.

He felt guilty about it, Linda felt embarrassed she had done something like that, and no word was spoken of it. Sandy never had an idea about it.

"You can stop turning red every time you hear her name or see her, Bud. Just do like she does. Pretend it happened in your dreams and not in real life. Anyway, you were saying that with Linda's incredible skills at downsizing things, you can't see what all might go back there?"

"Right."

"Well, I can envision half-a-dozen or even more cubicles or stations with a number of different instruments or test facilities or such back there."

"Oh. Like she's a *Sky Queen* Junior. A *Little Queen*!" Bud said looking happy about his new name.

Tom deflated a little. "We've got the *Sky Queen*, the *Super Queen,* and I even gave into the *Space Queen*. Don't we have enough Queens around by now? Can't you come up with something new?"

Bud grinned, shook his head and tapped his temple. "I have at least five more in line, skipper." Tom groaned.

Because the new outer skin of the *Little Queen*—Bud's name instantly stuck—could be produced in wide sheets long enough to run the length of the main part of the fuselage, that work was coming together in just a few days from the completion of the skeleton. At the present rate the jet/space craft would be ready in three weeks.

The wings came first and fastest along with the tail assembly. While the aft end was skinned, the wings still hung from cables and

winches above the body. By the time the underside had been installed the ship was beginning to look almost airworthy.

"When do the repelatrons get installed?" Bud asked as he and Tom stood in front of the partially installed nose.

"According to Jake Aturian, the two clusters are staged over in Building Two. He even has the new nuclear power pod there ready to go."

"I'd have thought it would be going in before the skin," the flyer commented.

"Not this time, Bud. Follow me," he suggested as he headed down the left side of the aircraft. When they arrived at the connection point for the wings he nodded at the gaping hole in the side. "The pod is about two millimeters shy of not getting inside that spot, but it will be shoved in, mounted and connected to the main wiring harness day after tomorrow. After that, the wings go on and she gets buttoned up."

"Then, we fly her?"

"Then, my anxious friend, once the rest is finished we fly her. Our first trip will be under cover of darkness when we take her to fifty thousand and run her out over the Atlantic, get up to top speed and then come home before the sun pokes its face over the horizon. After that, the following evening we head for lower space to check things before installing her equipment."

Bud's face scrunched into a scowl. "And, what, pray tell, is that going to be?"

"A whole bunch of electrical detection equipment and even a special laser array that I hope to pin to the upper part of the vampire's airship, or whatever it really is."

Over the next week as more and more possibilities for equipment made themselves known, Tom had to ask the construction team to not install either of the side front doors as the mounting equipment would impede bringing some things inside.

He also had to ask that a port be added to the underside of the fuselage to which he intended to mount both a high-powered and a low-powered laser.

Finally, twenty-four ten-inch holes were drilled through the bottom and special sealing rings and tubes installed. These would house the delivery mechanisms for what Bud had dubbed the "Paint By Numbers" canisters.

As Tom had first described them, these paint bombs would be ejected once they were above their target, guided using a small fin

assembly at the back until they achieved a laser-guidance lock on. A proximity fuse would cause a CO2 cartridge to fully dispense its content starting about fifty feet from impact and the canisters would—assuming Tom's computations were correct—rupture about ten to fifteen feet above the target spreading out a load of two gallons of a special red paint that would remain sticky and fluid even at the icy temperatures of forty thousand feet.

Albert Wong asked, "How far out will the stuff spread?"

"We'll find that out a little later today. You and Bud are going to take our test canister up in an hour and drop it onto the test area here at Enterprises. To simulate the temperatures I believe things will actually happen in, the canister will be encased in a dry ice pod that will separate at about one hundred feet. After that, we measure. I'd like you to be up there guiding it down to a marker and I've asked Art Wiltessa to join to guys since he'll need to know how to aim at what you will be dropping once we go out for real."

The test was made from one of Tom's Whirling Duck helicopters and from the height of ten thousand feet, the altitude difference the inventor believed the electricity vampires would be when he gave the drop order.

"Are we really dropping this thing ten-K feet over the target up there?" Bud asked.

Tom shook his head. "Probably under five thousand in real life, flyboy. I just want Albert and Art to have enough time to play around with the controls a little.

The outer shell of the test canister was plugged into a battery pack to keep it at minus-seventy degrees. In the air it would be up to Bud to get them centered over the target area—currently taped off with a large square of blue masking tape—while Art unplugged and shoved the thing out the door.

Albert would be concentrating on his guidance instruments.

Up the helo went circling about a mile-wide track as it rose and rose.

"We have altitude, skipper," Bud announced over the radio. "We're being told to hold for an incoming cargo jet from Fearing, so it'll be five minutes."

"Make it ten so any wing vortex swirl has died all the way down."

"Wilco."

"The jet touched down two minutes later, it's engines reversing and slowing it until it stopped just off the runway.

"Swift Cargo Five to Tom. The tower told us what you're doing.

We'll hold out here until you get whatever it is you are doing, finished."

Tom thanked them and told them it would be about ten minutes.

"We have nothing else to do except put her in the hangar. We'll wait. Just tell Barclay to not drop his paint can on us!"

The time came and Tom gave Bud a five-second countdown. "And… drop!" he said and all eyes were focused on the bottom of the Duck.

"Got it," Tom said looking upward using a pair of Digital BigEyes to bring the tiny target into close view.

They watched as the canister plunged downward, straight and true from their angle, until it was just a few hundred feet up. The outer pod broke apart and the two halves slowed down while the canister kept the same speed.

About fifteen feet above the ground a mighty whoosh sound came splitting the canister apart and spreading out the red liquid. It hit just to the right side of the twenty-foot target square and to everyone's amazement, other than Tom, not a single drop bounced back into the air. It all hit and spread and stuck as if a video had immediately paused.

"Looks like a giant bloodworm vomited down there," Bud radioed before saying they were coming down.

The canister's two gallons of the paint almost completely covered an eleven-foot circle and another twenty feet of partial to lightly splattered coverage.

When Bud set the helo down fifty feet away, they raced over to Tom who was standing with his back to them, studying the test results.

Art and Albert turned to the inventor to ask him what he thought of the test only to find a huge grin spreading across Tom's face.

Nothing needed to be asked or said.

CHAPTER 18 /
TOMMY'S MAGIC ELIXIR

TOM NOW felt as if the time was coming ever closer when he would be able to anticipate the exact movements of the electricity vampires. Every time one station failed to give them what they needed—and always supposing they did not have a hidden power supply and the frequent hits were a just a cover—he was getting to the point he could tell within perhaps a hundred miles of the next target.

He could also now see their original "plan" of only striking at plants in the million megawatts or greater range had been abandoned in favor of anything providing the chance at six hundred megawatts or more.

"And that, along with far too many calculations done over and over again," he was telling his wife at dinner one evening, "gives us a fair idea of their consumption and storage capabilities."

Looking concerned, she said, "But, they are far away, right? There is no chance they could come back and strike at Shopton?"

Tom tried to not laugh but could not help himself. As she grew closer to her delivery date, Bashalli was getting more and more nervous about many things.

He stood up and helped her to her feet, giving her a soft and comforting hug for more than a minute before speaking.

"We are either fortunate or not, depending on how you look at things, that Shopton has no power generating plant. Sure, all three of our local plants have large nuclear power pods sprinkled throughout providing us at least sixty percent of our power, and solar farms of thousands of panel on most rooftops giving us another twenty percent of our intake, the fact is none of it is interconnected in such a way to be a good target for these attacks."

She backed up a step. "So, if we do not have a power generator, how do we get our electricity?"

"We get a lot from the hydroelectric dam on the Niagara River, some from a generator company down in Albany, and a little that comes over when we need a bit extra, from a smallish facility over in West Leydon. Although," and he immediately regretted that he had just started to tell her something she might now worry about, "umm, well, dad is thinking of trying to get NRC approval for a three hundred megawatt nuclear reactor plant we would dig into the hills west of town and cool using some of the water that naturally runs off and into Lake Carlopa. That, however, is a couple

years in the future," he assured her, "and we'll have these people in no time at all!" He hoped.

Bashalli was not to be deterred from her questioning.

"What can they do to our town, or to Swift Enterprises or the Swift MotorCar Company or the—"

"Whoa there, Bash. First, and I know this is important to you, but they are a couple thousand miles away from here, Their range of doing anything seems to be less than eight miles." He led her over to the sofa and they sat down, her snuggling into his chest.

"Now, the second thing is whatever it is that they send down only affects electricity, and great big, huge amounts of it. Even more than all of Shopton uses in a week. We are not a viable target for them. All the folks working on this are certain they expend more than they might recover if they came here just sending that lance thing down." He hugged her and she gave a deep sigh.

Little Bart looked up from his work at the small table they had bought him. He was using crayons but had a rather sophisticated jet aircraft on the paper in front of him.

"Momma? Dadda will make the bad people go away." He nodded as if that settled the matter and went back to coloring in the aircraft.

Bashalli looked at their son, and then she looked into Tom's eyes. "Am I being a silly woman?" she asked.

"No. Not silly, just very, very concerned and probably because it is a natural instinct of mothers and mothers to be to protect their children." He chuckled. "I'd be worried if you weren't. So, don't worry about it any more unless you want to worry about the people in the middle of the country and out west which is where they seem to be heading."

What he did not tell her was the latest opinion of his and his father was the electricity vampires were making their way to a point that would be uncomfortably close to the Citadel, and they would get there in another three weeks.

The race was on because the *Little Queen* was due to be completed in twenty days.

"You have a call from your cousin Thomasina on line three," Trent announced to the young inventor. "She asked to remind you that it is eight o'clock and she has something she likes to think of as 'a life.' I often wonder what those are like."

Tom grinned as he pressed the phone button.

“Tom here, Tommy. Trent told me about the having a life thing, so I’m guessing whatever it is you need to tell me, or ask about, must be important.”

Tommy sighed on the other end of the line. “Well, it is certainly important in Betty’s and my minds, but I may have overplayed the ‘I have a life’ thing. The truth is I’ve got nothing right now. Neither has Betty. Just our work and our little shop and… ah, but you probably would like to have me get to the point.”

“It crossed my mind, but I figured to let you have another moment of self-pity before bringing that up. So, what’s up?”

“Well, those vampire bad men are, and I now believe I have a way to either snare them, make them visible, or even defeat them. The problem is, we aren’t sure which. Hopefully one of them, though. And bad men on the ground are going to be easier to capture we believe.”

She outlined an experiment they’d performed where about two ounces of their graphene mini-threads had been produced and left unconnected.

“All loose, it ended up as nearly a cubic foot of the things, Tom. Then, and this was Betty’s idea, we concocted a rather thick liquid that included micro flecks of iron oxide.”

“You made rusty syrup?” he asked.

“Sort of. But the best part was that we blitzed the graphene into it using an industrial stick blender. Don’t ask me why we have one, we just do. The graphene tore up the blade, but got thoroughly mixed in and we ended up with something that does two amazing things. It short circuits anything electrical it touches and it also heats up to about five hundred degrees if left in the sun for more than four minutes.”

Tom sat, speechless, as the implications of some properties of this new slurry hit him.

“So,” he began slowly, “the rust messes heavily with the flow of electricity and the graphene do their little electrical trick? Just like the fabric made from them turns heat into electricity. Is it the iron oxide that does strange things with that?”

“That’s our theory, Tom. Is there some way we can get back to Shopton to work with you? We both are of the opinion that if you can find a way to deliver this onto or all over the vampire’s airship, it ought to make things very difficult for them. Might even make them visible so your Air Force can get a bead on them. What do you think?”

Tom laughed. “I may already have something to do what you

need. I think I am going to need to get some sleep and then hit the skies early in the morning. What's the closest airport capable of small business jets?"

Betty spoke up. "That would be Luton, Tom. It is about twenty miles away, down the M-1 motorway. As I recall they only have the one runway but it should do. What aircraft would you be flying?"

"The long range Toad, unless you need to bring along a lot of equipment. I can get the graphene bits in production here in the next half hour and have at least five to seven pounds of them by the time we get back."

"We'll have nothing other than ourselves and a change of knickers," Tommy told him, making him blush.

"Surely at least two pairs, Tommy," Betty said, "We are staying for more than a day, aren't we?"

"Pack what you like. Any, uhhh, knickers or other girl stuff you can go shopping for once you get here. We don't have a lot in Shopton, but I'm certain Bash and Sandy would love to take you over to Oswego and all their stores."

When he arrived home some forty minutes later—and after arranging for the graphene production and the fueling and prep of the long-distance Toad—he explained his trip to Bashalli. She made him a simple dinner and let him take a hot shower and climb into bed.

He hadn't realized how desperately tired he really was and fell asleep in minutes. She crept in a little later and set the alarm clock for five, his requested time.

The next morning he got up to the alarm and was surprised to find Bashalli had set her own watch alarm to go off thirty minutes earlier. He shaved, got dressed and joined her for a nice breakfast before going to Enterprises and taking off for England.

As he passed over Wolverhampton on his flight path toward Luton he was directed to the south so he could curve around and come down on their runway from 080 end.

"Nice to have you on England's soil, Mr. Swift," the tower controller radioed him on touchdown. "Once you get to the second turn off to your left, please follow it to your left and then continue along what we call the snake, I think you say it is an ess-curve, then contact ground control on one-one-nine-decimal six. Good day!"

Tom followed all instructions and was soon parking across the apron from a curving part of their main terminal. He spotted the ladies waiting for him near a multi-level parking structure. A fuel truck stood nearby ready to fill the jet's tanks. They were fast and

efficient.

Eleven minutes later the ladies were in the Toad, the top had latched in place and the ground controller gave permission to enter the runway via the first turn-off lane and then cleared him for immediate take-off.

The flight back began with a lively discussion of the properties of the new slurry the ladies had concocted but about the time they were due south of Greenland Tommy could see that Tom was tired.

"If you trust me to not steer us into the ocean, why don't you grab a kip… or rather a nap, Tom?"

"You're right. I went to be early but I'm working in deficit these days. If you feel up to it I can switch to your stick and then just zonk out here. I promise I'll keep my feet off the pedals as well." He grinned at her.

They didn't wake Tom until it was time to report to Northeast Control as they approached to within fifty miles of the coast of what Tommy believed might be part of Canada, perhaps Nova Scotia if her memory of geography and the outline she could see on the RADAR were to go by.

Tom stretched and smiled. "That felt wonderful. Thanks for the suggestion." He put his headset back on and made the approach call. They were vectored down the coast so they could enter over the lower coast of Maine. At that point they were handed off to the FAA control tower on the hill above Enterprises.

"Roger, Swift Two. We have your IFF just about even with Portland. In three minutes turn right to two-seven-five. Contact Enterprises control as you pass over Lake Winnipesaukee in New Hampshire. Your present altitude is fine until then. At that point request you call for new altitude."

They landed thirty minutes later and taxied to the Barn.

With a promise from one of the ground crew to get the ladies' suitcases over to the shared office, Tom, Betty and Tommy walked quickly across the tarmac.

Damon greeted the two women like long-lost children before shaking Tom's hand and pointing to the four covered dishes sitting on the conference table.

"Chow brought those in about three minutes before you reached the outer office. As I understand, he has made us a southern specialty, shrimp and grits with a zesty sauce, as he described it. Looks very good."

The foursome devoured their very late lunches with gusto before

turning to the more serious business of the discovery made by Betty and Tommy.

"That is fascinating to me," Damon told them. "Whatever had you going down that road?"

Tommy laughed. Would you believe, Uncle Damon, that it was a telly episode of a murder mystery? The good guys used metal filings in treacle to pour over the suspected getaway car's engine. It started up but sputtered to a halt fifty feet down the road and the driver got a terrible shock through the steering wheel. So, it hit us both that there might be some small possibility in that!"

"Okay, I'll take that as a given, but how did you test it?"

Betty blushed. "I spilled some on a live circuit board Tommy was about to shut off and solder a capacitor to. It went pop and sizzled and died, and because of the smoke I ran it up to our roof and set in on a metal plate. Yesterday was gloriously sunny and within a minute the board smoked even more and burst into flames.

"Betty yelled for me to bring a laser thermometer and I shot it in the middle in time to have it register about two-oh-two Centigrade or nearly four hundred Fahrenheit."

"So, we tried it again on a throwaway board and it repeated right down to the degree of temperature!"

"I am hoping this is excellent news," the older inventor suggested."

Tom shrugged. "It is the first real piece of progress that could lead to our finding and possibly disabling these electricity vampires."

Damon asked how it might help them locate the airship.

"Well, it is sticky and black and once it spreads out it won't come off, not even by freezing it. I'll do tests with solvents, but I think for every gallon we get on them, we uncover perhaps a ten-yard circle that I don't think they have the ability to make invisible."

Betty giggled. "If Bud were here he would say that if Tom manages to hit them in the right places he can make then look like a giant flying cow!"

Several sets of eye rolled upward. "Bud can be catching," Tom said.

Tommy smiled and said, "Tom is having a run of the graphene bits made so we can do some experiments right here. Betty and I have locked the doors of the lab, put the metaphorical cat outside with a large saucer of water, and are now here for as long as it takes."

Betty agreed with an emphatic nod.

After lunch the ladies joined Tom in the large lab down the hall from the office, where they found a large container of the first pound of graphene fibers had already been delivered. Next to that large box was a smaller one with a commercial label declaring it to be, "**Oxide of Iron, Superfine (99.725% pure)**."

"That's better than we had," Betty commented as she read the label out loud. "I think what we had was only eighty-seven percent pure."

It will be interesting to see if there is any difference," Tommy said.

"There very well may be. The more pure iron in this mix the better electricity will travel though it, And the more graphene bits the more electricity will be generated from heat."

"How do you intend to go about energizing that, Tom?" Betty asked.

"What is the hottest light you can think of, other than the sun?" he asked.

"Well, probably laser light. Some if it is intensely hot and some of it is icy cold. What have you got in mind?"

"Enterprises came up with an etching laser years ago to put serial numbers on products. Three years ago I repurposed that as a way to superheat things up on the planet Pluto when we mine some valuable minerals and elements there. I have toyed with an even larger version, one that, at a range of about five thousand-feet, can heat the impact spot to eight hundred degrees. At five hundred feet that goes up to a thousand degrees."

Tommy smiled. "Correct this foreign lady, but that sort of heat might not be all that effective on something made from, oh, titanium."

Now, Tom smiled back. "Ah, but the combination of iron oxide and graphene would certainly react to it is, and I believe at that concentration, quite violently."

A jet airline pilot who had been cruising at forty-two thousand feet over central Nebraska reported to his superiors, who passed the word along to Tom, that something they flew over, perhaps three or four thousand feet lower, had appeared and quickly was enveloped in a cloud of some sort.

"It was the craziest thing, Mr. Swift," he said once Tom called him, "Maybe twenty miles ahead, it popped up over just a second or

two. My copilot looked at me and told me we were *not* going to call in a UFO spotting, but I recalled reading about these attacks on power stations, so I slowed us down enough to maintain altitude but to keep from overflying whatever it was less than a minute later."

Tom was growing more and more excited. "Can you describe what it was the two of you saw?"

Basically, what had popped up and then been covered by the cloud was longer than it was wide by at least a factor of two or three, medium gray on top and a light blue on the bottom of what they could see, and appeared to be a solid vehicle rather than a dirigible or Zeppelin structure.

"We got back on course a minute later. Wish I had my camera up in the cockpit, but we're not allowed to be tourists when we are flying two hundred and fifty paying customers."

"Could you get any indication of what direction they might have been traveling, or at least where the nose was pointed?"

"Sure did. It did not seem to be underway, but the nose was pointed about two-four-zero. I hope that helps."

Tom thanked him before hanging up.

A sighting! An actual sighting of something solid and not a shadow from the ground, miles underneath.

He went to tell his father.

Damon sat back in his seat nodding and looking contemplative. Finally, he spoke.

"This is incredibly good news, son. It also bears out what you and I believe to be their ultimate target, especially if we believe this aircraft is of Brungarian origin."

Tom nodded, a bit sadly. "Yeah, the Citadel. What are we going to do about it?"

"This is going to be a two-pronged approach, son. I have to ensure there is no power available out there for them to target, I will also get half the drones reprogrammed to fly as high as, well, how does forty-eight thousand feet sound to you?"

"Sounds like right in their flying zone, or even a little above. What do I do?"

"Get that space jet of your finished, outfitted with what you need and be ready to head them off before they get there. I'd rather deal with them on someone else's turf than our own."

"I think I'd rather that as well," Tom stated as he rose to go down

the hall to his lab.

There were a few missing pieces in his *Little Queen* puzzle, and he needed to spend a day or more ironing everything out. Bashalli was happy to take the ladies to Oswego in Tom's Toad where they shopped most of the day.

He'd been thinking about the jet spaceship all morning and came to a conclusion.

Not only was it going to be necessary for the *Little Queen* to carry both the incredible sticky graphene and rust liquid, and in the drop-able containers that would be remotely controlled for maximum targeting ability, he was also not certain the level of laser he could carry in the smaller aircraft was possibly not going to be enough.

Three calls later and he had a promise of a much larger and more powerful laser. It was never going to fit in the *Little Queen* now that she was nearly complete and he absolutely did not want to tear one entire side open at this point.

What was needed was a larger, extremely fast jet that could carry something nearly fifty feet long, twelve feet wide and fifteen feet tall. And, have a down-facing port through which the aiming and concentrating lens for a giant laser would be.

He had just the aircraft for the job and just the cargo system that could be adapted inside of two days.

Tom rubbed his hands together in glee.

"We'll have you any day now!"

It was a promise he intended to keep.

CHAPTER 19 /
SECRET HIDDEN, BAD GUYS REVEALED

WHEN THEY met two days later the ladies had outdone themselves. Now, the Rusty Carbon—evidently another of Bud's groan-worthy names—was suspended in a viscous gel that would loosen up as the explosive charge blew the canisters apart in a reaction called liquefaction, but within a tenth of a second of coming into contact with anything solid it returned to a gooey state and clung with tenacity even when the temperatures were in the range of one hundred degrees below zero!

"I think we are going to have a successful hunt," Bud stated as he and Tom reviewed the final assembly plans with the team of fifteen engineers and technicians responsible for the finishing work.

"What in the heck is in that stuff, Tom?" Albert Wong asked when the *Little Queen's* main team met.

Tom chuckled. "A big scoop of iron oxide—hence the Rusty part of the name—and a million or so tiny graphene fibers all suspended in something one of our English team, Betty Rawlins, came up with." He nodded to Betty who blushed a little.

"It's basically a plastic that remains in a sort of sludge state between one hundred below all the way up to ninety-six above zero," she described. "Fahrenheit, that is. Any higher and it gets runny like water and any lower it will eventually freeze. It will need a new type of, ummm, detonator. The carbon dioxide will be too cold and might cause it to be too thick to spread out."

Tom explained what he hoped would do the trick and then Art told the man who would be controlling their laser array he and Albert needed to spend some time working together.

"From everything I've seen this will still be a lot like our previous paint can drop, with about the same spread—although we'll do another test drop tomorrow to check that. Then, once it hits and spreads Art will hit it with his laser to energize the goo."

Art looked from Tom to Tommy and back again. "What do you believe it is going to do?"

She pulled a small band from her shirt pocket and pulled her hair back into a ponytail as she answered.

"The laser light will energize the graphene which will do what it is *supposed* to do and that is to make electricity. A lot of it with no place to go but into their systems. If Tom's assumption that the top of their craft is covered by solar cells the added amperage ought to

fry those and any power converter or regulator. But, even if it does not do that, if we hit them with enough of the canisters we should be able to either cover their upward-facing cameras which should wreck havoc on their invisibility monitor system underneath or at the very least make them easy to spot from above even if they attempt to go invisible."

Bud held up a hand, somewhat reluctantly because he knew how his question might affect Tom.

"What happens if this Rusty Carbon overloads their circuits?"

All eyes went to the inventor. He looked at the team with a hint of sadness in his eyes. "If it does, and I have few doubts about it, then our enemy may find their entire power system inside the ship getting fried. Circuits blown and even batteries being overloaded and blown apart. Should that happen they will likely lose control of the ship. Then, if they have any smarts they will get to a lower altitude and bail out."

Nobody stated the obvious… *if they have the ability to parachute out.*

The discussion turned to more logistics and how the *Little Queen* was to be used.

"We take her up to about one hundred fifty or even two hundred thousand feet and keep above the area most likely to be attacked. We won't be in time for their next probable attack, but even that one may help us narrow down the next targets. Always," he said looking at each of them, "assuming they keep heading toward the west and slightly south."

Betty, who had not been told of the small jet's abilities, sat there with her mouth open.

"Teeth together, Betts and no drooling. I'm sure Tom meant what he said, but I sure don't understand how that is possible." She looked to the inventor.

"The only things we have had capable of flying at up to one hundred thousand feet are the *Sky Queen* and *Super Queen*," Tom explained. "Now, we are adding what has been dubbed by our resident product naming expert—" and he looked over toward Bud, "—as our new *Little Queen*." He explained about her being able to withstand the rigors of outer space for at least a day at a time. He also spoke of his hope to use it to deliver the canisters of the Rusty Carbon goo.

Tommy was enthusiastic as she asked if she and Betty would be coming along. Betty didn't look quite as happy about the possibility.

Tom chuckled. "Not to worry, Betty. We only have a small

number of seats and all are devoted to people who will be active in the attack. So, apologies to you, Tommy, but not on the actual mission. I would, however, like to have you or both of you inside when Bud and I take her out for her final test flight tomorrow."

Tommy clapped and nodded. Betty shrugged, not especially pleased, but she also realized this would be possibly a once in a lifetime chance.

Both Englishwomen stood near the *Little Queen* with hands on hips, heads cocked to the right, and nearly identical looks of bemusement on their faces.

"There is no way possible for *that* to go into orbit," Betty whispered out the side of her mouth.

Tommy replied through clenched teeth, almost like a ventriloquist, "If Tom says it will, you can bet your bottom Pound Sterling it will. I'm just worried about those wings coming off as it dives back into the atmosphere."

Bud, who was standing nearby, moved forward and placed a hand on each of their shoulders, leaning his face in between theirs.

"The skipper has those able to be swung back, like a diving bird does before they hit the water and snatch up a tasty fish." As they turned to look at him he pulled his head back and grinned. "Tom assures me we won't dive in at full speed like a returning rocket from the Moon. We tuck in the wings, lower the power to the repelatrons that will be keeping us up, and we sort of come down. Totally under control, by the way."

Nervously, Betty inquired, "And, when do we go back to flying and not plummeting?"

Bud laughed. "Just as soon as we get into enough atmosphere to give any sort of lift. But, the idea will be to come down quickly—and *safely*—and sort of drop down almost on top of them before they have the chance to move away or disappear on us. In fact, the skipper will be dropping a number of your canisters of Rusty Carbon from nearly two miles over their heads." He looked at Betty, who only seemed moderately satisfied with the whole "safely" thing and added, "When we all go up later for the last test, you'll see just how smoothly things go. If you don't look outside you'll think we are just cruising around in a jetliner."

The crew of the *Little Queen*, plus two attractive passengers, met at hangar 4 at ten that next evening. Showing no lights and with minimal amount of radio contact, Tom slid the silent repelatron lifter controls up and the jet spacecraft lifted from the dark tarmac and into the dark, moonless sky.

Tonight's test had been designed to give the jet a full range of function tests to get through in just two hours.

Tom sent the ship eastward, and they soon reached forty thousand feet. As it flew along it began rising even higher using the jet's normal systems. But around fifty-eight thousand four hundred feet the lift provided by the wings was seriously tapering off.

"Time for switchover, Bud." The flyer reached out and tapped a blue "button" on the wraparound control panel. The jet turbines shut down so quickly it almost sounded as if they had been struck by something.

This was planned and normal, but that didn't help Tommy when Betty reached over and got her fingers locked on the blonde's arm. The smaller woman relaxed a moment later when the roar of the monopropellant-fueled rockets forced everybody back into their seats.

"Remind me to yell, 'Ouch!' at you, Betty, once we get back down. Right now I'm just too excited to do it!" She did, however, check to see if her friend's fingernails had broken skin. There were dents but no blood.

Using a combination of repelatrons and the rockets the ship nosed upward and Tom began calling out their altitude each ten thousand feet.

When he got to one hundred-sixty thousand he announced they would remain at that height for the next thirty minutes. Shortly after that, he asked Zimby Cox to slip into the pilot's seat so he could inspect everything,

"Well?" he asked looking quite pleased as he stepped back to stand by the ladies. "Your impressions?"

Tommy shook her head, her hair flying around in the partially reduced gravity. "I am too much of an English lady to use the sort of words that immediately come to mind, but it is incredible!"

Even Betty was looking wide-eyed with wonder. "Ditto, what she said, Tom. Or, more likely what she did not say out loud."

He excused himself and made the rounds talking to Albert, Art, and the technicians who would man the stations during the times when the main operators were resting. Everything looked great, but one man had a question.

"I recall hearing about the time the National Guard tried to attack these vampires and their jets all lost power. Are we in that same sort of danger, Tom?"

Tom shook his head. "No, James. We aren't and that is thanks to

the tomasite coating on everything. I saw the Guard's report on that incident and their findings were that electromagnetic impulses hit those metal-skinned jets knocking electrical systems for a real loop. Tomasite keeps that from getting inside."

"Oh, so no EM blast getting in means we stay running?"

"That is absolutely it, my friend."

"Uhh, Tom?" The inventor turned to look at James. "Thanks. My wife was sort of nervous about that this morning. I don't think she got much sleep last night. This ought to help."

As he passed the ladies on the way back to the cockpit Tom asked if they wanted to come forward.

Tommy immediately unstrapped and pushed herself up out of the seat ending up with her head against the ceiling for a moment before she settled back down.

Betty, even if that had not happened, stated that she planned to remain right where she was. She admired her best friend for her courage but could not bring herself to follow suit.

In the cockpit Tom placed a hand on Zimby's shoulder. "Go ahead and stay there, Zim. I'll take it back before we head home."

Tommy seemed to be thinking about something. She was biting the right side of her lower lip.

Seeing it, Tom asked her, "A question?"

She nodded. "Yes. I've heard Uncle Damon's thoughts on why they turn visible just before an attack, but I wanted to ask if you agreed with that."

Letting out a small chuckle, the inventor admitted that it was a convenient explanation and possibly true. "It would also give them a little more power we think for the attack. Until we can capture their ship and see what all is inside, it will remain a guess. It is, by the way, our best one and has had the advantage of getting politicians off our backs… for the time being." He looked at his cousin and saw she was still thinking about it.

"Until now we haven't been able to get above them and hold still long enough to really study them. Sure, we now have at least six ground sightings of 'something' up behind a cloud that was not there the minute before. I believe the fact we can see a shadow proves they are not actually invisible."

"Okay-y-y-y," she said slowly, "but how come that shadow isn't visible on the ground?"

"The same reason you rarely see a shadow of a jetliner on the ground. They are small enough and it doesn't appear they have

attacked anything at the time the sun would be directly overhead. If you want another guess I'd say their shadow has been all over the place, just not close to the attacks so they have been ignored.

"Luckily, the operators up at the *Space Queen* station have been trying to spot that shadow, taking everything from sun angle to height and all into consideration."

He told her it was hoped that the shadow could be found and then tracked every day until a plan for attacking them could be arranged.

"The Megascope space prober uses a lot more than visuals to see something, and we have had one report just before the most recent attack of something along the lines of an electrical phase shift being detected probably very close to where the vampires came out of hiding."

Bud turned around and added, "They ought to have a good tracking lock within a day or so. Then…" and he slapped his hands together making Tom wince.

After Tom took back the controls, Tommy returned to sit next to Betty and they chatted about possible improvements to the Rusty Carbon mixture. Neither of them came up with anything that sounded better than what they already had.

Tom made the call throughout the ship, "We are going to go up to two hundred thousand feet and then perform a power dive. Bud wants to end it in a loop, so please be certain you are strapped in firmly. Everybody!"

A minute later the ship rose. Finally it nosed down and the sounds of the wings being swung back into full sweep position could be more felt than heard throughout the jet.

Betty closed her eyes and said a prayer for them all.

The dive was steep and the leveling off and loop pressed them all down into their seats, but it was soon over and Tom called out they were heading for Enterprises.

On the ground Bud offered to drive the ladies to the Swift Senior home for the night. Tom, tired and just a bit sniffly, thanked him and headed home to Bashalli, Bart and the baby in progress.

He arrived home at midnight, walked quietly up the stairs and let himself into the master bedroom.

"Good flight?" Bashalli asked from under the covers.

"Very good," he told her as he took off his clothes and slipped in next to her.

* * * * *

When Tom arrived at work his father and the two ladies were conspicuously absent. Then again, so was Trent.

Tom walked down the hallway to Chow's small kitchen, intending to ask if the cook had seen any of them. The chef wasn't visible and Tom was about to TeleVoc him when it hit him. He slapped his own forehead. The day before had been Friday so this was Saturday.

With a small laugh he headed back down the long hallway and down the stairs to the parking lot. He got back to the front gate less than fifteen minutes after he came in and the weekend guard touched the brim of his cap and nodded as Tom drove back out and headed for home.

It was only with a tiny bit of confusion that he noticed several cars were now parked in front of his house, but he recognized them all.

Inside he was greeted by Bashalli, Bart, Damon and Anne, Bud and Sandy, Bashalli's parents and her brother Moshan. All had grins on their faces and glasses filled with mimosas.

"Where are Betty and Tommy?" he asked.

Little Bart squealed and ran to his daddy. "Tommy daddy and the pretty lady are in da kitchen fixing beckfass," he announced.

"Breakfast," Bashalli corrected him as she picked him up to take him to her mother.

At that moment the kitchen door opened and the smells of a good, fried English breakfast wafted out. Betty had two platters filled with sausages, a type of bacon Tom recognized as what Americans call Irish Style but the British call it bacon, fried red tomato halves, a pile of sliced and fried mushrooms, and many, many fried eggs.

Tommy came out behind her with a large platter of fried red potatoes with what looked like parsley, and a dish that Tom believed he recognized as coming from Pakistan consisting of finely diced potatoes, chopped cabbage, caramelized onions, corned beef and a light curry sauce.

"Breakfast is on for all takers," Tommy announced. Everyone dug in and soon all the platters and their individual plates were empty.

Moshan stood up, smiled at the ladies and moved over to give both of them small kisses on their cheeks.

"I have not had that particular dish, and it may be like some Indian dishes that were created in England, but the flavors were

magnificent and remind me of Pakistan!"

The phone interrupted them all.

"Tom? It's Harlan. Sorry to bother you on Saturday, but there's been another attack in the Midwest, and this time we got a look at them!"

Tom was flabbergasted, but managed to get out, "How?"

"I don't know the particulars other than to tell you that the *Sky Queen* was out there starting to do maintenance on the SpyNuts and drying out their sonic chips when something appeared only about a mile in front of them. They dropped the SpyNut back off, closed up and raced forward."

He told of how the large jet had passed directly over the enemy by less than one hundred feet at high speed.

"I honestly don't think they saw the *Queen* coming, Tom. They had just released that lightning lance of theirs when they went all crazy from the vortices of the *Queen*."

"What happened to them?"

"Well, Red Jones reported that their airship, which he says is huge and seems to be solid-shelled, nearly turned upside down, but they righted themselves, turned to the side and disappeared before the *Queen* could circle back. He made a few more passes at high speed to see if he could force then back out into the open, but no go."

Tom admitted it was not a lot, but it was certainly something to use again if the opportunity came up.

"One more thing, Tom."

"What is that?"

The old Outpost happened to have its Megascope trained in that vicinity before the appearance. I'm looking at a report from their temporary commander, Bob Conners, that says there… well, let me read it to you:

Tom and Damon Swift

We were watching the Sky Queen pick up a few of those sky donuts about thirty minutes ago when our Megascope operator, Tim Baxter, says he had an anomaly pop up. As in, the scope registered an electrical phase shift right in the middle of the sky. First, he says he got an indication of something like nine hundred volts positive charge that pretty darned soon shifted into a negative number, and it was about that same strength.

He said is was like having an invisible transformer running power one way and then someone threw a switch and it went the other way. The thing is, he told me, there was no visible power to be measured like lightning or anything. Oh, then he did see them turn visible before the *Sky Queen* almost mowed them over. I hope that all makes sense. I'll have the data sent down in about an hour.

"That's it, Tom. I don't know if you understand it because I sure don't."

Tom had a smile on his face. "Oh. Harlan, I do understand it and it is very good news... at least for us!"

CHAPTER 20 /
A STAKE THROUGH THE HEART

TOM HAD the *Super Queen* outfitted with the largest industrial laser he could manage to borrow from the U.S. Air Force. It was a whopper coming in at more than fifteen tons of support equipment for the five-megawatt laser emitter array. In a single burst it would use more power than five typical homes do over a period of four days.

It would be used to augment the smaller, less powerful lasers in the *Little Queen*.

To make it practical, it needed to be powered by a high-energy source. For the Swifts this generally meant one or more of Tom's incredible energy pods—nuclear power packs capable of years of energy output from a safe, sealed ball ranging from a few kilowatts in something about the size of a beach ball, to megawatt ones about twelve feet across.

This meant the requirements of the laser could be met by a series of five such large-scale pods and those almost exactly fit into the second of the *Super Queen's* cargo containers.

"That's a lot of power to be carrying around in her belly," Bud commented as the two men got ready to climb into the smaller space-capable craft.

"Yes, it is, but it is the only way to have enough power for the laser array and still be able to bring everything back on line within a few seconds of any shot. Maybe three-seconds if we are lucky."

Tom had performed all the calculations and the results showed that if he ran the *Little Queen's* laser array at ninety-five percent output—still a monumental level of energy—the recovery time was just under three-seconds.

The laser in the *Super Queen* would manage one shot of seven-seconds with a recovery time of eleven-seconds in between.

That, he believed, was about all the down time they could expect to work with. He hoped a very few shots would be necessary.

"Would you tell Sandy here just how this is going to work," the flyer requested.

"Well, Red Jones and Zimby Cox are coming back from Fearing Island in the *Little Queen*, and she has been outfitted with the electrical leakage sensor package that's now hanging out of her fuselage forward of where the vertical lifters would normally be positioned. Other replacement stuff includes the individual bomb

bays for the Rusty Carbon canisters. They include homing devices that need to travel down a fairly weak laser lock-on beam to the target."

"Like a lot of guided bombs."

Tom let out a large sigh. "These are not *bombs*, Bud. They are more like giant paint gun pellets. Once the sensors detect their flying craft and we get a small laser locked on… okay, the *bombs* will will be dropped one at a time and when they are thirty feet away from hitting—the best distance I could compute based on the test you did for me, they do explode using highly compressed hydrogen peroxide being forced through a silver mesh."

Bud smiled. "Like an old-fashioned flying jet pack, huh? Or your nifty ejection seats?"

"Right. A little of the H2O2 creates a tremendous amount of steam and that blows the bombs apart. The hot steam dissipates so fast it won't warm anything up. Inside is our special liquid that is a great conductor of electricity. In fact, what Tommy and Betty created will turn laser light into heat and then turn that heat into electricity."

"So, the laser hits that, makes a lot of extra electricity and… ummm, okay, then what happens?" his sister asked.

"Red and Zimby join us and use their much larger laser in the *Super Queen* to hit the goo on top which should turn up the heat so much it is likely to knock out their anti-detection equipment. Maybe even their main power. My guess and hope are they never anticipated this sort of attack from above and so they might not have the same sort of electrical protection we've managed to get to about seventy percent of the power stations. In any case, they should become visible and then their little scheme is over. We force them to the ground and the authorities take over."

"When you say, 'force,' we're not going to set down on top of them are we?"

Tom laughed. "No, Bud. Not that. At least, not quite. They ought to be in no condition to refuse our demand they set down."

Half an hour later the smaller jet touched down and her pilots climbed out and walked over to the waiting S*uper Queen*. Tom shook their hands before he and his crew entered the space-faring jet and settled into their stations a moment later. Tom took the pilot seat while Bud climbed into the second seat with Deke Bodack taking the systems engineer place behind Bud. Five minutes of preflight checks were complete and power sent to the lifters. The jet lifted a few feet off the tarmac and Tom added in some forward thrust. Fifty-seconds later they reached the far wall of Enterprises

and were already at eight hundred feet. He swung the nose to the right and the headed for the spot all predictions said would be the next target.

The larger jet would lift of shortly and take a swing down to a more southerly route.

The two jets would converge on the vampire's ship, one from high above and the other at about one thousand feet above the enemy's altitude, once that was determined, and it would all take place over a carefully selected location.

In fact, for the enemy being at that spot would be an act of desperation brought about by the careful herding of their attacks. As the statisticians and the experts at Enterprises gained more and more information about their movements, it had been relatively easy to arrange for certain stations to be brought off line or their outputs so reduced to make then unsatisfactory targets. That, in turn, allowed Tom to make it mandatory the electricity vampires ship be sent to one, and only one, power station that day.

Unless they had some untapped reservoir of power allowing them to travel one additional day—very low on the scale of probability—they would be nearing the Tolk Coal Power Plant below the Oklahoma border in Texas.

It had become clear to Tom and his father that the ship was making its way to the Citadel, probably as an act of revenge on the Swifts.

By this time the *Little Queen* was flying over lower Pennsylvania and would soon pass into Ohio air space.

"*Little Queen* to *Super Queen*, we are airborne above Pittsburg, heading west. Believe we will intercept with you over Target station in one hour, twenty. Do you concur?"

"This is *Super Queen*. Right. We need to put on some more coal to get there but will be at combination point in one hour, eighteen minutes. I assume that you are ready to go to work? We are. All systems will be double checked before rendezvous."

"Then, we are heading up and will park over the target."

"Roger," came Red's voice. "All systems check here, all our packages are tight and warm and ready to go. I'm taking her up to six-zero thousand right now. Good hunting, skipper!"

The plan was to have the smaller jet rise to an altitude of over seventy thousand feet starting about eight hundred miles from their destination. The *Super Queen* would be throttling down so they didn't get to the site until about ten minutes later. At one hundred miles out the *Little Queen* would rise into the border with space, or

about two hundred thousand feet up. Both aircraft would remain above controlled airspace so they would not need to announce themselves to the world within earshot of the vampire air ship. All communications would be via PER, or Private Ear Radio, an untappable point-to-point radio system Tom developed years earlier. They would chat in real time with no possibility of anyone else hearing their conversations.

Twenty minutes later the pilots of both reported they were flying —or in the case of the *Little Queen*, hovering— at their individual altitude points.

In the *Little Queen*, Art Wiltessa announced the lasers were fully charged and ready to go. Next to his station sat Albert Wong, the technician who would drop the graphene-and-carbon-laced "paint bombs" to follow Art's laser guidance beam.

"Canisters check as ready, Tom," the Asian man announced.

"All we need is the targeting data," Bud stated as Tom concentrated on the instruments.

"If our attempts to herd them have been successful, flyboy, they ought to arrive under us in the next twenty minutes at most. If I haven't made a catastrophic error we should have our first go at them right after that. As closely as I can figure they don't hang around once they get to a target facility; they generate that cloud, become visible and down goes their probe."

"How long do you figure we have once that cloud starts to form?" Art asked over the headset.

"Less than two minutes. So, as soon as we detect that cloud building I want the first tracking laser to paint right in the middle of it. If we get a bounce-back, then Albert will shoot out the first three canisters. Assuming they hit something, Albert, you are free to send down another five with a slight spread around whatever it is you hit the first time."

They all knew what would come after that, but nobody wanted to say it.

Almost exactly sixteen minutes later the first of the sensors picked up a cold spot thirty-two miles below them. It was directly over the facility. Tom let the ship drop from the border of space and race down in a controlled flat drop until they were just two miles above the point where everyone could see the first of the icy cold cloud starting to form.

"Here goes, everyone," Tom said perhaps a bit too loudly, but his adrenaline was pumping as was that of the crew.

"Laser one activated. Nothing yet, skipp… no, wait! There it is. I

have something and it's starting to become visible."

Everything seemed to be going their way. The giant airship, now plainly a hard-shelled airship, was growing ever more distinct. Tom wondered if they just had no sensors looking above them or if they were committed by some automatic system. No matter what the reason, the ship became totally visible within thirty-seconds.

"That has to be five hundred feet long, maybe even six, and two hundred wide, Tom," Bud exclaimed. "What the heck are those at the back? A big pair of ducted fans of some kind?"

"They look like it." Tom keyed his mic. "Where are the canisters, Albert?"

"The doors are not opening, Tom. I think there must be some frozen moisture in there. Maybe another moment down here and they will unstick."

"Keep working on it!"

Twenty-seconds later the Asian announced that at least five of the small doors were open. "Sending down the first three… now!

The canisters had been upsized a little and now were about ten-inches wide and thirty-two inches tall with a small tail to keep them flying straight. Their proximity fuses would go off right above the top of the airship below. And, less that twelve-seconds later that is what they did spreading their cargo of Rusty Carbon across the top.

"Did you see what was on top before they hit?" Bud asked. "Looks like solar cells. Maybe if nothing else if we can cover them we can force them to the ground."

"I don't think so, Bud. For one those can't be their primary source of power or they wouldn't be attacking our stations and sucking up what they can. But, if they are solar cells, I think we can overpower them with the Rusty Carbon and perhaps short circuit their equipment inside." In his microphone he ordered the next canisters to be sent down. "Whatever you can get out, Albert. Just aim for some place not yet covered." Then, "Art, get ready. Five-seconds after Albert's next hit I want those high-powered lasers to hit and sweep slowly around. But, be ready to concentrate on a single area at my command."

"Roger… standing by."

"*Super Queen* here. We're coming in a thousand feet above target and two hundred to the left. There in ten seconds."

The canisters delivered their liquid cargo to four new locations with the fifth one overlapping two of the first ones.

"Now, Art!"

All monitors dimmed automatically as the sun-bright lasers lanced down and hit the airship.

It was obvious the people inside knew they were under attack and they were trying to get away. The cloud-inducing carbon dioxide was still spewing out but the ducted fans at the rear spun up.

The *Super Queen* arrived and their more powerful laser shot down hitting in the middle of a concentration of the Rusty Carbon goo.

Tom faced his ship to mimic the direction the airship began moving, and inched them along.

"I'm going closer so the lasers will concentrate more, Art. Keep them aimed for me."

He brought the *Little Queen* to within four thousand feet of the ponderous airship that was trying to get away.

As he kept them above and only slightly to the rear of the airship a thought came to him.

"Albert? Do you have at least one or maybe two canister doors that will open? I have something special I'd like to try." He clicked his radio mic. "*Super Queen*, hold on your firing after this latest shot. I'm going to try to cripple them."

"All doors will now open, Tom. It must have been that moisture —"

"Right. No time now. Just aim two of them at the ducted fans at the back of the airship. Target those, Art. Tell me how to best position us for that hit."

"Uhh, maybe fifty feet forward of the middle of their ship. I can steer them down and into the front of the fans that way."

"We'll be there in ten-seconds. After that, use your best judgment. Get that pointer laser back there, Art.""

"Got it!"

About ten-seconds later Albert announced, "They're away!"

Because the monitors were still dimmed to overcome the light from the lasers nobody could see what was going on except Albert who was wearing a special headset to track his drops.

"One hit and the other popped open a bit too high and splashed behind them. Want another one to go?"

Tom thought a moment, "No, let's see what's going on. Art? Can you aim your power laser at the... uhh, Albert? Which side?"

"Port"

"Fine. The port side fan, Art. I'd love to burn that out and force them to go slower and maybe in a constant turn."

"Skipper? We have a fire down on the airship," Art reported. "Right were I'm concentrating the lasers the most. Do I keep burning them?"

"No. Stop that hit and concentrate on the aft area." A moment later came the report from Albert that the airship was now starting a slow port turn.

"I'm seeing the right fan trying to aim to overcome the damaged left side, but that one looks to be locking up."

At that moment a fighter jet whizzed past below the *Little Queen* and the enemy airship. It wasn't too close to either one, but took Tom completely by surprise. Grabbing the microphone he shouted, "Unidentified fighter jet! Cease. Get out of here, now. This is a crime scene and not, I repeat NOT your jurisdiction."

"Yeah, right. Whoever you are or think you are, this is a national security mission. I have my orders from my commanding officer, so if anyone is to leave, it's you."

Tom counted to five before answering. "We are here under direct orders of the President of the United States. Now, leave the area."

A chuckle came over the radio. "Want to make me?"

Tom switched channels. "Art? Make a shot across the nose of that fighter. He's just circling on our zero-nine-five, about three miles out."

On the monitors Tom and Bud could see the bright laser beam as it shot through the moist upper atmosphere air. It missed the jet by over a thousand feet, but had an immediate effect."

An expletive was heard from the fighter pilot followed by, "You can't do that. I'm here to shoot that airship down and you need to move off."

Tom, now more calmly told him, "As I stated, this is a Presidential mission. We have been told to try to capture that airship, not shoot it from the sky. So, unless you want to face a courts martial when you land, break off."

The jet started in on another run and Tom had another shot made in front of the jet. It broke off heading back to the northeast.

"Want me to go back to bombarding that airship, skipper?"

Tom was about to tell him to shut down the lasers when everything below them seemed to go into slow motion.

First, the sides of the airship began expanding; a few feet at first and then the entire left side burst open. In seconds the airship was tilting severely to its left side and began slipping downward. The nose came up sending it into a tailspin.

That only lasted a few seconds before the top seemed to explode up and off. Without a second's delay the airship plummeted downward totally out of control. As it tumbled, some of the ship broke apart.

As it slipped down through some real clouds Bud turned to Tom. "I didn't see any chutes. Did you?"

Tom could only shake his head slowly.

* * * * *

"Senator Quintana on line three, Tom."

It was the following morning. The *Super Queen* and *Little Queen* had come back to Shopton landing just before six the previous day. They had circled the crash site for ten minutes until a violent and powerful explosion went off creating a crater and leaving nothing more than a few inches in size.

Even the ladies were gone, taken back to England while the *Little Queen* was still in the air.

"Tom, it's Pete Quintana. Listen, I heard the outcome of the attack. I'm sorry it ended the way it did. Folks here in D.C. would have loved to figure out who our enemies were and interrogate them."

"There should be genetic materials to test. We may not know exactly who they were, but we can possibly make an educated guess as the where they came from."

"Possibly… possibly. The statisticians finally came through, hours after everything was over, and told us the eventual track would probably have taken them over your Citadel. So, the likelihood of it all is they were out to destroy your facility and everything else was collateral damage. Means to an end sort of thing. We… well we have evidence to corroborate it was Brungaria behind this. Maritime tracking says a large cargo barge carrying something huge under cover made it to Nova Scotia about four days before your were first attacked. They checked it on the way back out and found the ownership papers. We'll put in an official complaint, but it is likely they'll give us the, 'Who? Us?' routine.

"I wanted to tell you there will be zero repercussion from the little light show you made for that over-eager Air National Guardsman. Except, of course, his superior who ordered the shoot down will have to find a new line of work."

“I really wish we might have been able to capture that ship. I want to definitely know how they managed the invisibility thing.”

Pete sighed. “Sometime, Tom, it is best to know you have defeated an enemy than to spend the time and effort, and perhaps face the losses involved, in trying to find a motive.”

“I suppose you are right. Dad said just about the same thing.”

“Right. If you don’t mind me asking, what have you two got on the horizon? Personally, I’d love to see Enterprises create more of those sky watchdogs just to keep an eye on our national grid.”

“We will, if that is what the Government wants.”

He couldn’t answer Peter’s question because he had no idea that a few weeks later he would get involved in a special X-Prize competition that would have him flying around the world.

After that call ended, Tom dialed a number in England.

“Hey, Tommy. It’s Tom. I don’t know if it has hit the news there, but we won. Well, at least the electricity vampires’ airship ship was destroyed.”

“Yes, Betty and I heard. And, Uncle Damon sent us the video of the attack so we could see what that Rusty Carbon of ours did. It sort of made us ill. I can only imagine how you must feel, Tom. I know we both were gutted. It would have been so much easier if they had just given up and landed, then you could have torn their technology apart to see what made them tick.”

“Not much chance of that. That airship had some sort of self-destruct charge. It hit the ground and then blew into tiny pieces with a lot of smoke and fire. I guess they figured it was either success, or… not.”

What he did not want to say—and Harlan Ames had first suggested it—was the explosion that destroyed every bit of the airship was actually a powerful bomb the Brungarians meant to drop on the Citadel.

It had been a thought that kept him from getting very much sleep the first three days after coming home.

* * * * *

Fifteen days had gone by since the destruction of the electricity vampires’ airship. Tom had been taking as much time off to be with his wife and son, and the forthcoming addition to the Swift household.

Mother was a bit uncomfortable these days with only about a month and a half to go and so Tom had insisted she go to the Obstetrician to see if all was still okay.

She'd come out of the examination room with a little grin but refused to say anything other that, "I am doing just fine as is the baby. The doctor says I am just experiencing a small elbow to the intestines and gave me a mild medicine to help smooth that out." As they walked outside she asked, "Do you think Tommy and Betty will be coming back soon? I really like them."

Tom smiled. "I hope so. It's nice to know there is sort of a female me out there. And, I like them both, too!"

He drove her home, spent an hour in the kitchen, and had brought her meal out to the living room on a TV tray.

Bashalli moved her tray slightly away and hugged Tom close, whispering in his ear, "Do you realize how much I love you?"

He grinned and nodded. "Got to be as much as I love you. And, I don't want to sound too curious, but why this declaration and the love clench all of a sudden?"

"It's because when I was with my doctor this afternoon she repeated the six-month ultrasound. And she told me we are having a baby." She giggled. She knew Tom knew that. "Want to know what flavor?"

Tom pulled away from her but kept his hands on her upper arms. As he looked into her sparkling eyes, he replied, "Only as long as you want to share it with me."

Bashalli nodded. "I do. And, congratulations, Mr. Swift, you are going to be the father of a bouncing baby girl!"