THE NEW TOM SWIFT INVENTION SERIES

TOM SWIFT And The AntiInferno Suppressor

By Victor Appleton II

And a special bonus, the story behind the story:
Tom Swift and His Aerial Firetruck

Made in The United States of America

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By Victor Appleton II

Tom Swift sets aside a month during which he intends to make a series of design improvements in his tried-and-true seacopters. As he and Bud Barclay—his best friend—enjoy a few weeks of good old manual labor installing and testing his changes, trouble is brewing.

Old enemies make themselves known when a series of unexplainable forest fires break out in national forests that should be far out of fire season. Then, the stakes go much higher as a series of fires are set at petroleum storage facilities in Texas and California.

The first thing he must do is discover who, exactly, behind the fires, and what their overall intentions might be. Next, he must try to figure out how they are setting almost instantaneous fires over large areas. And then, he needs to come up with a way to put them out as fast as they appear.

Tom finds a way to harness two forces, one of which ought to make things much worse. The only thing going against him is a series of attempts on his life.

He is willing to shrug off most of them, but when his enemies begin to target his family and Enterprises employees, Tom decides to fight fire with fire.

This book is dedicated to William Wasson, a fire fighter in my original home town, who was the first person to ever let me sit in the driver's seat of a real fire truck, allowed me to put his—very heavy as I recall—fireman's helmet on, and turned my dad into my hero by letting him go upstairs and slide down the brass pole. For years I called all fire engines, Willy Woo's for both his name and the sound of their sirens. Both he and the old fire station may be gone, but my memories will last a lifetime.

There was a roar and the flash of a low-flying jet racing overhead. Immediately the sonic boom hit them… **Chapter 14**

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AUTHOR'S NOTE:

"We live in dangerous times." This is a phrase that has been uttered over and over again and has been meant to refer to everything from civil liberties to the economy. But it also refers to the somewhat unstable geo-political situation mankind has brought itself to.

Intolerance seems to be as much in our nature as tolerance. We readily accept a young child pointing to an overweight person and declaring, "He's fat, mommy!" while taking up arms and killing one another in the names of religion, respect, jealousy, drugs, alcohol, difference of opinion, and far too many more to enumerate.

One of Tom's long-standing enemies may be dead but that doesn't meant that his hatred disappeared. It lives on and is out to torment and attack our young hero.

And, now that Tom is starting to get older—and at the age of twenty-two—he is realizing just how dangerous things can be for him, and for his friends and family.

Fortunately, Tom doesn't fight anger or violence with more of the same. He uses his head, his science, and his heart to overcome or to minimize those things that threaten him. Kind of a pity that more of us can't be more like Tom Swift.

Tom Swift and The AntiInferno Suppressor

FOREWORD

There are five great fears that most people hope they never have to face. Now, the list and priorities vary from person to person, but for many people the list includes fears of different degrees. However, if you take the real, rational fears—and no, fear of clowns is not a *rational* fear!— you come up with some pretty scary things.

Death — Flying — Heights — Public Speaking — Fire!

To some, these intersect at points. Fear of death from flying (it should actually be the fear of death from *crashing*, by the way), or fear of catching fire while public speaking on a very tall ledge (I'm kidding?) can cause panic.

My personal list doesn't include public speaking, bugs, ghosts, rejection, humiliation, clowns, flying, tests, small spaces, tunnels, strangers, or failure. I am afraid, seriously afraid, of death by fire, death by drowning, and heights. In fact, I have a condition that not only makes me fearful of heights, but I almost feel compelled to fling myself off from them. But, never to sky dive! My father-in-law used to say, "Only fools and bird s--t fall from the sky!"

Weird, huh?

What could be weirder? Well, try fire fighting. Volunteer fire fighting including laying on the ground ten feet from a large propane tank keeping it cool with a garden hose while the shed it sits in is going up in flames. Or, picking up a fire hose and walking into a burning building that could collapse at any second. I've done both without a second's thought.

But, weirder things happen every day. We put our fears behind us and just get on with life when it is necessary.

Victor Appleton II

CHAPTER 1 / JUST A DAY OUT

TOM SWIFT—blond-haired, blue-eyed twenty-two-year-old inventor and scientist—sat in an old and large leather chair in the observation room perched atop the Administration building at Swift Enterprises. The room, featuring mostly glass for walls, had been the original control tower for the first airfield runways of the four-mile-square complex before the taller and modern control tower had been completed a couple years later.

Since that time it was used mostly when hosting dignitaries and other guests to give them a great overview of the buildings, hangars, criss-crossing runways and all of the open area inside of the tall security walls.

And, after "re-discovering" it months earlier, Tom had lay claim to it as an incredibly calm and quiet place to go when he needed to relax or concentrate. He personally had dragged the chair up.

The quiet had been technically made easy by having all of the phone lines removed a few years earlier. Nobody made calls and nobody received calls up there; nobody needed the phone lines anymore.

The only thing that got in the way of the illusion of being unreachable was Ton's invention of the TeleVoc pin.

Roughly the size of two nickels resting on each other, the pin provided almost magic-like communications for the user. Part brain wave analyzer and part sensor system to catch minute jaw and muscle movement in the wearer's neck and head, it could instantly connect with another user by simply tapping the pin lightly and then thinking and subvocalizing—basically talking without making any sounds—that individual's name.

The central computer sent a *ping* signal and the caller's name to the intended recipient who simply tapped their pin and answered. From that point until the connection was broken by either pin wearer, they subvocalized their conversation. The pins simulated the voices of the callers so if Tom were to contact his best friend, and Swift Enterprises test pilot, Bud Barclay, they would hear each other's voices inside their heads.

The pins had been developed by the inventor in response to the counterfeiting of the earlier Swift security system that relied on a small specially tuned coil of a proprietary metal alloy that intercepted a signal broadcast all over the complex. Anyone not wearing a specially outfitted watch or pendant would appear on the

Security department's screens.

But, those days had passed. The new system paired itself to each individual user and could neither be duplicated nor could it be worn and used by anyone else. If you had yours on, the computers knew where you were. If you didn't have one, you were an intruder!

About the only thing it could not do was allowing a wearer to "go private" and not be bothered by incoming calls. Unless they chose to ignore them and not answer, that is.

Tom's TeleVoc pin *pinged* inside his mind and announced "Larry Moses." He briefly thought about not answering, but dismissed that and tapped the pin.

"Tom here."

"Skipper? It's the tower. We've got Bud and your sister coming in from Montreal in a Whirling Duck and they're having control troubles. Let me patch Bud to you and see if you can help them."

There was a soft *ping* noise and silence for a moment during which Tom felt a little panic rising. Seconds later Bud's voice entered his head.

"Skipper? Sandy and I really appreciate you sending us on the honeymoon, but I think next time we'll take a commercial flight. This duck is wobbling something fierce!"

The Whirling Duck was one of Enterprises' helicopter lines. Always a fast helicopter, the latest range featured twin rear-facing turboprops pushing it along at speeds up to three hundred knots.

This was supposed to be the newlywed couple's return flight after tying the knot two weeks earlier. Tom had offered to pay for their honeymoon, something they took him up on and decided to travel across the width of Canada. Now they were returning home and it looked like they might be in deep trouble.

"What sort of wobble, Bud?" he asked tensely.

"The kind where the hub sensors are showing an off-balance reading and we're getting a little shaken up. We're twenty-three miles out and I'm not feeling the love with all the hills and trees and no clearings to speak of. And, before you ask, the answer is yes, I have slowed down to one-fifteen. Any slower and we'll have to go all rotor with no push and I'd kinda like to avoid that if—" His voice cut off.

Tom's face blanched. "What? Bud! Sandy! Come in!" There was no answer for a few seconds, and then—

"We're back. Sorry, Tom. Bad judder there. Listen, I'm not seeing

a way to get home right now. There's a mountain to our right that I'm pretty sure is Hurricane Mountain. If I can get us up and over the next one there's a flat place and a small lake I know. That's were we're aiming for."

"What's the lake called? Bud, I'm not up on every little pond around here. Do you know what it is?"

Sandy's steady and calm voice came on the radio. "Bud's a little busy, Tomonomo. I can't focus very well on this chart, but it looks like the lake is called Mew or New or possible Hew. Not that big, but the longest of five of them in a straight line."

A realization hit Tom. "Hey! I know those. And, it's New with an N. I'm heading that way right now. Tell Bud to try to skirt the mountain in front of you if possible. You'll be able to stay fairly low that way and won't have to rev up the rotor."

He directed his sister to remain in the radio with the control tower while he raced down and across the tarmac. As soon as the alarm had been sounded by the dispatcher, another helicopter had been rolled out of its hangar and towed over close to the tower.

This one was a new heavy lift helo featuring two separate rotors of five blades each set at a tilt on either side of the main body.

He jumped in and hit the **Start** switch. The on-board computers did a check of all systems as the twin QuieTurbine engines began whining up. With no warming up to do, the entire check now took just a minute instead of the five to six minute checks of days gone by.

Three minutes after he climbed into the pilot's seat, the Swift DB-1 was crossing the north wall of Enterprises and rising quickly.

The twelve-mile trip was over almost before it began. Tom remained hovering at one thousand feet scanning the air to the north. Moments later he let out a shout of triumph as he spotted the Whirling Duck coming around the lower slope of what his electronic chart identified as Giant Mountain.

Bud was flying fairly slowly as he approached the land near the set of large ponds. Even at a distance—using his Digital BigEyes to bring the picture in much closer than binoculars might—the inventor could see that the rotors above the cockpit were flexing and moving up and down. If it kept up much longer they were likely to tear from the central hub, sending the rest of the craft crashing to the ground.

Two minutes later the smaller helo was just a few yards from the ground and Tom was descending to land nearby. Bud's pilot sense

must have detected something as he evidently shut off the engines before touching down. The helo dropped the last few feet crushing the landing gear underneath. With a wrenching noise Tom could hear inside the DB-1 one of the blades parted from Bud and Sandy's helicopter and went flying out into the nearby pond.

Now totally unbalanced, the Whirling Duck gave a rough shake and tipped over, shattering the remaining blades.

Tom grabbed the large fire extinguisher and a satchel of fire suppressant grenades and rushed to the wreck.

He sprayed the extinguisher's contents into the now torn open engine bay before stepping over some wreckage to help Bud get his side door open.

The dark haired flyer seemed uninjured but they could both see the small gash on Sandy's forehead. She seemed to be alert but they helped her out and over to the waiting DB-1 and set her down in its shade.

"You two stay here," Tom directed running back to the fallen aircraft. He had to toss in all ten of the suppressant grenades to totally smother the lubricant fire that threatened to destroy the remains.

A minute later he was back with his sister and new brother-in-law.

Bud had been attending to his new wife's forehead and had a compression bandage over the wound. For her part, Sandy was cursing in a low voice in between taking swigs from a canteen Bud located in Tom's helicopter.

She had to stop when Tom took it from her. "No more for now, Sandy," he told her. "If you've got a concussion it will only make you sick. Wait until I get you back to Enterprises and Doc Simpson gives the okay."

Knowing he was right, Sandy nodded but winced a little at the head movement.

"Can you two strong gentlemen help a poor, frail little woman get to her feet?" she requested.

The boys looked at each other.

Tom mouthed, "Poor?"

Bud returned a silent, "Frail?"

They grinned and slowly helped her to stand up.

"Thank you my wonderful brother and my darling husband. And now, if you will excuse me—" and she was sick all over both of their

shoes.

"That does it," Bud said. "Just a little day out heading for home after a great honeymoon and I get girl puke all over me. Ick! Help me get her in and strapped down, skipper."

Tom assisted and then they both wiped off as much as they could before climbing into the rescue chopper. They were in the air minutes later and made a smooth landing on the helicopter pad next to the Infirmary at Enterprises a few minutes after that.

Doctor Greg Simpson—'Doc' to everyone—stood ready with a gurney and two of his nurses as Tom braked the spinning blades. Sandy was unloaded to the sounds of complaints and promises to "get that miserable rat," and whisked into the building. Tom and Bud followed at a more leisurely pace.

"What did she mean by that?" Tom asked as he opened the door for his friend. "What rat?"

"We spotted somebody following us a couple days ago. Sandy said she also saw him at the airport this morning. I told her it was nothing to worry about and that all Canadians looked alike. Some joke, huh? It looks like she was right. That guy must have done something to the Duck, 'cause she was running sweet and steady with nary a shiver yesterday."

Tom assured him they would know more once the wreckage was retrieved and could be examined.

"Did you download the flight data and cockpit data?" he asked.

With a grin Bud pulled a memory stick from his shirt pocket and handed it to Tom. "As soon as trouble began I started the download and let it cross-copy in real time until we hit and the power went off. That ought to have everything to give to the folks who'll descend like vultures from Washington later today."

Sandy was examined and found to have only a slight concussion, so Bud was next to get the once over. He was fine except for a badly bruised and swelling left elbow that had hit the control panel on impact.

When he and Tom stepped into Sandy's room she looked up and gave them a smile.

"And, now I know what your head feels like every time some spy or hired goon clobbers you over the head, brother dear. I promise to be a good sister and understand that it hurts like the devil and makes things go whirly, spinny, time-to-vomit for you." She looked at her new husband who was standing there with a concerned look on his face.

“Come over here ya big lug. I’ve got enough sense under this blond hair to know that I need to give you about the biggest hug ever for getting us down in one piece.”

Bud quickly stepped to her side and bent down, accepting her hug and giving her a soft kiss on her nose.

“I am so sorry,” he whispered to her.

“Sorry? What for?” she returned in a normal tone of voice. “Somebody is going to pay big time if I ever get my hands on the scrawny neck of who ever fiddled with the Duck. The Construction Company builds those things to top specs and they just don’t suddenly go wobble-wobble. Tom, tell Bud that he did good, will ya?”

Tom slapped his brother-in-law on the shoulder. “Bud, you did good. Really good. Amazingly good. Only time will tell but as I was putting out the little fire back in the engine compartment it looked like a couple of the hydraulic lines had been cut.”

Bud spun around in horror. “But… but that means someone was really trying to kill us!”

Sandy reached out and took his hand. “Bud,” she said seriously enough that he turned back to her. “The good news is that it did not succeed. And unless the fire obliterated any signs, I don’t remember that the man I spotted was wearing gloves. Harlan Ames and his team might just get fingerprints and hunt the jerk down.”

Tom left them to be with each other and walked out of the infirmary and around the side of the building. He crossed the walkway that wound between the main complex of buildings at Enterprises and into the Security department.

Harlan was waiting for him.

“I heard the news. Are Bud and Sandy okay?” he asked.

Tom nodded. “Yes. Bud’s an amazing pilot and he got the helo to within a couple yards of a controlled touchdown before something gave out.” He told Harlan about his sister’s concussion and Bud’s bruised elbow. “But, they both pretty much walked away from the crash.”

“Right. And we both know what they say about any crash you can walk away from… So, I have a recovery team on site already. They’ll pick up everything and get it back here for the investigation. I’ve already cleared it with the NTSB that they’ll let us conduct everything here.”

“Sandy says that she saw a man at the airport up in Montreal with his hands inside the Duck. Says that he wasn’t wearing gloves.

You might have your people dust the thing before they start grabbing pieces."

Harlan immediately picked up a portable radio and made a call. The answer came back, "We decided to do that anyway, chief. It'll take us an extra four or five hours but I was about to call you to say we'd be back late. Gary Bradley spotted a couple of cut metal-encased rubber lines in the back so I figured it would be the best thing to do."

"Good man. Take you time and if you need the night lights and a relief team give a shout."

He turned back to Tom. "Say what you like about the occasional slip up when we get an intruder or spy in here, but I *do* hire good people!"

Tom grinned. "Let me know if they lift any usable prints. Oh, and also when they get our ruptured bird back here I want to get a good look at everything."

He turned to leave but remembered the memory stick. Pulling it from his pocket he held it up for Harlan to see.

"Bud downloaded all flight data and voice recordings as they were looking for a spot to land. Let's get a copy of it into your computer and then I'll do the same on mine and lock this stick up for safe keeping."

Ten minutes later Tom walked into the large office he often shared with his father, the famous inventor Damon Swift. The older man looked amazingly more like an older brother than someone old enough to be the father of a twenty-two year old son and twenty-one year old daughter.

His face was creased with worry. As Tom came in he jumped to his feet.

"What happened? How is Sandy? Is Bud okay?"

Tom smiled and made a "sit down" motion. "They both are fine. A little rattled and Sandy's got a little concussion, but they both came out of the hard landing pretty much under their own power." He told his father everything he knew including the mysterious man in Canada.

"But, how did anyone know where they would be?" demanded the older man.

Tom sighed and shrugged. "When a girl like Sandy from a famous family gets married the society columns go crazy. I'd bet that if we had copies of all the papers up in Canada for the last couple weeks we could read all about where they were, what they

ate, who they saw and where they were off to next. Heck, Dad, you know San. She probably gave a couple interviews along the way and mentioned that their honeymoon was going to finish up in Montreal."

Damon was now determined to follow that up with Harlan and also with his daughter.

The following day Harlan walked into the office and sat down at Damon's desk. "You'll want to see this as well, Tom," he stated as he pulled several sheets of paper from a folder.

Tom came over to see four pages spread out. Two were of the inside of the engine compartment and the obvious man-made damage to the hydraulic lines.

The third was a close-up of a fingerprint at the top and a mug shot on the bottom.

But, it was the final page that got their attention.

"Is that C-4 explosive?" Damon asked in disbelief on seeing the package strapped to a brace bar.

"It is," Ames told them. "And that's a timer and battery to set it all off. A Swift Solar Batter for irony. Here's the good part," he said handing Damon a magnifying glass he pulled from his jacket pocket.

Examining the photo Mr. Swift nodded. "Ah, yes." He handed the glass to Tom who also immediately saw the same thing.

"The battery wire on the left is disconnected," he said.

Ames nodded. "My guess, based on what Sandy told me, is that the man never got the chance to connect it. He ran off after cutting those lines but before activating the bomb."

"Who is that?" Tom asked. "The mystery man?"

"From the fingerprints he left behind, several beautiful ones in the grime on the inside of the engine compartment door, he is our man. A French Canadian by the name of Damien Abaslom. Funny or ironic that his name means 'kill the father of peace' in a combination of French and Hebrew. And that is not a made up name. It is his given name from birth."

"What do we know about him?" Damon asked silently wondering if he ought to look up his own first name as it was fairly close to the other man's.

"We know that he is a thug for hire. Known mostly in Quebec for strong-arm attacks and wanted for a string of violent bank robberies. This is the first time he is indicated in a murder plot." Seeing the look on Tom's face, he said, "Oh, yes. There is no doubt

that the intent was to kill Bud and Sandy, and there is also no way anyone can see that this Damien guy could be working all on his own. We know one more thing. Abaslom was found dead in a hotel room in Montreal this morning. Shot at point blank range which probably means he knew his killer. It might also point to his being a hired gun for this and not the key person."

It took a few minutes for it all to sink in before Damon asked, "Do you believe the attack was specifically directed at either Bud or my daughter?"

Harlan shook his head slowly. "Maybe. This has all the earmarks of an attack to get at you or Tom for something we have no idea about. The worse thing is, until we can find who killed our suspect we can't know if this is part of a wider plot to also kill one or both of you!"

"What do we do now?" Tom asked.

"For now, you, all family members and all Enterprises' and Construction Company employees and their families go on alert. Anybody who spots anything that looks suspicious, no matter how minor it might seem at the time, needs to get that info to me pronto!"

CHAPTER 2 / SIRENS IN THE DISTANCE

THE NEXT day, Tom made a decision he had been putting off for a while. His fleet of seacopters, beginning as one of his earlier inventions, had reached the point where there were four major models and all but the latest were beginning to show signs of age.

Not signs of physical breakdown, but he had developed so many things that made the current controls and power systems, and quite an amazing number of other things inside, outdated.

He announced his decision to his father and Bud as the three of them sat having a lunch prepared by their private chef, Chow Winkler, in the conference area of the large office.

"I am going to try to take a full month off and rework the entire line of seacopters," he told them.

"What sort of changes, Son," Damon asked around a mouthful of the steak Chow had fixed for them.

"To begin with, I want to get rid of the old steam power. It might have been the way to go originally, but with all the advances we've made using repelatrons—like in the QuieTurbines—I believe that they can provide a greater thrust for the central blades and overcome the one design problem we still have."

"What's that?" Bud asked forking a green bean from his plate.

"The need to get into water at least every two hours. The steam made by passing water through the side of the nuclear power pod superheats many things and needs to be cooled down frequently. Now, if they could fly high enough to get into the cold upper atmosphere, that would be one thing, but they need the heavier, lower air to fly. I still intend to use the power pods in the front and rear sections, but use them for repelatrons. We keep the heat inside the pods and get more lift power from the blades."

He outlined more than a dozen major changes he wanted to investigate.

"I still want to make the smaller model, but we have three larger models that I think need to be modular so we just build the separate halves and can mix and match them to suit a mission. No more dedicated cargo seacopters. Those will end up being downsized about five percent so their modules will mate with the other two types. The nice thing there is that by removing all of the steam power loop and just running electrical conduit, we regain that lost space plus another two to five percent."

"Wait. You downsize and they still get larger? Jetz! I like it," Bud declared.

"What's a-gittin' larger, Tom?" Chow's booming voice asked as the older western cook wheeled in their dessert on a cart.

Tom explained about redesigning the seacopters.

"Wahl, that'd be right nice, Tom. The only thing I'd ask fer is a bit more room in those corr-e-doors 'round the outer loop. Now, I know ya all have noticed that I've slimmed down a whole heap this past two years—" he paused to accept their acknowledgement, "an' fact o' the matter is I'm 'bout five pounds slimmer that when I first joined up with you wonderful Swift folk." He patted his midsection. Although still nothing that could be termed as "skinny," Chow had recently found it necessary to replace a lot of his wardrobe of bright and gaudy shirts and denim pants with smaller sizes.

"You're looking really great these days, Chow," Mr. Swift told him.

"And a great big thankee to ya, Mr. Swift. Anyways, even in my thinner days them narrow passages was hard to navigate with any speed. O' course, it might all be moot…"

When no explanation was forthcoming, Tom asked, "What might be moot, Chow?"

The cook removed his ten-gallon hat and fanned his face for a few seconds while looking as if he were searching for the words to say what was on his mind.

"Kin I sit a spell?" he asked. "Got a lot o' stuff on my mind an' it's makin' my knees an' my feet hurt."

They would normally have laughed at the statement but something in Chow's face told them this was not the time for that.

"Ya see, I jest turned the big five-seven. Course ya know that. Ya all threw me a great big party a couple months ago. Well, as I've been getting a bit longer on the tooth I've noticed a couple-a things. Firstly, when I do a lot o' exercise or ridin' that mechanical bull at Shorty's Bar on th-other side o' town my knees hurt something awful for a day or more. I ain't as young as I use ta be."

"Well, Chow," Damon said with a smile, "none of us are."

"Yeah, but there's this other thing. Ya remember my lady friend, Wanda? Gosh, but it's been three years or so." They all nodded. She had been a really good influence on the westerner but had taken a job across the country. Chow had moped around for more than a month before he started dating another woman.

"Wahl, Wanda moved back ta Shopton 'bout five weeks back, and we picked right up where we left off." He had a big smile on his face. "She's 'bout the best thing ever happened ta me."

"That's wonderful, Chow, but what is this all leading up to?" Tom asked.

Chow looked uncomfortable and gulped, his mouth having gone dry. Tom handed him his glass of ice water and the cook drank it down.

"I'm retiring!" he said, the words gushing out.

"What? Retiring? Oh, Chow," Tom moaned. His face was filled with bewilderment.

Now it Chow's turn to get a strange look on his face. "No. I mean… wahl, shoot. I don't mean *retirin*' retirin'. I mean I've kinda decided that goin' on ex-pee-ditions and up inta space and all is a bit too much these days. I'm retirin' from goin' on safari-like stuff. That's all. Heck, I cain't retire from cookin'. I'd shrivel up an' die if'n I did that!"

With relief the three men now all told Chow that they understood and that they supported any decision he made. Secretly Tom, who had become increasingly worried about the old westerner whenever they were on an adventure, was relieved.

"Why do you think I don't go running around like Tom and Bud?" Mr. Swift inquired with a smile. "Not only do I understand the body issues, I, too, have a wonderful woman who is more fun that running around in jungles or bobbing in the ocean. Good for you, Chow. I fully support the decision!"

What he wasn't saying was that Doc Simpson had tattled on Chow weeks earlier telling him that the old chef had developed a slight heart murmur and how, from a medical point, he was going to have to ground Chow from future space flights and situations where he might be placed under great physical stress. That plus the man who had never been thin or underweight had, over the years, put too much of a strain on his knees and both would need replacement surgery in the near future.

"As long as we can depend on you to keep cooking for us, for as long as you want to that is, then we'll make this work," Tom told the now relieved man.

"Of course, you'll have to work overtime *preparing* for whenever we do go on a voyage or expedition," Bud said. "Everything would simply fall apart without chow from Chow."

"Buddy boy," Chow replied putting his hat back on his bald head,

“ya can count on it! I got recipes fer things like prairie dog hash an’ sage grouse surprise that’ll do real good frozen and reheated. In fact, anything from goat cheese cake ta cactus fritters’ll be packed just fer you next time ya head out.”

“Some day you’ll have to write a cookbook so we can be warned about what you put in your recipes,” Bud teased the man.

Chow snorted. “Yeah! Right! That’ll be the day.”

He wheeled his food cart out whistling an off-key cowboy song about a Mexican girl in a cantina in El Paso.

Once the door closed Damon filled the boys in on the cook’s health issues. After hearing that, and promising to never mention it to anybody, they understood the situation and were happy to make things work.

“Besides,” Bud stated as he and Tom were leaving the office, “this means we won’t have to chase him down the next time he tries to take a ride on a zebra or lasso a giraffe.”

As they crossed the asphalt parking lot they could hear sirens far in the distance.

Shopton was a fairly small town and had a single fire station a few blocks off the downtown area. The population had swelled to over twenty-eight thousand with the growth of Swift Enterprises and the Construction Company, but it was still a tiny town at heart. The regional airport to the north of town had its own pair of fire engines that could assist when needed and Swift Enterprises’ thirty-man, seven engine fire department was always standing by to render services at the southern end of town, near the complex.

“They’re coming this way,” Bud commented.

Listening carefully, Tom stated, “It sounds like five sirens. That means something big.” He scanned the air all around him. “There!” he cried out pointing almost due west. “Up the hill near that new neighborhood they’re building.”

“That’s a lot of smoke,” Bud stated. He turned to look at Tom only to find the inventor standing still, his jaw and lips moving as if talking to an unseen person.

In fact, Tom was calling the Emergency Services manager at Enterprises on his TeleVoc.

When Tom finished his subvocalization he looked at Bud and grinned. “Sorry. Thought it best to get our trucks going on that ASAP.” Seconds later they both heard the much closer sirens of at least four of Enterprises’ trucks as they raced across the tarmac heading for the main gate.

Bud looked back at Tom. “You don’t think that fire has anything to do with the whole Canada thing, do you?”

“No. It’s probably something caused by a careless toss of a lit cigarette near one of their woodpiles. It may be autumn here but the fire danger is still pretty high. “Let’s get up to the tower and look at things through their BigEyes.”

The two young men raced across the parking lot and over to the tallest of the buildings on the Enterprises property. Standing at ten stories tall, the Control Tower building sat at the exact center of the four-mile-square complex and could oversee all runways, taxiways and helicopter pads that surrounded the main buildings. It had been built to be tall enough to also see north to the regional airport to keep tabs on their flights.

In the past month Tom had outfitted the tower with a new railing system sitting just above the 360° windows. Attached to this were a half dozen of his digital binoculars, known as BigEyes. Part high-power optical and part computer enhancement system, they had been developed after Bud had helped rescue a Coast Guard seaman lost in bad weather during a man overboard exercise. The young man had almost perished so the flier had pled with Tom to come up with something that could not only see small objects from far away but could cut through fog and rain. The BigEyes did just that.

Now, the tower had the six that could be quickly called up into specific positions for use in viewing their surroundings. Tom moved two of them over and he and Bud stood looking at the hi-res viewscreen on the back of each one.

They could easily see the flames shooting up above the tall privacy wall that had been mandated by the FBI as a way to deter any would be spying on the grounds of Enterprises from this nearby hill.

“It looks like there are several fires, skipper,” Bud exclaimed. “Jetz! I can see at least five of the closest houses on fire!”

At that moment the general radio frequency used by Swift ground vehicles crackled to life.

“Swift Fire One. We’ve arrived and are deploying hose lines and men, but there’s a problem. Can someone call the folks at the city Planning Department and ask them why the hydrants aren’t activated? We’ll only be able to put on as much water as we brought up. Also, have our tanker truck head up. We’ll need that extra water in about ten minutes!”

“I’ve got that call,” Tom said as he reached for a phone. He placed a 9-1-1 call, identified himself and the situation, and asked

the operator to be connected to the Fire Department.

"Shopton Fire," came the voice of a woman. "If this isn't an emergency, we're already up to our armpits in one. It may take a bit to get to you."

Tom told her who he was and that the call was in response to the fire up the hill.

"Our fire trucks say that the hydrants up there aren't activated. What the heck is going on? I thought that it was mandatory to have them hooked up and under pressure before any construction started."

"Ummm, oh golly. I mean they're supposed to be… that is they were told to get those hydrants up and running weeks ago! Oh, shoot. If your trucks can't get water that means ours can't either. I've got to get to the Water Department!" and with that she hung up on him.

Tom looked at his receiver, bemused, but next dialed the national forest service office in Albany. He was immediately put through to their dispatcher. He described the situation and was assured that an air tanker filled with only water could be sent up in under ten minutes.

"Wish I could send you a couple of our helicopters, Mr. Swift. They're actually better at small fires; more accurate and all that. But one of ours is in the shop and the other two are on loan over in New Jersey."

Tom thanked the man and ended the call. Next, he radioed his own lead truck and gave them the news that the Enterprises tanker was leaving the main gate as they spoke, and that the fire-fighting airplane would be overhead in about a half hour.

"Tom?" Bud's voice came from beside him. "Is there some way we could outfit the *Super Queen* to carry a couple of fire fighting pods? I mean, she's huge and should be able to lift a lot of flame retardant. Right?"

Tom nodded, but then shook his head. "Sure, it can carry a couple loads of water and retardant, but the logistics are against it. For starters, the water would have to be released precisely half from the front pod and half from the rear one to keep the plane stable and not put undue pressure on the airframe. Then, unless both pods give up a lot of room for pumping equipment, how do you get more water in once you are empty? There is no safe way to skim her over a body of water like some of the smaller water bombers do. It might be nice, but it isn't practical. Sorry."

Bud shook his head. "Nothing to be sorry over, skipper. It was

just a thought."

Over the next thirty minutes they watched as the initial flaming houses seemed to be burning themselves out. The radio reported that the fire had jumped across the street and that two more houses were starting to burn. Without a ready source of water the trucks had to satisfy themselves with trying to keep any more homes from being set alight.

A small cheer went up in the control room when the fire retardant dropping airplane radioed in that they were five minutes out. "We came up empty to gain some time and will hit your lake before making our run. Please have all ground teams pull back three hundred feet."

From their vantage point in the tall tower, Tom and Bud could see the plane as it came in from the south, dropping to just above the lake surface about half way up the lake and sending up a rooster tail as their plane scooped up a full load of water. Soon the plane, an old Canadair CL-215 painted bright yellow, was rising back into higher air and turning toward the very visible smoke and flames.

"How much can that plane carry?" Tom asked Bud.

"Uh, I think around twelve or thirteen hundred gallons. Why"

"Just trying to figure how many runs might be necessary," Tom replied.

He needn't have bothered. With the precision born of years of practice, the pilot passed over the burning structures at a height of only two hundred feet releasing the water in a pattern that doused every home, either on fire or in danger of catching fire, in a single pass.

"Swift Enterprises tower. Fire Seven. We have a few spare minutes to hang around before mother wants us back home. We'll go pick up another scoop and make a few light passes to tamp down any hot spots. Please let your teams know we'd like them to stay back for eight or nine minutes."

Four minutes later the plane returned from taking on another load of water and came in from the original direction, this time letting loose a much thinner rain of water. At the end of the run they made a left turn and rose higher, soon changing over to a hard right turn that put them directly back on the opposite path from their first two runs.

"Why are they doing the double back thing, skipper," the tower's chief controller asked Tom.

"Most likely to get to any flames or sparks hiding out on the back

side of the buildings from the earlier runs."

"Swift Enterprises tower. Fire Seven. Final run complete. We've had fun but need to vamoose. Hope your ground teams don't spot anything. Hate to think we got sloppy. Have a better day!" With that, the plane waggled its wings and headed toward the state capitol.

The tanker truck from Enterprises and the one belonging to the airport came back down and refilled from working hydrants before going back to finish the work.

Tom and Bud, now that the excitement was finished, headed back to the ground and went their separate ways with Tom heading for his underground office and lab, and Bud hopping into one of the small electric runabouts kept on the Enterprises' grounds and driving over to the cluster of large hangars in the northwest part of the complex where he kept a small office.

The inventor spent an hour going over the final report on the crashed Whirling Duck that had almost cost the lives of his sister and best friend. It wasn't encouraging, but neither was it surprising.

Three different lines providing things from hydraulic pressure to operate the rotor hub to the secondary oil coolant system to fuel for the small APU, or Auxiliary Power Unit, that supplied all electricity for the helo, had been partially cut. Not enough to provide immediate feedback during the preflight checks, and also not enough to leak sufficient fluids to drip out of the engine compartment until the craft was in full flight. It was worrisome that somebody evidently knew enough about his aircraft to perform this level of sabotage in exactly the right places to deter detection.

What bothered him most was that all of the sensors that should have told Bud what was going on had been neatly bypassed. An extra wiring harness had been found that bridged around the fairly unsophisticated circuitry that would have had red lights flashing all over the control panel.

He was interrupted by a call from his father.

"Son. I need to have you back in the big office. We've just received a call from the lawyer of the developer of that project up the hill, a Rhee Ji-Woo. He intends to sue us for, as he puts it, a campaign of interference and for secretly disconnecting his system of fire hydrants. Plus, he says his people have found a device at the point where the fire started, and you are most probably the one who set the fire in the first place!"

CHAPTER 3 / A SCORCHER IN WYOMING

TOM WAS speechless.

"Listen, Son. I've got a couple of our legal eagles coming over so you fuss and fume on your way here and then we'll get to the bottom of this once we are together. Bye."

Tom *was* fuming. In fact, he was furious. How dare anybody accuse Enterprises of begin part of a plot to sabotage the construction up there. Certainly it hadn't been welcomed, but… He left the office and crossed under the nose of the *Sky Queen* reaching up and giving her a "for luck" pat absently as he passed underneath on his way to the stairs. He felt that he needed the exercise of climbing nearly nine stories to ground level to help clear his head.

It worked. In fact, by the time he reached the office he already had had an idea and a very good question.

Nodding to the two lawyers, Jackson Rimmer and Patrick Peck, he blurted out, "Since neither our fire fighting team nor the town's are letting anyone near the site, how can this Mr. Woo claim that his people have located a 'device?"

He plopped down in one of the empty seats in the conference area.

"Firstly, Tom," Jackson Rimmer addressed him, "Rhee would be the family name and secondly Mr. Rhee is actually a woman. Not certain if she is married or what. And then, I have to tell you that you pose an extremely interesting question. You must be your father's son because it is exactly what he asked not three minutes before you came in." He smiled at Tom.

"You and I had the same thought, Tom," Damon Swift said. "In fact, I just checked with both fire teams to see if anyone might have even come by from the construction company to see what had happened."

"Let me take a shot," Tom told him. "Nobody."

All three other men nodded.

"Well, we need to respond, and it would probably sound better coming from legal counsel," Patrick told them as he reached for the phone. Pulling a number out of his jacket pocket he dialed it and waited. After thirty seconds he began speaking. "This is senior counsel for Swift Enterprises, Patrick Jefferson Peck. My message is in regard both your spoken intent to file one or more lawsuits against my employers over the fire in your development to the south of Shopton, New York, and your accusation that we were involved.

We have expert testimony to the fact that nobody from your company, or any other outside entity for that matter, has visited the site since the discovery of the fire. So, your assertion that you have found a device you believe came from Swift Enterprises is unprovable in court. Further, once the facts of your intrusion into prohibited land at the front of the site are known, your entire project will be halted by Federal law. Good day!"

He hung up with a grin.

"It may not put the fear of god into them, but it ought to make them think several times before they proceed with anything. In fact, I am going to suggest that State fire investigators be brought in to check the entire site including all other structures for any evidence."

The attorneys left a few minutes later, with Jackson calling Tom and Damon ten minutes after that to report that the State officials had requested that the local police, the State Police and available Enterprises Security personnel be used to clear the entire area pending a full investigation.

"Chief Slater will have the necessary paperwork in about half an hour. I'll keep you two advised."

Tom and Damon sat discussing the situation for a few minutes before the older inventor had to excuse himself to attend a meeting with several department heads.

With no solid project on his plate other than his intended seacopter consolidation, Tom wandered down the hall to his large laboratory. As he passed the desk outside of the large office he nodded to the man sitting there. "Hey, Trent. Sorry about not even greeting you when I rushed past earlier."

Giving Tom a small wave of dismissal, the super efficient secretary replied, "Not to worry, Tom. Your father had already poked his head out to tell me you would be storming past in a few minutes. Hope everything got figured out."

Tom gave him a brief description of events and walked away.

Sitting at his large combination computer station and work desk, the inventor thought back to the report on the crashed Whirling Duck. It was obvious to him that he needed to do at least three things.

Firstly he needed to create a more foolproof way to get any warning signals to the pilot. The solution was fairly obvious. He needed to ensure that there would be no way a saboteur could bypass the simple computer circuit box. That meant he either needed to move it up to the cockpit and behind the control panel where it could not be reached without dismantling part of the equipment, or had to take wiring completely out of the picture.

Tom nodded as he made a note to look into a wireless system. Small transmitters could be attached to main systems that all would report to a new readout he would program to appear on the wrap-around all-glass control panel the helicopters were being built around, or retrofitted with.

Number two was a more secure way to lock the back equipment bay housing the small twin QuieTurbine engines and all the gearing for the rotors. By law, and for fire fighting reasons, it was not allowed to have a padlock or complex lock system on an aircraft. A tiny tickle above his left ear asked for some attention and he was scratching it when a two-part solution hit him.

One was to put a lock that activated by anyone wearing a TeleVoc pin. That would ensure that under normal conditions only Swift employees could open the doors back there. And, for firefighting situations he would construct a thermal override. Any fire detected inside would unlock the doors.

With that noted he put one knuckle against his chin as he contemplated the third item.

If all other security methods failed, then that still left vital tubing open to damage. The big issues were Federal regulations that specified that only special flexible, metal-shrouded tubing be used for the types of systems the saboteur had attacked. If not for that, all Swift aircraft would use solid durastress or even magnetanium tubes that would take a pneumatic “jaws of life” system to cut into.

He wrote a detailed email and sent it to the manager of the Construction Company, Jake Aturian. Damon Swift’s oldest and most trusted friend, Jake ran the large complex of production lines and fabrication buildings that had been the original family business first begun by Tom’s great, great grandfather, Barton Swift and his son, Tom’s namesake.

If anyone had connections with the agencies that would need to change their way of thinking, it was Jake Aturian. On several occasions his suggestions to the FAA or the NTSB resulted in changes to the way aircraft were manufactured or serviced. And so if they would listen to anyone, it would be to Jake.

Over the next three weeks Tom worked on the improvements to the Whirling Duck. His TeleVoc lock system so impressed his father that he asked Jake to begin installing it in all new aircraft coming off the production lines that were destined for Enterprises use.

The young inventor was now so busy between his projects and assisting his father with a specialty computer system for a Japanese rocket that his young wife, Bashalli, found herself having to visit him at work if she wanted to see him before nine at night.

"Thomas. While I understand and fully agree that you need to help father Swift, even he has said that you can slow down a little," she told him one mid morning when she came to visit him in his large lab, "and that, I hope, will mean more time to spend with your beautiful wife. I *am* still beautiful to you, I hope." Tom looked at her and could see her lower lip quivering. The look in her eyes made his heart melt.

He took her in his arms and held her close for more than a minute before saying, "Of course you're beautiful. To me, to Bud, to everybody."

She pulled away a little and looked him in the eyes. "Bud should be thinking that Sandra is beautiful. Not me."

Bud and Sandy Swift had married a few days after Tom's last major adventure and had just passed their one-month anniversary. Sandy was only slightly the jealous type, but liked to pretend that she was *very* jealous.

Tom chuckled. "Yeah. I know that if Sandy thought he had eyes for anyone else, he would soon find he didn't have eyes. Not to worry. I simply meant that everyone I know thinks I married far above my batting average."

Now, Bashalli's face scrunched up in confusion. She had been born in Pakistan but had lived more than fourteen years in the United States, and yet some words or terms confounded her.

Tom laughed and kissed her on the nose. "I mean that they look at you and think, 'what an incredibly beautiful woman,' then they look at me and are reminded of the old Beauty and The Beast story. In other words, just like me, they can't figure out how I was so lucky to have found and married you!"

Now smiling, she went up on tip toe and kissed *his* nose before releasing him and stepping back. "For that kind comment you get a big reward if you come home before seven." She wiggled her eyebrows.

Tom felt a little blush come on and he raised an eyebrow at her.

"You come home to me and I will cook you your favorite rib eye steak dinner!" Giving him a wink, she spun around and left the lab.

He spent the next twenty minutes finishing the notes he had been working on before Bashalli's visit and was about give Bud a call when he heard the door behind him open. Thinking it might be the dark haired flyer he called over his shoulder, "Park it and give me two minutes!"

Tom turned around at the sound of a small cough.

It was Chow standing in the office doorway looking embarrassed. The young inventor jumped up and hurried to the westerner's side.

He had forgotten that the old cook had decided to go through with the first replacement operation the very day after announcing his "retirement" from adventuring. The inventor didn't even know if he was supposed to be back so soon.

"Come on over and sit down, Chow," he suggested offering the older man his arm. It had only been three weeks since Chow's knee surgery and he was supposed to be keeping off his feet as much as possible.

"Mighty nice o' you ta offer the arm, Tom," Chow stated with a relieved grin. "I'm a might unsteady on these old legs o' mine still. Jest wish I could get around better." He opted to sit on the closest tall stool rather than to drop into the much lower—and, Tom realized—much more difficult to rise from seat the inventor had offered.

"So," he said sitting on the stool next to Chow, "what's keeping you from being able to walk, besides Doc that is. As I understand it you've still got a week of so of rest and therapy before he clears you for *limited* work." He gave the other man a knowing nod of the head.

"Yeah, yeah, yeah, an' all that, youngin'. Don't get me wrong. Doc's a fine man and a really good doctor, but I don't think he's got a notion about how stir crazy an hombe can get. I need ta be up and movin' but I jest cain't use that cane thingie he gave me. Keeps slippin' and fallin' on to the floor, an' I got to wait until somebody comes along who can bend over an' pick it up fer me." His face turned red with the embarrassment he must feel having to be reliant on others to assist him.

Tom nodded. "I noticed you're without it today. I wish I could help but it's the nature of a long rod to want to topple over. Didn't they give you one with a curved handle?"

Chow looked up at the ceiling and nodded, letting out a sigh. "Yeah."

Now Tom was puzzled. Chow could always hang the cane over the handle of his roll-around lunch cart or on the handle of the big refrigerator in his kitchen. So why not… He had to ask, "What's keeping you from hanging it on something when you don't need it to walk?"

Chow shook his head. "I plumb fergit ta do that, so when I lean it up on somethin' it sorta rolls away and boom, it's on the floor before I know it."

They sat looking at each other for a moment before Tom brightened. An idea had just hit him.

"What if I can build you a cane that won't fall over?" he asked. To

his surprise Chow shook his head.

"Won't work. Them canes that can stand up on spread out feet are too dang wide at the bottom. I tried one and it durn near tripped me up and sent me to the floor."

With a smile Tom explained, "What I had in mind is a cane that isn't any wider than the shaft of the one you already have, but all you'll need to do is set the end on the floor and let go. It will stay upright until you grab it again. In fact, I may be able to make it powerful enough to also steady you and to help you stand up once you've sat down. Now how does it sound?"

Chow's face was beaming. "Why, that'd be both a miracle and a right nice thing fer you ta do. But, can ya? I mean, can ya do it pretty soon so I can get back ta work?"

Tom laughed. "Chow? I'm almost certain I can have it ready before five this afternoon. If you're still around at that time I'll bring it to you. Okay?"

The cook agreed to stay at Enterprises a few extra hours. "B'sides, Doc wanted to give me the once over in the next couple-a days, so I guess I'll mosey over to see him around three. Thanks, Tom. I really appreciate it, whatever it is ya can do fer me."

Tom helped him stand back up and walked him to the door. Once Chow left he went back to his desk and called up his favorite CAD program. Within a few minutes he had designed the outer case. It would be made from a composite of carbon fibers and durastress allowing the thickness to be kept less than two millimeters. Once he had it finished, and had designed a screw-together point half way down, he sent the plans off to Arv Hanson to be rushed through.

The model maker called and agreed that it was possible to have it finished by about four that same day.

The following hour Tom spent creating the stabilization circuitry and equipment. By the time Arv entered the office at 4:12 the "guts" were ready. With Arv's assistance these were inserted into the two parts of the shaft, the whole thing screwed together like a pool cue, and the small switch at the end of the curved handle had been pressed.

The two men stood back watching the cane. It didn't waver a fraction of an inch, not even when Tom reached over and gave it a slight tap.

"Not bad, skipper," Arv commented, "but let's give it a good whack!" He did and winced slightly as the cane only shifted slightly under the smack that would have jarred any person's head. In only a second the cane was once again stable and completely still. While

Tom gave it a couple additional tests Arv walked down the hall to retrieve Chow.

The cook was flabbergasted by the cane and had to waive his arms over the top of it to see if there were any invisible wires holding it up.

Tom showed him the power switch and explained that he only needed to press it if it were going to be unused for more than a day. "Otherwise, it times out and goes into standby mode. It stays upright but you have to press the switch to move it," he said.

"Okay, son. I'm an old ranch cook and not a well educated man, but I hope ya can tell me how this dang thing works so's I can explain it ta folks." He looked hopefully at his young boss.

"Sure, Chow. You've seen those two-wheeled people movers we use in some of the shop buildings, right?" The cook nodded. "Okay. Those have been around for years. The first practical ones were called Segways. Lots of others have built similar things including the Construction Company. Well, those work using a series of small gyroscopes and fast-reacting motors and other mechanical means of keeping the thing balanced, even with one or two people riding on them. All I've done is to build in about a dozen tiny gyros all spinning at over forty thousand revolutions. So fast that they just won't allow the thing to tip over. Now, I wasn't able to make it so you can pull yourself up with it—I think Arv will agree that it would have to be about five times wider to have that kind of stability—but it won't tip over even if somebody walks right into it."

He was smiling. Chow was looking at it with both wonder and pride. Then, the older man asked, "Did ya put in an alarm in case some no good galoot tries ta steal old Chow's fancy stick?"

Now Tom laughed out loud. He moved over to the cane and stood between it and the cook. Reaching down he did something and then turned around. "Go ahead, Chow. Take the cane," he urged.

The cook took a few steps over and grabbed the handle. He almost pulled himself over as he tried to first pick up and then yank the stick from the ground. In absolute awe he turned to Tom.

"What the heck is goin' on?"

"That is your security system, Chow. All I did, and all you will have to do, is to put your index finger under the handle so the fingerprint reader I built inside it can get a quick scan. Scan to activate the 'Stay" program and again to deactivate it so you can use the cane. Basically, it resets the gyros so that they make the cane stick in one spot. Any dedicated thief could slowly move the stick, but it would take better than five minutes to drag it twenty feet, so

for all intents and purposes, the stick stays stuck!"

By quitting time the following day Chow was so adept at using his new cane that he was walking better than even Doc could have hoped, and so he was immediately cleared for normal duties.

For more than ten days Bashalli had landed enough hints that Tom had promised to take an entire weekend off. Since the following day was Saturday he decided to head home a little early to surprise her.

As he eased his convertible out through the main gate he flipped on the radio. A news bulletin was just coming on, with the disc jockey trying to put on his "serious things are happening" voice. Since Tom knew that the man was a year younger and seemingly still had issues with his voice wavering, he smiled.

But the smile turned into a look of concern as the story was presented:

"Authorities in Wyoming are saying that this looks to be the largest wildfire the state has ever suffered. Further, a spokesperson for the state's forestry service has told reporters that, and I quote, 'A small group of unmarked all-black helicopters were seen flying just under RADAR early this morning, coming from the south.' One man described them as coal black Huey-type helicopters although another person with military experience told WNN's Dave Tokuda they were old Chinese Changhe Z-11 models first used in the 1990s. Whatever they are, they passed over a large area of the state and disappearing back to the south. One hour later eleven fires broke out in areas too remote to quickly get fire crews into. Stay tuned and we'll try to get more on this story as it happens."

Tom had already pulled the car over to the side of the road and stopped. At the mention of the coal black helicopters an icy shiver ran down his spine.

They sounded like the same type of helo that had once attacked the car he, Bud, Sandy and Bashalli had been traveling in. At least they weren't the old MIGs he encountered when he was trying to launch his EnvirOzone Revivicators over the Antarctic and again when he was in Africa helping solve a water shortage problem that threatened to kill an entire small nation.

Responsible for that unmarked helo and the MIGs had been Li Ching con Gái. Daughter of Li Ching… *The Black Cobra!*

CHAPTER 4 / A NEW FACE, SAME OLD PROBLEMS

THAT THOUGHT sent another shiver up and down Tom's back and he broke out in cold sweat. He was startled out of his thoughts by a police car pulling up behind him and the officer hailing him on the loudspeaker.

"Are you okay, sir or madam? This is the Shopton Police officer Bobbie… uhhh, Robert Butterworth. Please put up one hand if you are fine and two if you are in trouble… uhhh… or wanted by the law." His voice cracked on the last few words.

It was enough to break Tom out of his thoughts and make him chuckle.

Putting up one hand and wiggling the fingers he turned around in his seat. "Hey, Bobbie!" he called out. Just about everyone in town knew of the new recruit officer and his nervous and bumbling demeanor. In fact, behind his back many people referred to the young policeman as "Barney Fife."

"Oh, hi, Tom," came back the reply.

Tom made a "cut" sign in the air trying to get the young officer to stop using the loud hailer. Bobbie must have picked up on the signal because he put the microphone back to his mouth and called out, "Oh. Right! Sorry!"

"Stop using the loud hailer, Bobbie," Tom called out over his shoulder. "Anyway, I just stopped to listen to a news broadcast. I'm okay and heading home." He put his car into gear and pulled back onto the street noting with some relief that officer Bobbie wasn't following him.

Once he got home and managed to untangle himself from his wife's embrace, he called his father to tell him the news.

"Oh, dear. I hadn't heard yet. But you can't really suppose that Miss Li is behind this. After all, didn't her airplane crash into the sea off the coast of Mexico?"

Tom reminded him, "One of her airplanes crashed but the other landed in Mexico and everyone was *supposedly* arrested. From both planes. We've never been told if she was one of the ones who went to jail." He sighed. "I would guess that it is possible she ended up bribing her way out and has been sitting back waiting for a way to make my life miserable again. I'm tired, Dad. Will you call Harlan

and fill him in?"

Damon agreed to do so and then hung up.

The weekend was not a good one for Tom. He stayed near the television watching the news for more reports on the fire and on the mysterious aircraft. For some reason the helicopters received very little mention, and this bothered him. There were no other sightings reported and even a check with the FAA came up empty.

Yes, they had the preliminary reports and yes, they had checked their data tapes, but no, other than a few RADAR blips close to the time when the helos would be inbound from the south there was no track of one or more aircraft heading from roughly Mexico up to Wyoming.

Things went from bad to worse the following day when five more fires broke out along the probable path of travel for the choppers.

Suspicion was that they had also dropped explosive packages with timers and these were now setting a series of new fires.

The only piece of luck came on Tuesday when a heavy, wet October storm passed over the fires and helped the crews on the ground and in the air get them all contained.

A pair of requests came in from the Government on Wednesday. Could Swift Enterprises devise a way to track aircraft flying below traditional RADAR levels, and could they concoct a better fire-fighting additive than the ones currently in use.

The answer to number two was a guarded 'no.' Over the years both Damon and Tom, along with their chemical scientists, had endeavored to create a better fire fighting liquid for their own use. Nothing they had come up with excelled the commercial products.

In discussing the first request with the woman from the Department of the Interior who called, Tom asked an important question.

"Can you assure that any bandwidths we might need to use will be cleared for us?"

"Why?"

"Well, because everything such as RADAR and radios and television works in specific bandwidths in the spectrum. Some of those ranges are great for certain purposes while others are less so. What I am asking is whether a range of frequencies can be cleared for this purpose assuming we find something? If not then anything we come up with will interfere like the dickens with existing devices using that bandwidth."

She had paused and then asked to put the inventor on hold. It took twenty minutes and Tom was about to hang up when she came back.

"I'm afraid that would be nearly impossible," she informed him. "There are far too many agencies to clear such things through."

"Okay, then I am afraid that we can do nothing. Either anything of this nature and importance is given priority and you folks in D.C. figure out how to work with each other, or it ultimately will be due to fail." He hung up a little disappointed and a little angry.

A few other incoming calls followed that one including one from Tom's favorite Senator, Peter Quintana from New Mexico. After Tom explained the situation the politician sighed.

"Figured it was something like that. But the Interior people wanted me to put pressure on you. Sorry for the inconvenience, Tom. Give my best to your folks and that pretty young wife of yours!"

Tom decided to return to his plans to bring the number of seacopter models down and to make more of them modular to cover many purposes.

But his mind kept returning to the matter of the fires and the possible involvement with the Black Cobra's daughter. She definitely had it in for Tom, and had come close to killing him on a few occasions including the time she stranded him and Bud on a tiny Caribbean island about to be hit by a deadly hurricane.

It had been the quick thinking of one of their rescuers to partially disable both of her aircraft before they could take off, one of which, as mentioned, had crashed into the sea off the Mexican coast with the other barely making it to land and prison for everyone.

It was Tom's having been part of the death of her father—even though it had been during an attack on Tom by the man—that infuriated her so that she had vowed to ruin the Swifts and to kill Tom. To date she had been foiled in her attempts but this now was looking to be a new way to draw Tom into a "fight" where she might find a way to attack him again.

If, that is, it really *was* Miss Li. Nobody knew for certain if she had been imprisoned in Mexico nor if she may have managed to bribe her way to escape. She had the financial means to support her attacks using MIG jets. Of course she could have been able to offer a tempting amount of money in return for freedom.

Now it seemed that she commanded a fleet of attack helicopters.

How they could be moved near enough to Wyoming to make the

attack was unknown. He only hoped they would be spotted in the air while they were flying to some other location.

All his attention shifted on Friday when the alarm came in that a second large fire had begun in Shopton. One of the older city blocks containing several historical buildings was ablaze and the call had gone out for the Enterprises fire brigade to help.

Tom raced to the main gate and hopped aboard the first truck to leave. With little to do to actually fight the fire he decided to use his cell phone to video everybody in the area. If this was like many "set" fires, the arsonist might be nearby watching their work. Such firebugs got some kind of perverse pleasure from the fires.

A few people looked strangely at him but only one didn't then smile or wave as they recognized Tom. That one person, a middle-aged woman dressed in dark gray, put one hand up in front of her face as she saw the camera turning toward her and then spun and walked hastily away,

Tom continued working his way around the outer perimeter of the fire barriers until he got back to his starting point. His phone's memory was about full so he took a break, sending all the data to his computers at Enterprises. He was about to take a second look around but the Enterprises firemen were starting to pack up. The fire had destroyed two of the buildings—unoccupied at the time—and scorched the other five, but everything was under control by the Shopton Fire Department's men and women.

On returning to his office he scanned through the hour of video he has shot. He recognized most of the townspeople on the screen, but he stopped and watched the footage of the mysterious woman several times. She was wearing dark glasses and didn't act or move as if she felt guilty, but simply did not wish to have her face on Tom's video. But, there was something strange about her.

He now thought, *I should have followed her to see if I could get a license plate or something more. Oh, well!* It was too late for that and he also believed that any facial recognition software would not have enough to go on, but he copied the twenty-three seconds of her video and sent it to Harlan Ames with a note giving the circumstances and asking him to see in anything more might be discovered.

Less than an hour later Tom got a call from the head of Security.

"As you thought, skipper. Not enough facial features to go on. We can't see her eyes behind the dark glasses she was wearing and she was covering much of the rest of her face. I do have to say I share your opinion that she was suspicious. I'm sending all this to the

local FBI folks."

Tom thanked him and then returned to his attempts to get back to the seacopter issues. Try as he might, his thoughts kept swinging back to the recent fires.

Was there anything he might do about them?

Plus, even without Government cooperation, might he come up with a way to look at lower and lower levels for intruding aircraft?

"Not without being able to bend a RADAR-like beam, Tom," came the answer when he contacted the head of Electronics. "Well, I tell a lie. But it is impractical as all get out. You'd have to have powerful electromagnets about every hundredth of a mile to bend the electromagnetic waves. Sorry."

"Not a thing to be sorry about. Physics is sometimes as harsh a mistress as reality!" Tom responded.

The next morning Tom was jarred from sleep by a call from Enterprises.

"Sorry to wake you at five, skipper, but we've just dispatched the fire trucks back into downtown. The Hotel Shopton is burning. Only the upper floor right now and it looks like it can be contained, but the Chief of the fire department was almost in a panic when he called to get our help."

Tom sat up patting Bashalli's hip gently to keep her from getting up. He stood and walked out of the bedroom and down the hallway. "No. I'm glad you called. Call the police department and see if any of their officers can start videoing anyone in the vicinity. We spotted a suspicions person yesterday and it's going to take me fifteen minutes to get there with my own camera."

He went back and into the bathroom and picked out the shirt and pants he had been wearing the day before from the hamper. They still smelled of smoke but he pulled them on as he headed to the bedroom door.

"Trouble?" Bashalli asked in a weary voice.

"Yes," he whispered. "Another fire downtown. I'll be back home in a couple hours. You get some more sleep." He went down the stairs two at a time and was out the front door seconds later.

When he pulled into a parking space all of the fire trucks were shooting water up onto the top floor and roof—barely making it that far—and a crowd of sleepy and angry people who obviously had been staying at the hotel were standing across the street. Hotel staff had wheeled out a large cart with coffee urns that sat steaming in the morning coolness.

A few locals had gathered to see what was going on this time and Tom acknowledged a few of their greetings as he pulled his phone back out. As he walked around the left side of the building he was just in time to spot a female form dressed in dark colors climbing into a car one block away. In the near-dawn light he couldn't see the license plate—if the car even had one—nor did she turn around so he might get a blurry shot of her face.

The Chief of the department approached him about twenty minutes later.

"Tom? I really have to thank you and your dad for all the help. Our tired old pumpers can just get water to that seventh floor. It's only because your trucks can get water on the roof that we've got this one nearly out. And quickly, too. I'll treat you to the best steak dinner in Manhattan if you can come up with a way to update our trucks to be as good as yours."

Tom smiled, hopefully. "I would ask why you don't just buy new ones except I remember the last municipal bond election that you lost. I know you have precious little funding. And, while I can't loan or give you any of our trucks, you have my assurance we will keep assisting you except in times when our trucks are in use on our own properties."

As he turned to leave, a thought struck Tom that made him pale.

While Enterprises was surrounded by a high wall and high-tech security system, the old Construction Company only had a razor wire-topped ten-foot chain-link fence for protection.

What if the arsonist got it in their—her?—head to set a fire there?

Tom decided to stop by his parents' house on the way home. Both Damon and Anne Swift were early risers, even on weekends, so he was certain they would be up.

They were and his father had just finished watching the early morning news. "I see you've been at the fire, Son," he said as Tom came in the kitchen door.

"And, I can smell that you have," Anne said as she shooed him back out. "I'll get you a clean shirt and pants. Phew!"

Tom looked back in through the open door. "How did you know I was there, other than the smell?"

"The local news crew got some shots of you getting some shots of the crowd. Did you spot that woman?"

Tom nodded. "She was just getting in a car and driving away, but I'm pretty certain it was the same person." He mentioned his fear about the Construction Company. Damon offered to follow up on

that.

Anne returned handing the clean clothes to her son and pulling the door shut. “You change and then I open the door,” she called out, almost pleasantly.

When Tom stepped back inside he was handed a towel and a pump bottle of “dry” shampoo.

“Hey, this is dog shampoo,” he complained looking at the label.

“Use it!” she commanded.

He did. It smelled almost as bad as the smoke. It was no wonder the family dogs would go out and roll in something after Anne tried using it on them.

He sat down and she put a steaming cup of coffee in front of him. They sat talking about the fire for a half hour, and Tom was about to leave when the phone rang.

“Is my smoky husband over there, mother Swift?” Bashalli inquired.

“Yes, Bashi, dear. He is and I’ve sort of de-stinked… de-stunk… well, he isn’t as smelly as before. Want to speak to him?”

“No. I just tried his cell phone and there was no answer.” Anne put her hand over the receiver and repeated this to Tom.

“Oops! It’s outside in my pants. Tell her I’m on my way.” He got up and began to unbutton the shirt.

“Keep that on and give it back to me at work,” Damon told him with a grin.

After handing Bashalli his own smoky clothes and the borrowed items to be cleaned, Tom took a hot shower and shampooed his hair twice to get the last of the smell of smoke and the perfumes from the dog shampoo out.

When he came downstairs he could hear the washing machine running and the smell of sizzling bacon was overpowering the smell of smoke and told his stomach that it needed something exactly like that in order to be happy. In the kitchen Bashalli was just placing the fried meat on a paper towel to drain. She picked up one of the two plates already holding scrambled eggs and buttered toast and put three pieces on it. The other two went on the second place with smaller portions.

As they ate he filled her in on what had happened at the fire and about the mystery woman.

“You told them that the horrible daughter of the Black Cobra might be behind the fires out west. I hope this is not her.”

Tom thought. “No. This woman isn’t Asian. She is tall and has brown hair and pale white skin. I don’t think the local fires have anything to do with Miss Li. I mean, I really hope they don’t!”

They finished breakfast in silence, only interrupted when Bud and Sandy came in through the front door as they were finishing their pineapple juice.

“You hear the news about the hotel fire yet?” Bud asked.

“Thomas not only has heard of it, he went down there to help fight it, Budworth,” Bashalli stated looking at her brother-in-law. “I do not believe he mentioned you being there. Having a good sleep in?”

Bud reddened. “No. Okay, yes. We just got up half an hour ago. Sorry I missed the action. Did you really have to lend a hand?”

Tom told him about his second video session.

“No good face shot, huh?” Tom shook his head.

“Who is this mystery woman?” Sandy asked sitting down and accepting a cup of tea Bashalli just made.

When the story of the two fires and the woman who did not want to be recognized was told, Sandy sat scowling. “Can you get a good picture of her even with the hand on face thing and get the police to hunt her down?”

“Harlan Ames and the FBI are working on that. Which reminds me, I need to copy my rather murky video from today and get it to them. Excuse me.”

He got up but was back five minutes later. “Done. And I had an email from Harlan. The State Police stopped a dark car driven by a dark haired woman wearing dark glasses at seven today. Just an hour ago,” he said looking up at the wall clock. “Gave her a ticket for wearing the glasses in reduced light conditions and let her go on her way.”

“Then they have her name and address?” Sandy asked enthusiastically.

Tom shook his head. “According to Harlan it was a phony name and address. It wasn’t until ten minutes after they let her go that the computer returned that information. They tried to give chase but the car was found abandoned half way between here and Thessaly and there were no tire marks leading away.”

They all looked resigned at the information.

The mystery woman, possibly the arsonist, had disappeared.

CHAPTER 5 / WILLY WOO

TOM'S PHONE rang for the third time before he could pick it up.

"It's Trent, Tom. I've got the Chief of the Shopton Fire Department, William Wasson, on line three. He's insisting on speaking to you. Do you want to take the call?"

"Thanks for screening the calls today, Trent," Tom told the secretary. "And, yes, I will take his call."

Punching the proper button Tom greeted his caller, "Hello, Chief Wasson. Assuming this isn't another fire call, how are you doing today, sir?"

"No. No fire. I'm fairly well, Tom. How's that beautiful young wife of yours?"

"Bashalli is fine. I passed on your regards from the other week. I am sure she sends her best to you. What can I do for you?"

Tom had known the older man since his youngest remembered days. One of the ten men of the Fire Department back in those days, he had let the young Tom to sit in the larger of the three fire trucks at the station, turn on the siren for a brief moment, and had allowed Tom's father to slide down the long, brass pole from the sleeping quarters above the trucks.

Since that time, and because of the sound of the rising and falling sirens that sounded like a howling dog, Tom had referred to the fire engines as Willy Woos.

"Well, firstly I want to thank you again for the assistance with that fire up the hill from you. And for calling in the fire bomber. I wouldn't have thought of that myself. And for the two fires downtown. By the way, both were arson. Small devices made from quarter sticks of dynamite and a gallon can of gasoline. But the main reason for the call is to ask if you would be willing to build three new fire trucks for the department. As you know our three oldest either need tens of thousands of dollars of retrofit to bring them up to snuff, or we go whole hog and buy new ones."

"What sort of things do you believe ours do that commercially available ones don't?"

"For starters we received some special state funding this morning, and I'm hoping to stretch it by leaning mighty heavily on friendship to get a low price, but mainly it is because of the array of capabilities yours have. Right now we have to run three different

types of trucks to deliver what you do with a single unit."

He was right. The Swift-built trucks could do everything from simple spraying of water to using high-density foam for aircraft fires. Plus, they carried an ultra light ladder system that could reach seventy feet above the ground. Made from durastress and carbon fiber, the entire ladder system only added three hundred pounds to the trucks and extended in just ten seconds.

"I think we would be very happy to build you those trucks. I don't have the financial information right here but I can have Sales give you a call and work out the details. Oh, and yes. I'm certain that dad will agree that we can do them for just slightly more than cost… to you, only. Don't go spreading the word. Okay?"

The Fire Chief agreed and after a few more minutes hung up.

Damon Swift entered the office just a few seconds later so Tom filled him in on the request. The older inventor chuckled. "Well, I never thought that we'd be getting into building our own little electric cars, much less anything larger, but I suppose that we can build Willy a few trucks. Did you tell him we'd give him that discount?"

Tom replied that he had but had not mentioned an exact price.

A few days later the two were sitting in the office enjoying a conversation about Mr. Swift's latest project when Trent opened the door and stepped inside.

"Bad news. There's been another fire at the Shopton hotel. It seems to have started on the roof and is burning shockingly fast. Chief Wasson requested that we send a couple of our ladder trucks and I've already called dispatch."

"Good work, Trent. Thanks for being on the ball," Damon complimented him.

Tom seemed lost in thought. Finally he looked up and asked, "Do I remember correctly that great-grandpa Swift once wrote about the Shopton Hotel burning down?"

Damon thought a moment and then brightened. "By Jove, I believe so. I can't recall any details but it totally burned to the ground."

"I'm going down there," Tom declared. "Maybe I can get another lift from one of the trucks. Bye!"

He managed to get to the main gate just before the two trucks came by. He swung up into the back compartment of the second one, put on a set of headphones to block out the siren noise and for communication, and off they went.

By the time they arrived at the hotel, the top two floors were engulfed in flames. With the first fire out, the top two floors had been sealed off and the hotel allowed to go back into operation.

The standard looky-loo crowd had gathered and local police were having a difficult time getting them to move back.

A quick check told Tom that everyone had been evacuated from the building and were accounted for with one exception. A German woman in a wheelchair could not be located. Her husband had been downstairs when the alarm went off and could not get back up to their fifth floor room.

Under Tom's direction one of the ladders was unstrapped and extended upward with a fireman connected by his harness to the top rungs. It was a maneuver that most fire departments would not use, but Enterprises had found in training tests that it cut potential rescue time by over four minutes.

From the looks of the fire as it crept downward, they didn't have four minutes to get there and start a search.

The other truck also extended its ladder with three men harnessed to it along with a large yet lightweight pressure hose. As they rose a built-in nozzle on the ladder put out a cooling and protective spray of water between the men and the flames they approached. Then, one by one, they opened the valves on their own nozzles and began spraying water into several of the now missing upper windows.

The rescue fireman got to the fifth floor, set a quick-release hook into a window frame and climbed into the building.

Tom looked around in time to see several people that had crept past the police barrier and were taking pictures. A couple of them took shots of him with one younger woman coming right up to him and asking if she could get a picture of the two of them together.

Before Tom could yell at her for her inappropriate behavior, she was grabbed and hustled away by two officers. He looked all around where he stood but saw no hint of the mystery woman.

By the time Tom turned he was just able to watch as the rescue fireman eased back out of the window attaching several ropes to the end of the ladder. He made a series of hand gestures to the others at the truck and the ladder soon extended several feet farther up. To the shock and amazement of the crowd below, a woman strapped into her wheelchair and wrapped in a shiny fire blanket was drawn up and out of the window and dangled at the end of the ladder. The man up there reached out and grabbed the closest wheel to steady her as the ladder began a fairly rapid descent.

A minute later the ladder moved to the side and deposited the woman, chair and all, on the ground where she was immediately taken by paramedics to a waiting ambulance, followed by a crying man who broke through the barrier to be with her.

Quickly, a second three-man team and hose assembly was added to the first ladder and up it went.

Forty minutes later the two ladders were withdrawn and the fire was declared to be totally under control. The local fire department took complete command of the situation and the Enterprises trucks moved a block away, waiting just in case.

The German woman had been taken to the hospital for smoke inhalation and released, but her husband had been checked in after it was discovered he had suffered a minor heart attack.

Three hours after they left, the Enterprises trucks drove back through the gates.

The next day a report came that unlike the first, arson, fire, this one had started in an upper floor electrical room that had not been shut down. The hotel now had to close their doors and would remain so for months to come.

Tom spent much of the week down in his lab working on the problem of how to better fight large fires. It was something that was taking up more and more of his time, although he had no other pressing projects that were being shortchanged.

His latest efforts had been on renewed attempts to improve the smothering effects of foam additives to water. Many of them had specific uses that mainly related to chemical fires such as petroleum, or were things that had been outlawed years earlier for their environmental impact, like borate for forest fires that had devastating after effects on plants.

Bud's footsteps could be heard clomping across the hangar floor as he approached Tom's underground office and lab. Without looking up Tom greeted his friend.

"Hey, Bud. Next time don't sneak up so quietly."

A copy of the local newspaper was dropped on his desk.

"Seen today's Bull Rag?" Bud asked with a hint of anger in his voice. He was referring to *The Shopton Bulletin*, a once weekly coupon clipper given away free at stores but that had built itself into a daily paper, in part thanks to news items provided by or about Swift Enterprises.

"What has our favorite petty-minded editor done this time?" the inventor asked as he reached for the folded pages. As he opened it

up to the front page, Tom's face paled and then turned red.

SWIFTS NAMED RESPONSIBLE FOR LOCAL FIRES

PROOF COMING SOON. THEY MUST ANSWER!

Tom scanned the article below. It began by making reference to the fire up the hill in the former neighborhood construction area and hinted that "reliable sources" were about to come forward with evidence that the Swifts had set the fires themselves just to gain control of the property.

After that it got worse.

It all ended with a reprint of an anonymous note sent to the *Bulletin* that read:

Remember the Hotel Shopton, Swifts!

...and was accompanied by a photograph of Tom at the scene of the first fire.

Tom picked up his phone and dialed a number he truly wished he did not know by heart. There was a click of the receiver being picked up and another click as it was quickly placed back down, cutting the call.

"It appears that our Mr. Perkins looked at his caller ID and decided he doesn't wish to speak with me right now," Tom said. "I'll give it a second try and then you and I and Harlan and maybe one or more of Enterprises' lawyers will go pay the *Bulletin* a courtesy call.

This time there was no attempt to pick up the call. After seven rings the call that should have gone to voice mail was disconnected.

Bud grinned and rubbed his hands together in anticipation. "So, do we play this 'softly softly' or 'roughy toughy'?"

With a shake of his head Tom told his impetuous friend, "I'm sure that Mr. Perkins is anticipating a visit and has plenty of cameras ready to catch each and every second of our visit with the hopes that he can find something to pin on us."

Tom picked up the phone and called his father's number. After a short discussion he dialed Jackson Rimmer in Legal. The attorney was very interested in being a part of the visit. The article had been brought to his attention moments before Tom's call and he had been working on a Cease and Desist letter. "Give me fifteen minutes to do one more little letter and I'll meet you in the parking lot," he told

Tom.

When the group assembled it was Tom, Bud, Harlan, his second-in-command Phil Radnor, Jackson Rimmer and a very, very large security guard named Ed Powell who had once been a pro football defensive tackle, and a very big one at that. They climbed into a van with Tom at the wheel and headed into town.

As he had suspected, Dan Perkins' feeling of guilt meant that he expected the worst and had prepared for it by inviting the local television news crew along with a team of his own photographers to act as the greeting shield in front of the newspaper office. The man himself stood at the top of the five steps leading to the front door with a smug look on his face.

As the security guard unfolded himself and got out of the van, the smug look changed to one of awe and finally settled on outright fright.

Jackson Rimmer placed a hand on Tom's forearm muttering, "Let me do the talking."

In a trembling voice, Perkins directed all the cameras to get a good shot of the guard. "I fear for my life!" he declared in a dramatic voice.

"Mr. Daniel Perkins? My name is Jackson Rimmer and I am senior counsel for the Swift organization. You ought to recognize me from the more that three dozen letters of complaint and the twenty-nine lawsuits I have filed against you for printing outright lies, incomplete truths and scathing generalities about my employers over the past four years. Today is no different. I am here to serve you with a lawsuit over the widely distributed front page and continuation on pages three and four of today's paper."

Perkins' eyes narrowed. "You can't intimidate the free press!" he said, striking a pose and looking around for support. Finding very little even among his own employees he shrank backward a little. "What do you want?"

"Well, that is very simple, Daniel Perkins. Our suit claims damages from your constant publication of lies in the sum of… let me see what I wrote here—" and he made a big show of flipping through the multi-page document. "Ah, yes. Forfeiture of this newspaper and all of the contents within this building plus any monies held in bank, trust and investment accounts under the names of the owner of this paper, which is listed as you, and also all personal properties, monies and assets owned by you."

Mr. Rimmer turned around, winked at the rest of the Enterprises team and got back into the van. The others followed him with the

exception of the giant guard who took the legal document he was carrying and made his way through the crowd. He handed it to Dan Perkins giving the man's hand a little squeeze to ensure that he had a grip on it and stated, "By the powers and license of the State of New York I hereby serve you, in front of witnesses, this legal notification. Have a nice day!"

He returned to the van, eased his way back inside and Tom drove them away. It was only once they were a block away that Bud let out a whoop!

"Jetz! That was great. Did you see the way Perkins practically fainted when Ed here walked up to him? Whooeee!"

The mood in the van was mostly jubilant with the exception of Jackson Rimmer. He knew full well that there would need to be serious follow-up on the matter and his work had just begun.

He needn't have worried. They were still half a mile from Enterprises when Tom's cell phone buzzed. He handed it to Bud who answered:

"Swift Mobile Lawsuits! How may we serve?"

His face only fell a little as he listened. Finally he turned to Tom, "Spin this puppy around, skipper. Dan Perkins has called your dad to plead for a face-to-face meeting." He handed the phone back to his friend.

When they arrived back at the *Bulletin*'s office nobody was to be seen at the front of the building.

Ed asked, "Do you want me to stay outside? I guess I've done to menacing giant bit." He grinned.

"Well," Jackson told him, "while we really do not need you, I would say that you are an integral part of this little group, so your presence would be nice. I'll leave it up to you."

They all entered the front door and were quickly shown to the medium-sized room that was the office of Dan Perkins, Editor of the paper. He sat behind the desk looking pale and a little sick, but motioned for them to take seats. Somehow, enough chairs had been shoehorned into the space for all of them.

"I guess I'll start the ball rolling, Dan," Tom said leaning forward. "It has been a perfectly lovely year and two weeks since you last took it upon yourself to try to boost circulation at the expense of Swift Enterprises. Why now, and why with such vengeance?"

Perkins drew in a shallow breath. "It wasn't supposed to sound like it did."

Tom blinked. “Not… supposed to… *sound* like it did? Come on, Dan, you can do better than that. And, while we’re at it you had better be able to give us the details on this reliable source of yours.”

“If not here then in a courtroom,” Jackson Rimmer added.

If there was any fight or bravado left in the newspaperman, it completely abandoned him and he visibly deflated.

“Listen,” he said in a beseeching tone, “I didn’t mean to print that, at least not today. My source promised me she’d have all the proof to me by this morning—” He looked around for any sign of understanding. There was none. In a very small and quiet voice he continued. “She promised. Said she had pictures of Swift employees placing incendiary devices at the last three fires around here using your own timers. And a video of a rocket arcing up from Enterprises and into that construction site she said you and the Government were conspiring to take away from the rightful owners.”

He seemed to gather some strength from the recitation of potential evidence.

“I had to go to press late last night to get the papers out this morning. There wasn’t anything I could do to stop it.” He sat there looking like the proverbial hare in headlights not saying anything else.

“Dan,” Tom said in a sharp voice snapping the editor’s head around to look at him. “There is plenty you could have done. Like not printing those lies. Like having this supposed evidence in hand before you even wrote a word. We’ve given you so much leeway in the past just making you retract things that you had no right to print, but this tops everything.”

“What Tom is trying to tell you is you have gone too far this time for a simple rap on the knuckles. Unless you give us everything you have including all details of this female you *claim* set you off this time, we will seize this paper and your personal property and force you to close. Forever.” Mr. Rimmer now sat back.

Dan Perkins began shaking. “You can’t! This is all I have. I swear I’ll help you. Honest. And I swear to never print an unflattering piece about the Swifts again. Just don’t go through with this.”

He started to detail the contacts he had with his female informer. She had first called from a phone booth in the center of Shopton to tell him of her suspicions about the Swifts. Slowly and over several more calls she expertly teased, informed and made promises of greater and greater proof to come until Perkins couldn’t manage to *not* go to print. But, he admitted, she had never given him a way to contact her and now seemed to have disappeared.

“I really thought that if I went ahead she would come forward with all the proof.” He sighed and slumped even further into his chair. “I’ve been an idiot, haven’t I?”

Everyone on the other side of the desk nodded.

“There never was any proof?”

Tom and his team all shook their heads.

“No nasty tricks to get that property? You didn’t set fires?”

Another round of head shaking.

When they left five minutes later, they had extracted a written promise from Perkins to not only retract everything but to make the whole thing out to be an elaborate trap for the would be informer that had achieved nothing. Harlan Ames had a list of the exact times of each of the calls as well as a recording of the final call that Dan Perkins had decided to make.

He would check with the phone company to find out which of their few pay phones in town had been used and then get his teams to dust each one for fingerprints and search for any evidence.

Tom returned to his office to a slew of messages from all over town and the state.

He sat in his chair staring at a sampling of them.

I always knew you Swifts were crooked as a dog’s hind leg! —
P.F.

Unless you want that contract canceled, you better have an air tight alibi for those accusations -
Shopton Fire Chief Wm. Wasson

We’re behind you, Tom — Greater New York
Tom Swift Fan Club

Tom sighed and hoped that Dan Perkins did a really bang up job of retracting and apologizing for this one.

CHAPTER 6 / BUILDING A BOMBER

"WHAT THE heck is going on?" Bud demanded as he walked into Hangar 2, only to find Tom climbing down the short stairs of Swift Cargo Jet number two, one of the three original cargo jets created to help ferry parts and supplies out to New Mexico to build the Citadel nuclear power and later to Loonaui Island.

"Which 'what the heck' do you mean?" Tom replied with a grin as we approached his friend.

"The 'what the heck' that goes with your dad's 'I don't think Enterprises can get into the borate fire bomber business,' thing. That's what. So, unless I'm seeing things, it sure looks like that team of technicians have removed the entire side of the old girl and are fitting her with water and retardant tanks. The ones with big labels that say 'Water" and 'Retardant.' So…" He looked expectantly at Tom.

"Oh, that. By the way, they don't use borate any longer even though the name has stuck. Kind of like one of your nicknames. And yes, he did say something along those lines a few weeks ago, but we've had a request and contract from the Government to supply a fleet of three super bombers that can fly above Mach-1 and get to fires as a unit, perhaps even blanket a much wider swath of burning land in a single coordinated pass."

"Oh," Bud replied looking a tiny bit puzzled. "Uhhh, are you just popping in big tanks? I mean, if these are supposed to fly in formation, especially over fires, how do they stay close enough yet safe from collision?"

He looked over his Tom's shoulder as the inventor hitched a thumb toward the nearest wing. "You may also notice that we have removed the wing tiplettes. In their place will go new ones with radio and laser ranging emitters and detectors. Those, in turn, will interface with the onboard computer systems and that will allow the middle pilot to take control of the outer two aircraft and fly them in the appropriate formation."

Tom looked at Bud as if he were hoping for additional questions. He was slightly disappointed when the flyer simply said, "Yeah. I'd do it that way, too." He soon brightened and asked, "Will three be enough?"

Now, Tom shook his head. "Not by a long shot. If these large fires are being set by our Miss Black Cobra, and if they continue to be as

widely spaced as the first three have been, then our trio fall way short. But, it is a good use of them since we needed to overhaul the airframes anyway, and now the Government is footing that bill."

"What's the eventual solution?"

Tom smiled. "The possible solution will be coming here tomorrow and the following day. Twelve fire bombers of various types and vintages are being retrofitted for closer use, and that includes Enterprises coating them completely in TomaCoat for both strength and heat resistance."

TomaCoat was a liquid form of tomasite that was sprayed on an object, cured using ultraviolet lights, and became a permanent layer to what it had been applied. His first major use for it had been at the lunar colony after they had one of their buildings collapse, killing a number of colonists. Tom had taken tanks of the TomaCoat up and sprayed the inside of the remaining structures.

It lived up to its promise weeks later when a glancing blow by space debris failed to destroy or even puncture another of the buildings. The supposedly bulletproof Plexiglas from the original manufacturer had shattered, but the TomaCoat held.

"We will mask off any areas that need to open and close, obviously, but the rest of each plane will get coated. Dad is the one working on the contract and specs but he figures this will allow the aircraft to fly at least fifty to eighty feet lower over small to medium fires and a hundred feet lower over really raging fires where they currently have to stay nearly five hundred feet up."

"Other than a closer view, what does that buy them?" Bud asked.

"Right now, a one thousand gallon load loses about forty percent to flash evaporation before any of the water hits the fire. Now, that does have a cooling effect, but for a closer drop by one hundred feet the evaporation goes down to twenty-eight percent. "

"Neat! More water, more flame dousing. Right?"

"Right. And, since you will be training the pilots of the three Swift Bombers, I need to have you ready in about two weeks to spend a couple days with the first six people who'll be coming here. But before that you need to take a crash course in firefighting from a pilot's point of view. And that's going to mean as of tomorrow you are heading up to Maine where you'll be attached for ten days to the Maine Forest Service. Don't worry about Sandy. Bash should be on the phone with her right now explaining the situation and offering to have her come stay with us so she doesn't get lonely."

Bud grinned. "Or, take it out on me by over-exerting the credit

cards!"

"Or that," Tom agreed.

"So, is Uncle Sam getting our three old cargo jets for keeps?"

"No. They get the reconfigured jets for about a year worth of testing. If they turn out to be an advantage, then we may either sell them or build three or even more brand new jets. Probably the latter as I'm certain there will be a list of 'could we have' things."

They stepped forward to peer into the fuselage of the closest jet. Looking as if he had located some ancient archeological find, Bud pulled himself into the jet and moved toward the item he spotted. "And, what do you call all this?" he asked over his shoulder.

Now Tom had to climb up and in to see what Bud referred to.

"Oh. That. I didn't get the chance to tell you but along with water and a foaming agent that will help smother fires better, I intend to inject the water with some carbon dioxide. The bubbles made by the smothering agent will hold a lot of that as will the water to a lesser degree. The idea is to get the wet down but to sort of super charge it with the CO2 so that there is even more flame deadening action."

"Neat! So, how many loads of water will that large CO2 tank charge up?"

"Three, for now. If need be there will be just enough room to add a second tank for six total drops before they have to be refilled. As long as a carbonator truck can be standing by, I figure that two tanks can be filled through valves on the side of the jet in about six minutes. It takes at least five to fill the water tank from a hydrant or truck, so we're good on that front."

As they were exiting the jet, Bud looked underneath. He stood up, cocked his head to one side and peered into the open side of the fuselage, then stooped back down and looked underneath again.

"Uh, skipper? Somebody stole the lifters on this old girl. What gives?"

He had spotted that the old atomic lifters under the jet, the ones that made vertical takeoff and landing possible—and only still in use in these three oldest cargo jets, the others having been refitted with repelatrons—had been removed.

"Well, with a full load of water, foam and CO2, they will be too heavy to lift off on the thrusters, and I even feared that the stress of lifters dead center between the wings trying to lift might snap the jet in half. So, for that reason and to save space, they had to go. Don't worry. If we do take these back we'll probably do something to give them VTOL capability again."

Bud's face scrunched up in partial confusion. "But, wouldn't it be better for fighting fires if you could just hover over the flames?"

Tom's head wagged from side to side. "Yes and no. You might get more water on a hot spot, but overall you would cover about fifty percent less area trying to do that and maneuver around in a small zone than you get by coming in low and fairly slow. These will get down to one-hundred-fifteen knots, which is about as slow as any of the smaller water bombers."

Bud seemed to accept that and soon left to go home to pack for his assignment.

During the first five days of Bud's out-of-state assignment, Sandy tried her best to stay out of Tom and Bashalli's hair. It wasn't easy but with Bud reporting that he was only on training flights, she didn't have a lot to worry over. On day six she received news that made her nerves rattle and her worry circuits go into overdrive.

"Yeah," Bud said as they spoke that evening. "There's a fire that's quickly getting out of hand about fifty miles from here so tomorrow morning we go up with a full belly and do a little dropping. I'll just be in the jump seat so the pros will handle everything. Nothing to worry about."

But, Sandy had begun worrying. So much that Tom and Bashalli were surprised when a knock came on their front door at eleven that night.

"I'm sorry, Bashi, Tom, but Bud's going into battle tomorrow and I can't take staying at home alone tonight. Is it okay if I just curl up on the sofa and cry a little?"

Bashalli put her arm around Sandy's shoulders and tried to comfort her sister-in-law, but it was to no avail. Once Sandy got it in her head that something bad was going to happen to "her Bud," there was practically no shifting it.

Even when Tom pointed out that Bud always came home in one piece—more or less, but he didn't say *that* out loud—his sister sat there attempting to smile but looking miserable.

She was so knotted up from worry that she had to take the next day off from work. She wanted to stay by the phone in case something did happen.

Tom had a word with Doc Simpson who prescribed a good glass of wine or three. With the following day being Saturday he assured the inventor that the after effects, including a sluggish feeling for a few hours after waking up, would not interfere with anything she had to get done.

"Just keep her at your house, or send her to your mom and dad's," he told the inventor. "All she needs is to have the edge taken off and a little company."

When Bud called her the next morning to tell her that the five drops they had made the previous day had gone very well, it slightly mollified her, but Sandy still felt something was wrong, or was going to be.

During those first five days Tom worked to perfect the chemical mixture he wanted to use in place of borate powder or a few other commercial concoctions. Most of the commercial ones were fairly safe for use in forests while a few, like the borate, had bad after effects. At least one could not be used near housing for safety reasons as it developed a noxious and sickening odor when heated to the temperatures a forest fire created.

His experiments had begun using simple liquid soap. Given its ability to form millions upon millions of tiny bubbles he reasoned that it might be a good starting point to see how best to deliver the smothering CO_2.

While it worked to some extent, it tended to pop open too early from the heat.

Experiment number two had been a soft plastic he first became familiar with as a child. It was sold in tubes along with a small pipe. The child would squeeze out a grape-size globule, stick it all around the top of the pipe—really just a wide straw—and blow into the other end inflating the "balloon in a tube." Five days after being exposed to air the plastic would break down.

Following his experiment where the small balloon practically exploded when introduced to a flame, he put in a call to the importer suggesting strongly that a warning regarding use near flames should be added. When that only brought on a snorting laugh and the phone being hung up on him, Tom turned the matter over to Enterprises' Legal department.

Test after test proved either mildly effective or ineffective, but nothing much better than liquid soap.

Tom even had a five-gallon canister of Navy-Grade AFFF, or Aqueous Fire Fighting Foam, delivered. Derived from animal blood it maintained a surface tension that held together much more effectively than anything to that point. It only had three major faults. Because it was made from animal blood it was classified as a Class 1 Bio-Hazard and would be difficult to get license for unless he turned everything over to the military.

The second problem was that it took a fairly great amount of the

stuff to be effective. Five gallons only could work at peak efficiency with about one-hundred gallons of water. This was not insurmountable, but as the cost was seven times that of borate it made fire fighting much more expensive.

The third problem was that it required special nozzles to use. These not only mixed the proper proportions of water and AFFF, they also added just the right amount of air to make the bubbles. And, they only worked at a flow rate of most fire hoses. In other words, it was too slow to be of any aerial use.

The only satisfying thing about the day was that Fire Chief Wasson called to apologize to Tom for jumping on the bandwagon in thinking the worst of the Swifts when the *Bulletin* had printed the lies, and told Tom that the contract was signed and being delivered to the Sales Department that day for the three trucks.

By day four he was beginning to think that he might not come up with a better solution than what was already available. At dinner that evening he told Bashalli about his failures.

"Thomas," she told him looking him straight in the eyes, "you are not the type of man who gives up over such a thing. In fact, you do not give up in such a short period of time. I do not recall marrying that sort of man. I married you and you are the smartest man I have ever known. And so I must ask what it is about this problem that has you ready to fling in the washcloth so soon?"

Tom chuckled and reached for her hand. "It's 'throw in the towel,' Bash, but you're right."

She smiled. "I know full well what the saying is. I just wanted to make certain you were actually listening to me. In the past whenever you have run up against similar results with things that you can already purchase you just go speak with some of the other geniuses at Enterprises and come up with something totally new and wonderful."

He nodded. "Bash. It feels so wonderful to know you are behind me like this. And you are right. I'll go speak with the guys in the Chemical group tomorrow."

The following morning he arranged for a meeting with the top three chemical scientists at Enterprises. He didn't tell them the exact nature of his problem over the phone but hinted that it had to do with creating a bubble that could withstand certain temperatures, but would burst open at a specific one.

Five minutes after entering the Chemicals building and sitting down in the conference room, Tom was looking at the two women and one man in amazement.

"Is it that simple?" he asked incredulously. "Corn?"

The others nodded and smiled hopefully.

"Yes," replied Millicent Schneider, one of the three. "There have been amazing strides in using corn to create plastics over the past decade or two. It began with making biodegradable plastic for the fast food industry and blossomed from that."

"Corn?" Tom asked again, not quite believing that they might not be teasing him.

All three heads bobbed up and down.

"Okay," he sighed sitting back. "Give me the particulars.

One by one they provided details on the latest developments using corn starches and proteins to create short and long string polymers for a wide variety of uses.

"Let me see if I understand that last one," Tom requested. "Not only is that particular corn plastic delivered as a liquid, it actually holds surface tension enough to be used as an ersatz bubble bath? And, it only loses that ability once it reaches eight hundred degrees Fahrenheit, *then* it loses its liquidity and forms a solid."

"That's right, Tom, Millicent replied. "It was developed to be a plastic coating that would be sprayed onto hot metal and then baked to finish the job of setting it. Really just for rustproofing purposes and nothing like the TomaCoat we produce here, but more effective than previous products, plus it is safe to use around people. No Volatile Organic Compounds, or VOCs, to deal with."

Tom pondered his next question. A lot would ride on the answer. "What about flash point? As I mentioned I want to use this to carry CO2 plus a bit of water until it gets close enough to the flames to break down and deliver the smothering effect."

Another of the chemists, Douglas Miller, held up a hand. "I think I can answer that one. Its flash point is eleven hundred degrees. But, and I think this will work into your scheme, when it does come apart it breaks down into nitrogen, carbon dioxide, a small amount of carbon monoxide plus a non-flammable H2O2. All of the oxygen is bound to other atoms and would be unavailable to feed any fire."

He sat back looking at his young boss. Tom was generally very straightforward when it came to his reactions to news both good and bad. But this morning the inventor's face was a mask. He appeared to be having an inner dialog with someone. When his face finally changed he looked around. "Oh. Sorry. That was Harlan Ames TeleVocing me with some news. So," he shook his head as if he was clearing it, "if I get it right, our corn bubbles ought to survive

intact to get down low enough to increase the fire fighting capability of just plain water. Am I missing anything?"

Millicent shook her head. "I don't think so. It is not proprietary so we can make it here. Possibly for about thirty dollars for a ten-gallon batch." Seeing Tom's face register a forming question, she hastened to add, "and that much will mix with around five thousand gallons of water. It ends up a third to a twentieth the cost of other solutions."

Tom got up and thanked everyone. "Please order in five gallons of it for some tests early next week. I assume you can't make it faster than that." When they agreed he ended with, "On Tuesday we will have five old P3 Orion aircraft that have been configured for retardant drops landing here. I would very much like to set a test fire up at the east end of the grounds and try out this new miracle liquid."

He returned to the large shared office and was about to sit down.

The phone rang and he picked it up. "Tom here."

"Son, it's your father. Turn on the office television and switch to channel 204. Quickly." Tom did as he was commanded and soon was watching a replay of the horrifying footage of a water bomber flying in low over a forest fire. As it tried to gain altitude his blood ran icy cold as both of the plane's wings suddenly snapped upward and the body of the plane plummeted into the forest below.

It was a scene he had watched a few times over the years. It seemed to happen about every other or third year when the tired older airframe of a former weapons bomber had reached well beyond its serviceable years and fatigue inevitably let to disaster. And though newer regulations meant that many of these "far beyond their best by date" planes were being weeded out of the fleets, the bottom line was it cost a lot of money to either build a new fire bomber or to retrofit an aircraft, money that many states did not have.

The sad thing was that very few of the pilots survived these crashes.

Tom's desk phone rang. He walked over and picked it up. "Yes?"

At the other end of the line came the sobbing voice of his sister. "Tom. I hope you have been watching. You sent my Bud up there and that was his plane that just crashed. *You've killed my Bud!*"

CHAPTER 7 / MISSED IT BY THAT MUCH!

TOM'S HEART almost stopped. Barely able to speak, he managed to get a hoarse whisper out, "Are you sure, Sandy? They have a lot of that type of plane up in Maine."

With sickening clarity he could tell that his sister was certain. Even before she said anything he was dreading her response. He heard the receiver at the other end drop, a nose being blown, and then the phone picked back up. In a woeful and husky voice, Sandy told him, "I know the tail number of Bud's plane. That one on TV is — was his." She began sobbing again. "Oh, god, Tommy, I can't lose Bud now. I just can't. You've got to do something!"

It was an incredibly sad request and one he knew would be impossible to fulfill, but he told her, "I'll get on the phone right now and see what I can find out. I'm also dispatching as many Swift jets and helicopters as I can to go up there to help the search and rescue."

He almost choked on the word "rescue" knowing full well that if anything, it would probably be a "recovery."

After making several calls, all of which dead ended with phrases like, "We'll let you know once we find out what has happened," Tom phoned Dispatch and told them to get the same heavy lift dual-rotor helicopter he had used to rescue Bud and Sandy a month earlier ready and on the pad.

By the time he arrived it was warmed up, totally checked and ready for flight. A quick call to the tower gave him full takeoff clearance and a vector to the location of the accident. As he pushed the large helicopter to its flight maximums his stomach would not unknot. There were so many "ifs" that his mind was swimming. That, he knew, was not a good thing when flying and so he sought to clear his thoughts.

An hour later he was approaching the area of the forest fire and had already checked in with the local controllers. They had been reticent to allow him in until he explained the situation with Bud and that he also was in the process of constructing the three "new" jets.

"Just remain a thousand yards from the edge of the fire, please," was the final recommendation. "You can go in to the crash site in fifteen minutes when the final drop in that area is over."

Tom flew around in a wide circle until the time came. He watched as another bomber dropped its pink load of retardant-

infused water and headed back to its home base. Tom's helo dropped its nose and began moving toward the crash site.

The fire had been moving in a slightly different direction than the doomed tanker so the plane had gone into the trees a thousand feet or more from the burning forest. Tom passed over a team of firefighters in several trucks that appeared to be slowly making their way to the crash. It would, he estimated, take them another hour to get to the probable spot.

As he flew a small search pattern his eyes caught the glint of sunlight reflecting off of metal. He depressed the right pedal, tilted the cyclic stick to the right and headed for the source of the reflection. As he neared he could see that the fuselage had hit the trees and broken into at least four pieces, the largest of which was from the very back of the tail to a point just behind where the wings had once been.

The main body pieces—two of them—were twisted wrecks and the cockpit was upside down, seemed to be badly twisted and had a large branch that had pierced it. Nothing of any real size had actually hit the ground, and there had been no fire. The first was interesting while the second was incredible until he remembered that the fuel would have been in the wings.

Tom spotted a small clearing with what might be a spring runoff pond a few hundred feet to the north. He maneuvered his craft over the clearing and eased it to the ground with an expertise that few could have copied.

He grabbed a coil of nylon rope, a first aid kit and several blankets. In moments he was racing through the trees in the direction of the crash. When he arrived he could see that what had been the top of the cockpit was now just a few yards above the ground. All of the windows had been shattered out and there were a few sparks dropping to the ground where exposed wires were dangling out and touching. That meant that the electrical systems were still partially operating, and that might spell trouble. His first task was to climb up and try to shut everything off before a fire started.

The inventor wished that he had thought to bring some heavy gloves. What he needed to do was to get a running start and to jump up and grab the "top" of the windshield area. However, if he did that now, his bare hands would be cut by any remaining glass.

It took a few minutes to decide what to do, but Tom quickly formulated a plan. Taking hold of one corner of one of the blankets he whipped it up and at the windshield. As he thought, it snagged

on some of the glass still in the frame. He gave the blanket a yank and it pulled out bringing a small shower of broken glass with it. Peering up he could see that the frame was now clear. To be extra sure he again whipped the blanket up and inside. It caught on nothing.

"Good," he said to nobody other than himself. A third toss of the blanket was made and he left it hanging there.

He stepped back a few yards and made a good run, jumping up and catching the frame with his right hand but missing with his left. Rather than let go he swung around for a few seconds and then got a grip with the other hand. Young and in good condition, Tom was able to pull himself up and into the cockpit, coming to rest on top of the upper instrument panel.

He looked up and could see both pilot and copilot hanging in their harnesses. Neither man was moving but his heart skipped a beat when he saw that one was a blond and the other had a bald head.

Neither one was Bud!

This aircraft only had two regular seats and the jump seat at the back of the cockpit was in the stowed position. That meant that if a third man—Bud—had been there, he would have had the seat in the down position. The limb had pierced where anyone would have been sitting.

A drop of blood from the bald-headed man hit him on the nose. He went to wipe it away when the man made a small moaning sound. Tom stood up and reached for the man's neck. There was a heartbeat, weak but steady, to be found in the man's jugular vein. Tom reached over to the other man and checked him. Sadly, there was no pulse.

The live pilot moaned again and his arms that had been dangling downward were pulled up.

"Don't move, sir," Tom advised. "You've been in an air crash and are upside down. Help is coming but you don't want to take a chance on hurting yourself with any sudden moves."

"I— I'm alive?" the man said in whispered disbelief. "As is I didn't die? Hey, Bobby. Ya hear that. We survived that! Bobby?"

"I'm afraid your friend didn't make it. My name is Tom Swift. I understand that Bud Barclay from my company has been training with you. But, before we talk about him, can you reach the main electrical system cutoff? We need to de-energize the circuits.

The other man cleared his throat. "Yeah. Circuits. Uhh, I've got something in my eyes. Let me wipe that—"

"Don't!" Tom commanded in a voice a little louder than he had planned. "If you've got glass in your eyes you'll damage them even more. Let me climb around you and take a look."

Tom wiggled and eased himself into a crouching position and hit the master switch. Turning around put him almost face to belly with the man. As Tom had guessed, there were small shards of glass all over the man's face, but to his relief he saw the man was wearing dark glasses that had not shattered but had been splattered with blood. Tom squatted so he was now face to face with the man, eased the glasses off and looked carefully. There was no indication of glass right in the vicinity of his eyes, but there was a lot of blood.

Taking out his handkerchief, the inventor carefully wiped the area around the eyes and then pulled a water bottle he found on the former ceiling and poured some of its contents on the pilot's face. Giving it a final wipe and asked the man to open his eyes.

"I can see," he told Tom. "Name's Rolph Stodemayer. Insurance agent by day and part time fire pilot. So you're the Tom Swift Buddy's been yammering on about. Before you ask, he was with us on this flight. Had to go to the can, so he went aft about two minutes before we crashed. Jeez I hope you can find him. Nice kid. Pretty wife, too, from the pictures he's been showing. So, can you give me a little check to see if I've got any broken parts and then get me down? I'll lay nice and quiet on the panel there and wait for help. Damn! Too bad about Bobby."

Tom felt the man's arms, legs and as much of his back as he could get to. Rolph was able to wiggle his fingers and toes and had no numbness. The only thing Tom could find broken was the man's left hand and it was pretty badly mangled. Five minutes later Rolph was lying on the control panel describing the layout of the back of the plane.

Tom left the cockpit and swung back to the ground. On viewing the middle of the plane from close up, he dreaded what condition Bud's body might be in. The only hope was that the flyer had been in the very aft and survived the impact. But, before he looked there he climbed into one of the trees and jumped over to the forward fuselage section.

The water tank there and the pumping equipment had been partially flattened in the crash. The fuselage had also been subjected to crushing G-forces that had compressed it downward. His small LED light couldn't penetrate into many of the tighter spaces, but he really did not wish to see anything if Bud were in one of them.

The second fuselage section was in even worse shape.

Tom climbed down to the ground and walked the fifty feet back to the tail section. Unlike the others it appeared to have ended wedged between three trees in an upright orientation. The very front was twisted where it had ripped from the rest of the plane and it was hard to see inside.

Tom took a deep breath and called out, “Bud? It’s Tom. Are you in there? Are you alive?”

There was no answer for a few seconds and then a weak, “Can you get a cell signal out there, skipper? I’ve been trying to call Sandy to tell her I’m okay for at least an hour. You know how she is always thinking the worst. She’s probably going spare right now. Oh, and my right leg is broken just below the knee and hurts something terrible.”

Tom could barely breathe on hearing his best friend’s voice. He fought to keep from crying from the joy he was feeling.

“You stay right where you are. I’m coming up!”

With only a little of his usual sarcasm, Bud replied, “I hardly have any option. Everything sort of collapsed around me and I’m in a pretty tight cocoon. It isn’t the sort of place you can entertain in, but come on up.”

Assessing the situation Tom spotted the only way to get up to the top of the plane and that was to climb the middle of the three trees and shinny out on a limb that overhung the wreckage. He did it and in a few minutes was sitting on the top of the plane. Nearby was a clearly marked emergency hatch that he was quickly able to open and toss to the ground below.

“Tom? I hope that thud wasn’t you falling off. I really can’t recommend falling from any great height.”

“No, Bud. Just the hatch that is going to let me get in there to rescue you. Hang on.”

“Like I have a choice!”

Tom eased down through the hatch and found a foothold on a narrow ladder reaching to the deck below. He put his LED light in his mouth to leave both hands free as he turned to the aft of the section. Several pieces of equipment had broken free from their restraints or mounts and were strewn all over the floor, He move a few aside and climbed over the largest two.

Pretty soon he was standing at the door marked:

Toilet – Aft – Human Waste ONLY

Below it, someone had scribbled:

But not after eating those nasty burritos, Sanchez!

Tom chuckled as he reached for the handle. It was jammed, but one good downward kick from his boot heel and it snapped off, hitting the floor with a metallic clang.

"Did that work?" Bud asked from inside.

"Not the way I intended it to," Tom answered wondering what to do next. His eyes were becoming accustomed to the lower light entering from the forward tear and the hatch, so he turned off his light and put it in his pants pocket.

"Tom?"

"Yes, Bud?"

"What about Rolph and Bobby? They okay?"

"Rolph is okay or at least I'm pretty sure he will be. Bobby didn't make it I'm afraid. Sorry."

He heard Bud sigh and sniffle. "Rats! If I could get both of my feet up I probably could kick the door, but with the broken one and the other sort of twisted wrong it'd be pretty hard. I guess it's a trade off. I braced my legs up against the door when I felt the plane nose down and the compression when this section hit snapped one of them. By the way. Did you jump into the closest aircraft and rush up here alone or did you bring people with you? Never mind. I know the answer already."

Tom examined the entire door, It was bent outward a little at the top. If he could manage to find something to use as a pry bar, he might be able to get the door open.

As he was looking around he heard a click and the creak of the door opening behind him. Grabbing his light he turned it on and flashed it in the somewhat embarrassed face of Bud Barclay.

"I forgot I locked the door when I came in," he said a little sheepishly. "It's unlocked now, but I'd give this place a few minutes if I were you."

Bud's arms reached up taking hold of the doorframe. He pulled himself into a standing positing, wincing at the pain his injured leg provided. He managed to jump up a little—with an even bigger wince—and got his other leg straightened out and solidly on the deck.

Tom helped his friend get to the bottom of the ladder before climbing up and out. He reversed the course that had gotten him

there and dropped to the ground where he retrieved the second blanket, the first aid kit, and the rope.

Fifteen minutes later, with Bud's arms to help, Tom had the flyer out of the aircraft, snug in an improvised hammock seat and lowered to the ground using a handy overhanging tree limb.

Inside the first aid kit Tom found an old-fashioned air splint that he used to immobilize Bud's lower leg, looking more dislocated than actually broken, and some large sticking bandages to cover the—now that he could see them—half dozen or so cuts and skin tears. With the flyer leaning on him for support, Tom soon had them under the cockpit.

His next visit was back up to see how Rolph was doing. The pilot was laying there talking to his deceased friend and co-pilot.

"Oh. Hey, Tom Swift. Should I ask if you found Bud?"

Tom grinned. "You should and I will tell you that other than a broken or dislocated leg and a few scrapes he seems to be fine even for someone stuck in the john for a couple hours. It smells pretty bad back there. Oh, and who's Sanchez?"

Now Rolph laughed. "Golly, I forgot about that sign. Sanchez is legend. About six years ago he flew with us for a summer. Amazing pilot with nerves of steel. He'd go lower and do tighter turns and steeper ascents than any of us. Now that I think about it, it's probably all that high-G stuff that broke this fine aircraft. Anyway, he was legend for another reason. His wife used to send him out with a sack of burritos and they never sat well with his digestive system. The result was that we were happy the can was in the back of the plane!"

Tom was about to suggest that they try to get Rolph to the ground when Bud let out a holler.

"Yo! Over here! Survivors!"

A minute later the trucks could be heard pulling to a halt nearby and many voices were all asking questions at the same time.

Tom swung his head out the open hole and looked at everyone upside down. As Bud gave a brief account to a few of the men and the two women of the rescue team, the others went back to the trucks and brought a pair of metal ladders and a stretcher with them.

It turned out that one of the team was a paramedic and took command of Rolph. His more thorough and practiced examination found a ruptured Achilles tendon in one leg and what was probably just a cracked vertebrae, but immediately had an immobilization collar being strapped around the pilot's neck.

It was decided to take both survivors to Tom's helicopter for an airlift out—faster and considerably more gentle—while Bobby's body would be driven out by the fire team.

After making a moderately short flight to Portland where Rolph was admitted to the hospital while Bud was having his knee reset and a cast put on, he and Tom flew back to Shopton touching down on the helicopter pad at Shopton General Hospital just seven hours after Tom had departed that morning.

Doc Simpson was waiting. He intended to remove the plaster cast, double-check the work of the people in Portland and then give Bud a brand new hinged cast made from carbon fiber. This new cast would allow Bud to open it when he really needed a scratch without either damaging the integrity or the cast or other parts of his leg. It was also just fifteen ounces versus fifteen pounds.

"He'll hobble a week and then we can get that off. The knee should be fine after that."

Also on hand were Sandy and Bashalli. Both of them had brave faces on as their men touched down, but both quickly broke down into tears when the two climbed from the large helicopter.

It was all Tom and Bashalli could do to restrain Sandy so that she didn't jump into Bud's arms, probably knocking them both to the ground and potentially doing the flyer more harm.

At dinner than evening, the four of them sat at Tom and Bashalli's dining table in near silence. Tom and Bud had been close to dying in the past but it had never been broadcast in color and high definition on network television, and then replayed dozens of times throughout the day.

It was decided that the Barclays would remain at the Swifts that night. Tom and Bashalli went upstairs first with the other two staying downstairs a few minutes longer.

As they were getting ready for bed they could hear Bud and Sandy coming down the hall.

"Bud, you know darned well you could have been killed. I'm happy that you weren't but I wish you would take your own safety more seriously."

"Sandy, I know what might have happened, but I'm here and I'm safe. The bogeyman didn't get me and I don't believe he will. Let's just be happy that this time," and he switched into an impersonation of a famous old situation comedy spy, "it missed me by *that* much!"

CHAPTER 8 / THE SECRET NOTEBOOK OF TOM SWIFT

TOM AND BASHALLI rose early the next day and made breakfast. There was no talk at the table about what Bud and Sandy had been discussing, and little discussion about the accident.

Bashalli almost bit her own tongue as the question, “So how do you think the wings fell off that airplane?” slipped through her lips. She looked in horror at Tom. He simply nodded.

“Airframe fatigue, Bash,” he responded. Before saying more he looked to his wife. She appeared to have come to terms with the accident and was just happy to have him with her, relatively unharmed.

“I could not watch the news video. But, why did the news people say that the wings flipped upward? Surely if they broke off they would fall down. Is that not correct?”

Bud gave her a brief explanation about how the same lift that made planes fly also lifted the wings up and away. He ended with, “It has happened before and may again, but it is one of the inherent problems with older aircraft. It’s why you don’t see very many really old aircraft flying passengers.”

The foursome spent the day driving around Shopton and visiting a few good friends. Tom realized that Bud knew he had ducked death by a whisker and needed to go see people.

Sandy and Bashalli used it as an excuse to talk about clothes and movie stars and gab with the women they saw.

That night, Bud and Sandy went to their own home and Tom and Bashalli tumbled into bed, emotionally exhausted. She snuggled up close to him placing her head against his chest.

Neither slept well and they got up around six a.m. Tom suggested that he make French toast while Bashalli got ready for her standard Monday morning meeting at the ad agency where she worked.

They ate in near silence but lingered in each other’s embrace before driving in opposite directions to their respective jobs.

Sitting at his desk around 9:00 contemplating the recent fires, Tom tried to recall something that he had heard or seen a few years earlier. Somehow, his mind told him it had to do with just what he was seeking an answer to. Try as he might it kept eluding him, so he decided to get up and go for a walk. On many occasions the simple act of walking and letting his mind wander brought other things

into sharp focus.

He left the Administration building and turned right at the corner stepping onto the walkway that meandered throughout all of the buildings sitting in the middle of Enterprises. Currently there were thirteen major buildings and five smaller, specialty buildings, but as he headed directly south he could see the crane and other equipment starting to erect building fourteen which would be the first structure of more than four stories other than the tower. It would eventually house an expanded and enhanced commissary, executive/guest meeting room, a new 2-level hospital to take the place of the one floor Dispensary, plus apartments for visitors and temporary employees/contractors.

Both the current Dispensary building and the outdated apartment building were to be razed and a much larger version of the Barn—the open-sided combination hangar and construction building—would take their place.

Tom stopped at the bright orange boundary fencing and stood watching the work. As with most little boys and grown men, heavy construction machines had an almost hypnotic effect.

Seeing the excavated areas he was reminded that there were to be two other structures in the coming year. One was a new Engineering building but the other was an extension to the existing storage building that acted as the museum for all Swift inventions and devices. Right now it housed everything from a few of the surviving examples of his great-great grandfather Barton's works including his revolutionary underwater turbine engine that made modern day torpedoes—and to a lesser degree, jet skies—possible.

The most recent addition was a backup of the device Tom had built to concentrate and disperse the air inside of the lunar colony. Looking like a large mechanical spider, it was the 4/5 scale, working prototype of the device.

There were almost two hundred pieces of equipment in there, but the most valuable assets were all of the notebooks and records that each of the Swift inventors had filled over the decades.

Tom was smiling when it hit him. What his mind had failed to conjure up was now what he was recalling. The notebooks!

At some point in his early teen years as he helped his father arrange the museum, Tom happened on a leather and wood box about the size of a paper storage box. It had been fastened with leather straps and had a small tarnished silver plate riveted to the top proclaiming it to be "Property of T Swift — Do not throw out!"

But it wasn't the box that Tom now thought of. It was a notebook

inside, one of about two dozen, that bore the handwritten title along the lines of:

Airborne Flame Defeating System

If that didn't describe just what Tom wanted to construct, he couldn't think of an alternative.

The only difficult thing was going to be finding that box or the notebook if it had been moved to another location in the ensuing years.

The museum building was locked at all times as it was more a special storage vault than museum, although Damon Swift had insisted that it might someday be open to the public and had the building constructed so it could support the hanging of numerous aircraft and would have sufficient space to display rather than simply store everything else.

As he unlocked the small, unmarked door on the west side he could hear the locking seals of the inner door hissing into position. Even if someone—a very determined someone—were to get through the outer door they would find themselves quickly trapped in a antechamber with a door that could only be unlocked by Tom, Damon Swift or Harlan Ames. As head of Swift Security he had insisted on being added to the limited list.

The outer door closed and heavy bolts slid into place. At this point even several hundred pounds of explosives would not breech either of the doors.

Sniffer circuitry adapted from Tom's *CadaverCar*, a corpse-sniffing vehicle created to assist search and recover in natural and man-made disasters, sampled the air.

"Detected single human. Identification, Thomas Swift. No other bodies in chamber. Unlocking inner portal," came a soft computer voice.

Tom had to chuckle. It had been his father's idea to have Bashalli record the original vocal samples, and now she was the official voice of the security systems for several of the building at Enterprises.

As the heavy door swung open and the lights went on a chill of a more enjoyable sort went up Tom's back. Along with a veritable maze of sealed display cases were dozens of aircraft of all sorts hanging from the ceiling. One very large space was and would remain empty. It was reserved for Tom's Flying Lab, the *Sky Queen* once she was retired. That would be years away but it had been decided early on that a place of honor was to be kept open.

Standing there he tried to recall the general vicinity of the box

containing the notebook he wanted. It had been about nine years ago and at the time he was young enough that it hadn't been all that impressive to him. Although the young Tom Swift loved science and invention, dusty old books in dirty old boxes had held very little interest to him then. What he vividly remembered was the day the original *Pigeon Special* airplane had been winched up into the air. It still hung in the front of the building to the far left.

The inventor nodded in appreciation as he saw that no dust obscured any of the displays. The air filtration system was similar to those used to create 100% clean room conditions for the creation of computer chips. And, any micro-particles that might get through the one-sixth micron filters were electrostatically trapped on a series of chrome plates.

He turned to the left, deciding to walk up and down the aisles to see if anything jogged a memory.

Three hours came and went and Tom was nearing the end of the final, far right aisle when he stopped short.

"My brain must be running is super slow motion," he muttered, turning around and striding purposefully to the back of the building. "Yep! There it is," he said halting in front of a tomaquartz-faced case. It stood more than eight feet tall and was about four feet wide and three deep. On the floor of the case, with a much larger box on the shelf above throwing a deep and dark shadow on his goal, sat the leather-covered box.

Tom pulled his small LED light from his pocket and clicked the switch. The bright light illuminated the case and the silver plate. Someone had taken the time to polish the plate because it was much, much brighter and shinier than he remembered.

He had to consult the tablet computer that he usually carried to find the code to unlock the display, but soon was carrying the somewhat fragile box over to one of the tables that stood next to the rear wall.

A sense of the historical value of the box and its contents ran through his mind while competing with a sense of foreboding that he wasn't going to find what he hope for. The original small padlock that his ancestor had used to safeguard the contents was still in place but had been opened years earlier and simply hung from the hasp. He eased it out, setting it aside.

He noted with some intrigue that both of his hands were slightly shaking as he reached for the lid to lift it away.

Even with the environmentally controlled air in the museum, the box had slightly swollen and the top was stuck. He didn't want to

damage it so he stopped to ponder what to do. As he turned the box around he had to laugh. A casual criminal or snoop would have missed it, but his keen eye spotted an additional security measure that had been built into the case.

In each of the corners of the lid were very slight bumps. These, he figured, would probably be release catches that had to be pressed. The only problem he could see was that his hands—nobody's hands—could span the distance to release all four at once. And, when he tried releasing the front ones first, they clicked back into place as he tried to undo the rear ones.

Tom reached up to his collar and tapped the TeleVoc pin sitting there, mouthing and thinking the name, "Bud Barclay." A tiny ping seemingly in the middle of his head told him the request had been received and the call to Bud was being put through.

"Hey, skipper. What's up?" came the flyer's voice that only Tom could hear.

He explained the basic issue. "I can't bring the case out of the building. All the alarms would go off and I'd have to do a ton of paperwork. Can you come over and help me get the box open?"

"Well, I just so happen to be up in the control tower right now. Give me two minutes to finish here and five to get to you. I hope you plan to meet me at that security door."

"Will do. See you in seven or eight minutes. And, thanks!"

Because nothing could be left out and unattended, Tom had to replace the box in the display case before heading to the doors. He made it outside a few minutes before Bud so he stood over by the construction barrier watching the concrete equipment. A brand new technology that his father had come up with a few months earlier, the "mixer" was more like a medium-size trailer into which several hoppers and a water line fed. He knew that inside precisely measured ingredients were flung into the mixing chamber where they were thoroughly combined by a veritable whirlwind. Damon had decided to use one of Tom's QuieTurbines to force air into the chamber at an incredible rate. It also allowed the use of durastress fiber strands to be incorporated without danger that they would clump together.

At the other end was the water system that took normal water from the closest hydrant and mixed it with a proprietary hardening agent that also acted to help reduce air bubbles.

As fresh concrete was called for by the construction crew the dry and wet ingredients were mixed as they exited the trailer and traveled down a foot-wide flexible tube right to where it was

required.

"How long does that stuff take to set?" a voice asked from beside him.

"Working time is anywhere from less that twenty minutes for concrete that is poured into forms, up to an hour for anything that needs to be smoothed and manipulated, like sidewalks and such. But," Tom continued as he turned away from the work and faced his best friend, "a floor or wall panel can be poured and ready to be used in less than three hours compared to the week it typically takes to completely harden and dry standard concrete."

They talked a little more about the construction as they walked to the museum building's outer door.

This time the inner sniffer sensors correctly identified both Tom and Bud and let them inside.

It only took a minute to get the box back out and the four corner releases pressed. Tom took a firmer grip on the lid and lifted. It slid up and off almost as if gliding on air.

He looked closer and could detect a band of some sort of plastic or polymer around the top of the box. His finger slid right across it as he attempted to touch it.

"Bud? You would say 'Jetz!' about now. Go ahead and touch that gray band."

The flyer did and his eyes widened. Looking at Tom he mouthed, "Jetz!" Out loud, he added, "That's almost like the alternating electro-magical stuff you do with the bullet train's skin. Except it isn't, is it?"

Tom shook his head.

"I'll have to figure out a way to test that in a non-destructive way. For something like that to be a hundred years old or more and still as slippery as it is, well, it's incredible! But, it isn't what I came for. If you have the time I could use some help looking through these—" he glanced into the box and did a quick count of book spines, "—thirty-six notebooks."

"Sure. I don't have anything for another couple of hours. What are we looking for?"

"I can't recall if it was a single, special notebook or somewhere inside one, so I guess we check them all."

Tom described what he remembered. It had to do with a flying fire fighting system his namesake had developed. And while he could not recall any of the details, Tom said he vaguely remembered

that it was all based around a fast dirigible that could get to a fire a hundred miles away in less than ninety minutes. For the day, that was almost three times faster that any other non-airplane.

"And, something in the back of my memory is telling me that it didn't just drop water, like that forestry service water bomber that put out the former neighborhood up the hill."

Bud looked at Tom, puzzled. "Former?"

"Yes. I got a call from Jackson Rimmer in Legal yesterday telling me that the trail along several phony corporations finally led to a money pipe coming from North Korea. Our Government shut that down and impounded all of the funds they located in a series of banks across the country. No more money means no more building. Besides, the construction company never came back after the fire."

"What's going to happen to the houses they started?"

Tom smiled. "Dad has suggested to the State Department that Enterprises would be more than glad to take it off their hands. And though he didn't mention a price to them as far as I know, it looks like they are going to just give the land to us. Dad says that we can move all the burned materials out, turn that part of the property into a nice park, and then build a series of guest houses up there as well as a larger, long-range air control tower. But, that's for later. Let's get started on these books."

Together they spend all of Bud's time reading through about two-thirds of the notebooks. By the time the flyer had to depart, Tom was starting to worry that either his memory was faulty, or that the notebook wasn't in this box.

He needn't have worried. The very next book he withdrew after letting Bud out was the one he wanted. As if the handwritten title on the cover—"Aerial Firetruck: Flying Fire Fighter"—wasn't a giveaway, the description page inside the cover told him he had found the correct book:

During the past two months I have been working toward the creation of a singularly elegant flying vehicle capable of dousing flames at heights far surpassing the capabilities of any conventional fire pumper truck or device. I undertook this for a variety of reasons, but primarily because of my witnessing the demise to the beautiful and historic Hotel Shopton, a structure taller than any other in the county and much too tall for our

local fire department to properly deal with.

The other reason for designing and building my airship was because of a premonition that a certain local bully —Andy Foger and his assortment of ruffian cohorts— had not just been responsible for setting the hotel ablaze, but that they might repeat the dastardly task again. And while no other structure in town is so tall as to be above the stream of water our pumper can manage, there are several nearby towns not as well outfitted.

Therefore, as detailed in this book of my notes on the subject, I have listed both the basic story along with a few details of evidence I recovered that also pointed to Andy's hand in this, as well as my calculations, formulas and other information necessary to reconstruct the aerial fire device should anyone wish to undertake it.

Sadly, and again at what I suspect to be Andy Foger's hands, my A.F.T. was destroyed in, of all things, a fire set on our home property. If needed I shall build a second one in the future.

August 1913 Tom Swift

Although several generations had passed since that time, there were several family stories regarding the Foger family and the troubles between them and the Swifts.

Tom shook his head sadly as he turned the page and began scanning through the book. Within minutes he knew he had hit on a bonanza of information. Some of it he easily recognized as still holding potential to assist in his search for a fire-retarding device, while a few things actually surprised him. In fact, more than several things made him stop and re-read sections of the notes.

Three hours later he closed the box and returned it to the display case minus the notebook. Carefully slipping it into a sealable metalized plastic bag he then tucked it into the satchel in which he

carried his tablet computer. In there he also had stashed another bag with a roast beef sandwich, which he now opened.

Such things were necessary if he were to sneak the notebook out of the building through the sniffer chamber.

It worked because as he sealed the inner door and the sniffer went to work—along with an RF ID tag sensor—all he heard was, "Exit permission granted. One body plus unidentifiable beef-based food item. Inner door locked and outer door will open in five seconds."

Four audible pips were heard before the outer locks clicked open and the door swung to one side.

Tom stepped out into the fresh air feeling a little guilty, but knowing that he needed to not just read the notes again, he needed to scan the entire notebook into his computer so that he could reference and cross-reference it at will.

He was still thinking about the wonderful and elegant way his ancestor had finally achieved his goal of a relatively lightweight airship capable of smothering flames in even the tallest of man's buildings.

What bothered him was the early mention of Andy Foger. The Foger family had been a fixture, and somewhat of a scandal, in Shopton for years. It had only been when Tom was young that the Fogers finally either died off or ended up in jail.

The last son had been escorted to state prison days after Tom's ninth birthday and the father and mother had died months later.

The only family member known to be missing was an older sister.

A shudder ran through Tom's body. He thought back to the accusations in the *Bulletin* and the photographs taken of him at the Shopton Hotel fire. And the mystery woman!

Could these recent fires in Shopton be acts of revenge by the last Foger?

CHAPTER 9 / WELL, *THAT* ISN'T THE SOLUTION!

TOM DEVOTED that evening to reading and re-reading the notebook from cover to cover. The one thing his great grandfather was extremely good at was writing detailed notes. A few places had been smudged and he had to try an old trick of using an alternate light source at an angle to bring the old ink into view, but he made his own notes and slipped them between pages that were hard to read.

Bashalli kissed him on the top of the head that evening and went to bed. When he finally set the book aside it was two a.m. and she barely moved when he slipped into bed.

That morning he rose at seven and headed to work with the notebook firmly under his arm. Once there he barely moved the entire day as he slumped in one of the leather chairs of the large office.

By the end of the day Tom knew everything his ancestor had known and also believed he had a small insight into a few things available in the modern day that might have been beyond possibility way back then.

He was trying to explain it to Bud late in the day and the flyer's eyes were clouding over.

"I'm sorry, skipper. I just can't wrap my brain around some of that. Flying fire truck? And you say it didn't take off with anything but made what it needed in the air? Hmmm. Can you break it down a little further or should I just go home to Sandy and admit to her I'm a dummy."

"Oh, Bud," Tom said with a look of concern on his face. "If Sandy doesn't already know that, then *she's* the dummy!" They broke into laughter. "Okay. Here's the little words version. Tom built a second airship that was larger than his original *Red Cloud*. It had to be to take up the mechanical systems. As he flew through the air going to a fire he started up another gasoline engine that turned a set of gears letting it finally get up to about eight thousand RPM. That turned a big, ducted fan up front to draw in huge amounts of air. He thought it through and had that mounted at the nose where it could pull the craft along faster than just the pusher propeller he was using."

"With you so far," Bud said.

“Good. He also made a membrane out of a specially woven and treated silk thread that was so tight that if wouldn’t let all of the air pass through. In fact, it was really ahead of the times. He designed it so that the gaps wouldn’t allow the larger molecules of carbon dioxide to pass, but let the smaller clumps of oxygen and single atoms of nitrogen to go on through. Then he collected the CO2 by basically sucking it away from the membrane using a vacuum system and then pumped it into a holding tank.”

“Didn’t that make the blimp too heavy?”

“First, it wasn’t a blimp, it was an airship, and no. He never could get it to high enough pressure to get more than slightly thick and viscous or purity to cause the gas to liquefy, so it remained within the load limits of the ship.”

Bud nodded as he processed what his friend had just said. “Right. Next?”

“Well, next he got to the fire and made a couple passes over it as low as he could safely fly, letting off large amounts of the CO2 as he went. It wasn’t very accurate but it worked.” Tom stopped and looked a little sad. “It is just too bad it couldn’t have worked to save itself. You see, Tom suspected that a town bully and rival had set fire to the hangar his airship was stored in.”

All Bud could do was to nod his agreement. With a sigh he stood up. “Okay. It has penetrated and I understand. So, are you going to replicate it?”

“No. Or maybe, but not at first. I think that with today’s pumping capacity and better technology that I can accomplish much the same, probably better, using a ground-based vehicle. Sort of a super CO2 truck to blow the flames out.”

“A portable Big Bad Wolf, then. I like it!” Bud exclaimed with a big smile.

Tom groaned. It was another in a long string of bad pun names the flyer gave to Tom’s carefully crafted inventions. In seconds, Bud could reduce something as elegant as Tom’s flying environmental repair and cleaning craft, officially know as EnvirOzone Revivicators, to a simple OzoNut! Or Tom’s incredible car capable of tracking down bodies trapped under mudslides that he dubbed *CadaverCars*.

The worst part was that Bud’s names stuck. Like limpets to a ship. Like fingers when “super glue” was misused.

“Bud,” Tom said slowly and cautiously. “I am thinking of calling it the Carbon Dioxide Fire Retarding System.”

"CarDiFiRetSys?"

Tom's shoulders sank. "Big Bad Wolf it is!" he said, giving up. He explained that there would actually be several membrane filter surfaces inside of the device to strip away as many different gas molecules as possible to get to what was hoped to be about 99% pure carbon dioxide.

"So, your great granddad decided to use a ducted fan to start the process, huh?" Bud inquired. "I thought they didn't get invented until the very late 1930s or even 1940. But, you're telling me that this Tom Swift was that far ahead of his time." Bud grinned at his friend before adding, "Imagine that? A Tom Swift who invented things before anyone else. Who'd have thunk it?"

Tom had to laugh at his friend's statement. "Yes. Well this Tom believed it was imperative to begin directing the air into a narrower passage to start putting it under pressure, or else it could not be forced through the membranes. It was a necessity and so he created a way to do it. But, don't worry about him not getting credit for it. An Italian firm called Caproni-Campini used his designs—stolen by the way, as far back as 1940, but they came forward after the war and acknowledged Tom's design and even paid some reparations for stealing it."

"Okay," Bud said sounding a little anxious to get to the heart of the story, "I'm ready for the advanced version, so after he sucks in and forces air through the membranes, *what* happened next?"

Tom described the process in greater detail where all but the CO_2 was piped back into the surrounding air while the desired gas was semi-pressurized in a large holding tank inside the actual lifting bag above the cramped—due to all the mechanical devices—one-man gondola.

The notes indicated a time of over twelve minutes to recharge with what Tom believed would be the equivalent of about one ton of CO_2.

"Then he flew right at the fire. The bottom of the gas bag and the gondola were coated with a flame resistant metallic paint he devised. And, the extra weight of the CO_2 meant that the ship wasn't as susceptible to the updrafts and downdrafts around a large fire."

"So he just flew up next to the fire and released the gas?"

Tom shook his head, "Not exactly. For one he admits in the book that he couldn't develop a quick-dump valve or support it with large-diameter tubing that would have been light enough. So he used a special six-inch set of tubes made from aluminum. They

came out of a distributor chamber just under the single release valve and let the gas cascade down to the four nozzles he also designed."

He showed Bud the digitized image from the book on his computer screen.

"Looks like a fancy shower head," the flyer commented.

"It does," Tom told him. "The gas was pretty thick in the tank. It probably would have liquefied if he could have managed about two hundred more psi of pressure. But, the tank's pressure shot it out, down the pipes and out through the nozzles. His notes say that it was effective from about two hundred feet away."

"Jetz! That's awfully close to be over a big fire," Bud said.

"And he knew that so his approach was from above and to the windward side, nose tilted down by about forty degrees. See, the nozzles pointed down and forward that much and he used any prevailing winds to help force the gas right into the heart of the fire."

Bud considered all this and pictured the process. He was impressed at both the technology and the bravery of Tom's ancestor.

Finally he asked, "But you're not going to make a flying fire truck?"

"No. Because I can liquefy the CO2 and have the technology to handle it in that form, I want to build a drivable version that can be protected from the intense heat using tomasite as an armor and then get up close to the fire and smother it in a blanket of CO2. I'll use the very heat of the fire to vaporize the liquefied gas and that will let a relatively small amount in liquid form spread out and be many times more effective, and right into the very heart of the fire."

"Where do you start?"

Tom bit his lower lip in thought. Soon, he was rubbing his jaw—a sure sign a Swift man was thinking over something—to come up with a good answer.

"I'm going to have to buy an old fire truck, I guess. We can gut it, build in all the membrane and filtering mechanisms and pumps. I might need to build or buy a pressure tank on a trailer to store the gas. In fact, that's probably the best thing. Say," he said brightening, "you can help with this. While I work on the guts, so to speak, can you go on an Internet search for what we need?"

He gave Bud the basic details regarding size and configuration.

"My guess is that there will be a number of municipal fire departments who'd love to get rid of an old engine as they take

delivery of a brand new one."

Bud agreed to take on that task and left a few minutes later.

Tom returned to his design work and spent the remainder of the day adjusting things to fit into what he now decided was the best vehicle for the purpose.

By the middle of the next afternoon he had come up with a self-contained arrangement that he felt would fit assuming that Bud could locate a pumper-style engine that was large enough to hold one of the larger water storage tanks.

Bud did not let him down. Before the end of the day he was back holding three pages.

"Got one. Well, actually I've got three possibilities. Two are about fifteen years old but in only fair shape and outdated, and the third is at the factory in Wisconsin where it was returned after five years and having a power tower fall on it."

Tom's eyes narrowed. "Tell me more about that third one."

The truck, one of that manufacturer's largest pumpers, had been in use in the city of Madison, Wisconsin for four years when it was damaged. It sat at a storage yard for almost a year before the insurance company declared it a total loss, but agreed to only pay for seventy-five percent of the cost to replace it. With that money going out the fire department didn't have enough to either try to fix or salvage the truck, and had eventually been surrendered to the factory for failure to pay the final year of payments.

"The chassis is in great shape," Bud explained, "but the back half of the cab is caved in, the water tank ruptured and the forward pump is only so much mashed metal. The relatively good part is they are willing to let it go for the final year's worth of payments... about forty-thousand dollars."

"What about the other two?" Tom inquired.

"Both smaller. One is ten feet shorter and the other is three feet shorter. Both were custom jobs originally and one has a three-story ladder rig on top."

He paused before dropping what he thought would be the bombshells.

"Go on," Tom urged.

"Okay. One has been sitting for three years and is pretty rusted, but they are willing to take any offer over ten grand and you haul it. The other is in very clean condition but the engine is, as their public information officer put it, knackered. I believe that is not a good

thing. Oh, and that's the longer of the two."

"How much? We can always replace the engine."

"Twenty-five thousand."

They decided that Bud should take Tom's Toad business jet—so named for it's amphibian appearance when viewed from the front—and go visit the three sites.

When he returned two days later he reported that the only one worth buying was the twenty-five thousand dollar truck. "The rest are going to cost three times that much to get back into working condition for what you want to do."

While Purchasing worked on that detail, Tom began to turn his design into reality. Over the next week he worked with many of his smaller tools to cut, shape, bend and build the mechanical parts of his desktop test machine.

For two of those days he worked non-stop on designing a pump and extractor system. His modern day science took a temporary back seat to the science and technology of the early 1900s as he spec'd out and then built the test system.

While he was busy with this, his Plastics department built a series of small membranes to the molecular-level sizes he required.

"It's a good thing you're letting us practice small," Jon McCleary told him the day he hand delivered the five circular discs. "We generally concentrate on making things that do not leak. This kept us on our toes but sure helped me understand what we need to do to ramp this up for larger screens. Hope it works."

"I'll let you know once I get it all assembled and run a few tests," Tom told him.

He felt very confident about success. As his great grandfather had proven, it is possible to pass a large amount of air through the proper membrane or membranes to extract any of the CO_2, and to then pump it under pressure into a holding tank, ready to be dropped or sprayed on a fire below.

Early in the process he had realized that one thing his distant relative did not have access to was a centrifugal pump. By adding this and spinning his membrane at high speed Tom found that the carbon dioxide did not pool on the membrane but slid quickly to the edges where it could be harvested.

All remaining gases passed beyond the system and would, as with the original Tom's machine, be ejected back into the surrounding air.

It took another two days to complete the assembly stage of all the small parts and after the weekend he spent both Monday and Tuesday going back over all his notes. Satisfied that he had incorporated everything to that point, Tom got up and walked out of the large office and down the hall to his laboratory. It was time to stop thinking about theory and to get his machine completed.

This first hand-built model caused his chief model maker, Arv Hanson, to inquire if Tom no longer needed his services. “I mean, skipper, if you are going to build these things yourself, what’s left for me to do?”

It had been mostly in jest, but Tom knew that he relied on this man.

“That’s easy. I didn’t want you concentrating on something so simple. I need to have you ready to build the mid-size model next week, once I test this little rig. In fact, if you want to stick around and help, I should be ready for the first tryout in about fifteen minutes.”

Arv nodded enthusiastically and sat down on one of the stools at Tom’s workbench. He watched silently as the inventor soldered multiple wires to the single circuit board and then connected them to one of his multipurpose control transmitter/receivers.

Ten minutes later Arv helped Tom carry the device into the test chamber that ran along one side of the large room. It was built from clear tomasite and was able to withstand explosions, something that Tom’s experiments had put to the test more than once. Inside, Tom did the final connections and checked all of the systems for the chamber.

He activated the wireless transmitter that would utilize a pass-through antenna to get the signals out to Tom’s master board.

Giving Arv a grin, Tom told him, “Here goes,” and flicked the power switch for his board. A series of LEDs glowed first red then orange and finally all were green.

A touch of one slider started the CO_2 extraction process slowly and then gained a little speed as Tom noted with satisfaction the needle of the pressure gauge in the small storage tank being filled. A couple minutes later he pulled the slider back down and pressed a nearby button.

“What I’m doing, in case you are interested, is filling the pressure cylinder to about half its capacity. That would be about thirty cubic feet of compressed CO_2. Now I’m stopping the pumps and the separation process. With luck—and now that I think about it I should have put in an analyzer to see if all that is in the tank is CO_2

—once I start the little fire in the brick enclosure I can release the gas in a steady stream. It should come out of the nozzle as liquid CO_2 and vaporize just about the time it reaches the flames."

"Why not just douse it all with liquid CO_2?"

"A couple reasons. In the real world structures will have wiring and plumbing and possibly other pressurized pipe systems, I don't want them freezing after being so hot; they'll shatter."

Arv felt like he ought to have known that but said nothing.

"Well, here comes the flames," Tom said as he depressed a red switch. Immediately five spires of flame shot up from the bottom of the three-sided brick enclosure. "I'm going to let things heat up a little before I turn the gas loose," he explained as he leaned back.

After five minutes they could see the heat rising from the bricks indicating that they had now been thoroughly warmed. Leaning back to his controls Tom turned one knob and then shoved another slider into the full open position.

The results came in three waves.

First, a steady stream of liquid gas shot out of the nozzle of his extractor and arced toward the flames.

Next, as it got to within a foot the liquid almost instantly vaporized creating a cloud neither man could see through.

Finally—and only visible on the high-speed video Tom reviewed later—as the flames went out, removing their heat, the stream of gas stopped vaporizing. It hit the back of the bricks causing them to explode with a *boom!* that shook the room.

When Tom showed the video to his father, the older inventor remarked, "Well, that isn't the solution you were looking for, is it?"

CHAPTER 10 / CHOW MAKES A PLEA

THE YOUNG INVENTOR had to grin. “No. Not exactly what I hoped for, but pretty much what I know should have happened now that I look back.”

“Where did it go wrong,” Damon asked with an expression that Tom recognized as being ‘I know what it is but I want you to learn from this experience!’

“I forgot to use the right kind of bricks. I had those heat-resistant ones but should have used the ones we have like those use in heat shields for returning space capsules. Once they heated up all it took was a shock of icy CO2 and *kablooey!*”

Damon Swift chuckled. “Well, at least it was all contained inside the test chamber. Did your little test rig survive?”

Tom nodded. “Yes. All of the exploding debris went up and back and to the sides, not forward. I’ve got the right bricks coming and will do the test again tomorrow. But, in the mean time, it is nice to see the video showing that the flames did go out, and pretty quickly. I think I’m on to something.”

The test the following day went very well. As before, the CO2 arced out of the nozzle and began to vaporize as it neared the hottest point. It proved that a relatively small amount of the liquefied gas could be effective in this type of fire. What he needed to do was to check it out with other types of flames.

And that is what he did for the following three days. Test after test were run using various combustible materials from wood to plastics to petroleum to burning metals.

He had suspected that the final one would fail, and it did. Burning metals seemed to laugh off the intrusion by the gas and didn’t even cool down. After noting this, Tom began a full-scale review of the results.

When Arv visited him to see about creating a larger-scale model of the machine, Tom suggested that they look as some of the data together.

“What do you think of that?” he asked after showing his model maker the video of the wood and petroleum fires.

Arv thought about it for a moment before answering. “To start with, once the outer area of flame is extinguished the CO2 stops vaporizing before getting to the fire. It is putting a lot of it out

simply by being a liquid. And that oil fire? Same thing except that it splashes the oil around making a larger fire before smothering it. That's going to cause collateral damage, isn't it?"

Tom agreed.

"What can you do?"

"Well," the inventor replied, "I need to make the dispersal nozzle variable and also reduce or increase the flow of the liquefied gas to match the needs of any specific fire. Eventually I can do that with some sensors and a simple computer program but it's going to be hit and miss testing for the time being. When you build the next one can you please give me a nozzle like on a fire hose? Everything from steady stream to a spread out wall of liquid."

They discussed several other changes including a pump that could be set to at least three different pressures. The basic layout of the overall machine wasn't going to change so Arv said he would work on increasing everything by a factor of three and then work on the multi-pressure pump and nozzle.

"Unless you have an objection, I'd like to bolt the nozzle to a swivel mount."

"That's great, Arv. I would love to test a point and sweep technique for larger fires."

Tom next called Jon in Plastics to give him the new dimensions for the membranes. The man said he could have them finished and tested in about a week, and Tom told him that would be fine.

Feeling like he had accomplished a great deal he TeleVoc'd Bud to see if the flyer wanted to pick up Sandy while he retrieved Bashalli and then go out to a nice dinner.

"You bet!" came the answer inside his head. "Your sister has been pestering me to go over to Oswego and try that new Ethiopian restaurant. I suppose this'll be a two birds, one stone evening?"

With a laugh, Tom told him, "Of course. She and Bash must be talking because I have the exact same request. You call yours and I'll let mine know that we pick them up in an hour."

Although both ladies muttered about not having any notice, and why pick *that* restaurant out of the many available, they were each standing outside their front doors when Bud and Tom drove up to get them.

It was a beautiful late afternoon and so they drove back to Enterprises where they climbed into Sandy's new favorite airplane, the fast and fun *Pigeon Commander*. The men climbed into the two back seats while the ladies sat up front. Sandy got them checked out

and in the air in record time and then, to Tom's amazement, turned to her companion and declared, "The controls are yours, Bashi!"

"I have the controls," Tom's wife responded.

Sandy turned around and smiled sweetly at Tom and Bud. "I've been giving Bashi a few lessons," she told them. "Nothing more that straight and level flying for now, but since she is a Swift—or a Barclay for that matter—I figured it was time she knew what to do up here."

"I was quite nervous at first," Bashalli said over her shoulder, "but this is less disturbing than I though. I understand that I still must keep a good watch on any traffic, but is it very pleasant."

Sandy took control back as they began their descent and flew the entire trip home in darkness after a wonderful, and surprisingly tasty, meal.

On Monday morning there was a knock on the office door. Trent poked his face in and, with a bemused look, informed Tom that there was a Mister Winkler who would like a few moments of Tom's time.

Very curious what this might be about, Tom said, "Send him in."

"Say, Tom," Chow began as he entered the large office and took a seat in front of the inventor's desk. "Kin I ask ya a question. Mebbe even a favor?"

"Absolutely, Chow. Ask or request away!"

"Okey-doke. Ya remember that I spent a lot o' years in Texas, right? Even though I don't talk like that much anymore."

Tom knew that if Bud were there the flyer would tease the older man about how he'd never lost his accent, but could see that the cook was in earnest.

"Yes, Chow. Of course I do. Go on."

"Wahl, ya see it's like this. With all o' these fires bein' set at places like oil fields and such, I got a friend down in Texas who's got a son that's part o' a fire team. They specialize in fightin' fires at oil derricks an' his daddy's been callin' me 'bout every day askin' what my boss is gonna do about it."

Tom looked puzzled. "About what specifically, Chow. I mean, I can't do much to investigate who is behind these or set up anything to stop them. And, short of paying someone to park fire trucks at every possible site, which is totally impractical, there isn't much I can do to fight the fires. Besides, there haven't been any oil field fires recently. Have there?"

Chow shook his head, but stated, “No, but if some galoot’ll set fire to a nice forest, a bunch o’ oil rigs ought ta be a real temptation.”

“Ah. I see. So, what is he asking for?”

Chow took off his ten-gallon hat and scratched his bald head while he pondered his boss’ question. Finally he spoke. “I don’t rightly know, son. But I’m thinkin’ he’s wanting you ta build some special fire fighting gizmo that’ll help his son and the other men who have ta put out these big blazes. That’s all I can figger.”

With the potential fire truck weeks away, they sat for a few minutes while Tom searched his mind for any ideas on what might be accomplished. Finally he looked up asking, “Has this man’s son been involved in those kind of fires in Texas? Hopefully he is an expert. I need first-hand information from somebody who’s been there. Can you check?”

Chow nodded. “Yep!” He stood up. “I can get back ta this boy’s pa right away an’ prob’ly have ya an answer in an hour. Will that do?”

Tom agreed that it would be fine, and as the cook left the office he leaned back in his chair to give the matter more thought. His CO2 fire truck might be too small for oil field fires. Of course there was all the information in his great grandfather’s notebook regarding the aerial fire truck he had built. But the truth was that it had only been used three times on modest fires before the unknown saboteur had destroyed the entire rig.

It had been successful, however, and that was something he hoped he might build on some day.

When Chow came back to report that the man in Texas really didn’t know what he wanted, the cook added, “Like any good father he’s concerned fer his kid an’ wants him ta be safe. Is there anything you can do ta make his job safer?”

Tom told him briefly about the old flying fire truck concept and that it might be possible to modernize it, “But that isn’t anything immediate. I do have one idea, at least as a temporary measure. Have your friend get the measurements of all the men on his son’s fire team and I’ll have the ladies in Uniforms and the folk in Polymers and Plastics see if they can come up with some sort of protective clothing. Enough to ward off the heat and let them get in closer without getting roasted.”

As the cook walked briskly out the door to place the call Tom picked up his phone. Ten minutes later he had arranged for a meeting in the shared office to start in twenty minutes.

To prepare for it he began looking at some of the information about several of the materials that Enterprises made.

The first to arrive was Jon McCleary from the Plastics and Polymers division. He sat down and they made small talk for another few minutes before Marjorie Morning-Eagle, the gentle giant from Uniforms arrived.

He started by telling them about Chow's plea. Next he detailed what he believed might be possible and what might be necessary.

"Obviously it will have to be very lightweight and easy to walk around in. I don't think they will accept a completely enclosed suit so we're looking at more a set of armor than anything. The helmet or face piece needs to accommodate current breather masks and any back piece needs to be large enough to hold the standard thirty minute tank, but I'd also like to give them the option of a larger SCUBA-type one-hundred and twenty cubic feet tank as well."

Jon asked, "Isn't the reason they wear just the smaller tanks due to all the other weight they have to carry around?"

"Yes, in general and for standard fire fighters, but these men, and I suppose a few women, deal with large, flat areas around oil wells. There is, to my knowledge, little if any climbing."

He outlined a way to build a support shelf and netting into the back of the armor to hold the tank and then to have some of that weight transferred down the back, hips and legs so that it ultimately was resting on the ground.

"I got a question," the Uniforms manager stated.

"Go ahead, Major," Tom told her using the nickname she had earned for her outwardly gruff command mode. Inside, everyone knew she was a softie.

"Okay. If Jon here is coming up with some sort of heat proof armor, what do you want from me?"

Tom smiled and nodded. "Well, for one I think these people need to be wearing something that is both soft and pliable but also is heat resistant and wicks away any perspiration. It might even be that we make them something they wear instead of regular clothing."

"Oh."

It was decided that an outer shell of durastress coated in TomaCoat would provide the majority of the heat protection, and that a layer of Kevlar and an inner layer of carbon fiber would complete the shell. For maximum flexibility all joints—ankles, knees, hips, shoulders, elbows and wrists—would be best suited to multiple layers of interwoven Kevlar and durastress fibers.

"I realized these points will allow some of the heat to intrude into the suit, but that can't be avoided if they are to have full mobility. I will, however, want to provide some sort of removable shields to snap on over each joint facing front for extra protection."

The two managers promised to work closely together and believed that a prototype suit could be built in three days' time.

Tom told them he should have measurements for at least one or more of the fire fighters within the next day.

Once they left his father stepped into the office.

"Trent told me about the meeting and I thought it best to keep out of your hair. What did you come up with?"

Tom told him, and the older inventor smiled and nodded. "Way back when I was young, maybe ten or so, a famous oilfield firefighter was photographed wearing a suit of home build armor made from some old corrugated steel and a metal bucket. He almost perished finding out that the metal simply gathered up the heat coming from in front and radiated it right into his face and body. Since then these so-called *hellfighters* have resorted to heavy flame-retardant canvas suits. If your new armor can come in at under the forty or so pounds I believe I read about, you may stand a chance."

"Oh, it'll come in at about fifteen pounds," Tom assured his father. "And that includes the mechanism for spreading the weight of their air tank down to the ground." When Damon raised an inquisitive eyebrow, Tom told him about supporting the standard and longer-lasting tanks.

"Excellent!"

Fifty minutes later came some not excellent news.

An industrial complex of about twenty buildings in Las Cruces, New Mexico, had been fire bombed an hour earlier. The early reports included the sighting of perhaps a dozen black helicopters coming up from the south, swinging over the complex at which time "objects" were dropped, and the aircraft then headed back to the south. Someone outside of El Paso had seen then flying into Mexico soon after that.

The fires broke out five minutes after the helicopters had made their drop, and now all fire companies in the small city were on site trying to put out the large fire.

The good news was that all people working in the complex were accounted for.

It was disheartening for Tom and made him all the more determined to do something.

Late in the day he received the measurements of forty-five of the fire fighters down in Texas. One of them was the son of Chow's friend who evidently was reluctant to let himself be measured. His father finally had to force him to do it. It was only later that Tom discovered the young man was the head of the entire team.

Three afternoons later Tom's presence was requested at Uniforms. When he arrived he stepped into the large open room where all of Enterprises coveralls and other "sewn goods" were constructed, including the giant inflatable habitats used at the Martian colony. He stopped immediately and felt a sense of deja vu run through his body.

In front of him stood what looked like the giant robot from the movie, *The Day The Earth Stood Still*.

"That's Gort!" he declared, pointing at the whitish-silver form standing in the middle of the room.

"Sort of, huh?" Marjorie commented. "Little shorter and a little thicker front to back and a little thinner and— naw! Come to think of it that's nothing like that movie robot!"

Now that he had time for a second look Tom realized that the form might be similar but there was little real resemblance. He got a shock when the armor turned its head and then its body and began walking toward him. It halted in front of him and its right hand reached up and pressed a recessed button on the neck. The helmet flipped back to reveal Hank Sterling's smiling face.

"Hey, skipper. When Jon told me I'd be making a resizable pattern for these I had to come over to see what it was all about. Pretty nifty!"

"Is it possible to do these in the multiple non-standard sizes?" Tom inquired.

Hank nodded. "Sure. I'll set up moving jigs and we'll crank these out in the large vacu-form machine at the Construction Company. The Major here has provided me with forty-five different sizes but they generally fall into three categories. So, three changeable jigs that will all fit into the machine at one time. I'll have the outer shells done by next Wednesday. Next Tuesday if I work the weekend." He looked at his young boss and Tom could see that he would be willing to do the extra time.

"No. Go ahead and do these on regular time. We're doing them on Enterprises' nickel so we're not on a set schedule. Oh, and that suit really, uhhh, *suits* you, Hank!"

"Don't tell Bud," Hank requested. "I want to walk over to his

office and give him a little scare!"

Tom looked at the Uniforms manager. "Can your ladies have the under garments done by then?"

She nodded. "Got a third of 'em done now. They're just like making giant onesies for very large kids, except these have build-in hoods and gloves. Cute little footies, too!"

She laughed thinking of the sight of almost four-dozen burly men walking around in what looked like a type of children's pajamas.

On Thursday afternoon Bud—who had jumped five feet when Hank clomped into his office—and Chow flew the undergarments and armor shells down to Texas where they met up with Chow's good friend.

There was, as Chow had warned the flyer, more than a little reluctance to don the gear until Chow had stomped one of his boots.

"Now, dang it all for the lot o' ya!" he practically shouted. "An' that goes double fer you, Brian! Your father begged me ta get my boss to make ya something that'll help you fight fires and this is the thanks ya give? Tom Swift is tryin' ta save yer hides, all o' ya. Now, I'll beat the first one o' ya who don't step up and take the bits that've been 'specially made ta fit just you. Come on!"

Within five minutes all of the men came forward and gave either Bud or Chow their name, received a box with the armor and a plastic package with the special undergarments, and had stepped back into a line.

Bud had been given the rundown on everything and so he asked that everyone come into a semi-circle so he could describe what they had and how to use it.

Grudgingly at first and then with increasing enthusiasm, the men listened and watched Bud's demonstration.

"These little plastic things'll protect us?" the one named Brian asked. "Prove it!"

"Okay, I will. Take your stuff and go stand over there, maybe thirty feet away from that outhouse." He pointed at a small building.

As the Texan was walking over to the spot, Bud called to him. "Go hide behind the shed first and get out of your clothes and into that gear." Then, as he turned back to the cargo jet he muttered, "I'll give you a demo!"

A few minutes later the firefighter stood in an area that was between the left wing of the jet and the shed. He was clad foot to neck in the armor with the helmet hanging behind his shoulders.

Bud was standing next to a three-foot-tall box that had a coil of hose on top. He walked over and checked to be certain the man was properly encased and then popped the helmet up and over until in clicked into place.

"You just stand there," he directed. When he got back to the box he picked up something looking a little like a nozzle from a fire hose. Pulling a lighter off the top of the box he touched it to the top of the nozzle. A small flame appeared. Bud smiled and nodded at the standing figure as he aimed the nozzle and pulled the trigger sending scalding hot and flaming napalm out to cover the startled man.

Bud played the fire over the armor-clad man for a full minute before releasing the trigger and setting the nozzle back on the box. He leaned down and blew out the little flame and shut off a small valve.

"You still with us?" he called out over his shoulder before turning to face the man.

The helmet of the armor nodded.

"Then come over here and show everybody you're still okay."

The man walked, with a natural gait, toward Bud and the stunned other men of the team. When he stopped Bud reached up and pressed the helmet release. It quickly flopped back between the man's shoulder blades.

"How do you feel?" Bud inquired.

At a loss for words for a moment, Brian soon replied, "I'm okay," in a surprised tone.

"Yeah, Thought so. And, you are all welcomed. Those suits of Swift FireArmor are courtesy of Tom Swift and Swift Enterprises." He then wheeled the flamethrower box back to the jet and soon had it stowed inside.

"Come on, Chow. We'll leave them to play with their new toys."

The next day as Bud was relating the story to Tom he shook his head. "They refused to let us leave until we had a real Texas barbecue," he said. "Chow told me on the way back that you have to beat sense into that sort of man on a frequent basis, but once you show them you've got their backs, you're a buddy for life!"

Tom grinned but secretly hoped that these new armor suits would not fail in the face of a real and prolonged fire fight.

CHAPTER 11 / TEXAS TRYOUT

IT WOULD only be a matter of five days before word came via one of the 24-hour TV news networks that a large fire was burning at a relatively small refinery outside of a town roughly sixty miles to the northwest of Corpus Christi, Texas.

Located just seventy miles away from the Mexican border, it was being reported that several low-flying and unmarked black military helicopters had been seen just after daybreak heading away from the area. Flames erupted moments later and by the time the sun rose over the horizon half the facility was an inferno.

The report had made Tom shudder. More proof that the daughter of the Black Cobra was behind this.

"Have you— Oh. Yes you have," his father's voice asked as he came into the large office to find Tom watching the television screen next to the conference area. "What is the latest. I caught a little bit of the news on the radio coming in."

Filling his father in with as much as he knew, Tom stated, "I hope they call in that Texas hellcat bunch we outfitted."

"Want to see if your suits work?" Damon asked with a small twinkle in his eye.

Sheepishly, Tom nodded, but added, "Well, that but I also have been told by Chow that they are about the best of the best down there at these sort of fires."

His father thought a moment before asking, "Do they do *these* types of fires? Or, do they concentrate on oil *wells*?"

Neither of them could answer that so Tom paged Chow's little kitchen down the hall. There was no answer but a few seconds later the office door opened and the chef rolled his food cart in.

"Ah. I see ya got that fire on the TV," he said as he began to set a few covered dishes in front of the two men. "Purty nasty bit o' biz-ee-ness if ya ask me," he told them.

Tom asked if Chow knew whether the team he and Bud had visited would be called in.

The westerner shook his head. "Prob'ly not. Not big enough. That little refinery only holds about enough oil at any one time ta power a tenth o' the cars in that corner o' Texas. Generally they contain these things, try ta cool down anything that ain't on fire, and let 'em burn out." He sounded sad and resigned to the fact.

“Is there any way for us to request that your friend’s team goes there today to help? Even if it turns out to be a futile exercise?” Damon asked. He briefly explained about hoping that Tom’s armor might be tested.

Chow nodded and brightened up. “I’ll get ya the number ta call,” he said as he rushed out the door leaving behind his partially loaded cart. In a minute he was back with an old-fashioned three-by-five card that he handed to the senior Swift.

While Damon got up and made a call, Chow finished setting up their breakfast.

“You’re moving really well I see,” Tom commented. Chow had practically left the office on the run and returned just as fast. He wasn’t the least bit out of breath either.

Proudly, Chow straightened up and stuck out his chest—a chest that two years earlier would have been eclipsed by his stomach but now cast a shadow on his slimmed down midsection in bright sunlight.

“Yep. You know Wanda, my lady friend. Well she’s got me out walkin’ each and every night. We’re up ta three miles, plus we walk past the high school and she makes me do a lap or two ‘round their runnin’ track. Not walkin’ either. On the trot! I can do ‘bout two laps ‘fore I get pantin’ these days. Thanks ta you and ta the Enterprises’ insurance plan for gettin’ me these new knees!”

The breakfast laid out, Chow turned to go but Mr. Swift stopped him. He didn’t look very happy.

“I just spoke with your friend who explained that his son and their team are on vacation and don’t want to be bothered with this fire. I find it incredulous that a group of professional fire fighters believe they can just pick and choose what they do.”

Chow nodded, his head hanging low as he responded with, “They got a reputation of be ornery hombres, an’ this is just them being a bunch of Texas jerks. They’re a rough bunch who think they’re God’s gift to the oil industry and to ladies. ‘Sides, they ain’t associated with any fire company. They’re freelancers. I’ll go see what I can do.”

He clomped out of the office, again leaving his cart behind. Tom moved it to the side and he and his father sat down to eat.

By the time they had finished the blueberry waffles covered with a maple syrup and yogurt mixture and were sipping their coffees, the cook was back.

“All taken care of.”

"How?" Damon asked.

"Wahl…" the westerner replied slowly not quite meeting his boss' eyes. "If ya was ta ask me direct I'd be obliged ta tell ya, but all things considered I'd rather not, if ya know what I mean." He looked up hopefully but found no agreement in Damon Swift's eyes.

"Chow, you know we can't be part of anything not on the up and up. So, you need to tell us what you did or said."

"Okay. Now, if I did a bad thing, then I hope you'll let me try ta make it right. So… okay. The way it went was I told the hombre's pappy about the fireproof armor Tom here made and Buddy Boy and me delivered. I told him it was not a gift until them danged hellcatters gave it a good test, an' if'n they was balking at fightin' this little fire, then not only was they a bunch of sissies, but they are gonna have ta pay about five thousand bucks apiece fer the suits. No returns. Period."

Damon caught his son's eye as they both fought to maintain stern faces and not break down laughing.

Tom choked out, "Go on."

"Ain't much more ta tell. He called me back five minutes later ta tell me his son sputtered and shouted and then agreed to have his crew on site in two hours." His head went back to its hanging position and his shoulders slumped.

"Chow, look at me, please," directed the elder Swift. "Good. Now I will tell you that if they contact me to complain I will back you up, but I may have to drop your cost *estimate* down to around a thousand dollars each. That's about what they cost, isn't it, Son?" he turned his head and asked Tom.

"Yes. Give or take. But Chow, you have to promise to not make any more pricing decisions for us. Okay?"

The cook's head bobbed up and down and he had a huge smile on his face. "Only reason I went that way is sometimes when ya face a ornery pig-headed bunch ya just gotta give 'em a good kick with yer crudiest boots! That was one o' my daddy's sayin's by the way."

He picked up all of the dishes and left the office, whistling under his breath, a sure sign that he believed he had handled the matter well.

"I have to hand it to Chow," Damon told Tom. "He may have all of the finesse of punch drunk boxer, but I'm not sure I could have achieved the same results. Anyway," he said standing up, "I suggest that you and Bud and maybe a couple of our more imposing employees head down there very soon to see what is going on and to

hopefully interview a few of these men to see what they think of the armor."

Tom frowned. "As much as I want to do that, I may have to turn it over to Bud and probably Hank Sterling to handle. I have a big meeting at eleven with all of the department managers, plus Jake Aturian from the Construction Company, to finally go over our seacopters and come up with a concrete plan of action. At least five people are on their way from Fearing."

Mr. Swift said that he fully understood and believed Bud, Hank, Tony Stack—one of the large mechanics who worked in the fire department of Enterprises—and Ed Powell, the giant security guard who had proven so effective during the encounter with the local newspaperman should make up the team.

"They'll have to take a cargo jet or the *Sky Queen*," Tom stated. "I don't think they could get off the ground with Sam from the fire crew and Ed in the same aircraft."

Damon laughed. "Then, I'll let you handle arranging that before you get ready for your meeting.

As Bud and his team were winging their way toward Texas an hour later, Tom was reviewing the designs for the four major and seven minor variations of the seacopter. By the time he arrived in the large conference room on the main floor of the Administration building, he knew what he wanted to propose.

"Thanks to you all for getting here. I realize you might be wondering why not just do this from our various teleconferencing rooms, but I feel that this requires face-to-face discussion and face-to-face agreement."

He started to outline his hope to focus on just two main models but to create a variety of interchangeable front, back and even side modules.

"With the exception right now of our one and only double rotor heavy carrier I want to build the smaller, updated version of my original seacopter for commercial sales—with a few of them for our uses—and then the larger model based on the cargo version. The mid-sized one is nice, and we'll hold onto the two we have, but in looking back at what's been utilized over the past three years I see those mostly sit and wait."

There was a murmur of agreement, and the meeting went on. By the time everyone stood up and shook hands it had been unanimously decided that Tom's plan was sound, and it would bring in a new revenue stream. The other plus was that Enterprises already had a log of more that a hundred enquiries for purchasing

small seacopters, about three-quarters of which would probably turn into early sales.

As everyone else left, Skip Carson from Fearing Island asked Tom, “Do you want me to complete the new, super model I’ve got about two-thirds finished? It’d be a shame to tear it down, and all of the finishing components have been made or purchased.”

Tom had to think about it for a moment before replying, “Finish what you are doing today and tomorrow and then stand down for a little. I’ll need to think hard on a good use for the big model now that we are concentrating on the others.”

He was about to leave when his TeleVoc *pinged*. Tapping the collar pin he answered, “Tom here.”

There was a pause and a double click telling him that it was an outside call being transferred through the combination security and communications system.

“Skipper, it’s Bud,” came the flyers voice inside Tom’s head as clearly as if he were standing three feet away. “We got here about the same time as the fire fighters, but they’re pretty disorganized. It looks like their leader, this son of Chow’s friend, decided to give it a pass. He’s evidently what holds them together so they’re at a loss for what to do. Any suggestions?”

Tom swore, something he rarely did. “Okay, for starters get Ed Powell in front of them. Tell him to think of them as a rag-tag bunch of kids from various colleges and he needs to snap them to attention and get them working as a team.”

Tom knew that the giant had been his team’s defensive captain and had to mold rookies into team players all the time. He hoped those leadership qualities were still sharp.

“Right. I’ll do that. Uhh, the other thing is that only about half these guys brought their FireArmor. What about that?”

This news irritated Tom. He swore again.

“Jetz! skipper. I can tell you’re really steamed about this. I’ll go ahead and get things going. Sorry for the call. Let you know in a couple hours how we’re doing.”

The connection was broken and Tom now felt a little ashamed of his anger.

Bud turned to Hank and Ed. “Here’s the plan. Ed, you go into Pro mode and whip these recruits into shape. Just remember that they are actually trained in their jobs but need a strong leader. Hank, you and Tony are going to take the half of these jerks who forgot to bring their armor and work them around to the windward side. That’s

going to be the coolest, isn't it, Tony?"

When the man nodded, Bud continued, "Good. So you get them in there and make certain they get hot and sweaty. I want them to stay safe but I also want them to realize they messed up big time not bringing their stuff."

Ed did an amazing job. The men, used to being ordered and even bullied a little, snapped to attention like seasoned military men and followed his orders. Twelve minutes later the first half were getting into their armor and starting to reel out hoses and set up their foam-producing equipment. The other half moved about five hundred feet around to the right of the burning facility and set their equipment up.

After two hours it was obvious that the armored team was making better headway. They already had one of the "cracking" towers that had caught fire put back out and another that had been in danger was cooled and protected. They continued a slow walk into the midst of all the giant equipment and pipes, making perhaps a five foot per minute advance.

The other team was making slightly less progress and had to use considerably more water and foam to fight for each foot. Without their new armor, and clad only in their heavy canvas suits, they were close to exhaustion.

Tony called a halt to their advance and got them sitting down while continuing to arc water and foam onto and around nearby equipment.

"Skipper? It's Bud again," came the new TeleVoc communication. He gave Tom a rundown of what was happening. "Another wave of specialty fire fighters got here ten minutes ago and will be taking over from our teams."

"How did the suits work?"

"Well, there's good news and bad news," the flyer reported. "There is still too much heat coming through the joints, even on the suits where they remembered to bring the snap-on shields. But, they like the whole bigger air bottle without it weighing them down part. One told me that if you could make them an exoskeleton that just handled that extra weight, maybe even a double bottle setup, that he would prefer their old canvas stuff."

Bud couldn't see him but knew that Tom would be nodding about now. "Tell them it is good information and see if you can get the group to debrief you before you come home tonight. Record everything and we can go over it tomorrow. Thanks, Bud!"

Two days later Tom arranged to meet with a half dozen of the hellcatters in San Antonio where about half of the team lived. He made it clear that he did not wish to have their leader present because of his refusal to help with the recent fire. Reluctantly, they agreed.

With Bud busy doing back to back to back demonstrations of the *Pigeon Commander* to six groups of potential "fleet" buyers from all over Europe, Tom hopped into the Toad and took off early in the morning. The flight was uneventful as was the meeting. He verified several points that had been made during the debriefing and offered a few possibilities.

All six men were enthusiastic about anything that might allow them to carry a longer air supply. One had a very good suggestion.

"With our old heavy jackets and pants we get pretty sweaty. Your underwear stuff is nice and so I guess I'd like to have that to keep. The one thing we have trouble with is hot bottles."

Tom frowned. "Hot bottles?" he repeated.

"Yeah. Our air tanks are mostly exposed on our backs and standing in all that heat they pick up a lot of it. It ain't so bad handling them with gloves, but by the time ya get to the bottom of a thirty-minute tank, you're breathing really hot air."

The others nodded.

Tom also nodded. "Ah. I understand. Well, there are a couple things I can do for that. To start with I can take your tanks and give them a covering in what we call TomaCoat. It has incredible heat-resisting properties plus it will keep them from getting dinged up if and when they get dropped. Plus, I think I might be able to come up with some sort of framework that won't impede your movements but would handle a larger tank."

They agreed to ship several of their spare tanks to Enterprises to be coated so they might try them out, and Tom offered to bring the necessary equipment to coat all of their tanks to San Antonio or some other central location if they decided to go ahead with the program.

"That frame-carrier thing may not be needed," one of them said. "The only reason we carry the small tank is the heat thing. If that's not a problem I have no troubles with a larger tank on my back. Besides. Inside those suits with no weight on my back, I get nervous about not having enough air."

The other agreed so Tom said he would shelve that idea for the time being.

With the meeting concluded Tom decided to walk back the half mile to the airport. It was a pleasant late morning and the only thing making it a less than straight walk was the freeway between the house they had been meeting in and the airport. Even that meant only a couple blocks of detour to the closest underpass.

He was a little disturbed as he spotted a form near to the Toad as he entered the north end of the airport where the jet was parked. Clad in black with a hood, the figure was moving back and forth, almost nervously. The closer he got the more he could see that whoever it was, was looking all around them.

It was very suspicious and he considered calling the police, but for some reason did not.

"Hey!" he yelled coming around the tail of an older Beechcraft twin engine. "Get away from there!"

The person jerked around to face him and Tom instinctively ducked back behind the tail of the nearby plane. Peeking out he saw that the person was standing there, still facing him and was reaching up to remove the hood.

It was a woman.

It was an Asian woman.

It was the Black Cobra's daughter!

"Tom Swift? I need your help," she called out. "I am unarmed and alone. I would show you how completely unarmed I am but I do not desire standing here naked, so you will need to trust me for a moment. I will come closer to you so you can see I have nothing under my clothes."

"Stay were you are," he shouted back. "I don't trust you and you've never done anything to gain any trust. Your father was an evil man and you are following in his footsteps."

In a quieter voice, she replied, "I can not dispute that. Between you and your government my father was hounded and killed. It is something I can not forgive, but I can put it aside for now. I have to."

"Why?" Tom found that he had stood back up and was exposed to anything she might have that could shoot at him.

"My life is in danger," she replied reaching up and unfastening the top of her upper garment. "I suppose that I must show you I carry no weapon." Saying that she unzipped the front of her very tight top and slipped out of it, showing only a necklace he knew had been her father's and a sports bra underneath.

“Do you need to see more?” she asked, somewhat sadly.

“Put your shirt back on but turn around so I can see your back,” he directed. As he said this he stepped out from behind the plane and began to walk toward her.

She did as directed. There was absolutely no way she might be hiding a weapon. This didn’t mean she wasn’t accompanied by people who had, but she was unarmed. Turning back to face him, now only fifty feet separating them, she said, “I am in earnest when I tell you I want… need your help. I am afraid for my life. My own people have turned against me, taken control of my money, my aircraft, and declared a bounty on my head.”

She looked down a moment and then back into his eyes.

“My people have mutinied. I decided to stop the fire attacks and they insist on continuing them. If you refuse to help me I am a dead woman!”

CHAPTER 12 / A NEW SURPRISE

TOM LOOKED at her, deeply surprised and shocked at what she had said.

"How is that possible? You hire men who are close to death and only do your bidding because you pay them enough to, presumably, let their families survive after they are gone."

She gave a small shake of her head. "After purchasing my most recent aircraft from China, that inbred moron running North Korea took command over all the banks and relieved me, as the official statement went, of the burden of being a woman with too much money. I was allowed to leave the country with my aircraft as he considered them to be old and of no use to his army. I managed to get away with several million, but that is now gone as well." She seemed to become smaller the more she spoke.

"Can we fly away from this place?" she asked. "Anywhere but here. Many of my former employees are scouring this city looking for me. If I stay, I will be killed."

Tom looked at her. She met his gaze and did not blink when he asked, "How can I ever believe a thing you tell me?"

She looked down momentarily and then back at him. "You can not. In fact, if my life were not in peril I would be looking for some way to kill you right here. But I am both a realist and a coward. I cannot face death without cowering and pleading. And I am pleading with you to spare me at this time and get me out of this city and this state."

Tom made a decision. "Get in," he told her tilting his head toward the Toad. He clicked the fob in his pocket and the canopy clicked and began to open on its hydraulic armature. "Go on," he urged when she hesitated. "I may regret this later but as long as you agree to sit in the very back I will fly you to somewhere along my flight path back to New York."

She agreed to the terms and they walked briskly to the aircraft. Tom had the twin turbines fired up and received takeoff clearance ten minutes later.

Before five minutes passed Tom found that he could not concentrate properly while worrying about what she might be up to behind him, so he set one switch to deactivate the other pilot's position and called over his shoulder for her to come forward.

"I am surprised that you trust me next to you," she said slipping

into the other seat.

"I don't think I can trust you not being up here," he responded. "I'm not certain what I should be asking you or even if I ought to talk to you at all, but I have to ask… why?"

Her high and soft laughter made him relax for a second before he realized that he could not let down his guard. "It is such a simple question with so many difficult answers. If you will tell me how far we will be flying I will try to tell you as much as possible in that time."

"About an hour," he told her planning to set down at a small airport outside of Little Rock he knew about. With no services such as rental cars or even a frequent bus service she would effectively be stranded there long enough for him to get back into the air and radio for state police assistance.

"Fine." She proceeded to tell him of the incredible anger her father had held toward both the United States and Tom and his father. A brilliant man but a megalomaniac all the same, he saw every one of his own failures as someone else's fault and had narrowed his anger to Tom in the final two years of his life.

"Growing up with that hatred had its effect on me. I may be able to reason that his anger should not drive my life, but my heritage is one of single-minded drive. Sitting here I know that you are rescuing me, but I also know that you will do everything possible to assure my capture once I am out of this aircraft."

Tom tensed expecting something bad.

"Do not worry. I will not do anything to endanger us in the air. And, as you have seen, I have no weapon to use against you. But, as I say I may be reasoning the immediate situation but in the back of my mind is an ever-lasting hatred of you." Her voice became soft and almost like that of a young girl. "You killed my father and I can not forgive that."

Tom glanced over at her. She was sitting looking straight ahead with both hands resting in her lap.

"Were you the one responsible for ordering the sabotage to my helicopter in Montreal?" He did not mention Bud or Sandy.

"Oh, Tom. Surely I can't be the *only* person who would like to see you dead?" she said almost teasingly.

They flew in silence for another five minutes.

"I did not kill your father," he stated in a level tone. "He tried to kill me and his plan backfired. He lost his life trying to end mine. But that isn't actually the *why* I meant. Why all of these fires? What

do, or did, you hope to accomplish.

"Getting you to some position were I might destroy you." It was a simple and direct statement.

He asked her about her aircraft.

"Sad to say of all the MIG aircraft I managed to obtain, I was able to rebuild eighteen. I lost some over the South Pole and more in Africa. Five crashed as a result of inexperienced pilots or men whose illness made them decide to take an early exit once the money had been paid to their families. In fact, other than one that ran out of fuel on a practice run north of your home state, I have just two left. Had. Well, those plus nine of the ten Changhe Z-11 helicopters I purchased."

He asked how she was moving them around but she refused to tell him.

"But, if your people have taken control, why not let the U.S. hunt them down and destroy them?"

She didn't answer right away. In fact it wasn't until she was stepping out of the Toad at the airport at Hot Springs, Arkansas, that she told him.

"I hope to regain control soon. I can not tell you that I will cease the attacks, but if I do get command back I will promise to give you several months to find some way to fight these conflagrations. You see, Tom Swift, it is not the destruction of property I seek, it is yours."

"One more thing. Are you also the Miss Rhee behind that property and fire up the hill from my company?"

She smiled enigmatically before telling him, "Guilty. Of that and oh so many other offenses. Why, I ought to be ashamed of myself." Tom was shocked as she winked at him.

She turned and strode away.

Tom closed the canopy, made the intended radio call and then took off for Shopton.

He met with Harlan shortly after landing and filled him in on the strange encounter.

"Well, for starters I'll have my fine toothed comb people go over the Toad to see if she planted any bug or tracking device. Even though you were given a look under the hood, so to speak, that doesn't mean she didn't have something hiding in her pant's leg."

He picked up his phone and made a call.

"The next thing is I will check with the Arkansas authorities. My guess is that she will have gone to ground and won't be located, but

you never know. I'll keep you advised."

When Tom received a visit two hours later at home it was with the anticipated news.

"She disappeared, Tom. One maintenance man says she walked off the north end of the property and toward the lake nearby. That's it. Troopers drove down a number of roads but they don't have air resources. I'm afraid she got away."

"Yeah. I figured that would happen. Maybe I should have stayed in the area to keep track of her," Tom stated.

"No. She would have found a way to keep more of an eye on you than you could have kept on her. Maybe if you were in a helicopter, but not a fixed wing. So, put that out of your mind. Besides, I have another piece of news for you."

Tom wanted to change the subject so he quickly asked what the Security man had to say.

"The fires here in Shopton? Starting with the one up the hill and the three downtown all had one thing on common. And we are fortunate to not have this released to the media. All of the timers are were based on Swift electronics!"

Tom wasn't certain what to say, but asked, "Things we use internally or commercial products?"

"Oh, commercial and all four purchased down in Albany by, get this, a dark haired woman about fifty years old who was wearing dark glasses even inside the electronics supply store. You would think that a store that sells all the top and newest technology would have a pretty good surveillance system, and in this case you would be absolutely correct except that she came in wearing a wide-brimmed hat, walked right to the only counter not covered by a ceiling camera, and left with her head tilted down."

Sound like she knew their setup," Tom said.

Ames nodded.

"I'm going to guess that there is no useable frame of her face."

Ames shook his head. "And there you would be wrong."

The inventor tilted his head and made a "go on" motion with his right hand.

"She didn't take into consideration that there is a beautiful, large and perfectly clean glass-fronted display case behind that particular counter and that the back of that case is a mirror. A two-way mirror! With an office behind that and a camera pointing out to get a wide angle view of the store." He smiled at Tom and Bashalli who had

just joined them with mugs of coffee. “Thank you, Bashalli.”

“Do we know who she is?” Tom asked. “Or did those glasses of hers prevent getting enough facial data?”

“We are working on it, and when I say ‘we’ I mean the FBI. It turns out that the camera was outfitted with a polarizing filter to reduce glare coming in from the front windows. That mostly cancelled out the polarizing effects of her glasses and they got a good look at her. I believe what they are doing as we speak is digitally removing the rims of the glasses, lightening up the eye area and then they will run about the best facial recognition software I’ve ever seen.”

Before he left he assured them that the results were most probably going to be available by morning.

“If they can tell who she is, she will go onto their ‘Immediate Apprehend’ list and have top priority along with our Miss Li.”

When he left Bashalli put her head on Tom’s shoulder and asked, “So, does this mean it is all over?”

She felt him shake his head. “No. Well, perhaps for these local fires but I need to tell you about my passenger today.” He then told her the entire story about his encounter and the flight and the now missing woman.

“Do you now think you should carry one of the e-gun devices in your Toad? If you had that you could have shot her, tied her up, and taken her to a prison. Hopefully a very dark, smelly and dangerous prison.”

Tom laughed softly. “Well, for starters if I missed and hit any of the controls I might have caused the Toad to crash, and you wouldn’t like that I’m sure.” She sat upright and nodded. “Okay, of course that leaves shooting her in the back as she got out, and I have to admit it has its positive side. Perhaps it is something for me to do for any future encounters.”

They ate dinner and spent a quiet evening before the phone rang at midnight.

Tom reached over to the bedside table and answered, “Hello. Who is calling at this time of night?”

The voice on the other end made him sit up.

“Hello, Tom Swift. I had to call to ask why you didn’t fly to a major airport where they would have had enough security to capture me immediately? Could you perhaps have been thinking that you want to continue our cat and mouse relationship? Do not say anything. Your lovely Pakistani wife will get so very worried.

Until we meet again, Tom—" and the line went dead.

"Who was that," Bashalli asked from across the bed.

"I'm hoping it is from someone who will never call again. Go to sleep. I love you."

When he reported the call to Harlan the following morning it was in an information swap that gave the Security man something more to go on and told Tom of the FBI's success in identifying the woman in Albany and most probably the one who had set the Shopton fires.

"Her name is Portia Foger," Ames told him. "That name ought to ring a couple bells."

Tom told him that it did and even related the story about his own great grandfather's troubles with her ancestor, Andy.

"I see. Nasty family. I put in an early call to your favorite editor, Dan Perkins, who practically jumped through his own hand-made hoops and over barrels to dig into the paper's archives and bring up the article about the last of the family including the son's incarceration—his name was also Andy by the way—and the parents' deaths less than half a year later. It had a picture of this Portia Foger, quite a stunning woman, and a quote from her stating that she would get even with the people of Shopton if it was the last thing she ever accomplished."

"It appears she is trying to make good on that threat," Tom said. "But why wait until now? It's been close to a decade. That's a nasty grudge considering how terrible her entire family lineage seems to have been."

Ames had no response but it hit Tom that this same sort of blind hatred was very similar to that of Miss Li.

Tom asked, "Do they think they will get her?"

"Therein lies the mystery, Tom. You see, Portia Foger supposedly died in a fire—oh, isn't that interesting? Well, she was thought to have perished in a fire in New Jersey three years ago. Anyway, I'll keep you up to date on anything they or I find out."

Tom went back to the effort to build the larger-scale test model of his CO_2 fire system. In the past weeks both he and Arv had discovered a few things that just were not going to work by simply upscaling them. A large portion of the intricate extraction system had to be rebuilt twice when they saw that there would not be enough airflow to make the machine function.

A greater amount of raw air was required and, as Tom now understood, when ramped up to the truck-sized unit it would only increase to a greater degree.

Tom briefly toyed with the idea that his full-sized unit might need to be airborne so that forward motion could, in effect, ram the air into the machine like a turbocharger in an automobile. But the design began to look heavier and heavier until it was no longer something that could fit into even one of the Swift cargo jets.

It was, he realized, not going to be a flying solution, at least not at first. His computations showed that at just .08 pounds of weight per cubic foot, a mass of pure carbon dioxide—under a third of one percent of air—would weigh about a pound for each 8 cubic feet. And, he would have to process three-quarters of a million cubic feet of air just to get a ton of CO_2.

It was doable, but he computed how long it might take to charge the system and came up with greater than one hour.

Not a viable solution.

Setting aside a flying notion Tom moved to designing a large turbofan that would be set facing down on the very top of the truck. This would mean that no ladder option could be included, and *that* meant that he either devised a way to raise the nozzle to a higher position or he needed to increase the strength of the actual pump.

There were tradeoffs for both but he settled on a solid swivel mount on the top rear of the truck and using the small amount of available space to upsize the pump.

For now it was all just a practice in design. Nothing could be set in stone until the smaller model had been tested and any deficiencies overcome.

He and Arv sat down for a couple hours one afternoon to check their combined work before setting the larger design aside and concentrating on finishing the test unit.

“How long until it is ready?” Tom asked.

Arv tapped his bottom teeth with the mechanical pencil he had been using to make a few notes. He flipped a few pages back and forth before answering. “A week. Maybe five days.

“Do it right,” Tom requested. “Take the week or even a little longer. And, let me know if you need my assistance. I’ve got a few days of programming to do so this thing can be controlled.”

They shook hands and wished each other success.

* * * * *

Anne Swift finished packing her groceries into the trunk of her car when a very solid something was poked harshly into her side. She tried to move away but a vice-like grip on her right elbow

prevented her from doing so.

"You will do quite well, Mrs. Swift, if you should remain very calm. In fact, "the slightly Asian-sounding voice told her, "it would be best to, as a song I heard many years ago tells you, to put on a *happy* face." The object, a gun was Anne's best guess, was poked into her side again.

She winced but managed to mask it with a slight smile. From the corner of her mouth she told her assailant, "You won't get away with this, whoever you are."

A small chuckle came from the man—whom she now would see was definitely Asian and possibly Korean from the shape of his face—and the elbow grip tightened.

"Now, you will get into your car and I will also get into the car, but in the back seat. You will pull out of this market and turn to the right. After that I will direct you where to go." Seeing Anne reaching into her purse he hissed, "Stop! What are you doing?"

Calmly, more than she actually felt, Anne replied, "Only the trunk of this car opens without a key. If you expect me to get in and drive, I have to get them from my purse." She hoped that he couldn't see that she was currently palming the unlock fob.

"Fine. Do it slowly and then show me what you take from your bag," he directed, still mostly in a hiss.

Anne opened the shoulder bag and reached inside with the hand still holding the key. Inside, she pressed a button on a small additional fob that was attached to the lining. It had been issued to her a few months earlier when she had "retired" from her secret position as an FBI microbiologist. The job had been so secret that not even her family had ever been told. Only Harlan Ames knew so that he could run interference with her husband if needed.

She pulled her hand out and showed the would-be kidnapper her key fob. "There."

He said nothing, choosing to poke the gun into her sore side one more time. This time Anne grunted in pain, but she opened the driver's door and climbed in.

One minute later, the gun barrel now touching the back of her neck, she pulled out of the parking lot and turned left.

CHAPTER 13 / SEVERAL TRUTHS COME OUT

AS THE CAR sped out of town, heading to the north, Anne kept a lookout for another car. She hoped it was a very special and particular car. After a few minutes she spotted a beige-gray SUV coming up from behind.

She surreptitiously tapped her brake three times, not enough to cause the car to slow but enough to make the brake lights flash.

Like all Swift family members, Anne wore a TeleVoc pin. But this one was very special. When she was on the grounds of Enterprises or at home, it functioned just as all other pins did. But outside of the facility it could be used to contact two people: Harlan Ames, head of Enterprises Security, and FBI agent Quimby Narz.

It was Agent Narz's voice that now came through.

"Anne? We are behind you. Are you okay?"

She subvocalized back, "For now, but I have an Asian man crouching behind my driver's seat with a gun at my neck. I am not happy and I have ice cream that is going to melt. Get up here and help me, Narz!"

"We will pull along side just after this next bend in the road. Maintain a steady speed and it'll be over in a minute."

She left the line open in case he wished to add anything.

The curve was only a few degrees so she didn't need to slow down but did anyway.

"Why are we slowing?" the man demanded.

"I'm not going to slide around a curve, you little twerp!" she responded.

The front end of the SUV was even with the back door of Anne's car. It inched forward a few more feet before something exploded out of its right side and into Anne's car.

The high-power lance that Narz had launched pierced the rear door and stabbed into the Asian. High voltage like a TASER jolted through the man rendering him unconscious. The cable detached and Anne and Agent Narz pulled their cars to the side of the road.

Furious, Anne jumped from her car, yanked open the back door and pulled the man out by his hair. She gave him a very solid kick in the side before turning around to face the agent.

"What are you going to do about my car?" she demanded, the adrenaline coursing through her system making her sound more

angry than she actually was.

Narz pulled out his cell phone and pressed a series of numbers. It beeped three times and he spoke quietly into it before he put it back in his suit jacket pocket.

While he handcuffed and leg shackled the prisoner, and got the limp body into the very back of his SUV, Anne sat in her car, legs out and feet on the road. Periodically she would look at the quarter-inch spear that still stuck out of the back door.

Five minutes later an identical SUV pulled up behind them and two men in immaculate overalls got out. The first one went up to Agent Narz while the second one inspected Anne's car.

"I'll sell it to you… cheap," she offered through clenched teeth. "Spear included at no extra cost."

He chuckled but went back to his own vehicle. One minute later he returned with a portable impact wrench on one hand and a car door in his other. His partner took the door while he undid the bolts holding the ruined door. He then took the new one and installed it while the first man took the old door back to their SUV.

By the time he returned with a small yet powerful upholstery shampoo machine—to clean the small amount of blood the Asian man had leaked after being pierced by the lance—the new door was completely mounted and the man was putting a small amount of white grease on the hinges and smudging the lower part of the door with dirt and a little additional grease.

If Anne were to leave her car in the driveway one evening and came out the next morning she would not have been able to spot that anything had changed.

She turned to Agent Narz to apologize, but he beat her to it.

"Nothing to say, Anne. You may have retired but we will keep an eye on you for as long as it takes to ensure that you are kept safe. Have a nice evening. Oh, and thanks for not panicking. You handled this very, very well."

Ninety second later she was alone on the stretch of highway. With a sigh she climbed back into her car and headed for home, now just delayed by about twenty minutes.

On the way through town her TeleVoc beeped in her head. She acknowledged the incoming call and Harlan Ames voice came through.

"Anne. I just got off the horn with Quimby. He told me all about it. I had asked Damon to keep low key on a little matter of a group of Asian spies stroke terrorists that have been pestering you Swifts for a few years. Does the name Black Cobra mean anything to you?"

“Of course. But he’s dead.”

“So we strongly believe. But this is his daughter causing problems. All I can say is never go anywhere without that little emergency beacon Narz gave you. This may be a one-time thing, but I don’t want you taking chances.”

“Understood, and thank you, Harlan. I suppose I ought to tell Damon all about my old double life. Or, at least some day.”

She ended the call and pulled into her driveway.

The ice cream survived, although a little soft, but was in fine shape two hours later when she served it to her husband just prior to sitting in his lap and telling him her story.

She wasn’t the least surprised when he confessed that he had known all about it for at least the past three years.

* * * * *

Tom and Bud spent as much time as they could with their wives with the flyer outpacing the inventor by several hours a day. Both attempted to make things up with walks, picnics—when the weather cooperated—and dinners out but knew that they were slipping back into old habits of being too absent too often.

“At least it isn’t like we’re up in space or on Mars,” Bud said more trying to convince himself than Tom. “Of course I can walk over to see Sandy at her office here at Enterprises but Bash works downtown.”

All Tom could do was to agree. With the mid-size fire fighting device coming together and now moved out of Arv’s workshop and into a space inside of the Barn—that had recently been surrounded by a heavy canvas curtain to keep out the approaching cold and blustery weather—his attention and involvement in the assembly and component testing was taking up most of every day.

Fortunately the programming seemed all but complete and he had even finished in time to get Arv to include a new type of swiveling and aiming bracket. Now, once the machine was activated, they could sweep the stream back and forth as well as up and down to cause the stream to arc father out or closer without having to constantly adjust the pump pressure.

It was going to be a few more days before anything could be tested but Tom and Arv spend quite a bit of time going over everything. On at least two occasions they were joined by Hank Sterling, in his guise as Enterprises’ pattern maker, who would need to be brought in for the next phase, that of making a full-size machine.

"Well, I'm going to hold off until you two stop tweaking things. Arv let me see his changes log and between you, do you know you've made fifty-three changes from the first test rig?"

It surprised Tom a little, but he knew they were all solid changes.

"Each and every one a gem," Arv assured the large engineer. "Besides, if you noticed at least five of those were to simplify making certain parts."

Hank nodded. "Yeah. I see that but mostly in the easy stuff like outer casings and such. Anyway, I just wanted to come see if you had an idea when it would be most beneficial for me to get started."

They discussed a few things before Tom told him, "We have the absolute dimensions of the fire truck. By law we can't extend more than about one inch on either side or else we can't drive the thing on city streets. You might take a look at the outer case dimensions and then plan out how to construct them."

Hank smiled at his young boss. "How much do you think I can build with the big vacu-form unit over at the Constructions Company? I already plan do to the big tank in the back using layered composites but do you believe anything is going to need structural metal?"

Tom looked at Arv who looked back and then they both looked at Hanks and shook their heads.

"No, Hank. I'm certain that we can handle the strength issues using lightweight composites and we absolutely need to keep weight down as much as possible. As it is I'm thinking of asking you to work with the team refurbishing the truck to see if you can beef up the chassis a little. And, it isn't so much the weight as the torque the compressor fan is going to be putting out. If we run that while driving over anything relatively rough I don't want it all to bend the frame." Tom's eyes opened wide as he recalled something. "That reminds me I need to work on the special mounts for that compressor."

Hank laughed. "You'll hit a solid sixty changes before lunch tomorrow, skipper!"

Tom also laughed but the truth was that if he could not manage to build a support and damping system adequate enough to keep the spinning compressor fan from being knocked out of balance—something that could tear the entire truck apart if it broke loose—then there would be no way to charge the system while driving, and that meant either doing so before responding to a fire and carrying around all that extra weight in the pressure tank, or having to stop and charge at the scene, delaying the time of getting anything on the fire by several minutes.

Hank had an idea. “You know all about the camera steadying devices that have been in use for decades, right?” Tom and Arv nodded. “Well, a buddy of mine out in Nevada has come up with a system that doesn’t use counter-balancing weights like all the others. His suspends the camera in a case and is attached at something like twenty points by fine wires. Each of those is attached to a very fast servo and the entire thing is hooked to a computer that takes inputs from a dozen or more tilt and vibration sensors.”

“I think I can see where this is going, but how quickly can it react?” Arv asked.

“You know those shakers in paint departments at hardware stores? Well he tests his stuff by strapping onto the top of one of those. I’ve seen some sample video. Steady as a rock.”

“If it can be upsized to handle a five-hundred pound compressor unit like the one our big truck will use, then see if we can license it,” Tom requested.

He spent the next two hours in his underground office triple checking all of the changes Hank had brought up. As he really already knew, each one was making the machine better and better.

He next turned to a smaller list he had been composing. It held a series of things he felt the full-size system must accomplish including time to recharge the system, pressure that could be maintained both in the tank as well as when shooting the liquid out of the truck, distance he hoped to achieve, and several other items.

Five times in one hour he received calls either from the switchboard or from Trent at the large office. While most were important and he answered each question politely, he was beginning to feel as if he needed to shut the phones off and even remove his TeleVoc pin.

Of course, that would not be a good thing as it would immediately set off alarms all over Enterprises. The security system would not just see his body as a possible intruder, but being one of the five top people at Enterprises, if he lost connection with his TeleVoc, it would be considered a dire emergency to locate him.

He grabbed a few things and left the underground hangar.

To get away from all interruptions, Tom headed back up to the old control room on top of the Administration building. He spent almost the first half hour just standing at the windows looking at the grounds of Enterprises. It was, the told himself, not a dream. Close to its tenth anniversary it was still mostly empty grounds and runways, but there was symmetry to it. And, it was beautiful.

He moved to the other side and glanced up the hill. All that could be seen, even from this vantage point, were the tops of two heavy-lifting cranes. What had begun as a front for spying on Enterprises would soon be a model community and a very tall control tower that would enhance not just the flight control and safety of Enterprises aircraft, it would partially be manned by a team of FAA controllers and was due to expand their capabilities for all regional air traffic.

Tom finally took a seat and pulled over his tablet computer and the notebook of his namesake.

This wasn't the original; that had been replaced in the museum immediately after it had been scanned. This was a paperback replica that the local print shop in town had been able to turn out from a simple computer file Tom emailed them.

He flipped the book open to a marked page near the back and read, for about the tenth time, what Tom Swift had written:

If I have to note any deficiency in my aerial fire truck it would be in my selection and use of gases. While it is known that carbon dioxide is readily made from air, and that it has highly rated capacity for depriving a fire of its source of oxygen, I fear that it will end up not being the final solution. What may be that entity I do not know at present.

Ned Newton tells me I must find a suitable name for my new ship of the air. With Red Cloud being taken by my first ship, he suggests that White Cloud, so named for the appearance of the carbon dioxide as it descends. He may be on to something.

In balance I must also write in this diary that the three times I have had need to put my system to use, the results have been impressive enough for me to be temporarily satisfied.

As father told me this very evening, it is not in the nature of an inventor or a scientist to sit back and be satisfied. Our world has not been built on satisfaction.

Tomorrow or the following day I will ride my motor cycle down to the capital of this great state and go to research options in the large library down there.

And that was it. The next notation in the book was the description of the fire—or conflagration as that Tom had listed it—on the Swift property that had burned down the largest of their buildings which was the one containing the aerial fire fighting craft. Tom's entry on that began with:

> Alas. My White Cloud is never to be christened. She is no more having been consumed in the conflagration of last evening.

Tom closed the book and began calling up his notes on his own CO2 device. For a moment he considered what if carbon dioxide wasn't the ultimate answer?

What was?

He brought up his note taking application and wrote a few things down, but they were mostly questions with very few answers or even guesses. Setting the computer to one side he leaned back. It might be under fifty outside but the windows made this room into a hothouse. It was pleasantly warm and he closed his eyes.

A minute later, Tom was sound asleep.

He awoke to the sound of a TeleVoc call in his head.

"Bashalli Swift," it announced in her voice.

Looking around to see that it had gone dark, he tapped his pin.

"Hey, Bash. I guess you're calling to tell me that it is—" he looked at his watch and saw the time, "—about an hour after I ought to be home. Sorry. I fell asleep."

"As long as you are fine and remember that we are due at your parents house in five minutes!"

Tom blanched. She was right. Anne Swift had asked that he and Sandy and their spouses come to dinner, having told them, "I have a little something to tell you all."

"Meet you there?" Tom asked as he scooped up his things and headed for the exit door.

"Or do you want me to pick you up?"

She laughed. "I am already here," she told him. "Please just come here and do not take a detour or that horrible old dirt road where you get hit by nasty people. In fact, as you drive here please be thinking of some way to pave that road, put up very bright streetlights and chase the bad people away! I love you," and she disconnected the call.

Running down the ride/walk that stretched the length of the hall, Tom briefly considered what his wife had requested. It might be something to consider especially since that old dirt road could become a handy shortcut for the new neighborhood up the hill to get into Shopton.

When he pulled up in front of his parents home it was in time to see Bud and Sandy opening the front door and going inside.

He got out and jogged across the lawn entering just behind them.

Greetings were made and the last three to come commented on the delicious smells coming from Anne's kitchen.

"It's a special night and so I have created a special meal," she told them. "And, you'll just have to wait for the reveal in half an hour so no sneaking in and peeking!" She looked pointedly at Bud when she said this.

Everyone laughed. While Damon handed out glasses of what appeared to be punch, but Tom noted that it also contained a little something to give it a kick, they all settled into the chairs and large sofa in the living room.

Anne looked around at her two children and the people they had chosen to spend the rest of their lives with. She smiled a little to herself and a little to them. A few minutes of polite conversation and a bit of, "Did you see that dress she was wearing on that TV show," exchanges went by before Anne stood up and asked for everyone's attention.

"Now I know that each of you may react a little differently to this, but I have a very important story to tell you all." She looked at her husband for support and he smiled and nodded. "Okay. Well, I believe that Bud and Bashalli know that I trained as a microbiologist and also have a doctorate in molecular biology."

There were nods all around.

"Fine." She took a large sip, more like a gulp, from her glass and then sat down. "Well, in spite of my seeming to have never put that education to any real use, something a little different is the truth."

She spent nearly the entire half hour laying out an incredible story about having been approached soon after Tom had been born and while she was pregnant with Sandy. A government agency she later found out to be the FBI wanted her to come work for them. She had refused and thought nothing more about it until her daughter turned four and the agent had come back to see her.

It was an incredible story filled with details of some of the more bizarre cases she eventually had agreed to take on.

Eyebrows were raised but nobody said a thing even when she

told them about clones, killer insects and possible aliens from outer space.

Most of the time Bashalli spent clutching to Tom's arm while Bud and Sandy sat holding hands. Damon Swift evidently already knew the story because he sat back just looking at the reactions everyone was having.

Though Tom appeared to be ready to say something when it was revealed that Harlan Ames was in on the secret live of his mother, he remained silent.

Only Sandy didn't react by being startled. It had been several years now, but she had secretly known about this and had just never said a thing. Not even to her mother.

At the end, Anne walked around and gave each of her children and children-in-law a warm kiss on their foreheads before going into the kitchen to bring out dinner.

It was a very active conversation at the table that evening!

CHAPTER 14 / THE TOWER RISES

"WANT TO COME for a drive?" Tom asked.

"Going for sodas with the girls or something equally as much fun?" Bud asked in return.

"How about a drive up the hill to watch them raise the central core of the new control tower up there?"

"Are we going to play 'Questions Only' the rest of the day?"

"Do you want to?"

Bud let out a little giggle. "Naw! And, sure. Love to. So how much is going up today?"

The new tower was to be tall and very large. Compared to the one in the very middle of Enterprises it would end up at fifty percent taller and three times as much space inside.

"With the base pad now ready to hold everything, they're raising the bottom two-story piece and then putting the next one on top of that. The next two rings will go on in the next few days and then the two-story disc gets lifted in ten days or so."

They walked out of the Administration building and hopped into Tom's car. This was the sleek hardtop sedan he generally drove during late autumn through the rains of spring, and it was supposed to rain late in the day.

Davey, the main gate guard waived them through and they crossed the nearly empty old highway and headed up the hill. As it wound back and forth Tom realized that it had taken enormously powerful trucks to get all of the supplies to the top of it. Fortunately, the original owners—even if they had meant the new neighborhood as a place to hide their spying activities—had build the road wide and as shallow as possible. It meant that the road ended up being more than three-quarters of a mile just to get to the top of the five hundred foot hill, but it also meant that anything with a long load could make all the curves with ease.

On orders from the FBI a guardhouse with a heavy metal gate had been added to the entrance of the walled neighborhood. Both young men showed their Enterprises ID cards—used only as photo ID since Tom's invention of the TeleVoc pin—plus their drivers' licenses.

"Nature of your visit today, sir?" one of the guards inquired.

"We're here for the raising of the first tower components," Tom

replied.

"I see. And may I ask why you have an interest, sir," the guard said, now sounding a little suspicious.

"If you actually read my ID you would have seen that I am Tom Swift. As in that huge facility just down the hill. As in now owning this property and installing the new air control tower. I believe that is reason enough, don't you?" he asked politely.

The guard stepped back and looked carefully at the inventor. He seemed to come to a decision, but Tom realized that he was receiving some communication through the earpiece in his right ear.

"Sorry for the confusion, sir. Go right in," the guard said giving a sweeping motion with his arm. The heavy gate swung up and they drove through."

"What was that all about?" Bud asked.

Tom grinned. "That, Budworth Barclay, was a private security guard getting a message from a superior to stop being an idiot and let us through." His grin disappeared as he stated, more seriously, "I suppose it is a good thing they are careful. A lot is riding on keeping this new facility safe."

As they drove toward the frontmost part of the property, the area that had been burned out, and site of the new tower, Bud pointed to one side and asked, "And what the heck is that?"

Tom pulled over and they got out. It was only a block or so to walk from this point.

"That is one of the new security devices Harlan and his people have installed."

"It looks like something out of a dog racing track."

In truth, it was similar to the sort of track on which the lure was driven at such a facility. One had passed them seconds earlier.

"That is one of the five camera and heat detectors that now circle around the wall. We had to tear out about twenty feet of wall on each side at the corners and then rebuild them as curves so the tracks could be mounted. They are constantly on the move."

Another of the devices came into view from the direction opposite the one to which the previous camera had gone. Bud raised an eyebrow at his friend as it silently passed.

"Okay. Yes, they are about as silent as you can get. Reason one, we are going to be using the rest of the neighborhood for homes and need to keep noise to a minimum, and we also don't want to alert would be trespassers that one of the cameras is coming or has

stopped to watch at them."

He explained that the five units raced around on parallel tracks that offered multiple cross-over and parking points. Each one could make the entire circuit of the property in three minutes and no individual area was without direct or telephoto observation for greater than five seconds at any time.

"Why not add another one or two?" Bud asked as they crossed the road to the fenced off area of the forthcoming tower.

"Too much crossing over and avoiding, I'm afraid. Everything would need to slow down and would end up causing longer gaps in coverage. But don't despair. There are actually ten of those up here. If one senses a person, it stops at the closest parking point and another comes on line and takes its place."

As they stood watching, a giant crane begin to lift the first ten-sided section into an upright position, Bud asked why it had been build on its side. "Wouldn't it have been easier to just pour the outer walls in some sort of mold?"

Tom laughed over the sound of the crane's engine. "Yes, Bud, and that's just what they did. See the two forms over there? Those have sections three and four. I believe dad's new concrete machine filled them day before yesterday." He pointed at the nearby machine. "Tomorrow they will be opened and then laid on their sides to allow the workers better access to adding all of the power conduits, water circulation, plumbing, stairs and even the two elevator tracks. Once that is complete they get tipped back upright and set in place."

They watched as the crane's attendants now repositioned the eight heavy cables onto new points for the lift. In ten minutes the foreman was standing near the tall unit giving his operator a series of hand signals. With a grumbling roar of the big diesel engine the piece began to lift from the ground.

It was only necessary to raise it about three feet before very slowly swinging it around to the waiting concrete pad on which it would be permanently affixed.

"You can't see the series of vertical and diagonal reinforced shafts that penetrate the ground by more than a hundred feet to keep the thing stable even in hurricane-force winds," Tom commented. He also pointed out what looked like a one-foot-tall ring of metal posts.

"Those are the two-hundred and six three-inch bolts that will hold everything in place. Each of those goes into the concrete pad twelve feet." Bud whistled in appreciation.

A short twenty minutes after it began the new tower segment was in place and one team of men began placing ladders against it while others entered the interior through what would eventually be the two security doorways.

The foreman made a final "cut" signal and came over to Tom and Bud.

"Hey, Tom, Bud. Came to watch and see if we know what we're doing?" the man asked. He was not an Enterprises employee but was the owner of the largest construction company in Albany, New York, and had been involved in the building of Enterprises all those years earlier. He had stayed on friendly terms with the Swifts ever since and that had led to several other jobs including this one.

"No, Mr. Elliot. Just wanted to get out into the fresh air and show Bud the new security system."

Elliot turned his head to look over at the nearest part of the wall. "The wacky racers, huh? The men make little bets on when one of them will come by. Nobody's ever hit it right. Must be one heck of a good randomizer program you got. So," he nodded his head toward the vertical piece, "what do you think?"

Bud spoke up. "It's huge! Why so big if the shaft just holds elevators and emergency stairs?"

'Wild' Bill Elliot laughed. "Bud, the saucer that'll sit up on top of this weighs in at eighty-two tons fully loaded. It'll be like having one of those old 737 aircraft sitting up there. The walls on the base units are three feet thick and are designed to hold five times that weight, for a safety measure. So, even though the shaft looks to be about twenty-five feet wide, inside we just have sixteen feet to work with. The rest is taken up by infrastructure."

"Pipes, wires and et cetera?" Bud asked.

He received a nod.

"So, Mr. Elliot, when does piece two go on?" Tom asked.

The construction man took off his hard hat and scratched his head. "It'll take three hours to get all the bolts cinched down, the locking nuts and safety cross-wise locks in place. Half hour after that and once I give the men a break, the next one goes on. Oh, and I have to tell you we ended up pouring sections three and four a half day late so they'll actually go up a day later than scheduled. Don't worry. We're ahead by a full three days as it is."

Just as the last words were leaving his lips there was a roar and the flash of a low-flying jet racing overhead. Immediately the sonic boom hit them and knocked several unprepared workers to the

ground. This was followed by the swirl of the vortex that formed behind the Mach-1-plus aircraft.

As quickly as it must have appeared from the north, it dipped over a southern hill and disappeared from view.

Tom's heart was in his throat. That aircraft had been a jet black MIG-17 just like ones he had already encountered. Flashing through his mind was the possibility of another pass. And, given that the woman who apparently owned and directed them paid her deathly-ill pilots enough to make suicide missions a probability, would the jet come back and crash into the tower? Or, were they even under her control? What if what she had said was true? Were these now flown by rogue pilots?

"Tom, it's your father" the TeleVoc all came. "Our tower spotted that and has lost track, bit it looks like whatever it was turned to the west and then headed back north. I'm calling the Air Force."

He evidently didn't want to wait for Tom's reply because the call was cut off.

Tom cancelled all work for the remainder of the day as a precaution. Bill Elliot explained that there was about a half hour of mandatory work to complete the bottom seal before everyone could leave.

"The ten of us doing that will be inside this steel reinforced cylinder. Don't worry. We'll be fine. You skedaddle back down and make certain the National Guard or whoever handles these things gets into the air."

Reluctantly, Tom agreed but told the man, "You all get out of here as soon as possible."

Chuckling ruefully, Elliot replied, "We're builders, not fools!"

Within the hour after he returned to the shared office Tom and Damon received word from the Air Force that they had some trace of the MIG. It had been spotted briefly as it came down from an area of Canada almost directly between the cities of Montreal and Quebec.

Permission was now granted by the Canadian government for a pair of U.S. fighters to fly into Canadian airspace to investigate a small airport near the town of Sherbrooke. A report had come in that a strange "foreign" jet had flown in that morning from an unknown direction, refueled paying cash in Canadian money, and had left again at about the time it would have been necessary to make the high-speed pass over the Shopton area. It was the second such visit to that field in several weeks.

They would have been able to fly as sub-sonic speed to avoid detection until nearly the last minute. There was no follow-up report of the jet returning to the small airport.

The next afternoon Damon took a call from the same man he spoke with the previous day. After he hung up he reported the finding to Tom.

"This would appear to put the statement of Miss Black Widow into the lie category. The remains of a MIG aircraft were found northeast of Quebec where it had crashed close to the St. Lawrence River. No sign of a pilot, though. At least not with the jet. A parachute was spotted in a tree half a mile back along the probable flight path but nobody was in the harness."

He typed a few things on his keyboard and a map of the area came up on the big monitor on the other side of the office. They went over to look and Damon showed Tom where chute and jet ended up.

"It is really strange," Tom said, rubbing his jaw. "If Miss Li lied to me and is actually directing these then why didn't the pilot crash and die? That seems to be the norm, unfortunately."

Neither could come up with an answer to that.

"On second consideration, perhaps she was telling the truth," Mr. Swift said. "Perhaps she has been usurped and this near attack was directed by someone or someones who don't wish to die. They still have no problems with crashing their own aircraft and I'm darned if I can figure out how they have managed to get their hands on so many of those MIGs. As you mentioned, most of them have been destroyed."

Tom shook his head. "I think I know. Decades ago when the Soviet Union dissolved there were wholesale reports of abandoned bases hidden in forests that used stretches of old roads for runways and how MIGs and other aircraft by the hundreds were just left to rot."

Damon nodded. "Sure— Ahhh. Some of their aircraft are missing I suppose?"

"There was a very small news item, ohhh… more than a year ago, that reported a satellite photo of one former base was suddenly clear of all visible aircraft. I seem to recall they tried to fear monger things by implying this could be a secret program to put all those old jets in the air for whatever purpose. It turned out the first photo was at least three years old. But a later photo taken with a more powerful satellite showed some old piles of charred aircraft."

"Maybe they didn't burn them all. Perhaps Miss Li and her agents took them and just burned the junk. Of course, that begs the question of how she got them out of Russia. Do you recall where the jets were located?"

Tom nodded. "Yes, and not in Russia. Way out east and south of Vladivostok."

"Ahhh. And that is very close to North Korea and *that* is where we believe Miss Li has been operating." He went back to his desk and called up a new map.

"Well, that's how they probably got the jets down to North Korea," Tom said pointing to a highway marked A189 running through the area and right to the border of the other nation.

"What about these Chinese helicopters?" Damon inquired.

Tom shrugged. "It's no secret that China has supported North Korea over the years. She probably bought them on the open market. That line was decommissioned several years ago so she may have purchased them for scrap."

He got up and placed a call. "Harlan? Can you come over to the big office, please. Dad and I think we might have figured something out and want you to be in on it."

"Be over in five," Ames told him.

When he walked into the office he announced, "This better be good. I was almost at my all time high score in that Samurai Pigmy Goats computer game. It's addictive. Actually, I was just about ready to go up the hill to brief a new set of guards for the construction site. What's up?"

Between them, the two Swifts filled their Security man in on what they knew and what they suspected.

"Yep. That makes a lot of sense. And since North Korea has always had a lot of spare parts for MIGs, and what we suspect is, or was, a mothballed factory for building their own, it would have been a cake walk for them to refurbish a few dozen of the 17s. Especially if Miss Li was paying cash. They will do anything for money! Let's assume it is the same for the helicopters. Well, I have to make a report on this to the State Department. I'll draft it and send it over in an hour or so. If one of you could give it the once-over and correct anything I've put down incorrectly, I'll appreciate it."

"Will do, Harlan. Thanks!" Tom said as the man left the office. He turned back to his father. "What do we do now? I mean, with the new threat of potential damage flying right into our back yard."

Damon smiled and pointed upward. He then moved his finger

and arm in a circle adding the other arm and another finger to the mix. “Give you any ideas?” he asked.

“It sure does. Why didn’t I think of that?” Tom said slightly blushing. “Should we just widen the flight path of the existing drones over Enterprises?”

“I’d think as a quick measure, but my thought is that a trio or quad of new drones just for the new area up the hill is probably best. Besides, I hear from a little birdie named Jake Aturian that you’ve got a design just sitting over there itching to be built.”

“I do. Ever since we finished the little fleet of Attractatron ships last year, the ones Bud called Push Me Pull You Mules, I’ve been trying to find a good use for the new system. It hit me a couple months ago that it would be a nice addition to our drones.”

Damon readily agreed. The Attractatron was a combination of a tight repelatron beam that was sheathed in an opposite and equal beam attracting things. It was necessary to use both, first because the repelatron provided the exact molecular content of what was to be grabbed onto, and also because any grab-and-pull-only device would yank its target right down into the emitter. It had been part of a new network of “space mules” designed to autonomously search for and move space debris coming from outer space from any trajectory that endangered the Earth. It had been responsible for more that thirty “captures” in the past six months alone.

“Can you make it fit into the current drone body?”

With a shake of his head, Tom answered, “No. And that is good and bad. It might be nice to have the drones all look alike, but the existing ones would need to be almost three times the current size. So I’ve decided to build a smaller version of the original model, the *Gabby Hayes*. It is just big enough to hold the maneuvering repelatrons and two Attractatrons.”

“Two?”

“Right. One to capture the incoming object—aircraft, missile or whatever—and one to anchor the drone to the ground. It wouldn’t be much of a system if it latched onto a passing aircraft only to be pulled along as the jet flew away.”

“Then, I say go with it. Tell Jake it’s a priority and see if he can get the first one to you in less than four weeks.”

Tom pursed his lips. “Uhh, what Jake probably hasn’t mentioned is that he already has the body shells that Hank made a month ago, and the guidance and lock-on systems that I had the folks in Electronics run up. In fact, he has just about everything sitting

around waiting for a start date. I'm pretty certain he can have all three of them built in a week."

"I see. And, if I had been a fool and said 'no,' to the idea?"

"Then we all would have kept quiet and the pieces would have gathered a little more dust."

Damon stepped forward and did something he hadn't done in about five years. He tousled Tom's hair telling him, "You're a good son, Son. Keep this up and I'll have to step back and let you run things pretty soon."

Tom pretended to look horrified. "Oh, no! You're not going to do that to me! I don't want that responsibility until you are too old and gray to get your walking frame in here to manage things."

And, because Damon had known all along about the readiness of the parts, he had already given Jake the go-ahead, so when Tom phoned the Construction Company manager he was told the first of the drones would be ready the next afternoon and the others in three days!

CHAPTER 15 / WHO'S AFRAID OF THE...

YEARS EARLIER, Tom decided the best way to keep drones patrolling over their assigned areas was to use special beacons that threw out a fan-shaped electronic signal that the sensitive instruments registered and only ventured beyond to make their programmed turns back into the protection zone.

For Enterprises these beacons had originally been stationed on the four corners of the four-mile-square property. In recent years these had been moved out by nearly a mile on the two corners farthest away from Lake Carlopa but only a third that on the other end as that took the small towers right to the shoreline.

Similar arrangements covered the grounds of the Citadel out in New Mexico and over Fearing Island. The only facility not covered was the old Construction Company as it stood about a quarter mile out from the current Enterprises coverage zone.

Now, with the possibility of a far-too-close overlap with the property up the hill, Tom had to create not only a new non-intrusion flight zone but program the systems to sense the other type of drones and to plan their own paths accordingly.

It was also believed that a potential danger zone now extended far beyond the current beacons so he made a call to both the local airport and to the FAA.

The airport agreed to route all south-traveling traffic either to the east and the other side of the hills across the lake or at least three miles to the west beyond where Tom hoped to fly the drones.

The next day and with only a small variation required by the Federal department, he and Bud and a small crew moved the existing beacon towers—some to across the lake and the rest farther out in all directions—and installed the new beacon towers for the hill area.

With no practical way to avoid it he had to be satisfied with the new drones overflying the nearest half-mile of Enterprises. This was fine as they flew at different altitudes and he already was arranging to replace the smaller, electronic/electrical interference drones as soon as possible.

He wrote the necessary add-on code for the programming that would eventually have a single fleet of about ten new drones covering all three of the Shopton-area facilities as a group.

Harlan knocked on Tom's underground office and lab door a few

days later surprising the young inventor.

"Harlan! I don't believe I've ever seen you down here when it didn't have to do with the security system. To what do I owe the pleasure?"

After taking a chair in front of Tom's desk, Harlan got straight to the point.

"Since your dad is down in Washington today I wanted to let you know a few things we've found out about. For starters, have you looked closely at the points of attack, well, fires, these past weeks?"

Tom admitted that he really hadn't.

"That's okay. With the exception of the first fire in Wyoming and the flyover here, no attack had been made more than one hundred miles form either the Canadian or Mexican borders. The one that involved the MIG aircraft here was the furthest into U.S. territory and all others have been where the black helicopters were spotted. We've asked the highway departments of any state hit to review border crossing footage for signs of six to ten trucks traveling together."

Tom looked confused. "Why?"

"Helicopters can be folded, especially ones the size of U.S. Hueys and these Changhe Z-11s for easy truck transport. You could get two of them into a fifty-three foot transport trailer."

"Oh. So everything must have taken off from fields or small air strips?"

Harlan leaned back in his chair. "Nothing has come through any controlled airport or from an area where a nearby population might be greater than a few thousand. Even the oil refinery attack most likely originated at least twenty miles north of Laredo on the Mexico side. This is pretty significant because it gives us a maximum zone of just a few dozen miles into those countries that we need to be watching to see if there are any new attacks coming. And that," he said leaning back forward to rest his elbows on Tom's desk, "means that the U.S. can overfly at least twenty miles of that with only a courtesy notification to their governments."

"Will the Air Force be doing that?"

"Not much, but we will. I've just been on the phone with both governments and secured their agreements to allowing up to two jet-powered Swift aircraft to be in their airspace at any given time. Standard flight rules are waived up to an altitude of ten thousand feet and to within ten miles of a major, controlled airport."

"How many of them are there?" Tom inquired.

"In that space, none in Mexico and only Vancouver British Columbia out west and Thunder Bay in Ontario. Of course, the attack here, and yes I am calling it an attack, came from farther north than the agreed on area, but I have to believe it was an exception. At least it has been to this point. And MIGs have a wider range, of course."

He described how he wanted to take two of the newest cargo jets temporarily out of normal service—one for each border, and to augment those with a pair of Toad jets. Although the cargo jets could outpace the smaller jets, both would be flown at under five hundred knots.

"I only wish we could put more in the air for the long Canadian border. But, it's what we have to live with."

"What about flying inside our borders?"

Harlan, who had been in the process of rising, sat back down. He poked his tongue into his left cheek where it moved up and down as he considered the question.

Before he could answer Tom added, "And I'll have the Outpost train its inward-facing space prober along the Mexican border. I'm not sure why I didn't think of that before now, but from their position out there they can perform a detailed sweep of the entire U.S. and Mexico border end to end in less than an hour."

Harlan got one of the biggest smiles on his face Tom ever recalled seeing. "And I can have another cargo jet and Toad combo flying in U.S. air out west and each pair can swing up as the other pair swing back down. Good idea, Tom."

"No charge."

"It's too bad the angle up to Canada is too acute for the space prober, but if we can take a third cargo jet and even possibly—" he looked at Tom to see how the next part was going to sit, "—borrow the *Sky Queen*—"

Tom didn't flinch. He had been about to suggest the very thing.

Giving a sigh of relief, Harlan said, "Great! I'd like to get things in the air by this time tomorrow. I've got Red Jones, Zimby Cox, Hank Sterling, Art Wiltessa and Bud already notified as chief pilots and five more as co-pilots. Red called in a favor from the Air National Guard and as long as we cover the base pay costs, and feed them, they'll lend us ten more pilots with the rank of Major and above. Real seasoned pilots who mostly fly for the big airlines and have enough seniority to take a few weeks off to help."

Tom agreed to okay the expenses and the Security man departed

with a spring in his step.

As soon as the elevator doors closed, Tom called out the door to his giant aircraft, “Looks like you’re going on a Cobra hunt, old girl!”

The airfield closest to the many hangars that occupied nearly a square mile of the northeast area of Enterprises looked like the site of a forthcoming invasion the next morning. The cargo jets and *Sky Queen*, all powered by nuclear reactors, would be able to fly for weeks if necessary. Enough food and other supplies were loaded onboard for a week.

This included several large yet lightweight tanks of jet fuel for the Toads. Although capable of using Tom’s amazing QuieTurbine engines, none of the available ones had them, sporting conventional twin jet turbines. Each could carry enough fuel for up to eight hours of flight at more than five hundred knots. This was a range of just over four thousand miles so the plan was to fly them to the farthest points in their search area and then refuel them at airports when possible. They would continue to set down three or four times a day to refuel and to allow the pilots to stretch.

The idea was to have each pair of pilots flying in shifts for eighteen hours before switching out for a new crew. Doc Simpson had warned him that the pilots should not be required to keep that pattern up for more than five days at a time before having at least forty-eight hours of rest.

After everyone had taken off Tom returned to preparing to test the middle-sized version of his CO2 fire suppression system. If it worked, then the truck Bud had located would be finished with its overhaul and would be ready to have the full-scale device built and installed in just five more days.

It had been decided that Arv would mount the four-foot long by three-feet wide machine on a trailer that could be towed out to one of the test areas on the grounds. With it hooked behind an Enterprises pickup truck, the model maker met the inventor late that afternoon near the southern wall.

“Hey, Tom. Everything’s working. I gave it a small test and then bled the CO2 back off. The small nozzle looked like it was going to be a real poser, but before he got ready to fly out, Hank told me he had just taken delivery of another 3D printer that uses a titanium and copper alloy wire as its source material. I sent the model to that and then went and watched it run for a while. It uses five lasers of various wavelengths to melt and even shape everything. That little part only took four hours and it was all made in one piece, even though it twists and turns and changes settings.”

Tom made a “hmph” sound then asked, “And it works right out of the printer?”

“Well, I had to take it apart and install cold-tolerant silicone washers, but pretty much, yeah.”

Four tests were set to be performed. One each on a roaring wood fire being enhanced with propane and extra oxygen, another on a pool of super hot oil, the third on a fire fed by burning lithium metal and the final one a three-story structure built to test all three in a single blaze.

It required a few tries to “dial in” the right nozzle setting and rate of flow for each test, but once accomplished both fires one and two went out incredibly fast. The new ability to set the flow and dispersal for petroleum, especially, had been effective.

There were still a number of problems with the burning metal as it remained hot enough to reignite once the CO_2 stream was shut off, plus it tended to fracture and shatter and then the pieces reignite if hit directly with the icy liquid.

Tom decided that the final test wasn’t necessary.

“We just have to admit this isn’t going to be the solution for metal fires,” he said to Arv.

“Well, if you’re satisfied so far, is there anything I need to change on the model so it can be turned into the full-size components? With Hank gone I can do a lot of the template stuff. Just say the word.”

“Make sure that when it is upsized that everything fits into that fire truck we bought. Get all the final internal dimensions from them. There may be a few places where you can slightly rearrange things to fit, but anything that looks iffy or needs to turn a sharp corner, bring me back into the process,” Tom requested.

While Arv hooked the trailer back to the truck, Tom called for the Services people to come clean up the test area and prep it for any upcoming tests.

“Right,” came the response. “Uhh, Tom? My list says you’ve got a lithium fire going. How soon do we come out. I mean, if it is still going.”

“Sure. Give it about an hour to finish burning. It’s below the surface right now but still dangerous. Then, come out and but don’t put water on it until the surface temp is down to one-twelve. We were using two pounds so you will only have about a half pound of ash. Standard hazardous materials handling. Thanks!”

He and Arv climbed into the truck and drove back to the main

group of buildings. On the way the model maker remarked that he would have all of the plans upsized and configured before the end of the following day.

"Unless you needed it yesterday," he added, making Tom laugh.

By the following mid-morning reports were coming in from several of the Swift aircraft. The Toads had taken it on themselves to set down at any field believed to have been used as well as a few that seemed to be likely candidates due to their proximity to large industrial complexes.

A small regional airfield in New Brunswick, Canada, told Zimby Cox that he had been visited by a "shady character, eh?" a week earlier who inquired about the possibility of refueling a business jet, but the airfield stocked no jet fuel. The man had stormed off before climbing into what was described as, "One of those American CIA black ops helicopters. Real fancy, but I always heard they were shiny. This one was dull black, eh?"

Everything that came in was passed on to the State Department and the Air Force.

In Mexico there was evidence that one of the helicopters had been there and abandoned. The woman who operated the single runway private field told one of the National Guard pilots that six of the flat black helicopters had not been there one night and had been there the following day.

"I never heard nothing, señor. They didn't fly in here but they were here when I got to work. Very mean men. Everybody was wearing sunglasses so I can't see their eyes. They pay very well for airplane gas. But that one over there went up in the air and sort of flipped over and crashed. Killed the pilot and his amigo. Muy bad."

When he read the report Tom believed it probable had been the field from which the oil refinery fire attack originated.

By the end of the third day little more had been discovered other than a report by the harbormaster in Vancouver who recalled a ship with Liberian registry but had been tracked coming from Korea had docked at the most distant point possible and had offloaded more than twenty fully-outfitted big rigs with various company markings and with U.S. license plates from many different states. When pressed for the manifest, it showed that each truck had been picked up in Seattle and taken to a port in Korea that was found to not be on any map. This supposedly had occurred two months earlier.

Because the cargo officer on the ship had paid all fees and declared there were no articles of contraband—and the port's drug- and people-sniffing dogs had not scented anything—all of the trucks

had been allowed to leave.

This had happened two weeks before the first fire attack in the U.S.

Both the Canadian and Mexican governments had agreed to notify any airfield within one hundred miles of the U.S. border to be on the lookout. If they reported suspicious activity that turned out to be some of Miss Li's aircraft and pilots, a hefty reward was being offered. So far, nothing had come in.

As the Enterprise planes began returning on day five, Tom was deep into the start of installing his full-scale CO_2 system.

"So, we'll be ready in three more days," he reported to Bud when the flyer sat down in the large office the next morning.

"Where are you going to test it?"

"You and I are driving it down to Albany. They average seven fires a day so we will get a couple of chances to test it out."

And they did. On the appointed day as they drove into the state's capital their radio picked up a four alarm call. Punching in the address on the navigation system, Tom wheeled the big truck down several main roads before turning off into an industrial park. Bud had manned the radio and made the call to inform the city's Fire Chief not only of their arrival—they were expected—but that they were already responding.

The Chief told them, "Just be certain to not get in my men's way. I know what they can do and do not know what you might do or not do."

"He really doesn't have a lot of faith, does he?" Bud asked as they made the final turn into the parking lot behind the three-story building now half-engulfed in flames coming from the windows on all floors and from the roof.

Tom jumped out and ran to the fire Captain standing with several walkie-talkies coordinating things. He very quickly told the man who they were and what they might be able to do, and was directed to move the truck to a location near the closest corner.

"If your rig can get some water on that corner and then work your way south we may be able to save the structure."

"We're shooting pure CO_2, sir. It will smother the flames as far as it can penetrate."

The fireman's shoulders dropped. He turned to Tom. "Okay. You've got one shot at this. If it doesn't do anything, you leave. Pronto. Understood?"

"Yes, sir!"

Tom raced back to the truck, started it up and moved to the indicated location. He and Bud jumped out with the flyer manning the pump controls and Tom running the computer-operated aiming system.

The auxiliary engine roared to life. Tom hadn't expected to arrive at a fire so soon and now they started with an empty tank. It required a full minute before he had any notable pressure and another two minutes to come to the point where they could begin.

With a loud roar the liquefied CO_2 shot out of the nozzle and made its arc into and over to the building. Just as Tom had set the program it seemed to vaporize mere yards from the side. Seconds later and as if someone had thrown a switch, the entire area no longer had flames. Tom let the pressure come back up and sent another arc onto the roof where is appeared from their angle to smother flames that had been shooting skyward.

"Who's afraid of the Big Bad Wolf?" Bud stated to sing.

But on the third attempt something went wrong. Only a small dribble of liquid came from the nozzle and Tom's readouts showed a dangerous spike in pressure.

"What happened?" Bud yelled.

"We've frozen up inside the machine," Tom replied wearily shutting the system down. Instinctively he knew it wasn't something he could readily overcome. The test was over.

They got back into the cab and pulled back from the rest of the fire trucks. On the lucky side, as long as it had worked, the system had put out more than a third of the visible flames.

Not knowing that Tom's system had actually failed, the Captain smiled and gave Tom a thumb's up sign.

The inventor returned it but wished that he had thought to add some sort of defrost heater for the system.

His liquid carbon dioxide had evidently turned into one huge batch of dry ice!

CHAPTER 16 / ANOTHER DAY, ANOTHER SOLUTION?

TOM'S TRUCK required nearly four hours to defrost. It left him with a mostly full tank of the liquefied gas, but he knew that it was probably going to be a single shot thing if they went to another fire. He took a deep breath and called the Fire Chief to tell him about the problem, but before he could get a word out the man on the other end was shouting at him.

"You crazy young kid. You did it! By all the seven gods of the flame you did it! Incredible!"

Tom was bemused. Certainly the two shots the truck had managed were effective, but to his mind the test was mostly a failure.

"Uh, sir? I actually called to tell you the test didn't go according to plan. My machine froze up. It's getting back to normal now and I do want to try it on a smaller fire, maybe a house fire, but we had to pull out before I thought we did much good."

Now the man on the other end was calming down and not shouting with excitement. "Listen. I don't care if you got off one blast or a hundred. The fact is that all that CO_2 not only put out the visible fire, it slithered down stairwells and holes in the floors made by the fire below and smothered those flames as well. Our men and ladies only had to put on a tenth of the water as we would normally and that kept collateral damage down. What you call a failure we call success with a capital S."

He told Tom that the new truck was welcome to come to any new fire that day.

Barely two hours later another call came into the fire station where they had stopped. The local commander let out a shrill whistle catching Tom's attention and swung his arm to indicate he wanted the inventor to come on the double.

Tom did.

"Okay. We have a small apartment building in jeopardy from a single-family house right next to it. My guess is the small home is a loss but if your machine can keep the other one from going up, you'll save at least eight families from getting burned out. Here's the address. Let's go!"

Tom ran back and hopped into the second seat. Bud had already

started the big truck and was checking the internal instrument panel.

"Looks like we bled off about thirty percent of the gas back there but we can easily recharge that on the trip. If you want to, that is," he added knowing that Tom was still bothered by the freeze-up.

"Yes. Let's get there with a full tank and see if we can get things handled in the one go," Tom directed as they pulled out behind the lead truck.

The smoke from the fire became visible as they turned the first corner. It must only be a half dozen blocks away.

When both trucks came around the final corner they had to screech to a halt. The street was blocked with cars and trucks of people panicking to load up and get their belongings out. No mater how many times the commander ran the siren or got on his loud hailer telling them to move, people just weren't clearing the path.

"We'll have to hike in the last block with hoses on our backs," he radioed to Tom. "Any chance you can do the same?"

"No because we're totally truck-bound. If you can clear everybody out of the way between here and the corner closest to the building I think our pumps can get the liquefied gas out that far. But you really have to clear things or else people are going to get hurt!"

It took the arrival of seven police cars and the firing of several "riot" blanks into the air to get people to pay attention. As the officers marched forward the fire commander yelled instructions and then gave a countdown.

"Anyone not out of the way in twenty seconds is not going to be able to file any lawsuit for injuries you receive. Now, MOVE!"

People scattered. The police rushed to the side, moved everybody out of the path, and the countdown reached zero.

The freezing liquid CO_2 shot from the nozzle. Tom had tried to compute the necessary arc but it was beyond anything he had anticipated, so it was partial guesswork. The first seconds of the stream splattered on the ground in front of the apartment building. It instantly exploded into a cloud of gas and continued moving toward the building.

Tom moved the nozzle down a fraction and the arc lowered but it meant the stream reached farther. Now it was hammering into the front of the building and everyone could see that it had punched a huge hole where the small lobby door had been. He quickly set the nozzle opening slightly wider and now the gas was billowing out before it hit the building.

Fifteen seconds later, the tank now empty, Tom shut things off.

The real firefighters rushed forward dragging their hoses along and soon were playing water onto the hot side of the building. As expected, the small house in the adjacent lot was a smoking heap of rubble.

Cheers of congratulations gave way to shouts of anger when residents realized that the building had been damaged by Tom's truck. Reason never controlled a crowd and so few could see that it he had not fired the CO_2 at the building it would have soon been engulfed in flames and everything would have been lost.

One of the police officers came over and suggested that Tom and Bud get the truck back to the fire department.

"We'll get the crowd back under control."

After radioing the Fire Chief, Tom and Bud headed back for Shopton. To Tom, they were now driving so much scrap and not the fire fighting miracle machine he imagined.

Bud tried to console him but it wasn't until that evening when Bashalli climbed into his lap and told him how proud she was that he had succeeded in saving two buildings that Tom relaxed and admitted that there was something good that came from the tests.

"Thomas. What you seem to consider to be failure used to be something you would have said was just a testing setback. What has changed?"

Tom let out a very heavy sigh. "Bash. It's just that there is so much riding on the success of coming up with something that really, really works. With the Black Cobra's daughter back in action, apparently, a lot is at stake. When I was younger I never feared people like her, but now that I have you—" He stopped as he felt her tense.

"I wish that you would repeat after me right now. I, Thomas Swift, love and cherish Bashalli Swift and want to do everything I can to protect her, but she is a big girl—a woman even—who is not a frail or delicate thing and who will be extra careful so that I do not have to worry. Can you say that?" She gave him a squeeze.

"Yeah. I can and I do and I know. But more and more of the country, maybe even the world, seems to look on Swift Enterprises as the go to place for everything. Chow thought we ought to get involved in the oil fire fighting team. The State Department seemed to think we were better at patrolling the borders than the military. *Really? Us*?" He sighed again. "Sometimes it feels like they treat us as a repair service. Oops. We messed that up. Call the Swifts!"

In spite of how her husband might be feeling, Bashalli giggled. "Of course *you*. You've done so much and have made such an incredible name for yourself and the company that it is perfectly natural for everyone to assume you are a super human. I know that I do." She kissed him on the cheek and got up.

"Your dinner will be ready in thirty minutes," she announced. "It will be delicious and you will be hungry."

Now Tom laughed, the tension he had been feeling leaving him.

As they ate he told her of the other thing that was leaning heavily on his mind.

"I have an idea for something that has nothing to do with fires, and it is so outrageous that it has only been discussed with any seriousness for decades in science fiction literature. I can't really say anything about it because I haven't even mentioned it to dad yet. The thing is, I can't spend any time on it until I come up with a way to fight these giant fires that are being set."

"But, you told me that your great grandfather, your namesake, developed something to do this. Why can you not duplicate it."

With a sad grin, Tom told her, "It is like going to the Moon. We made it there ahead of the others and the Apollo program put a few people up there, but it hasn't been reproduced by any government or space agency. That includes the Brungarians and the Kranjovians, back when they were a threat, because they never really landed. Swooping past firing missiles at me isn't the same. And today, even the U.S. relies on us and other companies for things like the Lunar colony. NASA lost the technology and is just now rediscovering how to do it themselves."

"And your elder grandparent? His flying fire vehicle?"

"That Tom Swift had a good notion and I just tried to make it happen using today's materials. It only partially worked."

She tutted a few times and he looked at her with curiosity. "It worked, Tom Swift. My Tom Swift. It just worked fewer times than you might have planned. It worked and did not fail!"

He knew she was right and gave her a long hug.

"Thanks, Bash. I feel better and tomorrow I'm going to start seeing if I can salvage what we have or if I might need to go in another direction."

"Good. And I only ask that you do me one other small favor," she asked looking up into his blue eyes.

"Anything, Bash. Name it. Absolutely anything."

She coyly smiled at him and motioned for him to come closer. When he did she reached up and turned his head to the side, whispering softly and warmly into his left ear.

"Dishes. You do the dishes."

She kissed his ear and skipped out of the kitchen and into the living room.

Beginning the next morning Tom poured himself into days of research in an attempt to identify components or techniques that would keep the CO2 liquefied gas from freezing solid. Lower pressure might work in the actual tank but the second he placed it under the level of pressure necessary to shoot it out any useful distance it began to harden. And the high pressure, low pressure nature of the system added to the problem.

Adding heating elements would only be a small part of the solution. Too much heat and the liquid would turn to gas too soon. Too little and it might as well not be there.

He was experimenting using the mid-sized model when his father stuck his head into the large lab room.

"Got a few minutes?" he inquired.

As he had very little more to go on at the moment, Tom said, "Sure. Good or bad?"

"It *has* been sort of like that a little too much lately, hasn't it?" Damon asked as they walked down the hall to the large, shared office. "Actually, this time I just wanted to talk with you. I know you've got your own troubles but I need some advice on one of my smaller projects that is in jeopardy of costing the company a lucrative contract."

They sat in the overstuffed leather chairs. On the low conference table in front of them was a tray with carafes of coffee and ice water, and a plate of chocolate brownies, one of Chow's most recent experimental dishes.

Tom pointed at the dessert squares. "What's he up to this time, I wonder?"

"Trent tells me that they are made using chocolate, marshmallows and coconut oil. I had one before I came to get you. Try one. They're keepers."

Tom bit into his and declared it to be "chewy and great!"

"Okay. The problem I'm having is with managing a lubricating product to replace all petroleum-based oils and greases on an autonomous rover vehicle that NASA wants to launch to Europa,

Jupiter's moon. Even with a small heater tank powered by its own small solar panel, the liquid will be sitting in the minus fifty-degree range. What we've been able to achieve keeps proper viscosity but only down to minus forty-one."

"What's the primary component?"

"Microscopic lithium and silicone particles in a highly-pressurized man-made water. We do the combination of the hydrogen and oxygen and it is so pure that it has a totally different freezing profile."

It sounded quite intriguing and Tom believed he knew the answer. "That's actually pretty easy, Dad. Just add a bit of ethanol. It won't react with either solid component and freezes below your super water. As little as about ten percent will—" He stopped as he saw the look on his father's face.

"You know all this. Right? And you wanted me to stop my tunnel vision approach on the fire fighting project and just open up to other possibilities, huh?" Damon nodded. "And if I introduce something with a lower freezing point, as long as it is also non-flammable I will probably have my solution?"

Damon laughed. "Something almost precisely like that, yes."

Excusing himself, Tom took two extra brownies and returned to his lab down the hall. In twenty minutes he hit on the solution. If he reintroduced about a ten percent amount of nitrogen—easily the largest component of air—back into the CO2, its much lower liquefying point would keep the primary gas fluid as well."

It required only a slight modification to how the gases were routed within the full-sized truck machinery and six days later Tom and Bud returned to Albany for another set of tries.

Calmer heads had prevailed in the incident of the damaged apartment building and the Fire Chief welcomed them with the news that at least two residents had written letters to the editor of the paper to thank the Fire Department for saving most if not all of their possessions without water damage.

"That really is thanks to you since these are the same people who had our way blocked so only your equipment could get anything meaningful in there. What's up for today's test?"

Tom said they didn't want to wish anything bad, but another large building fire would be preferred.

"I need something that I have to put three, four or even five tanks onto in order to make certain I have licked the freeze up problem."

They needed to remain in town overnight before something

similar to what they desired came up. At five a.m. they were roused from the extra beds in the fire station by the blaring of the alarms. The report called for three alarms and a total of seven trucks—including Tom and Bud's—were to respond.

As it turned out, this fire was in a building adjacent to the first one they had worked on a week or so earlier.

"That's suspicious," Bud said as he and Tom pulled right up in front of three of the other trucks. The remaining engines were driving around to the rear of the building.

"Captain?" Tom called out on his radio. "Ask those other trucks to stay clear of the right end of the building. That's our right and their left. I don't want any over-splash to hurt anyone."

"Roger. Please give me a thirty second warning, though, just to make sure."

Even though the huge fans sucking in and exiting out great amounts of air made the truck a little tricky to drive, Tom had decided to charge the system on the drive over so they arrived with a full tank. It took just a few seconds to dial in the proper combination of nozzle setting and pressure/flow before the green light came on.

"Okay, Captain. Thirty seconds to shot one!"

"Roger. You can go any time. Men and equipment are clear!"

"Okay, Bud. Here goes!"

The liquid shot out of the truck and performed its arc only to puff out quickly just feet from the building. A perfect shot with almost immediate results. Positive results.

When the tank was at just ten percent full Tom stopped the pump and set the recharge cycle to work. It only took four minutes but it felt like forever before he called readiness and made the second shot, this time up onto the roof.

Another success.

It was the same for shots three and four after which the only thing left for the real firefighters was to go inside and handle any remaining small fires.

With a grin of relief and satisfaction Tom noted that no freezing had occurred in the system.

As they were getting ready to leave the fire captain came over. "You do know that you've made the job of the arson inspectors pretty easy, don't you?"

"Why's that?" Bud asked.

"Easy. We generally wash away most evidence and tread on the rest. Your system did ninety-eight percent of the work so they will have an easy job. After all, the other building over there," he tilted his head, "gave them some really good clues to who did this. The owner is near bankruptcy and is the prime suspect. This building will cinch the conviction. I really hope you go into production with that truck!"

The drive back to Shopton was much more enjoyable for both young men than the previous one had been.

Tom even decided to take the next day off. Mostly. He did come in around nine and was back in his car by ten. As he passed through the main gate he glanced up the hill and saw the large two-story control saucer now mounted on its pedestal and made a decision.

Knowing that the latest of the security measures meant to protect the construction site for the new tower and Swift-owned neighborhood had been activated that morning, Tom decided to take a little side trip on his way home.

Not only were the new drones patrolling the skies but a multi-purpose, high-powered laser system, meant not to destroy but the temporarily blind the sensors of any incoming aircraft or weapon, had been installed on the top of the control tower. As a secondary function the light could be dimmed and modulated to provide anything from Morse Code signals to an all-weather visual beacon.

As his car climbed the five hundred foot hill he noted with satisfaction that the newest signs authorized by the U.S. Government warning against trespassing on "Federally Controlled Land" had been posted. Driving up to the entrance to what was supposed to have been an exclusive, gated development of almost sixty homes, Tom could see that a new gatehouse and gate had been installed.

Two U.S. Marines were manning the gate when he pulled up. Both snapped to attention.

"Hi, guys," he greeted them. "I'm Tom Swift and here's my I.D." He pulled a newly printed badge out of his glove box and handed it to the Sergeant.

The military man ran the edge of the card through a hand-held scanner—a *SwiftScan*, Tom noted proudly—and then checked the displayed photograph against Tom's face.

"Thank you, Mr. Swift. May I ask the nature of your visit this afternoon?"

Tom replied that he merely wished to look around the newly

finished tower as he had not had the opportunity before. The Sergeant nodded, made a brief notation on his scanner's screen, and waived him through the gate that the other Marine had just opened. As he drove down the central street he saw that at least half of the lots had houses on them either completed or nearly so, and all other lots now had foundations and construction crews starting those homes. Inside of two months the first residents would be able to move in.

Taking a left turn he headed toward the burned out street. If he didn't know that a fire had been set there to cover the tracks of a team of spies, who had as it happened been fronting the money for the entire development, he would never know it by what he now saw. Bulldozers had come in several days earlier to level this area and in a few weeks a new park and small community swimming pool would begin to sprout up.

As he swung around toward the far corner where the tower was, Tom saw that his father's concrete mixing trailer had been moved and used to pour a ten-foot wall about eighty feet out from the base, and a small team of Enterprises technicians were installing the security gate.

He stopped and spent a few minutes speaking with them before heading back to the main gate. The guards smiled and nodded as he drove back out and onto the road going back down hill.

The sun would not be directly overhead for another two hours and Tom was feeling like he could use a few of the Sun's warming rays, so he pulled around the first curve and stopped at the side of the road. This was his older convertible that offered no motorized top mechanics so he unlatched the roof and climbed out. As he pulled the vinyl and cloth roof back he heard a voice behind him.

"Excuse me, young sir. I was wondering if you might help me?" came a quavering voice.

Looking around he spotted an older man who was stepping out of the bushes near the car. He appeared to have very few of his teeth remaining. The man coughed a couple times and then gave him a gap-filled grin just as an incredible pain shot through Tom's head.

He dropped to the ground and was soon trussed up, tossed none too politely into his own trunk and was being driven back down the hill.

CHAPTER 17 / THE PERFECT DELIVERY VEHICLE

TOM SLOWLY shook his head, trying to clear the cobwebs but not shake anything loose. His head pounded and as he reached up to lightly probe the point of impact, his fingers encountered something wet and sticky.

Blood!

As he knew, scalp wounds typically bled a lot but were rarely severe enough to require more than stitching up. He pulled his handkerchief from his back pocket and pressed it against the wound and growing lump. It made him wince and he immediately pulled the cloth away. Something inside the wound had poked him.

Gingerly he felt around until his fingertips encountered a pointed object. He pulled out his small flashlight and turned it on. Taking hold of the object he eased it from the wound and brought it in front of his eyes. They were having difficulty focusing, but he believed he recognized what it was. Splintered bone. And being inside a head wound he realized the only place it could have come from.

Tom had been injured more times than he either cared to remember or could even count. Doc Simpson kept a detailed journal he only semi-jokingly referred to as his Young Inventor's Repair Guide, and so he knew precisely how many times and to what severity.

As far as Tom could recall he had never suffered a cracked or splintered skull, so this scared him.

He replaced the handkerchief on his head and left it there while he fished out a small plastic bag from his front pocket. He usually carried such sample bags in case he encountered something interesting. Easing the closure open he inserted the bone fragment and sealed it, placing the bag in his jacket pocket. He then pressed down on the compress in hopes that he could stem the bleeding but not cause his skull to collapse.

Shining his small LED light and looking around he discovered that he knew this place. In fact he had been in it dozens of times. The first time he had ever been kissed by a girl—on the lips, that is, as cheek kisses didn't count when you are fourteen—was in this very place.

It was one of the two caves on the small island out in the middle of Lake Carlopa. The smaller one, more a deep alcove, was at the

front of the island facing Shopton and this one was accessed via a much smaller opening at the back of the small hill rising from the shores of the two acre piece of land.

He decided to sit there for another few minutes until he could be certain his scalp was no longer bleeding. It might be necessary for him to swim to safety if there were no others on the island and he didn't want to be bleeding in the water. The lake was considered clean but not sterile. He really didn't need to get an infection on top of his head.

Ten minutes later he checked the cloth. It was partially soaked but a light dab of the one clean area told him that the cut had nearly sealed.

He shoved the handkerchief into his jacket pocket and tried to stand up. His head swam and he had to sit back down. It took several more attempts before he was able to get up and slowly walk toward the entrance of the cave. He knew he was heading in the right direction as the cave sloped up to the surface and down and in a partial spiral to a small chamber at the end.

Covering his head with one hand he used the other to shine the small light to show the way. In five minutes he was standing outside in the cooling late afternoon air. A few deep breaths helped to clear his thoughts.

Tom made his way around the perimeter of the island until he could hear voices. Luckily they sounded like teenagers having a party and not the person or people who had knocked him out and apparently driven him to the island.

As he came around the final corner one young girl who had been in the process of sneaking a sip of beer looked up at him and let out a blood-curdling scream, dropped the bottle and ran in the opposite direction still screaming. Several of the more brave or foolhardy boys ran toward Tom thinking that this bloody monstrosity must have been getting ready to attack the sixteen-year-old, but skidded to a stop.

"What the heck happened to you?" one asked.

"Who are you?" the second inquired while the third boy turned and ran for one of the boats.

By the time he got back to report that he had called 9-1-1, the others had Tom sitting on a folding chair and were placing one of their dry towels around his now-shaking shoulders.

"Hey," the first boy called out to the rest of the teens who were still standing at a distance. "This is Tom Swift! He's hurt. Who

knows first aid?"

Somewhat meekly, the frightened girl stepped forward. "I do. I trained with the Red Cross last summer." She walked to where Tom and the boys were and knelt down. "I'm sorry I screamed at you, Mr. Swift. Promise you won't tell my folks I was drinking, please?"

In spite of his injury and head that now felt like a giant bass drum was being beaten with every heartbeat, Tom had to laugh. "I promise to not say a word if you promise to not call me mister. I'm only twenty-two and not over the hill. Yet. Can you see if the wound is still closed?" he requested handing her the slightly bloody flashlight.

She checked the wound and reported that it looked to be oozing slightly. She ran to another of the four boats pulled up onto the small beach and jumped in, disappearing for a moment before jumping up and back out. She came back to Tom holding a fairly large waterproof first aid bag.

With a skill that Tom marveled at, she had his eyes protected with a large gauze pad, was slowly pouring hydrogen peroxide onto the wound and soaking up the fizzing red liquid with another pad. Two minutes later she reported that the wound seemed to be clean. Next, and after carefully daubing the area to dry it a little, she applied a spray-on antibiotic. It stung to high heaven but Tom sat still. Soon, the area went numb and all pain ceased.

"I'd like to glue that together if it's okay with you, Mr.— I mean Tom. I've got some surgical grade cyanoacrylate glue that will hold things together until you get to the hospital. Is it okay?"

Tom told her it was fine, "As long as you know how to use it correctly and we don't end up stuck together."

She assured him she had been trained by her mother, a nurse working at the hospital in Thessaly.

Five minutes later Tom was sitting in the back seat of one of the boats with the girl, Debbie Bates, beside him now holding his hand. Inwardly he was smiling at the girl he had frightened minutes earlier who was now trying to comfort him as the boat raced back to the Shopton pier where they could all see an ambulance was now waiting.

While he was being eased down onto a gurney and his vital statistics being taken he turned to her and said quietly, "I'll keep my promise, Debbie. And, thanks!"

Once the ambulance pulled onto the main street, the EMT in the back with Tom said, "Once the dispatcher got the call and heard it

was you, she contacted your Doctor Simpson."

Tom felt slightly embarrassed. It was like having someone call your mother to tell her you'd skinned your knee at school. "What did he say?"

"All I know is that we are taking you to Shopton General, but have been asked to stand by, barring another call that is, to transport you to your own little hospital."

Tom reached into his pocket and pulled the splinter of bone out, showing it to the attendant.

"Jeff? Hit it!" he called up to the driver. "We might have a cranial crack with loose bone. No bumps or potholes!"

The siren, currently silent, roared to life and the vehicle surged ahead. The trip that Tom estimated should have taken four minutes was achieved in two. And, only minutes after arrival he was being rushed down a hallway to the CT scan room.

He was lifted by two rather large orderlies and placed gently on the sliding platform of the machine. A nurse made certain he knew to remain as still as possible and then left the room. There were some hums and clicks and before he knew it, she was back.

"Looks like we got some good shots. Now, I'm no radiologist or CT reader, but I hear you came in with a bone splinter. I don't see where that could have come from." She patted Tom on his forearm.

"It's not mine?" Tom almost stuttered.

She shook her head. "Like I said. I'm not the expert but I didn't see any missing solid matter inside there. Oh, by the way. That's a really nice closure the EMTs did on your scalp. I didn't know they did that sort of thing. You probably won't even need stitches."

He was wheeled into an exam area in the Emergency ward where the duty doctor looked at both the results of his CT scan and his scalp. They had to shave a small amount of hair from around the area, but it would soon grow back.

Handing the plastic packet back to the inventor, the physician told him, "Four things. First, that isn't your skull. I guess the police will want to see it. Second, you are going to have a nasty bump up there that will last a few days. Don't play with it! Third, you do have a small amount of brain swelling from that hit. That means concussion and *that* means quiet and bed rest. Oh, Greg Simpson wants you to come to your dispensary after I release you. Finally, and I've spoken with the two ambulance attendants who deny having anything to do with it, your scalp was closed expertly. So much so that we won't need or want to stitch it. Whoever did that

belongs in the medical profession if he or she already isn't."

An hour later Tom was taken by the same ambulance back to Enterprises where he was rolled into the Dispensary and the room Doc had dubbed, the Tom Suite. Doc examined the wound and gave Tom a cold pack to reduce the swelling.

"They did a good job sealing that up," he commented as he made a few notes.

Tom told him about the girl. Doc was stunned. "You certain you were awake all that time? I only ask because that is one expert job of using skin glue. Everything lightly and evenly pinched together and then over-coated with a precise line of glue. You say some teenage girl did this?"

Tom nodded.

"Then, I want her name. I also want to get her in here if she has any desire to pursue medicine. I believe that she might be one of those 'naturals' you sometimes hear about. That," he pointed to Tom's head, "shows skill and expertise."

Tom went home to Bashalli that night arriving a little later than usual and in Doc's car. She rushed to her husband and wrapped her arms around him. "Oh dear. What has happened to you, Tom? Doctor Simpson?"

Tom gave her a brief report on having had a small accident and that he had been conked by someone only to wake up out on the island. By the time he finished Bashalli was in tears but she was nodding. It wasn't a first time thing for her husband and she feared it would not be the last time her young husband was attacked. It wasn't fair, but it happened.

Doc assured her that Tom would be okay after a couple days of rest. "That means sitting up or laying down in bed, or sitting quietly downstairs in your easy chair. It *does not* mean driving into work, being driven into work, or in any other way being at Enterprises until two days after tomorrow. That will be Friday, so I will alert the guards to deny you entrance until then." Handing Bashalli a small vial he added, "No aspirin; Tom doesn't need his blood thinned right now but may need these when the full headache and other pains hit."

He bid them both goodnight and let himself out.

After Bashalli brought him a small dinner Tom realized that he was sleepy. Knowing that people with concussions often fell asleep, and that it wasn't necessarily a good thing, he put in a call to Doc Simpson.

“Go ahead and sleep, Tom. Maybe prop your upper body and head up a little but sleep will do you a world of good.”

The next morning, other than a bad headache, Tom felt fairly back to normal. He had to smile when he saw that Bashalli had not only gotten up before him, she had pulled the roll-around desk and computer station over to the side of the bed, plugged in both the power and the Internet cabling, but she also had prepared an omelet for his breakfast. This was being kept warm by having been placed on a small heating pad and covered in foil. A note explained that she had several client meetings that morning, but would call around noon.

When they finished eating, Tom got up slowly and brought the computer table over the side of the bed. Laying down he pulled it in front of him. In minutes he was looking through the list of all the equipment his new CO2 fire truck system consisted of and sat trying to decide if there were ways to deliver and use it more effectively. A few computations reaffirmed that his original hope of repurposing a Swift cargo jet for an aerial version would still not work. Too much horizontal wing surface would be affected by updrafts and the swirling vortices of hot and cold air that accompanied large-scale fires.

The same thing held, only more so, for any hope of putting the equipment into one or both bays of the giant *Super Queen*.

He wasn’t sure why he was so intent on finding a say to mount the system in an airplane or jet. It just kept coming back and he put it down to the concussion. He turned things off and leaned back, taking a nap.

While resting in bed a little later, his mind searched for a solution to the best delivery vehicle for his new anti-inferno suppressor system. Time and again he returned to the recent use of the older Swift cargo jets and time and again he sought to dismiss the concept. It was, he felt to his own dismay, almost becoming an obsession. Even if it was relatively simple to convert them, he knew there was one insurmountable problem.

Jet aircraft needed to fly within a range of speeds. Faster and he couldn’t concentrate a “drop” on a small enough area; too slow and there wasn’t enough lift to stay in the air.

He sighed. He also knew that his new system relied on taking in and passing through his membrane system massive amounts of air. And, having an opening in a cargo jet that large was not conducive to flying.

He pulled the computer table back over and signed into the

electronic version of *Jane's All The World's Aircraft*, the one-stop source of photographs and specifications of every known, and even a few rumored, aircraft starting with the Montgolfier brothers' first hot air balloon centuries earlier.

Screen after screen gave him no inspiration. If he could find anything with possibilities he could design something new around it. Again he sought to stop thinking about an air solution, but couldn't.

After three hours his eyes felt like they were crossing and his head was pounding again. Tom lay back into his pillows and drifted to sleep once more.

As he drowsed the phone rang. It was Skip Carson, manager of Submersibles out on Fearing Island.

"Tom. I really hate to bother you. I heard about the attack. You okay?"

Wearily Tom replied, "Yeah. Still woozy and I was about to take a nap, but tell me what I can do for you."

"Oh, man. I'm sorry. It's just that we've run into a small issue with adapting the Model Three version of the seacopter for the new program. The *Prince Dakkar* and four others." This large version of Tom's seacopter had larger cargo carrying capabilities than other models. The first in the small run had been christened for the "real" name of the character of Capt. Nemo from the Jules Verne stories.

"Okay. I'm listening. And, I assume that this has to do with the consolidation and interchangeability program."

"It does," Skip verified. "I think we already knew this, but the circumference of the air tunnel is a full foot larger than any of the other seacopters. Unless we create some sort of spacer and plug, the size difference will cause unmanageable turbulence inside the tunnel. What do you want to do?"

Tom pictured the problem, but his head wasn't allowing him to think.

"Skip. I hate to do this to you, but I feel like I'm about to pass out. Let me call you tomorrow. Sorry for the delay, but—" Tom let out a sigh and his head fell backward. His hand, holding the phone, loosened and the receiver dropped to the floor.

"Tom? Tom!" Skip called out. Getting no answer he hung up and dialed the Fearing operator. "Get me the infirmary at Enterprises. Pronto!"

Twenty seconds later the call was answered.

"Enterprises Dispensary. Do you have an emergency?"

Skip told her about his lost contact with Tom. The receptionist placed him on hold and hit her intercom.

"Response Team assemble. Stat. Phone contact with Tom just lost. He's at his house. Ambulance to the front door." She then repeated the call. Finally, she punched the button for Skip's line and told him the response team was getting underway.

"I'll give you a call to let you know once I have word. Oh, and thank you!"

Just twelve minutes went by before the response team activated the emergency unlock on Tom's front door and raced upstairs. Finding the inventor on his back and the phone on the floor, the lead EMT reached out to check the young man's pulse.

"He's alive," he reported. "Let's get an IV in him and call Doc. I'm hooking up the remote sensor pack."

Before he could complete attaching the dozen or so patches around Tom's head and upper body, the inventor opened one eye.

"What are you doing?" he asked, almost casually. When the EMT told him what had evidently happened, Tom tried to grin. "Last thing I remember I was talking to Skip Carson out on Fearing Island. He must be panicked. Get me a phone and I'll let him know I'm okay."

The EMT laughed. "Tom, it was Skip who called us. He'll find out soon enough. The first thing we need to do is get you back to Doc."

With an intravenous tube dripping fluid into his right arm, the inventor was carefully lifted up and placed on a lightweight gurney, taken downstairs—in what Tom later told people was the worst part of the whole journey—and was racing to Enterprises. It was the nearest medical facility to Tom and Bashalli's home.

Tom drifted in and out of consciousness for the next twenty-four hours. Doc told the frightened Bashalli that it was a combination of Tom's recent attack and exhaustion.

"Give him another two days and he'll be just fine," he reassured her.

When Tom did wake up the following day, he was hungry, well rested and his head no longer hurt. He accepted all of the kisses and hugs that his wife showered on him and was able to return most of them.

Bud, Sandy and his parents arrived an hour later once Doc had called them.

His sister and mother tutted and mother-henned all around him but they both knew that he was Bashalli's husband and they had to defer to her.

After about twenty minutes Bud could see that Tom was tiring and suggested that he take the ladies to the waiting lounge so that Doc and the nurses could check Tom over.

"I'm going to stay behind for a few minutes," Damon told them. After they left and the door closed behind them, he turned to his son. "The truth. *Are* you okay?" He looked with deep concern into his son's eyes.

"Yes, I am. I understand that I've lost a full day, but I believe some good will come from it all."

"And that would be?"

Tom chuckled. "Well, thanks to Skip's timely call not only did I get medical help, but I now have a really good notion I know what aircraft to use for my flying fire suppressant system. That partially-complete giant seacopter I've had him sitting on."

His father looked bemused at the suggestion.

"Think about it, Dad. Flies at around five-hundred knots, can carry pretty heavy loads in the air and even greater ones under water, and has a massive built-in compressor to give me the airflow I absolutely have to have to separate enough inert gases to make this thing work."

He nodded his head emphatically ignoring the fact that it made his head start to hurt again.

CHAPTER 18 / "BUD, I FORBID YOU TO DO THAT!"

THE NEXT FEW weeks were a flurry of activity for Tom and the team of seacopter engineers out on Fearing Island. Along with their manufacturing counterparts at the Construction Company, everyone was working to redesign and complete the newest seacopter so that it could act as the delivery craft for Tom's fire suppression system.

Luckily, the seacopter that had been just sitting and waiting for the order to complete was perfectly suited and in just the right stage of construction so that new design could be realized with the necessary adaptations.

And there were a lot of them. Everything from a completely redesigned cargo area that would soon feature a trio of high-pressure tanks to hold the inert gases that would be extracted by a pair of machines that would take in the air being bypassed by the central fan and forced through the series of the membranes that Tom developed weeks earlier. To allow for the maximum amount of each gas, the tanks became an integral part of the seacopter—now dubbed the *Swift FireBomber*—instead of being built outside and simply installed.

The membrane separators would be installed in what would have been the port and starboard passageways and storage lockers leading back from the control and crew area. And, instead of a separate kitchen and bunk room up front, one of them was to be turned into the "drop control" room while the other would now do double duty for the maximum crew of three.

Other major additions would be the installation of an array of specialty repelatrons recessed in the forward underside of the *FireBomber's* hull. These would be used to push the mixture of extracted gases downward and into the flames with great force while not causing any lift to the vehicle.

Day after day Tom watched as the two teams worked with a synchronicity that amazed him. With the basic hull already manufactured and out at the island facility and all of the inner systems coming together in Shopton and being shipped as rapidly as they were finished to the construction sheds of Fearing, it would only be a few more days before the large two-part hull would be brought together, permanently.

Unlike any other seacopter, this one would never be divided into two parts to be operated underwater separately. In fact it would never be used underwater at all. It would be one unit and about twenty percent larger than any previous seacopter had ever been.

Most of it had been re-engineered. Some parts because they now were no longer required and some because they had to support the larger craft and fire fighting systems.

But, it was coming together, if not literally then figuratively.

As he stood in building three at the Construction Company watching the upper of the two giant turbine blade set being balanced and fine tuned Tom heard a slight throat clearing coming from behind.

Turning around he spotted Bud. The look on his best friend's face told him something was up, and it was making the flyer uncomfortable.

"Hi, Bud. Uhhh, you look like you need a good friend." When Bud nodded and looked down, Tom placed an arm around his shoulders and led him away from the construction hall. They walked in silence to the main office building and into one of the smaller conference rooms.

"What's going on?" he asked as gently as he could.

Bud's face looked up and into Tom's. He took a deep breath but seemed to be having difficulty forming a coherent sentence to start the conversation. After a minute he let out a long and unsteady sigh.

"I think I just ruined my marriage to Sandy," he admitted, a shudder visibly running though his body.

The inventor felt the blood drain from his face as he tried to find anything to say anything in response.

"Okay, give me the details. Or, at least the basic info," he prompted.

"Well, you will remember my wild ride down and into the trees in the bathroom of that old water bomber a couple months back. I certainly remember it. Can't help that. But I never realized how deeply Sandy remembers it."

"My little sister's memory would put a computer to the test," Tom told him with a hopeful grin.

Bud nodded. "Yeah. And I forgot that when I agreed to go up Maine again to train the latest team of pilots on flying our old cargo jets. She's been pretty quiet about my regular flights. Even testing a prototype a month back. But one mention of anything to do with

forest fires and she practically ripped my head off. She actually shrieked at me that she forbids me to do it. She yelled at me for the first time in our relationship where it was done in anger and not, well, with love."

Now Tom could see the tears running down Bud's cheeks. It made his throat close up and his own eyes begin to brim.

"She forbids me to just go teaching some accomplished pilots how to fly one of the safest aircraft in the skies. I did not handle it well."

Now, Tom asked, "What happened?"

"I laughed and told her she was crazy, and that I would be going up there to train these people and she couldn't do anything about it—"

They were interrupted by the sound of Tom's cell phone ringing. It was Bashalli's ring. Tom looked at his best friend and asked, "Want me to let this go to voice mail? It's probably about Sandy."

Shaking his head, Bud told him to go ahead.

"Hi, Bash, It's me," Tom answered in a voice he hoped sounded relaxed.

"Is Budworth with you?"

"Yes."

"Sandra is with me but she is in the bathroom trying to wash her face. I love my sister-in-law but I have the feeling she is making more of this than it deserves. So, just tell me if Bud yelled at her?"

Tom had put the call on speaker about halfway into Bashalli's speaking. Bud shook his head a definite 'no.'

"No. Bud didn't yell. He did sort of defy Sandy when she yelled at him. I assume she told you what it is all about."

"Not yet. She came in, told me that she and Bud had a shouting argument and that he had left. Oh, I hear the door. Bye!"

"I swear that I didn't actually yell. I may have raised my voice to be heard above Sandy's shouting, but it wasn't a yell."

Tom made a decision. "Come on. Let's get over to my house and get this settled."

They arrived at the house ten minutes later and walked in the front door. Sandy and Bashalli were sitting on the sofa having coffee and laughing about something. Sandy looked up at Bud and then at Bashalli. She got slowly up and walked to her husband, taking him in her arms and hugging him.

The two stood there for a couple minutes not saying a thing.

Finally, Sandy broke the embrace and stepped back.

"Bud. I love you so much that it hurts me every time I think you might be dong something that could get you hurt. But Bashi and I have had a talk and she told me I'm being a silly… well, she used a few unflattering and unladylike terms I didn't think she knew, but she's right. You're one of the best at the things you do and seem to have an angel on your shoulder who brings you back to me."

When Bud appeared to be ready to say something she placed her index finger on his lips.

"Bashi showed me her diary."

Tom now looked at his own wife. He didn't know about any diary. She shrugged in an 'I'll tell you later' way.

"She has kept track of each and every time Tom has been injured since I first introduced them. Well, since *you* introduced them after I set things up for you. Anyway, he has you beat thirty-seven to five. As she pointed out if he can survive more that seven times the injuries that you have, you have many, many years of catching up to do before anything really bad will happen."

Bud kissed her, saying nothing.

When they leaned back, Sandy finished by telling him, "I promise that I'll stop being all those terrible things Bashi accused me of and let you live, unhindered by me. *I'm leaving you*."

When Bud, Tom and Bashalli all let out strangled cries, Sandy broke into laughter.

"Kidding! I'm kidding, Bud. I love you so much, ya big lug, that I'll never leave you. And I swear I'll be beside you in that old sickness and health stuff we muttered about at the wedding. Promise!"

Tom took everyone out to a fabulous lobster dinner that evening.

It took a few days to get ready, but Bud left on schedule for the training. Three days later he returned, unscathed, to a very happy wife.

* * * * *

As he had promised, Tom returned to the Enterprises Infirmary three weeks after his injury for his final okay from Doc Simpson. While he sat waiting in one of the examination rooms a young girl walked in to take his vitals.

"Say. You're Debbie… uhhh—" Tom said trying to recall her last name.

"Bates, Mister… oops! Sorry. Tom. Yeah, it's me, good old Debbie

Bates. You look a whole lot better that you did that evening. Wow, that was the most scary thing I've ever seen, you all bloody—" She stopped and turned bright red. "That really isn't very professional of me, is it?"

Tom grinned. "Not as such, but since it was me I don't have a problem with you mentioning it. I would probably not be so forthcoming with anyone else, though. So Doc made good on his promise and offered you a job?"

She nodded and smiled. "Yes, and it's three afternoons a week plus Sunday all day." She stopped and her eyes grew large. "Do you know how much they pay here?" she asked before realizing that, of course, Tom Swift would know. "Gosh. That's two goofs. I'm not doing very well."

Reaching out to pat her on the shoulder, Tom replied, "I would think that this might be your very first important job."

She nodded. "Very first *any* job."

"Okay. You seem to be a really bright girl with a real aptitude for things medical, even if the first sight of my blood made you squeal and run. Just take things slow and easy and watch and listen to how others handle various situations. You'll catch on quickly."

She lifted his arm and placed a blood pressure cuff on it. Giving the **START** button a press, she watched as the pressure built up and then slowly dropped. Even before the machine beeped and displayed Tom pressure she declared, "One fifteen over seventy-two."

A second later the device showed 118/72.

Debbie smiled and seemed to be very proud of herself. "Amazed I got that close? Mom says I can practically tell a person's BP and heart rate by just looking at them. I'd say that your resting rate ought to be about sixty-two." She pressed another button and the device now showed 62.

"Color me very impressed," Tom told her.

By the time Doc arrived she had taken his temperature and checked to make sure he wasn't on any strange medications.

"How's my little medical savant doing, Tom?" Doc asked as Debbie was leaving the room. She turned and looked expectantly at the inventor.

"She is a wonder, Doc. Keep her around and see that she gets to the best medical school if that's what she wants. After all, you're not

going to be around here forever! Get her on the company scholarship list."

The two men were laughing as Debbie slipped out of the room. She stood, leaning against the wall outside the door, for a few moments trying to collect herself. She had known from her earliest memories that she wanted to be a nurse or even a doctor, but now it seemed as if it might actually become a reality. She ran down the hall to get her phone to call her mother with the news.

"How's my all-too-frequent patient doing these days?" Doc inquired as he felt all over Tom's head and examined the now healed skin. He noted that the wound had closed completely and there were no signs of infection.

"Really good, Doc. Got a lot on my plate right now, mostly inside Enterprises so I probably won't get clobbered again soon." He looked at the medico. Greg Simpson was only ten years older than he was but looked just four or five years older. His capable hands had saved the inventor's life on several occasions, both on the ground and in space. The two had a quick and easy respect for one another.

"Well, things look pretty good up here. No snakes crawling out of your head and not even a speck of dandruff. I'm giving you your full release. Land, space, underwater. The whole shebang. Try to give your head a couple months before you get hit again, though. You only escaped really severe damage because that cow's thigh bone that hit you was old and splintered pretty easily."

As Tom was leaving a few minutes later Debbie came up to him, went up on her toes and kissed him on the left cheek.

"That is to thank you for your confidence in me. I promise I won't let you down!" She went running off, and Tom could see that her neck was turning red with the blush that must be lighting up her face.

He left the building feeling a satisfaction for having possibly helped set up things for the girl to succeed.

Early the following Monday morning Tom and Bud flew in the Toad back out to Fearing Island. The *FireBomber* was in its final stages of preparation for a test flight. Because it was no longer seaworthy, Tom decided that he and everyone else needed to cease thinking about the craft as being a seacopter.

On the trip over Bud made few suggestions many of which made the inventor groan. It wasn't until they stood a hundred feet away from the craft that it came to Tom.. Now standing at one hundred feet long, sixty feet wide and over eighteen feet tall it looked more

like a futuristic flying saucer from a science fiction movie than anything else.

"Put a couple engine nacelles on the top and you've got something out of Star Trek," Bud commented. He was about to say something else when his eyes alit on something along the fuselage.

He started laughing so hard he almost had to sit down.

On the side, Tom had secretly had a drawing of a cartoon animal from the Three Little Pigs story with the words "*Big Bad Wolf*" underneath.

Tom helped his friend straighten up and they walked forward. As the reached the side of the ship, Tom said, "The official designation of this and any others we build will be S-AIF for Swift AntiInferno Suppressor but pronounced 'safe.'"

Bud nodded. "I like it," he declared running his hand appreciatively over the wolf illustration.

Tom pressed a small panel on the side that recessed back and slid to one side exposing a numeric pad and LED display. He keyed in a six-digit code and pulled his hand back. The panel closed at the same time that the main access hatch slid to one side and a horizontal door below it flipped down allowing a short metal set of stairs to slide out and to the ground.

Smiling at his friend, Tom stepped up and into the ship. As he entered the lights automatically came on illuminating the entire forward area of the ship. He could sense Bud coming in behind him.

"Jetz!" the flyer whispered on seeing the futuristic surroundings. "It *is* a spaceship!" Any type of control or switch that had previously been mechanical was now fully electronic. Hidden lighting illuminated everything without any chance of reflection or glare. The control room featured a trio of padded seats facing an all-glass control system. Bud had seen many such panels in the new aircraft built by Enterprises and even the transcontinental bullet train Tom had built a couple years earlier.

Every possible instrument that appeared on the smooth-fronted and curved screen, could be "grabbed" and moved to a new location at the touch of the pilot's finger. Coming down from the overhead was a large, curved screen that reached to just fifteen inches of the top of the control panel.

Tom explained, as he gave Bud a brief tour, that a retractable shield allowed direct viewing of one hundred fifty degrees from any of the seats. In addition a series of a dozen cameras arranged around the ship could be displayed on the screen at any time. In

fact, up to all twelve of them could be shown at one time.

"But, this is just part of the ship," Tom said mysteriously as he turned and gave Bud a "follow me," motion of his index finger.

They headed around the other side of the room and toward the rear of the craft about ten feet. At the touch of another door it slid quietly into the wall revealing another, smaller control room. This one featured a smaller version of the control panel and screen but had only a single chair.

And, coming from the right arm of the chair was a multi-function joystick.

"This," Tom said, "is the fire control room. This is where the fire fighting specialist sits and where all of the resources of this ship are managed. Systems charging, gas mixture, aiming and release. Everything. And, that includes taking override flight control of the ship."

Bud sat in the chair and ran his hand over the control panel. It lit up at his touch. At a glance he believed he recognized nearly all of the readouts and gauges. A cluster of them just to the left of center were unfamiliar but he guessed that they had to do with the fire fighting functions. They began talking about how things worked.

Before he realized it, Tom was suggesting that they leave.

"I just got in here," the flyer complained.

"Bud, we've been in here an hour and gone over each and every one of the controls. You probably won't need to do much simulator work back at Enterprises to be able to operate all this."

The dark haired flyer's head swung around. "We have a simulator?" he asked eagerly. "I mean, for this. I know we already have a simulator, but you've got it set for this beauty?"

Smiling, Tom told him about the most recent total immersion simulation program that had been written for Enterprises' multipurpose simulation chamber. With its 360 degree screen—an impressive feat in that it was just a single curved screen that seamlessly met itself—surrounding the occupant and the full overhead circular screen providing a view of anything above him or her, the only way to get in was to sit in the seat underneath that rose into the chamber. Once inside the pilot or operator was presented with a 3-dimensional representation of whatever they were supposed to be learning.

A special set of goggles let the viewer see things as if they were actually there while special gloves provided tactile feedback to the hands as if they were touching surfaces and manipulating controls.

As they were leaving the area, Bud turned around to admire the ship one more time.

"Say, Tom?"

"Yes?"

"You realize that hump on the upper back makes it look like it ought to be flying that direction, don't you?"

Tom laughed. "Sure. It kind of looks like a control room or canopy, but it isn't."

"Okay, then what is it?" Bud asked.

"You know we collect oxygen from the air, and separate that, but we can't just send it back out in a little stream. The whole process gives the O2 molecules a negative charge, like static electricity. The ship picks up a positive charge in flight so all that oxygen, well a lot of it, would stick to the hull. I don't want there to be any chance that as we dive at a fire and pull up, all the oxygen might break free and go into the fire we're trying to put out."

"So, we store it in that thing?"

"Only temporarily, flyboy. As we get moving toward the fire we dump all that O2 as a pressurized spray up and to the rear. Any more questions?"

"No. That's the only stumper I could think of. Oh, wait! I've got a big one."

"Go ahead."

"Okay. In the truck you had us using mostly CO2 with a little bit of nitrogen to act like antifreeze. So, why not just do the same for this one?"

"Bud. That is an excellent question. Hopefully my answer will be equally as good. You see, I realized that while the CO2 is easy to extract from the air, the fact is it is just about one-third of one percent by volume. In other words, minute at best. Nitrogen, on the other hand, is about three-quarters of all the air we breathe. It's just as good at smothering fires and being really abundant it just seemed silly to be tossing it away. It has two real advantages. One is it is just barely a liquid once we pressurize in so it is ready to smother almost immediately on release, and it lets us fill up that tank in about a minute and a half, even though we are taking on fifteen times as much volume as we did in the truck."

Bud nodded. "And, that wouldn't work in the truck?"

"No, and it is because we can't keep it in liquid form long enough once it would leave the nozzle. We'd just end up puffing a big cloud

of it out, and not very far out at that."

"Okay. Thanks for the explanation."

"Let's go. We both need to do as much simulation practice as possible over the next three or four days before she's ready to test fly. I have a sneaking suspicion that we're going to have to give her a real test pretty soon. I want us to be ready."

What Tom didn't say was that he truly hoped that their first flights wouldn't be to battle anything other than the test fire he wanted to set out on Fearing, far away from anything.

When the time came to fight a real fire he wanted all of the bugs worked out and any necessary fixes complete.

There was mounting pressure on Enterprises to succeed. The eyes of the world would be watching!

CHAPTER 19 / FLYING INTO THE FEAR ZONE

THE TWO young men spent several hours each day, swapping places after every few runs since the simulator was set up for a single pilot for both the main control room as well as the fire control room. Even before the first run-through for Tom he had the feeling that everything was just about perfect.

"Other than the ambient lighting not matching the real *FireBomber's*," he told Bud. "Go ahead and take your first run while I adjust the program."

Bud laughed. "Why bother, skipper? I mean, so what if it's a little bluer or greener or whatever?"

"A lot, actually, Bud. You saw all of the controls in the real thing, so you tell me. What happens if you get your mindset all on how the instruments look in one type of light and then all of a sudden you have to put your mind in automatic and react when they don't look the same."

The flyer, who had more hours in the air than practically anybody else his age—more even than a lot of military pilots had by the time they were twenty-two—thought it over. Nodding, he conceded Tom's point.

"Yeah. I remember running through the Air Force's simulator for that fighter jet they let me fly two years ago. The sim panel was mostly blue and the real thing was white during daylight, but red at night. I almost let it go inverted while I tried to reorient myself. So, should I really do the simulation now, or wait?"

"You do it now, and I'll have things adjusted before you are half way through your two hours."

Good to his word, Bud was performing his sixth solo run, this time responding to a simulation of a fire in an industrial park, when Tom's voice intruded into the simulator.

"Stand by," he said as the entire simulation froze momentarily. All of the "instruments" blinked out, as did the lighting for the cabin. In two seconds everything was back but subtly different.

Bud keyed his microphone. "Well, you called it, skipper," he admitted. "That small change has shifted my perception of everything in here. Don't start things back up for a minute while my little brain adjusts."

"I have to do you one better, flyboy. I need to reset the simulation

itself, and you will be going back to the takeoff position. So, I'll give you two minutes to re-accustom yourself."

Two minutes later Bud watched as the instruments were replaced by a set of numbers counting down from twenty. The overhead screen was filled with a map of the flight path he would be taking. As the counter reached zero, all the normal instruments from the forward flight cabin came back. He had to spend a few seconds arranging them to his liking, but was soon powering up the giant turbines that filled the center of the aircraft and lifting off.

He felt the shift of gravity as he aimed the nose slightly downward to pick up speed and watched as the ground began to recede under him. In minutes he was winging to the east with a destination on the outskirts of Detroit.

The *FireBomber* settled into its flying altitude of ten thousand feet and he could feel the gentle and rhythmic vibrations of the air as it passed into the intake and was chopped into smaller portions, compressed and flung out the bottom of the craft. It was familiar and reassuring.

He flew down the southern coastline of Lake Ontario and soon was running along the northern coast of Lake Erie. He could see the smoke when he was about twenty miles out.

The automated voice told him, "Time to shift to fire control." He acknowledged with the tap of a virtual button on the control board and the room went dark. Five seconds later everything came back up, slowly, and he was now sitting in the fire control cabin.

Bud tapped the **ACCEPT** button on his screen to release controls from the forward cabin to his board and joystick. He had to do a quick adjustment to his mind's perception of the control point as he was now sitting fifteen feet farther back than before.

Passing over the shoreline he now could see that the actual site was in the city of Warren to the north of Detroit and his map quickly identified the property as the Army Tank Automotive Command base.

Bud's left hand flew over the controls while his right hand kept a steady grip on the joystick. He slowed to a hover and began the "fill" process. Because every extra cubic foot of air was needed to pass through the filters so the thanks could be filled, there was precious little for forward flight. Tom had determined that it might actually be dangerous to attempt to refill during flight and so the procedure was to hover for the ninety-five seconds it took before heading down and taking aim at the fire.

Bud watched the gauges as the number crept toward one

hundred percent. He hit the **O2 Dump** button and could hear the whoosh of the escaping oxygen. A green light told him the process had completed. One of his instruments was a thermograph attached to a Digital BigEye processing computer. It not only showed him where the hot spots were, it could see fairly well through the smoke to show him what was actually on fire.

In this case it was the giant assembly hall at the facility.

Some twelve hundred feet long and three hundred wide it was filled with many types of combustible items raging from simple paper to rubber to paints and epoxies and petroleum products.

But right at the moment his problem was that there was no breakthrough of the roof. All of the fire was trapped inside, although he could see that a large area of the roof on the west end was sagging.

He swung the *FireBomber* around to that end where he saw something that made him grin.

The entire end of the building was wide open at the moment. While he realized that this was possibly from sheer stupidity—being open allowed more air to get in and that made the fire burn hotter—it also was going to help his efforts.

He set the craft into motion and aimed the nose down. From his starting point of two thousand feet he knew he would be able to get down to about two hundred before he needed to pull up.

As he neared that point Bud's thumb depressed a red switch on his joystick. Three things happened simultaneously:

There was the sound of the three tanks emptying their load over a four second period; the indicators on the control board swiftly running down to zeroes; the craft shot upward as the weight of the compressed and partly liquefied gasses departed.

He pulled back on the joystick and raced barely fifty feet over the roof of the facility. He switched the main screen to show his rear camera views in time to see the corresponding sliding doors at the opposite end of the building blow out from the pressure of the gases.

Swinging up and around he brought the craft to a halt and refilled the tanks. While waiting he switched to the thermograph and was pleased to find that the main hot spot had diminished significantly. There was still the indication that two additional fires were burning inside but he now believed that one more pass in the original direction followed by a final pass from the opposite direction would do the trick.

At the end of his third run he keyed his microphone and declared, “Turn over to locals.” The computers operating the simulation computed the effectiveness of his actions and soon reported their findings.

“Success factor ninety-seven percent. Likelihood of success in turn over to local fire fighters is one hundred percent. Final conclusion is that operator’s actions were appropriate for this simulation. Special note. In real life the roof of the structure would have blown up and off during run two with possibility of thirty-eight percent. Score: Pass.”

Bud sat back and grinned at himself. He felt something tickling his neck and reached around to find that the back of his head was soaked with sweat and it was now running down into his shirt.

He decided that a bathroom break and a wipe down were in order so he spun his chair around and pressed a small “real” button on the back wall. The seat descended and he was soon standing next to the simulator.

“I watched you do that last sim,” Tom’s voice came from behind him. “Really good. Before I introduced you to the simulations for the *FireBomber* I ran them myself.”

“How did you do?”

Tom grinned sheepishly. “I evidently excel at flying the aircraft but don’t have the hang of what dad says are fighter pilot reflexes. On the one you just did I didn’t pull up in time and tore the bottom of the craft on the roof my first try and got a little cautions and slammed the gases into the top of the opening tearing the front of the building down on the next run.”

Scratching his nose, Bud asked, “Did you ever do it right?”

Tom nodded. “Yes. Run three. I did what you just did on the first try but my final scores were a couple points lower. Still a success, but not as smooth and natural as yours. I did do a little better than you on the first one you did this morning. The forest fire simulation.”

“Aw, I thought I had that one spot on,” Bud moaned. “What did I do wrong?”

Now his friend laughed. “Wrong? Absolutely nothing. All I did was to come in at a lower altitude from about ten degrees farther to the south and on a flatter trajectory. My first two releases ran farther than yours with more of a concentration hitting right at the ground. Then I switched to hitting at the middle and upper parts of the trees. I had to make eleven passes. You made twelve.”

They talked about their different approaches while walking to the

gym where Bud decided that a shower was in order.

"I've got a lunch date with a pretty blond. Don't want to show up damp and stinky!"

By the time Tom called an end to the mandatory simulations two days later both he and Bud had come close to acing all ten of the scenarios programmed in.

The following morning they took the Toad out to Fearing where the actual *FireBomber* had been completed and given a short test flight by one of the island's seacopter pilots.

"When can we outfit all of our girls with those controls?" the young man asked the inventor. "I had to spend an hour just hovering around a few feet off the tarmac before I felt comfortable, but she handles as well as any regular seacopter."

Tom assured him that as part of his delayed program to modernize and consolidate the seacopter fleet, installing similar instrumentation was near the top of the list.

He and Bud entered the craft. On his way in, Bud noticed a difference in the color of the intake area on top of the craft. "What gives with that?" he asked.

"You won't laugh if I tell you we added a non-stick surface to the entire air tunnel?"

Bud considered this a moment before asking, "Do you mean as in Teflon or something like that? We'll we be able to cook something in there?"

"Ha, ha and ha, Bud. No. But the answer to your first question is yes, it basically is like a non-stick surface in a frying pan. I recreated that slippery surface from the old storage box you helped with in the museum. More than three times as slippery as any new product. In this case I wanted to decrease as much as possible any tendency for air molecules to stick to the tunnel. You remember how I told you we really can't be flying while filling the tanks? Well, the more I thought about it the more I wanted to see if I could overcome that obstacle."

"Did it work?"

Tom shrugged. "I think we can assume that it didn't even though it did to a small extent. If we absolutely need to be moving I would have no problem with forward flight of about thirty knots during filling. Not much more, though."

They took seats with Tom in the central chair and Bud to his right. The final check took just a moment and the inventor turned to his friend.

"You ready?"

Bud nodded.

Tom pressed several numeric buttons to identify himself as the primary pilot. If there were some sort of emergency, the craft would respond to his voice commands. The responses would be limited but could, if necessary, set the craft down on solid ground.

The turbines thrummed up in pitch and the craft rose as gently as if it were being picked up by a crane. He sent it moving forward once they reached twenty feet and moved toward the large airfield.

"Tom to control. Can I take my new toy out across the field?"

The voice of the island's chief controller, Leo, came back with, "We've been sitting here with the field all clean and nice for you for thirty minutes. Ran the sweeper trucks out there over night to make sure you don't kick anything up. Of *course* you can go across. We have nothing scheduled incoming or outgoing for two hours. Have fun, skipper!"

Tom thanked him and increased their speed slightly. Soon they were riding on their downward column of air moving at about thirty miles per hour. For the following forty minutes they maneuvered all around and over the field eventually reaching an altitude of two hundred feet.

"I guess we're ready to head back to Enterprises," Tom said as he set them back down at the construction hangar. "I'll have the team give her a thorough check to see if we loosened anything and if it's okay, you and I can come back day after tomorrow to pick her up for good. I'm planning to keep her at Enterprises in hangar five."

Now Bud was excited. Hangar 5 was next door to the hangar where he kept a small office. Number 5 had been used for several large-scale projects in the past but had been empty for about a month. Either Tom had already planned this in advance, or was simply taking advantage. Either way, the flyer was pleased.

The next morning he poked his head into Tom's underground office and lab. "Hey, skipper. A question came to me last night. Actually, it was Sandy who asked, but I thought it was a fair one."

The inventor pushed his keyboard to the side and indicated the chair in front of the desk. "Sit and speak."

Bud settled into the chair. "Okay. Now I understand why you have to filter out the oxygen from the air, but why divide it further? Can't we just get the O2 out and slam the rest into the ground? Wouldn't we be able to carry just a little more if it was all in a single tank?"

"You know, that is actually a good question and one I looked into

at first. But, there is a small problem with doing that. You see, we have to remove a few other things to make our gas mixture as effective as possible. That includes water vapor and at least one of the minute gases in the air."

Bud sat looking at Tom. Finally, he figured that his friend wanted him to guess what they might be, so he searched his memory for what were the components of air. A minute later he ventured, "So, you take out the water because it contains oxygen?"

Tom nodded. "Yes. That and hydrogen. If you pull water molecules apart they break down into hydrogen, highly flammable, and oxygen, a known requirement for fire. I couldn't be certain that the types of fire we might be fighting wouldn't go above the temperature where that breakdown might happen spontaneously, and so I had to screen out the O2. That, plus the minute amounts of naturally occurring hydrogen."

"Okay, but why separate tanks after that?"

Tom laughed. "Ah. Well it is because we may need to regulate the actual mixture for certain fires. If we need to do a drop on something that can't withstand the downward pressure waves, like a house, we can still just pump out CO2 and let it drift down in a smothering blanket without the repelatron shove."

They spoke a few minutes more before Bud excused himself. "I have to tell Sandy what I just found out."

After Bud left, Tom spent the next five hours going through the simulator results. As he knew there were several points where both he and Bud had failed to take the appropriate actions, or had delayed their reactions. Three of these he determined were due to placement of certain readouts on the control panel. But, there was not adequate space to move them into a better location for the operator. He had a moment of inspiration and rewrote a part of the control code to place the needed information up on the monitor, much like a heads-up display in a fighter jet.

He made a call out to Fearing to see if they could install the new code into the real computers on the *FireBomber*. The promise was made to have that update in place by the following morning.

The other changes would only be necessary in the simulator and so Tom made notes to work on those the next day.

With only an hour left before the work day would be over, Tom decided to head home. He was still spending far too many hours at work and wanted to make it up to Bashalli.

She was extremely happy and listened eagerly as he told her of the successes in the simulator.

“I need for you to assure me that you will be safe in your new flying fire truck, Tom,” Bashalli told him as she looked up into his eyes. “And, I do not want you to fly too close to the fear zone.”

Tom laughed gently as he gave her a reassuring hug. “I think you mean the fire zone, don’t you?”

He could see her head shaking from side to side. “No. I know exactly what I said. It may not be *your* fear, but it is mine. Perhaps Sandra’s fright about Bud has started to rub off on me.”

“But I’m always careful, Bash. Really.”

“I know,” she replied a little sadly as she stepped back. “But most of the time you are not facing an enemy like this Black Cobra woman.”

Tom had to admit that having Miss Li out to destroy him had to be a consideration, even if what she had told him was the truth. Especially in light of the possibility that her former employees might be out for greater revenge than just targeting him.

“Did you not tell me this woman seeks out dying pilots to man her disposable aircraft and pays them to not care if they live or die?”

“Yes, Bash. Harlan Ames once found a money trail from an account in Switzerland to one of the South Pole pilots and had surmised that she was paying these sick men enough money so their families could live comfortably once they had gone. Each one appeared to be ready to end their own lives in service to the Black Cobra’s daughter.”

“The money must have been *very* good.”

He nodded and reminded her that Miss Li had believed her own life to be in jeopardy.

“You still must be very careful, Tom. You should call the Air Force to assist you wherever you fly.”

“I will take extra precautions,” he told her. “But there is no way to be certain that the military can back us up on all our flights. The promise from the Air Force is to scramble aircraft that are within range of an air base and to have them at the scene about the time we arrive.”

He did not add that this only applied to any fires he and Bud would try to fight that were within five hundred miles of a major military airfield.

And that left about seventy percent of the country *uncovered*.

CHAPTER 20 / QUELLING THE INFERNO

TOM WAS JOLTED from his dreams by the combination of the special alarm tone from his nearby cell phone and from the shaking Bashalli was giving his shoulder.

"Wake up, Tom," she uttered wearily. "Something is happening at work!"

"Wha—? Oh, right." Tom forced himself up to sit on the side of the bed. As he was reaching for his phone he cleared his throat a few times so that he would not mumble or be unintelligible.

"It's Tom," he said into the mouthpiece. "What's happening?"

"Tom, it's Gary Bradley," the Security man replied. "We have a bad situation up at that new oil fracking and storage facility in northern Montana. Really bad."

Tom searched his groggy mind for information on the facility Bradley had mentioned. It was one of several taking advantage of the vast fields of oil trapped inside the shale often tens of thousands of feet under the ground. There were, to his knowledge, just two of them with their own major storage facilities. One was near Lewiston in the center of the state and the other one… he couldn't picture where it was.

"What happened?" he demanded. "Where is it?"

"The northernmost storage depot up near the Canadian border, between two small towns called Opheim and Glasgow was overflown by about a dozen helicopters just after sundown. The facilities manager contacted the police but there is little coverage by law enforcement up there. Nobody got out to take a report or to check on things, and the manager decided that if the authorities weren't interested then he wasn't going to be bothered."

"And, he should have been?" Tom asked, now completely awake and starting to get dressed.

"Too right, skipper. One of the workers called his wife to report that he'd found about a half dozen tubes attached to small parachutes hanging from some of the large tanks. Before he could do anything like report it to his bosses, it appears that all of the tubes detonated. Pretty nasty stuff because they blew holes in the tanks and set the petroleum on fire."

"I'm just about ready to leave. I'll be in your office in fifteen minutes. In the meantime, have the night crew get the new *FireBomber* charged up and turned on. I'm going to take it out there to see if I can help."

"Bud's Big Bad Wolf is going to get a baptism by fire. Literally," Gary said and Tom could tell that he was grinning. It was an absolute truth that whenever the flyer dubbed an invention or device something, it stuck.

"Yeah," Tom sighed as he leaned back over the bed to kiss his wife on the forehead. "And call our Mr. Barclay. The least he can do is to come with me!" He hung up.

"Do I need to tell you to be very careful, Tom?" she asked without raising her head from the pillow.

"No. You don't, I will, and you'll probably get a call from Sandy as soon as Bud leaves. She's still skittish about him being around fire, even in our aircraft."

Bud arrived at the Security building just a half-minute behind Tom. "I hope Bash didn't want to sleep any more this morning," he said with a slow shake of his head. "Sandy's not quite over my little flight accident. She's close, but—"

Neither said anything else as they walked into Gary Bradley's office.

The situation on Montana had started to get worse. The first round of explosions had evidently not been the last one.

"A new report came in from the fire team on the ground that says another ten or even fifteen explosions have gone off. A few might be from other types of tanks on the property. They evidently keep a stockpile of natural gas tanks to run their generators."

The rest of the news was not encouraging. Of the twenty-two tanks at the facility, eight were actively on fire and another four were in eminent danger of overheating and rupturing.

Tom placed a call to the control tower to have them obtain clearances for a direct flight.

"Bud and I will need to fly into Canadian air space starting just about the eastern end of Lake Ontario, cross up and re-enter U.S. space south of Thunder Bay, Ontario and then an almost direct west route over northern Minnesota. Let them know we will be in an unconventional aircraft for purposes of RADAR sightings and give them our IFF numbers. I want to take off in twenty minutes.

Thanks!"

He hung up before the man in the tower could confirm the instructions, but Tom knew that there would be no mistakes or questions and that he would get the approvals before the upcoming takeoff.

"Have all of the terrain and facility data you can scrounge up loaded into the computer and then please contact the Outpost and ask them to track us and beam down any new info that comes up. Thanks, Gary. Come on, Bud. We've got a real live fire to get to."

The two young men raced from the office and the Security building, hopping into Bud's car since it was a dozen yards closer to them.

By the time they reached the North West VTOL pad and the waiting *FireBomber*, the last of the preparation team was just exiting the craft. It stood there, looking for all the world like a cross between a more modern seacopter and some sort of UFO, but to Tom it was a beautiful sight.

"She's even more impressive with the spotlights on her," Bud said in an awed voice.

They strode forward and began to climb up the three-step ladder that stowed automatically inside the hull on takeoff. Bud stopped and called out to one of the technicians.

"Teddy? Catch!" He tossed his car keys to the red-headed man. "Take my car over to hangar six and park it on the southern side. Thanks!"

"You got it, Bud," Teddy called back. "After I take it on a high-speed run up and down the runways I'll be sure to put a buck's worth of gas in it!"

"The little smart-aleck might just do that," Bud muttered so that only Tom could hear him.

In only one minute they were airborne and receiving all of their clearances from the tower. The flight plan Tom had requested had only one minor change and would add just two minutes to the overall flying time. It was necessary to avoid a storm that had been brewing around Ottawa and had just started to spit out significant lightning.

With an official in-the-air time of five-seventeen and a flight speed of five hundred fifty miles per hour, the seventeen hundred mile trip would take just about three hours and ten minutes. With

the time zone change that meant they would arrive just before dawn.

As they neared their destination and the early light began to illuminate the scene, it was difficult to see anything with all of the dark gray and black smoke that was billowing upwards. Periodically they could both see the bright yellow-orange of the flames making the smoke.

"Go back and prep the controls, flyboy. You're going to be up to bat in about four minutes." As the flyer nodded, Tom reached for the radio and punched in the local firefighter frequency.

Bud rose from his seat and headed back down the starboard side passage. The first door toward the center of the craft opened at his touch and he entered, strapped himself into the seat and placed the special sensor glasses on his face. Tom had just completed them and they helped him by watching where his eyes moved and highlighting or amplifying any readout he looked at. With the lenses still flipped up, his hands danced over the controls as if he had been using them for a long time. In truth all he had was a dozen simulator hours to go by, but it all looked and felt right.

"Tom Swift to local fire brigade. I am in an experimental aircraft design to fight large-scale fires. We should be over your location in three minutes. Because of the nature of the unbreathable gas mixture used, I need to see if you and your team can move back or ensure everyone is in an Oxygen Breathing Apparatus. Even with OBAs, we will create a downward force that could injure anyone too close. Are you able to move back one hundred yards?"

"Tom Swift?" came the crackling response. "*The* Tom Swift. Thank the powers. We've been on station six hours already and won't have relief for another two. I can not only move my people out of the way, I can get them totally off the premises."

"Uh, Captain. I have to ask that you not leave or stand down. I'm not certain the effectiveness of this test rig. We haven't tried it against anything like this. At best you can have your people take a ten-minute break while we make three passes. We need about three minutes between each pass. I'll get back to you."

It was agreed to have the firefighters out of harm's way in three minutes. Tom called back to Bud to tell him the news.

"I'm ready," Bud answered over the intercom. "With the BigEye video processing I can actually see through most of that smoke. Gimme about ten seconds and I'll take the controls."

"Roger." Tom counted down the time. A few seconds late, Bud called out his readiness. "Okay. Transferring... now!" Tom pressed a single switch giving Bud's control panel and control stick full command of the *FireBomber*. The flyer immediately slowed them to a crawl.

His instrument showed that the compressor bypass covers had been moved away and that the excess air was being forced through the separators. In a few seconds the three gas tanks in the rear of the craft began to fill and pressurize. Less than two minutes later all tanks—nitrogen, argon and carbon dioxide—were full.

"Starting first run," Bud reported as the craft turned a few degrees to the right and the nose tilted downward.

As the inventor watched, they approached the closest of the smoke-engulfed tanks. Flames could be seen on his display—showing what Bud was seeing—coming mostly from a stream of burning oil that shot from the right side of the tank. Tom surmised that one of the explosives must have punctured the tank in just the right place to release oil and not allow it to build up its own explosive pressures.

"Stand by..." Bud said, more under his breath than aloud. "In three, two, and now!"

To the two men in the *FireBomber* it seemed that the scene below blurred as if a camera lens had been totally mis-set. This lasted only as long as it took the tanks to empty. Because of the vortex made by the central rotors the liquefied gasses appeared to be coming out as a circular coil, but one that raced away from the craft at an incredible speed. The seven purpose-built repelatron emitters shoved the three gases down to the ground at greater than two hundred miles per hour.

The effect was stunning and phenomenal.

As the streams rushed downward they vaporized, mixed and swirled around, hitting the flames and hot tank with such stunning force—not to mention the smothering effects of the three gases—that the flaming oil simply snuffed out. It was as if a gallon bucket of water had been dumped on a birthday candle. One second it was burning, the next it wasn't.

The force behind the gases smashed it into the ground where it the spread out adding even more smothering to an area greater than one hundred feet around the actual gas cone.

Bud sent the craft back upward and away from the smoke to get

into clear air. Two minutes later he made a second pass. By this time the flames had begun burning again in the area just doused, but they were noticeably lighter.

"Bud. After this next pass I want to call in the fire captain. If we can get his men into respirators and as close as possible to the inferno, maybe they can keep things down while we recharge. Otherwise I'm afraid that we will just be temporarily tamping things down but not getting the whole fire under control."

"Right. I'm heading back in. Go ahead and call them."

As the *FireBomber* made its next run Tom opened the radio frequency back to the fire captain. He quickly explained his plan and the grateful man, a man he later found out was due to retire that very day, agreed to the plan.

"Even this little breather has helped," he told Tom. "It gave us the time to switch out our air tanks as well. You give me the word and we'll head back in. Looks like you've been attacking the fire at tank eleven and a bit of number twelve. Suits us fine."

Tom called to Bud to go ahead with the next run.

The results were even more significant this time. It appeared that the dirt and stone system of berms surrounding the field of huge storage tanks was also holding in a lot of the heavy gasses the *FireBomber* send down. And, it was smothering ground-level fires for several hundred yards.

Tom also noted with satisfaction that the stream of oil pouring from the side of the tank had diminished to a small ooze.

"Must be empty to that level," he mused. He picked up the mic and called to the fire captain. "Go!"

As Bud circled up and away, Tom switched his monitor to a rear-facing camera and could see a half dozen trucks, some with scorched paintwork, moving back in toward the tanks. While Bud was opening the intakes for another charge of gases the inventor could see sprays of water dousing several of the nearby tanks.

It was only about an eighth of the fires engulfing many of the tanks, but it was a start.

An hour and a half later the *Sky Queen* arrived over the area. Red Jones, one of Enterprises senior pilots, called over to Tom.

"Skipper? It's Red. We brought some cavalry. Chow came in right after you left, heard the news and got those oil rig firefighters in Texas out of bed. We picked them up along with a couple specialty

pumps and high-temp hoses. Where do you want 'em?"

"Red," Tom began. "The last thing I heard you were in the hospital having your appendix hacked out. That was day before yesterday. What the heck are you doing here?"

"Aw shucks, Tom. They just make a tiny little hole in you these days, tie some fishing line in there, suck the thing out and give you a staple to close you up. I went in at nine and was home by five that afternoon. But, no more chit chat. I've got forty-three men and five women in the back all itching to get down and, as they put it, 'Get hot and happy!' Where do I put them?"

Tom radioed to the fire captain who almost broke down in sobs as he heard the good news. Two minutes later Tom directed the *Queen's* pilot to set down inside the main fences to the south, away from the smoke and heat.

The inventor asked Bud to set down and let him off.

"I need to give these new folks a tiny bit of training and also see what they really need us to do. Can you do the next few runs solo?"

Bud's response heavily referenced both The Pope and bears.

Tom approached the assembling firefighters from Texas. They all looked like the sort of people you never wanted to cross in a bar or a dark alley—not even the women—but they were a known quantity to him. He had to smile when he saw they all were carrying air tanks that had received the TomaCoat.

After explaining how the *FireBomber* worked and cautioning them about the gas mixture, he asked, "So, what can we do to make your job easier?"

One man stepped forward. He must have been six feet nine. The only thing differentiating his flame resistant clothing from the others was a bright red light mounted on his right shoulder.

"I'm Brian Chasen. I call all the shots for this bunch. I like the sound of your flying gizmo, but we'd prefer to do it our way. Why don't you and your friends take a break and give us a couple hours to see what headway we make, sonny?"

Tom walked up to the man and motioned for him to bend down. "I need to have a word in your shell like ear, Brian."

Chasen turned to his team and smirked, but he bent over placing his ear even with Tom's mouth. The inventor spoke in low tones and only spoke a few sentences, but the effect was immediate and thunderous.

"I'm sorry, Mr. Swift," Chasen muttered as he straightened up. "Misunderstanding. Didn't realize you were Chow's boss. I promise it won't happen again. Uhh, you call the shots, okay?" He looked nervously at Tom.

Shaking his head, Tom repeated, "You tell me what we can do to support *you*."

A plan was hatched within minutes and Tom radioed for Bud to change his attacks to come in from the north for a few passes.

"We're going to give the Texas team fifteen minutes to get set up and in place, then you pick me up and we will make a new series of attacks coming in from about eight directions around the entire complex."

The idea, as he explained once he and Bud were standing face-to-face, was to begin to drive the fires into a central location. As the *FireBomber* made each attack, and from a slightly lower angle than before, teams of the Texans would rush in with their hoses to keep things from flaring back up.

When the time came to take flight once again, Tom gave Brian Chasen a quick call to make certain the timing was right.

"Yeah. We'll appreciate the heavy lifting. It's a little confusing in here. We… we found a… uhhh, a body. It's a bit singed but looks like a woman. Asian. Pretty crumpled up like it was dropped from a height. Wearing civvies with a necklace with some sort of black snake on it. Anyway, I've had a couple of the men cover her with a flame blanket. We'll move it out when things quiet down."

Tom looked at Bud.

"You can't be thinking it's little Miss Li, can you?" Bud asked.

Tom's mouth puckered in thought. Finally he replied, "I don't know. If it is, then perhaps that puts an end to our Black Cobra troubles. She did, after all, tell me that she was in fear for her life. If it isn't, then I worry what message it is supposed to give us."

They soared skyward filling their tanks once they gained altitude and got into position about forty degrees farther north than their first runs. A radio call advising them that the ground team was ready came and Bud made the run.

Once again Tom switched from forward to rear cameras and had the opportunity to watch the smoke and flames being forced several hundred yards toward the center of the tank farm. As they curved around he also could see the Texans advancing with a wall of water

in front of them.

Again and again Bud hit the fires from positions all around the compass. During the following two hours they made two complete circuits of the facility. By the time they made their twenty-third run of the day, all but two tanks appeared to have been put completely out and the remaining ones were nearly out.

Refreshed by a rest and now supported by seven newly arrived fire trucks, the original fire team added themselves to the Texas team and took charge of tamping down any hot spots.

While the teams worked the last of the fire, Red flew the *Sky Queen* to Butte where he picked up several hundred burgers, five-dozen slabs of ribs, potato salad, beer, and anything else he could find.

The combined teams got a chance to clean up in the *Queen's* showers before tackling their well-deserved afternoon meal.

Tom and Bud sat to one side, and the flyer looked at his friend.

"So, I hear that the jolly giant out there was a little belligerent at first. Red Jones told me you had a quiet word and the man almost choked on his own tongue trying to apologize. What the heck did you say to him?"

Tom chuckled. "Well, for starters it wasn't exactly like that, but what I told him was my name, the name of our company, reminded him that we coated their air bottles, and then told him that Chow would kick his keaster all the way back to Texas when I told him how rude he had been."

Bud's face scrunched into a combination of a frown and deep contemplation.

"Jetz! I never thought to use Chow as an offensive weapon!"

A Montana Highway Patrol car squealed to a stop a dozen yards away and two troopers got out, carefully arranging their hats before moving toward Tom.

"Who's in charge?" the driver asked. When Bud pointed at Tom, the trooper turned to face the inventor. "Uhh, I'm not sure what to do about something, but I'm hoping you've got a clue. You see, about a mile that way—" and he hooked a thumb to the west of them, "—we've got a big open field filled with black helicopters and a bunch of A-rabs and maybe Chinese sitting around, sulking and looking kinda sickly. Nobody speaks a word of American and we're not prepared to give them translators."

Tom smiled softly. “Officer. Those men are the ones responsible for setting this fire. I believe if you ask that really tall Texan over there to show you the body he will take you to their former leader. I have a feeling they dumped her and then went to wait to be arrested.”

* * * * *

Three days later Tom lay on the sofa in his front room with Bashalli sitting beside him. He was still basking in the success of his anti-inferno suppression system and its use in the modified seacopter. The very next day after he, Bud and Red got home a delegation from the U.S. Department of Forestry came to Enterprises to discuss the purchase of a fleet of at least ten of the *FireBomber* vehicles.

“You are very happy with how this has turned out, are you not?” Bashalli asked as she leaned down and kissed his chin.

Tom nodded. “Yep!”

“And you are even happier to be here with me?”

The nodding continued. “Double yep!”

“I will not ask if you are going to now stop doing dangerous things. I love you, Thomas Swift, and want to be an understanding wife. Oh,” she sat up suddenly. “I forgot to tell you that Sandra has decided to stop being… how did she put that? Ah. She will stop being an afraid cat when it comes to Bud. I told her that she takes just as many chances when she flies as he does.”

She slid down to lay down in his arms and he asked, “What do you think I ought to do next?”

She shrugged, but was thinking, *For my Tom, the sky is the limit!*

Little did she realize than not even the sky would limit Tom’s next endeavor as he sought to do what had only been science fiction until now.

TOM SWIFT AND HIS AERIAL FIRETRUCK

OR

FIGHTING INFERNOS WHILE GETTING HIS OWN BACK AT A MEAN YOUNG MAN

BY

VICTOR APPLETON

AUTHOR OF "TOM SWIFT AND HIS MOTORBOAT," "TOM SWIFT AND HIS AIRSHIP," "TOM SWIFT AND HIS SUBMARINE BOAT," ETC.

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THE TOM SWIFT SERIES

TOM SWIFT AND HIS MOTORCYCLE
Or Fun and Adventure On The Road

TOM SWIFT AND HIS MOTORBOAT
Or the Rivals of Lake Carlopa

TOM SWIFT AND HIS AIRSHIP
Or the Stirring Cruise of the *Red Cloud*

TOM SWIFT AND HIS SUBMARINE BOAT
Or Under the Ocean For Sunken Treasure

TOM SWIFT AND HIS ELECTRIC RUNABOUT
Or the Speediest Car on the Road

TOM SWIFT AND HIS WIRELESS MESSAGE
Or The Castaways of Earthquake Island

(Other volumes in preparation)

GROSSET & DUNLAP
PUBLISHERS NEW YORK

Tom Swift and His Aerial Firetruck

THE TOM SWIFT SERIES

Tom Swift And His Aerial Firetruck

By Victor Appleton

Book eleven in **The New Tom Swift Invention Series**, titled *Tom Swift and the AntiInferno Suppressor*, heavily references a certain notebook written more than a century earlier by the Tom of this adventure.

While it is not necessary to enjoy either story without the other, I believe that the reader's experience may be enhanced by reading them together. In which order is up to you. My belief is that while one uses points from the other, both are standalone stories.

An effort was made to write this in somewhat the style of the books from the early 1900s, but that is a Herculean task at best. So my hope is to be forgiven if the reader finds some of the prose in this a little stilted and old-fashioned.

This book is dedicated to Howard Garis who wrote many, many of the original Tom Swift stories. As I read those later in my teen years I gained great pleasure knowing that he also wrote the Uncle Wiggily stories I loved as a small child. Thank you, Mr. Garis.

CONTENTS

This story takes place somewhere between the books
Tom Swift and His Wireless Message and
Tom Swift Among the Diamond Makers

AUTHOR'S NOTE:

More than one hundred years ago, when the first Tom Swift books were published, there were differences in how books were written. For instance, what we call "gas" was "gasoline" because a gas was something like air or propane or, as in this case, carbon dioxide.

To add to all that, spelling was often a hit and miss proposition with one editor or author preferring it differently from another. Then, when you added in the typesetters, few of whom were educated, guess work was all part of the process.

I have attempted to capture some of that in this "historical" novella. And so, as you read you might find things you question, believe to be mistakes, or are just plain strange.

While I cannot guarantee that each and every one was intended I can tell you that I know of at least fifteen instances that are not in keeping with spelling, grammar, word usage or punctuation by today's standards.

I suggest that you put your "editor's eye" into neutral and enjoy this for what it is. I promise that it will not ruin your appreciation of the story unless you are a strict grammarian or an English teacher.

For those people, I can only beg forgiveness for trying to capture the feeling of the original Tom Swift books, in this case about circa 1913.

TOM SWIFT and His Aerial Firetruck

CHAPTER I

A HARROWING EXPERIENCE

"I CAN'T BELIEVE this is happening," cried Mr. Wakefield Damon—an eccentric man generally given to more fanciful exclamations—said to the teenage boy and his friend standing to his right.

"That is certainly a great pity," the first boy told him. "The old Shopton Hotel has been a fixture in this town for more than fifty years, and here it appears to be ready to crumble into just so much soot and ash."

Indeed, the old wooden structure, a full five stories tall and by far the tallest structure in the small town set next to Lake Carlopa in the northern area of New York State, was now fully engulfed in flames and smoke. Later there would be whispered accusations and rumors of a mischief gone wrong, but for now all anybody could think was that the fire was getting the better hand against the small fire department and their two trucks.

Even with a portable pump and a hose tossed over the side of the small dock on the lake just one block away, not enough water was getting to the current concentration of flames that threatened to take out the fourth and fifth floors.

"Oh, bless my garden hose, but I do wish they would direct their

efforts where it might account for something," Mr. Damon cried.

The second boy had been watching the disorganized men of the fire department as they rushed here and there, stopping to aim one of their water streams at flames escaping from windows that were shattering and exploding outward from the intense heat. In his mind he could tell that this was not going to end well.

Tugging on his friend's sleeve, he tilted his head toward the building and asked, "Why are they only watering the fire down here? Why don't they start up on top where it is really roaring and work back down?"

His friend, Tom Swift—teenager, inventor and son of Barton Swift, also an inventor—looked back at him. "Well, Ned," he began as he stood next to his best friend, "you see, the problem is that water is very heavy and it requires a lot of power to make it fly through the air. So much that I am afraid our little fire trucks can't provide it. That goes double for the oldest machine, the hand-pumper over by the front entry."

"Why don't we get bigger trucks?" came the innocent question.

Tom almost had to laugh in spite of the terrible situation happening behind him. "Ah, out of the mouths of babes, my friend. It is actually an excellent question and one that ought to have an excellent answer. But alas, I have only to tell you that such trucks do not exist. Even down in New York City where I believe they have trucks with extension ladders capable of reaching practically to the top of our doomed hotel, the truth is that water being pushed upward in a hose forms a very weighty tube. Then, for each new gallon of water added to the beginning of the tube, that means practically eight pounds more to have to push upward. So," he was ready to turn this and any other experience into a teaching opportunity for anyone who would listen, "if a hose contains one hundred and fifty gallons at eight and a third pounds, how much weight does the pump have to push?"

Ned Newton was a junior teller in one of the town's two local banks, and could do many forms of mathematics in his head. His face scrunched up as he pictured the numbers and did the sums.

"Twelve hundred and fifty pounds." And, as soon as he uttered the answer his eyes widened when he realized the enormous figure

he had just quoted.

Nodding in agreement, Tom told him, “Right.”

“Golly,” Ned exclaimed. “No wonder they’ll never put out that fire. You have to invent something to do it, Tom,” he stated with the assuredness of youth.

Looking to his friend and mentor, Mr. Damon, Tom shrugged. What could he do? He was certainly adept at things mechanical, but doubted that he might create an improved pump. The latest ones no longer featured cylinders and valves working somewhat like automobile engines did—up and down, water in one side and out the other under pressure—but now featured powerful diesel motors that turned gears that in turn spun a multi-bladed fan-like object inside a circular chamber. With a special curvature of the blades it was now possible to both pull in water from a nearby source and to speed it up greatly as the blades turned, expelling it at high pressure.

He knew that the Shopton fire department used the older pumps with barely a fifty-foot vertical capability where new engines could spew water another twenty feet or more. Even now he could see on the perspiring faces of the closest of the fire brigade that they were resigned to losing the battle.

Try as they might to cover as much of the structure, as soon as the flames went out in one area, shortly after moving on to a nearby flaming section of the building the original area would erupt back into life.

Tom tried to calculate the arc of the water and how it was entering the small window areas. He figured that most of the water never reached more than six or possible eight feet inside allowing about eighty-five percent of the interior to remain on fire and ready to burst back into life

Quite possibly more water than the structure could withstand was needed to put everything out.

Looking back at his expectant chum, Tom Swift had to shake his head. “I’m not certain that I can, Ned. But I will promise you this; I will take some time in the next few days and see if I can think of something. Will that satisfy you?”

Ned thought a moment and then shook his head. “No. You have to *do* something so that your father, Mrs. Baggert and Old Rad and Mary and even me won’t burn.”

“You meant to say ‘I’ didn’t you?”

Ned thought about it and then saw his error. “Yes, sir,” he responded with a slight grin. English had not been one of his favorite subjects. “Me meant to say I.”

“Bless my ruler and chalkboard, this isn’t any time to be giving the boy elocution lessons, Tom,” Mr. Damon admonished him.

Tom smiled. He had a lot to thank the older man for. Over the years Mr. Damon had been a friend, a traveling companion, a sounding board and more. He frequently begged blessings on the most fantastic array of objects from his own shoelaces to the control cables of Tom’s incredible aircraft, the *Red Cloud*.

Evidently Ned was reading his mind for he now inquired, “Why can’t you use your airship to carry the water above the flames and then drop it down? Wouldn’t that make everything too wet to burn?”

Tom looked at his friend with some sense of wonder. Everything was cut and dried to Ned. He knew that Tom invented things and simply believed he could do something this time. Sighing, he pulled out his slide rule and did a calculation.

“I am afraid that isn’t very practical,” he responded finally. You see, the *Red Cloud* can lift just about two tons, besides itself. And so, even if you have just two people, a pilot and a spotter, that gives it something like one hundred and seventy gallons carrying capacity. And, besides, it is dangerous to fly right over flames. They give off tremendous heat and that can shoot the dirigible wildly up into the air, and the swirling vortex can suck it right back down to its destruction.”

He looked at Mr. Damon. Both had been in the *Red Cloud* months earlier when she drifted over a large forest fire. The results had almost killed them.

A call went out for everyone, including the firemen, to move back. “Get back! She’s gonna go any time!” the fire Chief yelled through the large megaphone he was carrying to shout orders to his

men.

As Tom, Mr. Damon and Ned moved back there was a cracking sound. They spun around in time to see the entire top floor collapse downward and into the floors below. One by one they went down like the bellows of an accordion until, with a final *whoomp!* of flames and smoke and air, the hotel was no more.

Tom glanced to the right as some movement caught his eye. A man about his age had turned and was running off at a fairly good clip.

Andy Foger!

Tom Swift well recognized the departing boy from years of being antagonized by the spoiled and undisciplined son of the local banker. Starting when both were in their early teens, Andy and a series of equally evil-minded cronies had practically gone out of their way to interfere with whatever it was Tom was involved in a the time.

If Tom were fixing up a car, Andy had to go out with his father's money and buy a larger auto. If Tom were tinkering with a flying machine, Andy had to have one and turn things into a contest to try to prove he was better. Fortunately, Andy often only succeeded in breaking whatever his new toy had been. On several occasions his actions had led to damage to the property of others and even to injuries.

What annoyed Tom most was that Andy's father would jump in to the rescue of his son, even when the proof was solidly against the boy.

Of course, Tom had taken great pleasure in knocking Andy down a peg, sometimes literally, on numerous occasions, and had been tickled pink when Andy pulled one of his most insane tricks right in the view of the local police constable. No matter what the older Foger tried–money, threats, pleas—Andy had spent an entire week in jail. Rather than coming out a better person, Andy had become more bitter and more determined to make the lives of Tom and Ned, miserable.

Bidding Mr. Damon a good day, Tom and Ned walked down the block and to a waiting automobile. The inventor had recently converted the car to run on methane gas rather than gasolene, and

had installed a device on the back into which he could place everything from table scraps to animal waste. Bacteria inside broke everything down with the results being heat, steam and the methane. The first two were necessary to keep the reaction continuing, but the gas was drawn off, run through a filter Tom had invented to remove impurities, and then a small pump forced it into a special holding tank.

The Swifts had a larger version sitting behind one of the buildings at the family home from which he might refuel the auto at any time. The small device was meant to provide an emergency source or additional gas for trips longer than the one hundred mile range of the main tank.

As he pressed the switch to turn the pump system on and to start the car, Tom's mind turned to the filter. It was a membrane of a material he had come across in a technical journal that only allowed the desired materials to pass through. In the case of his car, it was the methane gas.

Something nagged at the back of his mind as they drove off, heading for home to telephone Mary Nestor, Tom's girlfriend currently attending school out of town, of the demise of the Shopton Hotel.

TOM SWIFT and His Aerial Firetruck

CHAPTER II

AN IDEA JUST POPS UP

"EVERYTHING BAD SEEMS to involve Andy Foger!" Tom complained to his father, Barton Swift. The aging inventor had taught his son many things, even removing the boy from school when he turned ten to tutor his son in those things he believe made a man. He also imbued a sense of invention that Tom now carried on in his own way.

The things he had not been able to teach the boy were those that a mother might impart. Mrs. Swift had passed away when Tom was quite young, and his memories were only of a petite woman with a shiny face and a big smile who would hug him and give him kisses on his cheeks and tell him stories. Now, the only female in the household was their housekeeper, Mrs. Baggert.

She had tried to give the young boy a level of compassion for all living things, but had been ill-equipped to help him in cases like with the Foger boy. Pure meanness and an evil spirit pervaded the Foger family in general and Tom frequently ran afoul of Andy. And Andy's hangers on, like Sam Snedecker, who were always ready to follow Andy no matter how foolish it might seem to others.

Through the patenting of several of his inventions, Barton Swift had become a very rich man, having more money than Mr. Foger,

which was a source of jealousy on the part of the bank manager. It seemed that no matter what Andy's wild schemes might be, his father handed over enough money to see them begin with a bang, but Andy's own lack of patience and willingness to cut corners that ought not be anything but perfectly squared generally meant that he failed, or at least did not prevail over Tom.

Tom, on the other hand, earned all of his spending money. First by doing chores and later through a few of his own inventions and improvements to existing devices.

The whole situation bothered Tom and he was at a loss as to how to combat it at the best of times. But, now this latest happening had him both puzzled and worried.

"I saw Andy Foger sneaking away from the hotel building as the fire raged," he told his father. "He looked mighty suspicious. I wish I could get the goods on him. I'm certain he has had some hand in the terrible disaster."

"Now, Tom," his father cautioned. "It does nobody any good to point fingers when you have nothing to back up your assertions. Perhaps he had a perfectly good reason for being there and simply was leaving once he had seen enough."

Mrs. Baggert let out a snort from her position by the kitchen sink. "If you are asking me I'd say Tom here is probably more right than you are, Mr. Swift. That Andy Foger is a bad'n and no mistake. Even Mrs. Whittaker, their housekeeper, can hardly be in the same room with the boy for fear of what he might be planning!"

Tom hoped he might change the subject. Talk of Andy made him feel ill at ease. "Dad? Ned posed an interesting question while we watched the firemen try to put out the blaze. We both could see how ineffective their water hoses were what with most of the fire too high and too deep inside the building to reach. Once the timbers in the upper floors were weakened enough, down the whole thing came!"

Mr. Swift set down his newspaper and looked at his son. "You sounded as if you had a question, but it seems you forgot to ask it. What was it?"

Tom smiled. He had allowed himself to go off on a slight tangent but his father, as usual, brought him back around.

"Ned asked if I could refit the *Red Cloud* to carry water up high over a fire and then drop it or spray it somehow onto the flames. I did the calculations and told him we couldn't carry enough water to make any difference. But the real question is, is there some manner in which I might fly some flame-dousing liquid or even a powder up there and help. Perhaps not put the fire out but retard its growth and burning rate enough so that the professional firemen might save a building. What do you think?"

Barton Swift looked first at his son and then at the ceiling. As he gazed upward his mind began contemplating his son's question. At some level it made a type of sense, while at a purely logical level it was almost too far fetched. Finally he looked back at Tom.

"I would say the same thing I've told you time and again. In the world of invention, nothing is impossible until you have exhausted all attempts to make it work. That doesn't mean some things aren't impractical, but you cannot know what those are until you try. You give it careful consideration over the next few days and see what ideas you might come up with. And, of course, you may run any idea by me to see if I might help."

Tom kept up his smile even though he had been hoping for something a bit more… substantial. But, that was his father's way. He excused himself from the table and headed out to his work shed.

He pulled out several notebooks filled with his handwriting and sketches. Finding the one he was looking for, he set the others to one side and opened the book. He was looking for a series of equations dealing with the lift capacity of his *Red Cloud*, part dirigible and part aeroplane. He, Mr. Damon and their friend John Sharp—a former carnival aerialist and balloonist Tom had rescued when the man's balloon caught fire and he had nearly plummeted to his death into Lake Carlopa—had many adventures in the craft.

Finding what he sought, Tom studied the figures. His hunch had been correct when speaking to Ned. The cargo capacity of the *Red Cloud* was relatively low due to several factors. Among these were the weight of the airship itself, the cabin-like gondola that was positioned under the multi-chambered aluminum structure that held the lifting gas—a special gas of his own design that could be made with a few special chemicals so he was not reliant on the purchase of hydrogen gas or its more expensive cousin, helium.

While the *Red Cloud* could carry a greater amount of weight in forward flight, using the somewhat stubby planes—or wings as some might call them—to provide additional lift, these only worked to the craft's advantage when moving above a speed of nearly forty miles per hour.

Tom knew that was far too great a speed at which to attempt dropping water or some other suppressant. He might be required to either find something that was far lighter than water, develop an all-new and extremely lightweight aircraft, or both.

He also understood the principle behind not putting the cart before the horse. In this case it meant that he should be looking for the means of dousing the fire before he designed the delivery vehicle.

Tom wasn't even certain that a flying aircraft was the answer. Recalling the harrowing experience he and his fellow travelers had when the *Red Cloud* flew over the top of a massive forest fire, he felt a cold chill run down his spine. They had been buffeted about, shot into the air and even sucked back down dangerously near to the licking flames by the vortex action of the winds.

Would it be any different flying near to a large building fire? It might be something he needed to test. If it turned out that flying over any fire was too dangerous, could he come up with an alternative delivery mechanism?

He decided to take a walk around the Swift property. It often was useful in clearing his head and allowing the inventor to concentrate on the matter at hand.

"Oh, hey, Rad," Tom greeted the negro gentleman who was outside raking up some of the twigs and other tree debris that fell every time Shopton experienced a little storm. Eradicate Andrew Jackson Abraham Lincoln Sampson—named for the man who became president on the day his mother had been born and also for the man who freed his family the same year Eradicate had been born—was the local anything-for-a-nickel character who did occasional odd jobs for the Swifts.

Along with his mule Boomerang, a beast who gave true meaning to the term, 'stubborn,' Eradicate, or Rad as most folks called him, greatly disliked actual work but never shied away from it because of the reward at the end of a job.

"Mornin', Mista Swiff," he called out to Tom. "Yo looks lack yo gots somefin mighty serious on yo mind."

Tom laughed. "You might well say that, Rad. "Have you heard about the Shopton Hotel fire?"

Rad stopped raking and leaned against the handle with one hand while he pulled out an old bandana with the other and wiped his glistening, dark forehead. "Shore did. Effen went down thar an' saws me a bit of it. That's a terrible pity, that is. Nice lookin' place, althoughs ah never could afford to go inside fer fear theys charge me ten dollahs fer a glass o' water."

Shaking his head, Tom told him, "They didn't even charge ten dollars for a room, Rad. And I'm pretty sure that the water was free. Anyway, I'm going on a walk. If my father or Mrs. Baggert ask, tell them I'm going down the path to the lake and then walking toward town."

Eradicate agreed to do just that, so Tom set off.

An hour later the boy had reached and wandered around town, going past the still smoking ruins of the once great hotel.

Two very tired looking firemen stood to one side of the ruins spraying water onto everything. As Tom watched, smoke would rise from one spot and the men would direct their hose over to it. Minutes later another area would have a few small flames licking up and the hose shifted to cover that.

"It looks like very hot work," Tom called out.

One of the men, a local sheep rancher and fire fighting volunteer look over at him with a wry grin. "Hotter'n you might imagine, young Swift. Dratted thirsty as well. Say, I don't suppose that if I gave you a couple nickels you could run to the general store and fetch us back a couple bottles of soda?" He looked hopefully at Tom.

"Of course I'll do that, and it will be my treat," called out Tom. He began to turn to leave but turned back to face the men. "For all the hard work you do, it's the least I can do to say thanks."

He purchased five bottles, two for each man and one for himself. Walking back he drank his. A moment later the natural reaction of the carbonation from the drink made him burp. It came up through his nose, the gas stinging and making his eyes water.

Tom stopped, an idea hitting him. Could it be that simple? He knew the properties of the gas well. Could the smothering ability of carbon dioxide gas be the solution?

TOM SWIFT and His Aerial Firetruck

CHAPTER III

TOM IS IN A PONDER

THE REST of the afternoon, once he delivered the soda bottles to the two men, was spend reading through many books in the Shopton Library. Although not a large library by most standards—it was one of the smaller models of libraries the Carnegie people had build all across the country—it did feature a substantial reference section.

Unbeknownst to most of the townsfolk, many of those books had been secretly donated by Tom's own father in hopes of encouraging people to learn more as adults than they picked up in school when they were children.

He devoured every article he could find on the properties of carbon dioxide, even locating a five-year-old technical journal that held a short article by an Austrian engineer detailing how to build a simple carbon dioxide "flame overwhelmer" using sodium bicarbonate and household vinegar to form a chemical reaction. Supposedly by setting a beaker with the dry powder on a stand over a short candle and then adding the liquid, the resulting carbon dioxide gas would spill out and down the vessel and smother the flame.

It was an excellent idea, and Tom wrote down all of the important facts including how much of each ingredient offered the best results, how much each weighed in a measured amount, and how long the reaction lasted.

For a few minutes he considered whether it might be possible to carry the sodium bicarbonate up in the *Red Cloud* and drop in over the flames, then have the firemen pump an acid-laden water onto that, creating the gas. But, a few simple calculations and he crossed out those notes. Not enough control of the powdery substance and too much liquid would make it ineffective.

Heading for home, Tom was confronted by Andy Foger and Sam Snedecker.

"And, where do you think you're going after visiting the library, Swift?" Andy sneered. Sam, on seeing his friend sneering, did the same though he was unable to pull it off very well, looking more constipated than anything else.

"Yeah. Bookworm!" taunted Sam.

"Shut up, Sam Snedecker. Just because all of the black squiggles inside books befuddle your pea-sized brain doesn't mean they aren't a good thing," Tom rejoined. "And as for you, Andy Foger, I believe that you have a lot of explaining to do regarding your appearance right at the fire. You certainly high-tailed it away once you saw that I spotted you there!"

Andy's face went white and his lower lip trembled a little before he turned beet red and stepped toward Tom, fists clenched.

"You just take that back, Tom Swift. Besides, you were there. I'll bet you set that fire trying out some sort of new thingamajig or another! Yeah. That's it. I'll bet Sam here saw you there as well. Plain as day! Tell him, Sam."

Sam looked decidedly uncomfortable. "Uh-h-h, Andy? I wasn't—"

"Shut up, Sam!" Andy ordered. "You were there and you spotted Swift lurking around an hour before the fire. Let's go talk to the constable and tell him!"

"If you do, Andy, you will need to explain your being there. I have a witness and he is more believable that Sam here. Ned Newton is well respected in Shopton where as Sam is known to be a snitch and

your personal groveler. Go ahead, Andy, and make that mistake," Tom dared the other boy.

He turned away and started walking toward the road that would see him out of town and heading for home. Behind him, and a full thirty seconds later, he could hear Andy finally figuring out something to say.

"You just watch it Tom Swift, or some day you might just find yourself in a burning building!"

Tom stopped and turned slowly around with a look on his face that caused the two other boys to quickly turn and walk away.

Turning back and starting to walk again, the young inventor smiled to himself in satisfaction. He had both put Andy on notice over seeing him at the fire and had "stared down" the bully and his crony.

When he arrived back home, Rad was just putting his mule back into the harness of the small cart that carried his tools and belongings. "You daddy come out mebbe five minutes ago an' he was a-askin' fer ya. I tole him where you was an' he says to me to tells ya if'n I sees ya that he wants ta talk to ya. Well, Ise gotto go. Come on, Boomerang, ya obstinate ole mule!" he said as he tugged on the side of the harness. With a great deal of snorting to show its lack of delight in being made to leave the shade and tasty grass of the Swift front yard, Boomerang took a few slow steps and the pair of them shambled off down the country lane toward town.

Tom bounded up the steps at the front of the house and into the front room where he found his father reading a paper he intended to submit for publication.

"Ah, there you are, Tom. Come in and take a seat. I want to show you something and have a little discussion."

"What about," Tom inquired. He wanted to discuss some of his discoveries from the library but knew that if his father wanted to speak about something entirely different it would be difficult to swing the conversation around.

"Well, why don't I begin by letting you read something I found. I wrote this months ago and then filed it away as a lost cause, but a recent inquiry by our very own Government had me looking for it

today. Take a look," he prompted his son.

Tom took the five sheets of paper and began to read. As he got to the second page a small smile was on his lips.

Barton Swift had been asked to come up with some way to propel small, hand-launched torpedoes relatively short distances. There was no mention of the intent for such a device, but the older inventor had written that it was recognized that his own incredible turbine device was too large and had no practical manner in which it might be successfully downsized.

What really caught Tom's eye was the stated theory that an engine powered by a chemical reaction could be made in a size appropriate for such a device.

The reaction would be from mixing ordinary sea water with two powders and they would create great amounts of *carbon dioxide*.

Tom looked up. "Father, this is precisely the sort of thing I wished to tell you about." He detailed his research that afternoon and his belief that carbon dioxide was one avenue he believed ought to be investigated.

Barton Swift smiled. "It came to me on reading the letter from Washington D.C. this morning that I had looked into such matters and then it knocked around in my addled old brain that the very thing to remove the oxygen from a fire might be that same gas. And, I might have a suggestion for allowing you to carry what is required in the *Red Cloud*."

He told Tom that the general idea in his mind was to outfit the airship with a trio of metal tanks, or actually two hoppers for holding the pair of powders and one tank in which to mix them, add water and to allow the buildup of the gas.

"So, does that mean I ought to plan to carry the water as well?" Tom inquired. I suppose that it could sit in the mixing tank until I release the powders."

Mr. Swift held up one finger. "Not so fast, Son," he advised. "If you want to get to a fire quickly, and I believe that is a mandatory expectation, then you will want the airship to be as light as possible. So, what do you believe is the solution if you do not carry the water with you?"

Tom looked at his parent a moment before breaking into a grin.

"Why, I get it once I arrive. From one of the fire pumpers, I suppose. All I would need to do is to drop a hose down with the appropriate fitting and they simply shoot the necessary water up to me. With the necessary amount in the tank I can travel right to the dropping position, mix everything and shoot out the results into the fire below."

They spoke for another hour on the possibilities before Mrs. Baggert announced that they were to have an early supper as she had a ladies guild meeting to attend that evening.

"And don't go trying to do any cleaning of my dishes," she warned them. "The last time you broke a plate and they cost nearly a quarter dollar to replace. I can't have with you throwing away good money when I can wash them and keep them whole!"

After dinner Tom went out to the shed he used as a workroom and unlocked the door. He spent nearly two hours there making notes and a few drawings of what might be necessary to build a device as he and his father had discussed. He was just locking backup when the housekeeper came back.

Tom was about to call out a greeting to her when he heard something off to one side. The noise came from the direction of the large building that housed the *Red Cloud*. Keenly aware that a few attempts had been made in the past to either damage or steal his airship, Tom picked up an old ax handle that leaned against his shed and started toward the noise.

As he came around the final corner of one of his father's sheds the alarm system of trip wires and a gridwork of small tubes laid onto the ground—now covered with grass—that sensed anything treading on it, caused the lights and alarm bells to go off.

There was a sound of somebody colliding with the side of the building and then running footsteps from at least two people.

In the bright light that covered the entire rear yard area of the Swift property, Tom saw two young men running into the woods.

Andy Foger and Sam Snedecker!

Tom began to give chase. He dashed into the woods and took an immediate left turn down a disused path. He knew that if Andy and

Sam ran to the shore of the lake and headed back toward town he would cut them off.

What he could not see in the gathering darkness was that the hoodlums had second-guessed him and had strung a rope between two trees. It hit Tom in the stomach causing him to loose his breath and be catapulted backward into some bushes.

As he lay there trying to get in some good breaths he could hear the two laughing as they ran away.

His chest hurting quite badly, the young man staggered back to his home. He was met by his father who reported that nothing appeared to have been broken into before helping Tom into the house.

Tom resolved to report Andy and Sam the next morning to the local constable. If nothing else it would cause them to be visited once again regarding their illegal escapades.

TOM SWIFT and His Aerial Firetruck

CHAPTER IV

Red Cloud IS NOT THE RIGHT ONE

WHEN TOM woke up the next morning his lower rib cage was sore but his head was clear. After eating breakfast he requested his father's permission to make the report to the town's lawman.

Mr. Swift advised caution. "We only have your brief glimpse of young Foger and his crony, Tom. It is hardly legal proof and would not secure a conviction in a courtroom. No, that would require that they get caught in the act of vandalism and to do that I believe I must make an enhancement to our alarm system."

"What would that be, father?" Tom asked. The current system involving the thin wires that would break if walked into, setting off the entire system, was frequently rearranged so that no criminal could make a map of their location and thus avoid them on a repeat visit.

"I propose to purchase and install in weatherproof boxes a set of five or even six cameras with flash bulb attachments. And with some adjustment to how the system reacts to an intruder I also believe I can control each camera so that they only go off in the area where the would be vandal actually is located."

He told Tom he knew of a shop in Albany, the capital of the state

and about ninety miles to the south, that sold the very equipment he needed. He asked to borrow Tom's motor car for the journey and was granted that privilege immediately.

"I shall return this afternoon and have things set for tonight," he declared.

During the following week the alarms did not go off and Tom was able to make great headway in adapting the Red Cloud for his new purposes.

As there would be no great requirement for the week's worth of supplies generally carried aloft, nor would there be need to carry the additional one hundred gallons of gasoline in a pair of tanks that flanked the motor which operated both the front and the rear propellers.

Tom made one more decision to remove the shaft and the propeller from the front of the craft. It would save a few hundred pounds of weight, allow him to install a larger mixing tank and to set it onto the floor and not have to work over or around the boxed in drive shaft that rose fifteen inched above the floor.

It would be impractical to involve the fire department men in his initial tests. For security and safety reasons he wished to hold them on the family property next to Lake Carlopa.

This meant that his mixing tank would need to be brought to the scene already filled, and that was a relatively easy task.

In all, his changes to the airship required nine days of Tom's time along with the occasional assistance of his father and Ned. With everything completed he wheeled the big, red vehicle out of its hangar and then tethered it to a large stump that had earlier been outfitted with a large iron ring just for this purpose.

Tom's airship was not dependent on either of the two gases used by both the United States for their military airships and blimps—helium—or by foreign governments such as Germany where the more readily available and less expensive hydrogen was used.

Helium was the safer of the two. It was fairly inert and only slightly less powerful as a lifting gas than its explosive cousin. This had been learned the hard way and was still something other nations had to deal carefully with.

Tom created his own lifting gas. It was a close third to hydrogen, as safe as helium, and could be manufactured on the fly, so to speak, whenever he needed to. Several chemicals Tom was exceptionally careful to protect the names of, when mixed in precise proportions created the gas. A load of only two hundred pounds of these chemicals could fill the multi-chambered aluminum air box above the gondola.

Tom now set the process into motion and then climbed into the gondola to make certain everything was prepared for this first test.

Twenty minutes later he felt the airship begin to lift from the ground. It reached its short chain tether and stopped rising. The simple pressure gauges showed that all six of the chambers in the lifting body were coming to the three-quarters point. For this test the lit would be tested to its limits and so he had determined that they must be ninety-five percent full at a minimum.

Tom climbed out and attached the hose he had previously rigged to take water from the irrigation well on the property and to pump it into the tank.

There was a point about five minutes later when the ship dipped slightly until more gas allowed it to float back up.

Before he knew it, the ship was ready.

His ground crew had gone down to the lake an hour earlier to arrange things for the target fire. So he called to his father. “Come release me, please.”

Two minutes later the release lever had been thrown and the airship rose above treetop height. Tom turned on the motor, engaged the propeller and steered toward the lake.

When the *Red Cloud* reached the drop point for his first test Ned, Mr. Damon had old Rad had a good fire going in the clearing by the lake. It had been agreed that the proximity to water was preferred if anything should go wrong. Tom had brought along a small water pump, powered by a small gasoline motor, in case water might be required.

He slid his side window open and picked up the small megaphone on the floor. Placing it to his mouth he called out, “Ahoy! I intend to pass over the fire in about two minutes. Go ahead

and toss on a few more boughs and then move off to the side. This gas I am carrying will choke you if you inhale too much."

"Well, bless by old lungs," Mr. Damon exclaimed. "And here I thought all we needed to do would be to cover our mouths with handkerchiefs. Here, I even brought along extras." He shook his head, but followed the young inventor's command.

Several additional pine branches with their pitch-engorged needles were tossed on and the flames rose by at least ten feet.

Tom, seeing that his gondola was beginning to fill with some of the smoke had already closed his window and turned the *Red Cloud* to the north. As he reached a point nearly one hundred yards away he swung the tail planes hard to the right and the flying ship nearly spun around on its own axis.

He had to smile as the great weight of the pressure tank behind him caused the ship to over-rotate and he had to adjust his course back the other direction.

Red Cloud began moving forward. Tom held her about one hundred feet over the water as he eased forward, coming to a near stop over the flames. The ship was buffeted by the updraft of the hot air and he knew it would only be safe to remain there for a few seconds.

His right hand was hovering over the lever that would release the gas, and now he gripped it and pulled back with all his might. A great hissing and whooshing sound came from behind him, loud enough to make him wish he had brought along some sort of earmuff to reduce the effects.

From below the sight was an amazing one. To Mr. Damon and Ned it looked like what it was, a great deal of gas dropping down from the two exit pipes and onto the fire.

But to Rad it looked like a giant waterfall heading his way and he hightailed it into the safety and cover of the nearby trees.

The effect on the flames was easily noticed and quite effective.

In just seconds all flames had stopped and the fire sizzled and popped for a moment before reigniting.

Tom had moved a little to the south and spun the ship back

around in time to watch the flames come back up. It was a disappointment but one that he had already believed might occur.

Later, after the three on the ground had used the pump to douse the fire and when they all assembled in the *Red Cloud's* hangar, Tom explained.

"As I imagined, the carbon dioxide gas in the tank was sufficient to knock down the flames, but not enough to cool the actual burning wood. I have to admit a combination of success and failure, but this is most definitely a step in the right direction."

Mr. Damon raised on hand and inquired, "But, Tom, if the fire did not extinguish, how can this be a success?"

The boy explained that there was a mis-match between the amount of fire and the amount of the gas his airship could carry.

"If I were able to carry perhaps four or five times the amount of gas, and under sufficient pressure to cause it to go into its liquid state, then that super cold liquid would fall on the fire and both smother and cool it at the same time."

"Mista, Tom," Rad said. "How's ya gonna do all that with dis here shop o de air ya gots?"

Tom chuckled. "Well, Rad, that is a very good question. Unfortunately I now believe that my *Red Cloud* may not be the solution. I fear that she isn't capable of carrying the needed load of liquid gas. In fact, as I think more and more about it, I believe that simply filling the tank or tanks in any new ship and then flying to the scene of the fire will not work."

"Why," Ned and Mr. Damon asked in unison. Rad nodded his agreement.

"Simply because of time. Too much of it, in fact. Too much time lost flying to the fire in the first place only to drop the load and spend all that same time flying back for a refill, back to the fire and back and forth again and again. You could never get ahead of things."

"But surely the local firemen could rush in and keep things under control." Ned stated.

"Perhaps," Tom admitted. "But I would rather find a way to

manufacture the gas right inside a new airship so it might be accomplished near the site of the fire. And so, as much as I cherish her, I am afraid that my *Red Cloud* is not the solution. I must build another!"

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Tom and Barton Swift sat at the dinner table discussing the test. The younger man was disappointed but admitted that he knew it had just been a test and that refinements were inevitable.

"Do you believe that the system is sound in theory, Son?"

"What do you mean?" Tom asked.

"Well, is the carry and mix on site system going to give you what you need when made larger? I still believe in the promise of carbon dioxide but I have to admit to having snuck down and watched the test. I fear that the gas was coming down with very little force. Much of it appeared from my vantage point to simply be lifted and carried away by the heat of the flames."

This was something Tom hadn't considered.

"If that is the case, then I must devise a way to force the gases to the ground under much greater pressure," he stated.

Inside he was thinking to himself, *I only wish I knew what that solution might entail.*

TOM SWIFT and His Aerial Firetruck

CHAPTER V

MR. SWIFT PROVIDES A FINE IDEA

THE NEXT afternoon Mr. Swift knocked on his son's shed door. "Might I have a word, Tom?"

Puzzled, Tom replied, "Of course. At any time, father. Why do you even ask permission like that?"

"Because I may be about to suggest something you could find to be an annoying intrusion or at the very least to be a needless expense."

"Please," Tom said indicating the single "guest" chair he had in the ten-foot by fifteen-foot building.

Barton eased onto the chair. Tom knew his father had been feeling the ravages of rheumatism in his hips and lower back for some time, a curse of older people everywhere.

"Fine. Well, here it goes. As I overheard you remark to Ned and the others, your fine airship is probably not sufficient for the task at hand." He looked to see Tom's reaction. The younger man nodded.

"Well, as long as you agree then I also must tell you that as much faith as you place in your homemade gas mixture, you have had to contain it inside a solid metal case. Its nature is such that it will not be contained inside a woven cloth gasbag."

It was true. Being slightly corrosive it had been mandatory to construct the *Red Cloud* with the heavy metal chambers.

"What are you suggesting, then?"

"Helium. Now before you say anything like 'it is too expensive' or 'it is controlled by the Army,' I have to tell you that I have a good acquaintance in Washington who has told me on several occasions that I may purchase a fair quantity of it at any time I decide it will be helpful for any of my experiments or inventions." He looked at his son a second time.

Tom had been nodding his head as this information was being imparted. He had to admit to himself that he only had developed the formula when it was necessary to do so to overcome the lack of a safe gas to purchase.

"I could save quite a few hundred pounds by eliminating the aluminum shell," he stated. "There are considerations for having to bolster the gasbag so it might withstand faster travel speeds but those are not insurmountable. Now costly would the helium be?"

When he was told the figure, the young inventor was flabbergasted. He had expected it to be an exponential number. "That is incredible. Why, for that price I can only make two fills of my own gases and those must be vented after every three or four days of use as they lose efficacy. With helium I could add a small pump and remove it from the gasbag when not needed, and store it in a tank here on the property."

When his father excused himself Tom set to coming up with a new design specially purposed for his aerial fire fighter. All old considerations could be abandoned in favor of everything that would make the vehicle the most effective it might possibly be.

His mind became so enthralled with the design that he barely ate or slept for three days straight. It was only when he staggered into the house one afternoon that Mrs. Baggert steered him up the stairs to his bedroom and gave him a gentle shove.

Tom tumbled onto his bead and was asleep two minutes later.

When he rose the next morning he had dreampt of several refinements he might make to his system. Among these was to include a fairly small pump whose only job it would be was to fill a pressure bladder inside of the mixing tank. As the bladder would

inflate it would compress the gathering gases. Those, in turn, would reach a pressure where they would begin to thicken.

It was that thickening he felt was needed to be able to force the carbon dioxide down through the flames and into the heart of the fire.

It would also mean that the gases would be many, many degreed colder and that would assist in cooling the hot source.

Mr. Swift provided his son with sufficient funds that the boy could hire several local craftsmen to help build the gondola of the craft, and three expert seamstresses who would sew the four chamber gasbag from a very tightly woven silk coated with a thin layer of a liquid rubber compound of Barton Swift's making. With such assistance the craft began taking shape just one week later and was complete a further nine days after that.

Tom shook the hands of each man and assured them their work was not simply appreciated but could change people's lives.

During the construction a large hole had been dug next to the Red Cloud's hangar. And beside that the floor and framework of a new and larger hangar was being erected.

The purpose of the hole became evident when on the day prior to completion of the new craft a very large truck arrived with a large metal tank on its trailer. The hole was inspected by the driver who pointed out several places where small lumps needed to be flattened a little.

Next, two more trucks arrived, one carrying a load of sand and the other holding a heavy-lifting crane.

Nearly a third of the sand was dumped into the hole and then smoothed out by to men with large rakes. The crane groaned into life and the steam-powered engine began to unreel thick cables from rollers on top of the cab; These were attached to the tank at various places and in minutes the tank—filled with Tom's helium—was set into the hole.

To finish things and stabilize the tank, the remaining sand was poured into the hole filling in the gaps around the sides and covering the tank by at least two feet leaving only a raised valve and gauge housing sticking above the ground.

As quickly as they had arrived all the trucks trundled down the

road and disappeared.

It required another two days for Tom to get ready for a test in his new craft but that was Saturday and so he had a full compliment of friends and his father in attendance.

Again, Ned, Mr. Damon and Rad went down to the lake and set up a good fire while Tom and Barton carefully attached both the fill and overflow hoses to the new gasbag and began the task of filling the thing with helium. A previous test using only normal air had shown it to be completely seamed and capable of holding gas at pressure. The bag rose from it's perch atop the gondola—it could be folded and stored there easily—and was soon rising toward the sky. Only the weight of the gondola and its content kept the bag from going up until Tom gave the signal.

His chemical tanks and the water tank were full but the helium had little problem lifting everything. If anything it lifted the heavier craft faster than the Red Cloud could manage.

Everything was run in the same manner as the first test weeks earlier. There were several differences. To begin with the larger gas bag was buffeted more strongly by the rising heat and Tom felt like he was being shaken by a giant's hand.

Next, the pressurized gas did indeed come out of the nozzles in more of a thick stream than as a poufy cloud. It was only as it neared the flames that it practically exploded outward. And this had to effects. The fire was blown out, and the shock of the expanding gas hit the new aircraft hard.

This was minimized, however, but the face that once the heavy semi-liquid was gone the craft had so much lift that it began to rise at an almost alarming rate.

Tom got everything back under control before he reached five hundred feet. Turning back around he could see that the fire, still hot inside, had come back up but was much lower than before.

As he mentioned to everyone while they were deflating the gasbag and preparing to put the new craft away for the evening, "If I only had enough chemicals and water for another two shots I would have put that put that out."

"How might you do that," Mr. Damon inquired. "Bless my newly singed eyebrows but I hope you can answer that one!"

“So do I,” Tom told them all. “I’m not certain what the answer will be but there has to be a way to either carry more gas up there or to make it along the way.”

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Tom and Barton sat having breakfast the next morning talking about the new issues with the airship.

“Well, I might suggest that you don’t go fight in over the flames to start with,” the older inventor said. “That will stop the rough handling the heat gave you and perhaps even safeguard your gasbag a little more.”

Tom stopped with a forkful of corned beef hash part of the way to his mouth. “Well, if I do that then how do I get the carbon dioxide into the heart of the fire? Unless I am rushing forward and that momentum carries the gas along, I can’t see how it might be possible.”

“Do you recall when I taught you to shoot my old shotgun at clay pigeons?”

Tom nodded, taking his bite of the hash finally.

“What did I tell you then? How do you it the moving disk?”

Tom swallowed and smiled. “Oh. I see. You lead it. Aim ahead and estimate where it will be. But how do I do that with my airship?”

“I suppose that you will need to increase the pressure inside your tank and then force the liquid gas though the nozzles like you already do, but position them facing forward at an angle.

Tom excused himself and raced to his shed where he filled several sheets of paper with computations. Finally he came up with a good angle to test. As he described to Ned that evening, “If I angle the nozzles forward about forty degrees I can release the liquid gas early enough to steer to the side of the fire. That plus the immediate rise I get with the lighter craft should keep me safe and steady. Come outside and I’ll show you what I mean.”

They left the house and headed for the now complete new hangar. After the test Tom had only removed about half of the gas to make further testing faster.

“Tom,” began Ned as he looked up at the incredible sight of the

partially-expanded gas bag above the sleek and, frankly, ultra-modern gondola attached underneath.

"Yes, Ned?"

"The other boy hummed a few seconds before inquiring, "Have you decided on a name for the new airship? After all, every ship deserves to be christened with an official name. Even though I realize you have simply been calling her 'the flying fire engine.'" He grinned at Tom with a hopeful look.

The inventor sensed that his friend had a notion already as to what the new flying machine ought to be called. He asked, "And, what do you think she should carry as her official name, Ned?" smiling in anticipation.

Now it was Ned's turn to smile. He walked from the front of the ship to the back, both hands behind his back, as if inspecting the large vehicle. He returned to the front where Tom ad gone back to making the small adjustments on the fifteen blades of his incredible new intake system.

"*White Cloud*," Ned told him.

Tom stopped and set his screwdriver down. "*White Cloud*?" he inquired. "Isn't that awfully close to the *Red Cloud*?"

Ned's head bobbed up and down. "Yes it is, but if you will hear me out I can give ample reason for the moniker."

Tom had to keep himself from laughing at his friend's use of the word, 'moniker.' He reminded himself that the other boy had recently sent away from a booklet titled, "Learn A Word a Day" and had been attempting to use as many as possible.

"Fine, Ned. Please do explain it to me."

"Very well. You see, as I was witnessing your test of the expelling system the other day I was greatly taken by the near cloud-like appearance of all of that gas. It was so thick and billowy that I could not see beyond it. At that moment the name hit me. Why, I said to myself, that is putting out a white cloud, and that is the name I believe she ought to carry."

Tom laughed. "Then, with that explanation given I can hardly refuse. She will definitely be christened *White Cloud* both informally and officially, at least once she proves her mettle."

TOM SWIFT and His Aerial Firetruck

CHAPTER VI

RESEARCH AND DEVELOPMENT

TOM MADE several enhancements to the controls and to the release mechanism for the tank. But, try as he might over a series of three additional tests the thickness of the gas was not sufficiently liquefied to really force it out soon enough and to have it reach the flames at the perfect moment where it would spontaneously expand and both smother and cool the fire.

Even when he got close that still left the issue of only being able to carry enough to make gas for a single run. In a timed trial he and his support team—again consisting of Ned, Mr. Damon and the mostly ineffective bug game Rad Sampson—managed to make a simulated drop, return to the landing point where the ship was resupplied with what it needed for the next drop, and then back to the "fire," the very best they could manage was eighteen minutes.

"That just will not do," Tom declared.

"What can you possibly do, Tom?" Mr. Damon asked.

"Dat's what I'se been thinkin' too," Rad piped in. "It's a lookin' lak yo gotta make it yerseff each an effer time whilst ya's flyin'." He chuckled at the notion, but stopped and looked around as Tom was suddenly staring at him. "What I do?" he asked in a frightened

voice.

“Rad, you didn’t do anything except give me a great idea,” Tom told him.

He explained to the all how repeatedly making the gas, what they did for a single tank full now, was what was needed, but it had to be accomplished in the air and without any support team or resupplying.

“Well, bless my lungs and tonsils. What do you plan to do, Tom? Capture your exhaled breath as you fly yon miracle ship?”

The inventor smiled at Mr. Damon.

“Listen, everybody. There is a veritable trove of carbon dioxide right here,” he told them.

Mr. Damon and Ned looked dubious while Rad’s head swung left to right and then back again several times.

“Where dat?” he asked.

“In the very air we breathe and my airships fly through. In fact, if you were to simply take all of the air in our new large hangar and somehow manage to remove the carbon dioxide gas, you could fill a box of about two feet on each side.”

Ned cleared his throat. “It actually doesn’t sound like it amounts to all that much,” he offered.

Tom shrugged and gave a little nod. “Well the truth is that it is less that one percent of the air around us, but like all of the gases it can be separated and contained in pressurized tanks. How do you think they get the gas to make what some people call dry ice? Easy. They have machines that filter it out of the air, capture it, and put it under such pressure that it first turns into a liquid cold enough to freeze a finger solid in three seconds and then it solidifies.”

Ned’s face scrunched up in thought. “Fine, I suppose, Tom, but I recall our ninth grade class taking a bus trip down to such a factory in Albany and the equipment they had would fill a large auditorium. Not even your new ship with all of the helium it can contain would budge that from the ground.”

It was a truth that Tom knew would require both considerable thought to even plan a way around the problem as well as a

potential money outlay that would doom the project.

Several days passed before Tom asked permission to visit the large library of New York City. He had exhausted the resources of both the Shopton and Albany repositories.

After receiving parental permission he took his motor car, filled the gasoline tank from the supply the Swifts kept on their property, and drove south. The drive was a long one and he suffered a puncture about two hours after setting out, but as the car carried a repair kit he had the tire dismounted, off its oak and steel rim and the tube out and fixed in no time.

After checking into a small hotel a few blocks away from Grand Central Station he took a trolly car to the New York Public Library on 145th and was allowed into their reference section upon identifying himself as the son of Barton Swift.

For three hours until the librarian had to ask him to leave for the evening, Tom poured over nearly a dozen large volumes detailing every aspect of the properties and methods of collection for carbon dioxide.

He returned the next morning and only left at four that afternoon because he had promised to be home by nine. But he time had been more than worth it. He now knew what he had to do in order to collect large enough amounts of the gas.

“I will have to construct a membrane with gaps so small as to only allow gas molecules smaller that the desired ones to pass beyond, and then collect the results. It will not be perfect but there will be a possibility to achieve greater than ninety percent pure gas,” he told his parent at the table where they sat having a late dinner.

He described the process where he might build such a things and tumbled into his bed an hour later. Tom rose early enough to meet the telegraph man as he was opening the office at seven the next morning.

“It is a good thing that I just send these and don’t have to understand them,” the man told Tom as he stood scratching his head on wonder. “You do know that a telegram this long will cost extra. But, I guess I can keep it to about fifty cents. Is that acceptable?”

Tom said it was and handed the man three quarters. “That’s two for the message and one more for you to make sure I get their reply as quickly as possible.”

It required a week but delivery was made of nearly ten yards of a very special fabric made from the most tightly-woven silk possible. And still, this was not going to be sufficiently dense enough for his purposes.

What would make it so was a solution of chemicals that he repeatedly dipped the fabric into, once it had been tightly stretched in one by one yard squares over wooden frames. Each repeat of the process was followed by a period of drying and then curing using carefully applied heat.

Three days came and went before the young man was satisfied that the spacing between fibers was so small that it would perform as required.

Tom had not been idle during the week it took to get his fabric. He had constructed a special mechanism that was part compressor pump and part airplane motor. A special propeller was being built for him by a company in Connecticut that would have not two blades as with most, nor would it have three or even the four blades of large propellers being used on large aircraft.

This one was to hold twelve blades all angled at a more acute degree than any airplane could use. But all the extra blades had a specific purpose.

When surrounded by a circular cowling that was barely wider inside than the edges of the blades, it would force nearly ten times more air into the part of his machine that held the membrane than a regular propellor could.

This air would be under great pressure that was, in turn, mandatory to push the unwanted gases through leaving behind the desired one. Then, to facilitate the gathering of the carbon dioxide Tom had installed a rod right in the center of the tunnel where its rounded end would push the fabric into a shallow cone.

Pressure inside would force the gas to the edges where it would go though a series of small holes around the perimeter to then be pumped into an aluminum tank under incredible pressure to be used against a fire.

About the only thing necessary was for Tom to test the system so he might determine how much of the flame killing gas he could get in a predetermined period of time.

His hope was to have a machine capable of filling the tank every two minutes. It was ambitious, he knew. but anything much longer would lose the advantage of repeated attacks.

His first test, held while the equipment was stationary and on the ground, was mildly successful. Working against him was the amount or yard debris that was sucked into the new propeller that quickly covered much of the membrane and finally, before he could shut the motor off, punctured it.

He cleaned up everything and installed one of his backup membranes before locking the hangar and his shed and going inside for the night.

It was just after midnight when Tom was rudely woken by the sounds of the alarms going off in the Swift back yard as well as the bright lights that lit everything. He hurriedly pulled on his trousers and shirt and ran from his room. As he bound down the outside stairs he was in time only to hear whoever it had been who tripped the security system.

Barton Swift joined his son, a shotgun he kept with shells full of rock salt to fire painful but not injurious punishment to would be intruders.

Even Mrs. Baggert, generally given to sleeping through even the most noisy thunder storms, appears soon after.

“Did you see anyone?” the older man asked.

“So,” Tom told them both. “Only the sound of one or more persons fleeing. I hope the cameras were able to capture a good image of our *visitor*.” He emphasized the last word as if it were a distasteful thing.

“I will fetch the ladder and see which of our cameras tripped and then begin the processing of any exposed plates. I suggest that you, Mrs. Baggert, go back inside and prepare some strong coffee for me and a good hot mug of cocoa for Tom here.”

As she bustled back inside, Tom headed across the yard and his father walked to the tool shed next to the house.

Inside of five minutes two things had been discovered.

Barton Swift let out a holler to tell his son that one of the cameras was showing exposure. “It is the one pointing to the hangar buildings, Tom,” he called out.

Tom had been checking his own shed as well as his father’s main office shed. He now ran to the indicated area.

As he neared, something caught his attention. It sounded like the hissing of a snake, but Tom realized, in horror, that the noise came from the valve for his tank of precious helium.

Lunging forward he tore the wood box off and immediately could see that the valve had been turned so that some of the gas was now escaping. Tom reacted quickly managing to get the valve shut in just seconds. With the pressure gauge attached to the fill hose it was impossible to tell how much had been lost. That would be something to check in the morning.

Tom went back to the house and stood outside of the small closet where his father had set up a film processing dark room.

He called through the door to tell of the open helium valve.

“I was afraid of something like that,” Barton’s voice came through the door. “I shall have this plate processed in about three more minutes and then we shall see who we have captured.”

When the older inventor finally came out and to the dinner table where Mrs. Baggert had their hot beverages waiting, he was shaking his head. He handed the plate to his son.

Tom gasped. “Andy Foger!” he exclaimed.

TOM SWIFT and His Aerial Firetruck

CHAPTER VII

THE TEST VERSUS REAL LIFE

TOM MADE three prints of the photographic plate on special paper. One was to be locked away with his most private and special papers in a fireproof container, one was to give to the local constable as evidence against the miscreant, and the third was to be taken to the county courthouse to be registered as potential evidence.

He went to bed feeling a mix of emotions. While he was happy that proof had been taken of Andy's crime, he still did no know the extent of the helium loss. If it were greater than one-tenth the amount in the tank it would be devastating. He would not have sufficient lifting gas for his new airship plus the somewhat heavy gathering and compressing equipment that needed to be installed.

In the morning his father offered to take both the courthouse copy as well as the one for the local lawman, as he had to go to the hardware store to purchase some additional chemicals to use in making more photographic plates.

Tom agreed that it was a wonderful idea and was soon outside examining the valve of the tank. He was relieved that no sign of actual damage was evident. He had awakened before dawn after having a dream where the valve had been damaged by Andy and had leaked all of the remaining gas out during the night.

There was no worry on that account. The valve was in fine condition. All that was left was to install the hose, close off the far end and open the valve. The pressure building up in the hose would give him an approximate idea of the level of gas in the tank.

Once it was attached and double checked for closure, Tom took a deep breath and opened the valve. To his immense relief Andy's actions had resulted in very little loss. Perhaps even less than a single percentage.

Tom now took the far end of the hose into the large hangar and attached it to the fill valve of the gasbag. He released the helium into the bag, not enough to cause the fabric to move, but it was gas he did not wish to lose.

By the time his father returned from the errands, Tom had managed to create an improved design for the filtering and collection of gas.

"I believe that enough of the unwanted gases do not go through my membrane but do slide to the collection holes in the side of the duct tunnel and are then put into the tank," he told his father at lunch.

"What is your solution to that, always assuming that a problem exists? Have you, for instance, tested the collected gas or gases?"

Tom nodded. "Just after I measured the remaining helium. Of the gas remaining in the tank from my abbreviated test is would seem to be about seventy percent carbon dioxide, and most of the rest is nitrogen."

"I see. You will not want that so I again ask about your solution."

"More filter membranes," Tom replied. When his father looked disbelievingly at him, he added, "I will create a secondary membrane system. Once I collect the first of the gases, that amount will be diverted into a second chamber that acts just as the first one. I am certain that with far less of the undesired gases in that mixture that the highest majority of them will pass through and only allow the carbon dioxide into the pressure tank."

"I look forward to seeing the results of your tests, then," his father said with a smile.

Five additional days were to pass before Tom had created his

second stage filtering system. This time he wanted to hold a full test and that, he knew, meant that he needed to go aloft. With the assistance of Ned on the weekend and his father and their handyman, Garret Jackson, on two additional full days of labor, everything was dismantled on the ground and installed inside the now extremely cramped gondola.

It was so cramped that Tom would be forced to sit in the tight space to the left of the great fan duct.

When Tom felt ready he was saddened to know that Ned would not be there. It was the middle of the day and a Thursday, so the other youth would be at work.

The old fire site was raked flat and new branches and some dry kindling from the house were taken down and stacked. As these were roaring to life, Tom was sitting in the fully filled and ready to fly *White Cloud*. Mr. Damon had administered his blessings on helium, the giant gasbag and "cramped spaces," and now stood ready to release the hold down chain.

"Let her go!" Tom called out the side window, and Mr. Damon pushed the lever of the release with his foot. It shot forward and he shot back.

"Bless my—" he exclaimed and then though better of the word he was about to utter.

Tom had not seen the flailing of arms or the sudden seated position of his friend. He was concentrating on clearing the treetops and getting the airship moving forward.

He first started the motor that turned the pusher propeller at the back of the gondola. It shoved the airship forward and he turned her to fly out over the lake while attending to his collection machinery.

With the large duct and many-bladed propeller in the front, his visibility was reduced, but upon starting that motor and getting the propeller to spin, his vision was mostly restored.

There was an unintended result coming from starting the new propeller to turning. It seemed to be drawing in sufficient air to provide some pull to the craft, and the speed increased by nearly ten miles per hour. He wondered how much of the increase was due to the excess air being expelled down the sides of the gondola.

Impressed, but with many other things to be attended to, Tom made a mental note to find a way to measure this new propulsion method.

The gauges were soon showing that gas was being compressed into the pressure tank and a quick mental calculation told him that at the present rate, the tank would be full and to the desired pressure in under two minutes.

He spun the small wheel to the left and the nose of the craft turned. He was soon heading straight north and soon turned to a southernly course.

Tom had brought a small electric Aldis lamp with which to signal his readiness, and this he did with a prearranged five flashes. With the tank now full he put the engine into neutral and the propeller slowed to a halt. His view was obscured again but there was little to be done.

The men on the beach ran to the edge of the trees and prepared themselves.

As he neared the fire, Tom pulled the release for the gas, counted to seven, the time it would take to empty the tank, and then swung the craft hard away from the fire and back out over the lake. He turned a little father around so he could view the results.

A huge smile crossed Tom's face. The smoke was mostly gone and the flames nowhere to be seen.

He activated the propeller and the tank was soon refilling at a merry rate. As it neared full, Tom decided to only reduce the revolutions of the propeller so he might still see out the front of the windshield. It worked.

He gave the signal again and made a second run at the fire that was now a mere shadow of its former blazing glory. Another turn and he now could see that the liquid nature of the carbon dioxide had not just put the fire totally out, the ground all around was covered in what appeared to be a layer of frost.

He slowed the *White Cloud* and send a signal, this time in plain Morse code, to the team below:

WORKS FEW CHANGES

BACK TO HOUSE

He received one long flash telling him of their agreement.

Tom shut down the forward motor and turned for the Swift property. It took some maneuvering but by the time he was hovering above his landing spot his father and Mr. Damon were waiving their hands and shouting at him.

He risked shutting the rear motor down so they might be heard and opened his small side window, putting his ear outside.

"Son. You have to go to Thessaly. They just reported a large fire in the automobile tire factory there. Hurry!"

Tom pulled his head back in, shoved his left arm out giving them a "thumbs up" signal and the started up the back motor. In a minute he had gained enough forward speed to steer the ship around. Thessaly lay about twenty miles to the northwest of Shopton. It was the site of the school for young women of good families where his female friend, Mary Nestor went to school.

He recalled that the factory with the fire stood barely a quarter mile from that school.

Giving the rear motor full throttle, Tom remembered the extra speed provided by the forward one, so he also turned that one on. Not only was his forward vision again restored, his speed began to come up. The byproduct, of course, was that his tank began to fill as well. What would happen once it was full? In moments he would find out.

He was mildly surprised to find that as soon as he closed the valve to the tank that his speed actually increased again. A few ideas went through his mind until he told himself, *Of course. Everything is bypassing and rushing out the side exits under pressure!*

Tom briefly wondered if there were a good application for an aircraft motor that worked simply by creating a great pressure stream, but soon was maneuvering the aircraft as he adjusted his course to head toward the rising column of black smoke.

Tom hoped that his father might think to send work to the firemen or at least to the mayor's office over there of his impending arrival and what he would be doing there.

Unfortunately, such a call had not been made and so when he did arrive it was over a scene of chaotic attempts to get water far enough

onto the burned through roof to make a difference.

He swung the airship around and approached a crowd several city blocks away. Using his small megaphone he tried to hail the policeman who was keeping the people at bay.

"Ahoy! Police," he called causing the man to cover his head and duck. "Up here. I am Tom Swift."

The man finally looked up and his face turned white as a sheet. But, his training finally got the better of the situation and he cupped his hands and returned the hail.

"Ahoy to you. Get that thing out of here. We have a fire to fight and do not need anything inciting this crowd to come to riot!"

Tom called back down and explained what his airship might be able to do. He ended with, "Get word to the firemen. I will be passing over the building in five minutes coming from—" he looked outside to see the wind direction, "—from due east. Go!"

He watched the man pull out his pistol, waive it around and speak to several nearby men. He must have been deputizing them as they now stepped forward and began yelling at the crowd while the policeman turned and ran toward the nearest fire truck.

Tom made his first run at the time he had indicated. His aim was off and most of the liquid gas splashed off the roof and exploded into a cloud of gas. Run number two was more on target but before he could make run three a very angry fire chief signaled him to stop.

Again hovering over that man, Tom was treated to a balling out the likes of he had never heard before. He was ordered from the area on penalty of being shot down and arrested if he did not go.

It was only the next day when two officers came to the Swift home that he understood the man's anger.

One of the firemen had not given ground and had suffered ice burns on both of his arms. The man might never regain their use!

TOM SWIFT and His Aerial Firetruck

CHAPTER VIII

ANOTHER TEST AND SUCCESS IS ANNOUNCED

WHILE TOM was totally speechless, his father was not. He insisted that the law men come inside and tell the entire story.

They hesitated at first and it wasn't until the first man, the local constable and not the Thessaly officer, blurted out that Mr. Foger was calling for Tom's arrest that the true story emerged.

It turned out that Tom's first release had overshot the mark but it had not hit the fireman. Rather, he had rushed forward to see what the mystery liquid was and had reached into it with both hands that his injury had occurred.

"That hardly makes it Tom's fault," Barton stated. "In point of fact, that fireman is almost wholly to blame. And while I sympathize with his injury, a good doctor will tell you that unless he left his hands in the liquid—which would have been turning into mostly gas by that point—his injuries are akin to frostbite and that can be overcome. And now, you had best come clean about Mr. Foger's accusations and why you are paying attention to them."

The Thessaly lawman shook his head and stepped back. "Not my bailiwick," he stated.

That left the Shopton officer of the law looking decidedly

uncomfortable. He stammered out a short story about how the accusations Tom had made against his son had put him in a bad light with his bank's Board of Directors and now wanted to exact some level of revenge.

"Well, I suggest that you either come clean to the county judge about taking part in this sham visit, or I shall."

The two officers left seconds later apologizing for any "misunderstandings that might have happened."

Mr. Swift excused himself and stepped outside to his office where the one telephone on the premises was located. It was rarely used but now he placed a call to the Thessaly Hospital. He told the doctor who was available about the nature of the carbon dioxide and what forms of treatment were indicated, and the physician admitted that the earlier diagnosis had been both hasty as well as uneducated.

Returning to the house Barton had Tom sit down in the front room where they discussed the aircraft and the results of the Thessaly fire.

"As it turns out, your second release made a great impact. With all of the walls still intact, as it dropped in through the hole in their roof it billowed out and extinguished nearly three-quarters of the fire. Their firetrucks were able to handle the rest in the next hour. Good job, Son!"

Tom was not to be wholly consoled. He was saddened about the injury, no matter whose fault it might be. In addition to that he had a list of at least five changes he wanted to make. One of these he mentioned to his father.

"I believe that I must find a way to not just dump the liquid carbon dioxide on a fire. There will be times when a steady downward stream of just the gas may be all that is required. But there is no such thing as an adjustable valve that can do it all. What do you think?"

Barton thought about the matter for nearly ten minutes before announcing that it was going to take much more time. "Perhaps I will come up with something in the next day or two," he offered.

But it was only the next morning that he announced an idea that had come to him.

"Currently I can only see that the ends of the four tubes you use

to spread out the liquid gas are uncontrolled. By this I mean to say that they are wide open all of the time. As soon as gas reached the end it cascaded out." Tom nodded but did not comment. "Fine. Then you must create something akin to the adjustable shower head that I purchased last year."

Tom thought about it. It device mentioned had been installed onto the end of the pipe coming from the wall. It took the heated water and spread it out into a wide pattern using a series of nearly one hundred small holes. The adjustable aspect was a second plate with only half as many holes in it that could be swung over and constricted the amount of water passing through with the side effect that the water making it past this plate hit the head and body at nearly twice the speed.

Tom could see the logic of this immediately and promised his parent to begin to build set of more sturdy versions for his airship.

Two days later he had to admit partial defeat. While he could easily construct the "head" unit, there was a notable lack of strength in any outer covering to change the flow. Another attempt to put such a plate inside met with failure when a water test showed that far too much came out of the slot where the disc swung in and out.

When he was questioned about his success he told his father that he was going to settle on creating interchangeable head units or nozzles.

"The more I gave it consideration, Father, the more I came to the realization that there are possible as many as four or even five different types I might use, but I am satisfying myself with just three. One will be the full open setting and that one will remain attached at all times. The other two can be clamped on or easily released and removed at will."

"While you fly?" came the incredulous question.

"No. If a change is required then the airship must be lowered to near the ground and the change made from outside."

"And how do you impart the instructions to someone on the ground?"

"I intend to do some small refitting inside the gondola so I might take a crewman. On arrival at the site of a fire I let the man out who attaches the appropriate nozzles as indicated from a visual

inspection as we fly in. He remains on the ground ready to make another change if and when needed. And, the ship can easily carry two men on the inbound and outbound trips, and then fly as before with a full tank and a single occupant."

Barton Swift nodded. It sounded to be a good plan. "Who will you take as your crew?"

Tom smiled at his parent. "Why, Father, I was considering that the perfect man would be you!"

Barton laughed. "And you somehow imaging that an elderly man such as myself can do all that?"

Tom tutted and replied, "You really must get that notion out of your head. You are barely fifty yeas of age, in reasonable health, and with many more years ahead of you. The days of men only living until their mid fifties is as far in history as the Civil War. Of course you are the perfect person."

With some personally held reservations, Mr. Swift agreed to give it at least one try.

With his latest Government contract satisfied, the older inventor was able to lend a hand with many of the changes Tom made to his airship. Although it would cut down on side to side visibility inside the cockpit area, Tom remade the duct running back to the separator area taller and thinner giving both pilot and passenger enough room to sit comfortably. He also made it slightly less high by cutting a trench in the floorboards and running the curved duct lower in the craft.

Together they installed a clutch so that the propeller could be disengaged and turn freely in the wind rather than always having the motor turning it so that Tom could see through it.

On the day Tom wanted to begin the final installation of a slightly more powerful compressor a call came in telling them that a fire had been discovered in an old ghost town five miles from Shopton, once the site of an active gold mine. Now, the fifteen ramshackle structures were empty and not even used as a tourist attraction. No serviceable road existed and it would take almost two hours to get one of Shopton's trucks to the site.

Barton said they could be there in fifteen minutes of less.

Tom had left most of the helium in the gasbag over the past days

so that testing could be accomplished with little or no delay. This came in very handy for this response.

They called for Mrs. Baggert to act as the chain release "man" and she came out wiping her hands on a disk cloth. Unlike Mr. Damon she used her hands and had the ship unleashed in seconds, then hurrying back to the pie she had left in the oven.

It only took twelve minutes to get to the site and one the way the two men discussed whether to try a nozzle swap or not. It was decided to go ahead and fill the tank as they approached and make a first pass, dropping the liquid to the ground right in front of the first building. Using the prevailing breeze it was soon vaporized and drifting into and around all of the buildings. Although not out, the fire was diminished greatly.

"Well, Father, it is time for me to let you out. Please attach the red nozzles. Those let the liquid disperse more as a cloud than as a liquid."

The older man was fast and accurate and Tom was soaring back up in less time than it would take to fill the tank again.

The next pass was a true success. As he hoped, the gas came out in great gusts and headed to the ground where the white cloud enveloped the entire town. Mr. Swift had hurriedly walked a hundred yards away so he was not inconvenienced by the choking gas.

On the trip back he congratulated Tom and said he believed the variation in use of the gas was the key to success.

When the fire chief finally visited the site of the fire the following day he was so impressed that he came back to Shopton and went straight to the local newspaper. He gave an interview and what he believed would have been the sequence of events, even though he had not been given them by either Swift.

The paper came out just twice each week and so the story was not released for two days. When Barton Swift opened his copy on Saturday morning he was surprised to read the headline:

LOCAL INVENTORS, THE SWIFTS, SAVE TOWN

READ THE STORY ABOUT THEIR INCREDIBLE FLYING PUMPER TRUCK AND HOW IT SAVED A LANDMARK

He chuckled as he read how they had evidently constructed a fire truck with either wings or a gigantic blimp over it, and how it made water by sucking it from clouds before dousing the flames below.

When he read it, Tom was not as amused but followed his parent's advice to just let it go. He was not happy, though.

He was even less happy, furious in fact, when the alarms went off late that night. He ran outside without a shirt hoping to catch Andy Foger in the act, but he slid to a stop on the dew-dampened grass.

The hangar housing his new aerial fire truck was ablaze. As he watched helplessly the roof collapsed onto the gasbag, puncturing it, freeing nearly all of the helium he had, and announcing the end of his new *White Cloud*.

TOM SWIFT and His Aerial Firetruck

CHAPTER IX

ANDY GETS IT WORSE THAN HE GIVES

BY THE TIME the local fire brigade assembled and made it out to their property, Tom and Barton Swift had connected their own fire system to a pump—that took water up from the nearby lake—and had the fire almost out. They managed to save the nearby hangar of the *Red Cloud* as well as two other small structures.

In all, just the *White Cloud's* hangar had been lost and with it, as Tom feared, the entire airship. Only the heat-twisted metal from inside survived.

It was a bad next two days. Barton was sad for his son and Tom was nearly inconsolable. He had worked so terribly hard on his new airship and it had held such promise. And the worst part of all was he just *knew* that Andy Foger was responsible! Only after he vented his anger at the other boy in front of his father did the older man slap himself on the forehead, let out a curse word, and race from the room.

Tom gave chase fearing that his own anger has set his father over the edge of reason, but he stopped when he saw the man almost calmly walking around the corner with the ladder on his shoulder. He went up to the first tree that had a camera mounted such that it would have taken a picture of the grounds to the left of the burnt

hangar, and then to one that would have snapped an image of the front of the structure and a third that would have captured the far right side and the edge of the other hangar.

Giving Tom an encouraging smile and waiving the three sealed photograph plates he climbed down, leaving the ladder against a tree, and marched into the house.

Thirty minutes he was back outside showing the results to Tom.

"It was him!" he angrily exclaimed. "That rat Andy Foger did this!"

"And we must immediately take this evidence to the constable and insist that the Foger boy be incarcerated post haste! Let's go," he instructed his son.

Barton and Tom took the younger man's motor car and drive quickly into town where they accosted the constable. The many was not pleasantly inclined toward either the senior or junior Foger having been made to look the fool regarding Tom's involvement in the Thessaly fire. And he was even less likely to look kindly on Andy Foger given that the Swifts now had multiple photographs of the delinquent wrecking damage on their property on at least these two occasions.

Upon seeing the newest pictures of Andy, one of him actually placing a lit torch to the side of the hangar that was damp with the contents of a gasoline can sitting at the boy's feet, he let out an angry cry and told them, "I will see to this immediately!"

And, he did.

In court two days later he told the story of marching to the Foger home, knocking on the door and having it opened by the offender only to be slammed right back in his face. He entered the home and made a thorough search, eventually finding Andy hiding under his bed.

"The boy struggled and kicked at me as I dragged him out and then attempted to run from the room. I did not allow this and soon had him in hand irons. While I was taking him to the jail he began by threatening me and then pleaded to be let go and finally began sobbing telling me that his mother was so ill and he could not leave her side."

The Judge, a man who had been almost instantly visited by Mr.

Foger who had tried everything from threats to mentioning special friendships with government officials—none of which worked—looked down at Andy.

"After seeing the photographs that clearly and plainly show you on the property of Mr. Barton Swift engaged in destruction one of their buildings plus—" he consulted a paper on his desk, "—plus something called an 'aerial fire fighting ship,' I have to ask you what you can say that might be in your defense?"

Andy's face had been alternating between the paleness of fright and redness from anger. He now swung around to look right at Tom.

"He was asking for it! He's always doing things to make himself seem important. Well, I'm the important one here. His father is just some old kook who tinkers with little machines where my father is an important man and head of the bank! So there, Tom Swift!"

Shaking his head in wonder at the lunacy of Andy Foger, the Judge turned to his father.

"You, sir, seem to have exerted little if no controlling influence on your son. Make no mistake about that for this is not the first second or even fifth time the actions of Andrew Lawrence Foger have been brought to the attention of the constabulary of this town and also to my attention. In fact it was only two months ago that I sent Andrew to sit in the jail cell for two days when he was caught damaging property and pressing the blame on Tom Swift here."

Mr. Foger stood next to his son and their attorney his fists clenched behind his back and his face rigid with anger and embarrassment. He made no reply.

"Well, then given the evidence and no alternative explanation in his defense I hereby find Andrew Foger guilty of trespass, guilty of malicious release of United States Government helium, and a second trespass with damage and destruction of property by use of fire. You will be taken to the county jail in Thessaly where you will spend one month. You will also pay reparations to the Swifts for damages."

He banged his gavel and began to stand up when Andy shouted, "What about Sam Snedecker? He was there as well. He's as guilty as I am!"

Sitting back down the Judge motioned Andy to be quiet.

"Young Snedecker is not to be seen in the evidence. As he is always seen with you, he was questioned and denies being with you in the evenings. He evidently takes care of his invalid grandmother. Someone who is *actually* ill. Charges have not been brought against him. If you now accuse him of taking part in this, and the matter goes to trial, unless you supply ample proof of the accusation you might end up back in jail for lying in court. Well?"

Andy sputtered, "Well then, Tom Swift lit the fire at the Hotel. I was there I saw him—" his voice trailed off as he could see that bringing up the larger fire was not going to go in his favor.

Andy looked at his feet and said nothing more. He was led from the room by the bailiff, followed by his father who turned to glare at Tom for a moment before leaving.

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The first order of business was to now clean up the remains of the building and the airship. Seeing that his son needed to be left to the tasks alone, Barton remained in either the house or his own office for the full day the operation required.

Part way through the day Tom's mind shifted from sadness to pondering what he might do to make an improved version of his airship. There were many possibilities and by the end of the day he not only had the site cleared and the remains dragged to a large rubbish pile—with ample assistance from Rad and Boomerang—he also could picture a better, wider and possibly more effective way to make a new one.

He spent several days organizing his various note and finally transcribed everything into a brand new one of the notebooks he favored for such purposes. On the cover he wrote:

Aerial Firetruck: Flying Fire Fighter

Then, turning to the very front page he purposely had left blank, he carefully wrote the following:

During the past two months I have been working toward the creation of a singularly elegant flying vehicle capable of dousing flames at heights far surpassing the capabilities of

any conventional fire pumper truck or device. I undertook this for a variety of reasons, but primarily because of my witnessing the demise to the beautiful and historic Hotel Shopton, a structure taller than any other in the county and much too tall for our local fire department to properly deal with.

The other reason for designing and building my airship was because of a premonition that a certain local bully—Andy Foger and his assortment of ruffian cohorts—had not just been responsible for setting the hotel ablaze, but that they might repeat the dastardly task again. And while no other structure in town is so tall as to be above the stream of water our pumper can manage, there are several nearby towns not as well outfitted.

Therefore, as detailed in this book of my notes on the subject, I have listed both the basic story along with a few details of evidence I recovered that also pointed to Andy's hand in this, as well as my calculations, formulas and other information necessary to reconstruct the aerial fire device should anyone wish to undertake it.

Sadly, and again at what I now know to be at Andy Foger's hands, my A.F.T. was destroyed in, of all things, a fire set on our home property. If needed I shall build a second one in the future.

August 1913 *Tom Swift*

Tom placed the notebook into a box with about eighteen others and space for several more, lifting the leather-clad lid and setting it down on the wooden box. The four small secret release points clicked into place, securing the lid.

Finally, Tom moved the heavy table from its position against the wall of his shed, opened the iron door underneath, and slipped the box back into place along with three identical ones. They would remain safe even in the event of a fire or flood in their sealed compartment.

He replaced everything, locked up for the evening and headed up to dinner.

Mrs. Baggert had promised chicken pot pie and he was really anxious to dig in.

THE END

Tom Swift will next be seen in his forthcoming story

TOM SWIFT Among The Diamond Makers

A new adventure for today's science minded boys.

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