TOM SWIFT

And His

SeaSpace HydroFarm

BY

Victor Appleton II

Cover artwork excerpted from a work by Vincent Callebaut

Made in The United States of America

Although I wrote the artist who created the cover image several times, he steadfastly refused to even acknowledge my letters asking for permission to excerpt a small portion for this cover. Because he is a Belgian living in France I sent numerous messages in both English and French.

The original, larger art comes from Vincent Callebaut Architectures, Paris, and is from a series devoted to an aqua-farming project in South America known as AEQUOREA.

His work is beautiful and detailed, had everything I wanted, and you should go out and give the rest of his art a very good look:

http://vincent.callebaut.org/category/projects

Vincent, if you take exception to my honoring your art on this book, please remember *you* would not return my messages, even to say, "no." I used the email address from your own website. I don't use your art without feeling regret that you never responded, but believe I do you no injustice; in fact I believe I celebrate your genius. If you feel differently, then you will have to get back to me. You have the email address.

THE NEW TOM SWIFT INVENTION SERIES

Tom Swift And His SeaSpace HydroFarm

By Victor Appleton II

Tom Swift has been hoping that something more adventure-filled would come along. His last project—flying around the world in an electric-powered jet—was moderately sedate so when he is approached to create something unknown to help feed the people of several Caribbean island nations, he can't imagine how it will be much of an adventure.

But, since whatever he comes up with may someday help with similar issues in other parts of the world to feed millions of starving people, he lets himself be convinced to take it on.

Little can he realize that he is up against and old, and unseen enemy who wants him to fail and then hopes to kill the young inventor. Plus, there is a lot of bureaucracy involved in doing anything good, and always someone who wants to benefit from it themselves to the detriment of the people it is supposed to help.

Unfounded rumors threaten to swamp the project even before it gets to the point Tom knows what he wants to do, but he decides to persevere in spite of everything.

This book is dedicated to the indigenous peoples of Australia for being the first known peoples to raise food in flooded areas. Sure, those were eels, yet the level of engineering (canals, dams, etc) they used was incredible and all about 6,000 BC. Yes, more that 8,000 years ago! This is also for everyone who has continued these practices and improved on the quality of what they raise and in their stewardship of our planet. For those who would only use it for their own profits... phooey on you!

While Bridgette worked feverishly in the safety of the bio-sleeve, Bud tried to find the disease container among the sea cabbages. **CHAPTER 18**

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AUTHOR'S NOTE

As I approached book twenty (*way* back in 2016) of this series I had a sudden dread that it would be the last one. My old brain felt tapped out for ideas for anything beyond that. Titles? Who has titles?

But, as the old saying I just made up goes, "Old dogs can teach themselves new tricks if you give them the right incentive or at least enough rope..."

For me that incentive was the knowledge that I love to write and could not think of *not* doing it on an almost daily basis. So, with that firmly in what I jokingly call my mind, I went looking for inspiration. I found it on Jon Cooper's website and his intriguing Tom Swift Title Generator. In the past I had found a couple other ideas for short stories there and hoped it would not let me down.

It did. But, only because I wasn't looking for more than the random bits and pieces it creates. This time I started looking for unassociated words and then it hit me. Take one part "undersea" and one part "hydrosnake" and then put them together and totally changed it all to come up with this title concept.

Taa-daa!

I actually have come up with book 23-25's titles as well, and maybe 26, but you'll have to wait for it. As *someone* says... more to come.

Tom Swift and His SeaSpace HydroFarm

FOREWORD

Tom Swift has been the first to do many incredible things, and all in the short span of about a quarter century. Now, with public recognition of his excellence comes the realization it is time to take a break... a little “me” time.

The problem is his active mind won't allow him to just sit and "vegetate" like some do, and his idea of relaxing reading isn't some mystery novel, it is a good stack of scientific journals with interesting articles on "Toroidal Structures for Bilateral Strength," and "Subatomic Microchip Manufacturing in a Partial Vacuum."

Then, and mostly because his wife is distressed about the food situation on one island they visit, he lets himself be talked into becoming part of a program that can hopefully create growing space where none exists.

Having been associated with Tom for all these years I can say that he has been itching to get into a good adventure for about two years and this doesn't seem to offer him any excitement. He nearly passes on the project but is convinced by his wife, Bashalli, that it will be something to leave behind as a legacy to the world.

Like any good husband, Tom listens to his wife and tries to do things he knows will make her happy. In fact, his less adventurous life since his trip out to rebuild the exo-planet Eris has all been to live up to a promise to her.

He misses the action. Bud Barclay misses their adventures together. Even Sandy Swift-Barclay and Bashalli have come to the conclusion their men need something to get them out of the house and out of town for a while!

Victor Appleton II

CHAPTER 1 /

TIME TO RELAX?

TOM SWIFT, the famous twenty-six year old inventor, sat back in his chair and took a deep breath. Letting it out slowly he savored the feeling of relaxation that crept over his body and through his mind. It had been a pretty rough and hurried year for him and with the two last adventures—tracking down the would-be terrorists and their nearly invisible airship that had been stealing electricity to power their craft and their schemes, and the around-the-world solar jet contest—now well and truly over, he had some time to reflect on what he'd accomplished.

He also was looking at the calendar on his computer screen and realized his birthday was only five days away. Could he really be turning twenty-seven? *Yikes*, he thought, *that's like almost being an adult!*

That notwithstanding, even he had to admit to being impressed by the outcome of nearly all of his ventures into space, under the seas and all around the world since he had turned eighteen. Being awarded the Presidential Citation of Honor the previous evening for his part in ending the Electricity Pirates reign of terror had been a real capper to everything and he now looked forward to taking a well-deserved month off.

Also looking forward to that time was his wife, Bashalli, and the two grandmothers who would be taking care of their children, Bart and Mary, while the two adults were on a vacation.

Both Bashalli and Tom's sister, Sandy Swift-Barclay, had been trying to get the inventor and his best friend, Bud—Sandy's husband—to take the time off and unwind from everything they did at Swift Enterprises, the four-mile-square research, invention, production and airfield facility located a few miles outside of Shopton in the upper lake area of New York, situated on the shores of Lake Carlopa—for months.

Finally, and with the completion of the X-Prize solar global flight challenge, neither young man had much of anything to do, and the wives seized on the opportunity to book a two-week stay on the Caribbean island of Barbados, starting in a few days.

The evening before, Tom arrived home to find all their suitcases sitting open on their bed with Bashalli making a list of everything she absolutely had to take.

Once he received the explanation and had given into the inevitability of the trip, and promised to not tell Bud when they

were leaving, he sat downstairs in the living room nearly laughing at what he knew was happening here, and in also in his sister's house.

Bashi would pack far more than she or he could ever use, unpack most of it, return the excess to their closet and dresser, and finally pack them each one medium-size suitcase. That would be it. She would mix and match articles of clothing so it seemed she wasn't wearing the same thing twice and do a bit of hand laundry in their room sink. If she absolutely had to she would buy one or two items once they arrived on the island.

Sandy, on the other hand, would be calling before the end of the evening trying to borrow one or two additional cases to go with her matching four-piece set she'd been given by their parents for a wedding present.

Sandy could no more conceive of wearing anything other than full and matching outfits, each planned for a specific day and/or occasion, than she might consider camping in snake-infested woods.

In other words, *not a chance*!

Poor Bud would probably get half of one case, a small one, which was perfectly fine with him as he would likely be the same as Tom and wear the same pair of shorts several days running, have a clean pull-over shirt for each day of the first week, and then have the shirts washed when he changed into a second pair of shorts.

His punishment for being clothing frugal? Lugging most of Sandy's things around.

Half an hour after they ate dinner that evening, Bashalli got a phone call from Sandy who was wailing about the injustice of it all.

"Can you believe it, Bashi? Mother and daddy both are telling me they will come over and burn anything more than one large suitcase I want to take! They just don't understand how hard it is to look nice. You know, right?"

Bashalli didn't want to be rude, but she agreed more with her in-laws than Sandy on this matter.

"I am only taking one case for me, one for Tom and we will share space for bathroom articles and shoes. This place is remote even for such a small island and they have a 'How to pack for Barbados' page on their website. I think possibly mother Swift read that and she agrees with their philosophy of less is best."

It was true. The new resort built on the eastern side of the island near an expanse of sandy beach called Walkers Beach, was

an all-inclusive resort with five restaurants, a mile of walkways in and around the grounds, three swimming pools and even a small four-hole golf course around the perimeter. They provided a courtesy shuttle bus service from the airport outside of Bridgetown, the island's largest city, and twice-daily buses back to town for shopping excursions.

Other than that, most people coming down either remained at the resort and relaxed, generally in beach wear, or took day trips to neighboring islands leaving at eight and returning around dinnertime.

The most popular side destinations were flights to Martinique, Saint Lucia, Saint Vincent and Grenada.

"Ah, Bashi," Sandy said sounding disappointed, "I thought you'd be on my side. I don't know what I'll do if I can't take outfits for every possible occasion."

Tom had been listening from next to his wife, and took the receiver from her hand.

"San? It's Tom. Listen. Bash might be on your side on this, but she is determined to only pack the essentials and little else. You don't want her to feel bad if you have three different red outfits and she only has one, do you?"

He knew this would deflate some of his sister's argument. It did and she asked to speak to her sister-in-law.

"Also," Bashalli said picking up the conversation, "I seem to recall when this was first discussed you talked about getting to spend a couple weeks in just bikinis… and a smile. Has that changed, because I spent the last month trying to get back into any sort of bathing suit?"

"I'm sorry for being a jerk, Bashi. Guess I don't need any of your suitcases. Bud and I will make do with what we have. And, don't tell Tom, but he's right." She let out a voluble sigh. "Well, see you day after tomorrow at Enterprises. Assuming Tom still wants to fly us down."

The following morning he and Bud met in the large office he shared with his father in the Administration building at Enterprises. They were reviewing everything Tom and Bud had experienced during the recent X-Prize solar around-the-world challenge, a race between nineteen entries all capable of flying at around five hundred and twenty knots through the air for the thirty-six hours of the contest.

More than half the entries came up short but two unofficially won the contest. Tom and Bud, for one, and a technical university

in Ocala, Florida whose entry and team had been secretly sponsored by Tom.

The woman running the Diamandis Group, the holders of all X-Prize contests, had declared Tom to be the winner, but had then called him the following day to say there had been a *complication*.

"Now, in the strictest sense, and because of the diagonal track you had to take to the correct parallel, where the other team had pretty much a straight route, you had a five nautical mile disadvantage as we had previously discussed. Well, and I truly hate to bring this up retroactively and after we gave you dispensation to not land back at your home field, but the fact is you didn't travel the entire route around the globe."

Tom had not wished to be picky about it, but their almost dead landing at the old Swift Construction Company had been within five hundred feet of the same overall distance, so he promised to send exact GPS coordinates to her and she promised to have the committee review everything.

"If they lose and you win, are you going to take the prize money anyway?" his father was asking.

Tom shook his head. "Probably not. I only set out to try the project because I had nothing else to do. And, it isn't as if I or we need the money… it was only a seven hundred and fifty thousand dollar prize anyway."

"Then there is all the good that money will do down in Florida, right?"

Now Tom brightened and nodded. "Yes. Perhaps I ought to call the committee and tell them we accede to the other team's declared win."

It was Damon's turn to shake his head. "That won't work. They pride themselves on absolute accuracy and total lack of bias. So, don't call them, but perhaps you can plan another anonymous gift to the school." He now changed the subject. "How are you coming on the decision to help Robert Whitcomb with that small helicopter of theirs?"

Whitcomb Aeronautics had sent Enterprises the prototype of a four-seat mini-copter that proved to be not just poorly constructed, it included some materials that were doomed to fail and had been part of a plot to injure or kill one or more people at Enterprises. It had not been at Robert Whitcomb's request but at his renegade daughter's. Only through luck, low altitude and Bud's skillful piloting had the two young men avoided anything other than a rough landing in the lake.

The daughter made another attempt on Tom's life during the contest but spun in and crashed in the Pacific Ocean where nothing of the wreckage or bodies was ever found.

Once the contest was over, and Robert Whitcomb retook control of his company, he asked if Enterprises could help them by a thorough design review and new designs for anything that was deemed to be insufficient or dangerous.

"I got hold of him yesterday and said a two-man team would be happy to review the copter and provide our very best suggestions. I think with Bud's innate sense of what works from a pilot's sense, and my ability to design a few things here and there, we should have a winning team! Although, I'm going to send Hank Sterling out with Bud for this go-around."

Damon told them he thought it was a wonderful idea and asked when they would begin, before or after the vacation both their wives had informed the older Swifts about the day after the contest.

"After, because Bash has asked that I not even bring my tablet computer with us, and because Sandy would skin both of us alive if we suggested taking a few hours off to huddle over this."

"When do we leave on this vacation thing?" Bud asked mostly because his wife, in an effort to not give him any reason to find something else, earth-shattering and vital, to get involved with so he might try to call things off, was bored. He knew it was soon because he'd been taken off the test pilot rotation starting the following day.

"Today is Wednesday and my birthday is Saturday," Tom replied, "and we leave the next morning. Please do not tell your wife I told you this because then she'll give Bash that stare of hers. We both know the one that pretty much says, 'My hands are on my hips, my head is tilted to the side, and I have a quite unhappy look on my face… but I'm not saying anything; *you should know*!' and I promised I wouldn't ruin things by spilling any beans. Okay?"

Bud grinned and nodded. "What time is the party?"

Now, Tom had to think. He hadn't specifically been advised there would be one, or what time that might be, but he was pretty sure Bashalli had something planned. Celebrating birthdays was one of the first American things she really took to as a young girl… right after Christmas. Where she'd grown up that day was generally marked with a nod, a smile, and a pat on the head for children or on the shoulder for adults.

Presents and candles and cake and ice cream and balloons? Now, *that* was how to celebrate a birthday!

"To be honest I have zero idea, flyboy. All Bash told me was I get to sleep in as long as I want, she'll make my favorite breakfast of one of those Dutch baby baked apple pancakes with a brand new batch of blueberry jam she made last week to go over the top, and that I won't be allowed to leave the house other than to go into the yard with the kids all the rest of the day."

"Hmmm? Now I think about it Sandy did tell me that if I scheduled anything for this entire weekend my fanny was going to be in the wringer. Ahh, love."

Tom picked up the phone and asked Trent to call Whitcomb Aeronautics. "I've got to give him an idea of when you and Hank might come out to get their copter back on track."

He held up a finger. "Yes. Robert? It's Tom Swift. I hope this is a good time to talk to you." He listened and then shook his head. "No. Absolutely not anything I blame you for. We all know that."

He was about to add that any ill feelings were "dead and gone" but remembered Whitcomb's daughter, Octavia, had almost certainly perished in her attempts to kill Tom and Bud. Nobody knew for certain what with no wreckage where her plane had been reported crashing at sea.

"Anyway, I'm calling to tell you my wife and my chief test pilot's wife are dragging us out of town for a couple weeks, but as of about three Wednesdays from today I can have my two men out there working through everything they feel would be almost mandatory for you to qualify that helo and also to make it a good seller. Will that work for you?"

"It is hard for an old man to set aside his feelings of guilt, Tom, but you do your family proud. That Wednesday will be just fine. We have a small three-bedroom cottage on site and your men will be welcome to use it. Have them email any food preferences. Our nearby town of Sydney is a bit shy on good places to eat so we'll stock their fridge. Of course, if my wife were still with us she'd insist on having them over every night." He paused and Tom realized there was some emotional distress still within the man.

"They'll be just fine. One is our best man at the control stick, the other is not far behind him in flying capability plus he's one of our best Engineers, and at least one of them understands how to use a stove. Not so sure about the other." He smiled at Bud who stuck out his tongue.

"Well, I'm not certain how long they intend to stay, but whatever it takes. I... I really need to get that helicopter perfected and selling by this time next year. Otherwise, I will have come back for nothing. That, however, is not your problem... it is

definitely mine. Will you be coming out at least for a visit some time in there? I may be a bit rusty on cooking myself, but our Grand Meadows Country Club has a dining room and a chef they hired from one of the top hotels down in Oregon, and he does marvelous things with our local game and crops."

Tom chuckled. "They've told me they may need as many as five days, depending on how receptive your designers and manufacturing team are, so I might just fly them out and spend that first night in their bungalow. I will let you know beforehand."

When he hung up he called Hank and asked him to join the brainstorming session.

The big engineer came into the office and sat down next to Bud.

"Have I missed anything or is Bud still trying to tag a name onto their little chopper? Wasn't *Whirly Dumper* the latest one?"

Bud blushed and nodded. "Okay, not my best effort but I was feeling put out about the crash that day," he explained.

They reviewed both lists Bud had created—one pre-crash and the other after the main rotor had snapped off and dropped him and Tom into Lake Carlopa—along with Hank's first impressions and feeling about the little four-seater.

Tom added a few things he had thought about including getting rid of the extra-long nose that both impeded the pilot's view—and was outfitted with a camera to overcome that—as well as how it seemed to catch a lot of the downdraft from the rotor and make the helo feel nose heavy. It was simply there for looks, not flight.

By the time they parted two hours later the list of things to be looked into, changed or outright gotten rid of had grown from about nineteen pages to twenty-six. More than half of that were explanatory paragraphs, but the point-by-point list was substantial.

"Think he has a chance?" Hank asked as he stood to leave.

The inventor pursed his lips and shook his head.

"It isn't going to be like starting from scratch, but reconfiguring that helicopter is a mandatory undertaking. Since you are still here, can I ask that you take a stab at a prioritized list and you," he pointed at Bud, "do the same. Maybe there is a place where gotta do' definitely gives way to 'nice to do'."

When Saturday rolled around Tom rose from bed to find that Bashalli had quietly removed the clock from his bedside. He picked up his watch and saw it was just turning 9:06. With a little

smile he pulled the light covers off his body, stood up and stretched.

Making as little noise as possible he tiptoed down the hall and the stairs and was just in time to open the kitchen door to see Bashalli putting away a cookbook. He crossed over to her and put his arms around her and hugged.

"Good morning, Bash, and also to you, Bart and Mary if you can understand me." Bashalli turned around in his arms to face him. "What is on the agenda for today?"

"You will take the children to the front room, pay attention to them and especially Bart who has been trying to tell me he thinks the people who make rockets are doing it all wrong, and keep an eye on your daughter while I finish your breakfast. Then… all you need to do is get cleaned up and shaved before three." She kissed his chin and wiggled out of his grasp.

When time for the party arrived, so did Bud and Sandy, his parents, in-laws, and fifteen Enterprises' employees and friends. Among them was Chow Winkler, the western cook who had almost adopted them back when Tom was sixteen and was now their personal and Executive chef at work.

"Got me 'bout ten containers o' stuff in the truck. Tom, you stay put but Buddy and Hank and Zimby and Arvid can come with me. We settin' up on the patio, Ms. Bashalli?"

She came over to hug him and say that the kitchen was ready for the things he needed to put in their ovens. "Everything else can go on the two tables out there next to the grill. I have three more tables and chairs coming from the rental company in twenty minutes."

The party and barbecue went off quite well with more than enough food ending up being wrapped up and taken home by bachelors like Hank and Zimby Cox. Some of the desserts went home with everyone and a grilled and thinly sliced lamb and potato dish was gratefully accepted by Bashalli's brother, Moshan, who had admired the work his little sister put into it.

By nine everyone had gone home except Bud and Sandy, and they were getting ready to leave.

"So, Bud," Sandy said turning to him and placing her hands on both his shoulders. "Now I get to tell you, and Bashi can tell Tom, that you two will be getting up at seven tomorrow and the four of us are flying down in Tom's Toad to the lush, tropical and beautiful island of Barbados! Taa-daa!" she said throwing her arm in the air. "Bet that takes you by surprise!"

Bud, knowing his wife, nodded. “Sure. All except for the fact that you have packed and unpacked and repacked suitcases for the last ten days. And, you have a timetable and some other notes stuck to the refrigerator next to a calendar with tomorrow circled on it. Then, there is the phone call I took while you were in the bathroom last night from a resort in Barbados. And, the brochures you have had sitting under the *National Geographics* and *Sunset Magazines* on the living room table all about the wonders of Barbados and tomorrow’s date written on it, and—”

He got no more out as Sandy had clamped a hand over his mouth.

“You’re not supposed to snoop!” she told him.

“Well, unless you become a bit better at hiding things other than out in the open, then the only way I won’t find out about things is if I suddenly can’t read. Come here,” he said pulling her hands down and drawing here close. “Now, we’ll go home and I will try to find a little room for a pair of shorts and a couple tee-shirts tonight before we meet these fine folks at Enterprises tomorrow!”

CHAPTER 2 /
BLUE WATER, SUNSHINE AND SOMETHING ELSE

TOM HAD barely set the Toad down on the island's only runway when the radio came on and the ground controller tried to tell them the had to leave.

"You are not permitted to land here in that jet of yours. We have told you and told you that you do not have a commercial agreement to land or park, so turn back around and get off Barbados!"

The man was practically shouting at the end, but Tom calmly keyed his microphone.

"Tower and ground control. May I ask *who* you think we are? This is Tom Swift of Swift Enterprises on a private jet and arranged flight for a two-week stay at your Walker's Beach Resort Hotel. All landing fees were prepaid and I have the receipt and a voucher issued by your island government with me."

While they waited for a reply, he taxied around and off the runway, past the main taxiway and headed for an empty parking area to the right of the small terminal.

"Who do you say you are?"

Tom repeated their identity.

There was another pause of several minutes. Sandy and Bashalli were both anxious to get out and stretch, but Tom would not open the canopy until they shut their engines down, and he would not do that until the whole permissions problem was straightened out.

When the radio came back on, it was definitely a different person at the mic.

She was very apologetic. "Dear, dear Mr. Tom Swift and party. I am so, so, so sorry for the disrespectful way our ground controller spoke to you. Please accept my deepest apologies. I see where you have halted and would only ask if you might move to the other end of our terminal and park directly in front of our control tower. If you have already shut down your jet engines I will arrange for your aircraft to be gently towed to that location."

Tom looked over at Bud who shrugged. "Men controllers, mean. Lady controllers, nice!" Sandy smacked his shoulder.

"Ouch!"

Tom keyed the mic again. "We are still under power and will

taxi to the new position. I see another aircraft approaching the runway. Should we move quickly or hold until they are parked?"

"Oh, please move now if you will, and thank you. I will meet you at the base of the tower. Thank you so very much!"

Tom got them moved the one thousand feet in just one minute and shut down his two engines. In seconds the canopy rose and both women stood up, stretched and took deep breaths.

Both immediately made soft gagging sounds and sat back down.

"Ick! Close it!" Sandy barked.

Tom was about to ask when his nostrils picked up the scent of rotting fish and seaweed. "Oh, and ugh," he commented while trying to get a smile on his face to greet the woman.

He stepped from the cockpit and extended a hand to shake hers.

"Hello, Mr. Swift. I am Kaylia Clarke, Manager of the airport… and what in the world is that horrible smell?" She spun around to face the nearby ocean while pulling a handkerchief from her skirt pocket and covering her nose and mouth. She spun back around, her eyes wide angry.

Through the cloth she angrily stated, "I will have that man's head on a platter! Come, all of you and we will go inside and away from this… this… horror!"

Tom opted to close and lock the cockpit and not bring their luggage, which would have extended their time outside. They hustled after Kaylia and into the ground-level door.

There was only a flight of stairs going up so they all walked to the second floor where a short hallway led to her office and a bathroom.

After they all sat down, she apologized for the smell.

"That is my ex-husband and his attempt to try to woo me back. We've been divorced three years and about five times since then he's managed to find some rotting carcass of a whale or something and tows it out to the beach just south of here. Then, he calls me to say it is to remind me of him. Bah!"

"It is a little strong out there," Bud stated.

"I hope the resort won't be overcome like it is down here," Sandy said looking pointedly at their host.

"No. Marcellus knows he would be arrested and possibly dragged through the streets of Bridgetown if he did something

idiotic like that." She let out a sigh. "I cannot apologize enough except to tell you it will be gone by tomorrow as the tide draws it away from the island, and that he will be in jail at least until your depart. Would it be possible for you stay here five or six years?" She smiled at them as if saying she was more than half serious.

"We'll see what these first two weeks bring up," Tom told her.

They accepted cool drinks from her, each with more than a hint of rum, as they waited for another pilot to taxi his Cessna over and try to blow the aromas away so they might reclaim their suitcases and depart.

Twenty minutes later, with Sandy especially happy having finished her drink along with Bud's, they went outside and climbed into the waiting courtesy bus from the report.

It still smelled fairly fishy—and the driver commented on it—but it was nowhere as bad as before.

"I can guarantee you there will be none of this foolishness at the resort," he told them as he pulled away from the control tower.

The resort was a two-level set of five buildings in a sort of semicircle around the various pools, at least three buildings with restaurants and many, many deck chairs on which to lounge.

Their rooms were next to each other in the center building with a beautiful view of the nearby beach and the almost aquamarine waters of the ocean.

During the first week they took several driving tours out and around the area seeing many small villages and a lot of agricultural sites.

They also visited the two main distilleries on the island pumping out tens of thousands of gallons of strong rum every month.

Their favorite of the two was very close to the airport and made their rum from one hundred percent Barbadian molasses. The aromas coming from the cooking liquids and even from the fermentation vats was nearly intoxicating. It especially reminded Bashalli of her favorite molasses and ginger cookies.

At dinner in a resort restaurant specializing in local cuisine they were talking about the wonderful variety of foods available and all grown right on the island when their waiter came by shaking his head.

"I do not wish to insinuate myself on your conversation, but I feel I must correct a wrong perception on the part of the lovely dark-skinned lady. Barbados grows a lot of foods, it is a truth, but

far too much of the best is shipped off for the money it will bring, then we import lesser foods from Venezuela and French Guiana. What you are eating here at the resort is mostly local but the people of Barbados do not enjoy either the variety or the quality you do. Forgive me if this distresses you; it was not my concern or my place to even speak. I shall report myself to the manager."

Once he'd left Bashalli said, "That's terrible. To think they have all this lush land and instead of feeding themselves, they sell it off for the money. And, for what?"

Tom understood her indignity, but felt he ought to set a few things straight.

"To begin with, the government owns all the land on which the foods are grown. They had, until I managed to perfect the Cyclonic Eradicator, been forced to cover the costs of tens of millions of dollars of damages from tropical storms and hurricanes each year. They have a very small Navy to keep up and finally the cost of electricity is very high and the sales of some of the food goes to underwrite that or else nobody could afford to have lights or fans to cool their homes."

"But, if your Eradicators mean they don't have to fix so many things, why can't they stop selling that much and let the people have it for themselves?" Sandy asked.

"San, the truth is I don't know, but my guess is it might have been different twenty or thirty years ago, but these are a proud people who have rarely borrowed or accepted money from other nations. Tourism, food and rum is about all they have, and they've just about run out of room to grow more without crowding out something else."

Most of the rest of dinner was eaten in silence before the waiter approached them with a man he introduced as the manager.

"I have explained that I spoke without thinking and wanted to have Mr. Alvarado come over to help me make this better."

"And, I will tell you that this young man is one of my best waiters, so I will not fire him, but I will make your meal, as you say, on the house, for his intrusion."

"Nonsense to both ideas," Tom told him standing up and shaking the manager's hand. "He helped us understand something we did not know about and we thank him for that." He sat back down.

"I see. So you are not angry with him or this restaurant?"

All four from Shopton shook their heads and smiled.

The manager was surprised and a little bewildered. “Ahh. Then the only thing I can do is to arrange for a special dessert to be brought to you. As it is never on the menu, it has never been given a price. And so, it will not appear on your bill. I thank you all for your generosity and understanding. Jonathan? Come!”

“You have to do something to help these people, Tom,” Sandy declared as soon as the two men moved out of hearing distance.

He simply asked, “What?”

She stared at him a moment before putting both her hands in front of her, palms up. “How the heck should I know? You’re the genius. Make them more land or something!”

* * * * *

The next day Tom was still thinking about his sister’s statement. All he needed to do was make some more land and they could grow more food and perhaps keep some of it for themselves. Easy… right?

Bashalli, Bud and Sandy tried to get his mind off the problem, and Sandy even had a really good pout that she thought her insistence on him coming up with a solution to what was likely to be unsolvable was the cause of ruining the rest of the vacation, but the inventor’s attention was hooked.

He was still with them in person, but his mind frequently was off thinking about ways to help the people of this island.

It wasn’t just this island nation but many places around the globe that suffered from inadequate food production. Mostly it was weather and topographical in nature. Rocky and arid soil did not grow crops. Likewise, swampland grew many things, but few of them were edible other than animals like alligators and some species of fish.

Places most likely to grow food in plentiful quantities were temperate, had a long growing season, and nutrient rich soil along with fresh water. Places like that generally ran on tourism and far too much attention, and money, went to that than the general population welfare.

Then there was the fact that a lot of land was given over to cattle, goats and the likes. That land produced far less food per acre or hectare than farmland.

Tom chuckled to himself as he thought about a story a friend of his father told several years back.

It seemed an island off the coast of Scotland wanted to make a new type of Scotch whisky, and it needed to be absolutely free

from any chemical influences. More than just “organic,” it needed to be pure as possible.

The main problem was that local soil and barley growers had been exposed to nearly one hundred years of pesticides and fertilizers in efforts to increase grain crop yields in the same amount of land.

If, they thought, *there was some way to increase yield on land that had been in use all these decades, or find some way to bring a natural way of increasing yields, many problems might be solved.*

Except the weather. Plus, the growing period. And, on and on.

But, the owners of the distillery knew of a tract of land nearly fifty acres in size that had never grown crops other that prolific weeds and grasses for a very long time.

What it mostly had going for it was over one hundred and twenty years of being used by sheep. A great, huge herd of sheep was kept up on that side of the tallest hill on the island for about half the year. The other half, it rained.

So, and with the deed to the land purchased, the distillery people paid a visit to the owner of the sheep, explained what they wished to do with the land, and were able to let the owner continue to use about a third of that parcel. They grew the very first totally pure barley in a century on that naturally fertilized land, harvested nearly twice as much as any other land could produce even with all the chemicals, and created a new and very profitable class of whisky.

It was a good story and one Tom knew to be true, as he’d met the man responsible for it all.

He mentally shook himself and decided to enjoy the final three days on Barbados. The sunshine felt good on his face as he stood on the veranda of their room looking down at his wife and sister as they sat on lounges enjoying a cool fruit drink and getting even more tan. He was about to go join them when he spotted Bud heading their way.

The flyer looked up and was startled to see Tom standing there, but he made a “come on down” motion and Tom nodded his head, disappearing into the room.

The rest of the vacation was pleasant and Tom tried to just not think about the issues of food or economy or anything else other than seeing his wife happy.

Sitting next to her the following day he realized she wasn’t wearing one of her one-piece bathing suits meant to cover up a

slightly not-exactly-trim tummy. In fact, she was wearing the very same bikini she and Sandy had picked out for her years ago when she and Tom were just starting to date.

It had caused a sensation on Lake Carlopa among the young men—and more than a few older men as well—and an argument at home when her father and brother, Moshan, found out about it. It just wasn't something a good Pakistani woman ought to wear!

However, Bashalli Prandit was only Pakistani by birth. Having lived in the United States since before she became a teenager, she had adapted to the ways of local young girls and barely thought of herself as ever having lived in a foreign country.

"You look incredible, Bash," Tom told her bending down to whisper in her ear. "I guess I hadn't realized you'd slimmed down so much after the baby. Wow!"

She rolled over and smiled at him before grabbing his somewhat shaggy hair and pulling him in for a kiss.

"Thank you, sir, whoever you are, for the kind compliment!"

Tom's head sank. "Okay, I deserve that. But, I'll try to be here for the rest of the time. Okay?"

She showed him how okay it was by bestowing another kiss.

There had been no more sign—or odor—to remind them of their first day, so when they got out of the bus at the airport, Tom tentatively took a small sniff.

"Smells just fine," he told the other three. They got out, took their luggage over to the Toad and Bud opened it, slid their suitcases—plus a case of rum to give out as gifts—into the back and got ready to help the ladies climb in.

Kaylia Clarke must have seen them arrive because she came bustling out of the tower and over to them, a large smile on her face.

"I wanted to thank you for coming down. I hope the, well, the introduction to our island was easily put behind you."

"It was," Tom replied, "and we all had a wonderful time. We hope to come back, and," he leaned in a little closer, "if our wives have anything to say about it, this might become a yearly event."

They shook hands before he and Bud, who had completed the visual inspection of the jet, got in and closed the canopy.

Six minutes later the tower cleared them for take-off to the east. As they rose they turned and flew high over the resort now seeing that it more resembled a smile than a semicircle of buildings.

* * * * *

The hills around and in Shopton, generally seen from the air as being a brilliant green, looked a little dull and grayish to them. It would take several days for their brains to switch back to the non-tropical versions of green, but it was nice to be home.

Tom and Bud shook hands and the girls hugged and kissed before they took their separate cars home. As the Swifts came through their front door, Tom took a young boy charging at him in his arms and swung him up and around.

“Miss us?” he asked little Bart.

The boy looked as if he was contemplating what the right answer ought to be. “I think so,” he finally said. “Gramma P and Gramma S were both here a lot, so Mary and I didn’t have much time to read or anything.”

“Well,” Bashalli said giving him a kiss, “we missed you. And, your daddy didn’t have any time to read either.”

Bart shook his head at that revolting thought. “No reading about airplanes or sun electricity or rockets, Dadda?”

Tom shook his head. “Nope. Your mamma and I had fun and ate and lay around a pool and drove around a far off country that is actually just a small island in the middle of the ocean.”

Bart seemed to think that was okay and he kissed Tom on the chin before asking to be set back down.”

“Gramma S!” he yelled as he charged toward the kitchen door. “Momma and dadda are home!”

Anne Swift carefully opened the kitchen door inwards just in case Bart was a little too close, and came out to hug and kiss her son and daughter-in-law.

“They were angels and Bart and I discussed biology and I brought over a microscope and showed him some pond water and all the squiggly things in it. That fun lasted a couple hours before it was back to jets and rockets and questions about why the sun is dark at night.” She smiled a tired but loving smile.

Three minutes later she picked up her purse and left them to be together.

The next day, Sunday, was spent just playing with the children and resting from the vacation, but when Tom headed to work on Monday, he had a renewed energy he would not have believed possible before the vacation.

“I’ll have to remember to do that more often,” he told the secretary he and his father shared, Munford Trent, when he came

in the following morning.

"I can put it on your calendar, Tom," Trent suggested with only a hint of a grin playing around the corners of his mouth.

"Let me get back to you on that. Is there anything I missed I ought to know about before going in?"

"Well, Robert Whitcomb at Whitcomb Aeronautics called to thank you again for the help you are about to render in their helicopter design, apologized for about the fiftieth time for his daughter's attempts to kill you, and sent you a ten pound box of moose jerky."

Tom, not especially a fan of dried meats, said, "I guess I'll pack some up for Bud." When Trent shook his head and said the flyer received a box of his own, he changed it to, "Then I'll share with Hank Sterling, Harlan Ames, Arv Hanson and dad."

"I'm afraid Hank and your father each got a box and have shared it with several people. Nobody is clamoring at the door for more. I believe you are on your own."

"You?"

Trent shook his head, scowling a little.

He changed that to a smile as the young inventor walked through the door and into the large office. "*Bon appetite!*"

CHAPTER 3 /
A GOOD OLD BRAIN WRACKING

LIFE GOT quickly back to the normal—the work, make it home a little late, sleep and then work again cycle… as before—but Tom had been slightly changed by his vacation experiences.

For starters, he had learned it was entirely possible for him to not spend so much of his free at-home time reading scientific journals. He also learned to re-appreciate his beautiful wife, Bashalli, and all the hard work she did on a daily basis with their two children. And, her determination that after having a second child, she wanted to regain her old, trim figure.

And, she had.

But, way in the back recesses of his unconscious thoughts sat a little notion that something ought to be done about world hunger, and that needed to be relatively easy and self-sustaining by the peoples it was designed to help.

Several nights he lay awake pondering what sort of things might be tried with no real insights into a path to even start down. Those all but disappeared by the end of the first week back.

Some important departmental meetings kept him from flying out to Victoria with Bud and Hank but he agreed to be available at home each night to discuss anything they needed him to know about.

The first call he received that evening was from Bud.

"These guys have rolled out the red carpet, skipper. We got a standing ovation as Mr. Whitcomb let us off at the design offices. Well, a lot of them work at computer stations that force them to stand, but they were mighty happy to have us there."

Tom asked about their receptiveness to the many changes already submitted to them.

"I don't want to dredge up bad old things, but they lived kind of in fear of Octavia Dale and her murderer husband. A few of them actually documented all the bad things they did to that first prototype in case the police came a-calling. I've copied their various videos and sent them to Harlan Ames about ten minutes ago just to put in his little vault. To answer your question, they are thrilled and a few have even gotten a head start to make things right. In case you are interested, Dale had fired or chased off about twenty percent of their best people, but bless Robert Whitcomb… he got all but two of them back."

He told Tom about a beefed up and more powerful tail rotor

and the start of a new main rotor hub milled from a solid alloy stronger than most helicopters used.

"They have a new tail rotor shaft in the works that will never have any wobble, which is great. Oh, and they also found a little surprise in the upholstery of one of the rear seats. Nobody put it there so it must have been our friend Octavia; it was a small cylinder of an unmarked gas and an altimeter-activated valve. I don't know what it is but it is in Whitcomb's safe now and as soon as I can arrange to get it to Harlan, I will."

The next call Tom received the following afternoon was to tell him that nearly everything to fix or change had been assigned and the team out there was jumping into action.

"I think our work will be done in another day, Tom, so three total and not five," Hank said when he came on the line. "I drafted them a design for a vacuu-form bed they can build themselves to create about three-quarters of their body parts. Right now they are hand-forming hot sheets of polycarbonate around wooden molds."

Two days later with Bud and Hank on their way back from British Columbia, and Damon Swift traveling down to Washington D.C. to discuss a forthcoming contract with the Government Purchasing Office, Tom asked Trent to hold as many calls as possible and to transfer the important ones up to the old control tower. "I need the quiet for a few hours," he explained.

Situated on top of the Administration building, the six-sided, fifteen-foot-wide space had been the original control room for Enterprises when it only had two runways and three buildings and not the labyrinth of six long and two shorter runways it had today. And so, within two years of opening the gates Damon authorized a much taller freestanding structure to be placed dead center in the middle of the grounds.

Rather than tear the old tower off the top of the three-story building, it had been stripped of equipment and nominally sealed up.

A couple years later, Tom "rediscovered" it, immediately realized the triple panes of tinted glass made it both silent and cool, and asked if it might be turned into a private retreat for him to use when he felt the need for quiet, but did not want to be underground in the *Sky Queen's* hangar, a ten minute walk away.

"Go on up, Tom. If I can't handle it, I'll buzz you," Trent told him.

For over two hours the inventor sat in the large comfortable overstuffed chair he'd asked be taken up, walked around the open space looking out at the incredible grounds of the company, or even simply looked up into the sky watching the occasional contrail of one jet or another heading north or south.

One of the things on his mind was the food situation on Barbados and how the knowledge of it had affected both the wives. Truth to tell, it had affected his way of thinking about the happy-go-lucky island and islanders who gave little or no indication they had a lesser life than mere tourists.

That was, he told himself, silly. Of course small and poor nations were filled with people who were often a lot worse off than the fat and happy people who invaded them, a week at a time, during whatever was considered "tourist season," and then disappeared when even the slightest hint of clouds or cold weather arrived.

He was muttering to himself.

"If they need to have more places to grow food, where could that be? It would be an environmental nightmare to dredge up the sea beds to just build a few dozen more acres of land. Besides, it would take years to get the salt leeched out and make it into something that supported crops!"

A vision of his own *Space Queen* giant space station came to mind. Basically a huge cylinder, everything was built all around the inside of the hull. Because it rotated at a specific speed, people and objects felt a type of gravity that held things down.

Where there were not buildings or the factory turning out Tom's amazing line of Solar Batteries, there were plants. Some were crops, some there simply to provide the most oxygen production as possible, and some for their beauty.

"What if…" he was saying aloud as he heard footsteps coming up the spiral staircase from the third floor below.

"What if… *what*, Tom?" It was Bud coming up the stairs, and he had a plate of sandwiches in his right hand and a couple cans of soda in the other.

The inventor accepted a can of cola and then looked at it wondering if it got shaken too much on the trip up. He set it aside for a minute and picked up a roast beef sandwich from the plate his brother-in-law was holding out to him.

"Welcome back. I was just wondering," he said around a bite of sandwich, "if the whole key to growing things doesn't so much lie in trying to make more land, but perhaps to think along a higher level." He looked at the ceiling. "After all, we grow plenty of things up on the new space station. So, I was wondering aloud if that was something we could try. The only problems I see are the costs and the long time it takes to build something that large up there."

"Yeah, I see that. What about stationing a large platform off the

coast of Barbados, covering it with a foot or so of good soil and using that as the growing place?"

Something popped up in the inventor's mind. He'd recently read about the United States Navy getting ready to mothball three of its oldest aircraft carriers. Together, and if connected tightly and perhaps with some work to remove their command islands, they would provide about fourteen acres of growing space. That was above decks. Down in what had been their hangar decks would be about seventy-percent more area that might be utilized.

He mentioned this to Bud.

"Wow. That's even larger than the *Sea Charger's* deck. Uhh, do you think they'd let us have them?" That ocean-going vessel had been a research ship as well as a flight-capable ship, launching pad for rockets and now was stationed in the Galapagos Islands as the anchor point for Tom's unparalleled High Space L-Evator, the device that had made building the *Space Queen* possible.

Tom admitted it might be a hard sell. Firstly, the Government seemed to prefer selling off large older ships to metal reclamation companies to be beaten and cut apart, melted down and turned into everything from razor blades to automobile frames. Often a ship costing several billion dollars to build fetched less than a million dollars in scrap value.

Some ships were cleaned up, filled with nitrogen gas to avoid internal corrosion, and placed at anchor against the day they might find more usefulness in the Navy.

The second reason was nearly as stacked against them as the first.

"They have very stringent regulations on providing vessels to foreign nations who might turn around and sell them to this country's enemies just for the cash. It happened in Spain during their Civil War. Old U.S. submarines that had been provided to Portugal for their protection were sold to Spain for about a hundred thousand dollars each, complete with torpedoes and guns and ammunition. Those subs possibly accounted for several thousand deaths of the revolutionaries."

"Oh. So Uncle Sam didn't like the taste that left and won't do it again?"

"We'd have to assure them that everything from propulsion to armaments to catapults and all of that would be removed and either given back or destroyed under supervision, But, having said that I can see that practically all decks inside might find some use." He brightened. "Hey, picture an old carrier with all those decks, something like seventeen or eighteen of them, with each

one being used to grow something."

"Sure. With the right lights anyone can grow anything. Can you check?"

Tom said he'd first have a talk with their chief Legal Counsel, Jackson Rimmer, to see what he thought and then would likely bring up the subject with their friend, and U.S. Senator, Peter Quintana of New Mexico.

The two young men finished their lunch and headed down to the Legal department just one floor below.

"An interesting concept, Tom," Jackson told them after listening to an abbreviated version of the Barbados plight along with the idea of repurposing the forthcoming surplus carriers. "So interesting that I believe I may need to do some research for you. I don't suppose you've talked this over with Damon." He raised an eyebrow.

"Not yet. The idea just came up. But, when he gets back from this D.C. trip, I will."

By the following day Jackson had news, and it wasn't encouraging.

"The Department of the Navy will not admit they are decommissioning those carriers, Tom. It was front page news on the New York Times a month ago and yet they say there is no indication the ships have outlived their usefulness. Might I suggest you place a call to your favorite U.S. Senator?"

Tom did and made the call right from the lawyer's desk.

"Hi, Tom," his secretary—who was also his daughter—greeted the young inventor. "Dad is in the office but is on the phone with the SecNav right now. Can I slip a note under his nose to tell him what this might be about?"

Tom, Jackson and even Bud laughed as her question came from the speakerphone. "As a matter of fact we are wanting to talk about the three aircraft carriers that have been publicly announced for decommissioning, but the Secretary's own offices say are not being gotten rid of. And, we have a very good and peaceful use for them."

She placed them on hold and was back in about a minute.

"Dad is asking the Secretary if he would like to be in on a conversation regarding the ships. I'll know in a few momen— oh, here he is now." They could hear a conversation as she covered her receiver, then it was uncovered. "He's heading back into the office and will pickup in about ten seconds. Bye!"

"Hello, Tom and whoever is also there. Damon?"

"No, Senator. It's Jackson Rimmer in Enterprises' Legal department along with Tom and Bud Barclay. Have we caught you at a good time?"

"Don't know who said it but the old saw of 'No time like the present' seems to apply. I have the Secretary of the Navy on hold. Give me a bit to try to get him in on this."

Together, and with Tom taking the lead, they tried to explain the situation in the island nations, their forthcoming cut-off from needed food supplies, and Swift Enterprises' hopes to come to the rescue.

The gravely voice of the SecNav made the first comment.

"I've heard of some oddball uses for our old carriers from sinking them to become reefs for fish and SCUBA divers all the way to one multi-billionaire who wanted to purchase the old *Kitty Hawk* to turn it into a personal yacht. Had to disappoint him on that, but I must tell you your plans are intriguing. The problem is two-fold. Of the three carriers the media found out about, only one is actually ready to go to pasture. That's the *Carl Vinson*. She had her last PIA, that's Planned Incremental Availability, breakdown and rebuild about ten years ago and needs another one, except she is still sporting the scars received in the North Korean flare-up and would, frankly, need more rebuilding than the Navy or the President are willing to authorize."

"So, will she be available?" Tom asked.

"Yes and no. Because of the protracted de-fueling and cleanup that all our nuclear ships must go through, she will not be ready for anything, even parking as part of the ready fleet, for about three and a half years. After that, or rather sometime in the next eighteen to twenty months, we will want to entertain all offers for her empty hull. It's a pity this didn't come up a year ago when we put the old *Nimitz* on the block. She'd been cleaned already and went to India for scrapping although I would have rather she found a home here."

They thanked both the secretary and the Senator and hung up.

"And that would appear to put an end to that particular line of questioning," Tom stated.

Bud and Jackson nodded their agreement. As the young men were leaving the lawyer asked if it would be okay for him to pursue the issue a little further. "If not for now, for the future, Tom. I dare say that the million or so dollars they get could easily be paid by Enterprises and some place to tie one or more of them up could be

had for a little more money."

Bud clapped Tom on the shoulder. "Yeah! Even if not for Barbados, how neat would it be to have a small fleet of growing ships to be able to take just about anywhere?"

Even in his disappointment, Tom had to admit Bud had a point.

* * * * *

"You have a call on line five, Tom. It is a Mr. Carr from the Ministry for Foreign Aid in England."

"Thanks, Trent. Please tell him I'll be there in about one minute." After disconnecting the intercom Tom quickly called up the Ministry in question on thee Internet and read a brief description of their functions. Mostly it was to assist third-world nations that had suffered natural disasters such as drought or tsunami destruction.

"Hello, Mr. Carr, or is it Minister?"

"Good day to you, Mr. Swift. It is Mister as I am but a small functionary within this Ministry. Something I believe would equate to my being an assistant to an assistant to a Secretary of something in your government. Please, call me Jameson."

"Fine, and you call me Tom. What might I do for you and your government?"

"We have been providing support to about fifteen small nations over the past nine years this Ministry has been in existence. Before, we were part of the Foreign Office and pretty much were still living down the whole British Empire thing. Not a lot of countries had very comfortable feelings about us. So, the change was made and we were funded with enough Pounds Sterling to sort of buy friendship. That will not be a foreign concept to your own politicians I believe. But, it has allowed us to make inroads in countries that have suffered some sort of setback, mostly through environmental damage or disaster."

"Yes," Tom told him, "I'm just scanning your Ministry's web pages. I see quite a few countries that are either island based or are within Africa or a couple in South America. At first glance I'd have to say it appears you are doing good things and not just trying to buy your way into those places. I hope that is not a wrong impression."

The man told him it was not. In reality, his Ministry was exceedingly careful to not seem like any funds had any stipulations attached. No military bases would come, no expanded Embassies or a place from which to spy on neighboring nations, no nothing.

"In fact, your own company via your Swift Charities is doing quite a bit of good at the educational level in some of those places. I believe we are both trying to be altruistic as possible without simply handing out what amounts to unearned dole checks."

"It would seem we might be on the same page, or at least in columns on that page. So, what is it that has you calling me at your, hmmm, it would be after six your time."

"Never let it be said that non-Ministers have a life of their own, at least before eight or nine in the evening." He lightly chuckled but Tom could hear a small streak of stress in the sounds. "So, to business. We have discovered a situation within a small area to the north of the Venezuela and Guyana areas of South America. Are you familiar with any of the islands in that portion of the Caribbean and western Atlantic Oceans?"

Tom briefly told him he had recently vacationed on Barbados.

"Ahh. Did you enjoy the foods?"

"We did, at least until we found out many of the foods used by the locals were purchased from offshore while their own higher quality foods are sold off the island."

"Yes. It is a pity but an economic must for them. Well, what we are hearing is that the new incoming government of Venezuela is going to turn off the tap, so to speak. As they provide nearly eighty percent of the imported foods, and nearly all petrochemicals, islands such as Barbados and Grenada are going to find themselves struggling just to feed their own populations."

"Let me guess," Tom asked. "If they can't provide for their people, they will not be able to host and feed tourists, and without that trade their economies will suffer."

"Or, collapse. We must stop that from happening at nearly all costs. That is where we believe you might come into the picture."

"I am wracking my brain to figure out what I can do, and I have to tell you my own sister suggested making more land for them to use to grow foods or raise livestock, and I've frankly come up with no ideas."

"Well, Tom, I hope you might wonder no longer. What we would like you to investigate is the feasibility of creating a growing environment, situated in the ocean, near the islands."

Tom was silent for a moment.

"You want me to come up with new land to farm?"

"What we are hoping for is more than a mere farm. We are frankly hoping for a farming *miracle*."

CHAPTER 4 /
A FOOT IS PUT DOWN

THAT NIGHT he and Bashalli discussed Mr. Carr's call. To be honest, Tom wasn't all that eager to become involved in such an endeavor without a lot more information available. For one thing, he wasn't sure how deep Enterprises wanted to jump into the "funding" pool.

She sat, listening to him for a half hour before she simply stood up, made a disappointed face at him and wandered into the kitchen.

Nothing more was said about the matter and by the next morning he'd mostly forgotten about it.

Harlan called Tom an hour after he arrived at his desk.

"Tom, I think I need to tell you how close you and Bud, or at least anyone in that little helo that fell apart came to having a terrible accident."

"Go on," Tom prompted warily, not entirely certain he really wanted to know.

"That cylinder Bud brought back from B.C.? A combination of cyanide and a knockout gas that would have either outright killed anyone in that unventilated cockpit—and I'm guessing that is why it had little to offer by way of fresh air—or would have incapacitated the occupants before killing them as they fell out of the sky. Their 'Can you test this' list showed they hoped someone would take it well above three thousand feet and that is where the valve was set to pop open."

Tom felt slightly sick to his stomach. "So, if the thing didn't outright fall apart at altitude, they wanted to make certain it would crash. Possibly burn so badly nobody would find the cylinder."

"Or, if they did it might be mistaken for a nearly identical one they mounted in the turbine compartment filled with CO2. A fire extinguisher. Any fire would have obliterated the gases inside once the valve was opened."

Tom thought a moment. "Harlan? Can you do me a favor, please?"

"Name it, Tom."

"Don't tell Bud. At least don't volunteer the info. If he asks directly about the cylinder, tell him it's… uhh, tell him it didn't look like it was there as a friendly gesture and that's all you are at liberty to say pending more tests. Okay?"

“Sure. I will tell you that as he handed it to me he asked that if it turned out to be something deadly that I not worry you or Damon about that.”

Tom let out a short, rueful chuckle.

At home that evening all he would tell his wife was that the Whitcomb people were bending over backward to make their helicopter the best it might be.

“Sandy told me Bud mentioned finding some sort of canister of something under the back seats. Do you know what that was?”

Tom would have to have a little talk with his friend about what he did and ought not mention to Sandy Swift-Barclay. But, for now he shrugged. “Only that it looks like one they forgot to put in the engine compartment. There is another filled with carbon dioxide to fight any engine fire and a bracket on the other side that was empty.”

“Good,” she declared looking relieved. “Sandy sort of played up the whole, ‘They wanted to kill my Bud’ thing and I wondered if it was not a big issue. You know she tends to exaggerate?”

“Yes, I know my sister, Bash. If anything can be blown all out of proportion, she’s the girl to do it!”

Bashalli came over and hugged Tom. “Promise me you won’t do anything with that nasty little helicopter in the future?”

He moved her slightly away so he could look into her eyes. “Well, the truth is the people who built that had no idea what all was so horribly wrong with it. Each group or person only had their tiny piece of the puzzle and each was assured it was just for a non-flying prototype. Now that Octavia Whitcomb Dale is gone, they want to make that the safest thing in the skies.”

“Next, of course, to anything you build!”

“Of course.”

She served their dinner a few minutes later with Bart sitting in his high chair eating right along with them. He’d loved his infant foods and was especially pleased when he graduated to solid and crunchy things, like apple slices and carrots, but he recently took a liking to beef and chicken in any sort of creamy sauce.

Tonight, they were eating what Bashalli called an inside-out-chicken pot pie.

“Momma? Why’s da crust on da bottom and not on top?”

“That,” she said turning to him, “is the inside out part. Do you like it?”

He nodded his head vigorously and shoved another bite in his mouth.

“Then, it doesn’t matter where the crust is as long as it tastes good.” She was hoping to instill in their son a life-long love of trying all sorts of foods.

“I like it!” he declared munching on a full mouth of it, sauce dripping down his chin. “How do you make it?”

He looked so serious that it took Bashalli aback a little. “Well, I cut up everything in there, make a sauce and put it all together.” She hoped that would be enough explanation. It wasn’t.

“Show me?” he asked

“Okay. How about tomorrow?” When he agreed and went back to the last of his pot pie she turned to Tom.

“Airplanes, rocket, and food?”

He shrugged, telling her, “We’re going to need someone to take over when Chow retires. That’ll be about the time Bart’s eighteen or twenty.”

After they ate and she had fed little Mary, she came to the kitchen and smiled. Tom had already cleaned the dishes and stacked them in the dishwasher. She knew she’d have to rearrange them—men never got it right!—but it pleased her to know he was always ready to lend a hand.

“Can we go into the living room and talk?” she asked.

“General talk, specific talk, or I’m in trouble talk?”

“Hmmmm? Specific talk, sort of. At least about one specific thing, and you are not in trouble, yet.”

Tom squinted at her trying to decipher whether this was a work thing, a family thing, a wife thing, or something entirely different. She saved him pondering for too long.

“I wanted to talk to you about doing something for those poor people on Barbados. You know… the ones who are forced to give up their good food to people like us and then have their government sell the rest only to buy back not so good food. It really hurt my feeling when we heard about that.”

Tom was a little confused. “Last night you didn’t say much so I thought it was not a big deal to you, but now I see it was. I’m not sure what all I can do, Bash. It isn’t a matter of, ‘Oh, look, there’s an unused island we can turn into a huge garden’ sort of thing. Even in the small chain between Granada and Saint Vincent about the only unoccupied island is a couple acres and not at all suitable for much of anything.”

She crossed her arms over her chest and looked disappointed. “It isn’t fair.”

Tom knew a lot of things were not fair but decided this was not the time to point that out.

“How can the Chinese make a couple islands right in the middle of the ocean out of nothing and we can’t do that?”

He pointed out those islands were not so much for cultivation as to provide advanced military bases, had been made from dredged materials in the surrounding waters, built on coral reefs and had been ecological disasters.

“I know you really would help if you could, I just wish you could,” she said before adding, “but, you have to promise to try. Okay?”

Knowing she was now in her insistent mode, he nodded and made the promise.

For nearly two weeks Tom looked into options. First, there was the possibility of helping to lease property in one of the nearby land-based nations like Suriname or French Guiana. Neither of those nations, when contacted by the U.S. State Department offered much in the way of hope.

“Our unused land is rain forests and other protected lands. Everything we grow we mostly must keep to feed our own people. Sorry, but we are unable to assist you,” was the basic response.

One small island, Isle De Coche, had the land, but it was inundated by salt water at high tide making it fairly barren and nothing short of building up ten or more feet of fresh dirt and making a high-capacity desalinization plant would make their soil into something that might produce food.

More than once Tom wondered how in the world those islands had all become so populated. They offered little by way of native protection from the elements and were so far away from most things as to be considered “remote” at the very best.

He did days and days of research, speaking with Jameson Carr three times mostly to tell him he was looking into things, but had no answers at present.

“I hope you can find a way to help us, Tom. We need to offer these people a ray of hope… to tell them there are people out here with their well-being in mind. The British government, and His Majesty the King, are very mindful of spreading the word of hope and the fact we stand ready to assist around the world.”

"Not trying to renew the Empire, are you?" Tom asked because the rhetoric sounded very much like what had been presented as reason for taking over so many nations at one time—"It is for your own good and because we want you to love us."

"Oh, my goodness, no, Tom. We simply feel we need to step up to, well, perhaps atone is too strong a word, but the sting of our failed Empire has many of the younger politically astute among us wanting to give back after such a prolonged period of taking."

"Word," whatever that might be, is difficult to keep from getting out. For this possible project the word hitting the streets of more than one Caribbean nation was that a great U.S. company was going to be coming down and taking over all of their land and forcing them to move. And, when someone decided to add to that it must be because their very own governments were selling them out, people took to the streets and rioted.

Millions of dollars in damages were sustained in various towns before the local police were able to contain things.

Addresses by the local Governors or Ministers were listened to with distrust by people who had been lied to before and who currently lived barely above subsistence levels.

When the Governor General of Grenada and Prime Minister of Barbados contacted Tom, both were in a near state of panic. They begged him to do something.

Tom discovered neither of them had the slightest idea of what he was being asked to provide, only that his company had been mentioned in several rumors. He sighed and suggested they all needed to talk.

"I can fly down and pick you up along with the leading officials of Saint Vincent and Saint Lucia. You all should have been informed about what others want to do to aid your nations, and I suppose I'll have to be the one to do it."

Arrangements were made for the following day and Tom, along with Bud and Deke Bodack, flew the *Sky Queen* down to each of their main airports and picked up a total of nineteen people. Once back in the air and at an altitude of forty thousand feet, Tom came back to the very crowded lounge to address them.

"First, let me say that while I welcome you as a body, we did not ask for so many to come here. If you are uncomfortable I will not apologize. We believed we were entertaining up to eight. So, that out of the way, here is what I can tell you."

He launched into the basic things they already knew about food

and growing space. There were many nods and a few sad faces. He mentioned organizations that wanted to help but previous attempts failed or floundered—not necessarily on *their* specific islands—when a few local governments stepped in and took charge of any aid whether it be money or food or medicines.

"In some cases none of the aid made it down to the people. It is frustrating to the rest of the world who want to help to be disregarded and, in some very sad cases, to have their aid turned around and sold for profit by one regime or another for their own comforts."

Many protested they would never think of doing such a thing, and Tom let them get that out of their systems before he rattled off cases involving each of their countries over the past fifty or so years. In the end, half the faces were angry and half resigned to the truth.

"For those of you angry at hearing the facts, what can I tell you? The truth is the truth no matter how loud and long you want to deny it. There are still some nations willing to give this another try, to provide help, but have stipulations you must sign up to, or your nation or nations will receive no help. There will be no negotiations on these points so please do not try to argue them with me. I am, as the saying goes, only the messenger right now. It is only to be later that I might become one of the persons involved in providing you with alternate growing options."

This started several arguments among the people there and Tom finally had to TeleVoc to Bud telling him to drop them about a thousand feet.

"Not fast enough to hurt anyone, but I want them to feel it in their guts." He could envision the flyer's grin.

The maneuver had the desired affect. Silence came upon the room.

"Good. Now that I have your attention again, I will ask you if you can adhere to such rules. No taking anything from the people for yourselves. No selling things off. No taking over the sales and running prices up so you make a profit. This is aid, gentlemen and lady, for the common man and woman and child. Pure and simple. So, can you understand and agree, or do I need to return some of you to your airports and be done with you?"

It was harsh and it was abrupt, but it had results. Only the Governor-General of Saint Vincent and the Grenadines refused to agree. But, on landing back in Kingston and being asked to leave the *Sky Queen*, he changed his mind.

Now that Tom felt he had them convinced of the way things

would go, he agreed to try to dispel the fears of the people.

"It is going to take all of you as well. What I propose is to bring out some rather old gear I've had in storage for nearly eight years, dust it all off, and the group of us will be making a series of videos I will project high in the skies over each of your islands."

He told them what they would be doing and even the sort of things they would assure their people.

Things—attitudes—were helped along when Chow came forward from his galley with a warm lunch.

Tom took him aside after the last of their guests had been given a loaded plate.

"Chow? How the heck did you make all that? I only told you to expect to feed maybe a dozen."

The chef smiled and simply stated, "Ya know, if'n ya look back, when ya tell me ta pack fer ten days I pack three weeks. Jest in case, mind ya, and nothin' that cain't be put back in stores or the big freezers at work. So, the two turkey breasts and the one beef roast that I'd have portioned out and hoped ta have enough o' each ta meet demands, I simply cut thinner and put some o' both on each plate with a heap o' mashed parsnips n' taters with butter in between. And, see? Ever' one o' them is happy as can be."

On returning each of the groups to their islands and promising to come back in two days to do the videos, Tom and the *Sky Queen* headed for home.

There, he called Jameson Carr and told him about the meeting.

"Ahhh. Well, I had hoped this would not be made so public, Tom. This is disappointing. Can you tell me why you decided to let everyone know?"

Tom's jaw opened in surprise, but he closed it. "Mr. Carr. For your information it was because some word leaked or was given out to each of these four islands I found it necessary to hold the meeting. Or, are you willing to swear that had I called you, you would have done it with the same sense of urgency? In fact, I am a little surprised by your attitude. Swift Enterprises lets nothing about forthcoming or potential projects out our doors. Where else could the information have come from but your office?"

Jameson Carr was silent a moment. "Well," he started sounding a little worried, "we obviously had to spread a *little* word around here in England about the good work we plan to do. I suppose someone might have then contacted those nations and asked about what they thought. We never believed it might turn into riots. Are you certain it was because of this?"

"Positive. And now I am forced to do something else. I can actively deny we are involved and point right back at you and your organization, or I can move forward. I must tell you I do not like to have my hand forced like this, but I also do not like the situation down there at all. So, here is what you will be doing today or tonight so this can all come off according to plan."

He detailed the video address Jameson Carr would be providing no later than nine the following morning, Eastern Time, and how it would be used for each island's personalized address.

By the time Tom and his crew left to go back to each of the islands, he had four personalized addresses of three minutes each from the Brit along with some basic facts and figures for each nation and their current food woes.

This time only two or three people came to the airport and up to the lounge where a green screen had been set up. Outside, a camera taking a video of their terminal building, carefully avoiding any hint of the *Sky Queen*, to be added behind the speakers as they read their short speeches.

When they completed the final visit, Barbados, it was nearing one hour to dusk. A trio of seacopters swept in and landed a minute later and Tom took videodiscs to each of them. These would be used with the large, outdoor 3D Telejectors Tom once used, and would all begin at exactly nine that evening over each island.

He flew the *Queen* to St. Georges in Grenada stepping outside and letting Bud take the giant jet back up a minute later.

At precisely nine all citizens were jarred from whatever they were doing by incredibly loud music and the announcement that a special address would begin in one minute, and that everyone able to should go outside and look up.

For those unable to be outside, the local television stations had been informed to have their cameras pointed at a particular spot in the night sky.

Above the inventor's head the address by their Prime Minister began, followed by their Governor-General and then Jameson Carr's address tying things together began.

A few moments later a loud *CRACK!* was heard coming from near several planes and Tom dropped to the ground, *blood pouring from his head!*

Tom came to in a hospital bed. He sought to recall what had led him there, even where he was now, and then realized it was one of

the beds at Enterprises' Dispensary and the shadowy figure standing with his back to him looked like Doc Simpson.

"Hey, Doc," he croaked finding the oxygen cannula in his nose had dried his throat out.

"Well, hey there, yourself, Tom," Greg Simpson said turning to look at his patient. As he put the ends of his stethoscope in his ears and listened to Tom's heart, he asked, "Care to tell old Doc how the heck you took a bullet graze to your temple just standing there, next to who I hear was the local Governor of the island?"

He gave Doc a brief run through of the projections and his recollection of hearing something at the same time he felt a wallop to the side of his head before inquiring how he got back home.

"Bud was up in the *Sky Queen* and he said you TeleVoc'd him saying you were in trouble. He got down pronto—I hear whatever video he was showing just got over as you called—and found you in the arms of their leading politician, bleeding from the head wound but commenting on how pretty the pictures had been. Some woman there evidently tore off her blouse and packed it against your head." He grinned. "Guess you don't remember that part, but I suppose you owe her a new one."

The flyer had known that scalp wounds, even simple nicks, were bleeders and easily spotted that Tom's was superficial, but the impact had stunned the inventor. He got a compress on it, bandaged the inventor's head and took him back aboard. There, he put Tom to bed and flew them home at top speed.

Bud himself put in an appearance five minutes later.

"Just checking to see how you're doing, skipper."

"Headache and a real sore spot, but not bad. So, any word on how the videos went over?"

Bud's smile ought to have told the tale but he replied, "All riots stopped and all people working to put things back together. And…" he looked at Tom as if hoping what he had to say next would be accepted as intended, "It would appear that once word got out their potential benefactor had been shot, and especially once they found out it was the famous Tom Swift, everyone and their brother went on a search for the idiot who shot you. A lynch party from what I hear."

Tom tried nodding but winced at the pain. "Did they find out who it was?"

The flyer shrugged. "Some nobody with a grudge against the Prime Minister. Once he heard who he'd actually hit, he fled into the local hills and hasn't been seen since."

CHAPTER 5 /

A MAN, A PLAN, A *DOME*?

THE MORE he considered it, the more convinced Tom became that his wife was right. Eleven detailed reports had been published about just Barbados and Grenada and their food plight in the past two years.

Each one called attention to the growing disparity between what the islanders grew and kept for themselves versus what their governments sold for operating capital. It was food that had to be replaced through importing, and now their two main sources were saying the end of such shipments was drawing near, two of the authors stated their belief was that the difference between the monies coming in and those going back out were becoming minimal, and the whole process had to cease.

The problem was the population growth had not stopped, and had increased as better medical care and sanitation meant people were living longer lives while those of childbearing age seemed disinclined to stop making new citizens.

Religious pressures were, as always, to have more and more babies without any moderation due to circumstances or even intelligent thought.

"That means people like me, companies like Swift Enterprises, and funding sources like Mr. Carr are almost forced to step in to save these people in spite of themselves," Tom said to Bashalli at dinner.

She understood the economic aspects but not being raised to be religious she failed to come to terms with the enormous pressures various religions placed on people.

"What if nobody helped them until they show interest in helping themselves?" she asked, more that a little bothered that her pet project was turning out to be self-caused.

Tom shrugged. "Look at Cuba. Decades ago they were ruled by a dictator who was killed and they taken over by the man who became their next dictator. The United States wanted to have nothing to do with him and so the Soviet Union stepped in with open arms and even more open treasuries and gave the new dictator a boatload of money. He returned the favor by taking on their ideals of communism and becoming a huge thorn in our sides.

"Now, that is an oversimplification, but it shows what might happen if we abandon these small nations to their fates only to

have a large and not particularly friendly power step in and set up another satellite nation just below our shores."

She sniffled and stated, "Well, I hate it!"

Tom did as well. But, even the U.S. wasn't immune from handing out funds for friendship.

Far too many nations had been "bribed" by the United States only to turn on their benefactors at some point. He didn't know if it were from embarrassment over being so in debt to the U.S. or if it were for other reasons. The fact was all that foreign aid had accomplished was to keep others smiling at us over the years until suddenly they were not.

It also was a huge drag on the economy of ours and other countries with little to show for it.

From the purely humanitarian point of view, rescuing the small island nations felt like the correct thing to do. Now, the problem was how to go about that.

Several long conference calls were placed between Tom, Jackson Rimmer in Enterprises' Legal department, and Jameson Carr with his legal representative. More than a dozen good ideas, all impractical in the end, were presented by both sides and nothing substantial actually came from any of it.

"One thing I must say," Jameson stated during call number three, "is that while we may seem to be no further along that we were nearly a month ago, we actually are much farther than any previous attempts. I beg of you to not give up. There must be a way to grow that food, get it to the people who need it, and keep them from starving."

"May I ask something," Jackson spoke up. "It is just this. If, and I am taking Barbados as my point of reference now, *if* they can no longer get their foods from Venezuela and Guyana, and changing over to other sources will inevitably cost them more, would they agree to stop the food shipments out and use them for the good of everyone?"

The sad news was it probably would not stop the exports.

"These governments are run by greedy men who live comfortable lifestyles while their people are kept above the suffering level but not by much. No," Jameson said, "we have suggested that approach only to be rebuffed."

Now, Tom had a question. "What is to keep these same government types from selling off what our solution, whatever it may turn out to be, provides?"

Nobody had an answer for that until the legal rep in England spoke up.

"We make it a hard stipulation with verifiable checks at random intervals that they are not doing that. If they are, the food gets cut off to that nation. And, further assistance dries up until that government either is replaced or deposed."

Jackson laughed. "So, you are suggesting making this political to the point where food says who the people may be governed by? I believe several bodies including the United Nations would have you in chains in front of them within days. I suggest we table further discussions until Councilor Smith-Ramsey is replaced with someone who won't question us."

With the man sputtering over the indignity of it all, making threats to take everyone to court, and outright screaming over the line, Jackson calmly but firmly declared, "That is enough!"

It took a few seconds but silence reigned.

"That is exactly a small but very personal example of what you just proposed Mr. Smith-Ramsey. You took immediate umbrage to it. Imagine what these small island national governments will do. And with that, I want to call this phone conversation over. We can attempt this again in two or three days."

He and Tom soon hung up with the inventor shaking his head in wonder.

"You really put the wind up that blowhard from England," he said.

Jackson smiled. "What? That little theatrical? People like him are annoying and I always enjoy chopping holes in their sails in court. Well, we accomplished little or nothing, so have a nice and relaxing weekend. I have to go back upstairs."

When Damon slipped back into the office twenty minutes later Tom told him about the unsuccessful call and how Jackson had use one man's statements against him and provided a valuable point.

"He is one of the best," his father told him with a smile. "Why do you think we hired Jackson in the first place?

Another week and another mostly unsatisfactory call went past all the while Tom was spending a lot of time trying to come up with ideas for how to grow food where there was no land.

His father's underwater gardens out by Fearing Island were successful on a very small scale in growing plants that originated

in space from the beings they called the Space Friends. Those beings had all but disappeared and rarely answered radio calls these days, and the space cabbages were still viable but could have used an infusion of new plants to bolster their own DNA.

They remained, as Damon once put it, “Twice cabbages. Twice the size, twice the weight per cubic inch, twice the nutritional load per pound of plant and grew twice as quickly as their terrestrial cousins.

Father and son were discussing the situation one afternoon after Tom reported his idea of such a shallow water garden would probably not provide what was needed.

“It is looking more and more like we need to create some sort of floating island given over to just the growing of foods.”

“You must still be contemplating those old aircraft carriers. All right,” Damon said, “let’s just suppose you can get permission from the locals to build something and park it off their shores. What could it possibly be? You can’t build more land… you can’t just set up a large platform off their beach and tell them to go to it. I am, honestly, stumped and hope you have some other ideas.”

“I do,” Tom told him looking his father straight in the eye. “We’ve done it on the Moon, we’ve done it on Mars, so why not do it in the oceans? Actually, we have, but in a much different way.”

“So, are you hinting at a hydrodome?”

“No. A dome, to be sure, and possibly more than one, but I plan to do what science fiction has only heretofore done and that is build a permanent undersea domed structure. While I want to look into a space platform and even some other ways to accomplish this, it was one of Jameson Carr’s original suggestions that has been aiming me at the creation of some sort of aquafarm.”

When asked to provide some details, he told his father that maximum use of the available space would be necessary, and that meant not just growing on the floor but all up and over the arching dome above.

“I don’t believe we can do it on multiple floors because we really need sunlight. Think of it like a terraced mountain, or, more literally like a hotel that has an atrium in the middle and then rooms with their open hallways all around above.”

Damon was nodding. He’d spent some time in several such establishments.

“So, and pardon my interrupting you, Tom, but as the dome curves overhead, these terraces get closer together, right?” Tom nodded. “All the way to the top?”

“I don’t think so. As I said, we need some real light down there so my plan is to make perhaps the top ten or fifteen percent a clear panel that lets natural light in and spreads it around.”

He described how each terrace would likely be about thirty to thirty-five feet wide from dome wall to a shorter retaining wall.

“Everything would be automatically watered and fans would circulate air to cool or heat specific areas where needed. Excess water would drain through a series of pipes and be collected for reuse. Same thing for humidity.” He stopped seeing his father tapping his front teeth with a mechanical pencil. “Thoughts?”

Damon let out a single humorless chuckle. “Well, things like weeds may be a problem unless you plan to introduce sterilized soil. That, however, does away with beneficial bacteria. Words like ‘insurmountable’ come to mind, Tom. The biggest thing is the sheer physics of it all. How in the world can you keep an air-filled bubble sitting at the bottom of the ocean?”

It was Tom’s turn to chuckle, but Damon noted it was more a satisfied one.

“The same way I can shape and hold all the terraces, and it comes courtesy of our very own Chow Winkler! We were talking this morning and he asked what I had on my monitor. When I said it was an underwater dome, he asked me,” and Tom switched into an approximation of the western chef’s accent, “How in tarnation do ya think yer gonna keep that big old thing under all them waves? Bury it in cement?”

He looked at his father to see if there was a sign of recognition. There was.

“So, after he left I did some calculations. If we build the structure out of two slightly different size shells, inflate the outer one and then the inner one and finally fill the void with something strong and heavy… like concrete, we get a lot of weight and the structural stability necessary for something like this. I’ll probably have to also stick it down onto a heavy slab for the extra weight, but I also plan to partially fill these with navigable waters. If I interconnect them and have, oh, perhaps eight or ten feet of water on the lowest level, that not only lets me move people and plants from one location to another quickly, it also acts as the built-in reservoir for our fresh and recycled water!”

Damon Swift was thunderstruck. It all was so simple and yet so elegant, and something he might have taken months to come up with. But, here was Tom and an old chef casually tossing around an idea or two and they came up with an elegant solution.

“That is…” and he was at a loss for words. It apparently

surprised and worried Tom, so he waved any comment or question off. “I was about to say, when the emotion of how wonderful that is struck me, just how wonderful that is. Now, I feel terrible for asking these two questions. How much is this going to cost us, and what the dickens will these domes really look like?”

Tom smiled. “I can answer the second one by showing you something I found on the Internet I think is truly close to my concept. It will probably need a little tweak here and there, but it’s almost as if this man read my mind years and years in the past. He’s a Belgian architect who worked out of Paris and,” Tom now typed a web address he obviously had committed to memory, and a beautiful drawing floated in front of them, “…there.”

Again, Damon was awestruck. Finally, he pointed to a few figures in the distance and then at some boats floating on the water inside. “Is that the scale?”

“Truthfully, I don’t think so. His concept has fourteen levels making for about two total acres of space. I’d like to triple that… *per dome*. But, you can see how a seacopter could come in under this and just raise into this water area for all cargo actions.”

Tom pointed out several other features and explained how his concept might differ a little. He was certain the natural light window at the top was necessary and if the correct placement of the domes could be managed would only be about twenty feet below the surface.

“Personally, I’d make that forty feet and have the window capable of being raised and lowered. Lower whenever shipping is expected in the area or for when any storms are making the water turbulent. Unless, of course, you can park this growing area in sheltered water near to a coastline.”

Tom agreed that was a brilliant suggestion and promised to make it part of his eventual designs.

By the time he departed to go home to Bashalli, both father and son were getting excited about the prospects this type of aqua-farming might mean.

The matter of cost would be for another day, but Tom did hint that he believed the original requestor for such a solution, Mr. Carr, would be bearing the largest share of the costs.

“After all,” he said as he prepared to leave, “he did tell me they were prepared for something in the median seven figure range, and I think we can build these for around one-and-three-quarter million apiece. That makes three coming in around five-and-a-quarter.”

Damon looked as if he had another thought. “Tom. I would hate to see you putting all the proverbial eggs in a single basket, and so I will strongly suggest you keep looking into other ways to do this. The dome idea is a nice one, but the sheer physics of it may be insurmountable.”

They left it there.

Nearly four days came and went as Tom tried one design after another attempting to maximize the growing space while making all other aspects easier to accomplish. One design allowed for absolutely maximum plantings for food crops including fruit trees, but utterly failed to provide for space in which to harvest those foods. His initial idea to build in automatic tending and harvesting equipment failed to pass the “It can be done, but is it feasible (economically and physically)?” test.

Another dome idea setting the terraces up as hanging gardens with the drainage from the topmost one feeding into the next one down and so forth came up very short on necessary structural support to allow for some two hundred tons of dirt, planters and damp soil to remain up there without pulling down so hard on the actual dome that just about any outside force could collapse it.

Squaring the structure might help, but that brought on a new group of negative factors that made it a useless exercise to pursue.

Each time he had a thought for a new approach, he first sketched it on paper and looked at it, often for more than an hour. His eye picked up small details his mind passed over while drawing and many never made it past this rough stage.

However, through all those hours his mind and eyes came back time and again to the Belgian’s design. Its elegance and arching design combined with openness for light and the capacity it offered was the most intriguing thing he’d considered. And, the rings of terraces actually made the structure stronger against outside pressure.

A phone call to Arv Hanson had the model maker over at Tom’s desk in the underground office twenty minutes later.

“What have you got to show me,” Arv asked sounding a little out of breath. He had taken the eight flights of stairs rather than wait for the elevator. Even coming down was a workout.

“For starters, how about a cup of water,” Tom offered as he poured one and handed it over. “Then, take a seat on the sofa while I fill you in on a couple things, then I want your honest opinion on both the feasibility of a miniature and well as thoughts

on how it would translate to full size."

The entire plan to create extra growing spaces for several Caribbean islands was laid out followed by some of Tom's ideas for what it all needed to accomplish.

"The real thing is this will be possibly the first of many such placements in areas where population has outstripped their ability to feed everyone."

Arv nodded. "Yeah, I get that. Barclay was telling me about your Barbados trip and the waiter that brought the whole food subject up. Kind of sad, really. So," now he brightened, "tell Uncle Arv what he can do to help make it better."

Tom laughed. "I can do you a couple better. Come over here and take a look at my top four design possibilities and tell me your thoughts."

Arv looked at each design that Tom had begun to flesh out on the computer. Haphazard pencil lines were gone and in their place were more precise solid lines and curves only a great draftsman or a computer could make in a short period of time.

"Can you show me number three again, please?"

Tom pulled that design up and the model maker spent the next ten minutes looking at it. Twice he got up to take an even closer look at something only to sit back down, chin on his right fist, pondering that one design.

Finally, he looked at Tom.

"None of the others will work. That one will."

It was a definite statement and made Tom wonder what Arv had seen that he could not spot.

"Oh," he said sounding disappointed. "Number three and not number two?"

Arv shook his head. "It's pretty and all that, but it is too… uhhh, too… *cathedral*," he finally got out.

It was Tom's favorite and the one inspired by the European designer. He let out a long sigh.

"Okay, let's talk about making a miniature out of your favorite design."

Arv realized he'd just stepped on Tom's toes and apologized.

"Not a reason to say anything, Arv. I asked for your frank and honest opinion and just because it isn't exactly a match for mine doesn't mean it isn't the right one to make. So, let's talk models."

He described the kinds of pressures the water would place on the structure at the various depths starting at forty feet and dropping down to about three hundred and twenty feet.

At the mention of that depth Arv began to look a little worried.

“Hmmm. I really hadn’t thought the depth thing out, skipper. Uhh, can I take a look at those other designs before I make a fool of myself?”

Tom pulled the others back up on his screen and Arv spent another four minutes looking them over.

“Okay. Numbers two and three will very likely support both the structure overhead as well as resisting the outside pressures the best. Wait! Will these be pressurized, ‘cause that will make a big difference in support?”

Tom described how he hoped to allow for a seacopter to come in under the dome and to rise up through a large hole in the bottom and then surface right at the build-in dock.

They looked at each other, both realizing this would have to require high pressure inside the dome. Pressure so high it would make it difficult for people to work in there and could even do harm to the plants.

“How about this?” Arv offered. “You have your cluster of, what… three or four domes that attach to one another but to get the seacopter in you have a sort of airlock, only it will be a pressure balancing waterlock.”

The inventor smiled. It was a great idea. All the lock had to do was be large enough to accommodate a seacopter, be able to be sealed to the outside ocean and then have the water pressure inside dropped to match that of the dome, and the top would open allowing the seacopter to float to the surface and do what it was supposed to do.

“If that is the case, then I think design two is the way to go. Gives you max growing space around the walls without requiring massive structural elements. Plus, the not-quite-round shape and those terrace rings will help with pressure resistance.”

Tom smiled at Arv.

“Can you build me models of both number two and your first choice? I’d like to compare them in the pressure tank.”

Arv agreed but stated it might take as much as three weeks for Tom’s design due to the intricacy of the interior terraces that had to be in the model to give a good idea of what pressures they would be withstanding.

"And, I'll embed pressure and stress sensors all over the place so if we have a failure we will now exactly where that occurred. No good not learning from mistakes or problems!"

Tom agreed.

* * * * *

Two weeks later the model maker called to say he had the first dome model ready for pressure testing. "It's the one I liked, skipper. It was the easier of the two. Your choice comes next in about nine days.

Tom met him at the smaller of the two pressure tanks Enterprises had. This one could handle anything up to ten by ten by ten feet, and the model was about eighty percent of that.

"I've already put it in the tank and connected the pressure hoses. I figure if we put this down to about four hundred feet of pressure and bring the inside up from fifteen psi to about nineteen psi, about the most people can stand on a continuing basis, we ought to have a good test."

"Okay, but how about as you increase outside pressure you also increase inside up to about twenty-five psi. Then, back it off down to fifteen—slowly—and see what the structure does."

As they peered through the thick, clear Plexiglas window, and also kept an eye on the gauges and readouts, Tom and Arv watched as the dome's outside pressure was slowly raised at about the rate a trained diver might descend. From sea level to about two hundred and thirty-six feet the inside sensors showed no troubles.

By this time the interior pressure had been raised to twenty psi and was rising as the outside pressure was increasing.

Without warning, at two hundred and seventy-two feet the entire structure imploded and the surge of inside air made the water in the tank increase its pressure some fifty psi.

Arv turned slowly to Tom after shutting things off and starting to bleed off pressure.

"I suppose that means it is dome number two for the test. Dome one sure didn't hack it!"

CHAPTER 6 /
THE THROWN-AWAY ISLAND

NOW FULLY signed up for the project, and getting eager to begin, Tom needed to decide the final *what* he would build and almost as important, the *where* of it all.

"Obviously the closer to at least one, or even equidistance to all the islands, the better, but I do not believe we can build something off the coast of each of these islands. They have a proximity to each other making a centralized solution seeming to be the best, although I am willing to be convinced I am wrong," he told a group of department managers whose teams might be involved in whatever was to be created.

The manager for Biological Endeavors raised a hand.

"Yes, Barney?"

"I was looking at the map of the area down there and my feeling is we go for something attached to land, and place it off the southern coast of Barbados. They have the best airport facilities for the shipment of goods, and a single Type A cargo jet could handle the trips to the other islands with ease. Two runs a day if needed. Besides, the coastline and shallows there are just about perfect from what I see on satellite maps."

"There are two problems with that location," Jackson Rimmer who was there for any legal opinions, stated. All eyes turned to him. "One is that the shelf next to shore is beautifully shallow, but it is a protected reef area and already considered to be fragile. Unless we plan to park something floating above it and carefully find anchorage points and a way to get sunlight down there, their government will balk at that idea."

"And, two?" Tom inquired. He already knew but wanted the group to hear it.

"There is a lovely ten acre plot of land between that shoreline and the airport on which to place a sorting and processing facility, or even to use for growing, except it is privately owned by a man who, in my making a private inquiry regarding availability, tells me *is* not and *will* not be for sale, lease or hostile takeover. He told me there are already too many people on the island and thinks the tourists are the real threat. That leaves finding another location and then trying to work with the locals to improve their roads for the trucks necessary to transport things to and from."

"Okay," Tom said placing his palms on the table. "No Barbados site. I also know we cannot consider the island to the north of the

four we are trying to assist, that being Martinique. The funding body from England has a long-standing issue with that government and has declared them off-limits as far as this project goes."

"Where does that leave us?" Barney Donohoe asked.

Nobody had a ready answer to that other than promises that everyone stood ready once decisions were made.

The meeting broke up twenty minutes later with the understanding that both Tom and Jackson would be looking for a good location to build… *whatever* it was they were going to build.

* * * * *

Less than a week later the same two got together in the big office. Both had found out about something that interested them.

"Venezuela has basically cut off the island of Trinidad and Tobago from all supplies and communication," Jackson told the inventor. "It appears to be like a very bad divorce with neither party talking." It did not seem to be news to Tom who admitted he'd also found out about it the previous day.

Tom had an idea he might arrange with the locals, in exchange for free trade routes to the U.S. and other South American nations, to bring in his High Space L-Evator much closer so he could build a new space platform to be used as a growing space for the entire area. Everything would be brought down when ready, processed on that island and shipped to the needy islands.

"If we don't have room down here why not go up where there is practically unlimited sunlight?"

Tom knew there was one thing in the way… location, but was wondering if the elevator could be downsized and used at a site not directly on or near the equator.

"I'm not the scientist here," Jackson told him, "so I seem to be missing something. I understand the problems we had getting the L-Evator up—mostly from the legal end but some of the logistics as well—and a lot of that revolved around it having to be on the equator for stability. If we move the thing, doesn't it still have to be at zero latitude? Also, to what purpose would you want to have it near the islands? Wait!" he said as it hit him. "You mean to build a growing platform up there and use the up and down mechanism to deliver supplies up and food down. Right?"

"Yes, I do. I believe that a shorter elevator using repelatrons for positioning assistance can be put up there and be as much as ten degrees above the equator. Not only will we have more than ample sunlight in that orbital position, I can use the solar fabric created

by my cousin, Tommy Swift and her partner in England, to generate all the electrical power we need as well as heat for the enclosed space dome I'm envisioning."

He described something as large as one-mile square—about six hundred and forty acres—built from interlocking square panels of about one hundred by one hundred feet. Over the top would not be the traditional highly arched dome of science fiction, this one would have a reinforced and slightly curved roof standing perhaps only twenty feet over the surface.

"We'd make that like we do the habitat domes but using a slightly opaque material to diffuse the light yet allow all the good rays inside."

"But, you still have to move the current L-Evator from the Galapagos around the horn of South America and then up to its new position. Is that possible?" The lawyer was looking hard at the inventor because it all seemed so counter-intuitive that something had to operate under strict conditions one day and then those got thrown out to move it along to somewhere else.

"Oh. I'd thought to reel a lot of it back in once we outfitted the top pulley with a small platform and repelatrons to keep it stabilized, then bring it through the Panama Canal," Tom responded, now sounding a little unsure of his solution.

"Okay. You have the scientific knowhow and I have a few people I need to contact about the legalities of moving that thing. You realize that every airline flying through the area is going to have to agree to a specific time when everything has to stop or go wide and around, right? And, we have a long-term contract with the Galapagosian government to renegotiate. Then, there is what Panama has to say about driving a behemoth ship through their nation and system of locks flying a giant kite up into space. And, so forth. Wish me luck!"

When Jackson left, Tom sat in silent contemplation for an hour. There were many more things involved in such an endeavor than he'd considered. Many of them so far beyond his level of experience he was almost saying a prayer of thanks his father had found Jackson Rimmer in the first place.

After slowly letting a deep breath hiss between his teeth the young inventor shoved himself up and headed out the office door. He had many things to think about and needed to walk off some excess energy.

Outside he ran into many small groups of employees also enjoying a bit of exercise although most were walking with specific destinations in mind. It was a nice day and he greeted them as

they passed with only one group of five asking him if he had a minute to discuss something.

"Sure. I need a distraction so shoot."

A man he knew to be originally from Puerto Rico asked, "Is the rumor true? That you are about to annex part of Puerto Rico to be used to grow food for the rich people of The Dominican Republic?" He looked confused more than anything.

"It's Roberto, right?" The man, probably a year or two younger, nodded. "Okay. Obviously the rumor mill is churning out a lot of bad information. Before I answer the question, may I ask where you heard this?"

"From my auntie in San Juan."

"Well, you can assure your auntie that the rumor is about ninety-five percent false. Entirely so where it has anything to do with Puerto Rico. You see, there are four of the smaller islands to the south in that same chain that have run out of room and part of their normal food supply from off-island is about to be cut. The truth is we are not absolutely certain what we need or can do, but it will not, in any way, involve taking land away from anyone. Not even from any of the uninhabited small islands due to their soils mostly being far too saline to grow anything."

The man looked nearly convinced, but not completely.

Tom wanted the rumor to stop, so he added, "We've never considered Puerto Rico because it is just too far away from where the food is needed. If we manage to do anything it will be close to the four islands that will be in peril once a couple South American countries cut off shipments of food."

Roberto relaxed and thanked Tom. "I will call my auntie tonight and tell her whoever is spreading that rumor is a liar."

As the inventor walked on his mind turned to what other rumors might be out there and what might start. He made a detour at the next walkway between buildings to his left heading for Communications.

"Is George in?" he asked the receptionist.

"Hello, Tom. Yes, he is but he's talking with the lawyer, Mr. Rimmer, right now. Can you wait?"

Tom smiled. "Better yet I might be able to kill two birds with one stone, or so the saying goes. Do you know if they are discussing the Caribbean islands situation?"

Her eyes went wide and she nodded. "But, how could you know?"

"Easy. It's on all our minds right at the moment. Don't call him; I'll just TeleVoc him to see if I can join in the fun." He made the silent call and headed down the hall. "Thanks!" he called over his shoulder.

After greeting each other, Tom sat down at the small conference table in the office.

He told them about the rumor coming from a resident down there through an employee.

Jackson shook his head slowly. "I wish there was something in the human nature that could be flicked off with a simple switch. Far too many people spread far too much gossip and lies and falsehoods and twists of the truth. The bad part for us and for George here…" he pointed to the man who smiled weakly and fluttered his fingers, "…is that he and we have to quash these and do it very soon! If you both recall that small inter-island war in Southeast Asia about four years ago, well that was one hundred percent started by an unfounded rumor spread by a politician out to discredit his opponent. He did it by naming the man and accusing him of consorting with a neighboring island run by their military to the effect that their island would be turned over to the other one if his opponent won."

George Dilling picked up the narrative. "Sure. And people on island one got so incensed a bunch of their men stole the island's only vaguely military ship, went over the fifty or so miles and blew up the other country's main dock. And, so it all began."

"I seem to recall having read," Tom told them, "that more than three hundred people were eventually killed all because of that rumor. Gee, I hope we don't have that problem down in the Caribbean! The earlier riots were bad enough."

George stated he was working on a campaign to introduce the real facts to the people of the islands, including islands that were not going to be affected in any way. "The problem is if we don't have something solid to tell them, there is still a lot of leeway for some people who like to rabble rouse to fill in the blanks, and the easy money bet is they won't be on the side of truth!"

Tom stayed in the office another hour until it started to become obvious he had more than a few questions to answer, so he excused himself heading back to the big office.

It was just going on two so he made a call to England.

"Mr. Carr, Tom Swift. Do you have ten or so minutes? It is important and about the project."

"Does it have anything to do with the rumors that have begun

flying around fast and furious?" Jameson asked.

"Exactly. I am at a loss to understand how any word of the *possible* project might have made it to places such as Puerto Rico so quickly. Do you have any insight?"

There was a pause for a few seconds, and then Jameson Carr said, "Well, that might be a fault in our offices. We are built on the precept that information not broadcast is information that can be misinterpreted. I'm afraid that our Public Relations people started to give out releases far too soon in all this. Do you believe there is going to be an issue? Surely there won't be any more riots!"

Tom was dumbfounded. For nearly half a minute he could not find words to express his feelings. Jameson inquired if the line had been "severed" and Tom could only reply, "Nearly and by me!"

"Oh, dear. Did we do something terribly wrong? Again?"

Slowly and with pauses meant to allow the young man to keep hold of his temper, Tom explained some of the many things that were going terribly wrong. His speech lasted nearly five minutes, and it the end it was the English side of the conversation that went silent.

Jameson cleared his throat and in a tight voice responded, "I see. My god, what have we done?"

"If I were not someone who has dealt with the stupidity of politicians and government offices in numerous countries for nearly a decade I would tell you exactly what you've done and in no uncertain words. However," and Tom took a deep breath, "here is what you are about to do and your efforts in this will decide whether we continue working with and for you, or if Swift Enterprises tells you to take a hike and drops out after telling the world the truth."

He began listing numerous things, many of which involved making wide-reaching and very public statements about what the issues were, what was hoped for, and the absolute fact that no land on any of the islands or on the continent would be taken over, nor would it be leased unless by agreement by all residents on that island.

Arv had the second dome, the one more to Tom's liking, finished in nineteen days. Like the more squat one they first tested, with bad results, this one had been formed in one of Enterprises' very large 3D printers. It was the only way short of carving the thing from a solid block to get the right shape and all the interior terraces and even the ground floor buildings.

With both men standing at the controls, this time accompanied by Bud and Damon, Arv began adding pressure to both the water and the interior.

Fifty feet down and everything was exactly as they all hoped it would be.

One hundred feet down and the interior pressure was building up past eighteen psi to twenty, but everything else seemed normal.

Past one-fifty and two hundred feet.

Downward the model "plunged" now passing three hundred feet.

"Let's take it down to four hundred and then keep it there," Tom requested. "Pressure inside?"

Damon leaned over and read it out. "Twenty-point-one-three psi, Tom. It's been steady at that the last ninety feet or so."

Finally, Tom smiled. "After ten minutes stabilized, let's bleed off a little on the interior pressure. I really want to make these domes work in under eighteen psi for the sake of people working inside and the need to decompress to leave the domes. Sixteen would be my real goal."

Everything was checked inside and out before Tom suggested locking down the controls and leaving things for a forty-eight hour test. "If it can make it to that point, I believe we have a winning design!"

In spite of the fact that Arv's first choice had been a failure, nobody was any happier than he was that things seemed to be on the road to success.

It required five weeks for the words to make their way through a minefield of British bureaucracy and finally get out, five very short weeks when Tom and a team of Enterprises' managers and experts looked over plan after plan of what might be done. It was tiring work and in the end all they could point to was it had to be a non-land-based solution which still could include creation of an artificial island or even a platform to be floated high in the skies overhead.

Tom still wanted to go for a dome, but he had promised to fully investigate other options.

His dome concept had worked—much to his relief—but he heeded his father's advice to not just concentrate on a single possibility. However, he knew the time was rapidly approaching when he would need to point to one thing and go for it.

Plus, there was the overall planting area to be computed and he could not complete that until he fully designed his dome and did all the architectural computations. He knew if the math said the terraces inside such a self-supporting structure could only be half of his target, the total growing area would not be sufficient.

So, he and the rest of the team marshaled on.

Rather than make an impersonal phone call to the local government, Tom, Bud and Zimby Cox arranged to fly down to Trinidad and Tobago to meet with their top official. He met them at the airport in a rather old Cadillac sedan with a lot of noticeable rust along the lower edges.

It made Tom—the only one of the three who would go back to his office—realize he would be dealing with a proud but poor man who would not take kindly to any hint of an intent to "just come in and have it our way!" attitude.

They arrived at a small but beautifully architected structure known to all as The Red House. It was, Tom smiled at seeing it, a deep red color and had a sense of historical and modern designs well mixed and very well kept up.

"This is our Houses of Parliament and I keep an office upstairs and away from all that, but I must be ready at a moment's notice to come settle arguments." He grinned at Tom as a uniformed officer opened their doors and they stepped out. "I tend to spend a great deal of time out of the office and on the floors settling arguments," he admitted.

They walked in through a side door using a key the Prime Minister kept on a chain around his neck and turned a corner to a small elevator that had been cordoned off using an old red velvet rope. The elevator car was small yet it fit them both for the one floor ride.

His office was sparsely furnished but held more than three thousand large books in shelves that ran from the floor to near the ceiling and all around the perimeter of the room. Seeing Tom's appreciative glances, he said, "Those represent all the law books from every nation we could manage to get them from going back to nineteen hundred and twenty-six."

Tom was about to ask why, but the PM beat him to it. "It is because in the previous year a visiting dignitary from France lifted his nose at our Parliament telling us we didn't have any understanding of how a government should be run and how the laws of each nation dictate what can and cannot be accomplished."

“And, after that,” Tom said as a guess, “your predecessors made it their business to gather as many law books as they could?”

“You are an intelligent young man. I hope the subject of our discussion will be as interesting and professional.”

Tom set out the basics of the project including how all costs were being borne by a special agency within the British government. He knew this would go over well as this island had an excellent rapport with England.

After telling the man of the desired outcome, but admitting that not all aspects were presently known to him, he was asked what the local government and people might do.

“For now, we plan to do all the heavy work, but that doesn’t mean your people will be left out. I believe we might need as many as two hundred men and women capable of light to medium labor chores for a period of about two months.”

“I see.” His eyes narrowed. “And, what happens during that time?”

“We wish to expand your current airport runway outside Port of Spain, and then create a short rail line over to the coast so we can supply the islands to your north.”

“How long of an expansion?”

“Our satellite-based survey shows you have about four hundred feet of build-able space to the immediate west and about the same to the east. Unless your current fourteen gates is considered to be too few, we would want to leave the terminal building as it stands today. We would be making at least one or two flights in and out per day starting almost immediately and twice a week once things are complete. The rest of the time you will have free use to be able to accommodate larger jets than you currently manage… should you desire that.”

They talked about the difficulties Tom might find crossing the final eight thousand feet of wetlands to the ocean, and the local resistance of having the protected area destroyed.

With a small laugh Tom told him about the project, years earlier, in Kabulistan where an aerial highway, floating on repelatrons, was constructed over a previously insurmountable swamp.

“Other than by looking up at what makes the narrow line of shadow, the locals have mostly forgotten it is up there.”

“And, your intentions for shipping the foods to the other islands? Why not simply use cargo aircraft?”

Tom had thought about that point and had a good answer. “The position of our hydrofarm and its size is going to be such that we cannot adequately process the foods on site, so they will be brought to your island. We’ve spotted a location, currently un-utilized, near your Uriah Butler Highway. We’d lease that twenty hectare plot, erect a non-permanent structure, and be ready for business in less than three months.”

To sweeten the pot he suggested it was his intent to hire up to one hundred locals at good wages to work in the processing and shipping center once things got underway.

“So, it would seem that pending my government’s approvals and the willingness of the land owner to sell what amounts to twenty hectares of six inches of salty water and a few plants most of the year, you may be Trinidad’s newest international company!”

CHAPTER 7 /
A DECISION IS MADE

WHILE JAMESON Carr continued to put out the rumor fires whenever and wherever they popped up—some as far away as Malaysia and Indonesia—Tom turned his efforts to trying out at least one other of his concepts.

He had once created a flying platform held to the ground electronically and also forced away from it invisibly. His Space Kite was small, carrying only himself and Bud into space, and had proven to be a bit dangerous on her maiden flight, but in the ensuing years he had come back to the technology and actively used it for his Cyclonic Eradicators flying high over the western Atlantic and Caribbean Oceans.

"I have been thinking of making a series of larger kites and interlocking them into one huge growing platform, maybe as large as up to a mile to each side, with each section supporting its own weight up there," he said to Bud as they had breakfast in the cafeteria one Tuesday.

The flyer's face set in a small scowl. He well remembered their flight and the running out of oxygen as they flew away from the Earth uncontrolled. It was only a very last second rescue that made eating this meal possible for them both.

"What's to keep it from flying off? In fact, what's to keep different gravitex units from working against each other and tearing the thing apart?"

Tom had to think about that a few seconds. "Okay, you are still thinking about the bad things and perhaps not recalling we've been running the Cyclonic Eradicators up there," he pointed to the ceiling, "for about five years now with none of the three of them getting out of position by more than a few feet. Besides, all the units I envision would be linked to a computer—*with backups!*—to ensure they all work nicely with one another."

Bud nodded and shrugged. "Fine. Let's say I'm behind you on this. Now the question little Bud has is how far up?"

"Well, I'd envisioned these being at what might be called low orbit altitude. Perhaps a hundred miles up. No, wait. The seeds and everything need to be exposed to the radiation in the Van Allen Belts at about a thousand miles or so, but now I suppose the platforms might feature a single section, self-contained, to take things up before they get planted."

"Who is going to be up there tending the crops?"

Tom smiled.

"Do you remember the robot forest rangers we created about five years ago? The one that scared mom and pulled up all her flowers because it saw them as being invasive species?"

Bud grinned. It had made Anne Swift livid and she'd berated the robot as if it were a naughty child. All this was ignored by the robot as it expertly replanted everything in such a way even she could not tell anything had been pulled out or dug up.

"Of course I do. ALAN. Your Autonomous Life-form And Naturalist. Great little machine."

"Well, we'd have a few ALANs up there planting, tending and harvesting the crops."

They continued for more than an hour until Tom looked at his watch and jumped up.

"Got to run, Bud. Meeting with dad!" and he was jogging away.

Once he arrived he and Damon Swift sat down in the conference area of the office. Trent had already brought in a carafe of coffee and a few pastries.

"Tell me what sort of status you can and also where we stand on getting some sort of payment out of your Mr. Carr and his organization," the older inventor requested.

Tom gave him reports on the domes that had been tested, even though his father had been in on the initial hour of testing the second, Tom's chosen, dome. He had not been there when Tom decided to end to test by upping the outside pressures and dropping the interior pressure. His intent had been to destruct test the structure but it remain unfazed even down to a depth of seven hundred feet with the interior pressure at sea level conditions. It held up to that torture.

"I have to say I am impressed by that, Son. But, go on."

Tom described how he was still working on a way to fill the voids in a real dome structure without the weight of the wet mix slumping and causing bulges lower down. He mentioned he was on to something but preferred to not discuss it until he'd had more time to try a few things.

Then, he turned the discussion to a few of the other possibilities.

"I also want to look into one giant set of interconnected platforms, all covered by a low dome, that would float high in the skies, even in low orbit." As his father looked at him and tried to picture everything, Tom talked about his SpaceKite technology

and how it might work. When he finished about fifteen minutes later, Damon reached for his coffee cup and took a sip.

Finally, he set the cup down and asked a single, one-word question.

"Cost?"

With his father looking straight into his eyes, the younger man had to return the steady gaze and answer truthfully. "Too much. Possibly in the one hundred million dollar range when all is said and done."

"I see. So, tell me why you have been investigating that?"

"You told me to look at a number of possibilities beyond a simple dome," Tom answered with a small smile.

Damon had to chuckle. "You got me there. And, you are right; I did ask that of you. But, now you know the high cost is it something to spend any more time on?"

"I think so. You see, all along you've been telling me about the great strides in growth and yield you have been getting by irradiating not just the Space Friends' plant seeds but even some Earth crops you are growing under the water off Fearing. In the small hydrodome you've set up I recall you have carrots that are two feet long and four inches across the top that are, what… forty percent more nutritious?"

"Yes, but they do not need to be grown up there, only exposed for a brief time." He looked meaningfully at his son.

Tom mentioned several other crops Damon was actively growing and studying including a couple other root crops, a small patch of a grain called farro, and tomato plants producing foot-wide fruits that were more flesh than liquid and were delicious as well.

Their discussion turned to alternate ways to irradiate the seeds and seedlings and even the immature trees necessary to bear fruits in the first or second year.

"Your idea of repurposing a gravitex-based enclosed platform might be a good thing, but how about an alternative and one I hope, someday of course, will see one of my pet projects being returned to its former glory."

Tom thought about what that might be a moment before an idea came to mind.

"Are you talking about the High Space L-Evator and the anchorage ship, the *Sea Charger*? Or, rather, her new name the *Sea Lift*?"

With a small nod, Damon said, “That is exactly what I mean. She has been an important, nay, mandatory part of the whole space elevator system, but with that being used only about once a month now, I wonder if it is time to call that project a day and let me have the ship back.”

“Okay, but what do we do with the L-Evator? If I don’t do a growing platform up there, I probably don’t need the space elevator.”

“Think about it, Son. Why is the *Sea Lift* at the Galapagos?”

“Well, to be the anchorage for the up and down lines and the staging area for all shipments up and down.”

“Good. But why the *Sea Lift* in the first place?”

Tom had to think back but it came to him quickly. “Because even though the people down there were gracious enough to allow us to put the L-Evator there, they absolutely could not let us devastate any of their actual land. We had to float the anchorage.”

“Right, but you are on a roll, so I’ll let you continue,” his father said patting Tom on the knee.

Tom got to everything in the next few minutes. The space elevator system went tens of thousands of miles outside the atmosphere, but could certainly work much nearer the Earth. In fact, the closer it was to the ground the farther north or south of the equator it could be stationed and only minimal use of repelatrons would be necessary to keep it in one place.

Tom still might have problems with placing it more than five to eight degrees of latitude off the equator and so he promised his father he would look for another place to anchor the system to.

“I don’t understand removing it from the *Sea Lift*.” Tom stated. “I can’t believe it will work if it is bolted down to just any piece of land, and the ship gives us the ability to move it around.”

“Fine, but do you agree that while the elevator has been of great use, it only had to be on the ship’s deck because of environmental reasons in the Galapagos. And, now it is not of great use it really does not need to be there, hence the ship doesn’t need to be its anchorage point.”

Tom could only nod.

Finally, Damon asked about the dome concept.

“Do you feel it is the best for growing assuming you have to do it down here rather than up in space?”

Tom stated he did. It had the advantage of proximity in nearly all cases of repair needs, harvesting and distribution, and even in

handling any biological emergencies.

"Oh, and your thoughts about the beneficial bacteria? Well, I agree and would never suggest the use of herbicides. We already will have zero insect issues as we can lightly freeze the soil without harming anything other than the bugs. For weed control I still might like to have an ALAN in the dome. One should be able to handle three or four of them. He would be tasked with locating and pulling weeds when he isn't actively engaged in planting, attending or harvesting."

"Now, you just need to handle the high altitude exposure," his father said with a small grin.

A week later they met again for a status update. Tom came with several pages of notes and three drawings on which he wanted his father's input.

"This first one is for an active mulching and decomposition system. Sort of a plant matter digester so we can quickly use it to amend the soil."

Looking like a thirty-foot-long by six-foot-wide piece of pipe, the younger inventor explained that it would be set up with a grinder at the top into which all trimmings and even weeds would go, the results being nothing larger than a sunflower seed would be left whole and that sieved into the drum below.

Bacteria derived from healthy soil would be in the drum that would turn like a mulch drum, only slightly faster. Everything would be stirred around and heat managed to a precise degree so the breakdown of the vegetation would take place in about three days and not over two or more weeks. Then, in preparation for more material being introduced, that matter reaching a certain state of decomposition would be released at one end and placed into containers for use on almost all the terraces.

"We won't need to import any fertilizer for anything," Tom boasted proudly.

The second drawing was of a new type of water purifier, and one not using ultra-violet light to kill bacteria.

"If we manage things, there will be no harmful bacteria down there, so no need to kill it and the good stuff!"

"What in the world is that third thing? A chicken roaster?" Damon asked on seeing what looked like something that either belonged in a large store's kitchen area for cooking, or possibly a very long, new type of Ferris wheel.

Tom smiled. He was a bit proud of what that drawing showed.

"There are a number of crops, especially grain and seed crops, that will just take up a lot of space, perhaps too much, if planted as we do on the ground. So, I've come up with a rotating set of seven overlapping planter platforms set around a central, horizontal, axle. As that axle rotates, the platforms rotate around with it. Since they are free-moving and weighted correctly, they always want to keep facing up."

"Ah, now I see. So, as they rotate around they eventually come to the front of the terrace and get sunlight, then rotate back and away from it allowing the next and the next platforms to do the same?

"That's it! I'm envisioning the lower of the terraces to be set at forty feet deep, and this thing will be just about that deep, but thirty feet end-to-end. I believe ten of them stationed around one terrace will be able to grow the same yield as four acres of land where you have to leave room for tractors and people."

"Have you given individual thought to each crop you want?"

"Truthfully? No. But Barney Donohoe and his Bio people have given me a list of the top yielding crops that can be grown tightly packed without issues, and have the highest nutritional values. The three-dome solution I see at first—and it will be able to be added to at a later date if I construct things right—will never provide food for everyone, but I see it as the first step in making these four islands more independent and receiving healthier foods."

"Okay, and I hate to bring up other things you may have already discarded in your mind, but what about building a floating island? Instead of having a mile square platform in space, what could the people at Fearing Island do in the way of an unsinkable platform, and one that could even have a protective all-weather cover?"

Tom dug through some of his notes and finally had to ask for a minute to call up a computer file. When he printed it out and handed it to his father, Damon Swift let out a low and dismayed whistle.

"I see. About the same cost as the space-based one. Well, let's set that to the side for now. Got anything else?"

"No," Tom admitted. "Not really and certainly not on the do-able side of fantasy. Other than turning the *Sea Lift* into the sort of multi-level growing station I had planned if we could have procured those old aircraft carriers."

Damon shook his head. "Not really the sort of sacrifice I'd like

us to be making," he stated. "As I mentioned I have some reason to want to reclaim her as the ocean-going vessel she was built to be. We've been requested by the multi-nation occupants of the Antarctic to come down and study the ice build-up now that your ozone and cleanup system has been chugging away for well over six years. Nearly seven. They are seeing an uneven regrowth of the ice shelf and want us to tell them all is fine and they will not slide off into the ocean at some point in the foreseeable future. The mission is planned for two years."

"Then, pending my getting some real numbers together, and also trying another pressure test to see if there is anything I can do to increase the structural strength, I'd like permission to proceed with the dome, or domes, idea."

Damon nodded. "I say, yes. But I still want to see what amount we might have to cover that Mr. Carr and his group do not."

Day after day and meeting after meeting, all involving Tom, went by with little or slow progress being made. One week, then another and a third one came and disappeared in the past before Tom had the answers everyone needed.

He placed a call to Jameson Carr.

"Jameson, it's Tom at Enterprises. I hope you have a few minutes because I have some near-final financial figures to run past you."

Carr cleared his throat. "Am I going to like what you are about to tell me, or will I cringe and then promise to try to cover things at this end?"

"Honestly? I hope you will like what I have to say. A couple months ago I bandied around a sum of just under five-point-five million dollars for the design and construction of a trio of domes. And, while we were separated by the Atlantic Ocean I did not hear your sputtering and declaring that it was an impossible figure."

Jameson spoke slowly. "That is true, and while it was close to our upper figure, I have since secured funding for another one million Pounds, or about one-point-four million dollars. Are we in the, as I believe you Yanks say, the ball pitch?"

Tom laughed. "Ball *park*, but you are very close. So, here is what we can do."

He listed off the basics of the project including the triad of interconnected domes, transportation to the location they eventually would secure, the move and reconfiguration of the space elevator to support the domes and their plant needs, and

even the automated ALAN robot to make certain things were properly tended to on an around-the-clock basis.

When he gave the final figure, he heard the receiver being dropped at the other end and hoped Carr had not fainted.

There was a scrabbling sound and Carr came back on.

"Can you please repeat that? I may have misheard."

Tom replied, "Well, and I actually forgot to list the cost of building the processing facility, but as things stand now, we are looking at five-point-one million dollars. You had about six and now have close to seven-point-four so I am happy to report that we have a buffer. But, and I need to strongly warn you about something, our cost to move goods is going to eat up a huge portion of that in year one. It turns out that your own people did such a good job of playing this up and how we were the ones to make it work," he said turning a little sarcastic, "that all the companies who lease cargo ships have upped their costs because they believe you have a nearly bottomless pocketbook. I might have to come up with an alternative to that."

Jameson Carr sounded absolutely miserable as he responded to this last information. "I tried to tell people but they, you do now the type who go by the moniker 'they,' don't you? Well, *they* assured me that the world would jump into our boat, beat a path to our door, and give us such preferential pricing we could actually make money from all this."

"The barn door is open and that horse has bolted, and other clichés, but the next time they come to you with anything, tell *them* to put their names on a piece of paper guaranteeing that if *they* are wrong, they will pay the differences from their own fortunes."

Jameson actually laughed. "They may be fools and idiots, but then so are the rest of us who listen, but they are not total fools. Not a one of them would ever think of stepping forward with so much as a note of apology should their predictions be incorrect. If you have nothing else can you please forward the figures to me. I shall email my home email address and physical address so the papers do not get misrouted. I also intend to keep the final numbers from everyone, other than to tell them you are still investigating something that will likely take the entirety of our funding extension. I truly do not want anyone to believe there will be extra cash left on the table at the end of all this."

He thanked Tom, and the call was disconnected.

CHAPTER 8 /
A NEW HYDROWAY LINE

BUD HAD one important question and brought it up a few days later as he, Tom and Mr. Swift sipped coffee in the large office.

"So, I get the building the new farm domes near the islands where it is needed, but why take things to Trinidad only to bring them back out to the other islands? Also," he added before Tom could answer, "where the heck do all these cargo ships come from?"

Tom leaned forward setting his cup on the table.

"Okay, lets take it item by item. The new aquafarm needs to be in relatively shallow water so it receives enough light. Of course we'll assist that with light tunnels and amplifiers, but we do need natural light. In between the four main islands the ocean is just too darned deep so we'll park the growing station near one of them."

"And," Damon added, "Tom looked into anchoring the domes, now he's convinced me that is the way to go, to the ocean floor and raising it to the right level, but there are strong currents that would mean working inside might be difficult or even dangerous in many locations."

"Right," Tom said. "The island to Trinidad's north, Scarborough, does have the right depth of water and it has the right amount of space in a sheltered area to their south that will be perfect. And, they agree to lease the seabed within their territorial waters for only a small supply of the foods the mainland is cutting off. Perhaps less than six percent of the total yield of just three of the foods. And, if we build them a small dock, they have a small ferry we can use."

"Okay, I'll accept that, but why Trinidad for processing and shipping everything?"

Tom smiled. "Because Scarborough can't offer the space or the trained people to do the work. In fact they actively do not *want* to do it. They have a relatively small population and grow ninety-eight percent of what they need and even have surpluses of a couple things they would love to have us help them export. And, we can do that!"

Mr. Swift brought up the other question about the ships to move cargo to the islands, and Bud asked why not just run some specialty seacopters. "We have a few of those, you know."

"In the long run, and based on costs per mile per ton of cargo, two of the smaller type surface cargo ships comes out from five to

eight percent less expensive, Bud, than having to replace even one of those in our stable. Based, of course, on leasing the ships and not buying them or building our own fleet."

The flyer thought this over and recalled something he'd read about unpredictable weather. When he brought that up, both inventors had to shrug.

"For the five or more weeks in the spring and again in the fall when winds and seas will be too unpredictable or just plain dangerous, we will have to hold off I guess," Tom stated. He could see a question and grin on his friend's face so he asked what it was.

"Well," Bud started, "if there is just so much lousy weather that can kill a couple or three months of using ships, why not take things underwater? As in putting in a HydroWay?"

If he expected Tom and Damon to have an "Ah-ha!" moment, he was in for disappointment.

"Dad and I talked about that for several hours, Bud, and we keep coming up against a cost thing. The only way we've ever built the different land-based lines and the one Atlantean route is because they have been more than one hundred percent paid for.

Damon added, "We had some out-of-pocket expenses up front but it all got paid back. You might not know this but that trans-ocean route cost about twelve thousand dollars per mile for people and materials or upward of thirty-four million for the twenty-eight hundred miles of tracks and tunnels we dug at both ends. If *Demeter* had not been given to us, those costs would have tripled."

Tom made a helpless shrug as he said, "This route down south would end up being over seven hundred miles if it is an out and back single line shaped a bit like a question mark, or more like a thousand miles if it loops up to all islands and then around back to the start point."

"Jetz!" Bud exclaimed. "That's twelve million bucks right there!"

Tom appeared to be thinking about something so the two other men gave him a minute.

"I don't think it is going to be that costly," he said. "That twelve grand a mile included building the extruder and outfitting—well, re-outfitting—the *Demeter*. With those costs already paid I'm going to say we will come in at under seven thousand a mile and possibly less. How does that compare to the ship leasing, Dad?"

Damon looked through a small set of pages and found the answer.

"With the recent increase in pricing, older ships that went for about four hundred to eight hundred thousand dollars per year—

plus operating mileage of nearly one hundred per mile—have doubled. Plus crew costs. New ships are double that basic cost to lease and fifty percent more on the mileage fees."

"Can I also guess that outfitting docks in each port and running them would add to the costs?" Bud inquired.

The answer was yes.

"So, and correct me if my football jock math is all whacko, but two ships—let's call them used but not run down—each making a weekly trip to one of the islands times fifty-two weeks a year… carry the seven… well, it must come out to more than twelve million bucks. Plus crew costs plus those docks."

"Closer to ten million, Bud," Damon corrected him, "but point made."

They all thought of the implications. While the ships were a ready solution, they would continue to have the costs add up year after year. By the time about two years had passed a new HydroWay line could have been paid for and would only have the ongoing crew and operational costs of possibly no greater than a quarter million dollars every succeeding year.

It was something to think about and that meant Tom needed to get with Jamison Carr to discuss what his organization might be capable and willing to provide as far as operational funding.

"I'm going to have to approach this as a package," he said, "and that means I need to get on the ball and figure out what this growing area of transportation will truly be and how much it will cost."

"Could you do away with ships or a HydroWay entirely? How about a raised growing platform up on repelatrons that moves from island to island delivering the goods?" Bud inquired.

Tom gave a shake of his head. "Pushing against what? The water below? As my hydrodome technology shows, push on water with a repelatron and you get water that simply moves out of the way. It wouldn't support such a platform."

"Oh. Let's just forget the idiot spoke, okay?"

Damon shook his head. "No, Bud. You keep lobbing the ideas this way. We might knock a lot of them down but you've come up with some simple but elegant things in the past and we do value your input."

They had to leave it at that because Damon had a teleconference coming up with his clients in India regarding a series of failures to launch rockets from their own facilities and his

hopes to broker some time for them at the old Loonaui site.

The two younger men continued talking about it as they walked down the hall, out the first level side doors and all the way to the Barn where Tom was due to inspect a new reworking of his favorite small jet, nicknamed the Toad, that work namely to extend the range even more that the current Long Haul version's 3,600 miles out to an incredible 4,250 miles.

This was only possible through the addition of a third jet engine mounted directly over the cockpit and built partially into the wing. Slightly smaller than the pair of turbines currently on the jet, it was specially tuned for higher altitude running and would only be extended up from its holding point in the center of the wing, started and run once the jet was at cruising levels while the other two turbines were spun down but not totally shut off. It had been determined running a single engine was the only was to achieve the fuel economy and trying that with the existing turbines put too much strain on the airframe.

Cruising speed would drop to just over four hundred and ninety miles per hour but the extended range was being requested by a carrier needing thirty-two jets in the size and cost range Enterprises' SE-11 could give them.

Bud wished him a good flight until Tom told him he wasn't taking it off the ground.

"Slow and fast taxi tests for me today, Bud. I looked at the rotation schedule and think that Art Wiltessa has first go in the air, then Deke Bodack and then you, but all that is next week."

Bud grinned. "Yeah, but I figured you'd at least get the nose up and then, sort of accidentally, let the plane just lift off and then, of course, you will need to circle around to come back in. Besides, we both know the airframe can take off in a good stiff headwind. So, why the tests?"

"Just testing the center engine, flyboy. We have to know if it has what is needed in case it has to fly at lower than normal altitudes and land the aircraft on its own."

Bud headed off wishing Tom a good time.

He had a fine time, the turbine appeared to have sufficient power and, true to Bud's vision of the future, the nose did lift off for about five-seconds before he throttled down and set it back on the tarmac.

Once he finished and made some notes in the computer at the Barn he headed back to the shared office.

He settled into one of the comfortable conference area chairs

and used his tablet computer to research what had gone into the HydroWay. It was straightforward, all except for the logistics of keeping the extruder equipment deep inside the giant *Demeter* submarine supplied with air and the foaming mixture that would harden in a second once exposed to ultraviolet light.

On a map program he designed the layout for a loop system that would travel from the docks area of Port of Spain, Trinidad before realizing there was precious little space near the docks for what he needed.

It might require a special dock area on the coast. That had him drawing a question mark on the island.

From there it was more straight forward. The line would go to Scarborough and the location of the *whatever* he built. It would likely be a combination dock and loading/offloading platform. He made measurements on two possible routes from that point and came to the conclusion the longer route—by only fifty-three miles—that took him first to Barbados would be the best one.

There was ample space for the line to come ashore and a terminal be built in an area of unused land off the Spring Garden Highway. That would be a short spur line from the main line that then traveled northwest to a point not specifically within the city limits of Castries on Saint Lucia but on the opposite side of the island next to a small town and right on their main highway. Doing this would cut off nearly seventy-five miles of track and cut the budget by more than a third of a million dollars, possibly as much as half a million.

Then back down the short spur and the track that continued to Saint Vincent and the Grenadines and their capital city, Kingston.

The final stop would be Grenada and St. George.

In all, Tom estimated the one-thousand-seventy mile run to take under ten hours of travel time and about an hour getting into, unloading and getting back out of each harbor. That meant the entire round trip could be made in under fourteen hours by a six man crew and be ready to go the same time the following morning.

When he contacted Jameson Carr, the man listened attentively until Tom mentioned—but only when prompted—the estimated cost of the line plus one eight car delivery HydroWay train, he sputtered and said he had to sit down a moment.

Tom waited until Jameson caught his breath.

“That is our entire budget for the growth island or whatever you come up with plus one year’s operating costs. I don’t understand

the reason for the high cost of just delivering things. Please help me understand," he begged.

"Okay. My basic plan is to not create a floating dome-covered island to park off of one or more of the affected islands. If we did it that way the costs of four islands large enough to do what I want to do would be about thirty percent greater that what I just told you. Then, of course, comes the damage that will be sustained each and every year when tropical storms batter their way through. Our estimate is that any floating island will be out of production for as many as four months each year." He mentioned the time out of service for surface ships.

"Oh, dear!"

"Oh, dear is right. All is not lost, however. My solution is going to be to grow everything underwater. Perhaps by a couple hundred feet or more. We've discussed this a little before and you said you couldn't conceive it and wished to wait until I could show your drawings. Well, I am at that stage, but let me tell you a bit more."

Tom went through how his belief was that in a tightly controlled environment and using specially selected and bred plants and trees, he could more than triple the yield per square meter over anything he might offer on land.

"And, my concept of stacking the growing areas in a fairly high number of rings will make each acre of floor area practically triple that in useable space."

"Okay, and pending seeing what you are talking about, how much more is this going to set us back. I ask because I have a top number that if I surpass it and this is not the success we all hope it to be, that could put an end to our organization and any future help we might provide."

Tom had been actively sending him the full-color drawings he'd been working from and once he suggested the Englishman call them up on his computer, there was another stunned silence before he had to wait for the now overly-eager man to wind down.

"Tom? You get those domes of your built and we'll find the money to pay for the underwater train. By golly, this is going to be one for the books. Absolutely top notch and something I believe will lead the world to new ways to look at growing food!"

He was even more excited when Tom told him Swift Enterprises was willing to cut the cost of the domes down to materials and transportation. They would "eat" the cost of the manpower to build them cutting that part of the project to under four-point-five million dollars.

Carr and his constituents had planned for that portion alone to come to their top funding number.

"I dare say, Tom," his final words came before they both hung up, "this is going to happen just as long as you can deliver on the structures for the growing rooms and for that undersea train you've outlined. I have never taken a cross-Atlantic trip on the existing line, but the thought scares the willies out of me, and I cannot conceive how you ever put down the necessary track."

The technology to build another HydroWay line was parked right at Fearing Island. The giant submarine, *Demeter*—once designed to transport up to four fast attack nuclear subs—had been used first to search the oceans for lost nuclear submarines and reactors and torpedoes, and then to lay the first HydroWay line across the Atlantic.

She went out with her small crew several times a month to retrieve items from sunken ships that insurance companies were willing to pay to get back. With her giant claws and powerful winches she even could bring back large parts of ships, other sunken non-nuclear submarines and even a few crashed satellites thus keeping her busy enough to warrant holding on to her.

When Tom and Bud landed at the island and drove down to the dock area, only her superstructure was above water making her look a lot smaller than her actual size.

Lounging on the area behind the sail was a young woman in a Swift coverall, her face turned up to the sun.

"Ahoy, Millie!" Tom called out and the pretty girl opened her eyes, let out a happy scream and jumped up only to slide down the curved side of the hull. Just before she would have taken a dunking she pushed off and gracefully arced across the expanse of water and landed on the edge of the dock.

Bud reached out and grabbed her arm before she could fall backwards.

"Gosh, it's so great to see you both!" she said, the glee coming through in every syllable. After giving them both big hugs she stepped back. "Whatever brings you down here to the giant pig?" she asked.

Knowing that submarines were once called "pig boats" Tom didn't even raise an eyebrow at the nickname *Demeter* seemed to have picked up.

He explained they were seriously considering laying a new HydroWay line, more a circle this time, in the Eastern Caribbean

Sea and Atlantic Ocean. After he told her why, she was nodding as eagerly as she could.

"Me! I'll go!" she told them laughing and starting to do a little dance.

The young men were laughing right along with her as Tom said, "You, Millie, *and* the whole crew—the track laying team and the regulars—are going to be reassembled and a few of us will go down to take a look and help me plot the best places to put this thing. The only two musts are it must surface at each of the main islands involved and be as efficient as possible—distance is money we might not be recovering all our costs this time around—and we have to use minimal land space. That means a single line up from which the train reverses to go back underwater, then a switch system will get them heading the right way."

"Sounds like I'll have to come up with a way to transfer the sled to a small surface boat or even a hydrofoil," she told them.

Tom nodded. "That would be the plan, Millie, and you're our expert so I leave that up to you."

She gave them a quick little salute, leaned over and kissed them both on the cheek, and ran up the dock to tell the others.

"That kissing thing is seriously getting, ummm," Bud said, "serious. I like it and I know you finally got over your issues with it, but I live in dread come the day Sandy sees that happening and decides it must be my fault!"

The following morning Tom addressed the crew up in the large control room. He told them about the plight of several islands and how this could be one of several projects in the coming year or years. He also stressed how this time things would be a bit different in that the area was littered with the bones of old wooden ships plus a few unlucky metal freighters and that most of them were considered to be historic sites and only minimal disturbances would be tolerated.

"Are they all charted so we know what to try to avoid?" one of the propulsion specialist asked.

"No. That is a huge problem and it is unfortunate the United Nations simply gave in years ago and set out a blanket protection policy. My father and our favorite Senator, Peter Quintana, are going to be addressing them in a few days to ask for permission to slightly relocate anything we find along the best path. The hope is they will see the logic in helping the living over assuming anyone will ever retrieve the dead."

CHAPTER 9 /
IT'S ALWAYS SOME SORT OF GOVERNMENT INTERFERENCE

TOM DECIDED to not let that information bother him for the next week as he worked on his designs for the underwater growing domes.

At the same time he made more solid plans for plotting and marking out the path for his new HydroWay to carry goods between all locations. He had several videoconferences with Millie to check what her notes said would be the best route. At least that part seemed to be straightforward if he ignored the nagging thought that someone, nation or individual, might throw a wrench into things by insisting that such-and-such a location was a sacred burial ground for Spaniards who brought cholera and other diseases to wipe out the indigenous tribes so they could steal their wealth.

Some reason for a monument or any special consideration!

Still, he had a level of reverence for those lost at sea and had no plans for just bulldozing through anything of actual importance. There were many ways he might slowly and carefully move such things out of the way of the track laying extruder. Even something like a seacopter outfitted with both an underwater version of a "cowcatcher" and a pair of pantographic arms could gently move things to the side and arrange them as nearly as they originally sat.

He spent several days checking the current track extruder design and made a few notes and improvements to it based on what had been encountered during the Atlantic HydroWay build more that sixteen months earlier.

That route was actively used for eleven of those months before he asked to be allowed two weeks to "fix a few minor details." He'd been given those, in a pair of one-week increments, and had the *Demeter* go out and cut away and replaced a few sections of the track that had settled and were no longer perfectly aligned.

Now things ran smoothly again.

One thing he knew was the anchorage points for this set of tracks didn't need to go as deep since the bedrock was about twenty feet nearer the sea floor and the trains moving along the tracks would be shorter and lighter. That would mean a savings in materials and time, both of which equated to a savings in money.

Damon was sitting at his desk when Tom came into the office. He looked up from a short report he'd been editing and motioned

his son to join him

"So," he began setting the pages to the side, "I hear from a little birdie you may be considering using some of the other plants I've been cultivating under the sea out at Fearing. Tell me about that."

Tom leaned forward, resting his arms on the desk. "Okay. You have to admit your space seeds and the great things you've been doing with them are, well, out of this world." They would be as the seeds originally were provided by their alien friends and had immediately been tried out in several growing environments.

Seawater seemed to have promise but other things were necessary.

"Right," Damon said slowly, expecting Tom to continue.

"So, I do keep up with just about everything your write, Dad. Especially when it comes to your gardens. For instance, I know that you found out most seeds do much better, incredibly so, if they are exposed to radiation the sort found about eight hundred to twelve hundred miles up in the Van Allen radiation belts. Sixteen to twenty-five hours was your last mention and what you use these days." He smiled.

Damon returned the smile. "Pretty bright for a young guy," he stated. "But, go on."

"You've been hitching rides on just about everything going up at some point this past two years. I've even stopped the *Challenger* several times on the way to the old Outpost or the new *Space Queen* station to drop off your 'Exposure Pod' and then picked it up on the way back or someone else did it if I was on a fast turnaround trip."

His father could not dispute a single thing Tom had said. He did, however, have a question… or five.

"First, my pod holds only enough seeds for a twenty-by-twenty foot planting. And, I have been using your own Hydrodome technology to put an air bubble over the top of some of the planting area. It, by the way, increases growth and oxygen output five fold as long as the space seeds get radiated, then germinate in the salt water for seven days or thereabouts and then get the dry land treatment. Can you do that on the scale you need?"

He could see the smile playing around Tom's mouth and rolled his eyes. Like most parents, he knew his children and could foresee many things they might do, but it was a little different with Tom. He could just about look at Tom and tell you what the young man was thinking on any given subject, or how he might answer a technological question.

"To start with I have a plan to use the High Space L-Evator for the exposure cycle," he announced.

"That is not at all what I thought might be coming. But, surely you can see that we can't build another one just for this project. Your benefactor will not have bottomless pockets and there will be no metal and mineral-rich asteroid at the top to mine to offset the costs."

Tom shrugged. "I hadn't planned to build another one; I plan to move the existing one to the other side of South America. It will need to be positioned in fairly close proximity if I am to do things in the time-sensitive manner you've been pioneering. It also gives you back the *Sea Lift* like you've requested."

The subject turned to getting from the current deeply-anchored place in between several of the islands in the Galapagos through Central America—or more impossibly, down below the tip of South America—but Tom seemed to have an answer for that as well.

"We go through the Panama Canal. Before you ask, I've been checking. Legally, Jackson finds no reasons not to. Then, courtesy of our friends the Chinese and their super-gigantic cargo carrier ships—and their willingness to pay Panama to dig them additional and very wide locks which anyone can use—I can get our anchorage ship from the Atlantic to the Pacific via the canals."

Damon took a deep breath. He took another as he sought to find a way to ask his next question; he was afraid of what the answer would be.

"How much extra room is there in these new super locks for the *Sea Charger*?" Few people remembered the new name so referred to the ship by its old one.

Feigning innocence, Tom replied, "Oodles. Lots. Well, *enough*."

Damon did not want to know how little was "enough" being somewhat certain he would not like the answer in the slightest. To him, five feet on each side was *enough* where to his son, it could be as little as a scant inch!

"You say these new locks the Chinese specifically paid for are open to all?"

Now, Tom shook his head. "No. In fact the only ships allowed in other than theirs are ones that exceed the width of the second locks and that means nearly nobody else. *Sea Lift* is wider than their widest so she will be allowed in. Another nice thing is there are only two locks on each side of the central lake and the deepest one of them provides us at least fifty feet of water at its low point."

The conversation turned from the logistics to the need.

"I don't recall you having plans for a hydroponics garden area to give them their seawater start, and I guess I'm a bit puzzled about their crop value. We both know the fruit around the inner seed pods is palatable and can be served in many ways, but it is, to be frank, not something to the Caribbean taste. Now, the outer, cabbage-like leaves are very tasty and I am certain our island friends will find them delicious."

"I've taken that into consideration and I believe Chow has found a way. Besides, I only want to grow one new crop a month , save the seeds for another planting, and then grind the empty pods into mulch. It will make everything else grow at an accelerated rate. Tomatoes in six weeks rather than ten to fourteen. Fruit trees going from flowers to buds to ripe fruit in two months and not five or six or more!"

"Okay, I give in to your research and logic, but tell me this. How is your friend, the Governor of the islands, going to take this?"

Tom leaned back and slumped a little. He had formed a very nice friendship with the young woman ruling the Galapagos and truly didn't wish to hurt her or her people.

"I'm hoping she can see the logic in that we barely use the L-Evator now that the *Space Queen* is finished and in use.

Jameson Carr had some news for Tom.

"You and I will be addressing a small committee of the United Nations," he said excitedly. "They are incredibly anxious to hear all about our project and especially your underwater transport train and its low environmental impact. Isn't this exciting?"

"It might be," Tom responded a little cautiously. In the past he and his father had run afoul of the organization and their narrow views. They once had insisted they would make the building of the Space *Queen* super space station impossible unless the Swifts agreed to allow a small combat squad of U.N. troops to be permanently stationed there. When told that would not happen, several member nations did make it illegal to sell anything to the Swifts for use in space, and so Tom brought down a few metal-laden asteroids from the belt between Mars and Jupiter, mined them in space and then forged everything they needed.

Even a few of the "anti Swift" countries vied for rights to purchase many of the rare metals that became available.

And, the act of doing things that way meant that the U.N., by their own laws and rules, could lay zero claim to anything the station did or ask for even a courtesy visit.

"Well, Jameson, I will need some more information about both the committee make up and their agenda. I've been asked to address the entire body a couple times only to find myself being verbally bushwhacked for something a few have either misunderstood or refuse to believe, and it has left a rather bad taste in my mouth for putting myself through a repeat of that. I hope you understand."

Carr said he did, in theory, but was so impressed by the opportunity he wasn't fully willing to consider that it might not end up a wholly happy experience.

"When do they want us there?"

"Ahhh, that's the main issue, is it?" He went on not allowing Tom to tell him it most certainly was not. "They are so anxious to hear about this they want us there tomorrow afternoon. I am rushing to the airport in half an hour to fly to New York. I'm booked at a Hilton hotel nearby so if you want to come down tonight we can have dinner and strategize." He ended that on a hopeful upswing.

"I can't come tonight, and I am hesitant to even come tomorrow unless you have their agenda for what this is really about," Tom insisted. He felt he might be unduly being stubborn, but past experience had him being very wary of their intent.

"What I have is their letter. I'll read the main body to you.

> Mr. Jameson Carr,
>
> The United Nations has found that you intend to underwrite the construction of a sea-bound growing facility for one or more small island nations in the Caribbean Sea and parts of the westernmost Atlantic Ocean. We wish to discuss this planned development with you and your representatives at the soonest possible date. See below for your date/time.
>
> Certainly you can understand that what you intend might have world-wide implications, and not in a positive way.
>
> Please be prepared to meet with a committee of at least twenty-two leaders within our body the day following tomorrow. You will be given a time period of one hour beginning at two in the afternoon and must allow, within your presentation, twenty minutes for questions.
>
> Attached is a list of local hotels you will find suitable…

"And that is about it, Tom. Please say you will come. I am afraid

I do not have your level of expertise to answer much of anything besides our intent on this."

Tom placed him on hold and TeleVoc'd his father who was out on a walk around the main buildings.

"I understand your hesitance, Son, but I say go ahead and do it. At least, I would go down. You and I know that no matter how they might bluff and bluster and demand that they have no actual powers. Just insist their military wing not be part of anything."

In the end Tom agreed to meet Jameson at his hotel around eleven the following morning.

To Tom's consternation, the committee of just eleven members, about half of which were women, had only one concern to be addressed. They barely listened to the first five minutes of the presentation before asking for Tom to stop speaking.

"We must make certain that the underwater shrines that are the final resting places of so many, many lost sailors are not disturbed and therefore angering the countries of ownership. So, and with the understanding that you are about to embark on a visual tour of the intended route we *strongly request* you allow a contingency of our best preservationists to accompany you and to check out any places where your route intersects or would run through one of these sites. Otherwise, you will not be allowed to do this digging thing of yours."

Tom nodded, counted to ten under his breath while trying to maintain a smile he did not feel, then asked, "How many of your preservationists will we be asked to host, and do they realize this is going to be in a submersible craft with slightly above zero amenities other that a single bathroom, unspectacular food and a basic cot?"

She looked down at something on the desk before her, and looked up at him. "I would think three or four. To answer the question of amenities, do you not have something large enough so our people might have their own staterooms? I can also send you a list of their food preferences."

The inventor looked at her as if she has spoken in a foreign tongue he couldn't understand and shook his head.

"No. We do not have something to give your people individual staterooms. Nor do we serve our meals on fine china with sterling silver utensils, linen napkins and a choice of entrees. The submarine I have that will allow visual inspection sleeps nine including our own minimum crew of four and has just enough room to turn around in or to pass another person when walking down the narrow hallway. If you want your people to come along

they will have to live like we do."

She looked at him long and hard and then blinked several times before agreeing that their people would have to "fit in."

"I'd also like to ask about the statement in your letter to the effect this project might have 'world-wide, *non-positive* implications,'" Tom stated.

"Oh," the chairperson said in response, "that is simply something we put in all our correspondence these days. You might be surprised what extra information that gets up." She smiled at him as if to say it was nothing at all.

Under his breath and with the microphone turned off, Tom muttered, "And you might be surprised how incredibly rude it all is!"

The trip was planned to begin two days later and everyone was to be at the airport in Savannah, Georgia, no later that nine that morning. The shuttle plane would take off at nine-thirty and would be the one and only such flight out to Fearing Island.

Tom wasn't trying to make things difficult; he had a schedule to keep to and it did not allow for lengthy delays.

The jetmarine he had selected was the largest in the Swift fleet. It looked primarily like his first model but was nearly four times longer and twice as wide. It still featured a clear tomasite nose piece for direct viewing of the outside world. And, it actually could handle a crew of eleven, not nine, using a couple of portable cots set in one of the two narrow hallways down the sides.

Waiting at the airport were more people than Tom anticipated, and he hoped many of them were just there to see the others off.

He was surprised and more than slightly dismayed to find out there would be ten U.N. people coming. When he tried to explain it to their leader he was ignored with the man saying, "I'm certain your captain will see the necessity. Now, get our luggage onboard, son."

Bud, who was standing with Tom stepped forward, and before Tom could stop him, he walked up to the insulting man.

"That young man you just called 'son' *is* the captain of this boat. That is Tom Swift. Your committee was told you could have four places and you bring ten. Well, as the security man of the sub it is my pleasure to tell you that you and yours will be hot-bunking and will not be allowed to run free and loose around the sub while underway. Also, we don't have changing rooms for the ladies so I hope you are not embarrassed about that."

He turned from the shocked man before adding over his shoulder, “Oh, and drag your own luggage onboard. You all have fifteen minutes until the hatch closes and we leave!”

Amid side conversations wondering what ‘hot bunking’ might be the seven men and three women picked up their cases and carried them to the small jet.

Out on Fearing, Harlan Ames was checking their credentials and identification before allowing them to go aboard the *Thomas Dykers*, and he was also being rather harsh about the amount of things they could each take on.

“We do not have places to stow all of that. Grab one of the small athletic bags from the table over there, pack only as many things as will fit in it, and the rest will go into secure storage here in the island awaiting your return.”

To the ladies he stated, “No fragrances, hairspray or other aerosol products. Minimal makeup, please, and there is really no place for you to put it on anyway.”

By the time they were all onboard there were ten unhappy U.N. people and a crew of four plus Tom unsure how to treat them.

As they left port, the sights of the lush underwater growth and fish got everyone’s minds off their indignity.

On the way down to the southeast and their transit between Puerto Rico and the Dominican Republic Tom and Millie gave everyone a tour of the boat and explained how she operated. They also made an address to all hands regarding how their trip would work.

“Our track-laying machine is encased in a large submarine called the *Demeter*,” Millie told them. “It rides a hundred feet or more above the seabed and extrudes a continuous track as well as flash-cutting anchorage points that become integral with the tracks. While it will never scrape along the sea floor, we will have an attachment to move obstructions aside. Over the next two days we’ll move along the intended path and you can map out anything you feel must be more carefully handled.”

“We may need to backtrack and try alternate areas to get the best final route for the tracks,” Tom informed them.

As they neared the starting point, Santa Lucia, their leader asked if they might take a tour of the entire area.

“No,” Tom stated.

“And, just why not? This is supposed to be a U.N. trip of discovery and we wish to discover what all is down here,” the man

stated huffily.

"Well, then, first you will be disappointed to hear that this is actually a surveying trip for *our* purposes that you are being allowed to tag along with. We wish to accommodate your basic reason for being here, but as the Chairperson was informed, you work around us not the other way around. Second, every day of delay means another day of less and less food for these countries and their people. Do you all want to pool your money to buy them that food on the open market?"

At any given time during the actual survey trip there were two of the U.N. people perched in the nose of the *Dykers* generally flanking Millie. Most were amazed at how much light was available for their observations and photographing of the route. Tom decided to not tell them about the special coating or lights on the sub making things so vivid and just nodded at them.

Seven times on the first day a request to stop came from the observers. In each case they were looking over one or more shipwrecks and trying to decide how the tracks could be put down without disturbing the remains.

Millie finally got so fed up with the interruptions of her survey for the forthcoming tracks she got up, paced up and down the short corridor and then had a talk with Tom who was manning the controls.

"I'll see what I can do, but in the meantime, please don't curse at them or punch anyone. I know Bud wants to."

That evening as they came to the surface for the night—Tom hoped the bobbing might make a few seasick and have them requesting to be put ashore—he informed them all they were now almost a full day behind schedule.

"I don't mind if you photograph or take videos of everything we go over, but please don't ask us to stop again and again for you to spend an hour or more looking and discussing things. You can easily do that once we have you back home."

Many of the observers saw the logic in this, but their leader was determined to hold some level of control over the trip.

"My people are doing what they do, fully understand how they do it, and that is not anything you are to be concerned with. Understand? If you can't handle that, then maybe it's time for an adult to take over."

Mickey Finnegan, a very large Irishman who had once boxed professionally, stepped over and placed a meaty hand on the man's shoulder.

"I think you should apologize to Mr. Swift before I either let go of your shoulder, or use it to toss you overboard!"

"That's not going to happen, Mickey," Tom said with a little sparkle of delight in his eyes. "I'm sure that Mr. Masterson didn't mean to sound as if he was trying to take over. As in a *mutiny*. And I'm certain of that because if he were to try to mutiny then I would have every reason to arrest him, have him shackled some place small and harmless inside the sub, and fed bread and water for the duration he believes this trip can take. He would then be turned over to the proper authorities on our getting back to Fearing Island."

Masterson growled and tried to shake free of the tight grip, but Mickey just squeezed harder until the man went to his knees with a whimper and agreed to behave.

Two days later the team came to a group decision.

"What with underwater currents and all the disturbances that have gone on over the decades and centuries, most of what we are seeing is dozens of meters to a mile or more away from where they ought to be. Therefore, it is our opinion, and will be our official report, that there is nearly zero reason to ask that you do anything more than try to carefully move what you encounter to the side and to not just crunch over things."

Another of the U.N. team added, "We only ask that you refrain from doing anything down here for a period of thirty days. We will give all nations laying claim to any 'final resting place' that period of time to come retrieve their claims."

"So, and in spite of Mr. Masterson's beliefs," Tom asked, "we have permission to lay our tracks, assuming we are careful to not damage anything still intact?"

The spokesperson nodded and smiled. "That is our official stand. Masterson is not one of the official party, he is a U.N. overseer. Now, can we please surface so I can radio that in for the official records, then as quickly as possible head back to some shore and call for a flight home. Most of us are sick of this living in a small tube. I can't see how anyone could stand it for more than a couple days!"

CHAPTER 10 /
THE MAJOR OUTDOES HERSELF

THINGS AT Swift Enterprises for Marjorie Morning-Eagle and her team of seamstresses in the Uniforms department had been slowing down following the latest *ParaExplorer* double-level flying canopy and gondola destined for the Mars Colony having been completed.

Known affectionately, even by those she managed who would *never* call her that to her face, the "Major" was a formidable woman of Native American descent whose knowledge of what could and could not be done with needle and thread—or their equivalents—was the thing of legends. With a glance she could size up most projects and tell you where the pitfalls would be found, what would go smoothly and take less time, and what would need to be carefully designed around.

But, as she sat in Damon and Tom's shared office looking at the 3D telejector projection of Tom's intended growing domes she was nervously biting her lower lip.

"The magnitude of those terraces and how they have to all combine and be structurally sound is making my head spin, Tom," she admitted. "Compound seams and areas that will never hold themselves up and out while you fill them with whatever you said will be stiff and heavy enough to work. Not without a lot of support outside the envelope."

"And, I may well need to include some built-in bracings under each terrace for strength," Tom admitted.

Frankly, it was something even Tom had not been able to come to grips over. If it were just a matter of air or some other gas, then everything could be sewn together, sealed to prevent any leakage, and blown up like a very convoluted balloon. But, the Major was right. The terraces needed to be open nearly all the way around and had to support the weight to be planted inside them simply by what they were part of in the main dome walls.

Another obstacle would be that to get the domes to their eventual location, they had to fully be able to be rolled and folded and packed down into the smallest possible size. That meant nothing internal other than the fabric materials of the structure.

"How about this, Tom?" she said on thinking of one possibility. "We make it as is but we sew in several hundred places where you can temporarily attach bars or sticks of whatever between what is there at the lowest point, and that supports the next ring up until

it sets, and then you move things up a bit and keep doing that until it is all up and hardens into the final full dome?"

"It may come to that," he admitted. "But, I'd rather fill the walls and floors all at once and get that structural strength. Doing it in sections and waiting for the earlier stuff to reach the totally set point ultimately give us a little weaker overall dome. Too bad we can't fill this with something gassy that sticks to interior surfaces and solidifies, and that gives us enough strength and structure to support the final fill with the concrete mix I want to use."

"How about the foam stuff you build roads out of?"

He shook his head. "Too light. Strong, sure, but we need the weight of concrete. So, I'm kind of stumped for what this miracle gas might be."

The Major smiled. "You mean to tell me that your cute little inventor head can't come up with just that? Knock me over with a feather. I was certain you were going to start laughing and telling me it was all a joke and you had this figured out."

They talked about several options, but nothing they came up with would do the total job and provide the level of strength necessary.

She got up and shrugged, sighed and promised she'd be looking for some way to make it all work.

After she departed Tom sat pondering what to do next. He wondered, and now thought he ought to have asked the expert, if a double-chambered wall and terrace structure might be possible. Sort of a structure held within the larger structure to give everything a rigid foam core area in the middle of all fillable spaces.

His father returned from a meeting at the Construction Company so Tom asked if he had some time to spare to talk about the dome problems.

"I do," he said looking at his watch, "but only for about twenty-five minutes. So, let's not waste time. Tell me what is up."

Tom did. It only took four minutes before the older inventor nodded and said he now understood the issue.

Tom asked him about his foam core inside the main space idea.

"Well, I'd have to know two things. First, what do you pump in there that is lightweight enough to not cause any sagging issues, and also has the strength you must maintain for pouring in your main load of this concrete mix. Then, does it add to the strength overall or weaken it by virtue of you not having a full load of the

other material in there?"

Tom had to think a moment. They were both questions he'd asked himself but had not had time to come up with anything substantial.

"I think that we can hold up the dome using the self-hardening foam we use in the habitat domes. It can go in inside as little as one-inch tubes and push everything up into position with very little movement from being true. I played around with some other hardeners in the past and there was one in particular that gives more structural strength than just the regular foam, but it also takes about twice as long to set."

"If it were me, and before I, or you, go back to the Major with anything, I'd be in the lab doing some tests. Perhaps she can supply you with a small test tube of her intended fabrics?"

Tom liked the idea and promised to drive over to Uniforms after lunch to discuss it with the woman.

The thoughts of what and how to do it were so firmly in his mind that when Bud found him next door in the larger laboratory just after the lunch hour, it took him several throat clears, a noisy dragging of the lab stool he liked to perch on, and even taking the half-eaten sandwich from the young inventor's hand and setting it on the plate before Tom snapped out from his reverie.

"Man, don't sneak up on a guy like that," he said with a grin.

"Right. I suppose asking the drum and brass band to wait outside was a good idea after all. At least the bagpipers didn't bother you!"

Tom had a slightly guilty grin on his face. "Sorry, Bud. I have a big problem and each time I think I get my brain around it, part of it squishes to the side and slips away."

"Want to share?"

"Maybe I should. I already had a discussion with dad, and he sent me in here, but nothing is jelling in my mind."

He described the problems with both raising the dome and making all parts of it structurally self-supporting.

"Wow," Bud exclaimed. "Now I see why you were sitting here like a statue. Too bad you can't bottle that, huh?"

"I agree. Somewhere out there is a solution and I'm probably looking at it, or close to it. Maybe I need to refocus to see it?"

Tom decided he needed out of the office get out to clear his head.

"Want to come over to the car company and see what Dad designed? It's a concept one-off right now, but it's kind of neat."

"My car or yours?"

They took Tom's convertible and drove around the eastern end of the building cluster before heading to the underground tunnel. The ramp down responded to their TeleVoc pins by opening the gate and allowing them inside. Two miles later the up ramp doors opened and they rose back to the surface, now inside the Swift MotorCar Company's property.

Parking in a space reserved for Tom, they climbed out and headed first for the Administration building to let the company manager, Charlie Van deGroot, know they were there and to check and see if the new vehicle was accepting guests.

"She's been an anxious little beast to have you come over to show her off to Bud," the man told them. "In fact, she's had a recent bath and a light lube and is ready to run around our new track, and by the way, Tom, thanks for having that put in. It is a lot safer than the old method of having Bud here drive out the main gate and get clobbered by criminals in large trucks!"

Bud had, on taking the very first prototype Swift Model 1 car out for a test run, been hit, hard, and shoved into the air by a man who turned out to be working for an organization out to steal the car. The man—someone Bud thought of as "Green Arm" for the green tattoo of a teddy bear being squeezed by a fanged snake—ultimately was the only one of the organization to probably survive and escape, although it was never verified. Bud survived the bad landing as did the little car.

"A day I'll never forget nor live down," the flyer admitted. He now rubbed his hands together eagerly. "So, take me to this little marvel of your dad's."

With a "follow me" wave of his right hand, Charlie stepped past them and started down the hall to the stairs. Once they reached the outside they hiked the fifty yards to the first production building, the one producing most of the individual parts and subassemblies that were assembled in the building next door. Inside were the various pieces of equipment, but an area Bud knew was little used had been cordoned off with seven-foot-tall partitions.

Inside was an incredible little three-wheeled vehicle. The three-seat cockpit—two in front and one in the back—was set forward of the center to place as much weight up close to the two-wheel axle as possible. The rear wheel was the main drive wheel and the small engine was mounted just in front of it with the fuel tank between that and the rear seat.

Currently it was open-topped but as Bud began to ooohh and aahhh about the "open air feel" he was informed that a body was to be added.

"We have to do that to meet safety regulations," Charlie explained. "As it is, being a three-wheeler it qualifies for motorcycle insurance rates, but the NTHSA demands better passenger protection, hence the forthcoming body. But, she's a doozy!"

There was only a set of drawings so far for the body, but Bud looked at them with a grin that threatened to never leave his face.

Charlie reached over and picked a fob off the only table in the cubicle and handed it to Tom.

The inventor pointed at the second seat and Bud climbed in, with both men strapping themselves in using the five-point harnesses for each seat.

Charlie moved one partition to the side as Tom pulled the car forward and out the nearby roll-up door. They headed between the buildings to the three-quarter mile track Tom had built using his old repelatron skyway laying helicopter. It had steep banked corners and a pair of rises to get over the front gate and the railway line that took completed vehicles south for distribution.

Powered by one of Tom's Y4 engines—designed to be a set of three 4-cylinder engines mated to a single drive shaft in an inverted Y formation—the two hundred and thirty horse power and nearly four hundred foot/pounds of torque had the little speedster up over eighty miles per hour before they took the first turn.

Tom didn't dare chance looking over at his friend, so he made do with an impressed whistle.

"Double whistle from me, skipper. Maybe triple." He tried to make the sound but his lips were being shoved around by the wind coming over the open dash.

"Charlie's people have done a marvelous job," Tom stated as he pushed the car even faster through the final turn. "Not a hint of slip or vibration. Just the overwhelming feeling this is never going to be safe if it can do this sort of speeding along out in public."

"Needs that body and a good windscreen," the flyer stated as a gust it him in the side of the head.

"Or, at least a wind baffle up in front of us," Tom agreed.

By the time they got back to the subassembly building—Bud had taken his turn after Tom made four circuits with five of his

own—Charlie had left but there was someone waiting for them, her right foot tapping the floor.

Bud stopped in front of her as she held up a hand like a traffic cop.

"Out of the car and present lips!" she demanded of them.

"Hey, Steff," Bud said climbing out and just before she launched herself a surprising distance through the air and into his arms, giving him a big and rather sloppy kiss in the process. "Now, cut that out!" he told her putting her down on the ground where she barely came up to his chest.

Stefanie Bodack was a dwarf and one of the most demonstrative women Tom or Bud had ever encountered. She was also one of the top volcanologists in the nation and had helped Tom on several occasions.

Now, she was one of the inspectors at the car company, married to Enterprises' test pilot Deke Bodack, and a mother of two.

With a sly grin she turned to Tom and began coming forward.

He held up his arms. "I surrender. Let me get down on my knees and you can hug me," he offered. She nodded but once he was down she locked her arms around his neck and he, too, got a sloppy kiss.

When she released him and he was back on his feet, he grinned at her.

"Deke been down at Fearing Island too long?" he asked.

She nodded. "Yeah and I miss the goon. But, Charlie has too many things for me to do, and my usual baby sitter just got herself married and has decided to retire from taking care of other people's kids at night, which means I have to stay around the homestead. So…" she said looking past them at the little car, "what do you think?"

Both told her it was exhilarating and a lot of fun.

"My thought, too. And the stability your dad put into that thing is a marvel. Our test boy, Paul, tried to get it to spin, and even to skid and it just won't let you; ditto any sort of flipping over. I don't know if that will ever go into production, but it's been a pleasure to get to drive it twice. Even if they had to outfit it with blocks on the brake and accelerator so my feet reached."

They talked a few more minutes before Tom had to excuse the two of them.

"I have an afternoon call I need to make to the Major based on something dad suggested."

On the way back Bud asked if Tom just wanted to go straight to her workshop.

"Probably better than a call," he responded, so the inventor turned them to the right and drove to the hangar Uniforms now inhabited.

"Just the man, and his faithful non-Indian companion, I wanted to see," Marjorie greeted them as she stepped from her office only to find Tom reaching for the doorknob. "And, I can say things like that because I am one! Come on in and we'll talk. Bring the dark haired one with you."

She sat down behind her desk and pulled over her monitor she they all could see what was on it.

"So," she began, "I'm guessing everyone and their brother will have decided that a core area needs to be filled with something hard and supportive while the outer area gets the final heavy and very strong concrete mix. Am I right?"

Tom nodded. "One of the first things dad suggested."

"Okay, so all on the same page. Now, I'll bet you are thinking along the lines of the same stuff you pump into the habitat domes, huh?"

Tom admitted that was the case.

"Fine, And, so I was thinking at first and then I found this—" She swung the monitor around and typed some things on her keyboard, made a few selections and then turned it back.

"That is a formula for a type of gas produced by Swift Enterprises until about three years ago. You may recall you yourself used it as a temporary sealant and structural coating in the underwater tunnel that—and pardon me if this starts out sounding unsympathetic—you tried to build that failed through no fault of your own!"

Both parts of her statement were true. He had been hired to build a deep ocean tunnel in the North Sea at one point, but a saboteur had planted enough explosives, and set them off in a devastating pattern, that the super strong tunnel—or that portion of it that had been completed—collapsed nearly killing the dozens and dozens of workers inside… including Tom.

The other part was that the gas had been used as a spray-on product to coat all inner areas. It adhered using static electricity and built up like layers of paint. Once a three-thirty-second-inch coating was on and dried it had the strength of a half-inch of steel plating.

Its only weak spot was that a certain vibration pattern could cause it to crack and flake away.

This was built in by the inventor so it could be removed easily once major sections of the tunnel were complete and had a lattice of steel reinforcing waiting to be sprayed with a foot of a Gunite-like product. That needed to stick right to the outer tunnel shell so the coating was flaked away, vacuumed up and discarded.

Tom looked at the screen and a shiver ran down his spine. The entire episode with the explosions and the cracking and the water cascading in and…

The Major laid a hand on his forearm. "I'm sorry, Tom. I really didn't want this all to come back up like a nightmare, but I truly believe if we fill the entire shell with that it not only pushes the structure up, but it has the strength you need to later fill it with concrete. Using this I can have the double-walled building constructed so the area to fill with this gas is much smaller than if we go the hardening foam route, and that leaves more room for the heavy stuff you really want to have in there."

Tom smiled and said it was more along the lines of his thoughts.

"Oh, and I had this little brain breeze, how about we build in an extra thick floor for the heavy concrete product and then you use something lighter for all the structural stuff?"

Tom's intrigue overcame his old feeling and he snapped out of it.

"What about keeping this thing down? I want the structure to be heavy enough so it will sink."

"Okay. Hear me out on this although I bet you've already got this in mind. The structure can't hold itself up with all the water over it, so you are going to need to inflate and stiffen it on the surface. While it is up on a flat surface you pour the floor, so to speak, and see how much more weight you need. My guess is you could never get it to sink and then stay at one level, so you are going to need to anchor it to the seabed. Why not set deep anchors and winch it down to the level you need. I also see that as a safety measure in that if the domes need to come up, they will."

Tom had a think for a minute.

She saw him about to ask something so she added, "And, I've seen on your plans you were thinking of having just eight feet of water inside for the boats to move around? How about making that twenty feet? More water inside and closer to neutral buoyancy to be certain, but that also gives you some room under the dry land

flooring for more weight. Or, equipment."

Now Tom smiled.

"I was going to have to ask you to build at least one of the domes with twenty or even thirty feet of extra space below the dry area for the water processing and other environmental stuff."

"Two birds, my young boss," she told him. "Two birds."

CHAPTER 11 /
THE DOMES RISE AND GROW

FOR THE first time in her nearly fifty years of sewing, Marjorie Morning-Eagle was stumped. Stand her in front of a man and give her a measuring tape, paper and a pencil and she could freehand a pattern for a shirt that would need barely any adjustments. But, this…

The more she looked at Tom's drawings, the more convinced she became that it was beyond her understanding on how to come up with the patterns for all the pieces that needed to be cut, stitched, sealed and shaped.

And so, she did something she had never done before. The Major called for help.

It came in the form of Enterprises' chief pattern maker, Hank Sterling. He was coming up on fifteen years of working for the Swifts as the man responsible for taking a paper or computer design and figuring out what various pieces had to be made to construct that item time after time. And, that meant patterns, jigs, forms and even special tools had to be figured out and built.

"I'm lost here, Hank," she told him once he came over to her office. "Tom has a great design and it ought to end up being a thing of beauty, but there is just too much going on in there. Can you help?"

Hank had been studying Tom's design for a week knowing that at some point he might be asked to assist. He had over fifty hours of work in his computer for the project "just in case" someone like the Major asked.

"I do believe I can, Marjorie," he told her. "Assuming that you can handle the outer shell and leave places for everything else like terraces, power and water runs—up and down—I can provide you with some detailed drawings and measurements for what goes into all the stuff inside and above the waterline."

The look of relief was immediate and it nearly made her swoon. She rallied and looked up at him, a smile on her face. She picked up her coffee mug and held it high. "To teamwork!"

Hank, who did not have a mug, picked up a stapler from her desk. "Teamwork!"

After promising her he would start with the smallest of pieces, the uppermost terrace, he stood to leave but sat back down when a thought hit him.

“How are you going to allow for the solid windows at the top?”

She shrugged. “I was hoping you had some inspiration. I can leave the gap or gaps up there and add an extra thick collar around things that a frame can be attached to, but please don’t tell me those have to be made from some flexible plastic.”

“No. I’m certain the skipper wants that to be either clear tomasite or perhaps a thick, hardened polymer that can withstand the pressures outside that want to come in.”

“Is that going to be difficult?”

“Not really. There will be a lot of pressure inside holding things up and out, but at about one hundred feet—twice where I hear he wants to tops to be—the outside pressure would be like having me stand on my left foot with all the weight pushing down in a small area about the size of a deck of cards.” Now, he stood again promising to go speak with the inventor immediately about things such as those clear panes.

“I’d come up with two thoughts, Hank.” Tom told him as they sat in the big office an hour later. “I envision the basic area up there to stretch about one hundred and twenty feet long and be about twenty feet wide. For added stiffness I was thinking along the lines of ten by fifteen-foot panels set in a solid frame made from something like durastress. It can all be slightly arched to both spread light around and take more pressure. I’ll send you the pressure and strength figures I came up with and please, feel *very* free to check my work!”

As they discussed the general layout of the domes Hank had a question of actual size.

“I’m going for about the largest I think is manageable, Hank. About seven hundred feet long at the base, about six hundred wide, and just under three hundred feet tall at the windows.”

“Uhh, a minute ago you said you had two thoughts about those windows, so what was the other one?”

“That they aren’t windows in the sense of sitting up there holding back the oceans. They are more like lenses at the bottom of light tunnels. The tunnels are hard-sided and extend to the surface where they feature solar panels and lights to keep watercraft away. That way we can build in special concentrating lenses at the top to send down more than just the available light.”

“Ahh. Like the skylights over at the Construction Company that provide a lot of the light in the buildings. The ones with the polished mirror tubes and special spreading lenses?”

“Pretty much like those, yeah.”

By the time the pattern maker left he had a good idea about how to make those tubes and what size they would be at the very top.

For starters, he would be suggesting they actually be a trio of twenty-foot-wide tubes combined in a line and fused together. The top would feature the collecting lenses and the bottoms would have special lenses meant to spread the light around the outer walls of the domes and not to waste it heading straight down to the water.

The tubes would extend up about twenty feet above the water and feature a "skirt" of solar panels with battery storage packs along with the navigation light system to keep them all visible at night.

Those panels would feed the batteries by day and then make some light at night that would travel down into the domes about like good moonlight might on a clear evening and a full moon.

One very positive thing would be removing the need for the upper dome windows to be able to restrain all that seawater pressure. As the tubes would be partially open at the top, the air pressure—that would increase with depth—would not be as strong as water pressure.

Now, all Hank needed to do was get all that into the computer, convince Tom and probably Damon that it was going to work, and then research the best way to give maximum light down into the dome for as long as possible each and every day.

No, that wasn't all, he decided. There would need to be auxiliary lighting for the domes to cover those days when the sun was obliterated by clouds.

Or, for any crops that would benefit from twenty-four hour a day light.

"Egads," he said to himself. "There's far too much for me to think about! This is more stuff for Tom."

The inventor had been thinking about a large number of things having to do with the domes and how to grow vital crops under the sea. More than once he considered just building the domes a few meters off shore and sticking down into the sandy areas around the islands. But, that would double, triple or even quadruple the building costs and operational costs.

It was likely to be difficult to find a workforce qualified to work a three or four dome cluster and train them to require no outside assistance.

When Hank came back two days later it was with his tubes to the open air concept, something Tom had not considered. As the big engineer described it, Tom pictured everything it meant. Cost would be minimal as Hank could create the tube sections in his huge vacuu-form beds, and those could be shipped down unassembled, easily built into the proper sets and attached to the domes.

“What if we have a catastrophic leak into the tubes? As in if a ship collides with them?”

Hank nodded. “I was hoping you had a plan to place these domes in a relatively safe area, like not right in the middle of a harbor.”

“Right. I’d forgotten about that. And, you are right, Hank. I guess incidental leaks can be handled with a small pump system.”

A thought struck the engineer. “You know, there is already a potential safety shield. The lens that will disburse the light to where it is needed can be at the bottom of the sealed shafts and then have a small air pocket between that and the upper windows.”

Tom smiled and said he liked that idea very much.

Week by week things progressed with Hank until he was ready with a new specialty machine to introduce to the Major. When she saw it, she did something that hadn’t happened for more than twenty years.

She cried.

“That is one monster of a huge cutting machine,” she told him wiping her eyes. They were over at the Construction Company, the only place he might have assembled the laser cutter.

It featured arms coming in from all corners controlled by electrically operated pistons and fine gears to move them precisely around the fifty-foot by fifty-foot bed. In the middle where they all attached was a laser cutting system able to make cuts through up to twenty layers of the fabric blend she would be using for both the outer wall as well as the inner one.

“How accurate is that monster?” she asked.

“The computer that Tom had the Programming people use can swing that laser around with quarter millimeter accuracy.” He looked at her curiously. “Do you need it to be less than that?”

She called him an unflattering name and laughed. “No! Even I can’t cut something out that finely.”

The machine was not built to be taken apart and transported so she promised to make arrangements to have the massive amount of the air- and watertight fabrics delivered to the machine.

Tom was keeping himself busy with about three hundred small details, not the least of which was working with the same people who'd developed the plant mix for both the Mars colony and for the new *Space Queen* station.

"If this were one of our outposts I'd say we could dictate what can be grown, but the truth is these people eat certain things in their daily diet and are not exactly prone to trying a lot of new stuff or foods they are not at all certain about. So, let's take a look at what they do eat and make some decision."

The small team had a list of over two hundred foods that were native to the islands—or at least had been growing there for generations—along with some things they imported that appeared to be staples in their diets.

A surprising amount of sugar made up nearly half their caloric intake, but Tom knew the sweet grass was a space waste. It took nearly five square yards of land to equate to nearly five pounds of sugar or a half-gallon of molasses, plus it used more fresh water than a family of four consumed in two days each and every day.

That meant sugar cane was out. As was cultivating sugar beets. A favored type of sweet yam could be grown very successfully in minimal soil and with a small amount of water providing much more nutrition.

And the task of finding out what would and would not be a good candidate for the growing domes went on and on.

The "good" thing was that unlike growing plants in space or on a distant planet whose atmosphere was likely to kill people, the domes did not have to make a huge amount of oxygen. They *would* —photosynthesis did that—but it was not going to be a mandate that each plant carry its share of the load.

That meant things like trees could easily be supported, but only those bearing large crops and preferably more than one crop each year.

"Avocados."

Tom looked over at the woman who'd said that. "Okay. Why?"

"The people love them and they are almost nutritious enough to sustain a person all on their own. Plus, there is a dwarf tree type that grows year around putting out about a hundred pounds of the

fruits every couple of weeks. Just keep the flowers pollinated and production practically can't be halted."

Tom was stopped almost dead in his tracks. He had never considered the need for bees or birds or anything to provide pollination services. He sat back, a stricken look on his face.

"Is something the matter," Lisa Parker, a specialist in exotic botany asked.

Tom's eyes strayed upward and finally met hers.

"I completely forgot to take into account the need for pollination," he said, sounding somewhere between frightened and angry at himself.

There was a chorus of, "Oh," from the other four in attendance before notes were scribbled furiously and small side discussions held.

"Could we introduce a colony of bees?" came a question from Lisa.

Another of the botany team raised a hand.

"Yes, Blaine?"

"I think there is some evidence to say that bees do not do well underwater. And, I don't mean wet, I mean with all that water around them they evidently have difficulty getting their magnetic bearing. I'll look the article I read up and send it to everyone."

Various breeds of birds and even bats were discussed but failed the, "...and what do *they* eat?" test.

"Although," Tom stated after a minute or silence, "I would actually love to have some birds in the domes in case of any insect infestation. Then again, we have the feeding thing if they are not scooping up bugs in flight. I may have to create a group of tiny pollination robots. Any ideas on what and how to go about *that*?"

One hour later Tom had fifteen sketches in his notebook of things looking like dragonflies and even larger-than-normal bees. He told them to keep researching food crops and get him all special growing conditions they required within the next week.

"During that time I'll try to come up with something to take over for Mother Nature."

He called Trent on the way to his underground office and lab to ask him to pass a message to his father regarding progress made on the crops front except for his failing at the getting any pollen from point A to point B.

"You don't want me to make that b-e-e? Sorry. I'm feeling a

little silly today. I'll let him know when he gets back from the MotorCar Company.

Tom sat down at his drafting table, picked up a piece of sketch paper from a small tray to the side, and taped it in place.

"What do bees do?" he asked out loud. In his head, he thought, *Fly from flower to flower, get pollen all over their legs as they seek to get nectar to use to make honey, and pass it along without any clear plan at the next flower. Then, they go home, regurgitate the nectar up and head back out.*

He wondered if the taking of the nectar had anything to do with the cross-pollination of plants and moved to his desk for some research.

"To quote Chow," he mused, "this ain't a gonna be easy!"

At last, after three months of Tom calling, asking, threatening and outright canceling the program twice, a major piece of the funding came through from England. That meant, also at last, the actual first dome could be built from materials still to be ordered, still to be cut using Hank's machine, and still to be assembled by the team of ladies working in Uniforms.

"At least you got that laser cutter paid for," Damon told the younger man as they sat having a meeting about the project, "I was afraid we'd be eating the funds for that. I'm happy we didn't have to bring in our State Department to get the British government off their hind ends and start paying for what they've requested."

Tom was relieved as well, but didn't want to make a big deal about it. For several weeks he'd been afraid his father would use this as a learning experience and clamp down on Tom getting a running start at many of his projects. But, his father was a patient man and truly wanted his son to succeed, so he gave him a lot of leeway.

The Major continued to outdo herself as did the efforts of her people. Just seven weeks later the first of the dome shells rose, billowing out using a high-flow air compressor to fill it so that all outer seams might be checked.

With no crane available tall enough to maneuver one or more of her people over the dome, a solution had been found using the small one-man aircraft, the Wasp. Unlike a traditional helicopter, this used a swiftly-rotating, specially-curved disc above the small cabin that did not so much shove the thing into the air, it allowed low pressure air to pull the craft up and keep it in the air.

Showing more bravery than Tom would have assumed, or even

asked for, two of the Uniforms ladies allowed themselves to be strapped under the cockpits of a pair of Wasps and flown up and around the entire structure. As they moved along, their pilots in constant TeleVoc contact with them, they sprayed a soapy solution to check for air leakage. They found about ten places that were then marked using tailor's chalk that would be sealed once the dome was deflated.

That finished, the inner shell complete with the terraces and applicable gaps and holes was constructed. It was also tested and found to be nearly perfect.

Then, the difficult part began. Starting at the top, or crown, several of the ladies had to climb inside, between the shells, so they could attach the spacers that ultimately would keep things aligned and in the proper size and shape. The plans and diagrams they adhered to were more complex than for a fifty-story building and tolerances were just as strict.

When he flew over to see what was happening with the project, Jameson Carr asked why only one dome was being completed.

"Why not all of them. Surely you just hire a few more workers to glue things together?"

Tom took him to the changing room and got him into one of the body suits the ladies wore, handed him a copy of the one hundred and eighty-three page plan and pointed at the opening.

"Go in there and see how easy it all is. Surely you just glue a couple things together."

Carr was both optimistic and a little put out that Tom would want him to work, but he gave it his all.

Twenty minutes later, sweat pouring down his face, his fingers cramped into near paralysis and his back feeing like he had been mugged and stabbed numerous times, he dragged himself back out.

As the inventor handed him a bottle of water, Carr nodded his thanks. After a few minutes he looked up at Tom.

"I sincerely apologize to you and to the women inside that thing. I can't see how they do it. There are no clear markings in there and not enough light and certainly not a lot of air."

"And yet, there they are working on the single dome to get it ready. Perhaps we won't go on a hiring spree only to have to make these ladies stop to provide the multi-week training necessary to do the job. What do *you* think, Mr. Carr?"

"Point made and taken." Carr nodded and tried standing. Tom

had to help him to his feet and wait a moment for the Englishman's back to let him go fully upright.

"We are all doing our best, Jameson. You and your funding politicians were told many times that each delay at their end was not going to be picked up and covered at this end. We are at least two months and more likely three behind schedule with the first dome because of late funding. Domes two and three will not be finished for at least two more months, so please spread the word that anyone coming here and expecting us to drop what we are in the middle of only to give them a tour and answer the inevitable, 'Can't you go faster?' questions is only going to put this farther behind. As you know, the two South American nations cutting the islands off have already begun just that. Once we get all the domes built and transported, it will be at least an additional month to get them inflated, made structurally solid, plant the crops and begin to see results."

"I swear, Tom, neither myself nor any of those I represent shall come here to be a bother. I might get overridden by His Majesty, but I'll try my damnedest to not let that occur."

The Uniforms department ladies were doing better than anyone could have expected and two weeks early, the now double-walled dome was once again inflated. As air pressure inside the walls increased sharp corners appeared everywhere and the smooth arc for each terrace stood out.

There were still many things to do for the first dome, but once the ladies had taken a mandatory week off—with full pay—other departments would start building the lower floor area including the dock area, the connecting corridor and even the storage and equipment room that would be structured to flow as smoothly as the dome itself.

At the very top of that building—taking up three feet of space all the way around—would be the intake vents for the circulating fans to keep the ambient temperature from getting too hot the higher up you went. As they would be stiff-sided, those would go in once the domes were finally filled and ready to sink.

Damon offered his assistance in the creation of a set of stand-in bee analogs.

"I have a little something I can repurpose that I use in the small hydrodome of my underwater garden. It is considerably heavier than your average bee—something like eighteen grams rather than under two—but won't have to stop and perch on anything; its little rotors will just keep it hovering."

When Tom saw the first one a few days later he let out a laugh. About one-and-a-half-inches long and two-thirds that wide, it featured twin counter-rotating rotors made from something so gossamer they were nearly invisible. At the front was a pair of tiny probes with fuzzy ends.

"Those gather and spread pollen and the little bit of breeze they create helps spread it around a little. They systematically ignore two of every five blossoms because of that prop wash and still manage a ninety-seven percent pollination rate."

There was obviously little room for any sort of battery so Tom inquired how they flew.

"Tiny microwave receptors that vibrate and make enough power to keep them flying. I had to do that instead of solar power because of the need for them to fly at night. And, the microwaves are so light they will do little else than power these things. One emitter per dome will do it, and I have the schematics for those right here."

He gave a two-page printout to Tom who looked at it with a huge smile on his face.

"I can turn out, oh, three dozen which ought to do what you need. Will two weeks do it for you, Son?" he asked with a smile.

Tom returned it. One more obstacle overcome!

Shortly before the first dome was deflated, carefully folded and rolled up for transport, the pieces for the second dome started to come out of Hank's cutter. This one—technically Dome Three—would be identical to the first except the main floor building and dock area would be a mirror of the first dome and it would have its connecting corridor on the opposite side of the floor area. Dome Two would feature two connections plus a spot where another one could be added later.

England's Prime Minister—on hearing of the project and knowing his party was behind in opinion polls—insisted that he be allowed to come inspect and make any suggestions he felt proper. His message stated the work ought to be moving along quicker and wanted to "put some hot coals under you Yanks for all the money we're shipping over to you! We haven't seen a sausage back for all that."

Tom sent word to England, and to the U.S. State Department, that the man would be welcome but with three stipulations:

1) He would be put to work for one full eight-hour shift so he could appreciate the difficult job everyone was doing.

2) He was absolutely invited to make as many suggestions as he wished, assuming…

3) He understood that there was little to no likelihood any of them would be paid attention to, and the more he fussed and bothered people, the more Enterprises was going to insist they be paid to compensate for his interference at this late date.

Needless to say when he finally arrived he had an air of superiority about him and refused to partake in any of the work until he was informed by Tom—in no uncertain terms—that he either left immediately or got his hands dirty, or the project was hereby scrapped. Not used to being spoken to like that it took the man an hour to come to a decision.

He made a phone call.

Following a teleconference with the Work Ethics Officer for the King of England, he reluctantly rolled up his sleeves and got to work.

By the time he left late that evening he held his right hand out to Tom and had only one thing to say about the project.

“Rather you doing this than us. We’d make a right dog’s dinner of something this complicated. Well done to you and your incredible people, Tom Swift!”

CHAPTER 12 /
THE GRAND DOME TOUR

AS THE days progressed, so did the work on the domes. The original plan had called for Dome One to be complete before the start of the next, and so on, but that changed once it was discovered the sealant being used required at least five full days to cure—on the inside seams at least. The outside ones took advantage of sunlight to speed the process.

So, with only a two day off period, the Major's team began work on Dome Three. Primarily a mirror copy of Dome One it would be the easiest to complete as the second structure. Dome Two would be more complex with its underslung equipment bay and seacopter entrance.

She and her ladies all had a better idea of what worked well, what worked poorly and what could be done but might need a bit of tweaking as they lined up at the edge of their hangar workshop. This time, the entire floor would be completed before a single vertical panel was attached. This went for both the outer skin as well as the inner panels.

Before, they'd begun with vertical panels and their associated floor-to-outer wall panel seams and then discovered how difficult it was to properly align the other floor panels. That five-day lesson now paid off in letting them construct the entire floor and first row of verticals in a single day.

Tom found himself making a few changes on the fly such as concentrating on the seacopter lock to be built into the middle dome. Physics and air pressure at depth made his original thought of an open to the sea portal for seacopters to simply rise up into a non-starter. He'd already known it would not work if that were all it was, a great big hole in the floor of that dome. But, he hoped to overcome that with a series of water-repelling repelatrons set in a semicircle to hold the water down.

"Forgetting about our Mr. Newton and his Third Law?" Damon asked as he was reviewing some notes Tom had requested he look at.

"Well, if you are asking do I realize that pushing that water down and holding it outside a ring in the floor is going to be pushing up on the dome, then yes. Why?"

"Pull out that tablet computer of yours and your scientific calculator application," his father requested. "Now, input these figures and tell me what you get." He called over about fifteen

different numbers and suggested two combination calculations.

When Tom finished and pressed the **COMPUTE** button, his face sank.

"Oh," he said, now sounding both sad and alarmed. "I guess I hadn't figured that much water pressure at that depth would put *that* level of strain on the anchorage cables and the dome itself," he admitted on seeing that his concept would put enough pressure on the bottom of the dome to rip it apart unless the floor was thickened to about five feet of concrete rather than the two feet already specified.

That would throw off many other things with the dome.

"Besides," Damon said, "I believe you would find that the amount of downward force you need to impart would also shove down on the very water the seacopter is in thus forcing them down with it. Don't worry, Tom. There will be a way for you to make that happen even if it doesn't mean an open and easy egress for those inside the seacopter."

In a surprising amount of time—short and not long—the first of the domes and the inflation and structural materials were ready to ship. Not quite as large as any of the Mars habitat domes, it still was going to require some heavy lifting, and that meant Tom's *Goliath* spacecraft with its huge cargo disk.

But, with that came the need to work around her central tower and control room sticking up smack dab in the center. It was a permanent fixture with no way to relocate it.

Again, the Major came to the rescue.

"I'll just have the ladies roll it like a cigar and leave enough room down the middle for that giant spire you have on the ship," she told Tom and Damon as they inspected the work. "It's what we did for the last two habitats heading up to Mars."

"How does Tom lift that up and slide it down safely, Marjorie?" Damon asked.

With a grin, she pointed out the large hangar doors and over to where the *Sky Queen* was currently undergoing her four-times a year cleaning and Level One maintenance.

"We wrap it up, put a loop of something substantial at one end, and Tom uses his skills to hover over it, it gets attached to some sort of cable or chain, and lifted up."

"And all I have to do is center a hole that I'll bet is just large enough to do the trick, and then lower it down to the deck?"

The Major looked at Damon. “You got yourself a bright kid there, Damon. Easy on the eye and smart to boot!”

They laughed and then started to discuss the necessary dimensions.

“How about if I have Hank make us a thin-walled pipe you can roll in the middle of the package that will be exactly what is needed?” Tom offered.

The Major smiled at the senior Swift. “What did I tell you?”

This first dome would be like Dome Three, which was currently under construction. Dome Two would have something extra in a hidden level below were the supply craft would arrive. Because he had given up on the concept of an open arrival portal, Tom was now preparing to build a special submarine waterlock—the sealock—to be used to equalize pressures between the outer water and the air pressure of the domes.

That was going to require some special skills and some on-site construction as the nature of the space meant it could not be rolled up like everything else.

It would, Tom decided early on, be delivered more like a flat-pack piece of furniture, the sides and top raised and tightened into place, and then attached to the underside of the center dome.

World attention grew as people learned of the giant structures being put up near the island of Scarborough in the outer Caribbean. On a daily basis Enterprises was being inundated with more than three dozen requests—some bordering on demanding access—for permission to come see and tour the domes and to assure themselves/their readers-viewers/their governments/their own curiosity that these were not military installations, nor were they anything other than what Jamison Carr’s office had announced.

After consulting with the Englishman it was decided that a representative group of thirty individuals could be managed. They would need to share everything with the world in order to be considered even if they all wanted “exclusives”, so many of them balked at the idea and were removed from the lists.

One of the Swift cargo jets was temporarily outfitted with three dozen airline seats of the type used in Tom’s SkyLiner for the trip down to Scarborough.

The island’s single runway airport was undergoing repairs using Tom’s tarmac repaving machine so when the group arrived they would need to park the jet on a small patch that would not be

addressed for another two days.

Everyone had tried to jump up and rush to the right side of the aircraft as Tom swung them around and over the pair of domes that were fully inflated, but Harlan, sitting back with the passengers, barked at them with such a fierce tone everyone slunk back into their seats, looking like scolded children.

A bus took them back down the runway on a new access road to the small dock area that had recently been built. There, they climbed into the island's one and only ferry that took them out to a floating platform standing to the west side of the first dome. It was complete including its concrete shell and a full compliment of plantings. Dome Three was currently only inflated with air and otherwise empty.

Each person in the group had to go through a decontamination process a few complained about and one man flatly refused to undergo. He was shown back to the bus by Harlan who remained with him.

"Our new Dome manager, Mr. Barney Donohoe of Swift Enterprises, is still up north and so I cannot introduce him to you all, but his biography is in the packet of info you all received. I can, however, introduce you to the young woman who is coming out from the airlock over to your right. She is our second-in-command."

Tom introduced everyone to Dr. Bridgette Stern, a German-born woman recently living in Wales, who had been hired to head up the medical department for the HydroFarm.

"We need a plant doctor?" Bud asked out the side of him mouth.

"We do, and by that I meant the plants do, Mr. Barclay," she responded, hearing his comment. "It has been discovered that in any seriously enclosed growing environment various bacteria can invade plants and even other living tissues. With the domes technically shut off from the rest of the ocean around it, it might take as little to cause a devastating rush of a plant disease as simple as an errant microbe cluster that is allowed to grow, mutate, and then attack a large portion of the crops."

"It has happened even out in the open," Tom told them all. "If you recall history, the grape vines of France were damaged in the wine blight of the mid-nineteenth century. Back then the sort of plant medicines we have today were not even thought of, so their solution was to graft French grape varietals to American root stock and burn everything else. Then, a decade or more ago the world's banana crops began to suffer from what was called Banana

Freckle. The cure for which was to quarantine and breed some hardy plants that showed no signs of the disease, tear out and burn nearly ninety-seven percent of the world's banana plants and start over."

"And, we don't have the luxury of being without production for the kind of time it would take to clear everything out and start over," Tom stated. "Dr. Stern is going to keep that from happening to our hydrofarm." He smiled and nodded to her and she returned the smile if slightly tentatively. "Besides, we can't very well burn things in these undersea domes."

Most people laughed, but a few looked as if they wanted to know why that might be. Tom ignored them.

"We are just going to take a walk around, Doctor," he told her. "These three men are from the organization that funded the majority of the costs to built our domes and I want them to see what their money is buying them," he said pointing to the trio of Ministry officials. "The other people represent various agencies, news outlets and a couple foreign governments."

She softened a little. "Good. And, although I am a little rushed and therefore a little abrupt, welcome and I hope what we are doing meets with your approvals." She looked to Tom. "TeleVoc me with any question I might help on," she told him.

As the group turned and walked away the inventor pointed behind them. "She has a wonderful set-up behind those walls. Not only a hydroponics experimental station but a special quarantine mini-dome in which she can minutely examine any plant or seed that appears to not be producing to its fullest. Or, if we encounter some sort of bacteriological event, she will be able to contain it until a remedy can be created."

"Do you expect something bad will happen?" a rather mousy woman who had been introduced as Lucinda Parson, a financial analyst from a British newspaper accompanying Jameson Car's people for a feature story—ostensibly—but actually had an agenda of her own to make headlines by blowing the lid off what she considered to be a rich man's folly. "I only ask because of all the hoopla made over how wonderful this all is and how it will change the world! And, how much needed welfare money has been spent on all this… this *place*."

Tom stopped, turned and faced her. His sudden smile made her nervous. "The direct answer is, no we do not expect anything other than good things. The realistic answer is that for every outsider such as yourself we allow in, we have a small chance of that person bringing in your 'something bad.' It is why we have that extensive

arm, shoe cleaning and lower leg scrub down you all went through. And," he turned back and started walking again, calling over his shoulder, "we do intend to change the world. Perhaps a little bit at a time, but we will be making changes. Worthy changes."

Tom stopped again and turned back around to the woman. Leaning forward he whispered something in her ear that made her turn bright red and then almost deathly pale.

What he'd said was simple and straightforward.

"My Security team tells me that you have three contraband items in your purse, Ms. Parson. A remote camera, a listening and recording device, and to top that off, you have a small vial with some sort of liquid in it. As we enter the next room you will drop your purse on the floor behind us all and not say another word."

Again, his smile made her feel absolutely wretched.

Tom did check to see she followed his orders as they left the dock area of Dome One and entered the elevator.

Gary Bradley stepped from a small door and picked up her purse. It would be returned to her without the three items but with a note of warning regarding what she might write about the domes. It also would contain its own ultra-tiny tracking chip slipped into the leather between some of the wider stitching.

Of course, what happened next was a matter of what was in that vial she'd brought in. Later, it turned out to be simple and cheap vodka.

Tom and his group rode the large cargo elevator up and through its outer curve eventually coming out at the very top terrace. This one had been planted with avocado trees already reaching fourteen feet high. They would be controlled when they reached fifteen feet and the crop yield maximized via careful pruning. It all, he told them, they would provide nearly forty percent more harvestable avocados that any other trees of their sort left in the open air.

Ms. Parson couldn't help herself when she stated, "Those are a rich man's crop. I thought the idea was to help feed the needy masses."

The inventor once again stopped and turned to face his audience. "Okay. Let's take that and break it down. In some nations they are more plentiful than apples and cost pennies. Avocados have a set of protein rich nutrients in them along with minerals and vitamins that can prevent about thirty different nutritional maladies. Vision problems in young children. Maternity illnesses and deficiencies. Many of these can be halted

and even some reversed from both the ingestion of avocados and from their byproducts. Fruits that are in peak condition may find their way onto various tables, rich and poor, while damaged fruits can be processed to get maximum results per tree."

He gave her a slightly less menacing—to her at least—smile and added, "Just because *you* get some on an expensive salad when you dine out at your favorite restaurant in London, or pay high prices to have one or two in your kitchen to bring out when guests arrive, does not mean the average man, woman or child cannot benefit. But, let us continue on, I'm certain you'll have more to say, such as when we get to completing Dome Three and growing that *rich* man's wheat!"

One of the Ministry men, Colin Hughes, chuckled. "Face it, Ms. Parson, your various preconceptions are wrong. What is going on down here is incredible and will one day make this world a place where children no longer go to bed hungry. And, I wonder what sort of world we might have, and what sort of money many poor people might have, if people such as your own, very wealthy father were not heavily involved in the selling of tobacco products to them. Hmmmm?"

She turned incredibly red and made no further comments about anything.

Tom showed them most of the terraces in this first dome. Almost all were tree-based foods and all appeared to be in absolute peak condition. Each had been planted as a mature tree only three weeks earlier and all were thriving.

They took one of the large elevators down to the main floor. There they met up with Jameson Carr who was on a five-day work and inspection visit. He greeted his team and nodded at the various others, but actively scowled on seeing the Parsons woman.

Tom explained how Dome Two would consist of several additional terraces mostly involved in growing something called quinoa, a protein dense seed/grain. And, since that wasn't growing more than three feet above ground, there would be a series of raised lines along which ran grapevines and a type of blackberry.

The dispersal of sunshine allowed for this stacking of crops and that meant more and more things growing in less and less space.

As they walked to the center of the platform, one guest asked why the current two domes were still on the surface.

"Firstly, we need to have them all together up here because it would be next to impossible to do anything to connect them under water. Also, because we still have to add the necessary ballast, weight if you will, to sink them and that comes a week after

everything is erected and planted."

Jameson had to stop at a doorway and steady himself when Tom took them outside and across to a partially-submerged structure that would soon be attached to the bottom of the missing Dome Two. They went down some stairs and into the desalination and water purification room. To Jameson, it seemed so small and compact he barely believed it could be what the inventor was describing. Only once Tom took them to a metal stairway down and into a room that ran half the diameter of the forthcoming dome above did his brain catch up.

Above was only the pumping room. Down here were eleven different pieces of equipment ranging from something looking a bit like a refrigerator on its side with a six-inch pipe sticking out both ends—the high-intensity UV virus and bacteria killer—up to the locomotive-sized primary desalination unit.

We don't actually need this full capacity," Tom was saying as Carr got his mind back in gear, "except at first, and any time we might need to fully replace the water. That, we believe, to be about once a month."

"Why?"

It was a simple question from another member of the visitor's group.

"We do not wish to use artificial amendments to the soil, or even natural things as manure because of the bacteria and other things in it. So, we concentrate the minerals needed from the ocean water. The first time we ran the unit here, we only kept those minerals and key nutrients. Over there," he said pointing to a large red square container surrounded by a latticework of metal tubes. "That tank contains enough of these things to give us a full two months or slightly more of what we require."

"Tom?" Jameson began looking as if he ought have known the answer, "Can you tell them what you did with the rest of that water?"

Tom hid a sly grin behind his hand as he pretended to clear his throat. "Absolutely. Well, as you already know we have the ability to simply pass that water back into the ocean around us. So, once we got what we needed, that uncontaminated water was returned to the ocean. We waited five days for prevailing currents to scatter that before taking up our next batch. *That* we purified, desalinated, oxygenated slightly to aid in root growth, and added the correct amount of our nutrients before giving all the growing medium a good watering."

"Oh," the man who'd asked 'Why' said, "then what happened to

that water? Surely you didn't just shove that out into the ocean?" He sounded slightly horrified at the thought.

"No. As I mentioned a few moments ago, we recycle our water via drains and pipes and all that comes down here to be cleaned of anything not good, added to with the good stuff, and even to be injected with some enzymes that do primarily what worms would do in nature. Before anyone asks, at the end of the month whatever water is not actively held in the soil and other growth medium comes back down one final time to be cleaned and sterilized and only then does it go back to the ocean. It is, at that time, about forty times cleaner than the tap water you drink from most municipal systems in the U.S., and at least forty-four times cleaner than the water in London."

They walked in silence past the rest of the equipment as Tom stated their general purposes.

Once back upstairs and standing at the upper deck for Dome Two's equipment bay, Jameson asked if there was any reason to visit the third dome, or was it simply more or different crops.

"It is going to be a lot more of the same with a goodly portion given to ground crops such as carrots, rutabagas, onions, garlic, some potatoes and one experimental terrace. But, and we only need to use our boat to go in a moment and then back out, we have a series of hanging gardens throughout using the natural lighting to grow a variety of nine herbs used in local cuisines. Then, there is the special enclosed garden Dr. Stern works in that houses some very exotic food plants that grow underwater. Seawater. Nothing like that comes until we fill the shell with more than just air."

He talked about the nutritional value of what he simply called, "My father's cabbages." They were appropriately impressed by it even if Tom never mentioned the origin of the space cabbage seeds. When it came time to depart, Tom took them outside one final time to the ferry docking area and ushered them onboard.

The trip back to Miami went by quickly with only a little chatter and one or two questions Tom was able to easily answer.

Jameson's handshake as they parted was both warm and strong. "My god you can't fully understand what you have down there, Tom. Words like 'salvation,' and 'survival' come to my mind. Every penny spent on this project will see another life touched in a most positive way. Thank you… thank you a million times!"

CHAPTER 13 /
SINKING FOR SUCCESS

AS SOON as the third—middle—dome was totally incorporated into the triad of structures, Tom declared it time to prepare everything for sinking. Anchors as powerful and sturdy as the ones that had held down the *Sea Lift* and the L-Evator had been sunk and sealed into the solid bedrock sitting a few feet below the silt layer of the sea floor.

In all, twenty-one anchors had been drilled, inserted, expanded and tested. Each dome was now connected to six of them at 60-degree points around the dome floor, plus a single additional one dead center in the floor. All these end points went through reinforced concrete with integral steel reinforcement plates.

The outer cables featured reflective panels all around spaced at fifteen-foot intervals to keep any underwater craft from striking one. The central cables featured an enclosed lighting system to illuminate under the domes showing authorized craft—the occasional jetmarine and all the regularly scheduled seacopters—where everything was including the single entry point in Dome Two where they could rise up into a pressurized area that acted like an airlock.

Humans coming in via the underwater "doorway" needed to go through a brief period of compression until they were able to handle the interior pressure which was about that of being twenty feet underwater. They would be coming from a sea level environment into a pressurized dome, and that would be taken care of inside the craft. Of course, if they needed to leave the safety of the seacopter within the "lock" compartment it would start off with pressure found at the depth of about three hundred and fifty feet which would be hard enough that it was deemed mandatory for anyone doing that to wear a pressure suit. Even at that, the captains of all Swift craft were being advised to be ready for an emergency evacuation should anyone have a problem.

Inside Dome One, where Tom intended to ride during the descent, the final checks were made and the last of the open air valves closed and locked. In the low area that Bud had dubbed "the lagoon," the water level that had been at just about five feet was now being added to. This would continue until there was twelve feet of pure, fresh water, just enough with the weight of the dome structures plus a bit of heavy steel ballast under the floor areas to give the domes almost neutral buoyancy.

A set of giant underwater winches attached to the anchor cables

would soon activate and pull the domes down.

"Status check on all winches," Tom called out on his radio. One by one the calls came back that everyone and everything was ready. "Radio the *Cousteau* and ask her for one more sweep under us," he requested.

The captain of the seacopter radioed that all looked clear with no underwater contacts out to their normal listening range of fifty miles.

"Looks like even nosy fish and dolphins have decided to stay clear until they figure out what this is all about, skipper."

Tom gave the order, and the sounds of the winches and their heavy gearing vibrated throughout the domes.

Damon Swift in Dome Two and Bud handling the watcher duties in Dome Three both TeleVoc'd Tom at about the same time so he answered them as a three-way call.

"How're things looking and sounding there?" he asked.

With a chuckle that came through the silent communication system, Bud stated, "The winches under me sound like Sandy when she gets a really good snore going."

"Why do you think her room was the farthest one down the hall until she moved out to be your millstone?" Damon asked.

Tom had to grin. He'd grown up just across the hall from her room and had spent many a night listening to her "sawing wood" until he fell asleep. It its own way it was soothing to hear, but as soon as he moved out and set up house with Bashalli he realized that he didn't miss it a bit! *Poor Bud*, he thought with a smile.

"Let's all keep this channel open and call out if anything seems off to you," he requested.

The rate of descent was being kept to about a foot a minute. As they descended a series of laser range finders were firing their invisible beams all around the inner walls checking how they were handling the new stresses. With each second they gave a full sweep of each dome, inputting the results into a computer that Tom had the readout monitor sitting in front of him.

He called a temporary halt when the floor had moved down to a point where the bottom was twenty feet under the waves.

"I'm going to drive one of the boats around and come see you two," he said to them.

"Problem, Son?" Damon asked.

"Nope. I just want to see how things feel in the other domes. I

know the slight pressure build-up made my ears pop."

"I should have had Doc give me a decongestant," Bud said. "I'm having a devil of a time getting mine to pop!"

"All the more reason Tom is making this brief pause," Mr. Swift said.

Tom set an automatic alarm from the computer to notify him of anything not looking right before he climbed into the twenty-four-foot cruiser and gunned the electric motors. He had a moment where his mind failed to grasp the fact that there would be little sound. He was so used to the yacht his parents kept on Lake Carlopa with its twin three hundred horsepower gasoline engines.

He swung the nose around and headed through the low, arched passageway and into Dome Two. His father was standing on the dock, waving. As he pulled along side Tom tossed the bow rope which Mr. Swift made tight to a cleat.

The younger inventor climbed to the bow and leapt to the dock.

"How's it feel to you, Dad?"

"Solid, Son. I honestly have to say I expected a little grumbling and groaning from everything, but so far it is looking and sounding like it did on the surface. How far down are we now?"

Tom told him the outer two domes were just about twenty feet down, "About to the first terraces, but your dome with the equipment bay underneath sticks down another eighteen feet. Speaking of which, I need to take a peek down there. Pardon me."

He walked to the access hatch and keyed in a special code. Inside he climbed down the ship's ladder to the lower floor. The equipment dealing with temperature and air circulation were running as quietly as they normally did, but something was wrong. As he sought to figure it out it came to him.

The noise of the water filtration compressors was missing.

Around one side he found the problem. The circuit breakers for that system had tripped. He could see why.

A tiny pinhole leak had developed in the outer wall some ten feet away, but it was now under enough pressure to squirt the water in a half-millimeter straight beam and right into the top of the circuit breakers.

He TeleVoc'd the two above and asked his father to notify the teams on the surface.

"We need to go up for a tiny repair," he said and described what was the matter.

Because of the slightly increased air pressure they were under, Tom decided to play things safe and go up slowly so there would be no troubles such as them suffering the bends.

It took thirty minutes to go back up with Tom remaining in the equipment bay the entire time. He noticed, happily, that once the pinhole reached the ten-foot depth the water stopped.

He had the gallon or so of seawater mopped up before they hit the surface. He also marked the exact location of the hole.

Hank Sterling was waiting for them and as the outer doorway was opened he came in on a jet ski—also silent and electric so as to not introduce any carbon monoxide into the environment—with a small plastic box strapped to the seat in front of him.

Climbing off he handed the box to Tom.

"Sealant kit, skipper. Need any help?"

Tom said he probably did not so Hank turned his watercraft around and went shooting down the passageway into Dome Three to see Bud.

In the equipment bay, the inventor opened the kit, removing a syringe with two chambers feeding a single tiny needle. It was similar to epoxy setups but was quite different.

Tom pulled the tip protector off and drew back the twin plungers a full inch. This drew air into the chambers necessary for the twin ingredients to get ready to mix and set. With the cover back in place he gave the thing a good ten-second shake and was rewarded by having the left side turn from light gray to red and the right side turn from white to green.

Off came the cap again and he moved to the small circle indicating the hole. The tip went in its full half-inch and he put a little pressure the syringe before starting to shove the plungers in. A tiny bit of water came out as the air blew it backward, but in seconds the colored ingredients were moving inside.

His computation of the possible area of the hole, assuming it was just a pinhole through and through, said about a milliliter would be necessary. And, that is exactly what it took before he could not shove in any more of it.

The instructions said to wait thirty seconds before removing the needle, which he did. They also said to have a utility knife ready to chop off anything that came back out of the hole, and to do it within another ten seconds before it set harder that the surrounding concrete. As it set and slightly expanded, one more drop of water was squeezed out.

A small dot of the brown material did come back out but he had not picked up the knife from the box and it was too far away to get to in time. As he watched it started making one final color change to a light blue.

The little drop would actually serve to show where they had the one hole so he was not at all bothered.

That spot fixed he capped the remaining contents and went on a search for anything else that might require a small shot.

There was nothing so he repacked the box and headed to the main level where Hank was now sitting on the jet ski talking to Damon.

"That do it?" the engineer asked.

"Sure did, and thanks, Hank. In an hour we'll go back down. Want to come and be my eyes in the bay?"

Eagerly, Hank agreed to come along. "I guess I'll be leaving my trusted steed in here, then," he sighed.

"Why don't you shove it out the lock and let the other people up here store it for you?" Damon asked making both Hank and Tom grin.

They had just passed the fifty-seven foot mark when Tom realized he'd forgotten to reset the breakers for the water system. He TeleVoc'd Hank asking him to do that and also to give him a status report.

"Right… Okay, the three breakers are back in position and the pumps are starting up again. Sounding sweet if a bit noisy. As far as status, all dry and comfy down here. You?"

"Same. Every measurement is spot on and we're at max pressure of seventeen psi that should be sufficient. Oh, and I believe I can see the misters up on terraces nine and ten going on. Thanks!"

Minute-by-minute and foot-by-foot the domes traveled down and down. At one hundred and ten Tom decided to help things a little bit by increasing the depth of the water in the lagoons by another foot. It helped considerably as the winches reported the upward pressure had dropped by over seven percent.

The domes were given another rest break while the men inside walked and climbed to all levels making visual checks. All appeared to be right so Tom suggested they meet in the center dome and have a rest and food break.

"We're going to be at this about ten hours until it's time for the

replacement crew to try out the seacopter lock."

Ten minutes later the three boats were side-by-side at the dock and the men had pulled out some collapsible chairs and a table.

Chow had made them some self-heating meals including coffee and tea containers. Tom had said it would be three of them for probably two meals and Chow had sent meals for ten people for five days!

Now, it meant everyone had a choice of their favorites and soon they were happily eating, having coffee and talking about how the domes looked to be a success.

Tom was smiling around bites of his lasagna.

"I just hope the growing advances we gained from the exposure we gave all the seed and seedlings carries through from month to month," Tom stated.

Based on extensive research by Damon Swift on both terrestrial and space friends' supplied seeds it had become a standard practice to take seeds into space on the outer deck of the *Challenger* and to expose them within the Van Allen Radiation Belts at a specific altitude and allow the radiation to cover those seeds for a fairly specific period of time.

The results were not radioactive seeds or even seedlings but rather seeds that sprouted in half the time, plants that grew at about four times the normal rate and generally produced full crops in about half the time their standard cousins could.

The resulting fruits, vegetables and seed crops had been so thoroughly studied for abnormalities that everything knowable about them was, and that all said the results were as healthy and nutritious as any other example of their species, had little or no insect problems and were generally about ten to twenty percent larger. Crops with seeds could be replanted at least one more generation maintaining these same traits but needed to be replaced after that with freshly exposed seeds.

Tree crops, on the other hand, had been tested out to eleven generations so far with no deterioration in the better properties.

Bud spoke for the rest of them. "Between you and your dad, with this great set of domes and his super seeds, the people down in these islands are going to have trouble deciding on what they want there'll be such a variety of great stuff for them!"

"I hope so, flyboy."

Half an hour later the domes were again on the move. This time it would not stop unless there was a problem or they reached their

final spot hanging above the seabed.

It was nearing nine p.m., local time, when Tom stopped the winches for the final time and set the manual and electronic locks. Now, it would be nearly impossible for any outsiders to take command and cause problems for the domes.

Tom called another rest and food break before making the call to the waiting *Cousteau* seacopter.

"We'll have the sealock ready for you, Deke, so bring her in ten minutes from now. Just be sure to lock onto the navigation beacons under the dome and let the computer do the raising bit. That'll center you exactly."

"Roger, Tom. Oh, and I have to tell you—while a certain person who is currently visiting the little volcanologist room—that Steff came with me. Says she's gonna be the first person to get a kiss from you and Bud in the new domes. Don't hate me, please."

Tom chuckled. "Well, I could have you tell her we brought the wives so that honor is long gone, but I won't. Just thanks for the warning. I'll give you a one-minute notice."

He hopped onto one of the boats and headed for point in the second lagoon where the top of the sealock sat just five feet under the surface. The lock sensed the boat's presence and up rose a control panel on a five-inch column. He keyed in the approval code and set the timer. Once the seacopter had access to the lower, open portal the bottom would close in one minute, and the compartment would drop the water pressure to that to be found in the lagoon.

Where once he feared it would be necessary to have passengers exiting through a depressurization chamber he realized it only had to be done when they were getting back into the undersea craft where a more sea level pressure would be the norm. For those occasions both seacopters and jetmarines would handle the depressurization on the way back to the surface.

After pressing the right button to execute everything the waterproof pad and column were drawn back down and Tom backed the boat away.

A few minutes later his TeleVoc was pinged to announce the arrival. "The *Cousteau* will come aboard in sixty seconds," the female computerized voice he immediately recognized as having been programmed by his wife, Bashalli, told him. He acknowledged it allowing the process to continue.

When the time was up the top of the sealock slid to one side and the seacopter slowly rose until it was floating high in the water.

Tom pulled the boat over to the personnel hatch and ladder and waited. It popped open and the head of a very tall man came up. He waved to Tom, “Hey, skipper. Permission to come aboard?”

“Granted, Deke. How many aboard?”

“Hmm. Well, that depends on whether the one with her teeth sinking in my upper thigh will let go or whether I have to do something drastic like diving overboard to shake her off, but—Ouch!” He leaned his face back down and said something and then returned. “I have seven aboard, five of whom will remain here while your four will return with me and my little biter.”

Tom laughed.

One-by-one the men of the replacement team climbed out and then down the ladder to the waiting boat before Deke reached down and pulled a woman out by her two up-stretched hands. She whispered something in his ear that made him blush before turning to Tom.

“Permission to leap into your arms?”

Tom shook his head. “Safer if you climb down. Probably a lot drier for me to boot.”

She looked a little disappointed, but called out, “Okay, but prepare to be boarded!”

He helped her get to within four rungs of the boat before she let go, spun in his arms and threw her own arms around his neck giving him a kiss that made his head spin.

When he managed to get her to let go Deke, her husband, was now standing next to them. “Take it easy, squirt,” he told her. “You don’t know if this higher pressure is going to cause Tom to pass out from all the air you just sucked out of his lungs!”

She smiled, innocently. “I never sucked air,” she said. She turned to Tom and whispered, “Lasagna?”

Turning red he hissed back, “That was lunch!”

“Oh, sorry,” she said looking a little contrite. “I guess it must have been the tuna casserole for dinner, then.” She smiled up at him and he couldn’t help but smile back. The truth was he truly liked Stefanie and was amazed that her husband had zero issues with her behavior around Tom and Bud.

As they cast off from the seacopter that would remain in the top of the sealock she sidled over to him.

“I wonder what Barclay had for dinner?” she said, smacking her lips and grinning with just a hint of mischief. “Now, don’t tell me… let me taste it for myself!”

CHAPTER 14 /
WHAT GOES DOWN WILL HAVE TO GO UP

ONCE BUD recovered from the Stefanie treatment he shook Deke's hand telling him he was the better man between them for putting up with her shenanigans.

"Not better, Bud, it's just that I know what she can be like and you only ever see the tip of the iceberg, so to speak. I get the entire *Titanic* treatment!"

She walked over to Damon and shook his hand before asking his permission to give him a small hug.

"Small and dry," he warned her and bent down to receive a very chaste and pleasant hug.

When he stood back up he asked, "So, what brings a lovely lady like you down here, deep under the ocean, Stefanie?"

"Deke is still having the occasional bad dream about the Geotron incident," she told him in a very low voice, "so I figured it would be best if he had something to take his mind off things if… well, you know?" He had once been trapped deep under the sea floor in the middle of the Atlantic in Tom's burrowing machine and barely got out alive. It had kept him out of any submersible for nearly his first two years of working at Enterprises.

The older inventor smiled. "Yes, and probably a great call on your part. Did Charlie Van deGroot have any issues with you taking a couple days off?"

"Mr. D is next in line for boss sainthood right after you and Tom. I think he wants me to get some video so he can live the dream vicariously, so if you don't mind—" and with that she pulled out her cell phone and held it up.

Making a sweeping bow, Damon chuckled. "Go right ahead. If they are any good I'll have you turn them over to George Dilling for publicity purposes."

"Gosh, then I'd better use this," she stated putting her phone away and pulling a miniature high definition video camera from her purse. A minute later she was making a slow and steady sweep of the lower terraces and getting ready to do the same with each level above.

Deke came over to shake his hand. "If she gets in the way, just do what I do. Pick her up, look her in the eye and tell her 'No!' It's the only way she'll learn," he said, grinning.

"I heard that, Goon! Stop poisoning the waters for me. Mr.

Swift is a true gentleman and is letting me do this for almost official purposes."

Because he wanted to make a full and complete inspection of all three domes and each of the terraces, Tom suggested taking their visitors on a tour.

"It will take the better part of two hours, so any time you want to beg off, just sneak away and I won't say a word," he promised.

Stefanie followed him for the full tour while Deke left them at the end of Dome One.

"It isn't that this hasn't been pleasant," he stated, "it's just that I had a short night last night and would like to head back to my bunk in the seacopter. You," he said turning to face Stefanie, "behave with Tom. He has a lot to do looking at everything without fending off something standing, oh, about four-feet five inches. Get me?"

She smiled and reached her arms up. He obliged by picking her up so they were face to face even though his nose was at about six-feet-four inches. "I love you, Gigantor, and I know how to behave. It's only when I think I can get a rise out of someone like Tom or especially Bud that I give it my all. I'll see you in the bunk in another hour or two. Love ya!"

He kissed her and set her down where she turned and ran to catch up with the inventor who was a hundred feet further around the terrace level.

He asked if she could take alternate levels to speed things up.

"Here's what to specifically look for," he said showing her what he'd been doing. "If we keep to adjoining levels we can shout to each other if there is anything amiss."

But, an hour and seventeen minutes later when they'd completed the last of the levels in the third dome, nothing out of the ordinary had been spotted.

Stefanie was one level below Tom as they headed back to the small elevator on their current side of the dome when Tom heard a terrified scream.

"Steff! Steff!" he yelled over the railing of his terrace. "What's wrong?"

He could hear her scrabbling to get away from something but without her telling him what was the matter, he could only guess. He raced to the elevator and made it do her level in thirty seconds, When he came skidding around a growth of bushes that would soon bear a crop of goji berries, he let out an enormous laugh.

“Get it away from me!” she screeched.

Calmly, and much to Stefanie’s continuing anger, he said, “ALAN? Please step back from the lady. She has not been introduced to you and you frightened her.”

The robot straightened from his position trying to extend a hand to assist her in standing back up, and he turned to Tom.

“Did I do something incorrect, Tom?”

Walking over to help the woman he replied, “No, ALAN. It is just that some people are not used to you and she took a bit of a fright. Amend programming: if someone appears to be scared of you, do not move toward them with one or both arms extended. End programming.”

“Th-that belongs here?” she asked now brushing off her backside and looking more curious than angry. She looked over her shoulder and asked, “Want to help?”

Tom made a frustrated grunt and shook his head. “No, but I do want you to meet our ALAN.”

He explained about the project to provide constantly-working forest ranger replacements that could tend to trees and plants, take tourist around, and even help fight fires.

“This ALAN will be working the domes rather than having a number of people down here. He can do three times the work of eight humans.”

Stefanie held her right hand up to shake the robot’s. “Hello, Alan. I’m Stefanie Brooks-Bodack and I am sorry I was afraid of you. You have such a nice smile on your face. Friends?”

ALAN carefully took her offered hand and gently shook it up and down. “While I am incapable of emotions such as friendship, I appreciate that you can, so I accept your offer to be a friend.” He turned to Tom. “May I continue? I was checking soil moisture for the goji berry bushes and still have the quinoa in the next dome to check.”

“Go ahead, ALAN. We’ll be seeing you around.”

The two humans rode down in the small auxiliary elevator—normally fit for a single occupant, Stefanie hugged tightly to the inventor and they made it in one trip.

“Boy, have I got a story to tell the Goon,” she said and then excused herself to return to the seacopter.

The following morning Tom came out of the small room he and the others were using as sleeping quarters to find ALAN waiting for him.

“I need to report we have several small issues in the domes, Tom. There is nothing that appears to put the structure in peril or the persons inside in danger, but the watering system seems to have become plugged with some vegetation from outside that slipped past the filtering system. That system is also showing signs of troubles. What do you wish me to do?”

“Take me to the water system and we’ll see.”

Down in the equipment bay he discovered that during their sleep period, and perhaps even earlier, a great deal of seaweed and algae had been sucked into the equipment and it was having difficulties. He pressed the shut-off button and headed up to speak with his father.

“Is it something you can clean out down here?” Damon asked once Tom outlined the problems.

“I don’t think so,” his son answered. “I think I need to go out in the seacopter and check, but if it is a continuing problem I have to come up with a secondary filter system of some sort or we’ll just keep getting clogged up. I never thought we’d have issues sitting here a hundred feet above the sea floor.”

His knocking on the upper hatch got Deke’s attention and it soon opened letting Tom drop down inside. He explained what he needed to do and Deke got the ship ready.

“What the heck is—Eek!” Stefanie asked from the side. She was not dressed in much more that her underwear, not realizing they had a visitor. She quickly disappeared back into the bunk room and came out three minutes later in pants and a shirt.

“Sorry,” she apologized. “Didn’t realize we were entertaining.” She glared at her husband before smiling at Tom. “Where’re we going?”

The inventor repeated what he’d told Deke and the seacopter dipped under the water and the top hatch swung around shutting them in for the pressure balancing.

Outside, they looked at the main intake. Sure enough, it was packed with algae and seaweed. Curiously, there was nothing else floating at their level. He climbed into a hydrolung suit and went outside hoping to be able to pull the vegetation away, but it was crammed too far inside.

As he stripped the suit off back inside he told the other two, “Looks like we either bring down a large contingent of deep water divers or, and this is probably easier in the long run, we take the domes back up and clear this stuff out in shallow water.”

When he told his father, the older inventor agreed it was for the

best.

"I will say that you may need to stay up on the surface for whatever time it takes to make a better filter."

They reached the surface five hours later and Tom took the seacopter, along with the Bodacks, out and north to Enterprises. On the way he radioed to Fearing Island requesting a team of divers versed in clearing things away be dispatched.

"I'll be back in three days, so tell my father he can either stay there or turn command over to Bud if he wants to head north."

Back at Enterprises he received a shocking call from his father.

"Son, I put on the hydrolung suit and went out to see for myself what was going on. I found something I do not like in the least! A diving glove stuck in the middle of the seaweed. I also checked with the locals and they tell me that particular seaweed never, and I'll repeat that, it *never* is found below about seventy feet!"

"But, that's impossible," Tom responded. "I made a check under the domes before we sealed them up and headed down. There was nothing at that level."

"And, that brings me back to the diving glove I found. I think someone must have come in under the domes towing a load of the stuff that's inside the system and shoved it in."

Tom was dismayed. If his father was right, that meant they had some saboteurs out to make the domed farm a failure!

Three days later, as he hoped, Tom came back down, this time in the *Sky Queen*, with a new filter system that used a wide mesh rotating basket to draw in water, spin it so anything solid would go to the outer walls, and from there it would be scraped off and down an exit port in the bottom of the basket. Anything small enough would be pushed back out through the mesh as it worked in a never-ending cycle of intake, rotate, scrape and jettison the bad stuff while only water came into the dome.

It took two hours for the team from Fearing to attach it and run a power lead down to the connectors. With a lot of what had been removed sitting on the nearby beach, Tom decided to give his system a test. He and three others dragged a large grouping of the seaweed out to the middle dome and took it underneath.

Try as they might they could not get the system to clog up. And, what came out the exit point was small enough it would not be an issue even if it fed back in. Those small bits would be filtered out in the regular system and ejected into the sea away from the water intake.

As he was stripping off his suit, Tom turned to Bud and remarked, “I hope this is the one and only case of possible sabotage we have. That glove dad found? Harlan tells me it is from a company in Puerto Rico. They don’t have any sales records but agreed it is one of theirs meant to fit a fairly large man’s hand.

Two hours later the domes began to settle into the water and all but disappeared three hours after that.

Tom spent another full day in the domes once they reached depth and checked and rechecked all the intake systems. This was made easy for the new filter as he had added an underwater camera to it.

There were no further incidents of seaweed and algae.

That is the way things continued for nearly a full month. The regular crew of five had dropped to four and changed twice—every two weeks—so the first team was now back inside.

With ALAN tending to things it was up to the human to check and balance the nutrients in the water, check growth rates and even test samples of each and every crop at least every other day.

Then came a video call.

“Tom. Damon. I think we have a problem brewing down in the sea farm. And, it might spell doom for the project.”

When the two inventors asked, in some shock, what it could be, Barney told them, “We have a plant virus that is weakening them to the point we’re looking at a potential loss of nearly ten percent of the plants. And, not over much time. As in they were looking okay last week, showed no signs of anything day before yesterday, and then Jenna and Bridgette spotted a reddish blotch on one of the plants and took a scraping. It was this virus and by about an hour ago that plant and all the others in close proximity to it had withered.”

“Dead?” Tom asked.

“Not yet, but we’ve quarantined them in one of the bio rooms. Jenna has spent the last nine hours straight in the habitable sleeve and your friend Bud is helping Bridgette with prepping slides for her examinations. I’d like to tell them to stop but I am afraid right now it is a matter of every hour counting.”

“Bud knows when to take a break, Barney,” Tom assured him. “He’ll probably take a few fifteen-minute rests when time allows. Hopefully your ladies can follow his lead.”

“Let’s hope so, Tom. Right. Even if we lose some of those plants

I'd rather it be them than our people," Damon stated firmly.

Barney's face nodded. "Message received, Damon. I'll pull them at the first signs of fatigue. I've got nothing else other than to ask if someone can come grab some samples and see what they can find."

Damon looked at Tom and a silent message passed between them.

"Okay. We'll get someone out from Fearing within the hour and then we know of a lab that can investigate down to the microbe."

When they hung up the two men played a little game of rock-paper-scissors. Tom lost and had to call his mother.

"Hey, Momsie. I was just calling to see how you are doing today."

"Bull pucky, my darling son. Mothers always know when their children are trying to soften a forthcoming blow. From the sound of your voice this has nothing to do with your father, so what is it you want from me?"

Tom laughed.

"Okay, you got me. Dad and I need your particular training and help." He explained about the dying plants and it appearing to be some sort of virus, but both the habitat and even Enterprises being ill-positioned to try to unravel the mystery. "So, we were wondering if you might make a call and get your old lab open and if we might get your expert biologist help on this?"

Anne Swift had a lifelong love of biology and multiple degrees including a Doctorate in Molecular Biology. As a leading light in her field she had been approached as a young wife with a proposal from the FBI. Work for them in a civilian and secret capacity several times a year to find solutions of some of the worst biological problems of the day. In return they would pay her a rather large sum of money, money her young family needed at that time.

She eventually took the position, solving more than sixty medical mysteries before she officially retired and her family could be told of her exploits.

Then, she retired again a couple years later after going back to it for a special investigation, and once again after another mystery solved and the setting up of special curriculum at a secret training facility.

Since that absolute final retirement she had taken on only three more cases finding that they were more enjoyable now that she

could tell her husband and kids about what she was doing.

"Well, Agent Narz is retired and his two successors have been difficult to deal with, but I'll see what I can find out. Probably have to go down to the bank to get someone to speak with me. I will let you know."

The bank was Merchants & Co. Bank downtown and was both a real bank and the disguise for the labs and containment rooms below.

She didn't need to go down to see anyone. Her first call was to the formerly secret number she kept on her private phone. As usual, she let it ring once, pressed a key and hung up.

Within the minute it rang in her hand.

"Anne here. Who is in the big chair these days?"

There was a pause and then, "Mrs. Swift? This is Agent Anthony Bahr. I am in what you call the big chair. As this is the private emergency only line I have to believe you didn't accidentally dial me or are having a little fun. What can I or the other people here do for you?"

She explained the predicament at the hydro farm. He listened and asked only two questions before asking if he could call her back within ten minutes.

"Certainly," she replied and wasn't surprised the line went dead.

When the phone rang again she answered. "Yes?"

"You may have nearly unlimited use of the lab for five days. After that we might be having another case coming in. Of course, if we could interest you in working that one as well, you could continue your other work if needed."

Anne thanked the agent, said she would entertain that should her work on the space plants need the extra time, and asked if she would be meeting him.

"Probably not. You see, I am not a human. I am an artificial intelligence entity residing in five or more computers spread around the country. There is no *me* to come meet you although I can be accessed via your computer at your workstation in the lab. A pleasure meeting you verbally, Mrs. Swift."

The line went dead.

When she called Tom and Damon neither of them was very surprised at the news.

"We've both heard rumors of an AI within the Government,

Anne," Damon explained. "I suppose this means either your agent is having a joke on you, or…" He raised an eyebrow.

"I dislike many of the real agents," Anne stated, "and now you're telling me I might have to actively hate some sort of robot?"

All Damon could do was shake his head. He love his wife and knew she could and would hold a grudge for years if she felt it was warranted, and she actively hated robotic things. That has started when a vacuuming robot he'd given her one Christmas sucked in and destroyed one of her favorite necklaces Sandy had dropped on the living room carpet.

It would be interesting…

CHAPTER 15 /

MOVING DAY NEARS

THERE WAS little else to do. The former *Sea Charger* lay at anchor in the waters off the longest island in the Galapagos chain, Isobela, and Tom and Damon were at the home of Evelyn Estes, the island nation's Prime Minister, on Santa Cruz.

She sighed. "It is a sad day to know you are leaving us, Tom. Having your space elevator has been a bit of a godsend to us. Tourists we used to have to watch like ill-behaved children were so awestruck we built the lookout at the north part of this island. At least we already had the road out there."

An older woman shuffled into the room. Tom knew it was Evelyn's mother and smiled and nodded at her. She had a sad look on her face as she approached them.

"*Sr. Swift. ¿Por qué se debe romper el corazón de mi hija? No puedes ver lo que tu máquina gigante ha significado?*"

"My mother is speaking out of turn and says—"

"I got the gist of that. She wants to know why I am taking the L-Evator away and says how sad it is making you."

Evelyn looked at her mother and hissed, "*Parar esto. Usted avergonzar a todos nosotros. No es suficiente todo lo bueno que nos han traído?*"

"We might have done many things for you and your people here on the islands, but we are still sorry to go, Eva," Tom said giving her an encouraging smile. He'd already explained the many reasons for the move, not the least of which was the importance of success with his hydrofarm.

She laughed. "You gave us independence from Ecuador when they decided to try to take control back. You gave us communications and medicines and the first dental care our people have ever had. My goodness, Tom and Damon, for everything you have done some people talk about renaming one of the islands—a small on to be sure—Swift Island."

Tom smiled. "Might I guess which one of the islands that would be?" he asked raising one eyebrow at the memory of a boat ride with Bud, Sandy, Bashalli and Eva to just off a small piece of land, and the skinny dipping in the warm ocean water they all did as none thought to bring swimsuits.

She blushed mightily and nodded. "Yes, Tom. *That* one."

Damon, looking a little lost decided to let that slide. Perhaps his

son might enlighten him at a later time.

"Once Tom proves the hydrofarm can work, and if you will allow us to come back, I would like to suggest we build our second one right here. We would build a second, less complex version of the High Space L-Evator using the existing anchor points but it would sink into the water to park against the underwater growing domes."

"We have nearly enough growing space now, but it might be wonderful to have an excess. Fruits would be a great favorite."

Damon leaned forward. "You could export what you don't require, but that might not be much. What you don't need we would send to some places like some of the remote areas of Peru. One of Tom's ideas is that we share a goodly portion of the profits from the food sales with the host country. That, in this case, being your lovely islands."

"And," Tom stated giving their ultimate sales pitch item, "we will want to hire a number of your people to tend the hydrofarm. Possibly as many as thirty. They would be good-paying jobs with medical benefits and insurance and everything."

Now, Eva—her shortened name for those she truly liked—smiled and her eyes became watery with tears of joy. She stood, motioned for Tom to do the same, and gave him a long and warm hug.

"It is nearly more than we might hope for," she whispered into his right ear. Then, over his shoulder and directed to her mother who was hanging around the side of the room, she said, "*Madre. Estos son verdaderamente hombres de honor!* You would do well to learn that in English, mother. These are men of great honor!"

"Is there anything else we can do for you? To repay you for the support you gave Swift Enterprises when a lot of the world seemed to be against what we were about to do in space?" This came from Damon.

"If I had a list and you had endless patience with us and more money than we deserve, I would have at least fifteen things to tell you, but only one is of great importance. We have grown accustomed to having the medical services of your doctors and the small hospital on the *Sea Charger* ship."

Everyone on the islands still called her by the old name and not *Sea Lift* as she had been rechristened shortly after being anchored.

"If there was only some way to build a small facility here on Santa Cruz. We now have the two helicopters you have provided and could go pick up injured like an air ambulance, but then

what?"

It was true. Of the many islands making up the Galapagos, only a few hearty souls lived on many of them, but now could communicate via telephone thanks to the Swifts. Also, now with five small hotels and several ships of tourists each month coming to drop anchor, it had been a boon to have the *Sea Lift's* medical facilities.

Although, one of the young volunteer doctors joked about performing more health checks and operations of the local animal population, it was a fact that at least two lives had been saved where before they would have perished.

The islands were so remote and the airfield—narrow and barely fifteen hundred feet long—could not accommodate any jet that could fly out that far other than the ones operated by Tom and his father. And so, without a local hospital, others would perish as they had done before the Swifts.

"Where would we put it?" Tom asked.

Eva thought a moment before she smiled. "Do you know the field that has all of those gray containers to the southwest part of town?" Tom had to think and then smiled. "Well, if you can picture it, to the immediate east of that is a field of trees and bushes, perhaps three hectares, what I think would be nearly seven and a half acres in your measurements, is unused and owned by the island government."

Tom described what he remembered to his father. It was not quite a rectangle and the roads to the north and west were dirt today, but overall it was just three or four blocks from the main road in the city and would be easy to get to.

"Yes," Eva agreed. "There is Española Street coming south to the field and then Indefatigable Street coming in from the east."

Tom looked at his father and made a rounded motion with his hands. Damon smiled brightly and nodded.

"Of course!"

Slightly confused and having been looking at the older Swift when the motion was made, Eva asked, "Of course… what?"

Tom explained. "We have a series of buildings that come to you all folded up and looking more like a giant fabric block. Then, we inflate them, fill a series of small tubes with a self-hardening material, and in about two days you have an empty dome suitable for building pretty much anything inside. Our Mars colony uses them as do many electrical companies and even a package delivery service dad helped set up in Australia. We would clear only as

much ground as we need for the building, parking, access road and a helicopter landing pad and leave the rest of the trees there, and pour a concrete slab for the floor before we erect the building. Then, and here's the nifty part, we can open one side and start building everything you need inside."

Damon picked up with, "Multiple floors, as many rooms and in the configuration you need… practically anything. Here, let me show you the video of that Australian building being erected."

He pulled out a tablet computer, searched for and called up a file, and turned it around handing it to her.

For the next three minutes she watched the time-lapse video of everything being done to make it the usable building it is today. When it was over she was sobbing quietly.

Damon took back the computer while her mother rushed over with a handkerchief.

"I am…" she began with her voice shuddering a little, "…totally overwhelmed by that. And," she turned a hopeful face to Tom, "you could make us a medical facility in one of those?"

"We can and will before we take the *Sea Lift*… I mean the *Sea Charger* away. I believe all that hospital equipment and the labs and such could just as easily be left behind as removed and shipped back to the States."

Eva stood up, smoothed her light cotton dress and walked to Tom where she took his face in her hands and gave him a very warm kiss on the lips. As Damon saw his son's startled reaction, he didn't see her coming and received the same treatment before he could say or do anything.

"I can offer so little in return for what you say you can do," she stated before looking at her mother and winking, causing the older woman to roll her eyes and leave the room. "I only hope those kisses convey my gratitude. And, before you leave here today I am making you both honorary citizens of this nation! Tonight we celebrate."

The Swifts excused themselves five minutes later but promised to return in time for the dinner Eva was going to give in their honor.

"Strictly informal, please. What you have on is fine. I will simply add my one and only string of pearls to this and put on high heels."

As they walked down the street to the small airport, Damon asked Tom what the kiss was all about.

"I honestly do not know, but she has always been a bit of an enigma here. And a demonstrative person as well. Like a tall Stefanie."

"Yes… well, right. Uhh, let's not tell your mother, or your very own wife for that matter, what happened. Okay?"

Tom stopped and turned to face his father. "Gee, Dad," he began innocently. "Are you saying we ought to keep a secret where the nice lady kissed daddy all over his face from mommy?"

Damon socked Tom in the shoulder and walked on. Tom caught up laughing. "Face it, Dad. You are a chick magnet. First, Lady Penny down in Australia and now Eva, the head of the government here on these islands. Wow!"

From the side of his mouth Damon said a rude word and then laughed. "I can think of several times sweet young things have thrown themselves into your arms, Tom. So, you don't tell and I don't tell. Deal?"

As they walked Tom reached over and shook his father's hand. "Yeah. Deal. Good thing she doesn't wear bright red lipstick."

At the *Sky Queen* they had to make several calls to arrange for some things to start happening, including a call to Jackson Rimmer to say everything in the Galapagos would be just fine and there would be nothing "to be handled" from a legal standpoint.

Tom contacted the Major in uniforms and told her there was about to be a need for a specialty habitat.

"It will likely be a rectangle with as straight, vertical sides as you can manage with what will be two floors inside and I'm guessing about twenty or so windows. I'll come up with the basic design and we can haggle over what can be done fast over what can be done right. If we get this settled in two weeks, what sort of schedule are we looking at?"

Marjorie laughed. "You design me a mostly square sided habitat that I can repurpose for a five-dome project for Mexico and I'll put yours at the top of the list. Design in two weeks? Habitat in five. Just, please no more underwater domes for a few weeks! We are getting very good at those things in case you haven't noticed."

Tom was a little stunned. "Uhh, Major? Don't I tell you how impressed I am enough?"

She giggled like a young girl. "Sure, Tom, but a woman likes to hear she's appreciated as often as possible. But, back to the project, I really think that if the longest dimension is under two hundred feet we can turn it out in three weeks."

He made two more calls to assure himself the other necessary supplies would be ready at the same time.

The foam would be easily available as would all of the needed tubing to be sewn in place. What might not be ready were the many building supplies to make the interior. Their normal supplier said it might take as many as four weeks once the order was placed to get everything for a structure sufficient to provide hospital-like services including a fully-sealed operating room and a clean scrub room

"We'll do our best, Mr. Swift, but the sooner we get the plans the quicker we can pull from stock what we have and manufacture what we don't have right now. As before, you'll get everything bundled sufficient to fit on your large cargo pods of that monster *Super Queen* jet of yours."

Tom's final call was to the Captain of the *Sea Lift*. Although hints had been made they might be moving, that had been going on for more than two years. Now he had to tell the man they were probably coming true, and to ask him to prepare for departure in a month or so, and to break down the hospital onboard and get things shipped over to Santa Cruz.

"You know, Tom, that even if you don't move us it would be a real boon to not have to service the entire nation right here on the ship. Pretty much everything we do for the crew can be handled in our modest Sick Bay. So, you want the hospital moved out, we will do that with joy!"

Tom changed into a less sweaty shirt and met his father at the side hatch under the port wing. Damon, too, had a clean and dry shirt on and had, Tom noticed with a twitch of his nose, shaved and put on a light aftershave.

"I suggest we have the small electric runabout we brought hauled out of the hangar and drive over," Damon stated. Tom agreed and a quick TeleVoc to Zimby who was having a rest in the lounge got things rolling. Four minutes later the hangar doors opened and the ramp extended. The little two-seater came down with Zimby himself driving.

"You to the ones called for the micro car?" he asked pretending to snap at a mouthful of gum.

"Right here, young man," Tom said holding up a hand. They climbed in as Zimby got out and drove off with the pilot waving at them. Two minutes later they were nearing the house and Zimby was getting ready to get back to his resting in the lounge.

Eva met them at the door in an entirely different dress. She tried to look as if she'd never suggested they all remain in their

other clothes as she held the hem of her summer dress out and twirled.

"This is my official 'Eva is going to have fun and let her hair down' dress. I hope you both approve!" She gave them a warm smile and closed the door before taking them to the living room off the main entry. There, four men and two other women they both recognized as being the various ministers in the island's government were sitting and sipping tall, iced drinks festooned with pineapple slices and banana spears.

Following the obligatory shaking of hands and greetings, Tom and Damon took seats and accepted drinks of their own.

"Those are *La orina del diablo*, which I will not translate for you as it is rather an unpleasant play on words," Eva told them, "but they have been tamed down for you, our guests. Instead of the traditional alcohol distilled in the hills, this uses a civilized rum."

They all talked and had a wonderful time until Eva's mother came out from the kitchen and made a motion toward the table.

"*Mi madre, el chef, me dice que es tiempo para nuestra cena*," she said to her ministers and translated it for the Swifts. "Mother says soup is on!"

It was a delicious meal of a roasted goat that had been slow-cooked wrapped in local banana leaves and also some spices Tom was not familiar with. He'd have to ask Chow about them when they got home.

By the time the dessert, a sort of milky tapioca with concentrated cane syrup, arrived, Damon was beginning to wonder if the elephant in the room was going to be mentioned.

Before anyone could dig in, Eva stood and raised a glass in the air. "To my honored guests and my friends, and yes, to you as well, my mother who is listening at the kitchen door… I propose a toast to Tom and Damon Swift, the men who gave the Galapagos Islands a new and long-lasting lease on life as a free and independent nation. Our hopes are they shall return as friends as often as they can, and we thank them most sincerely, for the hospital they say they can bring to us in the very near future." She made a little bow to them and straightened as the others agreed.

"Cheers to Tom and Damon Swift!"

Within a half hour everyone else departed giving hugs and handshakes to both the North Americans.

Finally, it was just the three of them sitting in the living room with fresh drinks, this time iced herbal tea, with Eva sighing occasionally and smiling.

"I have to tell you both that I have had just enough alcohol to go back to our favorite swimming place, but I shall not mention it to you as I know it makes you both uncomfortable. So, instead of that…" she said standing up, "if I were to put some interesting music on the stereo might I entice both of you to dance one dance with me?"

Seeing them looking at each other unsure how to react, she added, "Father first and then son. And, one dance apiece."

Damon, the more diplomatic of them, nodded and smiled. "We would be delighted, Evelyn."

She thought about asking him to be more familiar but decided against it.

The two dances were slow ones and she was both an amazing dancer and a great follower as if she had been both their dance partners many times in the past.

When the music stopped and Tom stepped back, he reached down, took her right hand and kissed the back of it.

"Thank you, Eva, for everything, I promise we will move forward with the hospital and anything else we can think that might improve… no, *enhance* the lives of your people."

She had a "look" on her face that told them she did have something on her mind but wasn't certain she ought to mention it.

"Go ahead," Damon prodded her. "Ask. We can always tell you it is impossible."

She walked back to the sofa and sat down. They joined her. "The women of these islands see all of the fine clothes the tourists come in, and on the Internet when they watch western television programs, and are jealous. 'Why can *not* we order those things?' they ask, and all I can tell them is that it is nearly impossible to ship things here before the next change of seasons. And, *muy* expensive. So, and it is okay for you to say this is too much, but could you help us set up a delivery address in the US and then fly things down to us at least once a month?" She bit her lower lip and looked like she expected them to either laugh in her face or shout at her.

They laughed, gently and Damon told her it would not only be possible, but he would assure her that if her people bundled their purchases he would get them down every three or four weeks along with resupplies for the hospital.

Tears of joy cascaded down her cheeks as she first took Damon's face between her hands and delivered a kiss and then the same to Tom who knew what was coming but decided that he

honestly didn't mind it as much these days as he might have a few years back.

He also had an epiphany in that he now fully understood how you can have great feeling for a woman who is not your wife and that it should not make you feel guilty as long as you knew you would never act on an impulse.

On the drive back to the *Sky Queen* he said, "Dad? I now understand the whole thing with Lady Penny down in Australia. I will never give you a bad time about her ever again. Oh, and thanks for making Eva a very happy woman. She stepped forward when we needed her, and them, and I'm glad we aren't just dropping them like a hot rock now we're taking the *Sea Lift* and the L-Evator to another location."

Damon gently rested a hand on Tom's forearm. "It's the way I was brought up and the way my father was, and his father and I truly hope, and believe I see, that you will be bringing up Bart and little Mary to be honorable people who value friendships more than money and power!"

CHAPTER 16 /
NOW… A MAN, A PLAN, A CANAL, PANAMA!

THE *SEA LIFT*, approached the outer reaches of Panama City at the eastern entrance to the easiest and quickest way between the world's two largest oceans. Before them were nearly fifty other ships all readying themselves for their time to enter the Panama Canals to traverse to the Atlantic Ocean.

With the addition to the original locks and canals of the larger, wider canal set constructed over a decade earlier, and the newest super canals using even wider and fewer locks systems, it was possible to have up to three ships entering at nearly the same time. Smaller ships took advantage of the shorter locks and cycling times to move ahead of their larger cousins, and the largest of the large slipped between them and the other ships by virtue of entering a lock, rising or falling, and then steaming ahead sometimes as many as five miles before they encountered another place where they had to change elevations.

It was a constant ballet of ships, little mechanical "donkeys" to pull them into and out of locks, and pilot boats for them to follow as they crossed the expanse of Gatun Lake before reaching the eastern locks and exiting at Colon.

The High Space L-Evator had been reeled in up at the top bringing that point down to just fifteen hundred miles out, and a platform added with a ring of solar collectors and repelatrons to keep the now shortened tether and its cargo up where it needed to be… and stable. Without those changes this move might have been impossible.

"Stand by to go to GPS hold," the Captain shouted to the control room crew. The word was passed throughout the monster ship and a minute later a button was pressed placing the ship in the hands of the computers and satellites—including the older Outpost in Space—that now controlled her small maneuvering and main engines.

"Tell Panama Control we are now ready for their lock on," he said to the duty radioman standing to his right. The man walked back to a control panel, picked up a handset and made contact with the control radio center.

"Canal Control, *Sea Lift,* relinquishing control to your systems. Please acknowledge."

"Roger that, *Sea Lift*. Showing all green lights. Panama Control has *Sea Lift* under our control. Please adhere to the following…"

and the man rattled off fifteen rules and requirements, each one on the paper the Captain had in his hand and each one fully understood by all seafaring men and women involved in such a crossing.

In the end, the radioman said, "*Sea Lift* copies and her captain makes formal agreement to your list. Advise when we might expect to enter the first lock."

A moment passed before the answer came back.

"You are number two for the super locks. You will be maneuvered into position starting in fifteen minutes. We will give you a five minute and one minute warning. Out."

"Well," the Captain said to Tom and Bud, "that's just about that. I guess nothing surprises them these days or else they'd be asking what the heck we've got at the end of the cable that goes into the sky. Anyway, this new computerized process of theirs may have costs ship builders and owners a pretty penny to install, but it keeps constant control of every ship inside and outside the canals, stages them with an exactitude never possible before, and shortens the traverse time by between two and five hours, and in some cases that can be a saving of upwards fifty thousand dollars in time savings for one of the super cargo ships!"

"Why the difference?" Bud inquired, intrigued. "Ship size?"

"Only partly, Mr. Barclay. Ship size determines which of the three canal systems we go through and that determines how many locks and therefore how long it takes. All sorts of spacing and timing issues. I can't imagine the headaches they used to have."

Tom chuckled. "The one time I spoke with another ocean-going vessel he said it was a nightmare whenever one ship had any sort of mechanical problems. Everything had to stop while a team of people figured out what was being impacted and what could continue on, and for how long. I guess 'nightmare' doesn't half cover that." He looked around the room before telling the ship's commander to give him a call once they actually entered the first lock.

"First lock, Mr. Swift, or enter the first canal? There's a difference of nearly twenty minutes is why I ask."

"First canal, then. Thank you for letting me know about that."

Tom and Bud no sooner had reached the wardroom and poured themselves coffees than the Captain had them tracked down.

"With compliments and apologies, sir," the young man told Tom, "the Captain asks that you come back up and take a look at something rather interesting."

On the way back to the bridge Bud asked Tom what it might be.

"No idea, flyboy, but if the Captain thinks we ought to see it, it should be something good or else he'd mention what it is."

They stepped back onto the bridge a few minutes later.

"Come and take a look at a phantom ship," he invited indicating they should follow him to the starboard command wing outside the actual bridge. "I've had the bos'n set those glasses and lock them down. Take a look and tell me what you see."

Tom stepped up and peered into the eyepieces. He fiddled with the focus a little and brought a series of small powerboats into view. Each one was stationed at a specific distance from another one, front to back, and with a similar boat to one side at a much closer range.

He stepped aside and let Bud take a look while he examined the grinning face of the Captain.

"I'm seeing some really big shadows under those boats," Bud stated. "Not at all in keeping with their size. Is that it?"

"It is. Now, let me tell you that neither those small boats nor their shadows officially exist. But, they will be in front of us for most of the rest of the crossing, so I wanted you to know about them. Six speed boats with six shadows, and those shadows are all nuclear submarines!"

The flyer's face shot up from the eyepieces. "Jetz!"

"Indeed," the Captain stated. "And, it is something that only happens about once a year and never at the same time or date. Never announced and never officially acknowledged, but we received the order, 'Spacing,' from Control and our engines slowed us down in time to have that little group slip around us and get ready to go in ahead of us."

"Any idea where they are going?" the inventor asked.

"Nope. Just a little move 'em around exercise to keep the other guys from knowing where each of them is. Plus, I suppose it gives the tube jockeys a chance to experience other waters than what they usually cruise around in."

A minute later the speedboats each put out a little wake behind them as their twin outboard engines churned up water getting them underway.

Tom and Bud found out those boats were attached to their shadows by heavy lines and their single occupants were tasked with remaining directly above the back end of the sub's sails so if necessary, periscopes could be raised just in front of them and,

hopefully, not up through the bottom of the boat.

There was a lot of radio chatter having mostly to do with the *Sea Lift* and what was running up from her and into the sky. Some of it speculated on it being some sort of super spy ship while others claimed they knew it to be dragging along an invisible floating military base.

Finally, and with Tom's permission, the Captain contacted Panama Control and asked to be allowed to address the nearby ships with the truth. It came, somewhat gratefully, moments later.

"Okay, all you loose-tongued sea witches out there," he said into the microphone. Listen up good. This is Thackery McMurphrey, Captain of the *Sea Lift*. A bunch of you ladies ought to recognize us as we've been plying the oceans for more'n eight years. We used to be named *Sea Charger*. Look it up. Anyway, what we have on the end of the tether stuck to our deck is the space elevator built by Swift Enterprises a few years back. She's being repositioned today and there is nothing mystical or forbidding or even much secret about it! So, stop yer yammering on the radio, give the fine folk at Panama Control some quiet, and spread no rumors!"

As he hung up the mic Bud asked, "Will that take care of it?"

"Not a lick, but it'll shut them up for a bit and take all attention from the phantom boats out there. In the old days we could hope for a small collision to take everyone's minds off such things, but not today."

Tom thanked him and was about to head back down when they all felt the engines speed up.

"*Sea Lift*? Control. Sorry for no notification, but you were broadcasting. We are at the end of your one-minute warning and you are now heading in. Keep your bridge manned at all times in case of emergency, *only*! Be aware of your spacing and do not try to fill in any gap. Over."

"Wilco, Control. Many thanks!"

"And, to you, Captain."

And, that was it. With no other fanfare the *Sea Lift* started forward to enter the newest and widest portion of the Panama Canal.

The only incident occurred when, partway along the first long canal after lock and lift one, a number of off-duty crew personnel lined up at the forward deck of the ship with cameras to record the strange site of the small boat flotilla and their invisible friends.

That got the Captain a radio call to stop them immediately, and he passed that along to the crew with a warning.

"Any one of you even so much as opening a porthole or hatch in the front of the ship and taking photos will be demoted and have your phone or camera confiscated. For crying out loud, people! Grow up."

Seven hours later the *Sea Lift* had to shift from the newest, wide set of canals to the ones built a decade earlier. It appeared that one of the submarines was having an engineering problem that kept them in the last giant lock, and it would be so at least through the night. Fortunately, cross canals had been part of the design.

Captain McMurphrey had all hands muster at their work stations, even those who were supposed to be sleeping.

"We have a huge task in front of us," he told the crew over the P.A. system. "We draft just five inches less than the depth of this lock we now have to get through, and will have less than two-inches of horizontal space between us that the concrete edges until they flood the tank. I do not wish to test which is the stronger, so anyone not specifically at their duty station once we enter will get off and line the two sides. You will space yourselves no further than fifteen feet apart and will be carrying several special polymer sheets. Those sheets have handles and lines attached to them, and you will use them to place the sheets between our hull and the canal quay if things get too tight."

He paused and looked at Tom for verification. The inventor nodded. "You will all be on your TeleVoc pins and I want every eye watching for deviation in spacing. Call out immediately if we are off one side or the other. The donkeys will be dragging us extra slow but I still want *zero contact*, as in *no touching*. I hope that is clear to all. Now, we'll be pausing in five minutes so get to the port gangway ASAP. I'm having it slung over to the dock at outside port hatch one-ninety-six. That is all."

Turning to Tom, he stated, "I hope we have this right. We can't get ourselves jammed up in here."

Tom smiled. "Unless their measurements are off, and Bud and I intend to de-board and find out, we will be safe. Slow as heck, but safe. Bud?"

"Yeah, Tom?"

"Run down to the Navigator's office and tell her we need to borrow the laser measurement setup. Then, you'll take the port side and I'll cross over to handle the starboard side. We'll synch the lasers and make certain that the canal doesn't get any

narrower along the way."

With the crew departing the ship and readying themselves, the two young men from Shopton hauled the twin devices up three decks and down the gangway.

As Tom crossed over the lock that was still closed in front of the ship, Bud examined his set.

Looking like a cross between a handcart and a small ground penetration RADAR unit, with a tiny bit of metal detector thrown in, a flip-down panel would hang over the edge of the concrete wall, snug up against it. The unit, totally self-powered, would begin to move forward as soon as both of them were connected by cross laser beams and radio. Then, at an excruciatingly slow pace of just under twenty feet per minute—and they had to travel a full two thousand feet—the two machines would measure their distance from each other to the quarter millimeter.

He looked up from his bright red rig to see Tom halting directly across from him.

Both took initial measurements back to the inside of the lock gate and the flyer was informed he was nearly a full foot ahead of Tom, so he backed himself up.

His TeleVoc announced a call from Tom.

"Answer... Yeah, skipper?"

"I hear the donkeys will be here and hooked up in about twenty-three minutes. What say you and I go ahead and start. Anywhere we spot things getting tighter, be sure to use that washable paint to mark it."

Bud looked down to see he had two spray cans of the paint that would disappear during the next good rain.

Twenty minutes and nearly three hundred and seventy feet away they found the first sign of trouble. A metal collar ending one slab and starting another poked away from the wall and was nearly an inch-and-a-half off.

"What'll we do?" Bud asked.

"We call the Canal Master, Bud, and get him out here. Pronto."

I meant an hour delay waiting for the man to arrive; he had no clear concept of the tight fit it was going to be between his canal and Tom's ship. Once on site he muttered a prayer under his breath, tried to smile the trouble away, and then made a hasty radio call when Tom reminded him it would be the Canal's responsibility should anything happen to his ship.

Thirteen more minutes were lost while a small crew of

Panamanian men ambled out of a building and took their time getting to the site of the problem. Then, with just a few words in Spanish Tom recognized as containing, “fired,” and “useless,” and even “your mother,” they picked up their pace. They soon had a winch set up attached to a deeply embedded metal post thirty feet back and then to a hook they set against the errant steel piece.

Three minutes later they turned the power winch off, disconnected everything and were about to go back to their afternoon rest, except the Canal Master told them to stay put.

“If this fine Señor finds anything else you must have it fixed pronto!”

The two rechecked the now “fixed” area and declared it to be sufficient, then started out again.

The *Sea Lift* was now following them and the crew were stationed all along the walls with their hull-protecting sheets at the ready. No further issues with narrowing were found, although nine different places were between a few millimeters and up to five-inches wider.

They packed up their equipment and one of the bo's'ns mates offered to have it taken back onboard and returned to the Navigator for them.

After thanking the man, Tom and Bud climbed, one at a time, onto the lowered supplies platform that dangled over the side from the forward catwalk on the deck below the top one.

Two more hours were required to declare the ship to be fully positioned inside the lock, lift it to the new level, and get ready to exit. After that they were in the wider Pacific open canal getting ready to unhook from their faithful donkey escorts and from there to head out to the open lake.

Nothing else went the slightest bit wrong and they soon found themselves practically racing through the western locks and entering the Atlantic Ocean.

Several small boats pulled along side only to be sent away with their overpriced souvenirs and local foods of dubious origin.

As soon as they were in open water, Captain McMurphrey called for full speed ahead and the ship began the moderately slow process of moving from about three knots to its top speed of twenty-six knots. Thirty-eight percent larger than the biggest aircraft carrier and not as fast, it could still run with a lot of the world’s fleets.

Maritime law and Tom’s sense of safety kept them in the deeper water until they were due north of Santa Marta, Columbia at which

time they turned to zero-nine-zero to traverse until they reached north of the small Netherlands Antilles islands, their landmark for another course change.

Captain McMurphrey suggested it might be nice to cruise past the southern tip of Grenada or even farther to the south just to see what the waters were like.

Tom countered that with a suggestion they travel even farther down to the northern part of Trinidad and Tobago.

"I want to check something before he head down to the location I've secured for us. I sort of owe it to dad."

The big ship halted half a mile off shore and dropped anchor. It was approaching late afternoon on the ninth day of their journey and Tom wanted the crew to take a few hours off. While they sat stationary, he made a check of their "kite."

Much to his happiness very little power was being used by the repelatrons now they had halted. It gave him pause to think a few minutes before he placed a call back to Shopton.

"So, Dad, we're sitting off the north side of Trinidad and I've had a thought. You know I'd planned to take everything down and farther around South America and to that spot we've been given permission to anchor the L-Evator off French Guyana?"

"Of course I do. And I recall you originally wanted to anchor the entire ship there and I talked you out of that. So, what is this revelation of yours?"

"Okay, here goes. We've got permission to take over the salt marsh area to the west of the airport in Port of Spain, and that resides over the top of some pretty shallow solid rock. Rather than take the L-Evator a thousand or more miles farther away, do you think we might arrange to anchor it here and cut out a lot of travel time for everything?"

He mentioned the low power usage keeping the top of the unit in space.

"It has one other pretty big advantage. Almost nothing in orbit crosses the area directly above that anchorage point."

"Hmmm? It is going to take a bit of discussion with all the airlines that fly into that airport, but if we can get that permission I can't think of a reason to not do that and save both us and your Mr. Carr many millions of dollars and Pounds Sterling!"

"Then, here's the good news. The spot I would want to use is more than a mile south of the incoming and outgoing flight corridor. All we have to do is get everyone to agree to extending

that out perhaps five miles to the west and we are safe."

His father agreed to get right on it the next morning, "...once I can get with Jackson to have his legal mind on this. In the mean time, are you going to at least go check out the other location?"

"Yeah, I guess I should. We're going to remain at anchor tonight but will head down at sun-up tomorrow. I'll wait for you to call unless I find something."

The next morning the anchors were drawn up and the ship began her continued eastward journey. The Captain kept them heading due east for two hours before coming right to course one-four-zero. They stayed on that for a day and seven hours then made their final correction to take them directly to the proposed new home off the southern tip of French Guyana.

It would not be directly on the equator, but Tom originally felt it was safer there than off Brazil where it might interfere with their space launching facility.

The inspection of the site was made with a Whirling Duck helicopter as the large ship could not get to within sixteen hundred feet of the shore.

It looked good and so Tom asked the Captain to maintain his position for the next week to ten days. "It is looking nice, so far, but I may have another plan."

Besides which, as Tom had explained to Bud before they flew off the deck the following morning and headed back to Shopton, at only about five degrees of longitude above the optimum line, the other location would still be stable enough for the space L-Evator to operate when necessary.

"You really think it is going to be necessary to have the elevator down here?" Bud asked, his father asked, and Hank asked on separated occasions during the ensuing three days.

Tom had only shrugged in answer to each of them.

When Hank asked about the use for the L-Evator Tom told him, "We've already uprooted it and have moved it. We know that the very best crops we can grow get one heck of a strong start if taken up into space for a few hours. We haven't been able to duplicate it using known light sources, but there is something about exposure up there, within the Van Allen Belts' influence, and about a thousand miles up, that does the trick. I only want us to get the best out of the available space we have in those domes.

"And, while we enjoyed a pretty good set of weather conditions at the Galapagos, the relatively shallow water at the mouth of the river that separates that new location from Brazil, and that

wonderfully placed fist-shaped spit of land, it would be nicely protected. Heck, they even asked if we needed them to clear some of the rain forest for a landing strip. I had to tell them we not only do not do that sort of environmental damage, our intent is to provide out own."

That location really was *mostly* ideal. With the *Sea Lift* being repurposed again a small floating airstrip would need to be created. The nearby L-Evator cables would mean a slightly more tricky landing for small fixed wing aircraft, but helicopters and seacopters would have no troubles. What the location had to offer most was both the protection as well as nearby deep water. Just eleven hundred feet off from their possible anchorage the shallow sandy area dropped by nearly nine hundred feet. It would be possible to build an auxiliary docking station against the side of the L-Evator's landing dock to allow for the supply seacopters to come in to load and unload their seeds and seedlings as needed.

What it had against it was the distance to get anything to and from the islands where everything was needed.

In a combined meeting, all three men asked if Tom's plans were to run his HydroWay train down to the ship.

The answer to that was "No. For the size of what we will transport between that site and Trinidad, I think our two largest cargo-carrying seacopters would do. After all, this would not be a daily trip for them. Perhaps a couple runs over two days or so before every planting season to take things up and then a repeat as they come down."

"Right," Damon said in a tone speaking of his reservations, "and with literally dozens of planting schedules…? He left the rest unasked.

Tom looked at his friends and his father. "The thing is, I now feel this new location isn't going to be necessary. It is everything I'd believed, but if dad and Jackson Rimmer can negotiate for that eight acres of unused salt marsh land on Trinidad, that is the much better spot for it. Besides, it puts the L-Evator within a half mile of the processing facility!"

CHAPTER 17 /
THE FARMER IN THE DOME

FOR A VERY small amount of money, the local Trinidadian government was glad to allow the Swifts to lease the area of land they wanted. The accompanying extension to the narrower landing and take-off corridor also fit well within their own plans and desires.

"We have wished to keep noise levels down over a few of our residential areas and the current rules allow jets to make their initial turns starting less that one thousand feet from the end of the runway. They overfly many homes at a low altitude running at full power causing daily complaints. We are completely behind you on this."

The Swifts would be widening and making improvements on a dual carriageway that had never been completed, Chaguanas Main Road, that would go from the anchorage and landing site out to a main street and would take them to the processing facility.

With the first of the earliest crops getting ready for harvest, that facility was nearing completion. When the government saw Tom's plans for the proposed inflatable structure with all the solid walls and partitions inside, they had told the Swifts they would prefer to have a traditional building and so had, at mostly their own cost, erected a fifteen thousand square foot building that would provide room for all the proposed equipment as well as for some level of future growth.

Now that was all coming together, so the people of Trinidad who would be working there were being trained in all procedures from hygiene to careful handling of all items. Everyone was told that one bruised fruit or dropped bag of grain could mean the difference between some people eating and some not. Since they had gone through their own period of near starvation a few decades earlier, they all nodded their heads and promised they would take extra care.

"Besides," as the trainer from Enterprises told them, "we are not talking about making you perform to quotas on foods from many, many farms. Just a steady supply that may change from day to day, each with their own needs. Nobody rush and everything ought to be fine."

On what Tom called "Separation Day," the repelatrons were turned up to nearly full power so they were supporting the entire L-Evator structure plus the one thousand miles of cables dangling down through the atmosphere—everything else no longer needed

had been detached by a crew using the *Challenger* that then hauled the surplus materials up to the geosynchronous orbit of the older Outpost in Space where it would be stored several miles away.

Now with the L-Evator system holding itself up, the cables that had been connecting it to the *Sea Lift*—recently moved just off the western shore and within a quarter mile of the new anchors—hung a hundred feet over the ground and the entire unit was carefully guided by Tom until it was directly above the new location.

Six anchors had been driven two hundred feet into the bedrock near the edges of the property and their shorter cables stretched over to a central and much larger anchor that would be the point the space cables attached. Six teams manned the outer anchors and Tom, Bud, Hank and eleven men from Enterprises stood by the center point.

One by one, the six anchor lines were threaded through the central distributor and hauled to their individual anchor points using a local farmer's tractor. Each one reported completion of the anchor attachment within fifteen minutes.

Now, Tom lowered the central cables and the platform's landing station. Those were attached to the center point and the entire structure was tested by turning up the repelatrons to full power.

Nothing moved even a fraction of an inch, and Tom was pleased. He returned the repelatrons to their "station keeping" power levels and walked back about a thousand feet to admire the sight of the twin cables heading into the afternoon sky.

A minute later small lights flashed on and off showing any pilots, even by day, where the cables were.

He looked down to find Bud standing a few feet away.

"It's really awe inspiring, skipper. Kind of takes my breath away, you know?"

The inventor chuckled. "Yes, Bud. Believe me, I know."

After a few more minutes they walked back.

"What's next?" Bud inquired about half way.

"Well, tomorrow the *Sea Lift* gets her old name back, *Sea Charger*, and she heads to Fearing for a small refit to get some of the L-Evator junk off her decks, grind off some pieces that got welded to her, and readied for her next adventure to the South Pole, according to dad. After that we have the landing platform attached to the center anchor point and the elevator system to take

people up the fifty feet from the ground to get built."

The following day saw a quiet renaming ceremony with the traditional bottle of champagne being broken over the *Sea Charger's* bow dangling from the bottom of a Whirling Duck helicopter. Both Captain McMurphrey and Damon Swift swung the bottle. Then, with little else other than a triple toot of her signal horn, the anchors were brought up and she sailed north, disappearing around the small western islands at the top of Trinidad an hour later.

Within a small building on Puerto Rico sat seven men and one woman in an even smaller room. None of them smiled or spoke very often other than to nod their agreement to things told them, or demanded of them, by a man sitting on a small platform in front of them with a partition between them, hiding his identity.

They were willing to do as he asked in return for the luxuries they enjoyed, even following hurricane damage and earthquakes. Where their fellow citizens suffered, even to the point where the island had declared bankruptcy three times in the past fifteen years, any damages to their property had been repaired on a priority basis and their lives went on. When the local banks cried out they had no more money, these eight people sat happily in their homes or offices secure in the knowledge their monies had been removed and safeguarded by the man at the front of the room. Or possibly by people he reported to. Nobody knew.

Exactly who he was remained a mystery to them. There had been another of them once, but he had become curious and disappeared... and the identification of the man before them remained unknown.

Nobody else showed the slightest bit of curiosity now.

"We must either put a stop to this, or discover a way to take it over. Just when I had the countries supplying them food cut them off, and believe me that cost me a pretty penny, now comes this upstart Swift and his miracle domes full of food! PAH! Find a way to discredit Tom Swift and his efforts or do not come back to me ever again. Do you understand me?"

They all mumbled their agreement and left the room and the building as quickly as possible.

Tom told his father and wife he wanted to be in the domes when the first of the early crops was to be harvested.

Damon told him to have a good time but had too many other

items on his work slate. Bashalli asked if she might come along.

"I know that will mean that if Bud comes, Sandy will want to come along, but she has her regular work and told me just last week that Mr. Dilling is getting upset with her asking for days off. She used up all her vacation time on our Barbados trip and even went into deficit by four days."

"Yeah, Sandy isn't the best one for portioning out vacation days. Don't tell her this, but dad once told me that he believed she'd have been fired long ago from any other job other than being here at Enterprises. She wouldn't have to work except she also can't control her impulse to buy things. Bud's salary just can't keep up with his wife's ability to spend it. I guess you can come, and I really want you to see how wonderful it is down there, but I'll need to see what dad can suggest as far as she is concerned."

When he brought the subject up the following morning, Damon set his coffee cup down and snorted.

"Maybe it will do her a world of good to have George fire her, or at least give her the ultimatum of going and losing her job or staying and working to earn back the time off she has already used but not earned. Your thoughts, my responsible son?"

Tom thought a moment. "I don't want Sandy to resent Bash and her ability to pick up and go—pending having the grandmothers wanting to take Bart and Mary, that is—but Sandy really does have to finally grow up a little. You say I'm responsible, and I suppose I am, but she never had the advantages I had. Like working from an early age or even going off to find herself at college. And, yes, I know it is a little late for her to be Sally Coed, especially if she went anywhere out of town, but she missed out on a lot of growing up experience by hanging around Shopton."

They batted that hot potato around for a few more minutes before Damon picked up his phone and called George Dilling to ask him his opinion. With it all on speakerphone, Tom heard the Communications department director.

"Damon, I love Sandy like a daughter, but she frustrates the dickens out of me. I'd hoped she would settle down by now but she's like one of those birds that sees a shiny object and everything else flies from her mind. If I fired her, she'd hate me, you know. And, once gone she couldn't come back to work for me. So, I am at a loss for what to tell you other than I can't keep sending her on trips just to cover for her not getting to go everywhere her husband goes. Besides, I'd like to go to places like Paris and Berlin!"

"Okay, George. I'll leave it like this. She's going to come ask for time off. You tell her not this time. Mention the overused vacation

time. If she balks, give it to her straight that she can leave but will not have a job to come back to. You feel bad about that but this is a business. That sort of thing. I'll back you one hundred and ten percent."

Once they hung up he turned to Tom and took a deep breath.

"I do not relish being at the end of her storming in here with the indignity of everything and the, 'How can you let that happen, Daddy? You're the boss,' and all of that. It might just drive a wedge between us that I don't want, but I do so need for your sister to grow the heck up."

However, it never came to a head. When Bud announced the forthcoming trip, Sandy asked if Bashalli was accompanying Tom, and when told she was, she shrugged.

"I can't go, Bud. I hate it, but I don't have any time I can take off. Can you do without me?" Her lower lip trembled and a tear threatened to leak from her left eye, but she held herself together.

Bud took his wife in his arms and held her for a minute before saying anything. "Tom sort of needs me, but if it will make you miserable, or worse yet resentful, I'll tell him I can't go."

She pulled away from him and smiled. "No," she said a bit sadly. "You go and I'll stay here and earn another six minutes and eleven seconds of time off. I'll be fine. And, I actually have a project I sort of forgot about and need to get turned in by next Tuesday, so I'll be very busy. I love you, Bud, so never think I could resent you or Tom or daddy or even George if he someday gets tired of me and gives me the boot. I'll probably deserve it."

The trip began the following morning with a flight to Fearing and then a seacopter flight to the waters off Scarborough Island. It was Bashalli's third time in a seacopter and she was enthralled by the wraparound front control panel and the curved monitors that had replaced the direct view tomasite windows a couple years earlier.

Then, as they sank into the waters she let out a little squeal of delight on seeing the lush plant and sea life all around the sea shelf surrounding the island. When Tom turned them toward the domes and pointed the front downward, she gripped his shoulder so tightly he had to pat her hands and ask her to release them.

"I need full blood circulation, Bash. But, I understand your feelings. It is truly beautiful and otherworldly out there."

"Sorry. I wish Sandy—" She stopped as Bud came out from the kitchen area with three heat-and-eat portions of Chow's spaghetti.

"Yeah, I wish Sandy as well, Bash," he told her handing her one

of the containers. “Strange thing about how she all of a sudden got mature on me. Good, but spooky.”

He’d told them of her change on the trip to Fearing Island.

“So,” her husband said as they arrived even with the bottom of the domes, “here’s where we get to rise up inside, but we will have to stay in the seacopter for about a fifteen minutes while pressures are equalized. Good thing flyboy made us lunch. Oh, and it will be double that when we come back out. Just so you know.”

The time was spent in conversation with Bashalli telling them about the latest Bart and Mary story.

“Because his vocabulary is growing by the day, he figures she ought to be able to speak at the same level. She barely gets out ‘Gaaaaach’ before drooling and smiling and he’s trying to tell her how to pronounce words like potato and helicopter and oxidizer. He was getting confused and frustrated until I had a talk with him about different ages and stages of development. He refuses to believe he was ever like her at that same age.” She giggled. “He says it is okay if I was like that once but not Daddy because girls are supposed to be slow and are giggly and drooly!”

The signal came that all was equalized and the top of the seacopter pen (again, they would rise in a Plexiglas surround to keep seawater and fresh from mingling) slid to the side and they came to the surface.

Before opening the top hatch Bud said, “If he grows up to be as cute as Tom here, he’ll have to put up with teenage girls who still get giggly and drooly.”

Once in the dome, and after they were picked up by one of the boats and taken to the “land” area, Bashalli kept turning around and around trying to take everything in. She sniffed the air several times trying to identify the smells.

Tom TeleVoc’d to Barney Donohoe to tell him they had arrived but would not get to Dome One to meet with him for at least an hour.

“Well, take you time and show this place off to your wife, but when you do get here we need to have a small chat about something.”

Bashalli was dumbstruck by everything she was seeing, and even Bud had to admit to being surprised at the rapid growth having taken place in the month since he’d last been inside the domes.

ALAN approached them, Tom noticed, more cautiously than he might have before, and asked if he might be of assistance.

“ALAN,” Tom said, “can you please take my wife, her name is Bashalli, around and show her how you are preparing the different species for harvest? Another ALAN will have registered her a couple years ago.”

“Yes, of course. I have that information now. With great pleasure.” His head turned to look at her. “Do I address you as Mrs. Swift, or as Bashalli, or is there another form you would prefer?”

Tom left them as his wife was saying she would prefer being called Bashi by the smiling robot.

Tom entered the single story building taking up about a fifth of the lower dome area and found Barney Donohoe sitting at a desk, looking through a series of photos taken through one of their microscopes.

“Ah, Tom. Come in and have a seat. I was just reviewing something I need your direction on. Slide the chair over here and please take a look at these.”

When Tom did, he was handed the fifteen 8 x 10 pictures. They showed close up views of cells that appeared to Tom to be from plants—not a stretch given what the domes were filled with—but there was something wrong. In each photo there was something purplish and double-ended like a barbell of some sort.

“What is that?”

“That,” Barney said with a sigh, “is a virus we have picked up in about forty percent of the plants of Dome Three. Now, before you panic it is benign to humans and animals but it will have the effect of discoloration of rinds, peels and skins.”

Tom looked back through them before setting them on the desk.

“How did that get here?”

“Truth be told, we brought it in with us. It is a normal virus that comes with several of the grain groups and doesn’t use them as anything other than for locomotion. But, and this is in conjunction with the pressure in these domes, it seems to be moving from the grains to some crops normally grown above fifteen hundred feet of altitude. The very good news is, if we can use your space elevator and ship these things up as high as we do the seeds, it should kill the virus and we can be well and done with it.”

“Only that?” Tom asked incredulously. He was envisioning the difficulty in simply moving things out of the domes, and not considering the number of shipments necessary.

"Yes, and only on the plants after we harvest this time around. Besides, only five or six percent of the total harvestable crops are affected right now and we have already given them a very dilute spray with chlorine bleach that has killed the virus on the outside. But after we harvest, it will be necessary to ship things up. I've drawn up a plan of action that will see everything taken care of over a three week period assuming I can get five of your seacopters involved."

Tom promised him it would happen as soon as possible.

Of the seven men and one woman, two had so feared the wrath of their "master" they tried to flee the country. Neither made it to Brazil, their destination. One had an unfortunate and mysterious heart attack as he sat, waiting to board a jet in San Juan.

The other had taken a fall from the jetway used by his flight from Santa Domingo to Rio de Janeiro when somebody bumped into him, forcing him over the railing. On the ground, the man with the small tractor coming to hook up to the nose gear accidentally ran over him. He was deceased before they managed to get him to a nearby hospital.

The now five men and one woman met with the man they owed their allegiance to. It was the same small building and the same room, but someone had already removed the two extra chairs. Not a word was said about the late members, but everyone knew the stakes were now even higher.

A special virus obtained by two of the men had been smuggled down to Trinidad and released into the water near the sunken domes. Only a minute amount made it through the water purification system but it had been enough to jumpstart a related strain already inside.

However, within weeks food was coming up from the domes and heading for the processing facility. It was still traveling by one of Tom Swift's underwater craft and that was going to change in another month once the HydroWay was complete.

"We must strike and strike hard before he gets that underwater train finished!" the man demanded, smacking his right fist down on the arm of his wooded chair with enough force to break it. "Will the two of you fools tell me why that virus did not wipe out everything in those domes?"

The men looked at each other and turned absolutely white. Neither had any solid idea but one, slightly more intelligent than the other, spoke.

“They must have a very advanced method for filtering the water they take in. If they are using ultraviolet light that would kill the virus, or at least nearly all of it. The rest would be weakened.”

Another fist pound did the rest of the damage and the right arm of the chair splintered and broke away, falling to the floor.

“Why did we not know about that? Tell me that single, simple fact. Why did our man inside that dome not tell us?”

CHAPTER 18 /
THE POISONER STRIKES

ONE OF THE oddest experiments Tom wanted to try was growing his father's sea cabbages—from the seeds provided by their Space Friends—in the third dome. Even though its lagoon was filled with fresh water and the best results had been in saltwater, Damon had experimented with the unsalted kind to good results as long as the plants were provided with a little extra selenium.

A dual growing pod was constructed on site using a prefabricated kit Tom built at the Construction Company. It had an inner chamber that would be sealed but filled with breathable air plus a growing tank, not sealed from the rest of the lagoon but surrounded by a floor-to-just-above-water-level clear enclosure made of thick Plexiglas.

It didn't have to hold any pressure as the same water sat outside as inside, but it was a precaution to keep the extra elemental mineral from getting into the general water supply.

Bridgette Stern was the most interested in the development of the plants on a day-to-day basis and so spent several hours in what was called the bio-sleeve—the air-filled central chamber—using a high-powered microscope to check small leaf samples clipped from one or more of the plants. She also kept a careful check on the balance of water and the selenium additive, making slight correction about every other day.

At the times she was not inside the bio-sleeve, she was assisting Barney and had been the first to detect the plant virus. She'd been confused when he seemed more annoyed at her than at the appearance of something they did not want in the domes, but that had gone to the back of her mind as they worked to get rid of it.

With the HydroWay now less than a month from completion—*Demeter* had to lay the track more slowly than planned due to the great amount of ships and relics on the Caribbean sea floor—everything was being moved by seacopter and that meant either occupants of the vehicle remained in pressure suits or everyone had to go through the compressing and decompression on arrival and departure.

It was wearing but most people chose to pass the waiting time napping.

The initial six tons of fruits, seven tons of various vegetables—including a half ton of the sea cabbages minus their seed pods—and the first half of the quinoa crops were loaded into containers

and hoisted into the back of the three cargo seacopters in the Swift fleet.

All the while this was going on plans were being put to paper for the transfer of most of the trees from the domes into space. Berry plant and vines were to be replaced rather than dug up, transported up and back and replanted. It would mean about a two-week delay in the second crop but the plants would not carry the virus. In fact, Damon determined the irradiated new plants would actively fight off any virus or harmful bacteria for at least five weeks.

In the room in Puerto Rico, the man on the platform rolled up his sleeves and leaned forward as he waited for his minions to arrive. More like crawling in hoping for his good grace to let them continue to live their lives both of luxury, and… their actual lives.

Absently he scratched at the green tattoo on his left forearm. He was very proud of that tattoo having received it while he was still alive and living in the Middle East when he'd been known as Abdul the Righteous. The snake crushing the teddy bear had been his idea as it included what his late wife loved and what he loved to kill. He'd even had her name, Sally, added underneath the bear's bottom.

He was a killer who had "been killed" only to turn up in the United States around the time the Swifts were testing their first automobile.

He pushed his sleeve back down as the door opened and the first of his weaklings shuffled in trying to be as quiet as a mouse.

Abdul also like to kill mice. *Abdul liked to kill.*

Barney Donohoe was a torn man. Badly torn and about to have a breakdown.

His wife, Sophia, a native of Puerto Rico, had been on vacation visiting her parents and assorted cousins four months earlier. For three nights she called and they spoke of what she had been doing and who she had seen. Then, night four came and went with no call.

He wasn't initially worried as she had mentioned many of them might go out for a late dinner and she probably didn't want to bother or wake him.

When the next day and night went by, and he was unable to even get a connection to her phone, he nearly panicked. Several

frantic calls to the police in San Juan came up with nothing. And then, on the seventh day he got a call.

It wasn't from Sophia.

The gruff voice was male and probably disguised and told him in no uncertain terms what he was to do. It included making certain he was assigned to whatever project Tom Swift was going to try in the Caribbean.

"If you want to see your wife, and you want her to be able to see you, you will do everything possible to make Tom Swift fail. Then, when he comes to try to find out what went wrong, you will kill him!"

He'd managed to get on the team inside the domes and even casually tried to get them situated in a more favorable location for what he and his wife's abductor wanted. That part had not worked but he was in the domes three weeks out of every four and had total access.

While on watch he'd allowed a diver to come in close using an underwater sled towing several tons of algae and seaweed, and turned a blind eye as that man shoved as much of it as he could into the water intakes.

Tom had come down hurriedly and just as quickly solved the issue.

All that it served to do was to put Swift Enterprises' Security on notice and to get the domes outfitted with even greater surveillance.

He also had shut off the bio-filter and ultra-violet sanitizing lights while the virus had been added to the water around them.

He'd nearly been discovered by Bridgette Stern when she came into the control room to relieve him. It was only because she also offered to get his something to drink, and when she went to fetch it, he managed to get everything back on line.

But, the damage had been done.

Except, Bridgette had quickly suggested using the bleach treatment and he could barely rebuff that as she likely would have reported it to Tom or even Damon Swift.

Now, to cap it all off, the stricken plants were either being shipped up using that blasted space elevator or outright replaced, and even stronger measures put in place to keep anything like that from happening again.

Worst of all, he had no idea if his wife was even still alive.

* * * * *

Harlan Ames was having a near fit. Each and every fiber of his being said any and all of the little niggling problems the domes were having had to point to sabotage, but nothing pointed to where to look or how to stop it.

It was annoying, personally, and made him especially angry, professionally. His number two and three men, Phil Radnor and Gary Bradley, were sitting with him in his office trying to come up with any plan of action to take. They had been at it for two hours. All three were stumped.

"Other that stationing us down there, and ignoring things here at Enterprises and the Construction Company and the MotorCar Company—not a great idea in case this is all a diversion—I just don't see what we can do," Phil said.

He looked to Gary who shrugged. "All I have is there has to be an inside person. But, the two people down there the most, Barney Donohoe and Dr. Stern are both exemplary people. Heck, Barney's worked for us four years and Bridgette has an international reputation. The others are all from Fearing and have cleared all security checks."

Harlan looked at them.

"Right. So we start digging into Barney's background. He is the easiest one to influence. Dr. Stern's face is known all over and she is the one who pointed out the recent virus outbreak." He sighed. "Someone get to Donohoe's wife and family and see if he's been under pressure."

The following morning, once Phil tried to visit the Donohoe residence and was told by neighbors that Sophia Donohoe had never returned from a vacation to somewhere in the Caribbean—nobody knew exactly where—he raced back to Enterprises.

The message Barney received via the secret radio bug he had in his ear said to expect a visitor and to defeat the security measures at exactly three a.m. the following morning. He struggled with his conscience but kept coming back to his wife. Surely this new person coming would put and end to everything and he could be reunited with his beloved wife.

Then, a horrible thought occurred to him.

What if this new invader was going to blow everything up and kill whomever was inside? That would mean Barney would perish as well and then the monster in charge of all this would have nobody to hold anything over, and his wife's life would surely be worth nothing.

Barney Donohoe had his nervous breakdown and began crying. It would continue for over two hours before he was discovered by Bridgette Stern.

Harlan called Tom and told him about the situation with Donohoe.

"Because of that I want you nowhere near the domes. Got it?"

"Okay," Tom said sounding like it was anything but okay. "I had plans to go down in a week and that was to check on the HydroWay progress. Most of the loop is complete and the laying of the spur lines up onto shore will start in five days. I was going down with the portable track laying equipment to take over once *Demeter* gets into too shallow water."

"It might have to wait," his Security chief informed him, "unless someone else takes it down."

Tom felt miserable. Although it had been a long and somewhat obtuse path to get this far, everything was coming together and food was coming up on nearly an every other day basis. Meaningful amounts of food at that!

Harlan and Gary left an hour later to meet a seacopter at the airport in Nassau in the Bahamas. Zimby Cox flew them down in a production version of the SE-11 with Bud sitting in the copilot's seat. They taxied to the Southern area of the airport to a small civilian terminal.

The pilot agreed to wait for them to call. He would go stay with some friends living just to the north of the airport along the coast.

Deke was still on seacopter duty and set down within yards of the SE-11 three minutes later. The Security men climbed up the short ladder and into the side hatch. It took off with a cloud of dust and debris blowing out from the central rotor area as the hatch was locked.

Twenty minutes later Deke set them down a quarter mile off the coast of Scarborough and reversed the rotors, sucking them under the surface.

Their arrival had not been announced so when the klaxon went off indicating that the outer door was being closed with something inside, there were three different reactions.

Bridgette was so busy checking in Dome One she decided to ignore it.

A technician who had come down a few days earlier to help complete the transfer of four dozen trees to be re-rooted after their

radiation treatment looked up at the ceiling and the bright light tunnel above, and wondered who might be coming. It was his belief his trees were the last of everything that needed treatment. But, a minute later he shrugged and went back to work with ALAN carefully un-bagging the roots of another giant black plum tree and getting them arranged and covered as quickly as possible.

The third reaction came from Barney and it was one of total panic. He'd not been relieved of his job, yet, but knew what was coming. He had not arranged to allow the "man" coming in two mornings earlier to gain access. His tormentor radioed him to say the man found entrance the following day and that Barney would be "taken care of" when the time came.

Four times he reached into the desk and pulled out the small handgun he'd smuggled in. Twice he shoved it back and once he actually placed it to his temple, his right index finger trembling just outside the trigger guard.

In the end he lowered it and placed it back behind the stack of papers and the rags that had been hiding it.

Like a man turned into a television or movie version of what a zombie was supposed to be, he slowly stood, turned to the door and trudged out it, into the main floor area of Dome One.

He took one of the boats from its tie-up spot and slowly drove it through the connecting tunnel to Dome Two and then across to the top of the sealock.

It's time to come clean, he told himself, *and let whatever happens, happen. My poor Sophia must be long gone and rest her soul. I pray she never suffered.*

He almost chickened out during the waiting period, but when the top panel slid away and the gleaming, red shape of the seacopter rose, he found a resolve and strength to stay.

Bud was first up and out of the hatch turning and looking back down saying to whomever what there, "Clear. Barney is waiting for us."

Phil came up followed by Harlan and finally Deke.

When Barney reached out to shake Harlan's hand, the Security man simply said, "We know about your wife's kidnapping and what you have been doing. You are under arrest, of course, but we really need to have you back on our side."

"Of course. I've been so stupid. I should have come to you when she was taken. Now, it may be too late."

Bud piloted the boat back to the first dome and they all got out.

“Can someone go to the office and in the top, left drawer, at the very back, is my gun? It’s loaded so be careful.”

A second later another boat came shooting in from the other domes and Bridgette Stern hopped out, a horrified look on her face.

“We’ve got something poisoning the hydroponics. Something that is about to kill them and anything else that eventually shares some of the same water!”

Bud looked at Harlan and then at Barney. The man broke down and between sobs told them an agent of the man or people who took his wife must have brought in some sort of poison and dispersed it before disappearing again.

“All I know is it is supposed to kill everything and even everyone in here and put an end to Tom’s plans of feeding the islands.”

Now, he sank to the ground and lay still. Phil checked his neck. “He’s got a pulse; I think he just fainted.”

“Bud, you go with Bridgette,” Harlan commanded, “and find that poison; it must have come in sealed in some sort of capsule. Phil, you take Barry here to the seacopter and lock him in the aft storage space where he can’t do anything. I’m going to the office to call Enterprises.”

Everyone raced in their separate directions or boats and the small dock area was soon cleared.

The tree technician looked down over one of the higher terraces and shrugged. There had been some noise down there, and now there was nothing. “Did you hear anything, ALAN?”

The robot nodded and responded, “Yes,” before going back to work.

Knowing in these cases seconds or minutes could make a difference, Bud shoved his throttle to the max wishing for the sort of power surge a large gasoline engine might give, but happy the boat got away from the dock and through the tunnel in under fifteen seconds.

He swerved around and came up against the side of the small docking ring that surrounded half of the special enclosure for Damon Swift’s sea cabbages. Jumping out as he snatched the cutoff key from its slot, he helped Bridgett get out and they entered the bio-sleeve. Inside it was a little crowded but he needed to know what he might be up against.

As she detailed what it was poisoning the plants he put all

modesty aside as he stripped down to his underwear and pulled himself into the special safety bio suit and diving rig kept around for entering the wet area.

She barely noticed his state of undress as she was looking at several screens and even at a sample plant she'd brought inside. It was sealed in a thick plastic bag to prevent contamination, but it had all the visible signs of a plant about to die.

"Are you certain whatever it is poisoning the plants is inside the enclosure? Not something outside that seeped in?" He asked as he checked his air supply.

Bridgette stopped and turned to look at him, hands on her hips.

"*Mister* Barclay," she said in an exasperated voice, "do you believe we are so lax around here that just anything can come in and do what this is?"

Not liking her attitude, he responded with, "It got in. Whatever your procedures to keep things out, it got in. That is not an accusation; that is a fact. So, drop the *Mister* attitude and let's work together to find out what this is."

Rarely spoken to in that tone, she wasn't certain whether she now had a greater respect for the young man—nine years her junior—or wanted to scream at him. She remained silent a moment and then held her fingers up, inches apart.

"It likely cannot be larger that about this. Whoever did this, and I have to say Mr. Donohoe has been acting strangely, and now he is under arrest, I have to believe he did this. That aside, it would have to fit in a pocket, possibly has a screw top, and may have been emptied and then buried in one of the containers out there."

Her right arm swung around the circular windows into the wet area.

"Right. Close the hatch behind me and I'll head in there." He turned and pulled the inner door to the sealock open, stepped inside and held his right hand up so she could see the "OK" sign his thumb and forefinger were making.

A moment later the door was closed and water from outside came in to flood the one-man room. It took an excruciating sixty seconds and while the level was rising, Bud had a horrible thought. If the water coming in now came from inside the wet and enclosed area, it was bringing in the poison. So, what happened to the water once he came back? Did it exit into the enclosure or out to the larger lagoon?

He touched the place on the neck of the suit where an all-person version of the TeleVoc was located, and pinged Bridgette.

He asked about the water and was informed it came from the enclosure and went back to it.

"So, once I come back in, dripping wet, I will track contaminated water inside with you?"

In his head came an approximation of laughter. "No. The lock will empty and you will be thoroughly sprayed with a decontaminate that will be sucked back into a disposal tank. Then you will be dried completely. You, and I, shall be safe.

While Bridgette worked feverishly in the safety of the bio-sleeve, Bud tried to find the disease container among the sea cabbages. It was slightly unnerving to him to see her standing just a few feet away with what seemed like nothing separating her air-filled environment from his water-filled one.

Plant-by-plant and container-by-container his hands felt all around in an attempt to locate something he had no idea about other than it contained, or had contained, a deadly plant poison. The minutes stretched into a half hour as he frantically tried to remember if he'd actually searched the ones he'd just passed, or whether he might have skipped one or more. For the sake of completeness he reached back and poked and prodded in the farthest one from him.

Bud stopped suddenly and froze.

His right fingertips were touching something solid, long and fairly narrow. It had been forced down into the growing medium—one of Damon Swift's concoctions of dirt, sand, dead coral and some sterile animal fertilizer—almost to the very bottom.

With his left arm he waved at Bridgette. Her attention was on something else so he reached out and hammered a fist on the bio-sleeve's wraparound window. She jumped and spun to face him looking extremely angry until she saw the dull silver tube he was drawing out of the soil and holding up for her to look at.

She had to make three tires to activate her TeleVoc but her voice finally came into his head.

"I-i-is th-that what I think it is?"

Bud nodded and held it at arm's length. "If you think it is our poison container, then you are likely to be right. I wish like heck you weren't, but my guess is that you are. Now, what the heck do I do with it?"

It took the remainder of the day for Bridgette—with some help from Barney Donohoe who hoped to redeem himself even a

fraction—to identify the exact poison that had been introduced.

Obviously, whoever brought it in had no idea of the setup in the sea cabbage garden enclosure. They would have bypassed that entirely and simply infected the lagoon.

When that obvious bit of logic hit Harlan, he took their prisoner aside.

"You didn't do this, did you?"

Barney was close to tears again, but he straightened up and responded, "No, I didn't. I allowed a man to come in through the sealock and to slip back out later, but I didn't take part in the action. I can never forgive myself and do not hold out any hope you or the Swifts will forgive me."

He and Bridgette decided that a complete flushing of the small growing zone would be needed and so they pumped all the water from the wet zone into a holding tank that would be taken ashore and disposed of. Next, they flushed the "soil" and all surfaces with fresh seawater and drained that away as well before checking the levels of the poison.

"Minimal," Bridgette declared and, without thinking, high-fived the disgraced bio-man. "Sorry," she said to him.

"No, it felt good to be doing something right for a change," he told her.

The levels of the poison inside were so low that Damon, during a videoconference, agreed to re-flood the area to see if the damage would reverse itself.

"If it is too far along, you will need to do a complete clean out and I'll send new growth medium and seeds."

The following day Bud and the Security men, along with their prisoner and the tank of contaminated water, headed back to pick up Zimby Cox and then Deke took the seacopter and its cargo to Fearing while the men flew back to Shopton.

On the way home the small radio in Barney's ear signaled him. A harsh voice told him his wife would be executed if the poison plan didn't work soon.

From his pocket, Harlan took a small box and looked at the coordinates it was showing.

He now knew where the man who had kidnapped Donohoe's wife was, and even had a recording of the message Barney just heard. He slipped it back in his pocket and sat back.

CHAPTER 19 /
WHY MUST SOMEONE ALWAYS HAVE TO DIE?

TOM AND Bud came back down for the inaugural run of the new HydroWay line. Ending up at nine hundred fifty-six miles plus a few hundred yards, it had required no tunnels to be dug on shorelines. They simply ran the tracks into the water at the shore and from there down to the main line.

A new train complete with one main locomotive and one "pusher" engine car to be positioned at the back was delivered along with the eight cargo-carrying cars that would make up the completed train.

The poisoning episode had come and gone two weeks earlier, and in that time a team of fifty heavily-armed military men from Puerto Rico stormed a small house in a quiet neighborhood where they discovered a very frightened man sitting in front of a very angry man who held a knife to his throat.

Two seconds later, the large angry man's eyes rolled up as a bullet from a sniper positioned just outside the door traveled through his forehead and made a bad mess on the wall behind him.

The head of the military squad radioed his commander who radioed Harlan.

"Have your men tell you what is on that man's left arm," he demanded.

A minute later, Harlan thanked the commander and smiled.

One man, known to many as Abdul the Righteous, complete with green teddy bear being squeezed by a snake tattoo on his arm, was dead.

"What of Barney Donohoe's wife?"

Harlan shook his head. "Nothing so far. Just what may have been one of Abdul's minions. But, no blood, no body and no sign she was held where they found Abdul. They are still looking for her and will get to me immediately one way or the other."

Tom received the news grimy but with a sense of relief. He told Bud what he'd just found out.

"Good! He deserved it more than just about anyone I know."

Jameson Carr and his three top people met them in the terminal at Trinidad's airport the following late afternoon. All four

looked very tired and it was explained they had flown from London to Newark, New Jersey and then were boarded on the wrong aircraft, ending up in Dallas and not Miami.

"Fortunately, the airline realized they posted the wrong gate information and then made a right hash of checking our boarding cards. They should never have let us on that flight," Jameson said speaking for this team.

Tom had his smallest seacopter sitting outside the terminal building and took them to it. They were all weary and indignant but admitted they had suffered worse before.

"We can do one of two things," he said. "Either we go down to the domes now or we stay in Trinidad where we have several visitor's apartments at the processing facility. I can give you a quick tour there and we save the dome for tomorrow. In fact, we can take the HydroWay train from there up to here as long as we leave no later than eight. I'm supposed to be giving it a full test circuit with stops at all delivery stations."

Everyone agreed the thought of being able to lay down and get over their jet lag overrode the desire to see everything and all at once.

The next morning they boarded the HydroWay train, everyone sitting in the cab of the locomotive as there was no passenger car. They traveled across the tidal flats and were both shocked and amazed as the nose started pointing down and the water rushed up and over them. One of them held her breath without thinking about it and nearly passed out before she remembered she could breathe inside the train.

The route turned to the northwest for about twelve miles to clear the island before coming to a more east northeast course heading for Scarborough. One hour later Tom asked their Engineer to slow down as they passed between the wrecks of at least fifteen old cargo schooners.

"Those were Dutch traders running in formation and evidently trying to avoid a Spanish blockade. All they wanted to do was get to what we now call the Netherlands Antilles and their small colony. For their troubles they were stopped, in most cases rammed, boarded and taken prisoner. Their ships, as you can see, were sunk. Fortunately, history tells us the commander of the Spanish ships refused to allow his men to kill the Dutch. In fact, they were taken to within ten miles of the Antilles, put in the long boats the Spaniards had taken from the Dutch ships and tied to the back of theirs, and allowed to row ashore."

By now they were past the site but the visual memory was a

haunting one and would stay with the Brits for some time to come.

When it came time to switch from the circular track to the one-and-a-third-mile spur heading up the beach to the small above ground port, most of them neglected to look to their right where they would have seen the somewhat ghostly scene of the triad of domes sitting just five hundred feet away.

He turned around and grinned at Bud who had given up his normal second seat to Jameson. He also knew they had missed an incredible sight.

They transferred everyone to the dock area and the ferry for the two-minute trip to the dome area. There a seacopter waited to transfer them to the sealock and from that into the domes.

Everybody was so anxious to get inside the domes they began complaining about the delay as the sealock equalized pressures. Tom had to tell them to shut up when a clearing of his throat didn't do the trick.

"If you go out now your bodies, still at normal pressure like on the surface, would be squashed by the immediate quadrupling of pressure of the water outside. Even if we were sitting in air, the difference in outside and inside pressures must be accommodated for all our health. And so, I apologize for my yelling at you just now, but please be patient. I believe your wait will be worth it.

Sooner than they may have thought the signal came through the speakers and Bud, at the controls, sent them up to the surface inside Dome Two.

Tom pressed a button and the upper hatch unlocked and opened allowing the internal air to come in. It was earthy, fragrant, and so clean it seemed wrong to them.

"One at a time, and please stay on the upper flat area, we can go out now. I'll lead the way and Bud will be our tail. It's up to you all to fight it out for who goes up when," Tom told them with a mischievous smile on his face.

Vivian Rhys, one of Jameson's people, let out a piercing scream as she peeked around them and over to the far side of the seacopter pen.

Tom and Bud jumped forward unsure what to expect. What they saw was not on the top ten list of possibilities. It was the floating and, from the looks of it, heavily contorted body of a man in a wetsuit.

Bud pulled a boathook from its holder on the wall and as Tom took the others to the boat and got them settled, the flyer pulled the body over to the side.

If the body was contorted, the face was absolutely twisted with what must have been incredible pain. He was still alive, taking gasping breaths, but frozen in position.

"He has the bends!" Bud shouted out. "Somebody help me get him in the boat and over to the decompression chamber."

They wasted no time doing anything other than shoving him inside the chamber with a diagnostic neck band and a hastily applied IV line in place. He still had his wetsuit on. It would keep him warm and covered until he either recovered, or... didn't.

With the IV bags kept outside the chamber it was easy to continue to change them as needed. The first three were heated to slightly above normal body temperature and the next ones at room temperature.

Tom got back to the group an hour later and gave them the word the man was indeed an intruder who had likely hitched a ride on their seacopter.

"He must have been waiting down here, though because his tanks were nearly empty and his body had been under deep compression for at least an hour."

"But, how could anyone sneak in here?" Vivian asked.

Tom sighed. "It appears I need to install more cameras down here to look all over anything coming in. But, he must have brought something in with him. We didn't take the time to search his wet suit so it might still be in there. Don't worry. We'll find it."

"No need for that, skipper," Bud said holding a five-inch-long silver tube, identical to the earlier one, up for his friend to see. It was inside a closed plastic bag. "I'll go put this in the safe and join you all on the tour in ten minutes."

Their guests were interested in absolutely everything they saw, especially ALAN.

Jameson had already met the mechanical man and they greeted each other like old friends with ALAN shaking his hand and remarking that Jameson had recently had a haircut.

"It looks much shorter on the sides and must be quite a bit cooler than the other way you had it," the robot told him.

Vivian had to sit down on the dirt she was so gobsmacked at their interaction. Never in her life had she so much as touched even a robotic toy. But, when her boss turned to her and had to look down—and laughed at her once he figured she had not slipped but was their by her own doing—he brought ALAN over and introduced them to each other.

"May I be allowed to extend my hand and assist you back to a standing position," he asked, "or are you engaged in a close examination of the planting mixture we use. If you wish, I can detail all the components to you. I can even sit next to you so you do not need to look up at me if that is more convenient."

"N-no. I'll stand up," she told him and without thinking held up her right hand. He gently took it and before she realized what was happening, he had eased her to her feet.

"Thank you."

"It was my pleasure to assist. If you have any questions…?"

Nobody had anything to ask so they moved away with Vivian turning around twice to look at the mechanical man as he went straight back to his gardening.

The rest of the walk through of the three Domes was uneventful so Tom suggested they all get back into the seacopter, head back to the surface and then he could take them back to Trinidad or they could come on with him and Bud to see the other islands they were about to be servicing.

Jameson spoke for his team, "I, or rather *we*, came down here to see it all, Tom. Please lead the way."

An hour later they were back underwater in the HydroWay heading for Barbados. They were appropriately impressed by the coral reef-like nature of the island's surrounding shelf and how Tom had bridged that by simply running the tracks fifteen feet above everything and adding baffles to keep the moving water from flushing down on anything.

"We want to be good stewards of the land we are being allowed to use," he explained to an appreciative audience. Everyone nodded.

The Barbados to Saint Lucia trip was mostly uneventful but it was the passage across the undersea mountain range between Saint Vincent and Granada that caught their attention. That range, spectacularly flat on the top, had them weaving around the nearly three dozen bits of land that poked up above the waves. But more impressive were the vast array of old and even a few modern ships resting on their sides, upside down or even upright as if just ready to get underway they passed close by. Tom had no interesting stories about any of them except for a cargo carrier off the east coast of tiny, but populated, island of Mustique.

"That," he told them, "is supposed to hold fifty-seven vintage automobiles from a collection an Egyptian had who shipped them, or was shipping them, to his son residing in Columbia. The least valuable was said to be worth one hundred thousand dollars. After it

sank his health deteriorated and he died within the month. His son died of a broken heart a week later, so here they rest."

"Or, rust," Bud piped up lightening the suddenly somber mood.

By the middle of the following day the Brits had flown home and Tom and Bud returned to the domes. The intruder's breathing became more regular and his distorted face relaxed. It relaxed enough that Harlan realized who his was.

"Remember getting grazed by that bullet months back?" he asked the inventor.

"Sure. Why?"

"Because our unexpected guest is that man, or looks a lot like him. Take a look at this photo we got from his family and then look at his face."

Tom was shocked. It had to be the same man.

That left numerous questions hanging until he woke up and could answer them. At least there was no way for him to escape; the decompression chamber could only be opened from the outside.

"His name is Pedro Alejandro and he is, or was, a day laborer living in and around San Juan and not known to be in Grenada where his rifle attack nearly killed you. In fact, there is no record showing how he got to Grenada in the first place, nor how he left there and got here."

"When he wakes up, let me know." Tom requested.

"Oh, he's awake now and has been for at least an hour. He's lying in there probably trying to figure his chances of escaping. Here. Watch him." Harlan surreptitiously reached out and touched the control panel energizing the intercom link from outside to inside the chamber.

"So, as I was saying, Tom, the doctors tell me that if he hasn't woken up by this time he likely has brain damage and the only thing to do is put the body out of its misery with an injection of sodium biscosulphate to make him feel very little and then we'll use the poison he brought in this vial to stop the heart." He held up a small metal tube. "I'm going to do that in about five minutes. You'll possibly not want—"

"NO!" shouted the man, his eyes wide with fear and he was sitting up. "Don't kill me! Keep that poison away from me. I'm a dead man anyway, but I'll tell you everything. Just do not inject me!" His hands were now in front of his face as if in prayer.

Harlan, who had stopped by the small office of Bridgette Stern to borrow a syringe, and had filled it with a greenish liquid that was nothing more than her favorite green tea with a little milk, reached down out of the man's sight and pulled it up.

"But, if you are a dead man already, as you claim, this will only hurt for a few minutes and then you will feel nothing."

Tom had to turn away to keep from laughing at the panic this raised in the intruder's face.

He reached over and patted his Security chief's right shoulder and said, "You do what is best for us, Harlan. If he tells you everything to your satisfaction, we might as well keep him alive. If not…" and without finishing that statement Tom gave a noncommittal shrug and left the room.

Half an hour later Harlan caught up with him on one of the upper terraces where he was adding some small programming to ALAN.

"Well, he sang like Pavarotti. Hired by a woman in Puerto Rico who told him to watch over his shoulder for a huge man with a green tattoo on his left arm, and provided private transportation courtesy of her company's small jet to Grenada. Two days later he got back onto the airport property and her jet whisked him to Scarborough where he's been in hiding for a couple months."

"And, what? He got some SCUBA gear and dove down here?" Tom tried to finish the story. "Why? It's too deep and the pressure changes in the sealock happen far too fast because they are designed for seacopters, not human bodies."

"That's an easy one if you think about it. To plant another poison vial. I don't think he brought in the first one but he did this new one. He snuck in when one of the other seacopters departed an hour before you arrived and managed to get inside without proper equalization. In a panic because he felt horrible he figured the bio-sleeve would spread the poison, rather than contain it, but he barely managed to get out of the sealock enclosure before he passed out. Fortunately for him, it was face up. Otherwise, he'd have drowned."

"So," Tom asked, now wondering about something, "how did the first vial get in the domes?"

Harlan shook his head. "I've been told by Barney Donohoe it was by another diver who did manage to get back out, but has disappeared. Perhaps he never got back to shore."

Tom and Bud drove in the main gate one behind the other so

the inventor pulled to the side and waited for his friend to come alongside.

"Coffee?"

"Yep, and especially if I can have a donut as well," the flyer grinned. "I need my morning sugar fix to keep my delicate, boyish figure!"

When they had their beverages—and Bud his glazed, raspberry jam-filled sweet pastry—they sat and discussed how the "domes project" was pulling up to the end.

"I know I was glad that Abdul got his and good, but that poor schmuck we pulled out of the water probably didn't even understand what he was doing."

Tom nodded. "I agree and it is sad that someone seems to always have to die in these situations. If it had to be someone then our old nemesis, Abdul, was the best one to fill that part. I'm just glad we ought to have no more problems with outsiders trying to make things go bad."

Half an hour later as he walked to the shared office Tom's TeleVoc pinged him with a call from Harlan.

"Yes?"

"Good news, no, check that, *great* news!" he said in a voice that spoke of his excitement. "The authorities on Puerto Rico found Barry Donohoe's wife, Sophia, and she is *alive*!"

"That's incredible," Tom responded. "Where was she? How is she?"

"From what we've been given she was being held in the residence of one Oscar Salazar, a man who amassed a fortune during the years of destruction and damage before your Cyclonic Eradicators cut most of that out. He bought materials low and passed them on at high, exorbitant prices, but had cornered the market down there. In his employ starting just over a year ago was one Abdul Ben Tsadik, or Abdul the Righteous as we knew him. It appears Salazar met an untimely end shortly after that point and Abdul took over his empire.

"Anyway, the authorities put a number of things together, stormed the house and found Mrs. Donohoe locked in a bedroom with a small refrigerator that had some food and water in it, and the mummified body of Salazar in a shed out behind the house. He is remaining there and she is being taken to a hospital for a good check up and seeing that she is properly hydrated and fed, then she will be coming home."

Tom pondered something a moment, “With her husband in jail now, it’s going to be a hollow homecoming for her.”

“Yeah, I know. The only thing we can do is try to get him out on bail, let him be here when she arrives tomorrow and give them a few days together when he can tell her how much he loves her and what he, unfortunately, did to try to get her back. Then, it’s back in a cell until his trial.”

“Unless…” Tom began with a significant emphasis on the word.

“Yeah, unless.” Harlan let out a sigh that came through the electronic device almost as loud as if he’d been standing next to the inventor.

CHAPTER 20 /
FOOD FOR THE MASSES

JAMESON CARR flew to New York and then up to Shopton to meet with Tom, Damon, and Jackson Rimmer. By the time he cleared Security and had been ushered into the large office, it was nearing five-fifty in the afternoon.

Trent opened the door for him and the men who had been waiting for the last half hour stood and shook his hand.

"Thank you, all, for remaining here until I could arrive. I won't bore you with the state of Heathrow and the multiple levels of security they still insist on putting everyone through, but… well. I'm sorry to be getting here so late."

Damon nodded. "Okay. Can you tell us why this meeting was arranged nearly at the last minute and what it is that's so important you wanted to be here in person?"

His face as unmoving as a professional card player and his eyes giving nothing away, Jameson simply told them in a sort of Cockney, little boy's voice, "Please, sirs. May I have some more?"

Jackson and Damon immediately understood the Oliver Twist reference, but Tom—who had skipped so many grades he never had been forced to read any Dickens—missed it. So, while three men roared with laughter he sat there looking slightly confused.

Finally, Jameson let him off the hook. "Tom. I am sorry if the impersonation missed the mark, but in Twist's own words, we would like some more of your incredible underwater domes. At least three more for the current Caribbean location and then we'd like to investigate something smaller, perhaps two domes, for The Caymans, and another large-scale setup for one of the island groups south of Indonesia."

He went on to say he and his backers in the British government understood there were enormous costs associated with the space elevator, but wondered if there was another way to get seeds, seedlings and trees into the proper altitude for the treatment that made them so successful.

Jackson leaned over and whispered something in Damon's ear. He nodded and smiled at their visitor.

"It just so happens that we are discontinuing the use of six of our older supply rockets in favor of Tom's newer saucer ships. Those rockets were rebuilt with repelatron technology three years ago so they burn no fossil fuels, do not pollute in any way, and

could be outfitted with special cargo compartments that are not heavily shielded from radiation so the good kind can come in and do its magic."

Cautiously, Carr asked, "And the price of them would be?"

Damon looked at Tom who nodded. He understood the scrap value versus actual cost of everything that had gone into the rockets many years earlier.

"One million dollars, each, as they stand, plus two hundred thousand dollars to refit them."

Carr finally let out the breath he'd been holding if a loud *whoosh*. "Golly. I was sitting here thinking you'd say twenty or thirty million dollars. Are you certain you want to get rid of them at that low price?"

Jackson spoke for the Swifts. "If you want the honest truth, selling them to you at that price allows the Swifts to take a very nice tax deduction. Always assuming, of course, they are only put the use at these domed growing locations."

Jameson assured them they would be used strictly for that.

"When did you want to start and with which build?" Tom asked.

"The Caymans because they are in desperate need, and also because they have a six hectare plot of land right next to their airport they say they'll willingly let us use at zero cost just as long as we help them feed their people. There would be little processing to do and no underwater train to build."

"And, the domes? How far away would they likely go" Damon asked.

"A beautiful and not protected piece of the ocean one and two-thirds of your miles to the south of the launch place that features a sort of shelf just three hundred feet down."

"I hate to bring up the ugly spectre of funding…" Jackson began.

"Taken care of with the island government kicking it about two million dollars starting day one. It is worth that to them to not be dependent on countries like Mexico and Costa Rica for about a third their food. With your deep discount on the rockets and our funding, we ought to have a surplus of nearly forty percent."

Damon looked to his right and left before stating, "It appears Swift Enterprises may have found a business where we can make a small but reasonable profit by bringing food to the masses. Unless my son objects, I would say you have our deep interest."

"I certainly hope you have no objections because we'd also like

to pay you to enlarge the first triad of domes into a sextet of them. You're a hit in the Caribbean!"

The damage started by the initial vial of poison eventually took its toll on the sea cabbages. Weakened, they grew slower and slower until Bridgette Stern declared them a lost cause.

"We must completely sterilize the bio-sleeve and enclosure and start again," she said to Tom as he and Bud were questioning her. "That means starting all over with new seeds and your father tells me he will have enough with the coming harvest up at Fearing in about five days."

"That means they need to be taken up for the Van Allen treatment a few days later and before you plant them," Tom said earning him a nod from the Doctor.

Even without looking over his shoulder he could tell Bud was smiling or at least grinning.

"I can tell what's on your mind even from here," he said.

"In fairness, skipper, it has been two years since my last ride in the L-Evator. I just thought this would be a pleasant change of pace for us both to take the seeds up, spend some time just looking down at this beautiful planet of ours and then riding it all back home."

The inventor couldn't fault his best friend's logic. It had been even longer for Tom since he last rode the L-Evator, but that had been on the much longer trip up to the building point for the giant space station that had become the *Space Queen*.

"I'll see what dad says and we both need to see what the wives say," he responded with a raised eyebrow.

By the time the seeds were ready for their journey, Bashalli and Sandy—to Bud's continuing surprise—had said they believed it was an excellent idea. What Tom didn't catch was Bashalli adding under her breath, "And, it will make for an excellent welcome home for the two of us!"

It was decided they all would fly down to Trinidad where Damon and Anne would enjoy spending some time with the two girls while Bashalli's mother enjoyed a couple uninterrupted days and nights with her favorite grandchildren.

The airport improvements had been completed a month earlier and Damon had authorized the entire runway, taxiway and the parking apron around the terminal building to be resurfaced using Tom's incredible concrete revitalizer to chew it all up, remove the

rebar for recycling, add a different strengthening agent and some new cement and water before paving twelve-foot-wide lanes to laser straight accuracy.

The *Sky Queen* pulled onto a special area to the west of the terminal that was now permanently reserved for Swift aircraft.

As they de-planed, Sandy commented, “Wow, bro. I saw the lights all up and down the L-Evator cables as we flew in. Impressive even on a bright day like today.”

Tom thanked her. They all climbed into a van being driven by one of the new, permanent employees at the processing facility.

“My name is Victor and it is a very high pleasure to be driving your esteemed persons,” he told them with a wide, toothy smile.

After what seemed to be an endless set of turns and different roads, all the while bringing them closer to the L-Evator station, they arrived at the final, straight road. Before them stood the L-Evator, its base fifty feet off the ground and its top some two hundred feet higher.

They dropped off their precious cargo of the container of seeds with the loadmaster who promised to get them into the environmental pod at the top.

“We’ll be back to lift at six tomorrow morning,” Tom promised.

That evening the six of them enjoyed a meal taken at the Governor’s home along with six invited Ministers from the local Parliament. Nothing vaguely business was discussed after one statement by the Minister for Agriculture who came over to Tom and Damon a few minutes before food was served.

“It is with the greatest of pleasure I offer to you both my hand in thanks for what you are doing for not just this country but for our neighbors to the north. We are all small and moderately poor, but from what I see and hear, people‘s lives are being changed even at this short period of time. May whoever you believe in bless you both!” With that, the woman turned and was gone, but she had a smile throughout the meal that seemed destined to never leave her face.

In the morning only Bashalli and Sandy went back to the lift facility to see the boys off. Kisses were exchanged and wishes for a speedy return were given with promises of exactly that returned.

“We’ll be back before tomorrow evening,” Tom promised. “Probably around seven, while it is still light outside.”

The ladies hugged each other as the smaller elevator up to what some called the “People Pod” rose until it was even with that area

at the top of the L-Evator. With no way to see their men from that point, they simply stood there until a klaxon sounded three times and a voice came over the outside public address system announcing, “Lift in thirty seconds. All stand clear of ground equipment.” The same announcement with a five second time difference was announced in Trinidadian Creole, the second official language of the island.

The final ten seconds was all in English.

On the mark of zero the L-Evator began to rise. Slowly at first so as to not inconvenience the passengers, but it was visibly picking up speed as it passed through a light layer of clouds some five thousand feet up. A minute later is was just a speck in the sky.

“At times like this I used to think going shopping would be the best thing,” Sandy told Bashalli, “but now I believe a good walk and perhaps breakfast is called for. Come on, Bashi.”

As the L-Evator steadily rose Tom and Bud unstrapped themselves from the seats they had taken and rose. The pod wasn’t completely steady so it took a moment for them to get their “feet” and be able to move around, but they were soon at the view window looking at the Earth as it become more and more round, and Trinidad became a smaller and smaller piece of land in the middle of a veritable sea of blue.

The trip was scheduled to take just three hours so they spent most of it checking their cargo and in discussion of what all had happened during the build of the domes.

“Harlan Ames to Tom. Come in, Tom, Harlan Ames to Tom. Come in,” the radio announced.

Reached for the microphone, Tom keyed it and replied, “Tom here. You are coming in loud and clear. What’s going on?”

“I have a bit of uncomfortable news for you, Tom. And Bud if he’s awake and listening. You recall our diver and your personal shooter, Pedro Alejandro? If you recall he was working for some woman who was working for Abdul.”

“Sure I do. Now what?”

“The *now* of it is she sent a message to us a few minutes ago and I think it is serious. Let me read it to you:

> “To Tom Swift. You have foiled each attempt by my Master to put an end to your scheme to make our islands into your slaves, and even have killed him. I seek his revenge. I know you are to be riding in that ridiculous space elevator of yours sometime in the next several days. Believe me, you will not return. Not alive. And, nobody can stop me!

"That's it, skipper. Before I called I checked and she flew out in her private jet last evening, destination unlisted but my guess is she was heading to Trinidad. I'm going to have the U.S. Air Force send down a contingent of fighters to stop her if she comes too close, and if she is already on the ground they will disable her jet."

Tom looked at Bud who shrugged and said in a low tone, "Not a lot we can do from up here, is there?"

Tom thanked Harlan and asked to be apprised of any new information.

When the announcement came for the slowdown of the L-Evator, the two young men had been enjoying semi-weightlessness for nearly two hours. But, they pulled themselves over and strapped back into their seats. It would only be at the stopping point they would unstrap and float freely again.

Tom made one additional check of the seed container before he moved it into what amounted to an airlock that would take the case into a sealed compartment with only a clear polycarbonate surround. That way the radiation from the Belt would be able to get into do the magic it seemed to provide while occupants of the pod remained safely protected, surrounded by tomasite.

"Want to do the honors, flyboy," Tom asked pointing at the button that would start the transfer.

Bud pulled on the arm of a nearby seat and floated over, expertly halting at the last second, before answering. "Sure. Any time or do you have a countdown?"

"Now is as good a time as any," Tom replied. "It has just gone nine-thirty in the morning and we will be leaving them out until three-thirty tomorrow afternoon. Eighteen hours dad suggests for this altitude."

With a press of a single button, the automated system did what it needed to and soon they found themselves with nothing substantial to do.

They talked a little with Bud still marveling at the changes his wife, Sandy, had been going through recently.

"My sister is finally growing up, Bud. Love it and live with it, but probably best not to question it, at least not to her face!"

Chow had packed them some excellent heat-and-eat meals including a succulent roast beef in a thick gravy, chicken piccata, and several other items, all with thick sauces to cling even in zero gravity.

When it came time to retrieve the box, it slid right in and into a

protective sleeve in case there was any stray radiation. Then, with a check of their surroundings, Tom sent them Earthward. Part way down he contacted Harlan who had not given them any updates.

"Noting to report, but glad to hear that you're coming down. The Air Force would only send one old F-22 so I'm going to have Red and Hank take the *Sky Queen* up and escort you down. Let me know when you are getting into atmosphere and I'll have them meet you at seventy thousand feet."

Unfortunately, the Air Force Pilot could not get his older fighter restarted when the time came—something Damon was going to have a very serious discussion with his favorite Senator, Peter Quintana, about—and so it was up to the *Queen* to check all the surrounding air space and to head off any attack… if one ever came.

They rendezvoused at the named altitude and both came straight down with the *Queen* rotating around and around using its long-range RADAR and other sensors to spot anything coming close.

"Skipper! We've got a contact coming in from the direction of Carúpano in Venezuela. Fast. Maybe six hundred knots. We're heading to put ourselves in between," Red radioed before the giant ship moved to the west.

As it came closer and over the end of the spit of land pointing to Trinidad from the mainland, Tom and Bud spotted something white reflecting some late afternoon sun.

"It's coming right at us, Tom!" Bud said, his voice tense. "Jetz, but I wish sometimes the *Queen* had some air-to-air rockets!"

As fast as the *Sky Queen* was, the other jet shot past it, below by two thousand or more feet, and climbed right at the underside of the L-Evator. But, it passed some five hundred feet away.

The radio came to life.

"Major Morris, USAF. Got this bucket started. I'm in the air and heading up. Be there in five minutes!"

"If that's not too late," Tom said.

Bud noticed his friend and brother-in-law didn't seem unduly frightened. In fact, he looked downright calm.

The small jet made a tight turn, something Bud said it wasn't rated for, and raced back, this time about fifty feet below the bottom of the L-Evator. As with the first pass it missed, only this time it was much closer. Even *less* than fifty feet. Whoever was piloting that thing seemed determined to crash it into the L-

Evator.

"Tom? It's Red. We're coming around again and going to try to flip that thing over. Not certain I can get one of our stubby wings under it, but it's worth a try."

The inventor did not respond, he only nodded. He believed he knew what was coming next.

He was correct.

The corporate jet made another nearly impossible turn and came back. By now the L-Evator had dropped several thousand feet and the other pilot was fighting a losing battle to get down to their altitude. Rather than risk a third missed pass, the pilot headed straight for the cables holding the L-Evator to its upper pulley platform.

Tom and Bud felt the shaking going all up and down the cable system as the small jet hit the cables with its right wing. That wing sheered off sending the rest of the aircraft in an uncontrolled tumble, fire engulfing the fuselage from the ruptured fuel system.

The two men inside the pod ran to the other side in time to see it disappear below them. Neither wanted to watch as it soon hit the island in an unpopulated area three miles south of the airport.

Tom opened the door of the L-Evator and looked around at the crowd gathered on the raised landing platform. In front, looking like she was about to burst, was Bashalli with Mary in her arms and Bart standing next to her holding onto her pant's leg.

She rushed forward and swung into his arms as Bart grabbed his leg and gave it a big hug.

"My mother couldn't stand it and came down last night," she told him looking at their children. "Is it all exposed?" she asked not mentioning the "accident" with the attacking jet. It was something she rather would remain unstated.

"Yep! We got it all taken care of. Now, the alien seed garden can go back into full production."

"Hey, Dad!" a voice at his waist said. When Tom realized something had changed and looked at his boy, Bart smiled. "Momma says I got ta stop calling you dadda. She said dad or daddy is okay." Now, he looked concerned. "*Is* it okay?"

Tom reached down and picked his son up in his right arm.

"Bart? It is absolutely wonderful, whatever you want to call me."

The boy leaned forward and whispered into Tom's ear, "I like dadda but momma says I'm big now and 'bout to go to school, so I need ta talk growed up."

Tom smiled even though the boy couldn't see it and whispered back, "When it's just you and me you call me whatever you want."

"What was the fire up there?" Bart asked pointing.

"That, my first and only son, was just a way to tell you we were almost home. Special, just for you!"

Bart giggled and hugged his father before asking to be put down. He ran to his Gramma P and held onto her hand telling her about his dad's special fire message.

Tom turned to Bashalli in time to catch her looking slightly sad. "What's that face for?"

She sighed. "Here I try to keep you home with me and the children and then insist you get involved in another adventure and that takes you away and puts you in danger. I guess from now on I'll try to not insert my foot when I open my mouth."

He kissed her. "You keep insisting and I'll try to get better at staying around. Besides, I like your foot!"

She nodded and kissed him back. She knew it would just be a matter of time before he was off again.

What neither could know was it would be sending Tom and Bud and about twenty others on a rescue mission that she completely would understand and have no issues with as it involved saving the colony up on Mars.

The crowd parted letting the Swifts move forward to the elevator for the trip to the ground and eventually their hotel room.

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