

What Goes Up Must Come Down

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I.

Parabolus Corporation headquarters was in the tallest, newest building in Atlanta. The company had been founded five years ago and was today the largest private corporation in the world. It had been started by a twenty-two year old named Walter Fidwell, who was widely proclaimed as the greatest scientific genius since Einstein. According to his ghost-written autobiography, Walter's parents both worked and he spent a large part of his adolescence in a local mall. There were a number of attractions to keep young Walter amused, but the one that he took most for granted was the one that changed his life and the history of humanity.

Outside the food court in the mall was a fountain which shot streams of water. Long thin cylinders of water emerged from one hole in the fountain's surface and neatly disappeared into another hole after maintaining a parabolic trajectory through the air. The degree of arc might change, but the little jets of water never missed. It was like watching watery snakes jump out of their holes and slide into another hole.

It was fascinating to watch and the memory obviously lodged in young Walter's developing frontal cortex as he was eating his daily Big Mac and fries. Because as a freshman physics major at MIT, he came up with an idea that he thought would revolutionize air travel. Jet air travel had become widely viewed as a necessary evil. The costs of maintaining the system and retrofitting old airplanes to meet new environmental regulations had prevented investment in finding new and better forms of air travel. Between the huge cost of aircraft, fuel prices, pollution and sheer delays caused by a traffic control system that was collapsing under its own weight, the airline industry had become an expensive nightmare. Plus airplanes were at the mercy of the increasingly unstable and unpredictable weather.

Walter theorized that the whole problem could be solved with a complex system that integrated cryogenic supermagnets, lasers and nuclear powered thrusters. The thrusters would launch huge, luxurious suborbital spacecraft, which, using the magnets and lasers, would then be guided onto parabolic courses between cities, not unlike the paths followed by the water jets in the fountain.

Not only would the system be environmentally friendly, it would also greatly reduce travel times. A conventional jet plane could travel from New York to Sydney in about twenty hours and would cover almost ten thousand miles. With Walter's Photon Enabled Nuclear Intercontinental System, as he called it in his thesis, but

What Goes Up Must Come Down

wisely renamed by the venture capitalists, Parabolus, one would make the same trip in forty-seven minutes.

Although trips using parabolic travel took much less time than conventional air travel, the distances covered were much greater. Jet planes flew at around 35,000 feet, while Walter's parabola craft would be launched on steep trajectories almost fifty miles high. Even though they travelled further, the elapsed time was much less because of the speed that the craft were able to attain, thanks to the nuclear powered thrust and magnetic guidance system. As Walter was fond of pointing out, as long as they obeyed the rule: $v_e = \sqrt{\frac{2GM}{r}}$ the shuttles would avoid going into orbit and could be safely guided back to any point on Earth.

By the time he graduated, Walter had a patent attorney, an agent, a publicist and a host of venture capitalists who wanted to get Parabolus off the ground, in every sense of the term. In a few years, Parabolus had started transcontinental service between New York and Los Angeles and soon the biggest challenge became meeting the demand of all of the other countries and cities who rushed to join the Parabolus network.

It had been a huge undertaking. For safety reasons, the first platforms for launching and landing had been built out at sea. But it quickly became obvious that the virtually noiseless launches were quite safe and further, required a fraction of the space that conventional airports required.

It was one of those inventions that changed the course of human history. Traditional concepts of travel, urban planning and infrastructure, commuting, and national and cultural identity all changed radically overnight. The system had worked flawlessly for a dozen years and Walter and Parabolus's investors were very wealthy. A lot of other people were very wealthy too because of the new opportunities and industries that had been created by inexpensive, fast, safe, clean global transport.

There was only one problem, and it occupied an increasing amount of Parabolus's executives' time. Because of the gravitational, magnetic and sub-atomic forces that were activated along the path of each flight parabola, Walter had always claimed that two flight parabolas must never intersect for the duration of a flight. Each flight created an energy wave that was active throughout the flight and if a parabola craft passed through another flight's wave, problems could result.

Conventional aircraft had a similar challenge in that planes couldn't follow each other too closely because the aerodynamic disturbance caused by the lead plane's engines and passage through the air could create impossible turbulence for

What Goes Up Must Come Down

the following aircraft. But in the parabola flight case, the entire arc a craft followed during a flight would have active energies which might have catastrophic effects on another flight passing through the arc.

Walter's calculations were vague on what exactly would happen, but none of the scenarios were desirable. Theoretical risks ranged from emotional or physical damage to passengers to total destruction of both craft. Accordingly, there were strict rules limiting departures and arrivals to one at a time as well as clearly mapped out parabola tracks for launches and landings in busier space lanes.

That hadn't been a problem at first, but as the system grew, it created increasingly difficult challenges. For one thing, it put a practical limit on how big the system could grow and that meant a theoretical ceiling on revenues and profits. Not only did the management and shareholders of the company want to grow, but the public and governments wanted more flights. And the only way to do that was to permit multiple launches.

Parabolus desperately wanted to know if the problem was practical or theoretical and the Board of Directors had asked management to do everything possible to come up with a solution.

The first test they conducted was the most obvious. They launched two empty craft on intersecting courses. The unmanned ships were packed with instruments to measure energies, g-forces, radiation and an array of other stresses and forces. Walter, as Chief Technical Officer of the company warned that they still needed more data as the test was incomplete. "What we are trying to do is to find out what will happen to the people. If you don't have people on the ships you won't find out. Can't happen."

"But what about all the instruments?" asked the CEO. "We'll know what happened during the flight and that will tell us if anything risky happened."

"It's not that simple," Walter explained. "At the peak of the parabola, at the moment the ship stops rising and starts falling, there is some sort of discontinuity that happens. None of our instruments are reliable for a few minutes at that part of a flight. We've always known about it but it didn't seem to make any difference. Anyway, your test will be inconclusive."

"So?"

"So, the only thing to do is to have a test with people. And we don't know the risks."

"What about animals, like monkeys or rats?"

What Goes Up Must Come Down

“I don’t know,” admitted Walter. “For one thing, part of the issue is mass. A bunch of monkeys wouldn’t weigh as much as a full ship of humans and that might be a factor. Plus there may be emotional and mental problems we couldn’t measure in animals.”

The CEO was losing patience. “Look, I know you dreamed up this system, but you’re not much help in getting it to make money. I say ‘business is business,’ and in business you have to take risks. I say we do the test with people.”

The head of marketing was shocked, “But if something goes wrong it could hurt our brand. You know how we emphasize how safe we are.”

“How about asking for volunteers for a test?” someone suggested.

“Are you crazy? That will make us look like we don’t know what we’re doing. Half the battle is making people think we know how this thing works.”

“Wait a minute,” the General Counsel interrupted. “Walter. Worst case scenario. What is the worst thing that could happen if we launched a test with people?”

“First of all, remember that according to our simulations, nothing can go wrong. All of our concerns are based on theoretical problems because of anomalies in the mathematics that describe the energies produced by the launch and re-entry. But. And this is a big but, we just don’t know. There have been strange things recorded during some flights. Individually they don’t mean anything but we just don’t know.”

“What’s the worst case?” demanded the CEO.

“Worst case would be loss of the craft, but the probability of that is virtually nil. The most likely worst thing is that transit time would be greatly slowed. The calculations hint at some sort of energy drag that could occur. So a thirty minute trip might take several hours instead.”

“Is that all? I’m willing to live with that!” said the CEO.

The general counsel was unconvinced. “I still don’t like it. The reason people like us is because we are safe. And fast. If we show that we might not always be fast, that would be almost as bad as not being safe.”

The marketing boss snapped his fingers. “Wait. I’ve got it. It’s so simple. We have a contest. For young people. A party trip. Take them to some party destination for a couple of weeks. They won’t care if they get held up. And just in case, we make the parabola launch part of the prize – a super luxury party cruise.”

“What will that buy us?” the CEO asked.

“Well, if all goes well, we’ve got our successful test and away we go. If something goes wrong,” he glanced at Walter, “we tell them that we’ve slowed down the flight so they have more time to party before arriving. We fill the ship with half the normal number of passengers and twice the amount of food and entertainment. They won’t care! A problem will look like we intended it to happen!”

“It’s brilliant!” said the CEO. “Walter, what do you think?”

“It could work. And it would tell us what we need to know. But I’m still worried about the emotional and mental part of it. There’s still that risk.”

“Well, hell,” laughed the general counsel, “if anyone has trouble afterwards we blame it on too much partying.”

“That’s it,” said the CEO. “Make it happen.”

II.

The *Parabolus Adventure of a Lifetime* contest was a major success. The test required 100 subjects in two shuttles, and the contest offered round trip parabola travel to and from one of the most desirable singles vacation destinations in the world. In addition to bars and restaurants, the venue also offered virtually all adventure sports, from hang gliding and mountain climbing to scuba diving in the nearby ocean. The company received hundreds of thousands of entries and selected 100 “winners” after carefully screening the entrants to find people who had the fewest commitments and connections. Single people who lived alone and travelled a lot were given top priority. The Parabolus chief financial officer came up with the idea of requiring a ten dollar “entry fee” and that income nicely covered the cost of the test and provided a little extra profit as well.

The test called for the two craft to be launched from two different locations. Their courses would converge as they approached the port near the resort. The CEO had arranged for a conference room at corporate headquarters to be set up as the “war room” from which management would monitor the progress and results of the test. Banks of terminals and consoles had been installed to display the performance of the craft and the condition of the passengers.

The first part of the test proceeded normally as both craft took off from their respective ports. Everyone relaxed a bit when the first craft reached the peak of its parabola and began to descend and slow. Shortly thereafter, the second craft intersected the path of the first craft and the CEO slapped Walter on the back as the

What Goes Up Must Come Down

readouts around the room continued to show that everything was performing normally. It looked like two completely routine flights.

Until the second ship reached its peak and began to slow. Suddenly consoles and readouts either froze up or went into alarm mode. Walter froze too as everyone in the room bombarded him with questions about what was going on. "Cut the alarms," he finally said.

"What happened?" demanded the CEO.

"I don't know. Give me some time for analysis."

Walter and some of his assistants worked feverishly as the anxious executives watched. Sometimes they discussed, sometimes they argued. They wrote complex computer programs and puzzled over the outcomes. After several hours, Walter approached the CEO. "We still aren't one hundred percent sure, but we think we know what has happened?"

"Well?" said the CEO.

"You have to understand that the only piece of hard data we have is that the second craft has not arrived at its destination. It is several hours overdue. That, oh, and the fact that there has been no report of wreckage and the fact that we are still receiving transmissions from the ship lead us to conclude that it is still up there."

"And how are the passengers?"

"Telemetry reports are inconclusive."

"What the hell does that mean?"

"The team is divided on that. There is data flowing in. But it doesn't make sense. Every indication is that the people are alive. But that could be phantom impulses sort of echoing around in the magnetic wake. I personally don't think so."

"So they're alive?"

"I think so. I don't know whether it's a data recording and transmission problem or something else, but it would appear as if time has greatly slowed down for them. Almost stopped. That is what is confusing us."

"But can you get them down?"

"Unknown. Again the team is divided. The most optimistic idea is that the craft has slowed for some reason but is still moving. It will just take a while to get

What Goes Up Must Come Down

down. Others feel that it is stuck in an energy warp. We don't know if we can break the force or what would happen even if we could."

"What about the rest of the system? Everyone thinks we are down for routine maintenance but we can't stay off line for much longer."

"I don't know. My recommendation is launch one vehicle and if that works OK this should be an isolated problem. Who knows? It might even fix this problem."

"Do it," ordered the CEO.

Another tense hour passed and the news was good and bad. The new flight had gone flawlessly so it looked as if the system was undamaged. But the party shuttle hadn't moved."

Walter looked up from his console. "Uh, I have some additional information. We've been able to plot the changes in activity from the stranded ship. Again, the data is subject to various interpretations and cannot be fully trusted."

"Then what the hell good is it?" demanded the CEO.

"It looks like the craft is not permanently stuck where it is. As some of us suspected, it is moving slowly."

"If it's moving, we should be OK."

"Unfortunately, no. At the rate it's going it won't land for another eighty-seven thousand, four hundred fifty-seven days."

"You're joking."

"From the available data, that seems to be the case."

"We're dead," said the marketing boss. "How are we going to explain this? Aside from the liability of losing fifty passengers, no one will ever want to get on a shuttle again."

"I'm not so sure. The known risks of automobile and airplane travel never put people off from using those methods of transport. This is just a blemish on our perfect safety record," said the general counsel.

"But if we can't explain what happened, people won't believe it won't happen again."

"And we don't dare explain that this contest was really a front for a dangerous test. The lawsuits will never end if we do that," said the general counsel.

What Goes Up Must Come Down

The CEO had his head in his hands. Walter felt a moment of compassion for him. He, too, felt guilty about the passengers on the shuttle and the CEO must be wondering how he was going to explain the company's actions. The CEO looked up slowly and gazed around the room. "Who," he asked, "dreamed up this test?"

And Walter knew then that rather than sharing guilt, the CEO was only interested in sharing blame.

The general counsel said, "That doesn't really matter does it? We need to find a solution."

The CEO waved a hand. "You're right. We need damage control. What kind of a press release should we be putting out? Any ideas?"

"Well we have to make it look like an accident. We can't let anyone link it to the contest. How's our security?"

Jason Franks, a young marketing director who had managed the contest had been sitting apart from the other executives. He suddenly moved forward. "Excuse me. But I've been thinking about this. There may be a solution. We may not need a press release."

The CEO looked at him hopefully, "What is it?"

Franks stirred in his seat. "Is there a computer person here?"

Al Whiting said, "Yeah. That would be me."

Franks smiled and addressed Whiting. "What data do we collect on our passengers?"

Whiting shrugged, "Just about everything, I guess. Even their height and weight. Plus financial data. And you know how we started that 'I'm a Parabolite' program a few years ago where people could earn points and post information on the net about their travels? As a result of that we've even got pictures and people's address books and everything. Why do you ask?"

"That's what I thought. We also gathered a huge amount of biographical data on the people who entered the contest. You know, we wanted them to think they were being picked according to their skills and other qualities. You know how people that age are. They told us everything. We know who their first grade teachers were and the name of their first puppy."

"What does all that have to do with the fact that these poor souls are stuck in space?"

What Goes Up Must Come Down

“Here’s what I’m thinking. With the information we have available, would it be possible to make it look like those people were still alive?”

“What do you mean?”

“You know, use their IDs and passwords and whatever else we have to make it look like they are back on Earth and living their lives? Update their Facebook pages, Tweet for them, put pictures of their trip out on their web site, you know that sort of thing.”

“I suppose it’s possible. But it couldn’t work. If they don’t show up at work or at home, people will get suspicious.”

“That’s where we have to be creative. You know how mobile everyone is today. Especially people that age. Thanks largely to us. We just post some messages out on peoples’ networks saying they decided to spend more time in such and such a place or go off to visit someone somewhere else. We fiddle their bank accounts so it looks like they are doing stuff. Maybe a few of them would end up marrying each other and moving to a new location so no one would miss them. A few of them might die from falling off a cliff or forgetting to open their parachutes. Who’s to know?”

“You’re crazy!” shouted Walter. “It’s illegal.”

The general counsel cleared his throat, “You know, I’m not sure it is. We probably need to do some research, but if these people don’t still exist, there wouldn’t technically be anything illegal about making it look like they are alive. It’s illegal to fake your death, but I don’t think there’s much legal precedent for dead people pretending they are alive.”

“It’s fraud!” protested Walter.

“Who’s being defrauded?”

The CEO pointed to Whiting. “Is this doable?”

“Yes, it’s feasible. I don’t know what sort of technical issues might be involved. The beauty of it is that we have a couple of weeks to get everything up and running. Those people are all supposed to be at the resort for the next two weeks so no one’s expecting to see them until then.”

“What about the resort people? They’re probably already wondering what’s going on.”

What Goes Up Must Come Down

“We can handle them. But we’ll probably have to keep this thing going for a couple of years. We can kill off a few every couple of months and no one will be the wiser. You know how short peoples’ memories are. The next big Hollywood scandal will push anything about us off the front pages.”

The CEO thought for a minute. “That wouldn’t cost too much. After all, we’re protecting our brand and that’s priceless.” He turned to Whiting. “OK. Make it happen. Whatever you need, just ask for it. From now on you are Executive Vice President in Charge of Special Projects.”