

PRESSURE

*"The emergencies you train for almost never happen. It's
the one you can't train for that kills you."
- Ernest K. Gann, advice from the 'old pelican'*

Millions of stars glittered coldly in the pitch black sky while a solid layer of silvery clouds slid beneath my wings. I was sitting in the cockpit of a brand new Beechcraft Bonanza high above the Atlantic Ocean, retracing the same path Charles Lindbergh made from North America to Paris 65 years before.

I glanced at the handheld GPS propped up on the glare shield and smiled. It registered that I was racing eastbound above the cold dark waters of the Atlantic at a sweet 195 knots. In 11 hours I would arrive in Paris, right on schedule.

Having a GPS for navigating was only one of the advantages I had over "Lucky Lindy" that night, but probably the most important one. Without it I'd be forced to use good, old fashioned "dead reckoning," as I took the long way across the Atlantic.

I was cruising at fifteen thousand feet, where an unusually strong tail wind was allowing me to skip the normal 1,700 mile leg to the Azores and fly nonstop to Paris. Going direct to Paris from St. John's was a butt numbing 2,487 miles and was usually an impossible

crossing option when heading to Europe. But I'd seen the forecast for strong tailwinds when I'd received my weather packet and calculated that the Bonanza could make it. I had a smaller fuel reserve than usual, but I could live with that if it meant cutting a full day off my trip. Not flying all the way down to Santa Maria before heading back up to Paris would also save Pete almost one thousand dollars in fuel and landing fees. Enjoying an extra day in the City of Lights before catching my flight home didn't hurt either.

Sitting in a soft leather seat was another important advantage over the stiff wicker basket chair used in the Spirit of St. Louis. The technology in the brand new 1994 Beechcraft F-33 Bonanza was light years ahead of what the Ryan Aeronautical Company used when it built Lindbergh's plane in 1927. The Bonanza had a more reliable and efficient engine, a more aerodynamic airframe, retractable landing gear, cabin heat and state-of-the-art avionics. It even had that new plane smell. I still had one thing in common with Charles Lindbergh. If my single engine stopped turning avgas into noise, I'd be in trouble.

The stress and apprehension of taking off from St. John's on another solo transatlantic flight had worn off hours before. Once aloft, with the engine running smoothly, and no weather demons to contend with, I settled into the pilot's seat like it was an old familiar easy chair, comfortable, but alert.

Four hours into the flight, it was time to transfer some fuel from the ninety gallon ferry tank installed in the cabin to the wing tanks. I turned the valve on the bottom of the steel tank mounted behind my seat. That would allow the

fuel in the ferry tank to flow into the wings tanks. I then went back to the book I was reading.

When I checked the progress ten minutes later, I was perplexed to see that the wing tanks had made only a modest gain, if any. This got my attention. Although I hadn't really timed the transfer rate when I'd tested the fuel system the last time I used it, I was sure that it had gone much faster than that. Hoping it was my imagination, I took out a pencil, marked the fuel level on the steel ferry tank and sat back to see how fast it went down. It didn't take long for the devastating reality to hit me. The fuel wasn't moving at all! *Damn*. The news hit me like a thunderbolt. It only took a few seconds to realize what a terrible position I was in. A quick glance at the fuel gauges told me what I already knew. The fuel remaining in the wing tanks was not nearly enough to reach Europe or to get me back to Canada. If I couldn't use the fuel in the ferry tank, I was screwed.

It was then that I realized just how truly alone I was. My course from St. John's to Paris took me far south of the normal routes the airlines took when crossing the pond and I knew for a fact that there weren't any other ferry flights out there. It's not an exaggeration to say that there probably wasn't another human being anywhere within five hundred miles of me. At that moment I was literally the loneliest man in the world. I might as well have been halfway to the moon. And *Houston, we have a problem*.

Denial was the first emotion to poke its head into the cockpit. *I must have not opened the valve all the way . . . nope, it's good*. The valve was open as far as it would go and moved back and forth easily. I double checked the

aircraft's fuel selector and found that it was indeed where it should be to allow the fuel to transfer.

Amazingly, I didn't allow panic to join the party. But the seed had been planted, and it took all the self-control I could muster to keep it from growing. *Okay Kerry, stay calm. Think. What's the problem and what's the solution?* I took a deep breath, sat back and tried to work out what might be wrong with the fuel system. I pictured the fuel system in my mind, trying to determine where the problem might lie. The fuel level of the ferry tank wasn't going down so it's not a leak. I looked down at the outflow valve located at the bottom of the big metal tank. There might be something blocking the valve hole inside the ferry tank. I thought about the possibility for a few seconds. *Maybe I can shake it loose.*

I turned back around in my seat, buckled my seat belt and secured any loose items in the cockpit. I grabbed the yoke, flipped off the autopilot and proceeded to put the Bonanza through a series of aggressive maneuvers. Hoping to dislodge anything that might be blocking the fuel from flowing. Random items I hadn't been able to reach and secure floated around the cockpit in zero gravity as I nosed the Bonanza over again and again. When I finished my impromptu aerobatic routine, I twisted around in my seat and stared hopefully at the plastic fuel gauge. The fuel level remained stubbornly fixed.

Disappointed that just shaking the plane up and down hadn't fixed the problem, it was time to start taking things apart to try and find an answer. I unscrewed the rubber filler cap on top of the ferry tank, making sure there was enough outside air pressure to force the fuel into the wing

tanks. Bingo, I'd found the problem, or at least "A" problem.

With the cap off, I should've been rewarded with a blast of cold Atlantic air and gasoline fumes. Instead there was nothing. The ferry tanks we used were designed to be pressurized by ram air collected from a L-shaped tube. That tube was mounted on the belly of the aircraft and routed through a half inch rubber hose which went into the top of the metal tank.

Normally, the L-tube is mounted to the aircraft by drilling a hole in the belly, sticking the fitting through it and screwing the L-tube in place with a lock washer and nut. This method of fixing the ram air tube in place had worked well in past flights and kept it perfectly aligned into the slipstream, and very secure. When I delivered the plane to its destination and took the ferry tank system out, I'd just stick a metal plug into the hole we'd drilled in the belly. It was a small plug that we painted the same color as the belly. No one ever noticed.

But the L-tube wasn't mounted like that on this plane. Before I left on the trip, Pete had shown me the difference.

"Take a look at this, McCauley," Pete said kneeling down on the hanger floor and pointing under the Bonanza.

"We loosened the screws on an access panel, stuck the L-tube through it sideways and taped it in place."

I squatted down on my heels, looked under the plane and saw the L-tube sticking out of the belly at an angle and what looked like a half a roll of silver duct tape holding it in place. "Why the hell did you do it like that?" I asked, not liking what I'd seen.

“Do you know how much this plane is worth? I'm sure as hell not gonna drill a hole in the belly of a four hundred eighty thousand dollar airplane.”

“Okay fine, but don't you think you could have found a better way to mount the tube?”

“Don't worry McCauley, it's not going anywhere. Feel it, it's solid. Just make sure you check it when you get to St. John's.”

I grabbed the tube and tried to move it back and forth. It seemed secure but not nearly as solid as it normally was. *If it's so damn secure, why the warning to check it after I'd flown the plane to Newfoundland?*

I grabbed a wrench out of the tool kit I always flew with, and unscrewed a coupling in the ram air supply hose that ran from the L-tube in the belly of the aircraft to the ferry tank. The high pressure jet of cold air, essential for the system to work, was AWOL. Nothing, not breath of air was coming out of the hose. I blamed the duct tape. The airstream must have turned the L-tube, which in turn disabled the ferry fuel system. I also blamed myself and my willingness to go against my better judgment. I looked at the fuel remaining in the wing tanks, and did some quick calculations. I didn't have enough gas to turn around and fight the headwinds back to St. John's, or to stretch my fuel and make it to Ireland. I really needed that gas.

I spent a few more minutes kicking myself for being such a moron. If I'd checked to see if the ferry tank was working after the first two hours, I would have had enough fuel in the wing tanks to get me back to St. John's. But I'd been using the ferry system for two full days, and had gotten complacent. *Stop beating yourself up dumb ass,*

you'll have plenty of time for that in the raft if you can't figure this out. I sat there holding the silent rubber hose, my eyes glazed over in thought as the challenge glared at me. How to pressurize the ferry tank and force the fuel into the wing tanks where it could be used. Then from the dark recesses of my mind I remembered a conversation with Jim Bell.

“If your ram air tube is ever iced over and you need to move some fuel, what you can do is descend to sea level, open the ferry tank to equalize the pressure then seal the tank,” Jim said. “Then you climb back up to altitude, open the valve and the high pressure air in the tank will force some of the fuel out.”

“How much fuel will transfer?” I asked.

“I'm not really sure. I've never really had to do it myself, but I imagine you should be able to move five or six gallons each time you go up and down.”

“That sounds like a pain in the ass.”

“I suppose, but so is trying to get into your life raft wearing a survival suit.”

The procedure sounded like it would work in theory, but I could see a few problems in my situation: Number one, the only reason I'd chosen the long route straight across the Atlantic instead of stopping in the Azores was because of the unusually strong tailwinds. But they were only strong above fifteen thousand feet. If I spent all night repeatedly descending to sea level and back, I wouldn't spend enough time in those strong tailwinds to make it across the pond. Number two, just the act of climbing and descending multiple times was going to eat up a ton of fuel. Fuel that I needed, even if I could get it all moved, which I

doubted. And number three: Dropping through fifteen thousand feet of clouds and darkness without a current altimeter setting, before hopefully pulling up in time to avoid crashing into the cold black ocean, was, in a word, scary. I needed to find another way of pressurizing the ferry tank.

Sitting there holding the two ends of the hose I looked at the tank and wondered just how much pressure would be required to move the fuel. The air space in the tank was not very big due to it being almost full. I thought to myself, If I can blow up an air mattress with lung power why not a ferry tank?

Not really expecting success, I put the end of the black rubber hose in my mouth and got started. After a number of deep breaths, the back pressure in the hose began to increase. A positive sign that encouraged me to blow harder.

I worked as long as I could, then slapped my hand over the end of the hose to seal it, and waited to see if my labors would produce any results. Less than a minute later, the bubble on the sight gauge slowly moved past the mark I had made on the side of the tank.

“YES! It works! All right!” I yelled, pumping my fist in excitement. My mad scientist experiment was a success! I was able to pressurize the 90 gallon steel tank by lung power alone.

I was feeling pretty full of myself for being so damn smart as I watched the fuel level drop. After the fuel level dropped about an inch and a half it stopped going down. With a few calculations and some sloppy guesswork, it

took me ten minutes to move less than five gallons of gas to the wing tanks.

Hmm, not too bad. Let's see what that gets me.

Grabbing the manual for the Bonanza, I went to the performance charts and saw that at my current power settings, five gallons would keep me in the air for nineteen minutes.

“Okay, let's see, if I have eight hours and thirty-five minutes left to go,” I said, looking at the GPS and grabbing my calculator, “and moving five gallons gives me nineteen minutes of flight time . . .” My fingers banged away on the buttons as I tried to figure out how many times I would have to blow into the ferry tank to make it to Paris. *Nineteen times sixty is . . . no that's not right. Must be nineteen divided by sixty . . . Okay. Point three one hours. Divided by eight point three five . . . no . . . wait.* I was confused.

I couldn't figure out why I was having such a hard time doing a simple flight time vs. fuel burn calculation. I did those all the time. The lack of oxygen at high altitude was starting to have an effect on me. After a few failed attempts I finally concluded that I would need to pressurize the tank at least 27 times to reach Paris. It sounded like a lot, but it was doable.

I was also hoping that the weather in Shannon, Ireland would be better than forecasted. They were calling for dense fog at the airport, but if I could somehow land there, all my troubles would be over. But even Ireland was still hours away. Resigned to the fact that it was going to be a long night either way, I took the tape off the end of the hose, and got to work.

The rest of the night became a marathon session of hyperventilation, and 100 octane gasoline fumes. As the fuel level dropped, it became harder and harder to pressurize the growing air space in the ferry tanks. The longer I worked the worse I felt. Normally, I could fly at fifteen thousand feet all day without becoming hypoxic due to lack of oxygen. If I sat still and didn't exert myself, I could fly as high as eighteen thousand feet with little effect.

What I was doing in the cockpit that night was the exact opposite of taking it easy. Forcing my breath into the hose again and again started to make my head swim. I found that I was starting to have trouble focusing on the engine instruments and GPS. I sat there holding the hose in my mouth with my eyes closed, breathing in through my nose and exhaling into the hose, over, and over, and over. The dry, high altitude air immediately dried out my nostrils and made my throat burn.

After the second hour of exhausting work, I found myself nodding off when I capped the hose with tape, waiting for the fuel to transfer. I was used to fighting sleep on ferry trips. But that night in the Bonanza was the worst. As the hours wore on, staying awake became like a form of torture. I tried all my old tricks; pinching my inner thigh, shadow boxing, drumming on the dash and singing along to the music I was listening to. Anything I could think of to get me a few minutes and a few miles further along. But it was a losing battle and despite the blinding headache I'd developed, the seductive call of sleep led me to close my eyes, for what I told myself would only be a minute. *Just a quick cat nap to recharge the batteries.* I promised myself. Five minutes later I jerked awake, alarmed that I'd allowed

myself to sleep for so long. I knew if I slept long enough to run the wing tanks dry I'd never get enough fuel moved in time to start the engine before I crashed into the ocean.

One thing I was trying not to think about was what Pete Jr. told me about what had happened to one of Orient Air's young pilots just a few months before I'd been hired. The rookie ferry pilot was on one of his first few trips when he ran into icing trouble halfway between St. John's and Shannon. He was almost exactly in the middle of the Atlantic when he made a May Day call before ditching in the ocean. Pete said that he made it into his raft and even made brief radio contact with one of the rescue planes sent to find him. But that was it. Rescue planes from both Canada and Ireland scoured the area for two days but they could find no sign of the lost pilot. I couldn't help but think about the fact that I was flying over the exact point on the exact route that the young pilot went down.

After another grueling session on the black rubber hose, I decided to try eating something to hopefully keep my energy up. I broke into my goody bag and ate some Cheese Wiz on Ritz crackers and downed a can of soda. The food and caffeine picked me up a little, but I wasn't optimistic about it helping for long. The fuel gauges on the wing tanks were bouncing on empty as I picked up the rubber hose again and got back to work.

As time wore on, my mental condition worsened. It took forever to do the math required to estimate my arrival time at the next position reporting location and my voice on the radio was slurred. When I'd finally transferred enough fuel to make it to Shannon, I was just about done in. From the beginning of my ordeal I'd been praying that the

weather in Ireland would improve enough to allow me to land and end that horrible night. The forecast had called for dense fog until late the next morning. I could have called Shannon control earlier that night, but I'd been afraid that if I heard bad news I might just give up. I just didn't know if I had the stamina to keep going all the way to Paris. But I couldn't put it off forever so I radioed Shannon for a weather update.

"Shannon control, Fox, Golf, India, Fox, Mike."

"Go ahead Fox Mike."

"Yes sir, could you give me the current conditions at Shannon please?"

"Roger, stand by."

The short wait was unbearable.

Please, please, please be good! I thought, hoping for the best.

"Current conditions at Shannon; sky obscured, fog, runway visual range fifty meters. The airport is closed at this time."

My head sank into my chest as I listened to the controller confirm my worst fears. The large area of fog that was forecast was not only still covering the coast of Ireland, but was worse than they predicted.

"Roger Shannon. Are conditions any better further east? In the London area perhaps?"

"Negative Fox Mike, conditions don't improve until you cross the channel. Le' Bourget Airport is currently four hundred overcast with one mile visibility and light rain showers."

God, I thought, I don't know if I can do this for another four hours. But my options were few. I could declare an

emergency, and attempt a landing at Shannon, or push on to Paris. My thumb hovered over the push-to-talk button. It would be so easy, just push down on the button, declare an emergency and land at Shannon.

Do it! the little devil on my shoulder said, *Just declare an emergency and this will all be over. You won't ever have to blow into that damn hose ever again!* God it was tempting. I was so tired. With a possible end to my flight only forty-five minutes away I was sorely tempted to give it a try. But attempting a landing in zero visibility conditions was something that I just wasn't equipped to do. For me to try it in my current mental state would be pure suicide. Resigned to my fate, I thanked Shannon for the update and continued on into the night.

The last three hours to Paris were the worst. As the ferry tanks got close to empty, the transfer rate was down to a point that barely kept up with the demands of the engine. I was forced to blow into the hose almost continuously. I was getting so tired that I knew why they used sleep deprivation as a form of torture. I was also flying through the multiple airspaces that surround London, and then Paris. Answering the radio calls from ATC was interfering with my work so much that I almost turned the damn thing off.

As I crossed the English Channel, I encountered heavy rain showers, but my fatigued numbed brain hardly noticed. The trip was almost over, but the most challenging part was still ahead; a night approach to minimums in the rain. I was concerned because even simple tasks were starting to become difficult. I finally had the wing tanks full enough to make it to Paris, with a little reserve. I capped the pressure

line, for what I hoped was the last time and got ready for the approach.

Paris ATC cleared me to descend out of fifteen thousand feet, and as I passed ten thousand, the thicker air started to clear my head, like I was coming out of a dream. I realized that I should have dropped down and started flying at a lower altitude as soon as I didn't need the strong tailwinds to reach Paris anymore. The lower altitude would have made pressurizing the tank a whole lot easier. It would've helped me think more clearly as well. Unfortunately, I would've needed to think more clearly to realize that flying lower would help me think more clearly.

Starting the approach to Le Bourget I felt better and better as the increased oxygen and adrenaline of the approach cleared my head. The ceilings were reported to be at four hundred feet and the runway lights appeared out of the gloom right on schedule.

Twelve hours and fifty minutes and over 2400 miles after leaving Newfoundland, the wheels of the Bonanza thumped down at Le Bourget Airport. I taxied to the ramp, stopped the plane and pulled the mixture knob to shut the engine down.

As the gyros spun down, silence descended on the cockpit. I looked out at the deserted rain soaked ramp and realized I was utterly spent. My whole body ached, my chest hurt, my throat was sore and dry, and I had one hell of a headache. The events of the long night seemed like a hazy dream that I was already having trouble remembering.

I climbed out of the Bonanza like an old man, swung my backpack over my shoulder, grabbed my flight bag and headed to the only lit doorway in the terminal. As I walked

across the deserted ramp I wondered where everybody was. After all I had been through that night, I felt I deserved there to be a cheering crowd, eager to see the pilot who just pulled off one of the greatest feats in aviation history. Lindbergh had a huge crowd waiting when he landed, and all he had to do was sit there all night. I'd had to work. Instead, all I found was a sleepy customs agent inside who stamped my passport and went back to watching his portable TV without saying a word. He didn't seem impressed at all.