

Aviation is Powerful

By Justin Pymonto

Ladies and gentlemen, I could give you hundreds of reasons why you shouldn't listen to anything I have to say about aviation. During ground school, my average was 61%. I've nearly crashed on a dozen different occasions. I am so terrible at aviation that on my first cross country flight, my friend's radio decided to fail, and she was in a separate plane! But do you know why you're going to listen to me very carefully? Because even after I told them all these stories, I still decided to speak at this competition!

The reason why I am alive today, and have my Glider and Private Pilot's Licenses, is because Aviation is Powerful. Let me show you exactly how aviation changed my life by teaching me 3 life lessons: To be diligent, to be ingenious and to be empathetic.

Let's start with diligence, but instead of quoting some dictionary definition, let me ask you this: "What temperature has the highest risk for carb icing?" As for context: the carb, or carburetor, is the part that is responsible for injecting the fuel/air mixture into the engine. Even if you're not interested in aviation, if you've driven a car or used a snowmobile, chances are you've relied on a carburetor. Now what happens in aviation is that the air mixture entering the carb sometimes has a high moisture content and can freeze, hence the term carb icing, and this stops the flow of fuel. I'll never forget how I learned this. My first aviation camp, I'm sitting there, hot, stuffy room, bored out of my mind, just like some of you are now. I had the same question. "Why do we need to know this?" My ground school instructor looked at me, solemn face, and told me the story of how his flight instructor got into a helicopter one sunny day, went up with a few friends for a sightseeing flight, and never came home due to an engine failure caused by carb icing.

He finished that very story with a quote that sums up what diligence serves to correct. "Behind every dumb rule, there is one dead pilot." Very quickly, I realized that there's no way to know which obscure fact will save your life in aviation.

If you want to know what diligence looks like, well then, these candid pictures from my private pilot training serve quite well. In only one of those photos are all of us watching Netflix. For 7 weeks of my summer, all I did was study, day in and day out, every rule and every emergency procedure. You quickly learn that attention to detail becomes your best friend, and diligence your fiancé. But after you pass your exams and become a pilot, the trait of diligence never leaves you. In grade 12, when most of my friends decided to go out and party, the work ethic I had cultivated through my aviation career propelled me forward, allowing me to accomplish my goals.

Diligence also exists outside of the classroom. It serves as the bulwark against complacency, the evil that causes the downfall of many a pilot. Just look at the walk-around inspection for inspiration. For everyone who drives a car, it's a simple matter of hopping in and turning it on. Pilots don't have that luxury, and the walk-around inspection is exactly as it sounds. Before commencing a flight, a pilot has to ensure that the hundreds of possible malfunctions that can occur are avoided by inspecting the different parts of the aircraft. For example, as a private pilot, just a few things I can name off the top of my head, are using the dipstick to ensure there is sufficient oil, visually confirming that tire pressure is sufficient, and then look for leaking hydraulic fluid from the brakes. Before starting the engine, I also need to take a fuel sample to see if there is any contamination, and even if the fuel is the correct colour and type! But from the tasks I've named, that's just a drop in the ocean. In cases such as these, diligence doesn't manifest in the hours you took to memorize these actions, but the diligence you must have to check all your operating manuals and checklists to make sure you aren't missing any.

Moving on, aviation has a funny way of always keeping you on your toes. And when you begin to rest on the laurels of your hours of hard work and diligent training, it decides to throw you for a loop. That's when only ingenuity can save you.

I learned this as a familiarization pilot, responsible for flying younger cadets in the Schweizer 2-33a Glider. On one particular famil flight, I found myself joining the circuit with excess altitude, which normally isn't a worry, as extra altitude is known as life insurance for

most glider pilots. Not thinking too much of it, I start my prelanding checks with diligence, and the first step is to check the function of your spoilers.

Don't worry, I'm not going to ruin any movies for you, the spoilers in aviation decrease lift, which helps you lose altitude, and they increase drag, which helps you slow down. Pretty essential to landing, don't you think? I go to check the spoiler handle, but it doesn't budge. Still not worried, because I had been working out recently, I pull on it again. This time, I hear this horrible wrenching sound. I look at my hand, and in it, the spoiler handle, newly ripped from its hinge. My jaw drops, the spoiler handle drops, and my heart drops. There is no emergency protocol to follow when this happens, and so I had to rely on ingenuity.

This is a diagram of a normal circuit, with the recommended altitudes you must hit as an Air Cadet Glider Pilot. Without spoilers as a way to lose altitude and slow down, think about what you would do? Remember, this happened to me in Gr 12. I had seconds to deal with this emergency, a day after being grounded by my parents for coming home late.

Couple options. One, I could angle out on the downwind leg, or two, I could extend it. Either way, I lose the altitude but I haven't reduced my speed, and I'm farther away from the airport. Suddenly, it hits me. I have a 12 year old passenger in the back seat with a full set of controls. Without showing her how much I'm panicking and praying to every God I know, I turn around and ask her if she'd like to play a game. "When I say pull, you pull as hard as you can on that handle, okay?" I don't tell her this game is going to save our lives. Using her help, I was able to fly a normal circuit. These are the quick-thinking skills I would never learn poring over a textbook, and in that moment, it made all the difference. Creativity doesn't have to only be used in life-or-death situations. I've found that its improved my problem solving and even helped me with self-expression, even though no one wants to buy my art ... nor my poetry... not even my mom.

And lastly, the skill that keeps you human, is empathy. On the Cadet Pilot's course, you wait everyday with the hopes you'll hear the magic words. "You're going solo" But after looking

at these pictures, on which day would you like to fly for the first time? We didn't have that choice, and for me it was the on the right, a bleak and grey day.

Just to give you a sense of how bad it was, as soon as we took off, here are our instructors, wondering if we would actually make it back. They were right to be worried, as soon as my wheels left my ground, my vision filled with clouds and it didn't help that the airspace was very busy. I couldn't believe it, my first power VFR flight, and I'm completely disoriented. There was no way I was asking for help, I was ashamed.

And that's when I learned what empathy was, it didn't come from a pilot, but from a compassionate air traffic controller. All of a sudden, my radio crackles alive. I hear a friendly voice asking me where I am. Feigning confidence, I respond, "Waterloo Tower, uhh I'm about a 1 mile west of the airport." Same voice, this time comes back a chuckle. "Buddy, no you're not, we read you at 10 miles south. Do you need directions back, son?" Without the empathetic air traffic controller looking over me that day, rumour has it I'd still be flying around Waterloo. I can't get over how even with a job that busy, he still had the time to identify I needed help, and reach out and communicate in a calm and kind manner. I learned that empathy shouldn't be extended to only our friends, but to everyone we meet.

I remember presenting this speech at an earlier competition, and I was questioned about the anecdotal nature of my experience. "Well Justin, you're a bad pilot, you got lost and you needed ATC to bail you out. How exactly does that mean empathy becomes one of the criteria for every great aviator?" I told that person, "Hey man, that's a fair point, but very hurtful." The facts are that "Human Factors" is a critical component of aviation crash investigations. The language used in the cockpit in critical scenarios can very much be the difference between life and death. The problem is that language is in constant flux: it can change depending on the power difference, such as a First Officer talking to the Captain, or even on cultural differences. In these cases where an individual feels the need to defer to another person, they might choose to mitigate their speech, mitigation being downplaying/sugercoating the meaning of their statements. And in the crash of Colombian Airliner Avianca Flight 052 in January of 1990, speech mitigation is one of the contributing factors to the death of 73 of 158 passengers on

board. Analyzing the flight recorder before the crash caused by simple fuel exhaustion, it reveals a horrifying truth. Not only were there long stretches of silence in the cockpit where that should have rapid fire communication between the crew, but the dialogue that did occur shows a crew terrified to correct the Captain on the mistakes he was creating. Furthermore, the First Officer, responsible for conducting communications with ATC, did not assert their need for priority landing. At one point, the First Officer to ATC merely says: "That's right to one-eight-zero on the heading, and, ah, we'll try once again. We're running out of fuel." It's quite clear which sentence should have been first. Now, no one can know for certain why any of the crew chose to communicate how they did. But, many psychological and language studies have shown that in empathetic environments, people will be more confident in coming forward with concerns they have, whether that be the need for priority landing in the unfortunate and difficult case of the Avianca Flight 052, or even small, insignificant scenarios such as my need for directions. While I was lucky enough to feel confident asking for help from an empathetic ATC Controller, we have to be cognizant of the crashes that have occurred due to fear of speaking out and lack of empathy between crew.

Reflecting on how aviation has changed my life, it's clear that it has taught me 3 key lessons: the diligence to have an eye for detail, the ingenuity to problem solve, and the empathy to help others. And what's truly important, is that these skills that it takes to become a great aviator hold so very important in creating great citizens and leaders. I pursued aviation because it was a hobby, but it turned out to be powerful enough to change who I am and it become a passion.

I'd like to thank you for listening to my presentation, and if anybody you know is on the fence about pursuing this field, please encourage them, because Aviation is powerful.