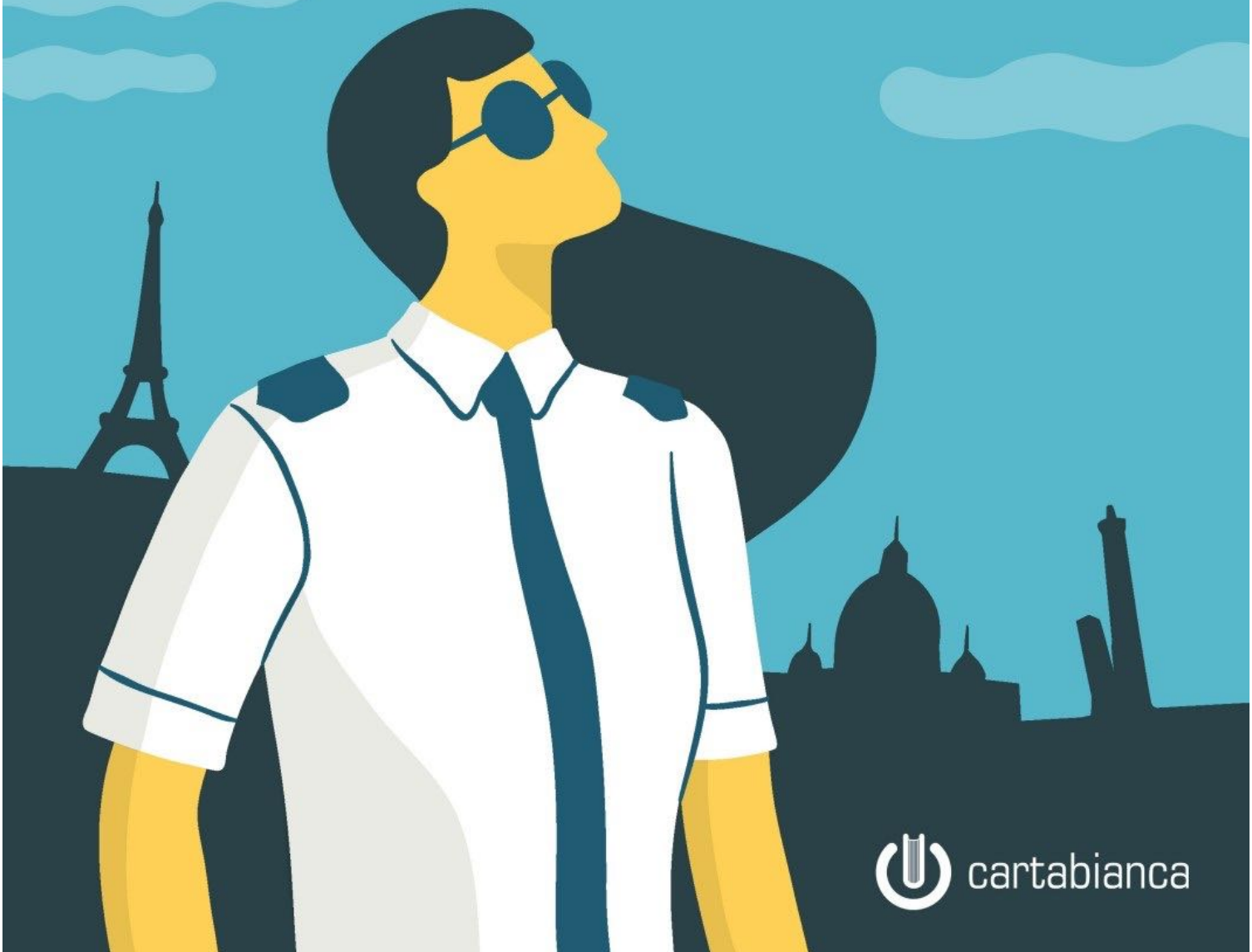
Carolina Dellonte

MY HEART AT ZERO GRAVITY

A GIRL, A PLANE AND THEIR STORY



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My Heart at Zero Gravity

A girl, a plane and their story

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To my grandmothers, who with their strength
have always been a great example to me.
To my grandfathers, whom I wish
I could have known better.

INTRODUCTION

It is absolutely necessary that, at last,
you know which world you belong to
and from which power that governs
the world you have been made;
and that no one is allowed to prevent you
from always doing and saying what
is in line with the nature you belong to.

Marcus Aurelius, *Meditations*

«Stop gawking at the view and watch what you're doing in here!» the instructor, who was sitting on my right, ordered me.

His strong Genoese accent resounded in my ears while we were in a tight turn at 1,000 feet in the air above Bologna. Actually, I wasn't looking at the view, but at how fast we were going above the roofs. When you are flying, figuring out the speed is not easy. Once you take off, it is rather difficult to get a true idea of how fast the plane is going, even if there are fixed objects very near in the background. Only some maneuvers, such as tight turns or coming out through the clouds when you are climbing after takeoff, allow you to grasp that reality. I used to adore those seconds when I was able to feel like a bullet.

I immediately looked at the instruments.

The runway was there, on my left, very near. The plane was ready to land, the landing gear was down, as well as the flaps, the speed was right and the air traffic controller had cleared us to land.

Everything looked perfect, by the book, but there was one problem. Being able to make the plane do what I wanted it to when I flew it just a few meters from the ground.

It was my fourth flight and my fourth day of training on the plane that would be, in the next ten years, my second skin, but I didn't know

that yet. My goal was to get through the next ten seconds without hurting myself or destroying something.

«When you go for a ride on your horse, I bet he does what you want him to, not what he wants to do», said Danilo.

He was my instructor during all my scheduled training for that week. He was a tall man, athletic, in his fifties, and he looked exactly like Clint Eastwood.

«So, with a plane, it's the same thing. It has to do what you want it to do and not what it wants to do».

That was imprinted on my brain as the 1500 horsepower vehicle was pushing decisively towards the ground. Believing that plane to be a thinking being, a kind of companion of adventures, would create in myself that connection that would make my life as a pilot much more interesting and amusing. I did not know that yet, either. The only thing I was thinking about was that the comparison with the horse was uncannily correct, except that at that moment I absolutely could not think that I had a horse in my hands, but, on the contrary, I should be concentrating on the fact that I had a huge pike flashing furiously through the air, trying to go back down to the element from which I had just removed it.

When I was a little girl, my uncles used to take me on vacation every summer to an island in the Baltic Sea. I used to spend my days surrounded by nature, and when I wasn't picking blueberries in the woods, I was fishing and spending hours and hours unraveling and cleaning the nets on the rocks. I liked to contemplate the flights of the seagulls as I threw them the entrails of the fish that I had just cleaned. Fishing for pike was my favorite pastime.

They were fish that were difficult to catch, and that was the most exciting kind of fishing of which my uncle was a fervent practitioner. I spent whole days at sea with him, hoping to catch one. From the motorboat, we cast a very long line with a little metal fish full of big fish hooks hanging at the end. Then, always holding the fishing rod stretched out tightly, we slowly moved forward, sticking to the coast

around the islands and navigating in the little bays. When the pike bit, since we could not be sure how well it was hooked, we quickly reeled in the line trying not to allow the fish room for maneuver. The real problem came along when we managed to throw the pike inside the boat. Pikes were huge fish, even more than a meter long, with a very big mouth and sharp teeth. They could weigh as much as 15 kilograms. As if they were aware of their dimensions and strength, they started a life and death struggle, hopefully to free themselves and jump back into the water. There were several pikes like those that could free themselves of the hooks, laugh at us to our faces and jump back into the sea again. Once there was one that, literally, hooked my uncle. During the fight, the hook that was in its mouth came off and lodged itself in the palm of his hand and, given that they were not small hooks, removing it was not a fun thing to do. The pike jumped back into the sea solving its drama with a dive, and we, on the contrary, solved ours at the emergency room.

The runway was getting closer and closer.

The plane was stable for a moment, like a splinter ploughing the air without a minimum bit of imperfection. I was prepared, I had started to become familiar with it at that point. I stiffened my legs, and pushing my feet on the rudder bar I got ready for the fight. The classic maneuver to land, placing the wheels of the main landing gear down first and then the nose landing gear, is to gently raise the front of the plane when you are just a few meters from the ground and then let it slip smoothly onto the runway; and gravity does the rest of the job. The plane I was sitting on, a Piaggio P180, did not do that. The two wings located on its nose induced an aerodynamic force upwards, which had to be opposed by slightly pushing the control wheel downwards. As this maneuver is not one you would do instinctively, it is not easily learned and so, at least for beginners, like I was at the time, it was a kind of maneuver that needed my full concentration.

As soon as I lowered the nose of the plane to just a few meters off the

ground to start the “flare”, that is to say, to put it quite simply, that jump into the boat for the pike, the plane started doing what it wanted to do. The more I grabbed the control wheel with my hands to control the engine’s power and pushed the rudder with my feet, the more it wagged back and forth. Nose and tail banked and tilted here and there, up and down, with a voiceless protest in an attempt to leave the plane in its own element and prevent it from going down and stopping in mine. It was a question of seconds, but I fought with it, determined not to surrender. Danilo had to intervene with a rapid movement on the controls in order to end that willful rebellion and give some dignity to my landing.

As usual, that was hard work for me. My muscles hurt because of the tension, and my confidence in succeeding, as soon as possible, in learning to have a positive contact with the ground, suffered a setback. Actually, Danilo didn’t seem very worried. He was an ex-military pilot, he had been a test pilot for years, so he had seen so many landings that probably my lost battles did not worry him excessively. I was grateful to him. Once we had arrived on the apron and had shut off the engines, I unbuckled my seat belt and told him, with a feeling that was halfway between upset and resigned:

«My horse would never have dared do such a thing, he would have listened to me immediately».

«That’s because you’ve always taken him for a walk in the woods», he answered.

«Try taking him to the track, the racetrack, and then tell me about what happens».

I imagined my horse, Mistral, with all the sandy track in front of him. No doubt, he was right.

MY HEART AT ZERO GRAVITY

CHAPTER 2
AREA 51 OR THE BERMUDA TRIANGLE?

After flying with him for a few days in Bologna, where I lived and where my airline was based, my instructor was recalled to his base of operations, Genoa. Soon after that, he was to go to the USA and train some American pilots, and so he had to go back to his office to prepare for that. I followed him.

The second stage of my training began that way.

My colleagues wished me good luck, they knew what was in store for me. The group of Genoese test pilots were very scrupulous and strict in their evaluations. They were all ex-servicemen with thousands of hours of flying experience behind them. One of them had been in the Gulf War, too. On the ground, they were four great guys, very nice and easygoing, but in the air, when it came to flying, they were unwilling to make small talk and joke around. The fact that I was the first woman to become certified for “their” plane was not important. I was a pilot like the others and like everyone else, I had to learn, and learn well.

The day when I arrived in Genoa it was awfully windy, but spring was in full swing. I arrived at the Sheraton Hotel at the airport, I got out of the car and started taking deep breaths of air that smelled of the sea and that filled my lungs with its sea fragrance mixed with the smell of the fuel of the planes parked just behind where I was. I entered the hotel lobby, checked in and went to my room. The hotel looked out on the northern apron of the airport. That was the general aviation apron where the Piaggio maintenance hangars were.

My P180 was parked over there, by itself, with the laces of its coverings fluttering furiously in that evening wind. It was partially lit by the lampposts, and I remained for a while behind the window looking out at it.

I was happy. After four years of sacrifice, of sweat and hard work, I had made it. I was there looking at my future and I very much liked what I saw. To be more precise and honest, I hadn’t made it yet. I was

only halfway. The next morning I would have my fifth day of training and the fifth flight of my program. Until then, I had only carried out the basic maneuvers and learned the use of avionics, but the program, from the next day on, included flying to higher flight-levels and starting to practice handling emergency situations on the plane. And I wouldn't do that in familiar skies.

«You know Area 51 in Nevada?» my colleagues asked me before leaving.

«Well, Danilo, Lorenzo, Marcello and Giuliano (the four instructors and test pilots) have created a similar one over the Ligurian Sea. They're going to take you there. They'll squeeze you like a lemon and, if you survive, when you see the runway in front of you again, you'll feel like Moses when he saw the Promised Land!»

At that time, the P180 did not have a simulator, that great invention that lets you make all the possible maneuvers and emergencies without risking a crash and losing your life. The simulator was being designed in Florida and would be certified only a few years later. For the time being, if I wanted to learn, I had to put into practice real emergency situations, that is to say, in the air. That meant actually turning off the engine, landing with only one engine, turning off the generators, or swooping and making an emergency descent, every one of those for real. All this, with a test pilot beside me, who usually worked with a parachute on and therefore, simulating a certain emergency with me would be like going out for a pizza for him. However, on the contrary, every time I got on board the plane, I wasn't quite sure I would ever eat another one.

Morning rolled around quickly.

I didn't sleep much, almost not at all, as I was so excited. I walked back and forth, between the bed and the window I don't know how many times, and when my alarm clock rang, I ran down to the restaurant for breakfast in a heartbeat. I had plenty of food. "If I have to throw up, it's better to have a full stomach, it's easier that way" I thought. In addition, the hotel offered a delicious breakfast. Vomit or not, if that was to be my last meal, I might as well enjoy it! After

finishing breakfast, I got my flight bag and started out for the airport on foot. I went through security and, with my badge, I was allowed to cross the apron and go to the Piaggio hangars. The Four of the Hail Mary were there, wearing their test pilot suits, busy tailing after the technicians and the mechanics who were hard at work on the P180s in need of repairs. I arrived, ready, on a full stomach, and eager to face the rest of my training and the famous Italian Area 51.

Those five days were terribly intense. Every day we flew for a couple of hours in our Area 51, that, frankly, I would have preferred to call the Bermuda Triangle given that, to get out alive every time we went in there, didn't seem mathematically certain to me. We were flying in an area between the Italian coast and Corsica where Danilo had drawn a triangular area on the on-board computer. At that point, he communicated the coordinates of the area to the air traffic controller in Genoa who could then confirm our position, assign us the limits of the area we could fly in and then leave us on our own to play around. Within that space, we were authorized to do whatever we wanted to do. Locked up in that triangle, we flew up to 29,000 feet and one after another, we handled all the emergency situations that can be simulated on a real flight.

Knowing that right then you are entering a stall or that right after the rotation an engine shuts off and the sea is below you, the real sea, all these situations project you into a state of mind that is full of adrenaline and which you would never find in a simulator. However, the emergency training in a real flight does not allow you to put into practice everything that might happen. Explosive decompression, smoke and fire in the cockpit are not reproducible on a real plane, for obvious reasons. You are flying at an altitude of almost ten kilometers and you can't just break a window and see what would happen or start a fire among the seats to realize whether you are able to land the plane when you are surrounded by smoke and flames. In such cases, you can only learn perfectly well what the pilot's handbook tells you to do and, should you, unfortunately, find yourself in those circumstances, apply it to the letter. After ten days of stalls, of the engines shutting off,

electrical failures, and landings without flaps, the last day of flight with Danilo finally arrived. The next day he would be leaving for the States and I would have my final test with Giuliano, the big boss.

We were flying in our Area 51 and Danilo had had me go over everything we had practiced during the week. I had done well, I was happy. I had lost a few pounds, but I had never thrown up and I had begun to acquire confidence in my skills. I could see the end of that torture, and that day the two hours of flying time seemed more bearable than those on the other days. I saw Danilo relaxed and happy.

«We're done for today» he said.

«We only have two things left, I'll do one of them, and you'll do the other one».

I didn't have time to say "ok" before my body was pasted onto the seat like a suction cup. For a moment I had the feeling of having ended up in a centrifuge, my organs were as if imploded in my throat. I couldn't see anything, my head was immobilized and I felt like I weighed a ton.

«Oh My God!» Danilo had taken over the control of the plane and, without any warning, he had carried out a maneuver in the true style of a military fighter plane.

As soon as the plane had leveled off again and I had realized I was still seated, with my seat belt fastened, and still alive, Danilo said: «Those were a couple of G's. Did you like them?»

I looked at him. My vocal cords were all twisted between my spleen and liver, and it took some time for me to get them back into place.

«Come on, don't tell me that you've never had any G's!», he continued, with a silly grin on his face like someone who knows a thing or two.

I sighed, regained the use of my lungs and vocal cords and said: «No. Never had any G's. Some slaps yes, G's no».

I hadn't gotten over that fantastic bodily feeling before he said: «Well, now it's your turn».

I got an awful sinking feeling that something terrible was about to happen.

«I have passed out. Maybe I'm also dead and the airplane is full of toxic smoke. Take me home».

Bang!

He closed his eyes and leaned his head against the window. We were at 25,000 feet, I remember that well. I immediately grabbed the oxygen mask and the smoke goggles. The mask was, together with the main landing gear of the P180, a military heritage, similar to those of a fighter plane. I pulled the mask out of its cubbyhole, I opened the elastic straps and put them on, around and behind my head and pushed the red button. Its tubes filled up with compressed air and, like an octopus, enveloped my head in an animal vice, crushing the mask onto my face. The oxygen supply started immediately, I turned to Danilo, who was pretending the coma very realistically and with a great effort I put his mask on him. I turned on the radio microphone, started an emergency descent and called the Genoa control tower. The air controllers in the tower were aware of the fact that on that day I was the victim of the Piaggio test pilots.

Every time someone filed a flight plan and went to the training area, the air traffic controllers, after taking into account the traffic at the airport, were very cooperative in trying to let us carry out our maneuvers.

The descent was rapid and efficient.

The P180 swooped through the air like a knife through butter, rapid, stable, quiet, just as if it were holding its breath along with me.

When I realized there was a problem!

I couldn't see more than one and a half of the instruments at a time! The smoke goggles and the oxygen mask had turned me into a surface-supplied diver. My view of the instrument panels and equipment was reduced to a few square centimeters. It was impossible to see everything at the same time. Taking a look simply by moving your eyes was not enough, but I had to go and find one instrument at a time moving my entire head and bending it in order to focus on what I wanted to see. The reading of the emergency checklist, which included a series of actions to do in order to act against the smoke, or at least

understand where it was coming from, was a really difficult task. Making an effort to read, my breathing increased and the background noise in my headset got more and more unbearable. I called the control tower again, requesting, as a simulation, an emergency landing. I was panting so much that my voice seemed to be coming from the moon and I prayed that the air traffic controller would be able to understand what I was saying. And the worst was yet to come.

The difficulty of being able to see the instruments and, once out of the clouds, to see the runway as well, seemed like an impossible mission. It was absolutely necessary for me to raise and lower my head continuously in order to see well, both inside and outside. The view was extremely limited. Even more, the mask and the goggles were making me sweat terribly because of the heat they were creating. I had drops of sweat coming down my forehead as if it were Niagara Falls, and my shirt was soaked.

It seemed to me that I was inside a flying sauna.

I tried to concentrate on what the air traffic controller was saying to me. The engines were pushing hard and the runway was getting nearer and nearer. I had a plane full of toxic smoke, a colleague who was more dead than alive and probably panicking passengers. I thanked Danilo for not adding also a failure in the landing gear, which would have made it necessary to put it down manually. I looked outside.

I was in line with the runway and Moses came to my mind.

For a split second I thought I was lucky, too. In a real situation, the smoke would surely not have allowed me to see much of anything. Smoke and fire on board are the most serious emergencies of all, the ones all pilots hope to never have to face. The runway was truly the Promised Land. The wheels of the P180 touched the asphalt of the runway without rebelling as they usually do and, almost without realizing it, I had managed to make a dignified landing. That was one of my best landings. I was bathed in sweat, done in and unable to understand whether or not I had passed the test. Once we had arrived at the parking space, I took off my mask and the goggles and looked to see how much oxygen I had used up from the emergency oxygen

cylinder.

A lot.

If Danilo and the hypothetical passengers had not died because of the smoke, I would certainly have killed them by leaving them without oxygen. At the parking space, Danilo came out of his coma, took his mask off and, unflappable, but with a faint smile, said to me: «Call the fuel truck, fill up the tanks and get the plane ready for tomorrow. We're done».

APPENDIX

AMELIA EARHART: WHEN PILOTS WERE AVIATORS

Amelia studying navigation charts in Hawaii, 1935

When I started flying many years ago, I considered myself very lucky to be able to achieve my dream after years of study and training.

I felt proud of all the efforts and sacrifices that I had painstakingly gone through. I boarded my first commercial airplane without thinking about how much the technology that was in front of me was actually responsible at least for half the success, if not more, of the flights I made. I simply got on board after leaving my coat in the wardrobe, taking the flight documentation from the technician, and drinking some fruit juice, to then sit down in my place inside the cockpit. When flights were difficult and challenging because of the weather conditions, when we faced approaches at congested and very busy airports, when we had to fly over thunderstorms or land in fog, I have always thought that my colleague and I were “good, capable pilots”. We did our job to the best of our ability and making the best of our training, and despite all of the help we got from the on-board technology or the help and collaboration from the air traffic controllers, I have always thought that we were

capable and courageous.

Then one day, a captain friend of mine gave me a book that, he told me, as a young pilot I ought to read to get an idea of how and what flying was like in the past. The book at issue was *Wild Blue. The Men and Boys Who Flew the B-24s Over Germany 1944-45* by Stephen E. Ambrose, the true story of a B-24 pilot during the Second World War in Italy and of his squadron in the 35 missions carried out against the Nazis.

I finished the book in less than three days. It left me stunned. Not only because of the bombings which, as we all know, were horrible and destroyed the lives of many people, but also because of what the reality for pilots was like in those faraway days, pilots who flew enormous fighter-bombers without servomotors, fighting against heavy forces applied to the commands, without weather radars, without pressurization, without landing instruments (ILS), without an electronic flight instrument system (MFD/PFD), without oxygen and without heating. Flying under those conditions was exhausting and dangerous: They suffered, in the true sense of the word, from the cold, fatigue and fear; they flew relying only on their own strength, struggling with and against their physical and psychological abilities, without ever asking themselves if there was a better way to fly.

I was flabbergasted to think about all the technology and all the comforts that I had available to me on my airplane. I had never thought about how fortunate I was to have all that on board. It was just normal for me. That day, my concept of being a “real pilot” changed.

From that moment on, I became interested in the life of pilots in the past. I read numerous books about the history of flying, about its protagonists and about its heroes. Many of them died young, but they made the history of flying and left us everything we now have. Among all of them, the person who captured my attention more than the others was Amelia Earhart, especially because she was a pioneer of women’s rights in aviation.

She promoted women airplane pilots and in general the freedom of women to choose to work, even doing those jobs considered for men

only and to emerge from the symbol of being only wives and mothers. She was loved by many in a period when America was enveloped in the Great Depression. Her records in flight fed the hopes and the wish to live, and her fame reached Europe. Many have agreed that at that time (1897-1937) she wasn't the best pilot around. Many people criticized her when, after her first successes and records, she let herself be driven by popularity and fame, even if she always claimed that she did it in order to be able to finance the purchase of her airplanes and to give visibility to women airplane pilots. However, when she disappeared in the Pacific Ocean during the final part of her flight around the world (July 2nd, 1937), the American Navy and Coast Guard carried out an incredible search in the sea and on land that cost more than four million dollars. It was the most expensive search in the history of the United States. Despite the enormous deployment of troops, no sign of Amelia, of her navigator or of her Lockheed L-10 Electra was ever found. She was declared legally dead in 1939 and since then, many speculations and theories have emerged, making her a legend.

"Many hours of flying in darkness, fog, storms and ice had gone by when Amelia realized there were drops of fuel falling onto her left shoulder and dripping on down the nape of her neck. However, perhaps even more dangerous was that little blue flame leaping out of her engine and that she could see right outside the window of the cockpit. In her attempt to become the first woman to fly alone over the Atlantic Ocean, Amelia knew that she was doing something very dangerous. Lots of other men and women had died in the same attempt. She wondered if her little plane would be able to stand yet more hours of bad weather before she managed to glimpse land. Would she succeed in her intention or would she die in the dark waters beneath her?" (Victoria G. Jones, *A Life in Flight*).

She wasn't flying only to set records. She used to say: «Adventure in itself has meaning and I fly because I have fun doing it». She, like other pilots, flew relying only on their own abilities: getting on board was an adventure and not only a way to go somewhere. While she was getting

ready for her last flight around the world, she spent entire weeks preparing everything she could have at her disposal: maps, weather reports, provisions, authorizations and the help of a navigator. It was a jump into darkness, but she never lived it as such. She flew airplanes that had none of today's technology, and yet, she already had a good idea of the effort a pilot went through in having to interact with machines which were at that time considered modern: «The prayer of the pilot, I'm sure, isn't to always have the most sophisticated and complicated instruments, but to simplify those that already exist».

There was no GPS on board or weather radar, every flight was a challenge. When she talks about how relieved she was after flights in bad weather or after she would get lost at intervals in the navigation, one can understand how great the efforts were from a psychological point of view. And yet, she never stopped.

These pilots were "true aviators": Probably, perhaps unconsciously, they trusted their airplanes more than we do ours today. Instead, it was their abilities and their courage that made the difference.

THE AUTHOR

Carolina Dellonte, born in Bologna, Italy, has been working in the aeronautical field since 1995. She flew as a pilot for ten years and is now a Crew Resource Management Instructor. She has a Psychology Degree from the University of Bologna and she has published some short stories and articles about aviation psychology. She also writes about her archeological travels on her Roman history blog. She is currently working on her second book.

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