

My Scariest M

"Understand you lost your No. 1 engine?"

"Uh, we lost our only engine."





By Lt. Andy Bordick

I used to tell people the scariest things I've ever done were night traps in the Tomcat. I can't say that anymore.

My T-45 student (callsign Flash) and I were "stuck" in Key West. We were supposed to swap a good jet for a high-time jet and do student airnav training en route. A low-pressure system was sitting over southern Florida, and the weather delayed our departure for two days. Although upset, we sucked it up for the team. You know how bad Key West can be.

On Monday morning our wallets were thinning and the weather appeared to lighten up. A sigmet was building on the west coast of southern Florida, so we planned to skirt it to the east. Just as we were about to file, the area the sigmet covered increased, but our route still took us to the east of it.

We launched and went IMC at about 10,000 feet. We were climbing through the 20s when Miami Center asked us about our route. We said we wanted to avoid the weather (big, ugly sigmet...duh). The controller told us he had a "hole" that was more direct to our destination, with a couple of reports of a smooth ride at FL370. It sounded like a suitable shortcut, and I thought that Flash might benefit from some route changes. We actually broke out in a little hole while transiting the high 20s. This would be the last time we would be VMC for a while.

We were in a steady, albeit slow, MRT climb, passing FL380 for FL390. The clouds were thinning; in fact, we thought we would break out when we leveled off. We were in smooth air and climbed at a fuel flow of around 1,300 pph.

A lightning bolt came from the right but didn't appear all that powerful. It struck the bottom of the aircraft forward of the wings. We heard a slight ding, like someone had hit us with a pebble or small rock, then the engine spooled down.

The rpm and EGT were in a steady decline, while the fuel flow was reading somewhere around 4,500 pph. Numerous warning and caution lights began to illuminate (all those that would come on during a normal shutdown). I took the controls and pushed the nose a little bit, so we wouldn't get too slow. I declared an emergency, while dialing in 7700, because I knew we

would be crossing a few flight levels we weren't cleared to cross. I began an immediate airstart, which consists of securing the throttle, pushing the GTS (APU) start button on the throttle, and bringing it back to idle. Center was quiet as we starting descending, which was a good thing because, suddenly, I couldn't breathe. I had been used to flying with LOX, so it didn't hit me that I needed to circumvent the OBOGS system with that green apple. Well, that was no easy task as the loop was hiding under my left thigh. At the same time I pulled it, our cabin pressure was indicating over 25,000 feet, so taking the mask off was not an option unless we wanted to go immediately hypoxic. I started breathing just as Flash confirmed we had both pulled the ring. We then noticed the EGT was spiking. I secured the throttle and was watching the airspeed increase to nearly 300 knots. Did I mention we were still IMC?

Having been distracted by those other duties, I just tried to pull a little. It didn't help. I looked at my standby gyro, and it showed a slight wing down, so I leveled the wings and pulled, still accelerating. Flash then said I was left-wing down and severe-nose down. I pulled harder to no avail. Finally, he said, "Cosmo, you are 60-degrees left-wing down and 30-degrees nose low." Well, my gyro showed level wings and 20-degrees nose up. So I (yikes!) gave my student the controls. By the way, the main attitude indicator was inoperative on the batteries. We were single-radio, pitot-static and (single) standby-gyro glider guys.

Flash astutely leveled the wings and started to break our rate of descent. I tried another immediate airstart, hoping the 330 knots indicated would help the motor. No joy. The engine was hitting its airstart limit of 600 degrees at 18 percent rpm. There is a caveat that we get 10 seconds at temperatures up to 650 degrees, but it didn't appear we would hit idle rpm in that time. Did I mention we were still IMC?

We checked the wet compass, and it showed a westerly heading. I checked the Garmin handheld GPS on my knee, and it was tracking the same, around 290 degrees. I hooked the nearest field, which was Southwest Florida International Airport in Ft. Myers. It has a hard surface of greater than 5,000 feet, so we put it on the nose.

We told Center we were heading direct. They came back with questions like, "Understand you lost your No. 1 engine?"

To which we responded with a snappy, "Uh...we lost our only engine."

This prompted an immediate, "Standby" call that momentarily silenced him. With a steer from the GPS, we proceeded north to Ft. Myers. Flash was doing his best to keep us gliding and heading the way we wanted to go. Although I had a good heading to get to the airfield, he had only a wobbly wet compass to follow, so I gave him some, "Come left or right" calls. He was keeping the speed around 230 knots, looking to intercept around 200 to max our glide.

We were switched-up to Ft. Myers approach, and I was breaking out the PCL to look for other options. I again tried the assisted airstart procedure that should have engaged the starting unit, but it didn't increase our rpm. After a few failed airstart attempts, I went to the failure-to-relight procedures, which said we needed to wait for 30 seconds before another attempt, while checking switch settings. Ft. Myers started asking us questions like, "Souls on board? Homefield information," questions I didn't like to answer. They also tried to vector us for the final portion of the VOR/DME for runway 24, which I quickly squashed with a reply that we needed direct. So they tried to give us headings, for which I informed them we were wet compass only. They obliged all our requests and started vectoring us direct to the field with clock codes and distances to the field. They also told us the weather was 1,200-foot overcast with 2 miles visibility.

After waiting for what seemed an eternity, I tried another engine start with the same results. We were showing fuel going in and the EGT lighting up, but the rpm was hanging below 20 percent. We were passing 10,000 feet and approach told us we were 20 miles from the field. I didn't break out the max-glide distances, but I was sure we couldn't get there from here. Did I mention that we were still IMC?

We tried a few more airstarts with similar bad results. I twice already had considered ejecting. First was when my standby gyro failed and we were accelerating to Mother Earth. Now, passing 10,000 feet, IMC, engine out, unable to

glide to the field, I again considered it. My mind kept saying, "I can't believe I have to eject from this airplane." Then the little voice said, "Don't give up; we're not done yet."

Passing 2,500 feet (barometric altitude, because the radalt doesn't work on the batteries), we noticed it looked dark beneath us. We were around 8 miles from the field. Approaching 2,000 feet, I told Flash it was time to let the engine cook because we were running out of options. We started to break out



Lt. Andy Bordick and 1stLt. Gary Shill moments after landing.

and I began riding the stick. We were being told where the field was, but visibility was poor. We had ground contact but couldn't see the airfield.

Right about the time I saw the runway, I felt a little kick in the pants. I looked at the rpm. It was climbing through 50 percent, and the EGT was decreasing through 600 degrees. I took the controls, dropped the gear and flaps, and performed a modified precautionary approach to

a Grumman hard landing. We reset the generator and hydraulics on short final, so by the end of our rollout, all of our warning and caution lights were out. We taxied to the FBO, while answering many questions from approach and tower. We shut down the jet, which now appeared to be operating 4.0.

They don't know why the engine spooled down after the lightning strike. Rolls-Royce still is investigating "disrupted airflow" theories. The NATOPS manual states you can expect "higher than normal temperatures" on high-altitude airstarts. But seven failed airstarts and a successful one finally taught me just how high those temps might be. We were IMC for 36,000 feet, which took approximately 15 minutes to cover as a T-45 glider, but the time went by like it was 15 seconds. After the episode of passing the controls to my student, I was panicked. I had been in system failures in aircraft before and was never as scared as I was during this incident. The reason I admit that is because it affected my thinking and problem-solving ability.

Flash and I never discussed an ejection plan. He later told me he was going to hang on for another 10 seconds...maybe. Flash never knew I had the PCL on my knee and was following it. Nor did he know I had tried seven unsuccessful airstarts on the descent. He was watching the EGT on a couple, but I didn't tell him every time I was trying a new start.

We made many mistakes that day, most of which rest solely on my shoulders. Even though Flash didn't have many hours in the jet, he spoke up to let me know I was doing it wrong. Had it not been for his level-headedness during an extremely tense situation, this would be a story about our ejection. Without the handheld GPS I had used extensively for two cruises, we never would have found a suitable landing field.

Some people would say we were unlucky because we got hit by lightning, and it knocked out our engine. I say I am lucky because enough things fell our way to get that airplane safely on deck with no injuries. In fact, the engine wasn't even damaged. Plus, I now have a new "scariest moment" story. 🦅

Lt. Bordick flies with VT-21.