Engine Out

What was supposed to be a routine, night, contact sortie turned out to be a more interesting flight than I ever would care to repeat.

By Lt. Greg Baumgartner

The evening's event started with an 1800 brief for a 2000 takeoff. The sky was clear and calm. The student was eager for his first exposure to night, ground, and flight operations in the sleek T-6A Texan II. The brief emphasized techniques, procedures and concerns unique to night operations. This flight was only the student NFO's sixth in the primary syllabus.

The planned conduct of the flight would have us start with a transit through alert area 292, west of NAS Pensacola. We'd conduct emergency-procedures training at altitude in the vicinity of the airport of Bay Minette, Ala. (1R8), followed by landing-pattern work at Mobile downtown (BFM). The flight would end with a return to NAS Pensacola. The brief concluded with a thorough NATOPS brief that included ORM.

The man-up, taxi and takeoff went as briefed. The air was smooth, and the sun just had set. The light from NAS Pensacola's lighthouse made a slow sweep over the bay and dueled with the green and white, rotating, airport beacon. We turned west and continued the climb to 4,500-feet MSL for the transit toward Bay Minette. This airfield is a small, uncontrolled field just north of I-10 in southern Alabama. The single runway is oriented 08/26, with a published length just over 4,000 feet. The field is surrounded by pine trees and uneven land. Runway lighting is pilot-controlled. During the instructor-upgrade syllabus, we often went to this airfield, but we are restricted from operating there with students because of the narrow runway, which only is 80 feet wide. While we had no intention of landing there, I figured it was a good idea to conduct high work near a suitable airfield, in case of an emergency.

I was pointing out some landmarks and unlit Navy outlying fields (NOLFs) on our way to the northwest part of the area. These fields are closed at night, and with the exception of one (NOLF Barin), are too short for T-6 operations. With the student NFO at the controls, we turned north overtop Silverhill NOLF and began a climb to 7,500-feet MSL to set up for a simulated power loss.

Students are taught the basics of handling emergency procedures in the contact phase. They are taught

to maintain aircraft control, and then to assess the situation, before they dive into the pocket checklist or execute memorized procedures.

The plan was to initiate a simulated power loss five to six miles west of Bay Minette and let the student handle the simulated power loss with a waveoff, before reaching high-key at 3,000-feet AGL. A traffic-advisory call was made on CTAF; no reported traffic was in the pattern. I would initiate the simulated power loss at 7,000-feet MSL by bringing the power-control lever (PCL) to idle. The student would trade excess airspeed for altitude, ask the instructor pilot (IP) what kind of power loss was being simulated, then execute the memorized procedures. He then would turn us in the direction of the nearest field, Bay Minette. The simulation would be complete at altitude because of the landing restriction.

I initiated the simulated engine failure at 7,000-feet MSL. The student NFO went through the emergency procedures. At about 5,500 feet and 130 knots, he called for a simulated PCL off (the second step in the engine-failure procedure). I moved the PCL just forward of idle to simulate a feathered condition, and this is when our training and engine came to a halt. The engine made awful grinding noises, sparks came out both exhaust stacks, and the engine and propeller seized within a matter of seconds.

I took the controls and made it clear to the student this was an actual malfunction (Just in case he thought it was an incredibly realistic simulation). I went through the engine-failure procedures, this time for real. I turned toward our nearest suitable field, Bay Minette, about four miles off our right wing. We were descending from 5,500-feet MSL and working our way to 125 knots, the T-6A's best glide airspeed in a gear/flaps-up configuration. I calculated we would have enough altitude to at least give high-key a good effort. My plan was to initiate ejection if we came up short of the emergency-landing pattern (ELP).

I activated the pilot-controlled lights and transmitted a Mayday call on CTAF. Another VT-10 aircraft was on the CTAF, doing some pattern work at a different uncontrolled field not too far away. We went through the forced-landing checklist, then lowered the landing gear with the emergency-gear system. We entered the emergency-landing pattern overtop runway 08 via high-key.

"No need to eject just yet," I thought.

That narrow but lit field was in complete darkness, surrounded by acres of trees. The darkness was not too unlike a ship at night. The ELP worked as it should. We hit low-key and rolled onto final. There were no glideslope indications at the field. We crossed the threshold on-speed, according to NATOPS. We floated down the runway farther than I had thought we would, almost 2,000 feet. Until this point, I never had landed with a feathered or seized propeller. I applied the brakes at a higher-than-normal speed because only 2,000 feet of runway remained.

With no anti-lock brakes, the tires subsequently locked up, and then both simultaneously blew. I eventually lost rudder authority, and we came to a stop abeam the departure-end numbers, just off the right side of the runway. We executed our emergency-egress procedures.

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We had discussed the possibility of ejecting as we proceeded to high-key. We would have done so if the ELP had not worked out. OPNAV 3710 says that pilots of aircraft equipped with ejection seats should not execute engine-out emergency landings if ejection is available, but I figure that rule was written before the T-6's debut. The T-6 has a better glide capability. Not giving the ELP a shot would have been wasteful. Fortunately, the ELP worked. Months later, the culprit was discovered to be a blade in the turbine section; it simply failed and took the engine with it.

The decision to conduct high work in the vicinity of a suitable divert seemed like a simple-enough choice as we planned our flight. This simple but important decision proved critical to our safety. Just knowing where your nearest divert is may not be enough to make sure of your safety. Choosing to operate within an acceptable distance of your nearest divert greatly mitigates the risk of an engine loss.

Lt. Baumgartner flies with VT-10.