Oil Pressure Where?

by Lt. Sean Polete

We were a quarter of the way through my first WestPac and just out of the great port of Perth, Australia. The tempo of flight operations was turning out to be somewhat less than I had hoped. Most pilots were flying once a day, with two days off every week. Our surface reconnaissance and recovery tanker flights, and the flight briefs, were becoming routine.

After an abbreviated flight brief, my COTAC and I talked about the "detect to engage" exercise we were doing with the battle group's cruiser. The exercise required us to climb to FL300 and proceed inbound from 80 miles at 450 knots. The most important goal for that day was getting in a good position overhead to see the Tomcat we were scheduled to tank, after he completed his supersonic run on the cruiser. After startup, plane-captain checks, and a look at the engine instruments in tension, we were off cat 3 and returned overhead for the Tomcat's mach run.

We checked our aerial-refueling store and were directed to proceed outbound while awaiting clearance for our inbound run on the cruiser. As we passed 15,000 feet, the master caution and APU bleed-leak lights illuminated (aircraft 704 had an outstanding gripe that the APU bleed-leak light illuminated with the APU secured). The TACCO broke out the emergency-procedures checklist. We secured our No. 1 bleed-air switch and checked cabin pressure. The lights went out within one minute as expected. While minor, this malfunction would play an important role later.

We continued our climb to FL300. I donned my O_2 mask as a precaution because of our altitude, and it reminded me of my training command days. Besides, with only one bleed-air source operating, anything could happen to cabin pressure at a moment's notice.

After another 15 minutes, we were outbound, and I again checked engine instruments. "Hey, the No. 2 oil pressure is not supposed to be jumping around like that, is it?" I asked. This got my COTAC's attention as I pulled the No. 2 throttle from full power to idle. Since we were operating over blue water with no divert available, we leveled off and turned back toward the boat. The TACCO, again with the pocket checklist in hand, reviewed engine-oil-pressure limits at idle. The needle was rock steady at the upper limit. In the back of my mind, I was contemplating how long we would have to wait for the fluctuations to cease and whether we would be forced to secure the engine. Not wanting my senior COTAC to

think I was too quick on the draw, I wondered aloud whether to shut down the engine. After all, the S-3 flies just fine single-engine. After consulting my crew and checking the gauges for secondaries, our COTAC notified tower of our situation.

After the No. 2 engine had idled for five minutes, the oil pressure started fluctuating again, but now with decreasing pressure. Scope-locked on the oil-pressure gauge, I called for a precautionary-engine shutdown. My seasoned crew suggested I descend below 10,000 feet prior to securing the engine (our only other bleed-air source for cabin pressurization). In retrospect, this was a great decision that probably avoided complicating our situation for several reasons-–not the least of which was that we were at 24,000 feet. Without cabin pressure or supplemental O_2, a crew member only would have about four minutes of useful consciousness. Also, my COTAC had a little sinus congestion the week before. Although he was med up, a drop in cabin pressurization might have caused him severe pain if he had still had any sinus blockage.

As we started our descent to 10,000 feet, tower informed us that we would have a ready deck upon arrival. Still descending, we positioned ourselves 10 miles aft of the ship. Once we got below 10,000 feet, we started the precautionary engine-shutdown checklist to secure the No. 2 engine. Having already flown an actual single-engine approach to the boat during work-ups, I was comfortable briefing contingencies for our approach. We continued our descent through 5,000 feet, heading aft of the boat for a 10 miles straight-in at 1,200 feet. This would give us time to consider and review our situation and the aircraft's condition.

Weather conditions were good: a typical day near the equator; clear, temperatures in the mid-90s, calm winds and seas. Dependent on our aircraft weight, our waveoff performance would be less than we were used to in the more temperate climate of San Diego. We were already below our max trap weight, but we decided to dump an additional 3,000 pounds of fuel to improve our climb rate in the event of a waveoff. We put the aircraft in the landing configuration and did controllability checks. With the flaps in the takeoff position, gear down, and trimmed on speed, my crew reviewed what to expect on a waveoff or bolter. As power on the good engine came up, yaw would have to be countered with rudder into the good engine. I would set the proper attitude to track straight up the landing area.

With good crew coordination and 30 knots straight down the angle, I flew an OK pass to the 2-wire.

Even after two single-engine traps and with "salt crust" beginning to form, I reaffirmed that every naval aviator always must consider the big picture. What could have been done better? In an effort to save an engine, I may have been too quick in securing it. Starting our descent earlier could have shortened the time we had let a low-oil-pressure engine run.

Lt. Polete flies with VS-38.

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