Single-Engine in the Adri

by Lt. Shannon Smith

There are lots of times when you have to knock it off: Someone violates a training rule; someone calls, "Knock it off"; an unsafe condition; ballistic or out-of-control flight; NORDO or bingo; aircraft that weren't briefed enter the area; unexpected loss of sight; inadvertent IFR; or overstress. We brief these rules before every air-to-air flight, along with out-of-control procedures. I had an experience with an unsafe condition that isn't directly addressed but is definitely implied.

It was our second month of flight operations in the Adriatic, and we were all feeling comfortable with operating in the area. The flight schedule had me on for another 2 v 2 AIC, not a bad mission, except all of our jets were in the 3-tank configuration commonly referred to as "the pig." It was an all-JO, daytime flight. I was Dash 2, and we were fighting a couple of Tomcats.

The first part of the hop was uneventful. Everyone got off the flight deck, and we were on our caps waiting to hear, "Fight's on." We were blue air for the first run. The declaration was bogey, so we made a standard section VID. At the merge, my lead made the ID and cleared me to fire. I killed the first Tomcat at four miles, leaving one alive when I arrived at the merge. My airspeed at the merge wasn't optimum because of my Hornet's configuration and fuel constraints, but I wasn't about to let this last Tomcat leave the merge alive. I sold the rest of my airspeed, decelerating below 250 knots to get my nose on the last Tomcat. Then I took a Fox-2 for a valid kill. Shortly after, my lead called, "Knock it off."

Feeling good about the first engagement, I continued a left turn to my cap station. I noticed my airspeed decreasing below 200 knots. Even with three tanks, at 22,000 feet, and with both throttles at mil, I shouldn't have decelerated that much. I checked my engine instruments and noticed that my left engine was at 68 percent rpm and fuel flow was at 400 pounds per hour. Realizing something was definitely not right, I came up over shot common and called, "Knock it off, knock it off."

I quickly relayed to my lead and the two Tomcats that we were finished for the day and that I was heading back overhead the ship because of engine problems. On the way back, I analyzed the indications and determined the left engine was still on line and the VEN was scheduling properly, but the rpm was stuck at 68 percent and fuel flow on the left engine was at 400 pounds per hour. I told Strike I would need to

recover on a straight-in, single-engine approach, and need to speak with the Hornet rep in CATCC.

The Hornet rep and I went through all of my indications and concluded I had a fuel-control problem. We agreed I should leave the engine running to maintain the No. 1 hydraulic system. I started a descent from 20,000 feet as I got closer to the ship, and as I passed 10,000 feet, I got a left-engine-flameout caution. My left engine rpm had dropped to 58 percent (fuel flow hadn't changed). I passed this info on to the rep, and we determined that the low engine rpm had caused the caution. Passing 5,000 feet, I got a left-generator caution. Checking my engine instruments, I saw my rpm was at 45 percent, but the engine was still on line.

I started thinking about the procedures for a single-engine approach as I leveled off at 1,200 feet, 10 miles behind the boat. The next caution I received was a left boost low. The rpm was down to 42 percent, and the caution was cycling on and off, tripping the master-caution side tone in my helmet every four seconds. With only one good engine, I was having a tough time maintaining lineup. Each power correction moved the nose left and right, and like most young Hornet pilots, I'm not the most proficient user of the footrests (that are actually rudder pedals). Fighting lineup, I drove the ball high in close, and I passed up four perfectly good arresting cables. On the go, I selected afterburner on the good engine and had to leave it staged to climb back to 1,200 feet. My next attempt ended with me rolling out on the 3-wire. A final look at my instruments before I shut down revealed that my left engine rpm was 34 percent, and the fuel flow had remained at 400 pounds per hour.

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Photo-composite by Allan Amen

The postflight maintenance inspection revealed that the main fuel control on the left engine had failed at a fuel-flow setting of 400 pounds per hour. This setting explained the decreasing rpm as I descended, which triggered the resulting cautions.

After every sortie, we analyze the "goods and others" to summarize the lessons learned. A "good" was that I didn't overreact to some of the cautions, which could have prompted me to secure my left engine. Taking time to analyze the situation prompted me to not shut down the engine, which kept the No. 1 hydraulic system on line.

An "other" from this flight was that I paid too much attention to the cautions, instead of concentrating on flying my jet and getting it back aboard on the first pass.

When an airborne emergency occurs, it is usually not the last problem that you will face in a flight. Which leads to the other "good" from this event: Crew coordination, even in a single-seat aircraft, is essential.

Lt. Smith flies with VFA-136.