Overcome and Adapt: A Cautionary Tale

By LCdr. Sean McDermott

Despite our fleet tasking during COMPTUEX, our Ops O finagled a 4 v 2 AIC hop for us: two Hornets, two Tomcats, and our two TA-4J Skyhawks. Dedicated dissimilar-air-combat training hops are a rarity in sunny Puerto Rico, so I hopped in the back for this good deal that would take us 80 miles out to sea.

The flight progressed as briefed until we started to reset for the third engagement. A few seconds after the "fight's on" call, our fuel-boost light came on. After a short pause, the pilot asked, "Did you just get a fuel-boost light?"

I replied, "Yes."

Seconds later, I noticed the pilot had reduced power. As a backseater and a pilot, I was obligated to scan the instruments, at least once in a while.

The rpm was at 68 percent, and I started to key the ICS to give a friendly reminder that 70 percent is the lowest rpm allowed by NATOPS. Because the ICS switch is located on the throttle in the A-4, I noticed the throttle was not at idle, as I expected; rather, it just was shy of full power.

Moments later, the pilot called, "Knock it off," because of engine problems. The engine sputtered and vibrated. We had started this evolution at approximately 10,000 feet. The pilot went through the **engine chugs/stalls** boldface and switched the fuel control to manual by 8,500 feet—with no effect. He never told me he had switched to manual-fuel control.

Our wingman, a pilot with over 2,000 A-4 hours, asked the only appropriate question: "What is the position of the fuel-control switch?" The answer confirmed the pilot had switched to manual. By this time, the rpm had decayed to 51 percent (within one percent of the generator going off-line), and we had a descent rate of over 2,000 fpm. The math gave this good-deal flight less than two minutes to go.

At 6,000 feet, the pilot tried to execute a second set of boldface procedures, **loss of thrust/flameout**, but had difficulty remembering the procedures verbatim. He said, "boldface," and I broke out the PCL and started to review **loss of thrust/flameout** procedures. I realized we already had done all the steps, so I prepared for an ejection.

I recall removing my kneeboard, cinching down my wrist Velcro, and tightening my waist straps, in preparing to eject. We had exhausted every option in our three-man brain trust, and it was time to give the jet back to the taxpayers. Then, at 5,200 feet, the engine sputtered and, without any input, went up to 72 percent. We were able to maintain 5,000 feet, albeit at 220 knots, 30 knots shy of our airstart envelope.

Not much later, the engine accelerated to 92 percent, and we were in a solid climb to 15,000 feet for the RTB. My pilot passed the communication lead to the wingman, and I verbally reviewed the procedures—this time, to my frontseater. Convinced we had tried every applicable procedure but still unsure about the nature of our problem, we flew a straight-in precautionary approach.

We were safe on deck, and it was time for some quality armchair quarterbacking. Our A-4 had a Tomcat and a Greyhound pilot on board. We were multi-crew

cockpit experienced, so why did it take a knock-it-off call to get me into the game? Why was it necessary for our wingman to get a verbal call of the fuel-control-switch position? When the pilot asked for boldface, he was looking for me to recite the boldface procedures. I believed he wanted me to open the PCL and review what he had done. The result was the same, but we didn't communicate effectively.

Before the engine came back to life, I did a lot of controlled-ejection preparation and wasn't much help to the pilot. On a positive CRM note, our wingman gave the right amount of assistance, as the radios already were mostly clobbered. Passing the communication lead to the wingman was an example of good decision-making.

A deteriorated cork seal in the main fuel tank blocked fuel to the engine. All the CRM in the world would not have helped us had we been at 2,000 feet when the blockage occurred. Still, it made for a good example that you never are just along for the ride.

Overcome and Adapt: The Motivated Maintainers

Erik McCarthy

Over a year earlier, the fuel cell on this TA-4J had been opened during other maintenance. Procedures call for the cork gasket surrounding the opening to be replaced each time the fuel cell is opened. However, the Navy supply system had discontinued this particular gasket—part of the thrill of maintaining a 30-plus-year-old jet.

Here is where some highly motivated Sailors came in. The fuel cell needed a cork gasket, and, as none were forthcoming from supply, they locally purchased cork material and made the seal. Their solution worked like a champ for over a year. The homemade gasket, however, was the wrong type of cork, and excess material hung over the edge of the cell-access hole. Over time, the gasket broke down and separated as it deteriorated; that is how it ended up covering the screen to the boost pump.

The story is not over yet because, while researching this incident, I learned NAVAIR had published a temporary-engineering instruction (TEI) that described the exact dimensions and materials required for that seal. This TEI was supposed to be incorporated into the MIMS but never was. The Skyhawks almost have been retired on several occasions; maybe that is why the TEI never made it to the pubs. When we asked NAVAIR for information on the cork seal, we had the TEI in half an hour. Our motivated Sailors should have requested the same help a year ago.

As a QAR or CDI, you are responsible to make sure the proper books are used for every maintenance job. If the books are failing you, then tell your chain of command, so the risks can be weighed properly (I almost mentioned ORM). Keep overcoming and adapting; the Navy needs you to, but keep it safe.

LCdr. McDermott flies with VC-8.