

Oops, We Sheared

By Lt. Brian Loustaunau

We just had returned from a “good deal” day flight in the eastern Mediterranean. As we flew overhead mom, waiting for the deck to open, I saw the master-caution light on our Prowler’s brow panel. I immediately looked down at the caution-light panel and saw the low-fuel light, which indicated a land-ASAP emergency.



Photo by PHCS Mate Mahlon K. Miller

My first reaction was to cross-check with the fuel gauge; I was certain we had had plenty of fuel just a minute earlier. Then ECMO 1 noticed we had no engine tapes, indicating an electrical problem. He and the backseaters pulled out their PCLs, quickly flipped to the partial-electrical-failure checklist,

the CSDs

and began reading. Based on other indications in the cockpit, we determined we had a complete AC-essential failure.

We already were in holding, so we took our time and decided against “fast hands in the cockpit,” instead discussing exactly what we wanted to do. We knew if we pulled the ram-air turbine (RAT) to restore electrical power, we would lose all electrical power in the wires. It, however, would give us engine tapes, trim, automatic-flight-control system (AFCS), oil-pressure gauges, and make the low-fuel light go out. As far as bringing the aircraft aboard, I was most concerned with the AFCS and trim systems. However, having good indications of engines and oil pressure sure would make us feel better. We decided to pull the RAT, which worked 4.0, and all electrical power was restored.

Meanwhile, the backseaters were talking to our tower rep. The rep needed to know we would lose all electrical power in the wires, which subsequently meant we would be NORDO (no radio), and would need to be towed out of the wires. In hindsight, we should have been more specific and thought through the situation a little more. We knew our newest aircrew was our rep that day, and, although he had been in the squadron for about six months, he didn't have much experience. The comms between us were very quick, and he said he understood what was going on. We just left it at that.

Trying to compartmentalize and fly a decent pass, it still came as a bit of a shock to me that we would lose all power when we trapped. I went through my usual routine. Once we were stopped, I throttled back and tried to raise the flaps as everything in the cockpit shut off. I quickly realized the flaps wouldn't move, and we

couldn't raise the hook. Our discussions while airborne focused on needing a tow and being NORDO once on deck, so the hook issue came as a surprise and added to the problem.

Assuming I already had cleaned up, the yellow-shirt indicated he was going signal to fold the wings but stopped once he realized the wings were dirty. The yellowshirt also gave the hook-up signal. We tried to convey to the director we had lost all AC power, were unable to perform the configuration changes, and would need a tow, not to mention a hook-down tow. They seemed reluctant to bring out the tow truck until they got us configured. The flight deck seemed very unprepared for us to be stuck, stiff wing in the wires. In retrospect, we should have stressed to our rep the extent of problems our loss of AC would have. Our lack of radios fueled the confusion and left us sitting in the wires much longer than the Boss would have liked.

Something else we hadn't really discussed was a loss of ICS. It's easy to communicate with the guy sitting next to you, but it can be difficult throughout the aircraft. We could yell back and forth for things like safing ejection seats, but overall communication was limited.

Finally, we were pulled out of the landing area and parked, stiff wing, on the finger. Once chocked and chained, our AEs arrived to troubleshoot, so we kept both engines turning. After trying to reset some circuit breakers outside the cockpit and pinpointing the problem, the plane captain gave us the signal to shut down.

What we didn't realize was the lack of electrical power caused the constant-speed drive (CSD) air-ejector valves to remain closed. This situation, in turn, caused the CSDs to overheat and eventually shear. Normally, we would have gotten a caution light in the cockpit, but with no power on the jet, we had no indication. It never crossed any of our minds this could have been a potential problem, and it is not included anywhere in the PCL.

An emergency does not necessarily end once you are on deck. As far as the CSDs shearing and causing maintenance a headache with more problems to fix, a NATOPS change is being submitted to include a caution on the checklist. Even a good basic knowledge of the system is not always good enough to preclude unnecessary damage to an airplane. 🇺🇸

Lt. Loustaunau flies with VAQ-140.