

If You're Going to Dayton, Don't Try the Hot Wings

By Lt. Jake Abrams

The crew was briefed, the jet was packed, and the flight plan was filed for a cross-country trip to an air show in Dayton, Ohio. We planned for a one-leg, two-hour, routine airways-navigation flight at 26,000 feet. The weather en route would not be a problem. The flight was uneventful, with the exceptions of a temporary single-generator failure that never duplicated itself and a 1,000-to-2,000-pound fuel split in our main-fuel tanks.

The fuel split was corrected during our initial descent by opening the interconnect between the tanks and performing a minute of wing-down, top-rudder flight—a NATOPS-recommended procedure. The flight lost most of its routine qualities 15 miles from Dayton, as we descended from 10,000 feet.

Our No. 1 bleed-leak light illuminated, so we secured the No. 1 bleed system. At the same time, we started a one-minute clock, looking for the light to extinguish within that time. The S-3 community sees a lot of bleed-leak lights; low-altitude flying in hot weather at high throttle settings induces most of these lights. But, every light always should be treated as a legitimate indication of a potential fire. In our case, the bleed-leak light did not extinguish within the minute, and we secured the No. 2 bleed system. The light finally extinguished after about a minute and a half, and we assumed the condition was resolved. One minute later, though, and 10 miles from our destination, the mechanical difficulties compounded.

The No. 1 engine-starter light began to flicker, along with a rapid rise in the No. 1 inter-turbine-temperature (ITT) gauge. We immediately brought the No. 1 throttle to idle; we were sure we would lose the engine, but we hoped it wouldn't be catastrophic.

Ordinarily, we would have shut down the engine right away, but we were picking our way through weather, transitioning to the landing configuration, and looking for a field none of us ever had been to. At the same time, our senses were assaulted by a veritable cornucopia of new lights from the master-caution panel. None of the four crew members remembers what all the lights were, but we dealt with the ones we felt needed immediate attention. Among them was a deice-hot light, which reinforced our focus on the serious bleed-air problem.

We found the airport and flew a visual straight-in; we opted to get on deck as soon as possible. We wanted to avoid the possibility of being delayed and having to take an arrestment at nearby Wright-Patterson AFB.

The No. 1 throttle was at idle. The engine instruments were within limits but were much higher than normal. Our leading-edge flaps failed to extend, but nothing precluded an immediate landing.

Taxiing clear of the runway, our backseaters saw fuel pouring into the jet through and around the electrical-load center.

As we all praised JP-5's high-flashpoint attributes, we felt a rapid shutdown was in order. This decision was reinforced when I exited the jet and found fuel pouring all over the running No. 1 engine. We rapidly secured everything, and everyone quickly exited the plane. We proceeded to go *Exxon Valdez* on Dayton International's new asphalt.

It turns out we had a wing fire. A wiring bundle chafing against a fuel line eventually wore through the line and sprayed fuel on a hot bleed-air element. All three elements of the fire triangle—fuel, heat and air—were present, and the expected happened.

We followed the NATOPS procedures as best we could after we decided to get the aircraft on deck. Our trusty aircraft spent quite a bit of time in Dayton getting new wing wiring and miscellaneous parts installed. 

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