

Bad Day for the Prowler

By Lt. Michael Orr

Day one of WestPac 2002. I was beginning my second cruise on board USS *Abraham Lincoln* during my first tour with the Cougars of VAQ-139. Throughout my first two years in the EA-6B community, I had experienced a long list of emergencies around the ship, including a night, single-engine landing during my first at-sea period. I began to have a black-cloud aura about me, but that all had been in the past. “I’m now a senior pilot and ready to finish this tour uneventfully,” I thought.

My first, post-CQ flight was a day VMC, 45-minute-cycle flight, 900 miles off the coast of Hawaii. As I manned-up Warcat 503, I looked at the beautiful, blue skies and wondered what possibly could go wrong. I had no idea what I was about to get myself into.

We had briefed a basic-fighter-maneuver-counters (BFMC) flight with our Super Hornet brethren. Unfortunately, maintenance problems and an emergency pull forward prevented us from launching during our assigned cycle. Losing the BFMC flight, we coordinated a launch during the next cycle and discussed alternate missions.

Following a brief sea-control-neutralization scenario, we proceeded 50 miles aft of the ship for a basic-air-maneuvers (BAM) mission. I briefed the crew on all the





maneuvers I planned to complete, including mild aerobatics, SAM defenses, and, finally, low-level defensive jinks. For the jinks, I descended to determine the altitude of the low, broken layer that was forming below us. The highest layer in our area topped off at 5,000 feet MSL, so I briefed the crew 7,000 feet MSL would be the hard deck for the defensive jinks. That decision, while conservative, would prove to be critical.

The first three defensive jinks went as briefed: 420 knots, 4 G pull to 30 degrees nose up, followed by rolling inverted and pulling to 20 degrees nose down. The final jink was a reverse-oblique. The maneuver began normally, but as I bunted the nose and rolled inverted, I suddenly discovered I could not pull the control stick aft of slightly forward. Lateral control appeared inhibited as well. At 8,300 MSL, 30 degrees nose up, and inverted, I yelled out the words I never thought I would hear myself say, "I've lost control of the jet!"

Aircrew who have experienced serious emergencies often talk about time compression, and my circumstance certainly was no exception. As we floated inverted in our straps, passing 15 degrees nose up, I thought about an incident in which a Marine EA-6B pilot experienced jammed flight controls on a low-level, and he had righted the plane with his rudder. I then applied full right rudder and what lateral-stick movement I could to regain upright level flight. Assuming this problem was just another of the many related to the EA-6B's aging automatic-flight-control system, I actuated the emergency AFCS-disconnect switch. Simultaneously, ECMO 3 pulled the system circuit breakers in the back cockpit. The combination of these actions broke free the control stick, and I regained controllable, yet sluggish, command of the airplane. The entire process, from losing control to regaining controlled flight, took no more than 10 seconds.

After catching our breaths, we proceeded overhead the ship to troubleshoot our problem. The crew discussed the possibility of damaged flight-control surfaces, so we began the damaged-aircraft checklist. After a section of FA-18Cs had inspected us, without finding apparent damage, we configured the aircraft for landing. Upon dirty-up, I watched as the integrated-position indicator (IPI) showed the flaps and slats extending. The horizontal stabilizer shifted to dirty throws, which save me more pitch authority in the flaps-down configuration.

I also noted the main gear were down and locked, but I didn't recall whether the nose gear indicated down and locked. ECMO 1 distinctly recalled all the gear indicated down and locked—this point would become significant a short time later. As we decelerated and the flaps and

slats continued to extend, I bunted the control stick forward to counteract the normal ballooning effect of the extra lift. As I tried pulling the stick to neutral, it again jammed in the slightly forward position, and the aircraft began a descending, left turn. I immediately told the crew I had lost control and simultaneously retracted the landing gear and flaps-slats. With the flaps-slats retracted and the stab returned to clean throws, I again regained controlled flight.

I realized we had damage to the linkages between the control stick and the horizontal stab. Since the stab actuator always shifts with flap extension, I decided the airplane was to remain in the flaps-up configuration for the rest of the flight. We told the ship we would execute a no-flap, no-slat approach. I also told the crew and the CATCC rep (our CO) that, while I still had pitch control, the control stick was very stiff in the fore and aft direction. This condition occurs in the simulator when the hydraulics are disconnected, but, all our hydraulics indicated good. Concerned with how much pitch control I would have on the approach, I told the crew I would slow flight the airplane in the no-flap, no-slat landing configuration.

Slowing below 250 knots, I extended the landing gear and watched as the main gear extended normally, but the nosegear remained barberpoled. NATOPS states the nosegear may not extend fully above 200 knots, so I continued decelerating to my calculated approach speed of 169 knots. The nosegear remained barberpoled. This quickly was turning into a bad day.

We requested a visual inspection by the S-3 tanker that had joined us. The tanker aircrew reported our nosegear appeared down and locked. However, Warcat 502, who just had launched and heard our conversations on the CATCC rep frequency, soon joined up. Incidentally, Warcat 502 was honored with the presence of CAG, experiencing his first flight in the Prowler. He sat in ECMO 1's seat, struggling to decipher the highly complex and ever-confusing EA-6B radio-ICS system. Warcat 502 immediately told me not only was my nosegear not down and locked, but the tow-link, launch-bar linkage and the nosegear door appeared to

be damaged. Have I mentioned this was turning into a bad day?

Based on Warcat 502's observation, we decided against recycling the gear and told the CATCC rep of our situation. This report must have sounded more or less like, "What the \$#! do we do now?" Like a dentist telling a patient to rinse, we were directed to tank while they figured out what to do with us.

As I enjoyed the thrill of in-flight refueling without stab aug and gear down—mostly, anyway—ECMO 3 dutifully told me Hickham AFB was a 900-mile bingo, requiring about three hours and 17,500 pounds of gas. A flashing master-caution light quickly shattered my pleasant fantasy of a three-hour flight to a gear-up landing. The annunciator panel showed an L CSD OVERHEAT caution light, which meant the generator's constant-speed drive assembly had had enough of this flight and was ready to go its own way. I backed out of the refueling basket, and ECMO 1 secured the left generator. The situation seemed to be cynically humorous, and I let out a chuckle as ECMO 1 inquired if I would sign off his NATOPS check when we landed. I reset the refueling switches and noted our fuel state was 8,500 pounds: 7,500 pounds in the main tank and 1,000 pounds in the wing tanks.

Our CATCC rep called to give us the plan. After the last aircraft recovered, we were to attempt an emergency extension of the gear by zoom climbing, to obtain the maximum 150-knot NATOPS limit for actuating the emergency blow-down system. If the gear came down, we would execute a normal no-flap, no-slat landing. If it did not, we would barricade.

I had seen this maneuver tried in the occasionally sadistic NATOPS warm-up simulators in the FRS. More often than not, the maneuver seemed to end with the pilot departing the airplane. I talked with the aircrew and explained my strong hesitation in trying this maneuver. I still had stiff resistance in the control stick. Each of the previous times I had pulled hard aft, I had lost control of the airplane. We told the CATCC rep my concerns, and, after a short conference, he agreed with our decision not to

try the zoom climb, and he told us to expect a barricade.

As my thoughts drifted to becoming the first Prowler pilot to barricade—an accomplishment I'm sure would not surprise anybody in the community that knew my history—the digital fuel gauge caught my attention. It had been about 10 minutes since we had in-flight refueled; however, now, the fuel gauge showed 8,000 pounds, with only 2,000 pounds in the main tank. Despite the long history we have had with inaccuracies of the digital fuel gauge, and since the low-fuel caution light was not on, we declared emergency fuel, and the S-3 tanker joined on us. We were plugged and receiving fuel within two minutes from the time we declared an emergency. Unfortunately, after a couple of minutes of tanking, the main tank still was not fueling. I cycled the in-flight refueling switch from air to ground, and the main tank quickly filled to 7,500 pounds.

As this emergency was averted, the CATCC rep called to tell us of our situation. In order to barricade the Prowler in a no-flap, no-slat configuration, the ship required 60 knots of wind over the deck. Barring a sudden tropical storm to provide that much wind, we would have to find a way to get our flaps down.

To sum it up, if I couldn't blow the nosegear down, I had to barricade, and to do that, I needed to have the flaps down. The last time I had tried this maneuver, I lost control of the airplane. Even BuPers would admire this Catch-22.

After a crew discussion, we had no choice but to try again to lower the flaps. Our CATCC rep directed us to point the aircraft away from the ship and to extend the flaps. The CO then dutifully told us that if we lost control, we needed to be ready to "get out of the jet." My crew was well prepared for this possibility. We had long since removed all kneeboards, stored all gear, tightened all straps, and lowered our seats. As we headed to a VMC area, away from the ship, and directed away all escorting aircraft from behind and above us, I extended the flaps and slats.

For dramatic purposes, I'd like to tell you that we had to eject or barricade in the end. However, a higher power intervened that day. The flaps and

slats extended normally, I maintained control of the aircraft, and while passing below 145 knots, the nosegear came down and locked on its own. After three and a half hours of in-flight troubleshooting and multiple unrelated emergencies, the flight ended with a straight-in, no-stab aug, I-want-to-land-now-get-aboard-safely 1-wire. Would you believe those stingy LSOs gave me a no-count?

Postflight-maintenance inspection showed that a bolt and a washer connecting the stab-artificial-feel bungee to the stab actuator had worked free. Whenever I pushed the control stick forward, the bolt holding the assemblies together would pull out and jam the linkages. The jamming is why I couldn't move the stick following the nose bunt on the jink. It's also why the same thing happened after I bunted the nose during the initial flap extension. The period of flight when I had normal

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controls was because the bolt just happened to have found its way back into its hole.

The hour or so I had stiff resistance was because of the disconnect of the artificial-feel bungee, leaving me to absorb all the aerodynamic loads of the stabilizer. The only reason I maintained control on the final attempt to lower the flaps is I did not try to counteract the ballooning effect. The fact the linkages did not become entangled during the approach simply was luck. This occurrence was the first one of its kind ever in the EA-6B.

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As for the nosegear, there had been a short history of that particular gear requiring slower speeds to extend fully. Without lowering the flaps, we never could have achieved that speed. We did have some tow-link damage, most likely on the cat shot. The nosegear door was fine; it just appeared to be flapping in the wind since the gear was not down fully.

The L CSD OVERHEAT was bad timing, possibly brought on by tanking with the nosegear partly extended. The fuel incident was more serious. Since departure for WestPac, we had had several issues with the digital fuel gauges being inaccurate. As maintenance continued to work the problem, and we continued to fly the airplanes, it was inevitable the gauge would fail at an inopportune time. We are convinced we never had a fuel-quantity problem, just a bad gauge.

The first lesson learned is that every aviator has been through some sadistic, NATOPS-emergency simulator, which had multiple unrelated emergencies. The usual comment is that those simulators are unrealistic. I'm here to tell you this emergency can and did

happen. We started with the jammed flight controls, then the barberpoled nosegear, then the left CSD, and finally the fuel gauge. Add in blue-water ops and 900 miles to the nearest land, and you have one whopper of a scenario.

Second, ship-to-crew coordination, which was cumbersome at first, became a real positive, as every controller and aircraft involved was switched to the CATCC-rep frequency. This allowed me to talk with whom I needed without trying to figure out which radio to use.

Finally, our aircrew coordination was excellent. For a flight in which nothing seemed to go right, everybody made positive contributions to getting the airplane back safely. Few crews find themselves seriously discussing ejection, controlled and uncontrolled. We discussed our issues rationally, logically, and, most importantly, calmly, in a high-stress environment. I believe as we extended the flaps that final time, my crew were the calmest people in the battle group. Day one of cruise finally had ended, 179 to go! 🇺🇸

Lt. Orr flies with VAQ-139.