

Mother Nature's



By Lt. Matthew Bogue

During tactical training, we're taught about the combat losses we've suffered as a result of anti-aircraft artillery (AAA). We're shown graphs and statistics that outline how AAA, despite being low tech, has posed a significant threat to aircraft. We're taught techniques for avoiding AAA, and we practice evasive maneuvers. One night, we learned how Mother Nature's AAA (hail) can damage aircraft.

We had briefed for a flight in support of Operation Iraqi Freedom. From the outset, we knew the weather was bad. Our weather brief indicated thunderstorms and cloud tops to FL470, with bases starting in the 20s. A milky soup bowl was below us, from the surface to the upper teens, and our only refuge was in the lower 20s. We stayed on profile, and our wingman managed to stay aboard.

ORM Center

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I made certain our engine anti-ice was on as we penetrated the first line of thunderstorms. We encountered turbulence, lightning, and a spectacular amount of St. Elmo's fire emanating from our refueling probe. As we cleared the first line, we found some clear air and caught sight of a section of aircraft to our south and 1,000 feet above us.

Before entering the second line of thunderstorms, we tried to use radar to help pick our way through the storm. Unfortunately, our radar didn't work—neither did Dash 2's. As we continued west, we found ourselves back in the goo. The lightning again picked up, and soon we were rocked with hail. Simultaneously, we noticed significant windshear (evidenced by rapid air-speed fluctuations), and the turbulence became severe.

Our wingman decided enough was enough and detached. He immediately descended 2,000 feet and

missed out on the icing. In the blink of an eye, the windscreen totally was iced over, and our pitot instruments went stupid. As soon as Dash 2 detached, we came up on air-to-air TACAN to monitor our separation and knew it was safe to descend. We descended to warmer air, and the ice quickly melted away. We heard a rush of air that quieted once we were back in clear air.

A little shaken but no worse for the wear, we pressed on with the mission. The weather to the west was clear.

This was combat, after all, and other pilots were depending on us for their safety.

We continued westbound and coordinated our tanking. Thanks to an exceptional controller, we rendezvoused with the tanker and filled up. We reviewed our timeline, then pressed north to our station. As we turned at tactical airspeed, we heard an incredibly loud



rush of air and felt a vibration. I immediately checked the engine tapes, and I was relieved to see two good motors. The crew took a minute to assess any battle damage and quickly decided we hadn't encountered enemy fire. We knew it was time to go home.

Although we didn't know exactly what had happened, we knew being over enemy territory was no place to be with probable hailstorm damage. When we were back in friendly territory, and I felt safe, I broke out the damaged-aircraft checklist. We had enough gas to reach the boat, and we headed that direction while reading through the checklist. We had considered diverting, but our divert fields were beneath the thunderstorms. By returning to the boat, we could have the recovery tanker look us over before configuring for landing.

We climbed to FL370 to get on top of the storm lines we'd initially encountered, and we returned on a more southerly track to avoid the

storm. On the descent, we reconfigured the jet for red lighting, and we found the first of many "snakes" in the cockpit conspiring to make our RTB as painful as possible. When we rigged for red, the green cockpit lighting extinguished, but only the red lights on the pilot side functioned. I had no red lights and was reduced to using my flashlight. We were directed overhead to find the recovery tanker, and, unfortunately, the weather overhead significantly had deteriorated since our launch.

The weather was marginal VFR, in rain and broken clouds. We couldn't find the recovery tanker for a quick damage assessment. So, we did a quick risk assessment and decided, if we configured normally, we could come aboard and stop the insanity. We put down the flaps and slats and got a normal slat indication, but we got a barberpoled vertical stab and flaps. After what seemed like an eternity, we finally got a good wing configuration via normal methods. When

we lowered our landing gear, only the left main indicated normal. The right main eventually came down, but the nose gear was hung. We had several indicators in the cockpit that the gear was indeed hung, including a transition light that flooded the cockpit and felt like a flashlight pointed directly into our eyes. Using our “dirty” bingo fuel as a guide, we realized we needed gas to work through our gear problem and still make it to a southern divert field.

CATCC gave us a vector and steered an S-3 to rendezvous on us. By this time, our state was 5.0; we were below ramp fuel and rapidly approaching a dirty-bingo profile. The S-3 found us and said our gear appeared to be three down and locked. As we worked our unsafe-gear-down checklist, we faced the prospect of tanking in poor weather while dirty.

What more could go wrong? The S-3 put the basket out, and, with an exceptional display of piloting skill, we were plugged and receiving fuel.

I reported our status to the crew over the ICS. The next call I heard from the back was, “Are we taking gas?”

I replied, “We’re 4.0 and taking gas.”

Again, I hear, “Are we taking fuel or not?”

Adding insult to injury, ECMO 1’s ICS was now receive only. With one hand on the windshield-air switch, to keep the rain from obstructing the pilot’s view, and the other hand holding my flashlight on the fuel indicator to monitor our state, I managed to troubleshoot my ICS. The only way I could communicate with my crew was to transmit on our squadron tactical frequency. They only could hear my sidetone.

Mercifully, while tanking, our nose gear finally indicated down-and-locked. We were state 6.5, normal configuration, and ready to come aboard. As we turned inbound on final bearing and reached seven miles, the controller reported, “503, seven miles, lock-on, say needles.”

I replied appropriately, and, despite not seeing the boat, the approach was proceeding normally. Then our ACLS dropped lock several

times, and we instead decided to fly the bull’s-eye. To help matters, the ship put in a hard turn to starboard as we passed five miles. Inside of three miles, we tipped over and started our descent. I barely had started to make out the ship when paddles asked us to turn on the taxi light; it was just like driving through fog with your high beams on. At a mile-and-a-half, I no longer could make out the ship, and I couldn’t evaluate our lineup. The pilot was inside at this point and could not make his normal needles-to-ball transition. At three-quarters-of-a-mile, I saw the deck, picked up the ball, and made the call. We caught the 3-wire on an OK pass. Finally, our nightmare was over.

As we were shutting down, we knew by the ground crew’s reaction something was worth seeing. A small crowd had gathered in front of our jet. We unstrapped, jumped out, and saw an imploded radome, a missing probe light, and an absent lower anti-smash. Our leading-edge vertical stabilizer (the football) was destroyed, and numerous punctures were on the pylon-leading edges. Our refueling probe was nicked and delaminated, our intakes were punctured, and the wing-tip leading edges had taken a beating. Also, our wingman had suffered some damage, although not quite as severe. Six other aircraft from our airwing diverted to the beach that night, and some of them had suffered hail damage.

Crew coordination played a crucial role throughout the flight. While we were fighting the “snakes” up front, the backseaters took care of some essential comms—one of the benefits of a four-seat aircraft. They talked to our rep and monitored instruments. We reviewed our options and made a plan; we each took a part of the situation and evaluated it, then decisively dealt with it. Unfortunately, operational necessity sometimes dictates that we drive ourselves into situations we normally would avoid. When that occurs, crew coordination and communication are essential. 

Lt. Bogue flies with VAQ-131.