Lightning Strikes the Rhino

Photo-Composite image.

By Lt. Bill Schenck and LCdr. Mike Chenoweth

We've all heard there's no such thing as a routine mission. Well, we were on one, or so we thought, but nothing was routine about this Friday the 13th flight or the way it would end with a Class-B-mishap visit from Mother Nature.

Our poor outcome resulted from bad judgment and decision-making. We just had wrapped up a successful fleet-replacement squadron (FRS) air-to-air detachment at Fort Worth JRB and were headed back to NAS Lemoore to enjoy a relaxing weekend at home. We woke up to blue skies, checked out of the BOQ, and headed to the exchange for souvenir shopping and chow. We then drove to the hangar for our brief. The flight

plans already were filed, and our DD175-1 (weather brief) was faxed to us two hours before our takeoff time. We had a flight of three FA-18Fs, manned by six instructors; it was a simple, two-leg ferry from Fort Worth to Lemoore, with a stopover at Davis-Monthan.

The brief covered the standard items: admin, route of flight, emergencies, NOTAMS, and weather. The weather forecast for our first leg was severe clear. We glanced at dash 1, but we failed to notice the small print in the remarks section regarding possible convective activity in Southern California. The remarks also contained a recommendation to check the weather at Davis-Monthan. This important bit of information would come into play later in the day. But, we missed it and assumed the flight lead "had it covered."

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We walked, happy to be headed home, read the ADBs, put on our flight gear, preflighted the jets, and manned-up. The leg to Davis-Monthan was uneventful. The weather was beautiful, and the flight went as briefed. We parked in the transient line, checked the airplanes, and made sure the fuel trucks were on their way. Our next priority was to find lunch. We got a ride to the golf course and enjoyed the weather as we ate. When we returned to base ops, the lead WSO (weapon-systems officer) glanced at the radar picture as we headed to the airplanes. The rest of us manned-up, and we again assumed the lead aircrew had things covered. The six of us should have crowded around the forecaster and gotten an accurate weather picture, particularly in Southern California, and adhered to 3710.

We started our aircraft, taxied, and took the runway as a flight of three. On engine run-up, we had a ladder caution, so the pilot pulled back the throttles. We stayed put as lead and Dash 3 departed. We taxied to the transient line to get the ladder restowed. Our flight plan was coordinated with clearance delivery and tower. This was our second chance to update the en route and destination weather, and we again failed to take advantage of it. After a 20-minute delay, we got airborne and were headed home.

The second leg started much the same as the first, with only a thin layer to climb over about 100 to 150 miles west of Davis-Monthan. As we approached California, we contacted Yuma MCAS PMSV to update our destination weather. Our position and ETA at Lemoore was passed, and a couple minutes later we received our forecast. Lemoore's weather was predicted to be overcast at 2,000 feet, with another layer at 10,000 to 11,000 feet. No mention was made of convective activity along our route, and we did not specifically ask about this activity. Our complacency probably stemmed from a lack of attention on the original DD175-1. As we approached Palmdale, we saw some buildups over the Sierras, but it looked like our route of flight was OK. As we turned northwest toward Lemoore, we saw our current flight path was VMC, with a thin layer below us, through which we could see the ground. Buildups were to our north, but we could not tell how far north they extended toward Lemoore and beyond. We were fat on gas and, after a brief discussion, decided to request a descent through the thin layer, rather than wait and find ourselves descending through something worse.

Unfortunately, the controller vectored us on a northerly heading for our descent. They wanted to deconflict us from the airliner to our west and 1,000 feet below us, decending into Fresno. This vector put the line of thunderstorms closer on our nose than the northwest heading we were on, but still at a manageable distance to remain VMC—so we thought. This was another opportunity to break a link in the mishap chain: We simply could have asked to maintain visual separation from the airliner and sequence in behind him. We got an initial descent, still in Class A, and still VMC, but with an intermitted level off at 24,000 feet.

The controller clearly was very busy with requests on VHF when he said, "I need everyone to be quiet, and we'll all get through this." We were stepping on each other and blocking out numerous transmissions.

We requested and received further descent clearance but too late to get below the weather and remain VMC. Our radar showed we were getting closer to the cells but still were about 10 to 15 miles from the heavy returns. The clouds didn't look too ominous. The line was along our flight path and extended west and north

to the edges of the scope. It looked like we would be keeping the cells far enough off our nose on our present heading. We entered IMC conditions and had a few seconds of rain and light turbulence. We kept our speed around 400 knots to avoid icing. A drawback to the increased airspeed was additional static-charge build-up on the aircraft, which increases the chance of a lightning strike.

That's exactly what happened.

Following the sound of a gunshot, we looked up to see three sizable bull's-eyes in the forward panel of the canopy. We also saw a hole in the CATM-9 seeker-head dome. Our immediate concern was the canopy, but it appeared the damage was limited to the flow coat. We had entered IMC at 17,000 feet. The strike happened at 14,500 feet, and we were back into VMC, in clear weather, at 11,000 feet. We could see the field from about 15 miles out. We decreased our airspeed and did a straight-in approach.

Why didn't we check the weather as thoroughly as we do for every flight when we lead, or when we fly with a student? I can't think of a reason not to, and there are many reasons why we should have, the least of which is that it's required. All pilots are responsible for a complete and thorough knowledge of weather conditions for every flight. The NATOPS General Flight and Operation Instructions Manual (OPNAVINST 3710) sets down the specific criteria. The pilot-in-command is responsible to see that the flight meets these criteria. You are required to get a completed DD-175-1 for all IFR flights. "For cross-country flights, you should attend the weather brief in person before filing your flight plan. The forecaster shall complete the form for briefings conducted in person."

Those last two sentences were taken from an instrument-training book I'd received in flight school more than eight years ago. We all know too well there is an increased number of unmanned METOC facilities throughout the continental United States. The days of going over and talking to your friendly weatherman to get the whole weather picture are all but gone. But, the aircrew still is responsible to be familiar with all the available charts and data, so that you can have a complete picture of the expected weather along your route of flight. The ADDS (aviation-digital-data service) website provides comprehensive, user-friendly, aviation-weather graphics to help you do just that.

Remember, no flight is ever routine. Take care with your preflight planning. Be prepared to become the mission commander or flight lead at any time, without notice—you must act effectively in those roles. Always have a divert field in mind, and watch out for get-home-itis.

Lt. Schenck and LCdr. Chenoweth are instructors in VFA-122.

Avoiding Thunderstorms

More than 44,000 thunderstorms occur daily over the earth, and pilots occasionally can expect to encounter one. Knowing thunderstorm characteristics and applying tested procedures will help aircrews operate more safely in the vicinity of those thunderstorms.

Most lightning strikes occur when aircraft are operating in one or more of the following conditions:

- within 8 degrees Celsius of the freezing level,
- within about 5,000 feet of the freezing level,
- in precipitation, including snow,
- in clouds, and/or
- in turbulence.

All these conditions do not have to occur for a lightning strike or an electrostatic discharge to take place.

Thunderstorms have many potential hazards. Here is a list of recommended practices to avoid the same fate as we did:

- If at all possible, avoid thunderstorms.
- Do not venture closer than 20 miles to any mature, visible storm cloud with overhanging anvils, because of the possibility of hail.
- Do not fly under thunderstorms, even if the area on the other side of the mountains can be seen. Winds that are strong enough to provide the lifting action to produce the thunderstorms also can create extreme turbulence between mountain peaks.

Thunderstorms should be avoided if at all possible:

- Fly around the storm.
- Fly over the top of the storm.

If you can't avoid the storm then fly through its lower one-third.

When thunderstorms are isolated, they easily are circumnavigated, provided the surrounding area is clear of masking clouds.