

Minimums are not always Enough!

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Flying in bad weather used to be more fun. Many times, on an early assignment as an F-4 AETC Instructor Pilot (IP), the clouds were below minimums for students, but still legal for continuation training. The challenge was to find another instructor to fill the empty seat — then we both could log flying time and challenge our instrument skills. With a qualified safety observer and a number of airports in the local area, it was common to go through an hour of “bet you can’t fly that approach!” We’d challenge each IP to navigate to a designated

Initial Approach Fix (IAF), fly an entire published approach to minimums, and then swap roles for the next round. Debrief and critique were as brutal as in any schoolhouse, but the exercise built confidence in instrument procedural knowledge, aircraft systems, and respect for the rules.

Fast forward 20 years to a later assignment, a test organization in the southwestern United States. There the focus shifted from honing skills in a challenging instrument environment to pure mission accomplishment. With that change, the decreased

number of bad weather days, and the philosophy that there are just too many good days on which to fly, we didn’t do much weather flying. The unit was made up of both active duty and civilian pilots. We flew enough to keep current and meet requirements, but rarely flew practice sorties in bad weather just to hone instrument skills. Many missions included flying lines as threat simulators and returning to base for a couple practice patterns for the day. Now, take a pilot who did not fly extensively in weather, deploy to a place with challenging weather, add some equipment

malfunctions, and a routine mission got real interesting, real quick.

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The first hops went fine — deliver jets, eat seafood, and pick up jets the following day. Weather for the return flight wasn't bad. The forecast called for intermittent clouds and required an alternate, but conditions were well above approach minimums. During the flight, however, an en route update indicated that the weather was worse than briefed or expected.

The flight lead split the two-ship for individual approaches. Approach control didn't pick up the wingman's squawk — IFF wasn't used while the element was together. This was the first indication of a problem.

The following day, the two-ship left their warm southern environs for the Pacific Northwest, and a 40-degree temperature change. Along the way, an intermediate fuel stop hinted at things

to come. One of the two jets just did not like the cold air. After multiple attempts to start engines and a losing battle with sunset, lead continued to the deployed location, and number two spent the night planning to pre-heat the engines the following morning before another starting attempt.

The next day was not a lot warmer, but the preheating made a difference. The engine finally started, and number two showed up a day late.

The weather was consistent for the deployment — ceilings just above minimums, clouds layered to the moon, with icing forecast in the clouds. It really wasn't that bad. Cloud bases were high enough to legally take off and the layers were not all that thick. The icing was brief enough to fly through without causing trouble. One could always find clear space in the working area — with enough work, we managed to get enough done to complete successful missions.

On our way back we would pick through the weather, fly a real instrument approach, and break out of the weather just above the

minimums. After a couple days we fell into a regular routine. Number two's faulty IFF was replaced once more. Since that jet was always scheduled as number two, those problems went undetected. It was a little tougher for the guy who had to hang on the wing through the weather and ice, but we were all experienced, well qualified, and all of those conditions were within the limits. We had the routine down.

On day four the morning forecast was the same — low ceilings with sleet and snow, layered clouds, and icing. We briefed our standard mission to include keeping our crippled jet on the wing, preflighted our jets in the rain, and took the runway. Formation take-off went fine, and we entered the weather as advertised. It didn't take many radio calls to figure out that rain had entered number two's cockpit affecting his radio and making some transmissions difficult to understand. This was not a significant problem — he would be on the wing all day, and besides, his receiver worked fine.

After a couple vectors toward the working airspace, we



Sometimes the minimums are not enough — on each flight, every pilot should plan for unexpected weather conditions!

started a climb and entered the ice. As the front of my canopy iced over, I looked over at number two. Though I could see him looking back, his helmet was disappearing behind the thickening ice covering his canopy. Just before it became impossible to see, we climbed out of the icing. That was good, but we knew we would have to fly back through the ice on the way down.

We pressed on to the working area and climbed to the top of the airspace. There were almost always breaks in the cloud layers, but not today. The entire northwest was pretty much the same — solid from the base of the lowest clouds up to higher than we could climb. The decision to return to base early was an easy one, but there was a catch. In that kind of weather it made sense to clear off number

two for his own recovery. But with a bad radio, and a unreliable IFF, that was not an option. He would have to just hang on the wing for the trip back.

The trip home was as much fun as the trip out. The clouds were solid, the ice was still thick, and the bases were right at minimums for our approach. We landed safely, cancelled the afternoon go, and reviewed the high and low points of our morning flight.

We aviators frequently lean forward to get the job done. Risk management is a part of every sortie. Sometimes, a number of small acceptable risks add up to a total that exceeds common sense. The weather was above minimums, and the forecast was the same as it had been. Contin-

gencies were briefed, and all the pilots were highly experienced. Those radio and IFF malfunctions were minor irritants when flying in good weather, but added up to significant problems in solid instrument meteorological conditions (IMC). The icing was within aircraft limits, and wasn't bad while flying heads down on the instruments, but flying visual formation through thick clouds and thick ice was a pretty heavy task load. The pilot was freezing on the early leg due to a faulty heater. That malfunctioning system was never noticed in the warm southwest. When we looked at the total of the accepted risk, it was clear there was nothing to be gained by trying that again. Sometimes, having just the minimums is not good enough. ▶

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