

CALLBACK

From NASA's Aviation Safety Reporting System



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VFR Flight into IMC

Visual Flight Rules (VFR) flight into Instrument Meteorological Conditions (IMC) has been identified as a major safety hazard within General Aviation (GA). The cause of VFR flight into IMC is “often found to be a willful disregard for the cues that dictated an alternate and safer course of action.”¹

Half of all GA weather-related accidents involved attempts to continue to fly under VFR into IMC. Among these accidents, more than 72% were fatal versus a 17% fatality rate among other types of GA events.²

Three of the following ASRS reports shed some light on the human factors involved in the pilots' decisions that led them into unintended encounters with IMC. In the fourth report, no human factors were addressed, but the incident itself offers a loud and clear lesson about the dangers of VFR flight into IMC.

A Dangerous Descent

NTSB accident reports dealing with VFR flight into IMC often leave investigators wondering just what the pilot was thinking. This ASRS report gives some insight into what the pilot of an Experimental, Homebuilt aircraft was thinking when he gambled on a “somewhat confident” assessment that the reported ceiling was correct.

■ *The clouds had broken up...and while the ceiling was still only around 3,000 feet, I launched, confident I'd at least be able to get to [my destination] less than an hour away....*

Not long after launching I ran into showers and zigged and zagged along, until I saw broken sky. Being on top seemed a better option than trying to cross the mountains by scud running.

The buildup ahead seemed to grow and [my destination] was now reporting overcast.... I knew better than to let myself get stuck on top, and yet here I was, unwilling to turn around and too stupid to check the weather ahead to see if it had afforded me any options. Instead, I circled the field (as judged by my GPS), and then descended through 2,000 feet of clouds, somewhat confident that the ATIS reporting 3,900 broken was correct. It was.

It was illegal. It was stupid.... There were so many better options I could have made, but didn't.

“I Should Have Turned Around”

An instrument rated, but not IFR current, DA40 pilot got caught between converging cloud layers.

■ *I would normally do any type of cross-country flying under IFR, but my IFR currency had lapsed. Preflight weather briefing called for VFR conditions along my route of flight with ceilings...gradually decreasing to 3,500 feet at my destination.... Initial cruising altitude was planned to be 5,500 feet and descend as needed to maintain VFR.... Approximately 50 NM from my destination, an overcast layer formed about 2,000 feet below me. I was VFR on top of the layer. ATIS at my destination was reporting a scattered layer around 2,600 feet. I made the decision to continue on until the layer broke up.*

I continued on between two layers, still in VFR conditions. In the distance it appeared that the lower layer was breaking apart and I believed I could break through.

As I began descending, it was thicker than I had anticipated. I was able to maintain VFR cloud clearance, but I was down to 1,800 feet MSL and there were still clouds below and in front of me. I did not want to scud run or descend any further. I turned back to the north, where it was VFR between two broken layers. As I climbed, it appeared that the layers were converging and there would be no space to maintain VFR. With no remaining safe options, I called Approach and told them I was declaring an emergency, was unable to maintain VFR, and needed a pop-up IFR clearance to my original destination.

By this time I was in solid IMC. I climbed to 4,000 feet and advised ATC of my altitude.... ATC asked me to verify I was IFR trained. I responded that I was instrument rated, but neglected to tell them I was not current. I flew an ILS approach and landed without any problem.

There were many signs of this problem arising. First, when I read the weather briefing, there were parts of my flight that were at my minimums for VFR flight. I softened my VFR minimums even though I was not IFR current. Furthermore, as I began seeing overcast cloud layers above and below me, I continued on because I thought my destination would have a layer I could break through based on the ATIS. I had neglected to consider that ATIS information is sometimes up to an hour old and based on what I was seeing out the

window, I should have turned around into better conditions and landed to reassess the situation.

The lessons are to set strict minimums for VFR and IFR and don't violate them. Continuously analyze evolving weather conditions during flight and proactively deal with them. Make sure you are prepared for the worst-case scenario. Have a lower threshold for turning back into better weather conditions and land at a suitable field if you can't. I should have told ATC that although I was instrument rated, I was not current.

"I Should Have Made a No-Go Decision"

Getting short on fuel and viable options, this C172 pilot was lucky to get vectors to a nearby airport that cleared enough for a VFR landing. Our thanks to the pilot for sharing a cautionary tale that ends with no less than five "I should have..." observations worth remembering.

■ I was planning on going on a short local flight. We had been experiencing low ceilings throughout the prior week, but it usually lifted significantly once the sun rose. Upon checking the METAR for [destination], I found the visibility to be 9 miles and the ceiling to be 1,400 feet. I decided to wait until the ceiling became higher. After about 30 minutes it appeared that the ceiling had lifted more and I was seeing much more blue sky than previously, although it appeared somewhat hazy. I rechecked the METAR and found that they were now reporting 7 miles and a 300 foot ceiling. The ceiling didn't appear that low near the airport I was departing from. I thought that there were probably some localized low clouds at [destination] that were skewing the METAR reading. I elected to takeoff since I thought I could always stay in the pattern and land quickly if I found the ceilings to be lower than they appeared.

Once I took off, I started to enter the haze at approximately 200 feet and quickly found myself in IMC. I am instrument rated so I transitioned to instruments and continued climbing since I knew that it wasn't thick. I cleared the low ceiling at approximately 500 feet and was in bright blue skies, but I couldn't see the airport to land. I listened to the ATIS and found that they were now reporting 1/2 mile visibility and a 300 foot ceiling with another close airport reporting the same. Upon hearing that, I immediately called the FSS and asked them what the nearest VFR airport was. They said that every airport within about 50 miles was IFR due to fog that had rolled in quickly. I called the Tower and told them about my situation and that I had about 1.25 hours of fuel on board and asked if they had any suggestions. Since my plane wasn't IFR certified/equipped, they suggested waiting for the fog to

burn off since visibility appeared to be getting better from their vantage point.

I leaned the mixture and throttled back to conserve fuel. Once I realized I couldn't wait any longer due to my fuel, I advised Approach. The Controller told me that [another airport] just became VFR and he gave me vectors. The ceiling broke up and I was able to make a normal descent and landing.

I learned a great deal from this flight. When I saw the ceiling drop so quickly, **I should have** pulled up the METAR for several other airports in the area to see if they were reporting similar weather. **I should have** gotten a weather briefing from a FSS before I took off. Although the fuel I took would have normally been sufficient for the short flight I was doing, **I should have** taken more fuel if the weather looked marginal so I would have more options in case the weather took a turn for the worse. And, most importantly, **I should have** realized that the weather originally reported before I took off (the 1,400 foot ceiling) was below my personal minimums and **I should have** made a no-go decision.

Imprudent Pruning

Scud running is a very dangerous practice that all too often leads to inadvertent flight into IMC. After ducking under the clouds, this M20 pilot did manage to "scrape by," but only by a matter of inches.

There are no explicit lessons offered by the reporter, but the narrative speaks for itself.

■ While on a VFR flight, I decreased altitude to maintain visual conditions and inadvertently lost visual contact with the ground momentarily as I entered a low cloud. I brushed the left wing on a tree top before I was able to ascend and enter visual conditions. I returned back to ZZZ and landed uneventfully.

Once back in my hangar, I noticed a few dents on the bottom side of the left outboard section of the wing and a slight bend in one prop blade. There was no damage to any other property or injury to any others and no injury to me. The incident occurred in a remote location.

¹Wiegmann, D. A., Goh, J., & O'Hare, D. (2002). The role of situation assessment and flight experience in pilots' decisions to continue Visual Flight Rules flight into adverse weather.

²AOPA. (2011). Nall Report: General Aviation Accident Trends and Factors (utilizes NTSB Accident data)

Total ASRS Alerts Issued in 2014	
Subject of Alert	No. of Alerts
Aircraft or Aircraft Equipment	63
Airport Facility or Procedure	48
ATC Equipment or Procedure	41
Company Policy	1
Hazard to Flight	1
Other	5
TOTAL	159

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January 2015 Report Intake	
Air Carrier/Air Taxi Pilots	4,505
General Aviation Pilots	918
Controllers	526
Flight Attendants	459
Mechanics	208
Military/Other	165
Dispatchers	104
TOTAL	6,885