

CALLBACK

From NASA's Aviation Safety Reporting System



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Weather Reports

With the approach of the winter season, weather becomes a more prominent factor in aviation incidents. The following reports offer timely lessons regarding light aircraft encounters with various weather phenomena. ASRS reporters describe situations that are commonly encountered, including VFR flight into marginal visibility conditions, unexpected conditions while IFR, and weather-related surprises during landing and takeoff.

"Then the Wall of White Came"

A PA-28 pilot neglected preflight weather planning because he just "planned to stay in the pattern." After he inadvertently entered IMC, ATC fortunately came to his rescue.

I had decided to perform some takeoffs and landings. The weather was marginal VFR with an observed ceiling that looked OK. There was mist in the air. Looking north I could see the mountains (about 5 miles) in mist, I was taking off to the south. I could see some occasional flashes of blue sky, and the wind was from the south. During climbout the mist became light rain and the visibility was becoming worse. Then the wall of white came and made the airport behind me disappear. I had no plan for this event. I was just barely at pattern altitude. I started to turn and was going to descend to try to find the airport, but I could already tell that I had my hands full. I was concentrating hard to keep the attitude indicator wings level and I started a slight climb. I now had to reduce climb power and keep the plane under control. By now I was at 2,000 feet, but fighting to keep the attitude indicator under control... Things were not good, I believe I was fighting vertigo... I then retrieved my chart (yes, it was a struggle to maintain control of the aircraft while doing this) and was able to tune in Approach and made my call for assistance. They answered! [The controller] had me enter a transponder code then tune to another frequency. Having someone to talk to was a great help. He gave me the altimeter setting, started giving me instructions, all turns were half standard rate, he kept reminding me to watch the airspeed, altimeter, and would have me call out when wings [were] level after the turns. At about 1,200 feet MSL I came out of the clouds with the runway in front of me. The total time in IFR was 30 minutes.

I normally don't fly in marginal conditions, but by...believing that I was just staying in the pattern, I gave myself a false sense of security, and ended up with extreme problems. The decision to take flight was in error due to improper weather/preflight planning.

"The Ceiling Had Dropped to My Altitude"

An instrument-rated private pilot on a VFR flight relearned several important weather-related lessons: Conditions can be worse than forecast; they may deteriorate more rapidly than

expected; and an emergency declaration may be the best way to ensure a safe incident resolution.

I was flying from ZZZ to ZZZ1 at 3,000 feet, ascending to 1,500 feet along the river corridor after obtaining a Class B clearance. Weather at ZZZ was clear below 4,000 feet. Forecast for ZZZ1 was 3,000-foot ceilings. Crossing the harbor, visibility was 5 miles in haze, as forecast in my preflight briefing. After reaching approximately the midpoint of river route...I found that a low layer of fog had formed under me, and the ceilings above me had dropped to my altitude. Because I could no longer maintain visual contact with the environment, and because narrowness of corridor precluded a safe 180 degree turn, I initiated an immediate climb to 2,500 feet and informed ATC, saying that I was unable to maintain VFR...I asked for an IFR clearance... and received a clearance to ZZZ2...and landed...without difficulty.

First, the flight conditions turned out to be worse than forecast. Second, I did not appreciate the rapidity with which the conditions were deteriorating...In the future, I will try to make better use of inflight weather advisories (ATIS's enroute, Flight Watch, etc.) and terminate flight if conditions are deteriorating rapidly. Second, if conditions are marginal, I will try to work out with ATC in advance what I should do if I lose VMC. Third, I will use the words 'declare an emergency' if I feel I need more immediate handling for safety.

"A Stall Was Imminent"

The flight crew of a corporate Cessna Citation was deviating around thunderstorms at high altitude when they encountered a rapid, unexpected, and very large increase in temperature that significantly reduced engine performance.

On IFR flight plan cruising at FL430...Initial OAT (RAT) -45 degrees Centigrade, had requested from ATC to climb to FL450. Request denied, had weather approximately 60 miles ahead, so asked for 30 nm (right) of course. Was in VMC, while deviating (right) of largest cells, entered IMC at Mach .73, only occasional light turbulence in some frozen precipitation. Started to notice rapid airspeed decrease, advanced thrust to takeoff thrust, still airspeed decreasing rapidly now to 150 KIAS, requested lower. ATC was very busy, no reply from ATC, had no choice but to start descent as a stall was 'imminent.' Co-Captain was able to notify ATC we were in a descent to FL410, was able to maintain 150 KIAS but not increasing in descent, had all (wing, engine) anti-ice on prior to entering IMC, did not have tail de-ice on because of boot temperature limit. Inside cell temperature rapidly... [increased to] -20 degrees. At that point at FL410 manually activated tail boots, maintained takeoff thrust to limit. Shortly after, exited cell, and airspeed began slow increase back to Mach .73 at climb power. Fifty or so miles more was able to maintain Mach .73 with normal power settings.

ASRS Alerts Issued in September 2008	
Subject of Alert	No. of Alerts
Aircraft or aircraft equipment	12
Airport facility or procedures	7
ATC procedures or equipment	7
Company policy	1
Total	27

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September 2008 Report Intake	
Air Carrier/Air Taxi Pilots	2829
General Aviation Pilots	1008
Controllers	61
Cabin/Mechanics/Military/Other	263
TOTAL	4161

"I Shoud Have Listened to My Gut"

A report from a Beech 55 pilot concluded that "no good deed goes unpunished"—in this case, cancelling an IFR flight plan prematurely to oblige ATC.

■ *...By the time I departed, my alternate was below legal limits for an alternate. But calling FSS to correct the alternate I thought was a losing proposition. I should have asked Center to correct it during my departure. I got to my destination and could easily see the runway from 2,300 feet, even though there was an extensive layer of ground fog. I entered a left downwind for Runway 22. I was communicating with Center via relay with an air carrier. I was asked if I could cancel IFR and agreed to cancel even though my gut said it would be better not to. As I descended onto base leg, I lost sight of the runway. I turned final and once again picked up the field, but I was too high and fast to land, so I went around. I could again easily see the runway on downwind, but once again lost sight of the runway as I descended and turned base only to once again pick up the field too late to land safely. I abandoned my attempt to land. I climbed to 3,000 feet and headed to my alternate...while attempting to contact Approach, Center, or an aircraft for a relay. I finally contacted Approach after several attempts and explained what had happened. They cleared me to ZZZ and to expect the ILS Runway 04 approach. They vectored me extensively due to traffic in the sector. In the interim, the AWOS indicated worsening weather at ZZZ with ceilings below minimums. Since I was flying under Part 91, I elected to fly the approach to have a 'look see'...I broke out at minimums slightly to the west of the centerline, corrected, and landed with a lot of room to spare. In retrospect, I should have listened to my gut and not cancelled my IFR flight plan, even though there was a perception on my part that I was doing Center a favor by doing so. No good deed goes unpunished....*

"I Lost Control of the Plane"

In-flight encounters with weather are not the only concern that pilots must have. Wind conditions at landing can challenge a pilot's best efforts to maintain control. More from a C172 pilot.



■ *Took off early in the morning...flew for about 4 hours and heard pilots having windshear and gusty wind problems at ZZZ. Searched for weather data for surrounding airports. ZZZ had winds right down the runway and was best choice for landing. Landed the airplane fine. When taxiing after turning onto Taxiway D at the airport, the nose dropped forward, the wind lifted my tail up and the airplane went left wing down off the taxiway. I had the proper wind correction in for a right quartering tailwind. I lost control of the plane once it went off the taxiway over a patch of grass and onto an adjacent service road. I was able to stop the plane on this service road. The final wind check I received before landing was [wind from] 290 degrees at 27 knots, gusting to 34 knots. The ATIS recorded [wind from] 300 degrees at 27 knots, gusting to 42 knots (unconfirmed). I feel I took all the proper*

precautions to prevent losing control of the airplane, but wind was just too strong to prevent loss of control.

This reporter added that during the taxiway excursion, the aircraft "felt like it was being lifted by a giant hand." Damage was done to the wingtip and propeller.

"The Aircraft Immediately Began to Settle"

The flight crew of a corporate turboprop ignored a subtle IAS hesitation during takeoff at a high-altitude airport—and recognized too late that it was a "strong negative windshear."

■ *Cleared for takeoff on Runway 03. First Officer was at the controls. Current METAR (nearly 1 hour old) as follows: Date and time 050/06KT 10 SM SCT110 19/M06 A3000. Light wind was confirmed by observation of windsock and flags. Review of performance charts showed comfortable margins for acceleration/stop and acceleration/go. Broken clouds and virga were noted to the south, scattered to broken clouds were observed to the north. Runway was dry and clean. Rotation speed was increased by 6 knots over that required for our takeoff weight to assure clean unstuck. Max power was set before brake release. Acceleration was normal until after 80 knot status check and callout. Momentary hesitation of IAS increase was noted at approximately 87 knots, followed by resumption of normal acceleration. Normal rotation to TOGA V-bar pitch attitude resulted in lift-off, but the aircraft immediately began to settle. IAS was decreasing rapidly in spite of subjective feel of normal acceleration...Main wheels contacted the runway 2-3 seconds after liftoff...When the mains touched down, I took the controls and applied full reverse and moderate braking (to avoid wheel lock-up). Approximately 2,500 feet of runway remained. IAS was less than 100 knots...Upon reaching the end of the pavement, I steered 10 degrees left to avoid the localizer antenna berm, continued full reverse, and applied max braking on sandy soil. First Officer assisted with braking and executed the emergency shutdown procedure before the aircraft came to rest. The aircraft stopped approximately 500-600 feet past the end of the runway. After assuring the emergency egress was not required, I exited the aircraft and found all landing gear intact and no visible damage. Both mains deflated within a few minutes when the fuse plugs activated from the heat generated by the max braking effort. I noted a strong, steady wind, estimated to be in excess of 20 knots, coming from the direction of the runway. The new METAR...showed 340 degrees 12 knots gusting 23 knots. Runway was changed to Runway 21 while we were waiting for service vehicles to arrive.*

The event is the result of a strong negative windshear at rotation...If I had to do it again, I would discontinue the takeoff at the point where the IAS hesitated momentarily. Our training discourages aborting after 80 knots except for fire, engine failure, or directional control. The First Officer and I were primed to continue in the absence of an abnormal indication prior to 80 knots. In this situation, I do not believe the aircraft could have remained airborne and climbed to avoid a CFIT outcome....