

# CALLBACK

From NASA's Aviation Safety Reporting System



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It will come as no surprise to users of the ASRS Data Base Online that many ASRS incident reports contain descriptive references to weather—rain, freezing rain, thunderstorms, frost, snow, ice, hurricanes, tornados, lightning, dust storms, wind, microbursts, and hail—not to mention unlimited ceilings and visibility. But did you realize that hundreds of pop song titles also use weather words to good effect?

For our October issue, we sample a variety of weather-related ASRS incident reports through pop song titles—from “Terminal Frost” to “Snowbird.”

## “Terminal Frost” (Pink Floyd)

The wings of an airplane are said to be “cold-soaked” when they contain very cold fuel as a result of landing after a flight at high altitude, or from being filled with very cold fuel. This condition often occurs when high humidity is present, and may lead to frost accumulation and icing on wing surfaces. A B737-700 First Officer reported to ASRS that Cold-Soaked Fuel Frost may occur on both longer and shorter flights, and is a preflight concern.

■ *Cold-Soaked Fuel Frost has occurred on a number of company flights. The FOM requires the Captain to check for Cold-Soaked Fuel Frost on flights over 2 hours...It occurs on the [B737] Classic and NG on flights well under two hours in a variety of weather conditions. I am submitting this report to increase awareness and encourage checks for Cold-Soaked Fuel Frost on every leg...*

*...[Inbound] flight 1:54 hours. During preflight, as part of my own personal check of the aircraft, I checked the wing from one row behind the emergency exit window. Cold-Soaked Fuel Frost covered a large portion of both wings. Weather at the time was clear, 66o F. I notified the Captain, who also looked at the wing. After passenger boarding was complete I went to the back and again checked the wing...Only condensation remained and we departed without delay.*

*I have had Cold-Soaked Fuel Frost [on]: 1:20 hour flight, 80o F, clear sky. 1:05 hour flight, 70o F, clear sky. Checks... need to be incorporated into every leg no matter the duration of the previous flight. Ladders need to be provided to allow the crew to conduct a tactile or hand-on check of the wing when Cold-Soaked Fuel Frost occurs. It can be clear ice or difficult to determine if it is condensation or ice....*

## “Blame It on the Rain” (Milli Vanilli)

A B737 First Officer made an alarming discovery when inspecting the aircraft’s engines during preflight.

■ *It was raining quite heavily. When I was doing my preflight walkaround, I found a pair of Ramper’s knee pads, half-way back, and sitting inside the #2 engine. Obviously, one of the Rampers had set them there to prevent them from getting wet while unloading/loading the aircraft. I removed the knee pads and handed them to the first Ramper I came across. There was great potential for engine damage or even worse if the chain of events had been different), i.e., Ramper puts knee pads in engine after I do my walkaround and then forgets about them, and we start engines....*

## “The Wind Beneath My Wings”

(Bette Midler)

For a CFI light twin pilot, applause from passengers on the landing roll was short-lived.

■ *Started flying GPS approach to Runway 9. There was a runway change and I was vectored for ILS to Runway 27. Weather from ATIS was reported to be ceiling 900 feet, visibility 3 miles in rain, winds 230 degrees at 15 knots gusting to 30 knots. Started down the approach, broke out at 900 feet. Crosswind was coming from the left, applied left crosswind correction. Touchdown smooth (my friends applauded). The airplane was thrown upward by a microburst. I added some power and regained control and brought it down again. The airplane was then slammed to the runway. When I taxied in, I noticed that the wind was coming from approximately 130 degrees and at least 15 knots (the windsock was fully extended).*

*I called the Tower to report the microburst and the wind difference. They told me that the winds were all over the compass and that they had received reports of Low Level Wind Shear...My left prop grazed the runway and my nose strut was pushed up. There were no injuries....*

## “Ceiling Unlimited” (Rush)

The forecast of Ceilings and Visibility Unlimited (CAVU) brings visions of great flying weather. A B757 flight crew discovered that CAVU may also mask less desirable weather conditions.

■ *...It was night CAVU. Descending through 5,000 feet we encountered continuous light turbulence...with periods of continuous moderate chop and moderate turbulence. We had the airport in sight on downwind, but requested vectors to the final due to the turbulence, night, and we were both a bit tired... On final, the Tower reported the winds out of the northwest at 7 knots. The FMC was showing 30 knots of wind at 1,000 feet, so we selected a target speed of VREF plus 15 knots, expecting the wind to diminish by landing. The ride was very rough, and descending through approximately 400 feet, we received a reactive windshear warning. We executed the windshear recovery procedure per the flight manual. Once through the shear, we cleaned up and received vectors back for landing ...We did not encounter windshear on the second approach and landed uneventfully.*

ASRS Alerts Issued in August 2009	
Subject of Alert	No. of Alerts
Aircraft or aircraft equipment	10
Airport facility or procedure	2
ATC equipment or procedures	1
Maintenance procedure	2
<b>TOTAL</b>	<b>15</b>

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August 2009 Report Intake	
Air Carrier/Air Taxi Pilots	2733
General Aviation Pilots	904
Controllers	28
Cabin/Mechanics/Military/Other	391
<b>TOTAL</b>	<b>4056</b>

## "Crying Lightning" (Arctic Monkeys)

A pilot and passenger aboard a corporate high-performance turbine aircraft encountered unexpected lightning in clouds.

■ *At FL250...began to encounter light turbulence in clouds. Without warning, a lightning bolt struck the aircraft and [we] concurrently encountered severe turbulence. All EFIS screens went blank, static in cockpit [was] so loud that intercom to backseater [was] unusable, generator fell off line, landing gear unsafe lights came on, VHF com radios [were] overcome by static, autopilot unusable. Engine operated normally. Standby EFIS came back on line after a short time, but main primary flight display was giving only partial information, being altitude, heading, but no air data. We were unsure if navigation instrumentation was operating correctly. ATC called and stated our altitude had deviated significantly, and the standby EFIS indicated we were several hundred feet off assigned altitude. ATC requested we call a phone number. It appeared we had hit a severe turbulent updraft. We informed ATC we were struck by lightning and requested descent. We came out of cloud into clear conditions. The electronic instrumentation began to come back on line after reboot. However, the generator would not stay on line and the landing gear unsafe light remained illuminated. We decided to divert. Gear came down normally and landing [was] uneventful.*

*Upon inspection of aircraft, evidence of lightning strike was evident. Removed Generator Control Unit and it looked like someone had taken a torch to it....*

## "Butterflies and Hurricanes" (Muse)

The aftermath of a hurricane led to a missed approach by an EMB-135, and flight crew "butterflies" during the climbout. Here's the Captain's story:

■ *I was the Pilot Not Flying...Before I left the hotel I contacted Dispatch to talk about the weather [at destination] where it was receiving the aftermath of a hurricane. The current weather was 1 sm, 1,200 feet overcast, and winds 010 degrees at 25 knots gusting to 35 knots. The forecast weather was similar and seemed to hold true. On ILS Runway 30R approach around 1,500 feet I noticed our airspeed rapidly decreasing and yelled 'power.' Almost simultaneously the First Officer added power and we received a red windshear warning. The First Officer then executed the windshear procedures by adding max thrust and pressing the GAR [Go-Around] button. I informed the Tower that we were going missed due to windshear. Their instructions were to climb and maintain 3,000 feet. After the windshear warning went away, we cleaned up the aircraft. Rapidly approaching 3,000 feet, I noticed the First Officer had to use an excessive forward force on the control column to decrease the rate of climb. I could tell we weren't going to level off. I told him to press and hold the quick disconnect button because I thought we may have a runaway trim because of the amount of forward force to slow down the climb. I informed ATC that we needed higher, and they gave us 4,000 feet, then 5,000 feet, and then a block altitude that we requested from 5,000 feet to 8,000 feet.*

*Our rate of climb with full nose forward pressure on the control [column] was around 500-1,000 fpm. This was also with a*

*decreased amount of power that kept us anywhere from 200 knots to 220 knots, as airspeed was also hard to control due to turbulence. I continued to run the QRH and cut out both pitch trim systems. Then I turned the main system back on and the First Officer was then able to use the trim. We stabilized the aircraft at 7,000 feet....*

*In our climb I informed ATC our intentions were to divert to...our best alternate, where weather was better. I thought this was the best decision due to current [area] conditions....*

## "Snowbird" (Anne Murray)

For a C150 instructor and student, weather conditions changed a planned training flight into a demo of soft field landing techniques.

■ *The objective of the training flight was to gain cross-country experience as well as to learn how to navigate around isolated snow showers. We were in a non-IFR certified aircraft. No flight plan was filed. A web site was consulted for weather, but no preflight brief was obtained. The weather was reported as isolated snow showers and light winds. We departed...with an en route distance/time of 56 miles/50 minutes. As we circumvented the isolated snow showers, our time en route had extended to 1 hour 40 minutes. The sun had set and daylight was fading, our original destination was obscured with snow, so we decided to divert to another airport. We contacted Approach Control and asked for vectoring assistance, but all airports within 20 miles were IMC with snow. The area where we were flying was VFR with unlimited ceiling. I decided it was safer to land the airplane in a field while we had remaining daylight instead of trying to navigate around snow showers in the dark. No Mayday call was made, but the Approach Controller was informed of our decision. We were given a phone number to contact the Tower after we landed, and then descended to the farm field. The field was frozen solid with about 3 inches of snow. The approach was upwind parallel to the furrows. A soft field landing technique was used with no damage/injuries to the aircraft or the 2 occupants.*

*In conclusion, a full preflight brief would have given us a more accurate understanding of the weather we encountered. A better understanding of the weather could have led us to the decision not to fly that day.*

## Coming Soon!

We have made recent changes at the ASRS! In May 2009, we launched an internal end-to-end electronic "Analyst Workbench". This tool assists our Expert Aviation Safety Analysts in processing reports you submit through the ASRS website or send by U.S. mail.

Coming Soon! We will launch a new and improved version of our database search tool, "Database Online" (DBOL) in November 2009 that will be more efficient and user-friendly. It will also include Microsoft Word, Excel, and html report outputs. As always, we welcome your suggestions or comments on our improvements.