CALLBACK

From NASA's Aviation Safety Reporting System

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WINTER WEATHER WARNING

While there have only been scattered flurries of weather-related ASRS reports recently, the forecast is for increasing intensity over the next few months. On the brighter side, ASRS Analysts do see a chance for significant clearing of embedded gray cells and foggy memories provided there is heavy participation in a review of cold weather operations and procedures. A high absorption rate of the towering accumulation of lessons learned could prevent an avalanche of reports at ASRS.

"…We were going to have to find the runway regardless of the weather"

This "chilling" statement reflects the gravity of the situation encountered by an instructor and student in an ice-encumbered Cessna 172. Knowing the limitations of one's aircraft and having a respect for the forces of nature are two universal lessons learned by the instructor who submitted this report.

■ *The [Cessna 172] began to accumulate light rime ice in cruise at 10,000 feet… Icing became increasingly heavier until…we were having difficulty maintaining altitude. Departure [said] he needed us to maintain 10,000 feet. I told him we were picking up ice and requested vectors [to the] ILS Runway 35 at XXX… We checked in with the Tower [and we were] cleared to land. Icing was moderate at that point. We had full throttle at 70 KIAS and [we were] descending 400 feet per minute. We were unable to maintain approach minimums, and at one point Tower said, "You probably know this, but I'm getting an altitude alert..." We briefed the approach and knew we were going to have to find the runway regardless of the weather... We saw the approach lights at about 400 feet AGL, almost 500 feet below the localizer approach minimums. We landed without incident (with two inches of ice). The approach and tower controllers were extremely helpful.*

Causes: We took off into forecast icing conditions… I thought if we could get up high enough (10,000 feet) we could fly over the icing layer…

Even a very thin layer of ice on the leading edge and upper wing surfaces can cause a dramatic loss of lift and increase in drag. With *two inches* of ice, these pilots were lucky to be near an airport.

Cool Controller Stops a Snowballing Situation

Quick work by a sharp Center Controller not only helped an MD-80 crew out of a bad situation, but also prevented a "chain reaction" of traffic conflicts. This first report gives the Controller's perspective.

■ *The aircraft was in level flight at FL350, with some deviations off course due to weather. At INTXN the pilot unexpectedly announced, "We need to change altitude right now." Since I did not control the airspace below FL350, I was unable to provide a descent clearance right away. The pilot initiated a descent and I advised the pilot that I was declaring an emergency and to please fill me in on the situation when circumstances permitted…Subsequent discussion with the pilot indicated that the aircraft was unexpectedly unable to maintain altitude… The pilot asked for and received clearance to FL310. Because I was sitting immediately adjacent to the controller [handling] airspace below me, I was able to coordinate the un-cleared descent quickly enough to avoid cascading problems with other aircraft.*

And the following report details the pilot's view of the same incident:

■ *…Aircraft was in cruise flight at FL350 with airfoil and engine anti-ice on. [We were] in IMC deviating to the east of thunderstorms. Aircraft speed increased initially from .76 to .78 Mach, then deteriorated to .69 Mach. Performance did not increase so we immediately descended to a lower altitude to regain speed and aircraft control. There was no time to request and receive clearance for the altitude change. I believe we must have flown into relatively warm, moist air blowing off the top of a storm to our left, causing marked deterioration in aircraft performance.*

It appears that the aircraft may have been operating at, or close to, its performance limit altitude for the thrust available and that the encounter with the effects of the thunderstorm resulted in the inability to maintain altitude.

ASRS Recently Issued Alerts On…
B757 lavatory fire incident
Homebuilt Kitfox rubber tubing failure
CL65 uncommanded nose gear retraction
Published SID discrepancy at a Mexican airport
An international airport's taxiway signage and marking

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October 2002 Report Intake	
Air Carrier / Air Taxi Pilots	1914
General Aviation Pilots	741
Controllers	51
Cabin/Mechanics/Military/Other	114
TOTAL	**2820**

The Ice Review – Act II

While airborne incidents may involve more drama, a snow-covered airport can be a stage for a medley of errors.

Exit Stage Right

The MD-80 Captain in this report stepped in on cue, but even with the help of a proficient understudy, couldn't save the scene.

■ *The ATIS indicated braking was good… Light snow was [also reported] and [was] encountered on the approach, [but] was not present upon landing. After my landing, we transferred controls at 60 knots and the Captain started to taxi…He then called out that he couldn't turn the aircraft. I looked up and saw we were sliding. I joined him on the brakes as he put the power levers in full reverse. Both of these inputs, along with tiller inputs, came to no effect. Our nosewheel and right main gear went onto the grass…*

Exit Stage Left

The B737 Captain who submitted this report was all set for ice and snow, but oil and rain stole the show.

■ *…It had been raining lightly for about one hour. I was cleared for takeoff…[and] …taxied onto the runway with slightly more than minimum power… As I reached the centerline and turned the nosewheel handle there was no response. The aircraft continued at a 45-degree angle toward the edge of the runway. I applied max braking and could feel the aircraft skidding as the anti-skid operated. The aircraft continued traveling toward the left side of the runway, and I applied reverse thrust to the engines. The aircraft was skidding and shuddering, but stopped on the runway approximately 10-15 feet from the edge…*

The rain, in combination with oils from the asphalt and tire rubber made a normal taxi onto the runway for takeoff a very slippery situation. It has made me very wary of all wet runway and taxiway evolutions. During the winter I tend to focus on snow and ice, but this situation…could put you off a runway or taxiway when you are not expecting to slip.

Winter Driving Hazards

When the wings aren't "working" airplanes have to be "driven" on runways and taxiways. Anyone who has lost control of a car on an icy road knows the helpless feeling when the vehicle doesn't respond to steering inputs. But imagine the emotions these two maintenance technicians experienced when they lost control of a large, turbojet aircraft. One of them describes the "impact" of cold-weather taxi operations in his report to ASRS.

■ *I was assigned to taxi an aircraft with another technician. We were to taxi…from the gate to a company hangar. My partner (the other technician) took the left seat while I took right… We pushed out from the gate and started engines. I got clearance from the ramp [controller] to proceed south on the taxiway. As we were getting close to our company hangar…our aircraft started sliding to the left. My partner tried to reestablish control, tapping the brakes even more and moving the tiller. He said, "We're sliding. The nosewheel isn't turning the aircraft." We impacted [another aircraft] in the gate…*

"Please remain seated until the aircraft has come to a complete stop…Captain"

Even after parking, an extended period of vigilance might be required when there is ice on the ramp. After the chocks were put in and the engines secured, the Captain who submitted the next report thought it was time to leave…but so did the airplane.

■ *Taxi to the gate was normal, with slush and ice on the taxiways and ramp. I stopped the aircraft at the gate with normal use of brakes. External power was connected, engines shut down, and the ramp agent signaled, "chocks in." I returned the signal, verified both engines off, and released the brakes. The First Officer stated that the shutdown checklist was complete. I left my seat to open the cockpit door. While unlocking the door, I felt a hard jolt. Initially, I thought the jetway had hit the aircraft, but when I looked outside, the jetway was not near us. The First Officer reported that the aircraft had rolled backwards. He applied the brakes as soon as he was aware of the motion. The jolt was the aircraft stopping abruptly. I turned the seatbelt sign on again, and made an announcement for the passengers to be seated so that the aircraft could be towed back into position…The aircraft was towed back to the stop point, chocks reinstalled, and brakes set. The ground crew said that the…ramp was so slippery that the aircraft slid backwards with the chocks in place…*