

Planes Aren't Made for **Ice Dancing**

How to Plan for Slippery Surface Operations

Photo by James Williams

The snow finally stopped falling and the sun is actually shining! Finally. It's the perfect day to get out of the house and go flying. After clearing your airplane of all the remaining snow and ice, and shoveling a path to the plowed taxiway, you can finally hop in and get that engine started. Since you are thoroughly cold from all that preflight activity outside, you want to get moving and get the cabin warm. Off you go zipping down the taxiway and pass the north side of some hangars, which is in perpetual shade. *Thud.*

You are now in a horizontal triple Axel spinning down the taxiway. You think, "steer into the turn," but that doesn't do anything. The nose wheel doesn't turn like in a car — since you are on the ground, you have "driving" on your mind. You better shut down that engine in case you hit something.

Everything is White

You are now nose-first in a snow bank. As you squeeze out the door and onto the snow, you see two people in the window of the FBO holding up paper

FAASTeam Photo



Snow bank related accidents are the greatest hazard to aircraft ground operations during the winter season.

napkins with "10"s written on them. We all know the type — pilots love to judge other pilots. This is not what you had in mind for a fun day of flying. At least there were no controllers with a bird's eye view to judge you as well.

What happened? Your wing clipped a tall pile of snow along the edge of the taxiway on the only stretch of pavement covered with a layer of ice and slush, which was hidden in the shade.

"Winter operations at non-towered airports can be a challenge, especially in the more northern regions of the United States. Airport managers and the like go south for the winter, leaving the airport to be maintained by the local city or county folks," explains Jay Flowers, FAASTeam program manager at the Fargo Flight Standards District Office. "Since most are not pilots and do not spend much time around airplanes, the concept of cleaning a runway may be one or two passes with the plow down a stretch of asphalt."

As part of your preflight, consider who cleaned the runway. Did they leave piles of snow at the runway and taxiway edges? Can you see the runway's lights and signage? Do you know your wing clearance from the ground? Is the runway plowed wide enough for your aircraft? Are all of the taxiways/runways plowed, or just at one end? It's up to you to collect as much information as you can before moving your airplane.

Push or Pull?

Since you are now stuck in the snow and possibly blocking access to the active runway, let someone know immediately. Notify ATC if they are at the airport. Otherwise, contact the airport manager. If

you cannot get a hold of anyone at the airport, call Flight Services at 877-487-6867 (Alaskan pilots will be referred to an appropriate in-state number to call) so they can issue an unsafe runway or unsafe taxiway notice to other pilots. Flight Services will also attempt to contact the airport manager.

Don't walk away and abandon your airplane either. Check your ELT, which might have been activated when you hit that snow pile. You don't want to be the subject of a search and rescue mission hours later when you are really at home keeping warm by the fire. It's happened before.

Next, call your local mechanic before trying to tow your aircraft out of the snow. Tying a rope around the tail section of your airplane and attaching the other end to the bumper of your pickup truck will only make things worse.

"Some aircraft can be very touchy as to where a 'tow something' can be attached to the aircraft," note Flowers. "You may have to contact the aircraft manufacturer to confirm your intentions."

Make a Hole

Good thing you shut down that engine before plowing into the snow bank. Except for your ego, everything else is okay. Your mechanic cleared your airplane. It's time to try again.

"Keep your taxi speeds slow and braking to a minimum," instructs Flowers. "Snow has the ability to restrict a pilot's view of the taxiway or runway surface. You may be on ice and not even know it."

Since you made it safely down the taxiway and don't want to show off your ice dancing skills again, make sure the run-up area is clear of snow and ice. Frozen brakes and a slippery surface could put your nose back into the snow. And you're still being judged from the warmth of the FBO peanut gallery. This time would not be a "10."

To help steer clear of the safety risks associated with winter surface operations, it's best to just avoid operating at an airport unless the airport has explicitly reported that taxiways and runways are clear and prepared for taxi, takeoff, and landing.



Photo by H. Dean Chamberlain

Make sure you have a clear path to the runway — even if you have to clear the snow yourself — and that your wingtips will clear all the snow piles.



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Fly Into the Wind

It really was a perfect day for flying — once off the ground. It's time to return home. Note that ramps and runways that were clear and dry during the day may become covered with water from melting snow and ice, only to refreeze after the sun sets. On wet or icy runways, opt for a landing direction most closely aligned with the wind even if you are an expert at crosswind landings. Otherwise the aircraft won't stick to the ground, and you will find yourself performing another ice escapade.

Since braking is not effective on a wet or icy runway, take advantage of aerodynamic braking by holding the nose up as long as possible. Aircraft control can only be maintained if the main wheels are rolling. Any braking should be applied gently and evenly using care not to lock up the wheels.

When the airplane slows down, control effectiveness from the rudder and ailerons are lost. The airplane does what comes naturally — it weathervanes into the wind. If there is ice, the amount of wind the airplane can tolerate drops dramatically. Just ask someone who flies a skiplane!

If it looks like a tailwind or crosswind landing on ice or snow is unavoidable, divert to an alternate airport and leave the dancing to the professionals. For more on this, be sure to read FAA Advisory Circular 91.79A, *Mitigating the Risks of a Runway Overrun Upon Landing*, which includes current and comprehensive guidance on the risks associated with tailwind landings and landings on wet or contaminated runways.

Brake for Moose

When landing during the winter months, also pay attention to critters on the runway and other clear zones. A warm, black runway soaking up the sun's rays attracts animals. "Nothing like a frozen blade of grass to warm a critters stomach," comments Flowers.

If landing at a towered airport, ask ATC for a braking action report to help you determine if landing is safe. ATC provides braking action advisories that are reported as Good, Fair (Medium), Poor, or Nil (Unreliable). Operations on runways reported as having Nil or Unreliable braking are inherently unsafe. You can help your fellow pilots too by submitting a pilot report on the runway conditions you encounter.

Remember that airplanes are more adept at "dancing" in the air rather than "dancing" on the ground. A slippery airport surface could be deadly to the "untrained" airplane. Remember to stay focused and think ahead to prevent any unwanted bloopers. ✈️

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Learn More

FAA AC 91-79A: Mitigating the Risks of a Runway Overrun Upon Landing

<http://1.usa.gov/Xw32P7>

FAA SAFO: Operational Considerations for Airport Winter Operations

<http://1.usa.gov/1rm6yaJ>

AOPA Cold Facts: Braking Action Reports

<http://bit.ly/1wmrFtS>

FAA Runway Safety

<http://1.usa.gov/1mvH6Nb>