

# The Freezing Season

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## Winter, inconvenient and unpleasant as it can be, doesn't have to put a big crimp in your flying — but take heed

■ ■ There are many hard and fast rules about winter flying, most of which have been broken at one time or another by experienced pilots.

Sometimes it's worked, sometimes it hasn't.

Don Jonz was one of the best-known fliers in Alaska. He had a wealth of knowledge about cold-weather flying and in early 1972 shared some of his knowledge in an aviation publication. Back then, among pages and pages of winter advice, he warned that pilots should "stay the hell out of IFR weather unless you are instrument rated and on an instrument flight plan."

He advised pilots to "double check the aircraft's survival gear."

The following winter Don Jonz and two passengers, including Louisiana Congressman Hale Boggs, never arrived at Juneau after departing Anchorage. No trace of the airplane nor its occupants has, even to this day, been found, despite one of aviation's most massive search efforts.

Jonz, it turned out, departed Anchorage on a VFR flight plan. Before he left he had gotten a weather briefing—with snowy IFR conditions forecast for portions of the route. Also, he departed with neither a survival kit nor an emergency locator transmitter aboard his Cessna 310. Safety investigators never could positively pin down a cause for the accident but concluded "the pilot was aware of the poor enroute weather conditions, and the available evidence suggests that the disappearance of N1812H may have been related to those conditions."

Whether you are making a flight across Alaska or across Albany, winter poses additional threats to safe flight. Such threats are certainly not insur-

mountable (in most cases) but should cause a pause for thought and, in some cases, additional action, as you go through your flight routine.

Five facets of winter present the most hazardous obstacles to your normally safe comings and goings.

**In-flight weather.** More changeable than ever, weather adds snow to its ever-exciting collection of disorientation producers. Snow in the air is a menace to the VFR pilot, as are clouds and fog. And snow on the surface can be a hazard, causing visual misperceptions, poor approaches and damaged airplanes.

**Airframe ice.** Moisture may still be in water-droplet form in the air at below freezing temperatures, but when these droplets see a below-freezing aluminum wing coming along at 120 knots, they will cling like glue. Eventually, unless action is taken, so much ice may accumulate on wings, props, and other surfaces that the pilot won't even be able to see out the windshield as his plane mushes inexorably toward the ground below.

**Winter deposits.** Frost, freezing rain, and snow are among the various accumulations of cold stuff that seem to find a comfortable overnight haven on aerodynamic surfaces. The weight, drag, and airflow disturbances caused when these substances rest on an airplane will occasionally keep even the most over-powered aircraft on the ground long past the departure end of the runway.

**Carburetor ice.** A problem with year-round potential, moderate winter temperatures add to the likelihood of an ice-encrusted carburetor in many parts of the country. High humidity, not necessarily low temperature, is the danger sign.

**Carbon monoxide.** That heater, that



last winter performed flawlessly, may now have a crack in the muffler shroud. You might not smell exhaust gases, but, nevertheless, CO can cause dizziness, headache, nausea, and eventually unconsciousness. Flying an airplane in such a state usually proves less than successful.

And so it goes, the biggest hazards. Add to these, winter's innumerable unpleasanties and indignities—dead batteries, slippery sidewalks, frozen feet, early nightfall, and so forth—and you might be easily convinced that a warm fireplace and TV movies of the air aces at war might suffice for your flight activities for the winter.

Don't give up so easily. Know of winter's obstacles, be as best prepared to cope with them as possible, and occasionally be willing to give up a flight.

Start by assuring that your airplane has been checked by a mechanic some time before winter gets under way. Special winterization equipment, if necessary, should be installed; and all systems, particularly heating and defrosting, should be working properly. Oil ought to be of a lower viscosity to permit easier starting.

Now you go to the airport. You are wearing warm clothing. Boots, too, if there's snow about. *You will not rush your preflight just because it's cold outside.* You are also now properly dressed in case you'll need to walk several miles after a forced landing.

Look at the plane you're about to fly. If it is covered with snow and ice and the temperature is around 0 degrees F., the best bet is to get the craft into a heated hangar and let heat do the work for you—even if you have to pay for such a service. The warm hangar will also preheat the engine to make starting easier, and it will warm the cockpit so all those levers, wheels, dials, and cables will work freely.

If you're forced to clean up the plane manually, use ropes, brushes, arms—but not sticks or blowtorches. Get everything loose off that you can. Completely deice the props (or severe vibrations might result). Chopping ice away from recessed fuel-filler caps may be a particularly demanding chore—but do it so you can check the fuel supply.

Let's be reasonable. There will always be some residue of winter's deposits on

your craft. But there can't be much, and it can't be on props or control surfaces. Smooth off the rest of the surfaces as much as possible and don't plan on a high performance takeoff.

Winter starting procedures are prescribed in the owner's manual. Follow them—they probably work. If you have no access to preheat for the engine, its oil will be quite congealed at lower temperatures and the engine tough to turn over. During preflight, rotate the prop by hand (assure switches off, plane still chocked and tied) several times to loosen up the engine's inner workings.

Don't over-prime or over-throttle the powerplant before cranking. Such procedures lead to fires. All electric accessories should be off (the battery will be weaker the colder it gets), then start. Keep the engine going: if it catches and dies, moisture will condense, then freeze over spark plug electrodes making starting virtually impossible until you get the engine heated—somehow.

The aircraft will, of course, roll effortlessly out of its tiedown spot because *you do not set the brake when you park the plane in winter.* If you did, you just might have found that water and slush froze the brake pads against the disks, and your taxi roll might be awkward.

*Taxi slowly and carefully . . .* so carefully, in fact, that you don't use your brakes. All too many airplanes end up with wingtips gouging holes in hangar doors. They're not meant for that.

Takeoff run is obviously affected by snow and slush on the runway. Use your judgment. If the craft has any white stuff remaining on its surfaces, use all of the longest runway, don't load up to maximum gross, and add some flaps if that will help the craft get airborne. Roll for takeoff, and, if the plane seems at all strange or unwieldy, you'll have plenty of room to abort the takeoff. You cannot be in a hurry in winter.

As you whiz down the runway and look at your airspeed, it may indicate zilch. Despite instrument indications, the plane is, in fact, moving. Let the craft fly itself off, then set up a climb attitude. Once established in a climb, *turn on the pitot heat.* It will be amazing how quickly the airspeed needle will jump toward a more normal position. So, if you suspect an iced-up pitot tube, turn the heat on *before* takeoff.

Of course the weather briefing made no mention of known ice since your aircraft flight manual most likely prohibits flight into known icing conditions. But *if you do encounter airframe ice, do*

*something and do it fast.* Ice attacks your airfoils (spoiling lift and adding drag), covers your props (decreasing thrust), and adds pounds to the airplane (giving gravity more to pull at). This is a particularly horrible combination of events.

No specific rules will get you out of ice since each weather system is different. Try something. Go up through the





cloud and get into sunlight to melt away the ice. Go down and get out of the cloud into warmer temperatures. Tell your controller (you are obviously on an IFR flight plan, otherwise you would never have gotten into this predicament) of your problem so he might help, and so he can alert those behind you of possible icing. If you don't alleviate the ice buildup soon, head for the nearest

airport. Keep your speed up (stall speed will be higher with ice aboard), and don't expect your stall warning to work. Unless heated, it too will be iced over. Don't count on your ADF either—ice on the sense antenna quickly renders it unreliable.

Assuming, though, your flight is progressing normally, you will want to watch for carburetor icing. At tempera-

tures below 15 degrees F., carb icing is unlikely. Indication of induction ice is an rpm drop for fixed-pitch engines, or a manifold pressure drop on a constant-speed prop aircraft. In either case, airspeed will decrease (assuming altitude is being held constant).

*Anticipate induction icing.* If conditions are ripe for the stuff (high humidity), apply full carb heat regularly to prevent ice from building up. If ice is already there, full carb heat will make the engine run rough, momentarily (as the ice melts and water flows through), but don't shut off or reduce the heat. You will only make matters worse as the water refreezes. In a short time the powerplant will be running smoothly again, and it will have its original zeal renewed.

When snow covers everything below, navigation precision becomes particularly important. Landmarks disappear and runways become only part of a white-with-black-specked panorama. Before setting off, check your destination to assure that the runway is usable, and to try to find out whether it is mushy or icy-slick. Determine, if you plan an overnight stop, whether the operator at the airport will be able to help decide your airplane should winter decide to deposit some form of white stuff on it.

If you have trouble finding your airport, keep looking, you'll find it soon. You can do this, of course, because *you will always allow considerably more fuel reserve in winter*—just for such an eventuality.

Landings on slippery runways mean longer stopping distances and potential walls of plowed snow (windrows) alongside the runway. Landing on ice leaves little margin for sloppy technique. Track the centerline, and don't be caught floating sideways from crosswinds when you touch. Fly the airplane to a stop (wheels and brakes will have little braking or steering effect). Plan in advance, and keep control of the airplane until halted.

There is no need to say goodnight to your airplane in October and then wait until April to pay it another visit. Even if you don't own a plane, winter layoffs are hard on a pilot's proficiency—and take away six months worth of potential flying joy and beauty.

With a little more caution and a pair of electric socks, there's no reason in the world why flying can't be the regular activity in winter that it is during the balance of the year. □

