

Icing & Cold Weather Operations

During the cooler months of the year, often in winter, frost and snow can accumulate on wings, elevators, and other flight control surfaces when an aircraft is parked outside exposed to the elements. Frost and snow disrupt airflow over the wings and can substantially alter flight characteristics resulting in increased stall speeds, increased weight, longer takeoff rolls, or even a complete loss of lift. When these conditions are present, the pilot should either completely remove all frost and snow from the aircraft or make a decision not to fly. While no Federal Aviation Regulation specifically prohibits a light general aviation aircraft from attempting a takeoff covered in snow and frost, doing so may fall under careless and reckless operation.



Another hazard during colder weather flying is icing. Icing is likely when the temperature is below freezing and visible moisture is present. There are two types of icing, structural and induction. Structural icing includes; Clear Ice, Rime Ice, and Frost. Familiarizing yourself with the composition of different structural icing will better equip you as a pilot to identify them in flight and avoid flying into areas where they are present. Induction icing includes; Carburetor Icing and Air Intake Blockage. Carbureted engines are especially susceptible to induction icing because of the venturi effect within the carburetor. It is possible for carburetor ice to form even when the skies are clear and the outside air temperature is as high as 90 degrees F. At the first indication of carburetor ice apply full carburetor heat and leave it on even if the engine runs rougher while the ice melts. Remember, both carburetor and alternate air sources use unfiltered air. They should be closed when on the ground, unless conditions are conducive to engine icing while taxiing.

Common Situations for Airframe Icing

