



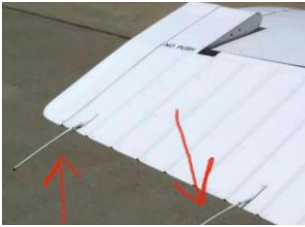
Cold Weather Flying

(Safety Brief #118)

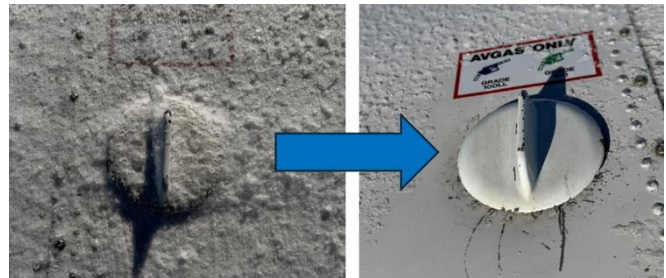
Preflight and Preparations

- ❑ **Preheat the engine** when outside temperature is below 30F (-1C) ([Preheat video](#)). (Note: the fleet is grounded below 20F (-7 C)).
- ❑ **“Pull the prop through”** several times to get the oil moving around (rotate propellor by hand).
 - Rotate the propellor in the same direction as when the engine runs.
 - Ensure mags are OFF and key is removed from the ignition.
- ❑ **Remove all snow, ice and frost** from all surfaces carefully (use only snow brooms or similar soft objects). Snow/ice adds weight, reduces lift, and can impact control surface hinge points.
 - Be careful of antennas, static wicks, lights, windshields.
 - Ensure ice chunks do not fall into control surface hinge points.
 - **DO NOT use any ice scraper** or rigid tool/credit card on any surface or windscreen.
 - **DO NOT bang the snow brooms** on any surface to break up the ice.
 - **Use ‘Signature Aviation’ or ‘Sheltair Aviation’** for heated hangar space the night before.
 - **Consider using warm water** in a bag to melt the ice, then wipe it down. Do not use warm water directly as it may quickly re-freeze.
- ❑ **Shoveling a path** around the airplane for preflight is a good idea. Don’t ‘avoid the walk’ around, shovel a quick path.
 - Wear good shoes, consider micro-spikes. Don’t fall and break your wrist.
- ❑ **Shovel a path for each of the 3 wheels** to join the “non-movement area”.
 - Shovel from front side of tire all the way toward a clear taxi area.
 - Even small snow/ice ridges can prevent taxiing forward if not cleared. Airport snowplows may leave ridges that can make it impossible without clearing them manually.
- ❑ Have essential **cold weather supplies/survival** kit on board.
- ❑ Pilot and passengers should **dress appropriately** for the occasion. Although being in the cockpit is warmer than being outside, plan for it to be colder than expected. (Altitude, drafty cockpit and possibly insufficient cabin heat).
- ❑ Reposition/turn **aircraft into the sun** for improved defrosting of leading edges and windscreen.
 - Use a towbar and a friend to move the aircraft, don’t be a hero and do it alone.

- ❑ RMflight: The use of aircraft **de-icing fluid or any antifreeze fluid is prohibited**.
- ❑ Be careful of **wind screen** temperature probes when defrosting.
- ❑ **Minimize time with master switch ON** during preflight, save the battery.
- ❑ When installing or removing **wing covers**, be extremely careful to prevent damage to the aircraft.
 - Locate and protect '**static wicks**'



- Do not extend flaps and ensure that the gust lock is installed.
- ❑ There is **less daylight** so plan accordingly. Darker mornings also mean less sun to help defrost.
- ❑ Use the correct rags for windscreen (microfiber) and control surfaces (white shop style rags).
- ❑ As the snow and ice melt, ensure fuel cap area is very clear. Do not want water in the system.



Airport Environment

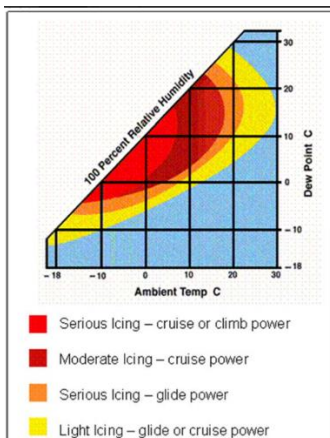
- ❑ Listen carefully to the ATIS for taxiways/runways that are closed due to snow.
- ❑ Airport snowplows will leave **ridges of ice/snow** at various intersections, be ready to not get 'stuck'.
 - Taxi with appropriate momentum to go through/over the ridges with safe non-heroic efforts.
 - Be extremely careful when using additional power at these intersections of ice/snow.
 - Pull the control wheel back full aft to keep the weight off the nose wheel.
- ❑ Prepare for **unpredictable surfaces with patchy or hidden ice** when taxiing.
 - Add additional distance from the aircraft in front of you.
 - Use only appropriate power for taxi that allows stopping with minimal braking.
 - Anticipate turns during taxi, use wider radius turns when possible.
 - There is no 'ABS' in the braking system. Modulate brakes carefully, reduce power first.
- ❑ Be careful in the **runup area** when applying power. If unable to maintain a stopped position, perform the runup at a lower RPM or find a better stopping area.
- ❑ On **low wing aircraft**, be careful not to allow the wings to extend beyond the paved taxiway.
 - Snowbanks from the snowplows may be higher than the wing and could contact.
- ❑ **Slush on taxiways** could backsplash on to tail control surfaces and freeze. Taxi slower.

- ❑ Treat **runway braking distance as 'unknown'**. Previous pilot reports may not apply to the runway section you are using.
 - Land at speeds and distances that would allow slowing to a stop without braking (planning).
 - Use minimal and equal braking to slow/stop as needed before making any turn to exit.
 - Do not brake excessively in attempt to make an early exit from the runway if suspected patchy snow/ice, just 'plan' a longer rollout.



Aircraft Operations

- ❑ **Close air vents** inside the airplane.
- ❑ **Locate the heater and defrost levers** before engine start/departure.
 - Use cabin heat for passenger comfort. Watch for Carbon Monoxide (CO), know the warning signs or carry a detector. Review the emergency procedure for suspected CO issues.
- ❑ Limit the time from **'master ON' to 'engine cranking'**. Conserve all battery power for engine start. (examples: delay flap retraction or ATIS until engine is running and charging is indicated).
- ❑ Follow aircraft **checklist for 'cold engine start'**.
 - Do not delay between 'priming' and 'cranking'. Do not allow time for the fuel to 'pool'.
 - Additional priming may be required (but watch for flooding).
 - Do not crank engine for more than 10 seconds in each start attempt.
 - Be quick to adjust power when engine starts to 800-1000rpm.
- ❑ Run-up until engine **oil temperature is in the green** (or a 'reasonable' time (+10min)).
 - Can allow engines to warm up at **~800 to ~1300rpm**.
 - Use normal power settings on taxiways, no need to use extra power to speed up warming.
- ❑ **Manage cowl flaps** during taxi, departure, climb, cruise, descent, landing (250F-400F on CHT).
 - Cowl flaps closed during cold/low power/low-temp operations (taxi, cruise, descent, landing).
 - Cowl flaps open during hot/high power/high-temp operations (departure, climb, >400F).
- ❑ **Minimize idle power long duration descents**, keep 'some' power in, maneuver as needed to descend, etc.
- ❑ Know the **conditions for carburetor icing** and use appropriate carb heat.



- ❑ In retractable gear aircraft, **tap the brakes** (stop the wheels from spinning) BEFORE retracting the landing gear. This will avoid any additional slush or ice entering the wheel well.
- ❑ Note: The oil pressure may indicate 'high' until operating temperature is achieved, this is normal.

❑ Note: The oil temperature may indicate lower than normal until departure, this is normal.

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