



HEADQUARTERS
CIVIL AIR PATROL KENTUCKY WING
UNITED STATES AIR FORCE AUXILIARY
P.O. BOX 4665
FRANKFORT KY 40604-4665

TEL: 502-564-0660
FAX: 502-564-0662

30 November 2011

MEMORANDUM FOR ALL KENTUCKY WING PILOTS

FROM: DO Kentucky Wing

SUBJECT: Cold Weather Operation of Aircraft

Improper operation of aircraft engines during cold weather can cause significant damage to engines, creating the risk of injury to personnel and the possibility of increased maintenance expenses. To avoid this, pilots and aircrew members must follow the procedures outlined below. For the purpose of these procedures, cold weather is defined as any time the outside temp drops below 40°F for more than 3 hours and the aircraft is parked outside or in an unheated hanger.

- The aircraft oil sump heater must be used a **minimum of 4 hours** prior to the flight. Overnight is better. The plug is located inside the oil dipstick access door. The heater is rated for 110 volts AC. A standard 16 gauge 50 ft cord will normally suffice. A longer cord will require heavier gauge wire. If the plane is in a hangar, a blanket or furniture pad should be draped over the engine cowling for additional insulation.
- If pre-approved by the Director of Operations, the Aircraft Maintenance Officer, the Wing Commander, or an Incident Commander during an actual mission, use an FBO service to preheat the engine compartment. The pilot must monitor this operation closely. The air produced by preheat systems is **EXTREMELY HOT** and can cause serious injury to you and possible damage to the aircraft. Air from the heating system should be directed only into the front cowling openings. Do not direct hot air into the oil filler door, dipstick access door, or the cowl flap openings. Position the air duct so hot air is forced downward over the engine, not directed upward against the cowling. If this is not monitored closely, the paint on the cowling will blister and/or the cowling may be damaged. Twenty minutes is normally sufficient. Improper air direction or prolonged use of preheat may damage the cowling or melt rubber or plastic engine components. **BE CAREFUL.**
- **DO NOT USE** an FBO preheat system to de-ice or remove frost from the aircraft exterior.
- Hangering overnight is the best method to avoid frost on early morning flights. Many of the FBOs we work with will do this free of charge. All snow, ice and frost must be completely removed from aircraft prior to flight. Overnight hanger fees are not reimbursed unless pre-approved as described above.
- Do not use an ice scraper on any part of the aircraft. The windows will be scratched and the finish may be damaged. Sunshine or airplane window defroster is the best deicer.
- Use of an FBO de-ice service is acceptable for ice/frost but is usually very expensive. These charges must be paid by the pilot unless pre-approved as described above. The fluid used to remove frost and ice can be bought and stored by squadrons. Use only propylene glycol. Mix it correctly and store the fluid in a heated interior area.

The safety of personnel and the aircraft should be the primary objective of the flight crew. As always, if there is a question concerning the safety and prudence of the intended flight, the best decision usually is – **DON'T GO.**

Maj George Stinson
Director of Operations
Kentucky Wing