NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

N 8900.27

National Policy

Effective Date:
12/20/07

Cancellation Date:
12/20/08

SUBJ: 14 CFR Part 125 and 135 Airplane Operators Use of Approved Alternate Ground Deicing/Anti-icing Procedure In Lieu of a Pretakeoff Contamination Check

1. Purpose of This Notice. This notice provides guidance and information to aviation safety inspectors (ASI) with oversight responsibilities for certificate holders operating under Title 14 of the Code of Federal Regulations (14 CFR) part 125, § 125.221 or part 135, § 135.227 that elect to follow requirements of approved alternate ground deicing/anti-icing procedures.

2. Audience. The primary audience for this notice is Flight Standards District Office (FSDO) ASIs who are responsible for the approval/review of ground deicing activities of part 125 and/or 135 airplane operators. The secondary audience includes Flight Standards branches and divisions in the regions and in headquarters.

3. Where You Can Find This Notice. Inspectors can access this notice through the Flight Standards Information Management System (FSIMS) at http://fsims.avr.faa.gov. Operators and the public can find this notice at http://fsims.faa.gov.

4. Background.

a. Part 125, § 125.221(a) and part 135, § 135.227(b), states that no certificate holder may authorize an airplane to takeoff and no pilot may take off an airplane any time conditions are such that frost, ice, or snow may reasonably be expected to adhere to the airplane unless the pilot has completed the testing required under § 125.287(a)(9) or, as appropriate, has completed all applicable training as required by § 135.341 and unless one of the following requirements is met:

(1) A pretakeoff contamination check, that has been established by the certificate holder and approved by the Administrator for the specific airplane type, has been completed within 5 minutes prior to beginning of takeoff. A pretakeoff contamination check is a check to make sure the wings and control surfaces are free of frost, ice, or snow.

(2) The certificate holder has an approved alternative procedure and under that procedure the airplane is determined to be free of frost, ice, or snow.

(3) The certificate holder has an approved deicing/anti-icing program that complies with part 121, § 121.629(c) and the takeoff complies with that program.

b. Accident history shows that hard-wing aircraft (no wing leading edge devices) have been involved in a number of takeoff accidents where upper wing ice is believed to have been present. The FAA believes that most pilots are unaware of the significant degradation to lift and performance that small amounts of ice can cause when present on the upper wing. Wind tunnel test data shows that an upper wing surface roughness caused by particles the size of table salt grains, distributed over the wing at about one grain per square centimeter, can result in a 2 percent lift loss in ground effect and a 33 percent lift loss in free air.

c. Pilots may observe what they perceive to be an insignificant amount of ice on the aircraft's wing surface but could be unaware of the increased risk this poses. The increased risk is due to reduced stall margins resulting from icing-related degradation of performance. Further, small areas of almost imperceptible ice can result in localized, asymmetrical stalls on the wing, which can result in roll control problems during lift-off.

d. Detecting small amounts of ice on aircraft surfaces, especially in wet or night conditions can be extremely difficult and may not accurately determine the presence of ice. The FAA considers it imperative that, when conditions conducive to ground aircraft icing exist, that pilots or other appropriate personnel perform a tactile inspection on the leading edges and upper surfaces of the wings of hard-wing airplanes and all other surfaces considered critical by the aircraft manufacturer.

5. Guidance. Turbojet Aircraft Flight Manuals (AFM) for hard wing aircraft may contain limitations which require a visual and tactile inspection of the wing leading edge and upper surface during ground icing conditions to determine that they are free of snow, frost, ice, and slush contaminates. The following guidance, which supersedes the policy disseminated in August 2007 at the FAA Inspector Aircraft Ground Deicing Workshop, identifies how this check should be accommodated in the certificate holder's approved ground deicing/anti-icing procedures.

a. For aircraft with AFMs that do not include a specific time for the completion of visual and tactile inspection the inspection can be accomplished as part of the aircraft pre-flight inspection procedures. However, if the airplane is deiced a tactile and visual inspection must be accomplished after the deicing is completed and prior to anti-icing to ensure that the frozen contamination has been completely removed.

b. During active ground icing conditions if the tactile and visual inspection is not completed within five minutes of takeoff, the pretakeoff contamination check required by § 125.221(b)(2) or § 135.227(b)(2) as per the air carrier's approved procedures must be accomplished within five minutes prior to takeoff. Unless otherwise specified in the AFM the pretakeoff contamination check may be accomplished visually from inside or outside the aircraft as per the operators approved procedures. Due to the inability to adequately view the upper wing surface from inside the aircraft, FAA policy for high wing aircraft is that the pretakeoff contamination check be completed from outside the aircraft and may be visual or tactile, based on the aircraft manufacturers recommended procedures, or other procedures approved by the FAA. An alternate procedure, as outlined in this notice may be approved by the FAA for an operator in lieu of conducting a pretakeoff contamination check.

c. Under part 125 and part 135 (without an approved part 121, § 121.629(c) deicing/anti-icing program), the use of holdover times (HOT)/allowance times and tables when operators use deice/anti-ice fluids is advisory only and serves as guidance to the pilot in making takeoff decisions. Under an approved § 121.629 deicing/anti-icing program the HOT are limiting time values (instead of advisory) and the pretakeoff contamination check is only required if the holdover time has been exceeded prior to takeoff.

d. Provided that the quality control of the de/anti-icing fluids, the application equipment, and the training of the application personnel can be assured, the effectiveness of the de/anti-icing fluid is the same for an aircraft operated under parts 121, 125, or 135. Due to the variability of operational locations and the limited number of operations typically conducted at one location it is extremely difficult for part 125 and/or 135 certificate holders (on demand operators) to meet all of the requirements for a self implemented § 121.629(c) program. It is the FAA's position that the proper use of de/anti-icing fluids and their associated holdover times provide for the lowest level of risk associated with takeoff operations in ground icing conditions and therefore the FAA is taking these steps to encourage their use by part 125 and part 135 operators. Additional developments are in progress to establish standards and guidance to allow qualified aircraft ground deicing service providers not part of a § 121.629 approved program (non-program service providers) to apply de/anti-icing fluids and for the air carrier using those services to be authorized to implement the associated holdover times as limiting time values.

6. Operators Who Elect to Implement and Use an Alternate Procedure, §§ 125.227(b)(2) and 135.227(b)(2).

a. This notice provides guidance and standardized procedures and limitations for part 125 and part 135 certificate holders who elect to use an approved alternate ground deice/anti-ice procedure. This alternate procedure will authorize the use of current FAA published fluid holdover/allowance times as limiting value times in-lieu of conducting a pretakeoff contamination check within five minutes of takeoff when within the fluid's HOT. If the applicable HOT is exceeded a pretakeoff contamination check is required. For high wing airplanes, this check must be accomplished from outside the airplane. For hard wing airplanes, both a visual and tactile check must be performed.

b. The approved alternative procedure may only be used if de/anti-icing fluids are applied by an air carrier or contract service provider conducting ground aircraft de/anti-icing service under a current part 121, § 121.629 approved program, and the implementation and training elements of FAA Order 8900.1, Flight Standards Information Management System (FSIMS), Volume 3, Chapter 18, Section 3, Part A Operations Specifications - General, are incorporated by the operator.

7. Action. POIs should provide a copy of this notice to all part 125 and part 135 certificate holders that operate in ground icing conditions. For those certificate holders choosing to take advantage of this alternate deice/anti-ice procedure, the POI should review the certificate holder's deicing/anti-icing plan to determine that it is consistent with the guidance, training requirements, and procedures contained in Order 8900.1 and re-issue OpSpec A041 if necessary.

8. Tracking. Document the conveyance of the information contained in this notice for each air carrier affected.

a. Use Program Tracking and Reporting Subsystem (PTRS) code 1381.

b. Enter “N8900.27” in the “National Use” field (without the quotes).

c. Once the above information has been provided to the operator’s representative, as appropriate, close out the PTRS.

9. Disposition. We will not incorporate the information in this notice into FSIMS. Direct questions concerning this notice to the Air Carrier Operations Branch, AFS-220, at (202) 493-5286.

ORIGINAL SIGNED BY

James J. Ballough
Director, Flight Standards Service