



U.S. Department
of Transportation

**Federal Aviation
Administration**

Memorandum

Subject: **INFORMATION**: Policy for Propeller Ice Protection
Equipment

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From: Manager, Engine and Propeller Directorate,
Aircraft Certification Service

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Manager, Chicago Aircraft Certification Office, ACE-115C
Manager, Propulsion Branch, ACE-118C
Manager, Wichita Aircraft Certification Office, ACE-115W
Manager, Systems and Propulsion Branch, ACE-116W
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1. Purpose

This policy provides guidance for compliance with parts 21, 23, 25, and 35 of Title 14 of the Code of Federal Regulations. The policy clarifies configuration and quality control responsibilities for certificate holders and parts suppliers involved with propeller ice protection systems on type certificated products.

2. Related Documents

- a. Part 21—Certification Procedures for Products and Parts
- b. Part 23—Airworthiness Standards: Normal, Utility, Acrobatic, and Commuter Category Airplanes
- c. Part 25—Airworthiness Standards: Transport Category Airplanes
- d. Part 35—Airworthiness Standards: Propellers.

3. Background

For airplanes certified with ice protection, the certification of the propeller ice protection system involves an overlap between airplane and propeller requirements. The airplane is required to meet the icing requirements of part 23 or 25, whereas the propeller is required to meet the applicable structural and durability requirements of part 35. This overlap in certification requirements between two certified products, airplanes and propellers, has led to confusion over the configuration and quality control responsibility for the certificate holders. For example, a propeller type certificate data sheet issued under part 35 that indicates the propeller has a deicing system, does not mean that the aircraft meets the requirements for ice protection as set forth in part 23 or 25 with the propeller installed.

4. Policy

- a. Ice protection system as part of a propeller Type Certificate

(1) Propeller Type Certificate (TC) holders are responsible for the configuration and quality of the ice protection system components that are included on their approved parts list. These parts are part of the propeller type design. Therefore, the ice protection system supplier falls under the configuration and quality control system of the propeller TC holder. These configuration and quality control responsibilities include:

- (a) ice protection system parts shipped by the propeller TC holder as spares, or
- (b) parts shipped to an airplane TC holder or a Supplemental Type Certificate (STC) holder for installation on the propeller.

(2) When an ice protection system is included as part of the propeller type design, the airplane TC or airplane STC holder may install the ice protection system using approved installation procedures. The ice protection system supplier remains under the configuration and quality control system of the propeller TC holder or under their own configuration and quality control system when they have Parts Manufacturing Approval (PMA).

(3) For any of the above circumstances, the ice protection system supplier may ship parts to customers other than the propeller TC holder under direct ship authorization from the propeller TC holder or under the propeller ice protection system supplier's own PMA.

b. Ice protection system as part of a propeller STC or airplane STC

(1) An airplane TC holder that modifies a propeller to include an ice protection system must obtain a propeller STC. If the modified propeller is installed on an airplane, then the airplane TC holder must satisfy the ice protection system requirements of part 23 or 25, as applicable. Under these circumstances the ice protection system supplier falls under the configuration and quality control system of the propeller STC holder, which in this case is the airplane TC holder.

(2) Any person who modifies a propeller to include an ice protection system must obtain a propeller STC. If the modified propeller is installed on an airplane, the installer must obtain an airplane STC that satisfies the ice protection system requirements of part 23 or 25, as applicable. Under these circumstances the ice protection system supplier falls under the configuration and quality control system of the propeller STC holder.

(3) The airplane owner is ultimately responsible for ensuring that either the TC holder or the STC holder has production approval for the components of the ice protection system, or that the ice protection system supplier holds PMA for those components. An FAA Form 337 documents the approved data for the alteration to the aircraft or propeller, but does not constitute production approval for the manufacture of parts.

(4) If the ice protection system supplier holds PMA, it may ship parts to the STC holder, directly to the airplane owner, or to the person installing the STC, even when the STC holder does not have a production certificate. When parts are shipped directly to an airplane owner, the PMA holder for the ice protection system is responsible for the quality control of those parts he shipped.

c. Coordination of configuration changes

(1) Because the airplane TC or STC holder is responsible for part 23 or 25 icing certification and the propeller TC or STC holder is responsible for part 35 certification, the airplane and propeller TC or STC holders should coordinate and approve configuration changes between themselves and with the ice protection system supplier as appropriate. This coordination should ensure that configuration changes do not affect the ability of the airplane or propeller certificate holders to comply with their respective regulatory requirements.

(2) Changes made by a PMA holder to their ice protection system parts must be evaluated with respect to part 23, 25, and 35 regulatory requirements to ensure that changes do not affect the airplane or propeller's compliance with the respective regulatory requirements. We recommend that the PMA holder establish an agreement with the airplane or propeller TC and STC holders to coordinate configuration changes as appropriate.

5. Effect of Policy.

a. The general policy stated in this document does not constitute a new regulation or create a "binding norm." Whenever an applicant's proposed method of compliance differs from this policy, it must be coordinated with the Engine & Propeller Directorate Standards Office, ANE-110, through the issue paper process or equivalent. In addition, if an office believes that an applicant's proposal that meets this policy should not be approved, that office must coordinate its response with the Engine & Propeller Directorate Standards Office, ANE-110.

b. Applicants should expect that the certificating officials will consider this policy when making findings of compliance relevant to new and amended certificate actions. This policy statement identifies one issue that will be considered when determining whether an applicant has shown compliance with parts 21, 23, 25, and 35, and offers one means, but not the only means, of showing compliance with the rule for that issue. The FAA, in appropriate circumstances, reserves the right to require that an applicant take additional actions in order to show compliance with the rule on this issue.

//signed by Jay Pardee on 3/2/05//

Jay J. Pardee

Manager, Engine and Propeller Directorate