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of Transportation
Federal Aviation
Administration

Advisory Circular

Subject: AIRCRAFT ICE PROTECTION

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Change:

FOREWORD

1. **PURPOSE.** This advisory circular contains information relating to the substantiation of ice protection systems on aircraft.
2. **REFERENCE.** Federal Aviation Regulations, Sections 23.1093(b), 23.1583(h), 25.1093(b), 25.1419, 25.1583(e), 27.1093(b), 27.1583(e), 29.1093(b), and 29.1583(e).
3. **SCOPE.** The procedures described in this advisory circular are presented for guidance purposes only and are not mandatory or regulatory in nature. Other methods may be equally effective and acceptable.

/s/ R. S. Sliff
Acting Director
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CHAPTER 1. TYPES OF SYSTEMS

1. GENERAL. There are four types of systems used for anti-icing or de-icing exposed surfaces. These are:
 - a. Hot air systems.
 - b. Electrical resistance systems.
 - c. Liquid systems.
 - d. Expandable boot systems.

A brief discussion of each type follows:

2. HOT AIR SYSTEMS. Hot air systems are used on most of the large jet transports because of the availability of hot air from the engines, and the relative efficiency and reliability of these systems. Hot air is used to anti-ice or de-ice leading edge wing panels and high lift devices, empennage surfaces, engine inlet and air scoops, radomes, and some types of instruments. Systems whose sources of hot air are separate heat exchangers have also been used where