

AEROSPACE INFORMATION REPORT

SAE AIR1609

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(R) Aircraft Humidification

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1. SCOPE:

This SAE Aerospace Information Report (AIR) covers the design parameters for various methods of humidification applicable to aircraft, the physiological aspects of low humidities, the possible benefits of controlling cabin humidity, the penalties associated with humidification, and the problems which must be solved for practical aircraft humidification systems. The design information is applicable to commercial and military aircraft. The physiological aspects cover all aircraft environmental control applications.

1.1 Purpose:

The purpose of this AIR is to provide guidelines for the design of aircraft humidification systems. Physiological effects of humidity levels on crew and passengers are reviewed. Various techniques used for cabin humidification are discussed and evaluated. Various technical issues are addressed, and effects associated with humidification systems are described.

2. REFERENCES:

2.1 Applicable Documents:

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1.1 SAE Publications: Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

2.1.1.1 ARP987 The Control of Excess Humidity in Avionics Cooling

2.1.1.2 AIR1204 Control of Water Carryover from the Environmental Control System and Condensation on the Structure

2.1.1.3 AIR1168/3 Aerospace Applied Thermodynamics Manual, Section 3, Aerothermodynamic Systems Engineering and Design

2.1.2 Government Publications: Available from Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954.

2.1.2.1 Food and Drug Administration Public Health Service Publication No. 308, Handbook on Sanitation of Airlines