



U.S. Department  
of Transportation

**Federal Aviation  
Administration**

# Advisory Circular

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**Subject:** RTCA, INC. DOCUMENT  
RTCA/DO-160E, ENVIRONMENTAL  
CONDITIONS AND TEST PROCEDURES  
FOR AIRBORNE EQUIPMENT

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**Date:** 12/20/05  
**Initiated By:** AIR-100

**AC No:** 21-16E  
**Change:**

## 1. PURPOSE.

a. This advisory circular (AC) identifies RTCA, Inc. document RTCA/DO-160E, *Environmental Conditions and Test Procedures for Airborne Equipment*, dated December 9, 2004, as containing acceptable environmental qualifications for showing compliance with certain airworthiness requirements. We wrote this AC for applicants for type certificates, supplemental type certificates and technical standard order (TSO) authorizations.

b. Other FAA policy and guidance may take precedence over the requirements contained in RTCA/DO-160E. This AC is not mandatory and does not constitute a regulation. In it, we describe acceptable means, but not the only means, to comply with airworthiness standards.

2. **CANCELLATION.** This AC cancels AC 21-16D, *RTCA Document DO-160D*, dated July 21, 1998.

3. **WHY USE RTCA/DO-160E?** RTCA/DO-160E defines standard environmental test conditions (categories) and applicable test procedures for airborne equipment. These tests provide a laboratory means of determining the performance characteristics of airborne equipment in environmental conditions. These same conditions may be encountered in the airborne operation of the equipment.

## 4. WHEN TO USE RTCA/DO-160E.

a. When applying for a TSO authorization for airborne equipment, you may use the conditions and procedures in RTCA/DO-160E instead of the same conditions and procedures specified in a TSO, if:

- (1) Conditions and procedures used are those prescribed in RTCA/DO-160E.
- (2) The substitute test procedures from RTCA/DO-160E provide an equivalent level of safety, and
- (3) You request approval to deviate in accordance with the requirements of Title 14 of the Code of Federal Regulations (14 CFR) § 21.609.

**b.** When applying for a type certificate or supplemental type certificate, you may use RTCA/DO-160E to show compliance with appropriate airworthiness requirements, when agreed to by your cognizant aircraft certification office.

## **5. RELATED DOCUMENTS AND HOW TO GET THEM.**

**a.** Order copies of RTCA documents from RTCA Inc., 1828 L Street, NW, Suite 805, Washington DC 20036-4007. Telephone (202) 833-(339, fax (202) 833-9434. You can also order copies from the RTCA Internet website at <http://www.rtca.org/>.

**b.** Order copies of 14 CFR part 21 from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 371954, Pittsburgh PA 15250-7954. Telephone (202) 512-1800, fax (202) 512-2104. You can get free copies from the Government Printing Office Internet website at <http://www.gpoaccess.gov/ecfr/index.html>.

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