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Environmental Conditions and Test Procedures for Airborne Equipment

RTCA DO-160B
July 20, 1984
Supersedes DO-160A

Prepared by: SC-135
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F O R E W O R D

This document was prepared by Special Committee 135 of the Radio Technical Commission for Aeronautics (RTCA). It was approved by RTCA on July 20, 1984, and supersedes RTCA Document DO-160A dated January 1980.

The objective of Special Committee 135 was to review and update RTCA Document DO-160A, "Environmental Conditions and Test Procedures for Airborne Equipment."

RTCA is an association of aeronautical organizations of the United States from both government and industry. Dedicated to the advancement of aeronautics, RTCA seeks sound technical solutions to problems involving the application of electronics and telecommunications to aeronautical operations. Its objective is the resolution of such problems by mutual agreement of its member organizations.

The findings of RTCA are in the nature of recommendations to all organizations concerned. RTCA is not an official agency of the United States government and its recommendations may not be regarded as statements of official government policy unless so enunciated by the government organization or agency having statutory jurisdiction over any matters to which the recommendations relate.

These standards were coordinated by RTCA SC-135 with the European Organisation for Civil Aviation Electronics (EUROCAE) Working Group 14 (WG-14), and the International Organization for Standardization Technical Committee 20, Subcommittees 1 and 5 (ISO/TC 20/SC 1 and ISO/TC 20/SC 5). EUROCAE concurs with RTCA on the environmental conditions and test procedures set forth herein. When approved by EUROCAE, this document will be identified jointly as RTCA DO-160B/EUROCAE ED-14B. Also, the RTCA/EUROCAE document is under consideration for endorsement by the International Organization for Standardization (ISO) as a de facto International Standard to supersede ISO Standard 7137.

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CHANGE RECORDING PAGE 1/

Change No.	Date	Applicable Section	Revision No.	Remarks

1/ Changes will be numbered sequentially and be in the form of an ERRATA or REVISION. ERRATA will be used only for editorial (non-substantive) corrections. REVISIONS will be numbered sequentially by section and used for all substantive additions, deletions and/or corrections. REVISIONS will result in the affected section(s) being reprinted and identified with the revision number (Rev. "#") and date. This information will appear on the section title page of the reprint below the date of issue. When a revised test procedure (section) is used in conducting a test, the Environmental Qualification Form, Figure A-1 of APPENDIX A, shall reflect which version was used.

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NOTE: DETAILED TABLES OF CONTENTS APPEAR ON THE INSIDE COVERS OF MOST SECTIONS. EXTRA INDEX TABS MARKED "SECTION 23" AND "SECTION 24" HAVE BEEN INCLUDED TO ACCOMMODATE POSSIBLE ADDITIONS TO THIS DOCUMENT.

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RTCA/DO-160B

ENVIRONMENTAL CONDITIONS AND TEST PROCEDURES FOR AIRBORNE EQUIPMENT

SECTION 1

PURPOSE AND APPLICABILITY

SECTION 2

DEFINITIONS OF TERMS

SECTION 3

CONDITIONS OF TESTS

—IMPORTANT NOTICE—

Information contained in these Sections is pertinent to all test procedures described in the other Sections of this document. Further, Appendix A is applicable for identifying environmental tests performed.

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PURPOSE AND APPLICABILITY

This document defines a series of standard environmental test conditions (categories) and applicable test procedures for airborne equipment. The purpose of these tests is to provide a laboratory means of determining the performance characteristics of airborne equipment in environmental conditions representative of those which may be encountered in airborne operation of the equipment.

The standard environmental test conditions and applicable test procedures contained herein may be used as a minimum performance specification under environmental conditions which can assure a sufficient degree of confidence in performance during operations.

NOTE: In each of the test procedures contained herein, the following phrase will be seen several times:

"DETERMINE COMPLIANCE WITH APPLICABLE EQUIPMENT PERFORMANCE STANDARDS."

The "Applicable Equipment Performance Standards" referred to are either:

- a. EUROCAE Minimum Performance Specifications (MPS) and/or EUROCAE Minimum Operational Performance Requirements (MOPR).
- b. RTCA Minimum Performance Standards (MPS) and/or RTCA Minimum Operational Performance Standards (MOPS).

Some of the environmental conditions and test procedures contained in this document are not necessarily applicable to all airborne equipment. The selection of the appropriate environmental conditions and test procedures is the responsibility of the writers (authors) of the performance standards for the specific airborne equipment.

NOTE 1: There are several additional environmental conditions (categories) that specific airborne equipment may be subjected to, which have not been included in this document. These include, but are not limited to: Hail, icing, acceleration, acoustic vibration and combined temperature/humidity/pressure tests.

NOTE 2: The procedures for testing airborne equipment for special environmental conditions that are usually uniquely related to that specific type of airborne equipment, should be the responsibility of the