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Environmental Conditions and Test Procedures for Airborne Equipment

Change 1

RTCA DO-160D Change 1
December 14, 2000

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Change Transmittal

This change forwards revised text for Section 8.0 – Vibration, Section 20.0 – Radio Frequency Susceptibility (Radiated and Conducted) and Appendix C – Change Coordinators.

- Remove Section 8.0 (dated July 29, 1997) from RTCA/DO-160D and replace with the revised Section 8.0.

- Remove Section 20.0 (dated July 29, 1997) from RTCA/DO-160D and replace with the revised Section 20.0.

- Remove Appendix C (dated July 29, 1997) from RTCA/DO-160D and replace with the revised Appendix C.

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Section 8

Vibration

Important Notice

Information pertinent to this test procedure is contained in Sections 1, 2 and 3. Further, Appendix A is applicable for identifying the environmental tests performed.

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8.0 VIBRATION

8.1 Purpose of the Tests

These tests demonstrate that the equipment complies with the applicable equipment performance standards when subjected to vibration levels specified for the appropriate category.

8.2 Applicability

Vibration tests apply to equipment installed on fixed-wing propeller aircraft, fixed-wing turbojet, turbofan, and propfan aircraft and helicopters.

Vibration tests to be performed on any equipment item are selected in this paragraph and are specified by three identifiers: (1) aircraft type, (2) category and (3) aircraft zone location. The test curves to be applied are then specified in paragraph 8.2.2. Requirements and procedures to accomplish these tests are specified in subsequent paragraphs herein.

8.2.1 Vibration Test Definitions

8.2.1.1 Standard Vibration Test

The standard vibration tests demonstrate that equipment will meet its functional performance requirements during normal operating conditions of the aircraft.

8.2.1.2 High Level-Short Duration Vibration Test

High-level short duration transient vibration levels are encountered during abnormal aircraft vibration conditions that occur during blown tires and engine fan blade loss. This test should be applied to equipment in which a functional loss of performance can hazardously affect the aircraft's performance.

CAUTION: A full analysis of vibration levels related to some specific engine imbalance conditions has not been evaluated against these limits. Therefore this test alone may not be sufficient for some applications without additional test or analysis.

8.2.1.3 Robust Vibration Test

The robust vibration test demonstrates that equipment will operate satisfactorily while subjected to a performance vibration level and continue to operate satisfactory when being subjected to an endurance vibration level. It combines a demonstration of the equipment functional performance and structural integrity. This test should be performed on all equipment where its resistance to effects of long duration exposure to vibration must be demonstrated. The necessity for conducting this test in lieu of the standard vibration test shall be determined by the relevant equipment specification.

8.2.2 Category and Test Curve/Level Selection

8.2.2.1 Category Selection

The appropriate test category selected for the equipment from the categories defined in Table 8-0 below, should be based upon the level of assurance required for the equipment’s demonstration of performance. Categories denoted by the number two (2)