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Minimum Operational Performance Standards (MOPS) for Airborne VOR Receiving Equipment Operating Within the Radio Frequency Range of 108-117.95 MHz

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Prepared by: SC-153

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F O R E W O R D

This document was prepared by Special Committee 153 of the Radio Technical Commission for Aeronautics. It was approved by RTCA on November 17, 1986, and supersedes RTCA/DO-149, "Minimum Operational Characteristics -- Airborne VHF Omnirange (VOR) Systems," January 14, 1972 and RTCA DO-153A, "Minimum Performance Standards - Airborne VOR Receiving Equipment Operating Within the Radio Frequency Range of 108-118 Megahertz," November 2, 1978.

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Coordination of these standards was accomplished by RTCA SC-153 with the European Civil Organisation for Civil Aviation Electronics (EUROCAE) WG-7A.

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1.0 PURPOSE AND SCOPE

1.1 Introduction

This document contains minimum operational performance standards for airborne VHF Omnidirectional Range (VOR) receiving equipment. These standards specify system characteristics that should be useful to designers, manufacturers, installers and users of the equipment.

Compliance with these standards is recommended as one means of assuring that the equipment will perform its intended function satisfactorily under all conditions normally encountered in routine operations.

Any regulatory application of this document is the sole responsibility of appropriate governmental agencies.

Section 1.0 provides information needed to understand the rationale for equipment characteristics and requirements stated in the remaining sections. It describes typical equipment applications and operational goals and establishes the basis for the standards stated in Sections 2.0 through 4.0. Definitions and assumptions essential to proper understanding of this document are also provided in Section 1.0.

Section 2.0 contains the minimum performance standards for the equipment. These standards specify the required performance under standard and environmental conditions. Also included are recommended bench test procedures necessary to demonstrate equipment compliance with the stated minimum requirements.

Section 3.0 describes the performance required of the installed equipment. Tests for the installed equipment are included when performance cannot be adequately determined through bench testing.

Section 4.0 describes the operational performance characteristics for equipment installations and defines conditions that will assure the equipment user that operations can be conducted safely and reliably in the expected operational environment.

This document considers an equipment configuration consisting of: Antenna system(s), transmission lines, radio receiver, omni converter and a course deviation indication display. Additional functions and components that refer to expanded equipment capabilities are identified as optional features.

The word "system" as used in this document refers to the VOR system. It includes all portions of both the VOR ground transmitter and the VOR airborne equipment.

The word "equipment" as used in this document includes all components and units necessary for the system to properly perform