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**Minimum Operational Performance Standards
(MOPS) for Devices that Prevent Blocked
Channels Used in Two-Way Radio
Communications Due to Unintentional
Transmissions**

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FOREWORD

This document was prepared by Special Committee 163 of the Radio Technical Commission for Aeronautics. It was approved by the RTCA Executive Committee on January 25, 1991.

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. Since RTCA is not an official agency of the United States Government, its recommendations may not be regarded as statements of official government policy unless so enunciated by the U. S. government organization or agency having statutory jurisdiction over any matters to which the recommendations relate.

Coordination of these standards was accomplished by RTCA SC-163 with the European Organisation for Civil Aviation Equipment (EUROCAE) WG-38.

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TABLE OF CONTENTS

	<u>Page</u>
1.0 PURPOSE AND SCOPE	1
1.1 Introduction	1
1.2 System Overview	1
1.3 Operational Application	2
1.4 Operational Goals	2
1.5 Assumptions	2
1.5.1 Unintentional Continuous Transmissions	2
1.5.1.1 Stuck Microphone PTT Switches	2
1.5.1.2 Loose Microphone Jacks	2
1.5.1.3 PTT Line Activation by Other Causes	3
1.5.1.4 Unkeyed Continuous Transmissions	3
1.6 Test Procedures	3
1.7 Definitions of Terms	4
2.0 EQUIPMENT PERFORMANCE REQUIREMENTS AND TEST PROCEDURES	5
2.1 General Requirements	5
2.1.1 Airworthiness	5
2.1.2 Intended Function	5
2.1.3 Federal Communications Commission Rules	5
2.1.4 Fire Protection	5
2.1.5 Operation of Controls	5
2.1.6 Accessibility of Controls	5
2.1.7 Effects of Test	5
2.2 Equipment Performance - Standard Conditions	7
2.2.1 Automatic Termination of Transmissions	7
2.2.2 Resetting of Transmission Timer	7
2.2.3 Bypass Switch	7
2.3 Equipment Performance - Environmental Conditions	9
2.3.1 Temperature and Altitude Tests	9
2.3.1.1 Ground Survival Low Temperature Test and Operating Low Temperature Test	9
2.3.1.2 Ground Survival High Temperature Test and Short-Time Operating High Temperature Test	9
2.3.1.3 Operating High Temperature Test	9
2.3.1.4 In-Flight Loss of Cooling Test	10
2.3.1.5 Altitude Test	10

	<u>Page</u>
2.3.1.6 Decompression Test	10
2.3.1.7 Overpressure Test	10
2.3.2 Temperature Variation Test	10
2.3.3 Humidity Test	10
2.3.4 Operational Shocks and Crash Safety Tests	10
2.3.4.1 Operational Shocks	10
2.3.4.2 Crash Safety	11
2.3.5 Vibration Tests	11
2.3.6 Explosion Proofness Test	11
2.3.7 Waterproofness Tests	11
2.3.7.1 Drip Proof Test	11
2.3.7.2 Spray Proof Test	11
2.3.7.3 Continuous Stream Proof Test	11
2.3.8 Fluids Susceptibility Tests	12
2.3.8.1 Spray Test	12
2.3.8.2 Immersion Test	12
2.3.9 Sand and Dust Test	12
2.3.10 Fungus Resistance Test	12
2.3.11 Salt Spray Test	12
2.3.12 Magnetic Effect Test	13
2.3.13 Power Input Tests	13
2.3.13.1 Normal Operating Conditions	13
2.3.13.2 Abnormal Operating Conditions	13
2.3.14 Voltage Spike Tests	13
2.3.14.1 Category 'A' Requirements	13
2.3.14.2 Category 'B' Requirements	13
2.3.15 Audio Frequency Conducted Susceptibility Test	14
2.3.16 Induced Signal Susceptibility Test	14
2.3.17 Radio Frequency Susceptibility Test (Radiated and Conducted)	14
2.3.18 Emission of Radio Frequency Energy Test	14
2.3.19 Lightning Induced Transient Susceptibility Test	14
2.3.20 Lightning Direct Effects Test	14
2.3.21 Icing Test	14
2.4 Equipment Test Procedures	15
2.4.1 Definitions of Terms and Conditions of Test	15
2.4.2 Detailed Test Procedures	16

	<u>Page</u>
2.4.2.1 Automatic Termination of Transmissions	16
2.4.2.2 Resetting of Transmission Timer	16
3.0 INSTALLED EQUIPMENT PERFORMANCE	17
3.1 Equipment Installation	17
3.1.1 Accessibility	17
3.1.2 Aircraft Environment	17
3.1.3 Display Visibility	17
3.1.4 Dynamic Response	17
3.1.5 Failure Protection	17
3.1.6 Interference Effects	17
3.1.7 Inadvertent Turnoff	18
3.1.8 Aircraft Power Source	18
3.2 Installed Equipment Performance Requirements	18
3.3 Conditions of Test	18
3.3.1 Power Input	18
3.3.2 Associated Equipment or Systems	18
3.3.3 Environment	18
3.3.4 Adjustment of Equipment	18
3.3.5 Warm-up Period	18
3.4 Test Procedures for Installed Equipment Performance	18
3.4.1 Ground Test Procedures	19
3.4.1.1 Conformity Inspection	19
3.4.1.2 Equipment Function	19
3.4.1.3 Interference Effects	19
3.4.1.4 Power Supply Fluctuations	19
3.4.1.5 Equipment Accessibility	19
3.4.1.6 Functional Tests	19
MEMBERSHIP	21

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1.0 PURPOSE AND SCOPE

1.1 Introduction

This document sets forth minimum operational performance standards for systems that prevent blocked frequencies used in air traffic control (ATC) two-way radio communications due to unintentional transmissions. Incorporated within these standards are system characteristics that should be beneficial to users of the systems as well as to designers, manufacturers and installers.

Compliance with these standards is recommended as a means of assuring that the equipment will perform its intended function(s) satisfactorily under all conditions normally encountered in routine operations. Any regulatory application of this document is the sole responsibility of appropriate government agencies.

Because the measured values of equipment performance characteristics may be a function of the measurement method, standard test conditions and methods of test are recommended in this document.

This document considers an equipment configuration to consist of: transmitter, receiver, power supply, microphone, control panels, antenna, interconnecting cables and related accessories. It should not be inferred that all equipment will necessarily include all of the foregoing components as separate units. This will depend on the specific design configuration chosen by the manufacturer. Additional functions and components that may refer to expanded equipment capabilities that exceed the stated minimum requirements are identified as optional features. Equipment features that are beyond the scope of this document may be developed in future RTCA activities.

If the equipment implementation includes a computer software package, the guidelines contained in RTCA/DO-178A, *Software Considerations in Airborne Systems and Equipment Certification*, shall be considered.

1.2 System Overview

The aviation communications system includes ground-based and airborne receiving and transmitting equipment that provides air-to-ground, ground-to-air, air-to-air and ground-to-ground voice and data communications. The equipment addressed in this document provides the means for reducing unintentional transmissions that adversely affect two-way voice radio communications.

Disruption to voice communications in the ATC system presents the potential for degrading flight safety. Although these communication disruptions may occur in areas where traffic density is low, the growth of air traffic (and communications) has increased the number of disruption incidents. The FAA concluded, as early as 1968, that the occurrence of communication disruptions presented serious problems, e.g., the loss of separation standards between aircraft, near mid-air collisions, delays and potentially disastrous disruptions of traffic flow. Various educational programs and advisory material issued by the FAA have not reduced the problem. In fact, subsequent surveys have indicated that the problem has intensified.

In 1984, the FAA was petitioned to enact rulemaking requiring two-way radio communication systems employing anti-blocking and stuck microphone protection circuitry. The FAA subsequently published the petition for rulemaking for public comment. The majority of responses to the petition for rulemaking were favorable.