

RTCA, Inc.
1828 L Street, NW, Suite 805
Washington, DC 20036-5133 USA

**Minimum Operational Performance Standards
(MOPS) for 406 MHz Emergency Locator
Transmitters (ELT)**

RTCA DO-204A
December 6, 2007

Prepared by: SC-204
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RTCA, Inc.

Telephone: 202-833-9339

Facsimile: 202-833-9434

Internet: www.rtca.org

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Foreword

This report was prepared by Special Committee 204 (SC-204) and approved by the RTCA Program Management Committee (PMC) on December 6, 2007.

RTCA, Incorporated is a not-for-profit corporation formed to advance the art and science of aviation and aviation electronic systems for the benefit of the public. The organization functions as a Federal Advisory Committee and develops consensus based recommendations on contemporary aviation issues. RTCA's objectives include but are not limited to:

- coalescing aviation system user and provider technical requirements in a manner that helps government and industry meet their mutual objectives and responsibilities;
- analyzing and recommending solutions to the system technical issues that aviation faces as it continues to pursue increased safety, system capacity and efficiency;
- developing consensus on the application of pertinent technology to fulfill user and provider requirements, including development of minimum operational performance standards for electronic systems and equipment that support aviation; and
- assisting in developing the appropriate technical material upon which positions for the International Civil Aviation Organization and the International Telecommunications Union and other appropriate international organizations can be based.

The organization's recommendations are often used as the basis for government and private sector decisions as well as the foundation for many Federal Aviation Administration technical Standard Orders.

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.

Change History

This document contains the original RTCA/DO-204 as prepared by RTCA SC-160 and published on September 29, 1989, as well as the integration of the three Change Documents that have been issued by RTCA for the original document. The following is the Change History.

Change	Date Issued	Description
Original	9/29/1989	Minimum Operational Performance Standards for 406 MHz Emergency Locator Transmitters (ELT), RTCA/DO-204
Change 1	7/13/1994	Change #1 to RTCA/DO-204 was required to make editorial corrections and additions
Change 2	10/6/1997	Change #2 to RTCA/DO-204 was required to (1) remove Appendix A, entitled "Beacon Coding," (2) change references to "the Soviet Union" to "Russia," (3) change references from "Appendix A" to "COSPAS-SARSAT Document C/S T.001" and provide information on the acquisition of said document, and (4) make other editorial corrections and additions
Change 3	6/12/2001	Change #3 to RTCA/DO-204 was required to (1) change references to the transmitted frequency to add the frequency of 406.028 MHz ± 1 kHz, and to indicate that " <i>After January 1, 2002, all new beacon models submitted for type approval must be set at the frequency 406.028 MHz ± 1 kHz,</i> " and (2) to change the address of the U.S. Mission Control Center for obtaining guidance on the selection of a User Protocol.
Revised	12/06/2007	Minimum Operational Performance Standards for 406 MHz Emergency Locator Transmitters (ELT), RTCA/DO-204A

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1 PURPOSE AND SCOPE

1.1 Introduction

This document describes minimum operational performance standards for Emergency Locator Transmitters (ELTs) utilizing the 406.0 to 406.1 MHz band and operating in the COSPAS-SARSAT¹ system. Included in the system are the minimum operational performance standards for the 121.5 MHz homing transmitter.

System characteristics that are incorporated within these standards will be beneficial to users, designers, manufacturers and installers.

Section 1.0 of this document 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 is 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 ELT equipment that define the required performance under standard operating conditions and stressed physical environmental conditions. It also details the recommended bench test procedures necessary to demonstrate compliance.

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 characteristics for equipment installations and defines conditions and tests that will assure the operator that operations can be conducted safely and reliably in the expected operational environment. .

Compliance with these standards by manufacturers, installers and users is recommended as a means of assuring that the equipment will satisfactorily perform its intended function(s) under conditions encountered during and following crash situations.

Additionally, adherence to these standards should assure that the ELT will not adversely affect normal aircraft operations.

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

It is recognized that any regulatory application of this document in whole, or in part, is the sole responsibility of appropriate governmental agencies.

Since the measured values of equipment performance may be a function of the measurement method, standard test conditions and methods of test are recommended.

¹ COSPAS – COsmicheskaya Sistyema Poiska Avaryinykh Sudov; (Space System for the Search of Distressed Vessels)
SARSAT – Search and Rescue Satellite-Aided Tracking