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**Minimum Operational Performance Standards for Airborne Radar Approach
and Beacon Systems for Helicopters**

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Prepared by:
SC-133

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D E D I C A T I O N

By formal resolution of the RTCA Executive Committee on June 1, 1979, this document is dedicated to A. Rufus Applegarth, Chairman of Special Committee 133 from January 28, 1977 to May 10, 1979. Mr. Applegarth, a staunch supporter of the principles and activities of the Radio Technical Commission for Aeronautics for over thirty years, passed away on May 10, 1979. He is remembered by the members of this Special Committee, and by all those who knew him, for his many significant contributions and accomplishments, and for his innovative and dynamic leadership in the aeronautical community.

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F O R E W O R D

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T A B L E O F C O N T E N T S

	<u>Page</u>
DEDICATION	i
FOREWORD	iii
TABLE OF CONTENTS	v
1.0 PURPOSE AND SCOPE	1
1.1 Introduction	1
1.2 Operational Goals	2
1.3 Operational Applications	3
1.3.1 General	3
1.3.2 Operational Concepts	4
1.4 Test Procedures	5
1.4.1 Bench Tests	6
1.4.2 Environmental Tests	6
1.4.3 Installed Tests	6
1.4.4 Operational Tests	7
1.5 Assumptions	7
1.5.1 Radome Design	7
2.0 AIRBORNE RADAR REQUIREMENTS	9
2.1 General Requirements	9
2.1.1 Airworthiness	9
2.1.2 Intended Function	9
2.1.3 Federal Communications Commission Rules ...	9
2.1.4 Operation of Controls	9
2.1.5 Indicator Readability	9
2.1.6 Effects of Test	9
2.1.7 Fire Protection	9
2.2 Airborne Radar Performance - Standard Conditions	10
2.2.1 General Equipment Characteristics	10
2.2.2 ARA Equipment Performance	11
2.3 Airborne Radar Performance - Environmental Conditions	19

2.3.1	Temperature and Altitude Tests	19
2.3.2	Temperature Variation Test	21
2.3.3	Humidity Test	22
2.3.4	Shock Tests	23
2.3.5	Vibration Tests	24
2.3.6	Explosion Test	24
2.3.7	Waterproofness (Drip Proof) Test	24
2.3.8	Salt Spray Test	25
2.3.9	Magnetic Effect Test	25
2.3.10	Power Input Tests	25
2.3.11	Voltage Spike Conducted Test	26
2.3.12	Audio Frequency Conducted Susceptibility Test	27
2.3.13	Induced Signal Susceptibility Test	28
2.3.14	Radio Frequency Susceptibility Test Radiated and Conducted	28
2.3.15	Emission of Radio Frequency Energy Test	29
FIGURE 2-1	.....	30
2.4	Airborne Radar Test Procedures	31
2.4.1	Definitions of Terms and Conditions of Tests	31
2.4.2	Detailed Test Procedures	32
FIGURE 2-2	.....	41
FIGURE 2-3	.....	45
TABLE 2-1	.....	48
FIGURE 2-4a	.....	50
FIGURE 2-4b	.....	51
FIGURE 2-4c	.....	51
FIGURE 2-5	.....	52
FIGURE 2-6	.....	53
3.0	BEACON REQUIREMENTS	55
3.1	General Requirements	55
3.1.1	Airworthiness	55
3.1.2	Federal Communications Commission Rules	55
3.1.3	Effects of Test	55
3.2	Beacon Performance - Standard Conditions	55
3.2.1	Antenna Characteristics	55
3.2.2	Receiver Operating Frequency and Bandwidth .	56
3.2.3	Receiver Sensitivity and Dynamic Range	56
3.2.4	Reply Transmission Frequency	56
3.2.5	Reply Transmission Pulse Characteristics ...	56

3.2.6	Duty Cycle Control	58
3.2.7	Pulse Recurrence Frequency	58
3.2.8	Recovery Time	58
3.2.9	Beacon Delay	58
3.2.10	Beacon Automatic Standby Mode	59
3.3	Beacon Performance - Environmental Conditions	59
3.3.1	Temperature and Altitude Tests	60
3.3.2	Temperature Variation Test	61
3.3.3	Humidity Test	62
3.3.4	Waterproofness (Drip Proof) Test	62
3.3.5	Sand and Dust Test	62
3.3.6	Salt Spray Test	63
3.3.7	Power Input Tests	63
3.3.8	Voltage Spike Conducted Tests	64
3.3.9	Induced Signal Susceptibility Test	65
3.3.10	Radio Frequency Susceptibility Test Radiated and Conducted	65
3.3.11	Emission of Radio Frequency Energy Test ...	65
TABLE 3-1	.....	66
3.4	Beacon Test Procedures	67
3.4.1	Definitions of Terms and Conditions of Tests	67
FIGURE 3-1	.....	69
TABLE 3-2	.....	70
FIGURE 3-2	.....	74
FIGURE 3-3	.....	75
3.4.2	Detailed Test Procedures	76
FIGURE 3-4	.....	79
4.0	INSTALLED EQUIPMENT PERFORMANCE	85
4.1	Test Conditions	85
4.1.1	Safety Precautions	85
4.1.2	Power Input	85
4.1.3	Associated Equipment	85
4.1.4	Environment	85
4.1.5	Adjustment of Equipment	85
4.1.6	Warm-up Period	85
4.2	Equipment Installation	85
4.2.1	Equipment Accessibility	85

4.2.2	Display Visibility	86
4.2.3	Interference Effects	86
4.3	Minimum Installed Equipment Performance Requirements	86
4.3.1	General ARA Equipment Performance Requirements	86
4.3.2	General Ground Beacon Performance Requirements	87
4.4	Test Procedures for Installed System Performance	87
4.4.1	Conformity Inspection	87
4.4.2	Ground Test Procedures	88
4.4.3	Flight Test Procedures	89
5.0	OPERATIONAL CHARACTERISTICS	91
5.1	Required Operational Characteristics	91
5.1.1	Power Input	91
5.1.2	Antenna Tilt and Stabilization	91
5.1.3	ARA Display Range Scales	91
5.1.4	Equipment Operating Modes	91
5.2	Test Procedures for Operational Characteristics ...	91
5.2.1	Power Input	91
5.2.2	Antenna Tilt and Stabilization	92
5.2.3	ARA Display Range Scales	92
5.2.4	Equipment Operating Modes	92
MEMBERSHIP		93

1.0 PURPOSE AND SCOPE

1.1 Introduction

This document sets forth Minimum Operational Performance Standards (MOPS) for Airborne Radar Approach (ARA) systems based on operational requirements of helicopters in the approach, missed approach and departure modes, particularly during Instrument Flight Rules (IFR), Instrument Meteorological Conditions (IMC) and at night. Included in this document are those system characteristics pertinent to the airborne equipment and to the ground-based radar beacon for those operations requiring such equipment. Operational goals have been established based on future requirements and technology, rather than merely repeating current state-of-the-art criteria.

Section 1.0 of this document is intended to be tutorial in nature and 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, as envisioned by the members of Special Committee 133, and is the basis for the standards stated in Sections 2.0 through 5.0. 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 airborne equipment. These standards 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 contains the minimum performance standards for the ground beacon equipment. These standards define required performance under standard operating conditions and stressed physical environmental conditions. It also details the recommended bench test procedures necessary to demonstrate compliance.

Section 4.0 describes the performance required of the installed equipment. Installed equipment tests are included when performance cannot be adequately determined through bench testing.

Section 5.0 describes the operational characteristics for equipment installations and defines conditions that will assure the operator that operations can be conducted safely and reliably in the expected operational environment.

In the establishment of ARA equipment requirements, the inclusion of color was not considered to be a minimum requirement for the radar display element. However, it was recognized that the state of the art of both technology and