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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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**Technical requirements for stratospheric airship-Part 1:
Environmental control system**

平流层飞艇通用技术要求 第1部分：环境控制系统

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Table of Contents

Preface III Introduction IV 1 Scope	1
2 Normative references	1
3 Terms and Definitions	1
4 Technical Requirements	1
4.1 Composition	1
4.2 Function	1
4.3 Performance	3
4.4 Interface	4
4.5 Reliability	4
4.6 Maintainability	4
4.7 Testability	4
4.8 Security	5
5 Verification test	5
5.1 Test Items	5
5.2 Test requirements	5
6 Labeling, packaging, transportation and storage	5
6.1 Identification	5
6.2 Packaging	5
6.3 Transportation and storage	6

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting is required.

This document is Part 1 of GB/T 44821 "General Technical Requirements for Stratospheric Airships". GB/T 44821 has been published as follows part.

Part 1: Environmental control systems; Part 2: Propulsion systems.- Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed and coordinated by the National Technical Committee for Aircraft Standardization (SAC/TC 435).

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Introduction

GB/T 44821 "General Technical Requirements for Stratospheric Airships" was formulated to establish a unified system for the development, production and use of stratospheric airships.

Standards will promote the healthy and rapid development of the stratospheric airship field, so as to better meet and serve the economic construction and security needs of China's near-space.

GB/T 44821 is intended to consist of two parts.

Part 1: Environmental Control System. The purpose is to propose general technical requirements and verification for the environmental control system of stratospheric airships.

The testing as well as labeling, packaging, transportation and storage requirements provide a basis for the design and manufacture of stratospheric airship environmental control systems.

Part 2: Propulsion System. The purpose is to propose general technical requirements, verification tests and Labeling, packaging, transportation and storage requirements provide a basis for the design and manufacture of stratospheric airship propulsion systems.

General technical requirements for stratospheric airships Part 1: Environmental control systems

1 Scope

This document specifies the technical requirements, verification tests, and labeling, packaging, transportation and storage requirements for the stratospheric airship environmental control system.

This document is applicable to the design and manufacture of the environmental control system for stratospheric airships. use.

2 Normative references

GB/T 43328

3 Terms and Definitions

The terms and definitions defined in GB/T 43328 and the following apply to this document.

3.1 Environmental control system

Environmental control system A system used to control the working environment temperature inside the airship cabin and various equipment to keep the working environment temperature within the specified range.

4.1 Composition

The environmental control system should consist of the following subsystems.

Condition monitoring and alarm subsystem. consists of temperature sensors and other measuring equipment. a) Data processing and control subsystem. consists of environmental control computers, sensor collection boxes and other equipment. b) Actuator subsystem. consists of cooling fans, electric heaters, valves and other equipment. c) Environmental protection subsystem. consists of thermal control coating, insulation board and other equipment. d)

4.2.1 System

The temperature inside the airship cabin and the working environment of each equipment should be controlled to keep it within the specified range.

4.2.2 Condition monitoring and alarm subsystem

The condition monitoring and alarm subsystem should have the following functions.

Monitor the stratospheric airship environmental status and transmit relevant data to the data processing and control subsystem; a)