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General requirements of use for tethered balloon

系留气球使用通用要求

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents". Drafting.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the National Aircraft Standardization Technical Committee (SAC/TC435).

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General requirements for the use of tethered balloons

1 Scope

This document specifies the general rules, procedures, inspection and maintenance, and record keeping for the use of tethered balloons.

This document applies to the use of tethered balloons in their fully assembled state.

2 Normative references

GB/T 43328

3 Terms and Definitions

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

4.1 Composition

A tethered balloon typically consists of three parts. the balloon body, the tethering cable, and the mooring equipment. The balloon body is the mission equipment or mounting material.

The device provides spatial hovering capability, the mooring cable provides optical and electrical channels for the connection between the on-board equipment and the ground equipment, and the anchoring equipment provides...

A device is provided to enable tethered balloons to be anchored, moored in the air, launched, and recovered.

Tethered balloons are classified into several subsystems. sphere structure subsystem, power supply subsystem, telemetry and control subsystem, and tether cable subsystem.

The lightning protection subsystem, pressure regulation subsystem, mooring subsystem, and aerial recovery subsystem are detailed in Appendix A.

4.2 Usage Procedure

The general procedure for using tethered balloons consists of six stages. pre-launch inspection, launch, in-flight tethering, recovery, post-recovery inspection, and anchoring.

When the document's usage process differs from the specific product's usage process, some processes can be simplified based on the actual situation and usage requirements of the specific product.

Alternatively, they can be combined; the usage process is shown in Figure 1.

Note. Before the tethered balloon performs its launch mission, ensure that the mission payload system and the tethered balloon have completed joint testing and that the mission payload system is functioning normally.

Figure 1.Flowchart of tethered balloon usage