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**Rotorcrafts - Flight dynamics - Vocabulary and symbo
(English Translation)**

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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.

This document is modified to adopt ISO 5224:2021 "Terminology for the flight dynamics of rotorcraft".

This document has undergone the following structural adjustments compared to ISO 5224:2021.

---Chapter 4 has been added;

---The "References" section has been removed;

--- An "index" has been added.

This document differs significantly from ISO 5224:2021. The relevant clauses are indicated in vertical single-line margins.

The lines () are marked. A summary of these technical differences and their reasons can be found in Appendix A.

The following editorial changes have been made to this document.

---To harmonize with existing standards, the standard's name has been changed to "Terminology and Symbols for Flight Dynamics of Rotary-Wing Aircraft";

---Notes on some terms have been deleted (see 3.2.3, 3.8.5, 3.8.7);

---The normative and requirement-related words such as "must" and "should" have been removed from the original text (see 3.9.2 and 3.9.3).

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

1 Scope

This document defines the terminology and symbols used in the field of rotorcraft flight dynamics and aerodynamics.

This document applies to teaching, scientific research, standardization needs, and technical exchange related to rotorcraft.

2 Normative references

This document has no normative references.

3.1 Basic Definitions and Classifications

3.1.1

Rotorcraft

3.1.2

helicopter

A heavier-than-air rotorcraft that uses a powered rotor as its main source of lift and propulsion and can take off and land vertically (3.1.1).

3.1.3

gyroplane

Except during initial startup, the rotor system does not rely on a power system for propulsion. Instead, it generates lift by rotating through airflow during flight.

Power, and the propulsion device is usually a conventional propeller, a rotorcraft that is independent of the rotor system (3.1.1).

3.1.4

compound helicopter

compound gyroplane

The rotor system is driven by a power unit during takeoff, hovering, and landing, operating in the same mode as a helicopter (3.1.2), and has independent operation capabilities.

Rotorcraft with auxiliary propulsion devices for rotor systems (3.1.1).

3.1.5

Convertiplane

Vertical takeoff and landing (VTOL) is achieved by using rotors to provide lift during takeoff and landing, and then switching to fixed-wing aircraft for lift during regular forward flight.

The plane.

Note: Depending on whether the rotor is fixed like in a helicopter (3.1.2) or tilted to act as a propeller to provide forward thrust, convertible rotorcraft are classified as follows.

They are divided into two main categories. tilt-wing and tilt-rotor.

3.1.6

Lift and thrust are provided by one or more tilting propellers (propulsion rotors), and these propellers are typically mounted at the end of the fixed wing.