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

GB/T 14410.3-2008

Replacing GB/T 14410.3-1993

**Flight mechanics -- Concepts, quantities and symbols -- Part 3:
Stability and control of aircraft**

飞行力学 概念、量和符号 第3部分：飞机稳定性和操纵性
(English Translation)

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Foreword

GB/T 14410 "Flight mechanics - Concepts, quantities and symbols" is divided into nine sections.

- Part 1. Axis systems and motion state variables;
- Part 2. Forces, moments, their coefficients and derivative;
- Part 3. aircraft stability and control;
- Part 4. flight performance;
- Part 5. flight measurement;
- Part 6. Aircraft geometry;
- Part 7. Flight points and flight envelope;
- Part 8. dynamic characteristics of the aircraft;
- Part 9. atmospheric disturbance model.

This section GB/T 14410 Part 3.

The partial modification of the use of ISO 1151-4:1994 "Flight dynamics - Concepts, quantities and symbols aircraft stability and control." versus ISO 1151-4:1994 is the main difference.

- a) ISO 's 4.2.1,4.2.3 merger corresponds to this section 3.1;
- b) ISO 4.2.2 corresponds to this part 3.3.6,3.3.7;
- c) ISO 4.2.4,4.3 respectively correspond to the present section 3.4,3.6;
- d) Added a maneuver point, the neutral point, the maneuver margin, when the static stability grip/release lever margin and other terms.

This Part replaces GB/T 14410.3-1993 "Flight mechanics - Concepts, quantities and symbols - Part 3. aircraft stability and control." Section compared with the GB/T

14410.3-1993 The main changes are as follows.

- a) add stability, controls, volume and other characteristics of the aircraft used for the evaluation to define;
- b) the original "aerodynamic center" extended to "aerodynamic center and center of pressure";
- c) modify the terms and definitions have references to other chapters numbers marked;
- d) increasing the dimension of the unit, and indicated in the symbols and units columns;
- e) an increase in the English index.

This part is proposed by the China Aviation Industry Corporation.

This part of the jurisdiction of the China Aviation Industry Corporation.

This section is drafted. Beijing University of Aeronautics and Astronautics, China Aviation Technology Institute Comprehensive, China Aviation Industry Research Institute of air power, in State Aviation Industry Development Research Center.

1 Scope

This section provides research aircraft stability and control terminology and symbols used (not including the dynamic characteristics).

This section applies to fixed-wing aircraft, the aircraft can also refer to other use.

X0 directions in this section referred to the body axis system is close to zero lift line aircraft.

2 Normative references

The following documents contain provisions which, through reference in this text, constitute provisions of this part. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this section, however, encourage the parties to this part of the research agreement Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 14410.1-2008 Flight mechanics - Concepts, quantities and symbols and units - Part 1. Axis systems and motion state variables GB/T 14410.2-2008 Flight mechanics - Concepts, quantities and symbols and units - Part 2. Forces, moments, their coefficients and derivatives GB/T 14410.6-2008 Flight mechanics - Concepts, quantities and symbols and units - Part 6. Aircraft geometry

3 Terms, definitions and symbols

The following terms, definitions and symbols and units apply to this section.

No terms are defined or explained symbols and units

3.1.1 Manipulator fixed when Ying Angle aerodynamic center aerodynamiccentre fortheangleofat-tack, motivatorfixed Along the longitudinal axis (GB/T 14410.1-2008 in 3.1.4.1) point P, when the angle of attack (GB/T 14410.1-2008 2.1.2) about changes Aerodynamic pitching moment coefficient of the point (GB/T 14410.2-2008 in 3.3.3.2) (CA m1) P to a constant value, wherein the pitch manipulator (GB/T 14410.1-2008 in 3.6.1) is fixed, that is $\Delta m_1 = \text{constant value}$, CA () $m_1 P \alpha = 0$

3.1.2 Manipulator when loose to float Ying Angle aerodynamic center aerodynamiccentre fortheangleofat-tack, motivatorfree Along the longitudinal axis (GB/T 14410.1-2008 in 3.1.4.1) point P, when the angle of attack (GB/T 14410.1-2008 2.1.2) about changes Aerodynamic pitching moment coefficient of the point (GB/T 14410.2-2008 in 3.3.3.2) (CA m1) P to a constant value, wherein the pitch manipulator (GB/T 14410.1-2008 in 3.6.1) floating loose, ie CA () $m_1 P \alpha = 0$