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

GB/T 37303.5-2019

**Ships and marine technology -- Manoeuvring of ships -- Part 5:
Submarine specials**

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Foreword

GB/T 37303 "Ship and Marine Technology Ship Maneuverability" is divided into six parts.

- Part 1. Basic concepts, quantities and test conditions;
- Part 2. Swing and yaw correction;
- Part 3. Heading stability and steering;
- Part 4. Shipment, acceleration and traverse;
- Part 5. Submarine special requirements;
- Part 6. Special requirements for model tests.

This part is the fifth part of GB/T 37303.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part uses the translation method equivalent to ISO 13643-5.2017 "Ship and Marine Technology Ship Maneuverability Part 5. Submarine special requirements".

The documents of our country that have a consistent correspondence with the international documents referenced in this part are as follows.

- GB/T 37303.1-2019 Ships and marine technology - Ship handling - Part 1. Basic concepts, quantities and test conditions

(ISO 13643-1..2017, IDT).

This part is proposed and managed by the National Marine Ship Standardization Technical Committee (SAC/TC12).

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1 Scope

This part of GB/T 37303 gives a test guide for the maneuverability of the submarine's elevator and model. This part is combined

ISO 13643-1 is used.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

ISO 13643-1 Ships and marine technology - Ship handling - Part 1. Basic concepts, quantities and test conditions (Ships and marine technology - Manoeuvring of ships - Part 1. General concepts, quantities and test conditions)

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Rudder test meander test

Determining the handling characteristics of the submarine and verifying the maneuvering test of the submarine's dynamic stability in the vertical plane.

3.2

Vertical overtaking test vertical overshoot test

Determine the maneuvering test of the effect of the horizontal rudder at the beginning and end of the depth change.

3.3

Depth of direct flight test neutral level flight test

The maneuver test for the pitch angle and the horizontal rudder angle is determined in the case where the constant depth and the given speed are maintained at the end of the submarine's dive operation.

Note. The deep-depth direct flight test includes.

--- For a submarine with a telescopic rudder horizontal rudder, determine the deep-depth direct flight test by using a given pitch angle and a given δ horizontal rudder angle;

--- For submarines without telescopic rudder horizontal rudder, determine the fixed depth by using the δ horizontal rudder to control the absolute pitch angle (preferably $\theta_S = 0^\circ$) test.

3.4

Critical speed test critical speed test

A maneuver test to determine the stall speed of the horizontal rudder during dive operation.

4 test related physical quantities

The physical quantities related to the test are shown in Table 1. See ISO 13643-1 for general quantities and concepts.