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Second edition
2015-04-01

Ships and marine technology — Guidelines for the assessment of speed and power performance by analysis of speed trial data

*Navires et technologie maritime — Lignes directrices pour
l'évaluation des performances de vitesse et de puissance par analyse
des données d'essais de vitesse*



Reference number
ISO 15016:2015(E)

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Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 8, *Ships and marine technology*, Subcommittee SC 6, *Navigation and ship operations*.

This second edition cancels and replaces the first edition (ISO 15016:2002), which has been technically revised.

[Annexes A, B, C, D, E, F, G, H, I](#) and [J](#) form a normative part of this International Standard, whereas [Annex K](#) is informative.

Introduction

This International Standard concerns the method of analysing the results obtained from speed trials.

The primary purpose of speed and power trials is to determine a ship's performance in terms of ship's speed, power and propeller shaft speed under prescribed ship's conditions and thereby verify the satisfactory attainment of a ship's speed stipulated by Energy Efficiency Design Index (EEDI) regulations and/or contract. Ship's speed is that realized under conditions stipulated by contract and/or EEDI regulations, which are usually; smooth hull and propeller surfaces, no wind, no waves, no current and deep water of 15°C.

In general it cannot be expected that all such stipulated conditions will be met during the actual trials. In practice, certain corrections for the environmental conditions have to be considered, such as for water depth, wind, waves and current [1][2].

The purpose of this International Standard is to define the basic requirements for the performance of speed trials, and provide procedures for evaluation and correction of speed trial data, covering all influences which may be relevant to the individual trial runs based on sound scientific grounds, thereby enabling owners and others to have confidence in the validity of the final results.

This International Standard is intended to help the interested parties achieve the desired target accuracy of, within 2 % in shaft power and 0,1 kn in speed.

The procedure specified in this International Standard has been developed largely on the basis of published data on speed trials and on ship's performance, the more important among them being listed in [Clause 2](#).

ISO has invited the International Towing Tank Conference (ITTC) to co-operate on the development of a new standard for speed/power trials taking into account the new guidelines issued by ITTC and approved by MEPC65 for EEDI. The contribution of the STA-group and the ITTC is highly appreciated.

Substitution of terms clause

This International Standard is generally applied to those ships for which survey and certification of EEDI is required under International Maritime Organization (IMO) Resolution MEPC.214(63) [as amended by MEPC.234(65)]. In the case of other ships, to which the above IMO resolutions are not applicable, the terms or phrases of this International Standard are deemed to be replaced as necessary (e.g. "agreement between the Shipbuilder, the Owner and the Verifier" shall be read as "agreement between the Shipbuilder and the Owner" etc.)