INTERNATIONAL STANDARD

ISO 15016

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

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO 15016:2015
https://standards.iteh.ai/catalog/standards/sist/54f71914-12af-45b2-83de-c88096500955/iso-15016-2015

Reference number
ISO 15016:2015(E)

© ISO 2015

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 15016:2015
https://standards.iteh.ai/catalog/standards/sist/54f71914-12af-45b2-83de-c88096500955/iso-15016-2015

COPYRIGHT PROTECTED DOCUMENT

© ISO 2015

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

 © ISO 2015 – All rights reserved

Contents

Page

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO 15016:2015
https://standards.iteh.ai/catalog/standards/sist/54f71914-12af-45b2-83dc-c88096500955/iso-15016-2015

© ISO 2015 – All rights reserved

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO 15016:2015
https://standards.iteh.ai/catalog/standards/sist/54f71914-12af-45b2-83de-c88096500955/iso-15016-2015

 © ISO 2015 – All rights reserved

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

iTeh STANDARD PREVIEW
(standards.iteh.ai)

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

ISO 15016:2015
https://standards.iteh.ai/catalog/standards/sist/54f71314-12a7-4502-8b0a-c88096500955/iso-15016-2015

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.

© ISO 2015 – All rights reserved

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.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

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.

ISO 15016:2015
https://standards.iteh.ai/catalog/standards/sist/54f71914-12af-45b2-83de-c88096500955/iso-15016-2015

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.)

© ISO 2015 – All rights reserved

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

1 Scope

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 EEDI regulations and/or contract.

This International Standard defines and specifies the following procedures to be applied in the preparation, execution, analysis and reporting of speed trials for ships, with reference to the effects which may have an influence upon the speed, power and propeller shaft speed relationship:

— the responsibility of each party involved,

— the trial preparations,

— the ship's condition,

— the limiting weather and sea conditions,

— the trial procedure,

— the execution of the trial,

— the measurements required,

— the data acquisition and recording,

— the procedures for the evaluation and correction,

— the processing of the results.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO 15016:2015
https://standards.iteh.ai/catalog/standards/sist/54f71914-12af-45b2-83de-c88096500955/iso-15016-2015

The contracted ship's speed and the ship's speed for EEDI are determined for stipulated conditions and at specific draughts (contract draught and/or EEDI draught). For EEDI, the environmental conditions are: no wind, no waves, no current and deep water of 15°C.

Normally, such stipulated conditions are unlikely to be experienced in part or in full during the actual trials. In practice, certain corrections for the environmental conditions such as water depth, surface wind, waves, current and deviating ship draught, have to be considered. For this purpose, during the speed and power trials, not only are shaft power and ship's speed measured, but also relevant ship data and environmental conditions.

The applicability of this International Standard is limited to ships of the displacement type.

In this International Standard, it was decided that the unit to express the amount of an angle should be "rad" (radian) and that the unit of speed should be "m/s" (metres per second). Nevertheless, "°" (degree) as a unit for an angle and "knots" as a unit for speed may be used. However, the units for the angles and speeds which appear in calculation formulas are to be "rad" and "m/s" without exception. Moreover, for the convenience of the users of this International Standard, numerical values using the units of degree and knots are stated jointly at appropriate places.

If it is physically impossible to meet the conditions in this International Standard, a practical treatment is allowed based on the documented mutual agreement among the Owner, the Verifier and the Shipbuilder.

© ISO 2015 – All rights reserved

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ITTC 7.5-04-01-01.4:2002, *ITTC Recommended Procedures and Guidelines, Speed and Power Trials, Part 4: Instrumentation Installation and Calibration*

ITTC 7.5-02-07-02.2, *ITTC Recommended Procedures and Guidelines, Prediction of Power Increase in Irregular Waves from Model Test*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
brake power
power delivered by the output coupling of the propulsion machinery before passing through any speed-reducing and transmission devices

3.2
contract power
brake power or shaft power that is stipulated in the new build or conversion contract between the Shipbuilder and the Owner

iTeh STANDARD PREVIEW
(standards.iteh.ai)

3.3
contract speed
ship's speed to be achieved as agreed within the terms of the new build/conversion contract

ISO 15016:2015
https://standards.iteh.ai/catalog/standards/sist/54f71914-12af-45b2-83de-c88096500955/iso-15016-2015

3.4
Double Run
two consecutive speed runs at the same power setting on reciprocal headings

Note 1 to entry: See 3.16 for speed runs.

3.5
EEDI
Energy Efficiency Design Index as formulated by IMO

3.6
EEDI power
brake power that is stipulated by the Energy Efficiency Design Index (EEDI) regulations

3.7
EEDI Speed
ship's speed achieved under the conditions specified by the IMO Resolution MEPC.245(66) (as amended)

3.8
ideal conditions
ideal weather and sea conditions: no wind, no waves, no current and deep water of 15°C

3.9
measured ship's speed
ship's speed during a speed run derived from the headway distance between start and end position and the elapsed time of the speed run

3.10
Owner
party that signed the new building or conversion contract with the Shipbuilder

© ISO 2015 – All rights reserved

3.11
power setting
setting of engine throttle and propeller shaft speed for fixed pitch propellers and setting of the pitch angle for controllable pitch propellers

3.12
propeller pitch
design pitch for a fixed pitch propeller

3.13
pitch angle
operating pitch angle of a Controllable Pitch Propeller (CPP)

3.14
shaft power
net power supplied by the propulsion machinery to the propulsion shafting after passing through all speed-reducing and other devices and after power for all attached auxiliaries has been taken off and accounting for losses in shaft between propeller and the location of power measurement at the shaft

3.15
Shipbuilder
shipyard that signed the new building or conversion contract with the Owner

3.16
ship's speed
speed of the ship that is realised under the stipulated conditions

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Note 1 to entry: See also measured ship's speed, contract speed and EEDI speed.

ISO 15016:2015
https://standards.iteh.ai/catalog/standards/sist/54771914-12ef-45b2-83de-c88096500955/iso-15016-2015

3.17
sister ships
ships with identical main dimensions, body lines, appendages and propulsion system built in a series by the same Shipyard

3.18
S/P trials
speed and power trials to establish the relationship between power and speed for a particular ship

3.19
S/P trial agenda
document outlining the scope of a particular S/P trial

3.20
speed run
ship's track with specified heading, distance and duration for which the measured ship's speed and shaft power are calculated

Note 1 to entry: This International Standard contains the procedures on how to conduct the trial and table(s) portraying the runs to be conducted.

3.21
tank tests
model tank tests for the prediction of the speed power relation for the stipulated conditions

3.22
trial baseline
the track of the first S/P run

© ISO 2015 – All rights reserved

3.23
Trial Leader
duly authorised (Shipbuilder's representative) person responsible for the execution of all phases of the S/P trials including the pre-trial preparation

3.24
trial log
all the data recorded before, during and after the S/P trial

3.25
Trial Team
team that consists of the Trial Leader, the Owner's representative, the appointed persons responsible for the S/P trial measurements and, if the ship requires EEDI, the Verifier

3.26
Verifier
third party responsible for verification of the EEDI

3.27
zero pitch
Controllable Pitch Propeller (CPP) blade angle at which the pitch angle at the representative radius is equivalent to zero

4 Symbols and abbreviated terms

iTeh STANDARD PREVIEW
(standards.iteh.ai)

4.1 Symbols

ISO 15016:2015
https://standards.iteh.ai/catalog/standards/sist/54f71914-12af-45b2-83de-

A_{LV}	is the lateral projected area above the waterline including superstructures
A_M	is the midship section area under water
A_{OD}	is the lateral projected area of superstructures above upper deck
a_Q, b_Q, c_Q	are the factors for the torque coefficient curve
a_T, b_T, c_T	are the factors for the thrust coefficient curve
A_{XV}	is the transverse projected area above the waterline including superstructures in square metres
B	is the ship's breadth
$B(x)$	is the sectional breadth
B_f	is the bluntness coefficient
C_{AA}	is the wind resistance coefficient; $C_{AA}(0)$ means the wind resistance coefficient in head wind
C_B	is the block coefficient
C_F	is the frictional resistance coefficient for the actual water temperature and water density
C_{F0}	is the frictional resistance coefficient for the reference water temperature and water density
C_{MC}	is the horizontal distance from midship section to centre of lateral projected area A_{LV}, where + means forward from midship
C_{Pv}	is the vertical prismatic coefficient
C_{T0}	is the total resistance coefficient for the reference water temperature and water density
C_U	is the coefficient of advance speed
D	is the propeller diameter
E	is the directional spectrum
e_i	is the scale correlation factor of the wake fraction
F_D	is the skin friction correction force same as in the normal self-propulsion tests
Fr	is the Froude number

© ISO 2015 – All rights reserved

F_X	is the external tow force measured during load variation test
g	is the acceleration of gravity
G	is the angular distribution function
h	is the water depth
$H_1(m)$	is the function to be determined by the distribution of singularities $\sigma(x)$ which represents a periodical disturbance by the ship
$H_{1/3}$	is the significant wave height
H_{BR}	is the height of top of superstructure (bridge etc.)
H_C	is the height from waterline to centre of lateral projected area A_{LV}
$H_{S1/3}$	is the significant height of local swell
$H_{W1/3}$	is the significant height of local wind driven waves
(i)	is the run number
I_1	is the modified Bessel function of the first kind of order 1
J	is the propeller advance coefficient
J_{id}	is the propeller advance coefficient in the ideal condition
J_{ms}	is the propeller advance coefficient in the trial condition
k	is the wave number
K_1	is the modified Bessel function of the second kind of order 1
K_Q	is the torque coefficient
K_{Qid}	is the torque coefficient in the ideal condition
K_{Qms}	is the torque coefficient in the trial condition
K_T	is the thrust coefficient
K_{Tid}	is the thrust coefficient in the ideal condition
K_{Tms}	is the thrust coefficient in the trial condition
k_{yy}	is the non-dimensional radius of gyration in the lateral direction
L_{BWL}	is the distance of the bow to 95 % of maximum breadth on the waterline
L_{OA}	is the ship's length overall
L_{PP}	is the ship's length between perpendiculars
MCR	is the Maximum Continuous Rating
m_n	is the n^{th} moment of frequency spectrum
n_{id}	is the corrected propeller shaft speed
n_{ms}	is the measured propeller shaft speed
P_1	is the power corresponding to displacement volume ∇_1 during the S/P trial
P_2	is the power corresponding to displacement volume ∇_2 used in the tank test
P_{Bms}	is the measured brake power
P_{Did}	is the delivered power in the ideal condition
P_{Dms}	is the delivered power in the trial condition
$P_{Full,P}$	is the power at full load/stipulated condition predicted by the tank tests
$P_{Full,S}$	is the power at full load/stipulated condition obtained by the S/P trials
P_{Sms}	is the measured shaft power
$P_{Trial,P}$	is the power at the trial condition predicted by the tank tests
$P_{Trial,S}$	is the power at the trial condition obtained by the S/P trials

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO 15016:2015
https://standards.iteh.ai/catalog/standards/sist/54f71914-12af-45b2-83de-c88096500955/iso-15016-2015

© ISO 2015 – All rights reserved

R_{AA}	is the resistance increase due to relative wind
R_{AS}	is the resistance increase due to deviation of water temperature and water density
R_{AW}	is the resistance increase due to waves
R_{AWL}	is the mean resistance increase in long crested irregular waves, as substitute for R_{AW}
R_{AWM}	is the mean resistance increase in regular waves based on Maruo's theory, which is calculated from the radiation and diffraction components
R_{AWR}	is the correction term of R_{AWM}
R_F	is the frictional resistance for the actual water temperature and water density
R_{F0}	is the frictional resistance for the reference water temperature and water density
R_{id}	is the resistance in the ideal condition
R_{ms}	is the resistance in the trial condition
R_{T0}	is the total resistance for the reference water temperature and water density
R_{wave}	is the mean resistance increase in regular waves
R_{wave}^{EXP}	is the mean resistance increase in regular waves measured in the tank tests
s	is the directional spreading parameter
S	is the wetted surface area
S_S	is the full scale wetted surface, the same value as used in the normal self-propulsion test
S_η	is the frequency spectrum
t	is the thrust deduction factor
T_C	is the period of variation of current speed
T_{deep}	is the draught; for a trim condition T_{deep} is the deepest draught
t_{id}	is the thrust deduction factor in the ideal condition
T_M	is the draught at midships
t_{ms}	is the thrust deduction factor in the trial condition
V'_{WR}	is the corrected relative wind velocity at the vertical position of the anemometer
V'_{WT}	is the averaged true wind velocity at the vertical position of the anemometer
V_A	is the speed of flow into propeller
V_C	is the current speed
V_G	is the measured ship's speed over ground
V_{G1}	is the measured ship's speed over the ground on the first of four runs
V_{G2}	is the measured ship's speed over the ground on the second of four runs
V_{G3}	is the measured ship's speed over the ground on the third of four runs
V_{G4}	is the measured ship's speed over the ground on the fourth of four runs
V_S	is the ship's speed through the water
V_{WR}	is the relative wind velocity
V_{WRref}	is the relative wind velocity at the reference height
V_{WT}	is the true wind velocity
V_{WTref}	is the true wind velocity at the reference height
w_M	is the model wake fraction
w_{Mid}	is the model wake fraction in the ideal condition
w_{Mms}	is the model wake fraction in the trial condition
w_S	is the full-scale wake fraction

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO 15016:2015
https://standards.iteh.ai/catalog/standards/sist/54f71914-12af-45b2-83de-c88096500955/iso-15016-2015

© ISO 2015 – All rights reserved

w_{Sid}	is the full-scale wake fraction in the ideal condition
w_{Sms}	is the full-scale wake fraction in the trial condition
x	is the longitudinal coordinate
Z_a	is the vertical position of the anemometer
Z_{ref}	is the reference height for the wind resistance coefficients
Z_Γ	is the vertical displacement relative to waves in steady motion
α_P	is the power ratio
α_T	is the effect of draught and encounter frequency
α	is the angle between ship's heading and component waves; 0 means head waves
β_W	is the slope of the line element dl along the water line
Γ	is the Gamma function
ΔP	is the required correction for power
ΔR	is the total resistance increase
Δt	is the deviation of the thrust deduction factor
ΔV	is the decrease of ship's speed due to shallow water
Δw_M	is the deviation of the wake fraction
$\Delta\eta_R$	is the deviation of the relative rotative efficiency
ζ_A	is the wave amplitude
η_D	is the propulsive efficiency coefficient
η_{Did}	is the propulsive efficiency coefficient in ideal condition
η_{Dms}	is the propulsive efficiency coefficient in trial condition
η_M	is the transmission efficiency
η_O	is the propeller open water efficiency
η_{Oms}	is the propeller efficiency in the ideal condition
η_R	is the relative rotative efficiency
η_{Rid}	is the relative rotative efficiency in the ideal condition
η_{Rms}	is the relative rotative efficiency in the trial condition
η_S	is the shaft efficiency
θ_m	is the angle between ship's heading and wave direction relative to the bow; 0 means head waves
λ	is the scale factor
μ	is the smoothing range
ξ_n, ξ_V	are derived considering the load variation effect as described in Annex J
ξ_P	is derived considering the load variation effect as described in Annex J
ρ_A	is the mass density of air
ρ_M	is the water density in the model test
ρ_S	is the water density for the actual water temperature and salt content
ρ_{S0}	is the water density for the reference water temperature and salt content
τ_P	is the load factor equal to K_T/J^2
τ_{Pid}	is the load factor in the ideal condition
τ_{Pms}	is the load factor in the trial condition
ψ	is the ship's heading
ψ'_{WR}	is the corrected relative wind direction at the vertical position of the anemometer
ψ'_{WT}	is the averaged true wind direction at the vertical position of the anemometer

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO 15016:2015
https://standards.iteh.ai/catalog/standards/sist/54f71914-12af-45b2-83dc-c8809650093/iso-15016-2015

© ISO 2015 – All rights reserved

ψ_{WR}	is the relative wind direction; 0 means head winds
ψ_{WRref}	is the relative wind direction at the reference height
ψ_{WT}	is the true wind direction in Earth system
ω	is the circular frequency of regular waves
ω_E	is the circular wave frequency of encounter
∇_1	is the displacement volume during the S/P trial
∇_2	is the displacement volume used in the tank test

4.2 Abbreviated terms

CPP	Controllable Pitch Propeller
IMO	International Maritime Organization
ITTC	International Towing Tank Conference
JASNAOE	The Japan Society of Naval Architects and Ocean Engineers
JONSWAP	Joint North Sea Wave Project
MEPC	Marine Environmental Protection Committee in IMO
SNAJ	The Society of Naval Architects of Japan
SNAME	The Society of Naval Architects and Marine Engineers, USA
STA-Group	An international group of owners, shipyards, research institutes, classification societies and universities studying and improving sea trial procedures and Sea Trial Analyses (STA)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

5 Responsibilities

ISO 15016:2015
https://standards.iteh.ai/catalog/standards/sist/54f71914-12af-45b2-83de-c88096500955/iso-15016-2015

5.1 Ship builders' responsibilities

The Shipbuilder is responsible for the planning, conduct and evaluation of the S/P trials. The Shipbuilder shall ensure that:

— an appropriately authorized Trial Leader is appointed to oversee all aspects of the S/P trial,

— all permits and certificates required for the ship to go to sea are provided,

— all qualified personnel necessary for operating the ship and all engines, systems and equipment required during the sea trials, are on board,

— all regulatory bodies: the Classification Society; the Owner; ship agents; suppliers; subcontractors; harbour facilities; departments organizing the supply of provisions, fuel, water, towage, etc., necessary for conducting these trials; have been informed, are available and on board when required,

— all safety measures have been checked,

— all fixed, portable and individual material (for crew, trial personnel and guests) is on board and operative,

— any safety systems for conducting safe S/P trials have been checked in accordance with the administrative requirements,

— an inclining test has been performed and/or at least a preliminary stability booklet including the S/P trials condition has been approved, in accordance with the SOLAS Convention,

— all ship data relevant for the S/P trials Preparation, Conduct, Analysis and Reporting are made available to the Trial Team prior to the S/P trials. This data shall include the information requested

© ISO 2015 – All rights reserved

in Annex A as well as the results of the tank tests for this ship at trial draught and trim, EEDI draught and trim and Contract draught and trim.

Speed and power measurements and analysis shall be conducted by persons acknowledged as competent to perform those tasks, as agreed between the Shipbuilder, the Owner and the (where applicable) Verifier.

The Shipbuilder shall arrange for divers to inspect the ship's hull and propulsor(s) if necessary.

The Shipbuilder is responsible for the overall trial co-ordination. A pre-trial meeting between the Trial Team and the ship's crew shall be held to discuss the various trial events and to resolve any outstanding issues.

The Trial Leader shall maintain contact with the Trial Team on the preparation, execution and results of the S/P trials.

5.2 The Trial Team

The Trial Team is responsible for correct measurements and reporting of the S/P trials according to this International Standard and for the analysis of the measured data to derive the ship's speed and power at the stipulated conditions.

The Trial Team is responsible for the following:

— conducting an inspection of the ship, including the condition of the hull and propeller(s)/propulsor(s), prior to the commencement of the S/P trial,

— the provision, installation, operation and removal of all necessary trial instrumentation and temporary cabling,

— providing the ship's Master and the Owner's representative with a preliminary data package and initial analysis before disembarking,

— delivering a final report on completion of full analysis of the measurements taken during the trial.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO 15016:2015
https://standards.iteh.ai/catalog/standards/sist/47f1914-12af-4582-89de-c88096500955/iso-15016-2015

6 Trial preparations

The success of the S/P trials largely depends on the preparations. In this Clause the most important steps are summarized.

6.1 Step 1: Installation and Calibration

Assemble all the trials instrumentation in the configuration that is to be used on the ship. Test the instrumentation system for any malfunctioning or other complications.

Apart from the obvious inputs such as; shaft torque, propeller shaft speed and DGPS, it is important to check:

a) gyrocompasses,

b) anemometer system,

c) propeller pitch (of each propeller),

d) ship's draught measurement system (if available),

e) water depth measuring system.

After the trial instrumentation is installed, all shipboard input signals to be recorded during the S/P trials shall be calibrated prior to the trials. For this purpose the sensors shall be cycled throughout the full operating range of the system.

© ISO 2015 – All rights reserved