

Tasks of Technical Committees and Groups of the 22nd ITTC

Each Specialist Committee will submit a final report on the results of its work to the Full Conference. The conclusions and the recommendations of the Committee should be structured into three separate parts:

- General technical conclusions
- Recommendations to the Conference on carrying out or reporting work requiring Conference action (e.g. testing techniques, symbols, prediction techniques, etc.)
- Recommendations for future work and identification of tasks which may be appropriate for Specialist Committees.

1. General Committees

Resistance Committee. Review the state- of-the art, comment on the potential impact of new developments of the ITTC, and identify the need for research and development for resistance and flow. Monitor and follow the development of new experimental techniques and extrapolation methods.

Review the ITTC recommended procedures, benchmark data, and test cases for validation and uncertainty analyses and update as required. Pass the information to the Quality Systems Group for publication in 1999.

Identify the requirements for new procedures, benchmark data, validation, uncertainty analyses and stimulate the necessary research for their preparation.

Prepare an up-to-date bibliography of relevant technical papers and reports.

Review ASME and ITTC recommendations on quality assurance and uncertainty analyses. Derive procedures for implementing guidelines for typical ITTC experiments in the field of resistance and flow. Monitor the development of CFD methods.

Continue to encourage and monitor CFD validation including liaison with other organizations such as ASME.

Propulsion Committee. Review the state- of-the-art, comment on the potential impact of new developments on the ITTC, and identify the need for research and development in the areas of propulsors, cavitation and powering performance. Monitor and follow the development of new experimental techniques and extrapolation methods.

Review the ITTC recommended procedures, benchmark data, and test cases for validation and uncertainty analyses and update as required. Pass the information to the Quality Systems Group for publication in 1999.

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Review the development of design and analysis methods for propulsors with special emphasis on the modelling of the vortex wake. The Committee should consider repeating the 18th ITTC comparative exercise.

Review research on the performance of propellers operating in various conditions such as for ships when turning, accelerating, decelerating, backing, or operating in waves.

Review available LDV data for propulsors. Review the correlation of liquid quality (liquid tension and nuclei distribution) with cavitation inception and the stability of cavitation patterns. Cavitation experimental techniques should be reviewed to predict cavitation behaviour more accurately. The effects of turbulence and propeller blade roughness should be taken into account.

Manoeuvring Committee. Review the state-of-the-art, comment on the potential impact of new developments on the ITTC, and identify the need for research and development into manoeuvrability. Monitor and follow the development of new experimental techniques and extrapolation methods.

Review the ITTC recommended procedures, benchmark data, and test cases for validation and uncertainty analyses and update as required. Pass the information to the Quality Systems Group for publication in 1999.

Identify the requirements for new procedures, benchmark data, validation, uncertainty analyses and stimulate the necessary research for their preparation.

Prepare an up-to-date bibliography of relevant technical papers and reports.

Strongly promote comparative model tests and force predictions including experimental, semi-empirical, computational methods, and comparisons with the results of sea trials for modern ship types in deep water. Specific interest is in the full-load condition, waterjet propulsion, and the effect of aft-body variations.

Develop a reliable method of predicting manoeuvring in shallow and restricted water, including squat.

Continue to promote research into manoeuvrability standards, including the IMO interim standards, in order to provide advice to organizations who set standards, such as the IMO, and pilot organizations.

Loads and Responses Committee. Review the state-of-the-art, comment on the potential impact of new developments on the ITTC, and identify the need for research and development in the areas of seakeeping and ocean engineering. Monitor and follow the development of new experimental techniques and extrapolation methods.

Review the ITTC recommended procedures, benchmark data, and test cases for validation and

uncertainty analyses and update as required. Pass the information to the Quality Systems Group for publication in 1999.

Identify the requirements for new procedures, benchmark data, validation, uncertainty analyses and stimulate the necessary research for their preparation.

Prepare an up-to-date bibliography of relevant technical papers and reports.

Review progress made in studying the mechanism of deck wetness impact loads, bottom and bow flare slamming loads and the impact of green water and wave loads on moored offshore vessels.

Examine hydroelastic problems in ocean engineering.

Identify sources and interaction of potential and viscous origin forces to determine the low frequency motions of moored offshore vessels.

Develop a standard formulation of wave spectrum for short-crested seas including sea waves and swell.

2. Specialist Committees

The following Specialist Committees will be established for 3 years:

Unconventional Propulsors. Develop guidelines for carrying out propulsion tests and extrapolating the results to full-scale for propellers with ducts, partial ducts, pre-and post-swirl devices, tip-plates and z-drives.

Waterjets. Formulate guidelines for waterjet performance prediction methods based on (1) momentum flux methods and (2) direct thrust measurements.

Cavitation-Induced Pressure Fluctuations. Recommend procedures for predicting cavitation-induced pressure fluctuations from propulsors.

Computational Methods for Propeller Cavitation. Evaluate computational methods for predicting cavitation inception and patterns. Prepare a guide for selection of such methods.

Ice. Review the ITTC recommended procedures, benchmark data, and test cases for validation and uncertainty analyses and update as required. Pass the information to the Quality Systems Group for publication in 1999.

Prepare an up-to-date bibliography of relevant papers and reports.

Carry out tests in different tanks to clarify ice loads and also the performance of an open propeller in level ice. The tests should improve the modelling practice in the field of propeller/ice interaction.

Continue work to achieve common guidelines for the measurement of model ice properties. Also develop procedures to conduct and analyse model and full-scale tests.

Develop model test procedures in deformed ice and the measurement of the properties of deformed ice.

Analyse methods to correct ice resistance for small deviations from target values of ice thickness, ice strength, and hull friction.

Analyse methods for conducting tests involving offshore structures and moored vessels in ice in view of the results obtained in the comparative cylinder tests.

Trials and Monitoring. Recommend updated procedures for conducting full-scale trials and long term performance monitoring and their analyses. Consideration to be given to powering, manoeuvring and seakeeping. Evaluate the use of onboard performance monitoring systems and Global Positioning Systems. The Committee should contribute to the work of the ISO on standards for speed trials' evaluation.

Stability. Examine the techniques for carrying out model tests to investigate capsizing of intact and damaged ships and provide guidelines for such tests. Assess the methods available for numerical simulations of capsizing of intact and damaged ships.

Environmental Modelling. Survey the work done by the IAHR and others and recommend techniques for modelling the environment, including simultaneous generation of waves, currents and wind. Evaluate physical and numerical modelling of realistic wave time histories. Assess the quality of modelling of full scale conditions and the uncertainty in results due to differences from ideal conditions.

Deep Water Mooring. Evaluate techniques and recommend procedures for the experimental and numerical simulation of moored vessels in wind, wave and currents.

Safety of High Speed Marine Vehicles. Study the dynamic instabilities of high speed craft and develop procedures to solve problems relating to high speed roll, pitch and directional stability anomalies.

Develop by means of test procedures and computer codes, information on dynamic instability which can be used to improve coverage of this topic in the IMO High Speed Craft Code.

Catalogue incidents and accidents to high speed passenger-carrying vessels to identify trends and areas of hydrodynamic inadequacy.

Develop full-scale test procedures to define and determine high speed craft safety.

Model Tests of High Speed Marine Vehicles. Review the status of hydrodynamic technology related to model tests of high speed marine vehicles summarised in the Proceedings of the 16th ITTC (1981) and recommend codes of practice for carrying out model tests for high speed marine vehicles.

Review experimental methods to evaluate the seakeeping performance of multi-hull forms and HSMVs including active motion control systems and prepare guidelines.

3. Groups

Symbols and Terminology. Carry out the continuous updating, revision and extension of the ITTC Symbols and Terminology List, including sections of the old ISSC list not presently covered.

Widely disseminate the ITTC Symbols and Terminology List in Various media to the member organizations and other interested parties, such as naval and commercial shipbuilders, universities, ISO, IMO and ISSC.

Monitor the international efforts in the field of neutral data formats and co-ordinate the development of neutral formats for the exchange of information between ITTC member organizations and their clients.

Convert the ITTC Symbols and Terminology List to a terminological data base.

Produce a document that can replace the ISO Standard 7463, First Edition September 15, 1990, based on the obsolete 1975 Version of the S&T List.

Quality Systems. Provide guidance on the steps which must be followed and issues to be addressed by ITTC member organizations to achieve ISO 9000 certification.

In association with the Technical Committees, produce a new series of publications containing guidelines, recommended procedures and summary descriptions of bench mark data and test cases.

Stimulate, monitor and support validation work within the technical committees.

