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Message from the Chairman

The 23rd ITTC Conference in Venice was technically most informative, made a significant contribution to the tankery business and socially was a very enjoyable event. The success of this event was made possible through the excellent work of all of the ITTC Committee members and the Organising Committee. Once again I would like to record our gratitude to Admiral Ulderico Grazioli and Dr. Enrico De Bernardis for organising and hosting the conference. The support of the Italian Navy was also much appreciated.

I am very pleased to note that a number of technical committees have already met and started their activities, as we have about twenty-four months from now to complete the main Committee tasks.

In order to plan the management of the committee activities and the organisation of the 24th ITTC Conference in Edinburgh, David Clarke, Secretary of the Executive Committee and I met David Murdey, Chairman of the Advisory Council and Willem van Berlekom, Secretary of the Advisory Council in December 2002 in Newcastle upon Tyne. We also visited the venues proposed for the

conference and social events in Edinburgh. During our meeting we decided on the key dates for various EC and AC activities and agreed that the most effective way forward for communications between the member organisations and Committee Chairman and the AC and EC Secretariats would be to approach the AC secretary for all ITTC matters. It was also agreed that the AC Secretariat would be responsible for publication of the ITTC Newsletter.

With very best wishes to you all,

Atila Incecik, Chairman
24th ITTC Executive Committee

Report from the 23rd ITTC

The 23rd ITTC was held in Venice from 8 to 14 September. 126 delegates and 91 observers from 28 countries attended the conference and there were 86 accompanying persons.

The Conference was very interesting from the technical point of view. The events of the social programme and accompanying persons programme benefited from a whole week of nice weather, which allowed the participants to best enjoy the delightful beauties of Venice and its Lagoon.

The Italian Navy School "F. Morosini" hosted the technical sessions, providing a friendly and peaceful environment for the attendants and an excellent support to the Conference staff. There were fifteen reports from the Technical Committees on the following subjects:

- Resistance
- Propulsion
- Manoeuvring
- Loads and Responses
- Speed and Powering Trials
- Procedures for Resistance, Propulsion and Propeller Open-Water Tests
- Validation of Waterjet Test Procedures
- Cavitation Induced Pressure Fluctuations

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- Water Quality and Cavitation
- Ice
- Waves
- Stationary Floating Systems
- Esso Osaka
- Extreme Ship Motions and Capsizing
- Quality Systems.

The technical reports of all of the committees and groups were well received. The considerable amount of valuable work carried out by the chairmen and members of the outgoing committees is acknowledged and they are thanked for all of their efforts, which contributed so much to the success of the 23rd ITTC.

In addition to the technical sessions four group discussions were arranged on the following subjects:

- New Experimental Techniques and Facilities
- Accuracy of CFD Predictions
- Model Manufacturing and Accuracy
- IMO Standards and ITTC (particular to Manoeuvring and Capsizing)

The group discussions were well attended and were considered as an efficient way of discussing topics of general interests for the ITTC members in a non-formal but structured way.

The discussions contributed during the Conference are being collected as Volume III of the Proceedings and will be distributed in February on a CD-Rom. The CD-Rom will also include material from the Group Discussions and a revised version of Volumes I and II of the Proceedings provided at the Conference.

Decisions of the Full Conference

At the plenary session, held in the morning of September 14th, the Full Conference approved the following items relating to the 24th ITTC:

- structure of the Technical Committees
- recommendations and tasks for ITTC Technical Committees
- appointment of Prof Atilla Incecik as Chairman of the Executive Committee.

The Technical Committees and Group established for the 24th ITTC are listed in the following pages with their tasks.

ITTC web site

A permanent ITTC web site will be created at <http://ittc.sname.org> and it is planned to have basic information on the ITTC, such as the list of member organisations, rules of organisation and the terms of reference and membership of the technical committees, and this newsletter available on this site in the first part of 2003.

The website will contain all information on the ITTC except that pertaining directly to the arrangements for the next (24th) Conference. The site will be maintained by the AC Secretary and Prof. Bruce Johnson with support from SNAME staff. An important part of the web site will be to include proceedings from past ITTC Conferences. The Advisory Council decided that the Secretary should start the process of including the past proceedings in the web site working backwards from the 22nd ITTC. It was also the Council's opinion, that in the web site different parts of the proceedings should be found and accessed in a consistent and easy way.

For the 24th Conference, the University of Newcastle will set up a web-site, which will contain all information related to the 24th Conference. To avoid duplication of information, links will be set-up between the Conference site and the permanent site.

News from the Executive Committee

The Executive Committee held two meetings during the Conference in Venice. Some items from the agenda are reported in the following.

ITTC Member Organisations

The application of Sharif University of Technology, Teheran, Iran for ITTC membership was approved. The new member organisation will be included in the Southern Europe Area.

New Committee Structure and Tasks for the 24th ITTC

The Executive Committee approved the new committees and the tasks proposed by the Advisory Council for the 24th ITTC. Chairmen and members for the new committees were selected from lists of names submitted for each of the geographical areas. In the selection process it was considered useful to have the evaluations of TC members' performance, which was introduced for the 23rd ITTC.

Change in Membership of the Executive Committee

Three Geographic Areas will change their representatives in the 24th ITTC Executive Committee.

Americas: Dr. Roger H. Compton (Webb Institute, Robinson Model Basin) will replace Prof. Robert F. Beck (University of Michigan, Department of Naval Architecture and Marine Engineering).

East Asia: Prof. You-Sheng Wu (China Ship Scientific Research Center) will replace Dr. Seung-Il Yang (Korea Research Institute of Ship and Ocean Engineering).

Pacific Islands: Prof. Takeshi Kinoshita (University of Tokyo, Institute of Industrial Science) will replace Prof. Hiroharu Kato (Toyo University, Department of Mechanical Engineering).

2005 ITTC Arrangement

Prof. Incecik made a short presentation of the 24th ITTC Full Conference in 2005, which will take place in Edinburgh, UK, organised by University of Newcastle.

Secretary of the 24th ITTC Executive Committee

After the meeting, the Chairman proposed, and the Executive Committee Members accepted, Dr. David Clarke University of Newcastle, as Secretary of the Executive Committee.

News from the Advisory Council

The Advisory Council had two meetings during the 23rd Conference in Venice

New Members

The Chairman welcomed the following new representatives in the AC. Dr. Tao Jiang, VBD, Germany, Mr Giovanni Caprino, CETENA, Italy, Dr Ulderico Bulgarelli, INSEAN, Italy, Dr Akira Masuko, IHI, Japan, Dr Jin-Tae Lee, KRISO, Korea.

Tasking and monitoring the work of the technical committees

The procedures set up in the 22nd ITTC to follow-up the progress of the work of the technical committees have worked very well and the Council decided that the same procedures will be used for the 24th ITTC.

The Advisory Council should review the progress of the work of each committee. Each committee should prepare interim reports for consideration at the Council meetings; the reports should include a statement on the progress of the committee's work, attendance at meetings, and any other matters requiring the attention of the Council.

Chairman, Vice Chairman and Secretary of the 24th ITTC Advisory Council

At the Advisory Council meeting in March 2002 Mr David Murdey, NRC was appointed Chairman of the 24th ITTC Advisory Council.

Dr. Naoji Toki was elected Vice Chairman.

Mr. Willem van Berlekom, SSPA will continue as Secretary to the Advisory Council.

The council thanked the outgoing chairman Dr Hans Broberg for his inspiring and dedicated work for the AC.

Dates and venues for future meetings

2003: Pusan, S Korea September 24-25, 2003

2004: St Johns, Canada August 2004 (in conjunction with ONR symposium)

2005: Newcastle, UK March 2005.

News from the Technical Committees

Resistance Committee

The first meeting was held on 9-10 December 2002 at INSEAN, Roma, Italy and hosted by Dr. Emilio F. Campana. All the RC members attended. Dr. Eng. Y. Kodama of NMRI was elected Secretary. The Committee's terms of reference, tasks and responsibilities and time schedule were reviewed. The Chairman proposed a table of contents of the Committee Report and an in-depth discussion of each section followed. The objectives of the present Committee are:

- Overview trends in EFD and in CFD;
- Review Uncertainty Analysis in experimental fluid dynamics;
- Develop new QM procedures with UA for additional towing tank tests (e.g. nominal wake);
- Develop benchmark tests among ITTC member institutes for comparative measurements and uncertainty analysis for identifying facility biases;
- Update and improve ITTC recommended Procedure 7.5-03-01-01 "UA in CFD, Uncertainty Assessment Methodology and Procedures" and prepare ITTC recommended Procedure 7.5-03-02-01 "UA in CFD, Examples for Resistance and Flow";
- Review far field waves and wash;
- Review new developments in modeling of relevance to resistance;
- Overview new developments in ship concepts, ship design and design optimization;

- Provide recommendations for scaling and extrapolation.

A table of contents for the Committee Report, the groups and the responsibilities for each of the tasks for the proposed structure and the date and location for next Committee meeting were agreed upon.

Next Committee meeting has been decided to be held in Pusan (S. Korea), 26-27 September 2003, following the 8th Numerical Ship Hydrodynamic Symposium.

Propulsion Committee

The newly appointed 24th ITTC Propulsion Committee has established e-mail communications among all its nine members, allowing some preliminary discussions of arrangements. It has been agreed that Dr. Ki-Han Kim (David Taylor Model Basin / Office of Naval Research, USA) should be the Committee Secretary. The first meeting of the Committee is to be held at the University of Southampton, UK, on the 17th, 18th and 19th February 2003. Loads and Responses Committee

Manoeuvring Committee

The first meeting of the committee will be hosted by INSEAN, Rome on March 6-7 2003

Seakeeping Committee

The first meeting of the 24th ITTC Seakeeping Committee was held on 14 - 15 January 2003 at QinetiQ Haslar, Gosport, UK. In attendance were the committee Chairman, Hiroshi Kagemoto (Japan) and committee members Masashi Kashiwagi (Japan), Jianbo Hua (Sweden), Adolfo Maron (Spain), Paul Crossland (United Kingdom), Yang Jianmin (China), Terrence Applebee (United States), and Jean-Francois Le Guen (France). Absent was J A Keuning (The Netherlands).

The meeting was called to order by the Chairman and, after introductions by the members, Terry Applebee was elected Secretary.

Discussion of the structure of the 24th ITTC and the tasks and topics of the Seakeeping Committee followed. In total eleven tasks were outlined and member assignments were made. A tentative schedule for three additional committee meetings before the 24th ITTC meeting in Edinburgh in 2005 was agreed upon.

Ocean Engineering Committee

The ITTC Ocean Engineering Committee had an informal meeting of some of the members following the Venice Conference and has started to work on reviewing the topics assigned by the ITTC. This re-

view will guide the subsequent work of the committee and determine which topics are most in need of additional work. The review stage is expected to be completed by May 2003 at which time a Committee meeting will be held to decide follow-on actions.

Committee on Stability in Waves

The Committee has already had two meetings since the 23rd ITTC. The 1st meeting was held at Morosini Naval School, Venice, Italy on 14 September, 2002. Here Dr. Naoya Umeda was appointed as the Secretary of this committee and it was agreed to have committee meetings together with stability conferences and workshops, if practical.

The 2nd meeting was held on 16 October, 2002 at Roslyn Claremont Hotel, Roslyn, NY, USA, in conjunction with the 6th International Ships Stability Workshop organised by Dr. Stefan Grochowalski and Webb Institute. Based on tasks regrouped by the chairman, Dr. Jan Otto de Kat, the following main coordinators were selected at this meeting:

- (1) Prediction of extreme motions and capsizing of intact ships: Dr. Naoya Umeda
- (2) Prediction of dynamics of damaged ships: Prof. Apostolos Papanikolaou
- (3) Stability safety assessment: Prof. Alberto Francescutto
- (4) IMO matters: Prof. Dracos Vassalos
- (5) Evacuation in waves: Prof. J. Matusiak
- (6) ITTC Member survey: Prof. Sam Fan

These coordinators, except for the task (6), are requested to determine their plans of actions by 24 December 2002 and submit their progress report by 31 July 2003.

The next meeting will be held in Madrid, Spain in conjunction with the 8th International Conference on Stability of Ships and Ocean Vehicles (STAB2003) on 15-19 September 2003. This conference will be organised by Prof. Luis Perez-Rojas, Polytechnical University of Madrid, and cover all aspects of ship stability with refereed papers from the world. Its web site is now available with following address: <http://www.etsin.upm.es/Noticias/STAB/STAB2003.php>

Committee on Assessment of Ocean Environmental Issues

The SC (chairman: Dr. Chang-Gu Kang) holds its first meeting at Vancouver, Canada, in 10-11 (tentative) April 2003 during 2003 International Oil Spill Conference, in order to discuss the detailed workplan and to arrange tasks on the designated tasks of the Committee, including the review of the

state of the arts on the relevant task. Through e-mail communications among the members of the SC, the members have already decided tentative entire timetable for the 24th ITTC, as follows: 1) by April 2003- decision of workplan and arrangement of tasks, 2) by January 2004 – Discussion on interim work results, 3) August 2004-Discussion of draft report, and 4) by January 2005- finalization of the report and its submission to 24th ITTC.

We regret to inform that Mr. Kazuo Hirata died of a cancer sickness on 23 Nov., 2002. He worked at IPT (Brazil) and was designated as a member of the Specialist Committee on Assessment of Ocean Environmental Issues for the intersessional period of the 24th ITTC.

Ice Committee

The Ice Committee's first meeting will be held during the 18th International Symposium On Okhotsk Sea & Sea Ice, Mombetsu, Hokkaido, Japan (Conference dates are Feb. 23-27, 2003). Member's tasks have already been allocated and each member has started working on their respective technical task (the task allocation and initial discussions was conducted via e-mail communications).

Committee on Validation of Waterjet Test

The objective of the Specialist Committee on Validation of Waterjet Test Procedures is to provide proven procedures for the determination of the powering characteristics of waterjet propelled vessels. The objective includes an uncertainty study for the prediction of the main powering characteristics such as power-speed and impeller rotation rate-speed relation. To meet this objective, a series of standardization tests is currently undertaken by several institutes that volunteered their participation.

The present committee takes over the objectives and work of the 23rd Specialist Committee which was not able to finalize its task in time, due to the late availability of hardware for the standardization tests. As the membership of this committee remained roughly the same, the committee was able to make a flying start. Two meetings have thus far been held. The first meeting immediately after the last Conference in Venice and a second meeting at Pusan National University in South Korea. This latter meeting was in conjunction with the 2nd PNU International Colloquium on Waterjets, organized by Pusan National University in cooperation with ASERC and KRISO.

The standardization tests consists of self propulsion tests, waterjet system tests and pump tests. The latter two tests are conducted with a larger model of the waterjet system. The propulsion tests are well underway. Standardization tests have been conducted

by NSWCCD (USA) and MARIN (Netherlands) and are currently conducted by INSEAN and KRISO (two ship models tour the world). The Pump tests are currently undertaken by NSWCCD.

Further committee meetings are scheduled for Oct 2003 (in conjunction with FAST'03), July 2004 and Feb. 2005. The progress of the Committee can be monitored on its web site: <http://www.ittc-wjc.insean.it/>

Committee on Cavitation Erosion on Propellers and Appendages on High Powered – High Speed Ships

Members of the committee have been in regular email contact since their appointment at the 23rd ITTC. Two members of the committee have been assigned to each of the three appointed tasks and are currently carrying out background work in those areas. The first official meeting of the committee is to be held at the Applied Research Laboratory, Pennsylvania State University on the 16th and 17th of January 2003. The meeting will be hosted by the Chairman of the committee, Dr. Michael Billet and with Dr. Stephen Turnock appointed as secretary to the committee.

Committee on Azimuthing Podded Propulsion

The first meeting of the Committee, which was held in Newcastle upon Tyne on 18 and 19 November 2002 at the University of Newcastle. All eight members of the Committee attended the meeting. The meeting agenda involved the exchange of biographical and institutional information, election of the secretary, tentative schedules for future meetings and reports, review of pod propulsion related activities, extensive review of the Committee tasks and their allocations for the members and additional business.

The Committee elected Dr. Lui of National Research Council (NRC)-IMD of Canada as Secretary. The future two meetings were tentatively scheduled to be held in Canada in 2003 and Japan 2004. Preliminary deadlines for some important milestones to prepare the committee report were specified.

Committee on Powering Performance Prediction

The first meeting of this committee will be held on 22-24th January 2003 at Istanbul Technical University.

Publication Schedule

The following deadlines for material and publication dates will be applied for the ITTC news for the 24th ITTC.

Issue No	Deadline	Publication date
47	Jan 15, 2003	Jan 30, 2003
48	May 30, 2003	June 15, 2003
49	Nov 30, 2003	Dec 15, 2003
50	May 30, 2004	June 15, 2004
51	Nov 30, 2004	Dec 15, 2004
52	May 30, 2005	June 15, 2005

The ITTC News will only be published on the website from Issue No 48. This issue (No 47) will be mailed to all ITTC member organisations and ITTC committees, council and group members.

Technical Committees and Group of the 24th ITTC and their Tasks

The Conference confirmed/established five General Committees, seven Specialists Committees, and one Group, and assigned updated tasks to them.

Each 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 Committees.

General Committees

Resistance Committee

Review the state-of-the-art, comment on the potential impact of new developments on the ITTC in ship concepts, design methods and design optimization and identify the need for research and development. Identify developments in modeling of relevance to resistance. In particular review research and development in modeling and turbulence stimulation and provide recommendations for scaling and extrapolation. 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 analysis and update as required. Identify the requirements for new procedures, benchmark data, validation and uncertainty analysis and stimulate the research necessary for their preparation.

1. Continue review of trends in experimental fluid dynamics - EFD. Monitor developments in measurement methods especially in optical techniques for measuring flow velocity, pressure, body motion, and techniques for wave profiles, especially near bow and stern.
2. Review Uncertainty Analysis in experimental fluid dynamics and verify how it is utilized to improve accuracy of not only raw data but also derived quantities.
3. Review the development and identify the need for research in the computation at full scale, free surface treatment, unsteady flows, design methods and optimisation, and accurate modelling of turbulence. Validation by reliable data from experiments.
4. Develop ITTC recommended procedures including uncertainty analysis for additional towing tank measurements as needed (e.g., nominal wake). Develop benchmark tests for Gothenburg 2000 Workshop test cases (standard tanker, container, and combatant standard ship models/propellers) between ITTC member institutes for comparative measurements and uncertainty analysis for identifying facility biases and improving the insight on the facility operation. Improve recommendations with regard to scale effects for model size and turbulence stimulation.
5. Continue to monitor new developments in Verification and Validation methodology and procedures and further update and improve ITTC recommended Procedure 7.5-03-01-01 "Uncertainty Analysis in CFD, Uncertainty Assessment Methodology and Procedures". Prepare ITTC recommended Procedure 7.5-03-02-01 "Uncertainty Analysis in CFD, Examples for Resistance and Flow," based on a collective example of as many participants as possible following ITTC recommended Procedure 7.5-03-01-01 "Uncertainty Analysis in CFD, Uncertainty Assessment Methodology and Procedures"

for Gothenburg 2000 Workshop test cases. Update benchmark database to validate numerical procedures, including recommendations for archiving, distribution, and use of data.

6. Far Field Waves and Wash. Continue to monitor development of wash prediction techniques, in particular for trans-critical and supercritical regimes. Propose guidelines when enough experience has been collected.

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 for propulsion systems. 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 analysis and update as required. Identify the requirements for new procedures, benchmark data, validation and uncertainty analysis and stimulate the research necessary for their preparation.

1. Develop an ITTC procedure for specifying the accuracy of model propeller geometry required for propulsion and cavitation testing.
2. Review the development of numerical design and analysis methods for propulsors.
3. Review design and performance aspects of secondary thrusters, such as tunnel, azimuthing and dynamic positioning devices.
4. Review development in prediction and assessment of wake wash and propulsion issues in shallow water.
5. Review advancements in numerical methods for the computation of propeller induced effective wake, cavitation, and induced hull pressures.
6. Review of design issues related to very large propellers for mega container ships, such as vibratory forces, cavitation and bearing forces.

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 for predicting the manoeuvring behaviour of ships including high speed and unconventional vessels such as planing boats and catamarans. 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 analysis and update as required. Identify the requirements for new procedures, benchmark data, validation and uncertainty analysis and stimulate the research necessary for their preparation

1. Improve the procedure 7.5-02-06-02 "Manoeuvring Captive Model Test Procedure", in particular by addition of a section on circular motion tests. There is required a set of validation data for captive model tests in form of time records of forces for a given ship and a given motion history (i.e. Planar motion mechanism).
2. Continue work on procedures or guidelines for numerical applications in manoeuvring.
3. Further improve and update the procedure 7.5-02-06-01 "Manoeuvring Free-sailing Model Test Procedure" and include an uncertainty analysis, primarily linked to the position measurement. Validation data for free-sailing model tests are necessary for other hull forms than "Esso Osaka" hull.
4. Application specific numerical methods should be sought for confined waters and bank effects as well as ship/ship interaction. Work should be conducted to improve the regression methods regarding confined waters.

Seakeeping 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 for predicting the behaviour of ships with forward speed in waves including high speed and unconventional vessels such as planing boats and catamarans. 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 analysis and update as required. Identify the requirements for new procedures, benchmark data, validation and uncertainty analysis and stimulate the research necessary for their preparation.

1. Review the first attempt of the Loads and Responses Committee of the 23rd ITTC to develop procedures for the validation of seakeeping computer codes in the frequency domain.
2. Develop a procedure for the validation of seakeeping computer codes in the time domain.
3. Review methods to determine impulsive pressure loads taking the characteristics of the structure into account. Develop experimental and numerical procedures to for the prediction of bow and stern slamming, deck loads and loads on bow visors.
4. Develop a procedure for model experiments to determine whipping loads.
5. Develop a procedure for predicting the risk and magnitude of parametric rolling.
6. Review available seakeeping operability criteria.
7. Continue work to develop standard procedures for predicting added resistance and added power in waves.

Ocean Engineering 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 for predicting the behavior of bottom founded or stationary floating structures including moored and dynamically positioned ships. The review should include the modeling and simulation of waves, wind and current environments in deep and finite depth water. 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 analysis and update as required. Identify the requirements for new procedures, benchmark data, validation and uncertainty analysis and stimulate the research necessary for their preparation.

1. Review the techniques for hybrid model testing and amend procedure 7.5-02-07-

03.4 for Hybrid Mooring Simulation Model Test Experiments as required.

2. Develop procedures for the validation of computer codes in the time domain.
3. Review the first attempt of the Loads and Responses Committee of the 23rd ITTC to develop Procedures for the Validation of Codes in the Frequency Domain.
4. Review the ITTC Procedure 7.5-02-07-03.3 for Model Testing on Tanker-Turret Systems, and update as required.
5. Review the state-of-the-art of the prediction of the roll of floaters with risers and mooring systems.
6. Monitor research on Vortex Induced Vibrations (VIV) and propose methods to model systems subject to VIV.
7. Study and recommend guidelines for issues of importance to shallow water testing such as wave spectra, response non-linearity and mooring modeling.
8. Recommend a procedure for the definition of directional irregular wave spectra, including measurement, accuracy, analysis and validation.
9. Make an assessment of uncertainties in the modeling of nonlinear effects in a 100-year steep sea state, by a comparative benchmarking analysis including laboratory experiments, numerical models, theoretical prediction models as well as field data.
10. The review of wave modeling and simulation should include topics such as wave generation on current and in finite depth waters; active wave absorption and reduction of parasitic laboratory waves; laboratory wave kinematics; and further integration of model test waves with numerical modelling.

Specialist Committees

Committee on Stability in Waves

1. Report on the collective experience and knowledge of member organisations in the prediction of ship capsizing.
2. Monitor and assess the implementation of the proposed experimental procedures for testing intact and damage stability, and recommend refinements as necessary.

3. Identify weaknesses and recommend improvements to numerical models for predicting capsize of intact and damage ships in regular and irregular waves, and test their validity.
4. Review the application of existing numerical and physical model testing techniques to ships other than RoRo's, including high-speed craft. In particular review and suggest improvements to the IMO Draft MSC Circular "Interim Guidelines for the Conduct of High-Speed Craft Model Tests"
5. Develop numerical and experimental procedures for assessing both intact and damage stability for conventional and novel vessels.
6. Review experimental and numerical techniques to predict extreme motions and course keeping characteristics in stern quartering seas, which may lead to broaching.
7. Review experimental and numerical techniques for evaluating evacuation systems of ships and offshore structures in waves

Committee on Assessment of Ocean Environmental Issues

Background

Protection of the global environment is an urgent and unavoidable issue for mankind in the 21st century. Since the ocean covers about 70% of the surface on the earth, it is expected to play important and crucial roles in the global environment. According to recent predictions by scientists, the ocean level rises as global warming takes place and density stratification of surface water becomes strong which ultimately affects the marine ecosystem. Consequently, our life is also affected greatly by such changes of ocean environment.

As specialists in the fields of naval architecture and ocean engineering, we cannot allow ourselves to be totally uninterested and indifferent on this topic. Therefore, it is important and timely for us to tackle these environmental issues without limiting our concerns to conventional waves, currents and winds.

Tasks

Review aspects of the ocean environmental issues of interest to the ITTC and make recommendations for future work of the ITTC in this field. Topics may include:

1. Review of the environment pollution problems of ocean caused by spilled oil, other chemicals, marine debris and seabed litter.

2. Review of the state-of-the-arts technology for management, control and recovery of the pollutant in the ocean.
3. Review of the experimental and numerical modelling technique for prediction of the distribution of pollutants.
4. Development of standard testing and certifying procedures for oil and chemical recovery tools and equipments.
5. Cooperation with organizations in other fields to deal with wider area of environmental problems.

Ice committee

1. Develop a procedure for general experimental uncertainty analysis for ice tank testing, including both bias and precision uncertainties.
2. Review test procedures and recommend guidelines, as applicable, for the performance of offshore structures in ice-infested waters
3. Conduct tests in various tanks to develop a better understanding for the performance of open water propellers in level ice.
4. Produce a desktop template that deals with the main tasks to be performed and the responsibilities of the people involved in a typical test in the ice tank.
5. Review the numerical methods applied to ice engineering and provide a list of the applicable computer codes.

Committee on Validation of Waterjet Test Procedures

1. Finalize the standardization tests that are currently under way.
2. Using the results from the standardization tests develop procedures and nomenclature for the performance of waterjet related tests (self propulsion, pump characteristics and waterjet system tests). These procedures should also include uncertainty assessments in performance predictions, that are based on experiments.

Note: These tasks are a completion of the tasks for the 23rd ITTC Committee on Validation of Waterjet Test Procedures

Committee on Cavitation Erosion on Propellers and Appendages on High Powered/High Speed Ships

1. Develop procedure(s) for methods and scaling models of cavitation erosion on propellers and appendages
2. Develop guidelines for prevention of erosion
3. Develop a procedure for cavitation induced erosion tests.

Committee on Azimuthing Podded Propulsion

1. Review and make improvements to the procedure 7.5-02-03-01.3 for podded propulsor tests and extrapolation..
2. Recommend procedures for carrying out podded propulsor cavitation experiments.
3. Establish guidelines for extrapolation to full scale.
4. Review impact on off-design conditions to loads and stability.
5. Review impact on IMO manoeuvring criteria.

Committee on Powering Performance Prediction

1. Review and update the Speed/Powering Trials Procedures 7.5-04-01-01.1 -- 7.5-04-01-01.6 and include analysis and take due account of the ISO Standard Guidelines
2. Examine new extrapolation techniques for powering prediction including numerical methods such as the use of RANS codes. Develop corresponding correlation factors, if necessary
3. Develop the uncertainty analysis of extrapolation methods as follows:
 - Accumulate trial results analyzed by using several extrapolation methods.
 - Complete the evaluation of the uncertainty analysis for power prediction by making use of uncertainty analysis for model-scale self-propulsion and open-water tests.
 - Perform validation of extrapolation methods for power prediction by comparing with speed trial data and full-scale tests, including uncertainty analysis.

4. In cooperation with the Seakeeping Committee review the state of the art and recommend a standard procedure for predicting powering margins.

Group

Quality Systems Group

1. Revise and update the ITTC Recommended Procedures. Modify and re-edit the existing procedures according to the comments of the Conference and the Technical Committees.
2. Update the ITTC Symbols and Terminology List according to ISO 31 Standard.
3. Put the ITTC Symbols in a relational database in order to be able to search according to your personal requirements.
4. Revise and complete the Working Instructions on Standard Measuring Devices
5. Stimulate, monitor and support validation work within the Technical Committees.

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The UK's first Marine School at Newcastle University was launched in December 2002 to provide a single base for all education, innovation and research related to the sea. This is another landmark in the Newcastle University's and the UK's proud maritime history. The School of Marine Science and Technology was formed by merging the existing Department of Marine Sciences and Coastal Management with the Department of Marine Technology, both of which had 100-year histories and international reputations for teaching and research. The new School will continue with the current wide range of successful activities of the former Departments but will also branch out into new and exciting areas in the marine world. The new School will be headed by Professor Atilla Incecik