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Message from the Chairman

Thanks to the dedicated services of our hosts, Arnold Hansen and Erling Huse, we all had a pleasant and rewarding conference in Norway in September. The responsibility and obligation to carry on the task of the Chairman of Executive Committee is now handed over to me. I will try my best to preserve the traditional cooperative spirit of ITTC and to contribute to fostering the functions of ITTC.

It is encouraging to see the newly formed technical committees and groups have already begun their activities in various ways. I wish all the Committees and Groups will have a successful fulfillment of their given objectives and tasks in forthcoming three years.

By the time this newsletter reaches your desks, I believe the new year of 1997 already has started turning its wheel. I would like to send my greetings and best wishes for the New Year to all of you.

Prof. Choung Mook Lee
Chairman, 22nd ITTC

Report from the 21st ITTC

The 21st ITTC was held from September 5 to September 21, 1996 in Bergen, Coastal Express Ship and Trondheim, Norway under the Chairmanship of Mr. Arnold Hansen and the Secretariat of Prof. Erling Huse. The conference was attended by 186 delegates from 27 countries with a large number of accompanying persons.

It must be said that the Conference was very successful technically and socially, and especially the meetings on board the Coastal Express "Kong Harald" were a delightful and memorable experience.

It should be mentioned to publicly acknowledge the contributions of the outgoing committee members and chairmen and to thank them for their efforts which have contributed so much to the success of the 21st ITTC.

The members of the ITTC owe many thanks to Prof. Erling Huse and the staff of SEVU (Foundation for Continuing Education at the Norwegian Institute of Technology) for the excellent and hospitable way in which the Conference was organized.

The technical committees and groups consisted of 12 sessions on the following subjects:

- Ocean engineering
- Seakeeping
- Resistance and flow
- Powering performance
- Propulsors
- Waterjets
- Cavitation
- High speed marine vehicles
- Manoeuvrability
- Performance in ice covered waters
- Symbols and terminology
- Quality control

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During the sessions, the reports were presented with subsequent discussions and replies.
In addition to the sessions, workshops were organized on the subjects of:

- Stability
- Model testing of deep sea offshore structures
- Unconventional propulsion
- Response based design loads, impact on model testing

Volume II of the ITTC Proceedings will be published around the end of January 1997. Meantime, Prof. Huse has been collecting the discussion replies.

News from the Executive Committee

The Executive Committee held three meetings during the Conference in Norway. Some selected items from the extensive agenda are:

New ITTC Member Organizations

Applications from two organizations were presented and approved:

- Samsung Heavy Industries, Korea, and
- Tianjin University, China.

Host Organization for ITTC in 2002

An invitation to host the 23rd ITTC in 2002 has been received from the Bulgarian Ship Hydrodynamics Center. According to the "Rules of the Organization", the deadline for receiving invitations for 2002 is September 1998.

Decisions of the Full Conference

At the closing ceremony in the morning of Saturday, 21st September, the Full Conference approved:

- The new "Rules of the Organization"
- Recommendations to the 21st ITTC
- Committee Structure and Tasks of the 22nd ITTC Technical Committees*
- Members and Chairpersons of the 22nd ITTC Technical Committees*
- Chairperson of the 22nd ITTC Executive Committee*

(*Up-dated version and list are shown in a later section of this newsletter.)

1999 ITTC Arrangement

The 22nd ITTC in 1999 will take place in Seoul, and consecutively in Shanghai from September 5 to September 11.

News from the Advisory Council

The Advisory Council had three meetings during the Conference in Norway, discussing subjects such as:

Membership of the Advisory Council

The Advisory Council approved the application from the University of Michigan. Prof. R. Beck was welcomed by the Council as the representative of the university. Hydronautics Research Inc. has decided to resign from the Advisory Council but it will continue as a member of the ITTC.
The number of members of the Advisory Council is 33.

Tasking and Monitoring the Work of the Committees

For the efficient and successful working of committees, the Advisory Council has decided to monitor the progress of the work of each technical committee. It will also review the draft Conclusions and Recommendations of committees. Committee chairpersons are asked to provide progress reports for their committees so that they can be considered at the meetings of the Advisory Council to be held in September 1997 and August 1998. Each report should give a description of:

- The committee's tasks.
- How the work is progressing and, in particular, any problems relating to the completion of the committee's tasks.
- List of the members attending the committee meetings.
- Dates for future meetings.

The progress report should be brief and it

should not be more than two pages. The reports should be sent to the Secretary of the Advisory Council, Brian Bowden, who will remind chairperson in writing, nearer the date of the Advisory Council meetings that the reports are required.
It should be pointed out to committees that their reports should include clear and concise "Conclusions", "Recommendations to the Conference on Methods and Procedures" and "Recommendations for Future Work". Draft Conclusions and Recommendations of committees will be reviewed by the Advisory Council during a meeting to be held in March 1999. Mr. Bowden will inform you on that matter in advance of the date of that meeting.

Review of Advisory Council Membership

The Rules of the Organization state that each Council member must be confirmed as a member every six years, at which time they must re-establish that they meet the membership criteria.

Member organizations of the Advisory Council shall:

- Carry out a substantial portion of their work for clients.
- Have a long history of work in support of the ITTC, as evidenced by membership and attendance at Committees and Groups, providing data in support of, or making written contributions to, Committees and Groups.
- Have a capability of performing a variety of investigations within the scope of the ITTC.
- Attend and contribute to the meetings of the Advisory Council.

Each organization should provide the following information so that an assessment can be made of their eligibility for Council membership:

① A list of types of investigations for clients.
② A list of clients.
③ Support for the ITTC during the last 6 years
- Membership of committees and groups
- Provision of data
- Responses to questionnaires
- Participation in ITTC model tests and full-scale trials
- Provision of benchmark data.

④ Demonstrate ability to carry out a variety of investigations within the scope of the ITTC
- Theoretical and experimental investigations
- Must have some experiment test facilities
- Must carry out applied research and development investigations with respect to ITTC aims and objectives as well as doing commercial work.

⑤ Number of Advisory Council meetings attended and contributions made during the last 6 years.

The Executive Committee will collect the reports from the member organizations, evaluate them and make recommendations to the Advisory Council for endorsement. Half of the member organisations will be reviewed during each 3 year period. They will be chosen by selecting alternate organizations in alphabetical order from the list in Appendix 4 of the Proceedings of the 21st Conference. The Executive Committee will undertake the review at its meeting to be held in 1998, and a report will be presented to the Advisory Council at its meeting in March 1999.

Secretary for the 22nd ITTC Advisory Council

A questionnaire had been issued to members to seek their views on providing financial support for secretarial services for the Council. The results of the questionnaire showed that there was general, but not unanimous, support for the proposal. The chairman informed the Council that DRA had undertaken to provide back-up support as necessary for Mr. Brian Bowden if he continued in the post. It was agreed that Council members would contribute towards the cost of the secretariat and Mr. Bowden would be appointed as the Council secretary for the 22nd ITTC.
Mr. Bowden has retired from DRA and can now be contacted as follows:

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Vice Chairman of the Council

Dr. Kitakawa from Shipbuilding Research Center of Japan resigned as Vice Chairman due to ill health. Dr. Keh-Sik Min from Hyundai Maritime Research Institute, Korea was elected as the Vice Chairman.

World Wide Web

The dissemination of ITTC information using the World Wide Web was discussed. It was agreed that it would be useful to establish an ITTC Web Home Page which could contain information such as the rules of the organization, catalogue of facilities, proceedings, membership of committees etc. The current version of ITTC Symbols and Terminology list can already be accessed through the Internet.

Guidelines for Preparation of Committee Reports

As a greater number of committees is being proposed for the 22nd ITTC it was pointed out that the Conference Proceedings could become excessively large unless guidance was given on the content of the committee reports. One possibility would be to limit the reports of the General Committees to a maximum of 50 pages and the reports for the Specialist Committees to 25 pages. Consideration could also be given to publishing the reports as separate documents rather than in one volume as at present. This will be discussed at the next meeting of the Council.

Dates for Future Meetings

It was agreed that future meetings of the Council would be held as follows:

- 25th and 26th September 1997 at Val de Reuil, France,
- 17th and 18th August 1998 in Washington, USA. This meeting would coincide with the 22nd Symposium on Naval Hydrodynamics and the 100th anniversary of the David Taylor Model Basin.
- March 1999 in Japan.

News from the Technical Committees

Committee on Stability

The first meeting of the Stability Committee was held in Trondheim on 21 September immediately following the 21st ITTC. At this meeting Dr. M. Renilson of Australian Maritime Engineering Ltd. was elected secretary.

The second meeting was held on 20 November in Osaka in conjunction with the Second International Workshop on Stability and Operational Safety of Ships. At this meeting the recommendations from the Executive Committee were discussed and the following tasks were allocated: guidelines for model tests on intact stability, techniques for numerical simulation of intact stability, guidelines for model tests on damage stability, and techniques for numerical simulation of damage stability.

It was agreed to coordinate liaison with the following ITTC committees: Loads and Responses, Manoeuvring, Safety of High Speed Marine Vehicles, Environmental Modelling, and Model Tests of High Speed Marine Vehicles. It was also agreed to undertake an investigation into the applicability of ITTC standard symbols and terminology.

The next meeting will be held in Greece in late October or early November 1997 in conjunction with the third International Workshop on Stability and Operational Safety of Ships.

Committee on Computational Methods for Propeller Cavitation

The first meeting was held on December 12-13, 1996 at DRA Haslar, UK. Mr. M. Stanier of DRA Haslar hosted the meeting. Five out of seven members attended the meeting where tasks and workscope of committee were discussed. Dr. Ki-Han Kim of DTMB was elected as the secretary. The next meeting will be held in Virginia in September 1997 in conjunction with the SNAME Propeller/Shafting '97 Symposium.

Propulsion Committee

After the 21st ITTC, the newly appointed 22nd ITTC Propulsion Committee had a short

meeting in Trondheim. At this meeting 6 of the 8 members were present. It was decided to have the first official meeting of the Committee from January 13 through 15, 1997 at the Jiao Tong University in Shanghai, China. Dr. J.V. Pylkkánen of Technical Research Center of Finland was elected as the secretary.

Manoeuvring Committee

The first meeting of this committee will take place in Genoa, Italy 20-21 January 1997. The questionnaire concerning the tanker Esso Osaka was circulated to the ITTC members. Dr. R. Barr, secretary, collected the replies.

Loads and Response Committee

The first meeting will be held at the David Tayor Model Basin on May 22-23, 1997. Dr. J. Wichers of MARIN was elected as the secretary.

Committee on Deep Sea Mooring Committee

The first meeting will be held in Tokyo on April 18-19, 1997 in conjunction with the 16th International Conference on Offshore Mechanics and Arctic Engineering.

Committee on Unconventional Propulsors

The first meeting is scheduled to be held on 18-19 February 1997 at the University of Liege, Liege, Belgium. This meeting, hosted by Professor Yide Shen of that university will be at the Civil Engineering Institute. Chairman Neil Bose asked each member to bring a one to two page biographical summary and some details about each institution represented as an introduction.

Committee on Cavitation Induced Pressure Fluctuations

After the kickoff meeting in Trondheim, the main actions of the committee were grouped under the following headings:

- Review and comparison of computation methods for propeller cavitation volume variation and induced pressures
- Survey and review of published full scale measurements of unsteady hull pressures
- Surveys of published model measurements - techniques, instrumentation, analysis and correlations
  - How to do tests to obtain reliable results?
  - Effects of vibration and possible hydroacoustic waves in the tunnel circuit
- Review of hydrodynamic and structural mechanics of cavitating propeller-induced unsteady excitation of vibration and inboard airborne noise
- Survey of methods and approaches for reducing excitation levels of vibration and noise from cavitating propellers in non-uniform inflow
- Round-robin tests of model propeller
  Continue the Ukon-Hoshino series of tests
- ISO 9000 issues
  Write out the procedure for wake-screens and hull model-wake unsteady pressure tests

The actions will be discussed at a meeting on February 5-6, 1997 at Chalmers University of Technology, Sweden. Dr. J. Friesch of HSVA was elected as the secretary.

Committee on Trials and Monitoring

The first meeting was held at CETENA, Genoa, Italy on December 2-3, 1996.

Committee on Model Tests of High Speed Marine Vehicles

The first meeting will be held at INSEAN, Rome, Italy on January 13-14, 1997.

Quality System Group

The first meeting took place at the Vienna Model Basin on December 10-11, 1996.

Address Corrections

In case the address stated in subsequent sections or used in sending this newsletter is incorrect (misspellings, wrong postal code, improper title, etc.), please inform the editor and corrections will be made.

Publication Schedule

Contributions are requested from you for the ITTC Newsletter. The primary function of the ITTC News is to provide communication among the member organizations, the Executive Committee, the Advisory Council, and the technical committees and groups. As the editor of the ITTC News, I shall be pleased to receive reports on the work of your committees and groups as well as any other material of interest to the members. Messages by fax, letter or Email will be fine. The following schedule is anticipated for the newsletter :

Newsletter No	Deadline for receipt of material	Date of issue
35	15 November 1996	December 1996
36	15 May 1997	June 1997
37	15 November 1997	December 1997
38	15 May 1998	June 1998
39	15 November 1998	December 1998
40	15 May 1999	June 1999

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.

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 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 identity 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 capsize of intact and damaged ships and provide guidelines for such tests. Assess the methods available for numerical simulations of capsize 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 condictions 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.

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