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## Message from the Chairman

First, I would like to thank Dr. Georges Thiery for the kind hospitality offered during the meetings of the EC and AC at Bassin d'Essais des Carènes, in September.

The progressing work of the TCs was examined, and the results are very interesting and encouraging as it can be seen in the following pages. TCs members are working hard, aware of the importance of their task.

I take the opportunity to send to all members of the ITTC Community and their families the Season's Greetings and Best Wishes of Happy New Year.

Ulderico Grazioli, Chairman  
23rd ITTC Executive Committee

## News from the Executive Committee

The meeting of the ITTC Executive Committee was held, at the Bassin d'Essais des Carènes in Val de Reuil, after the Advisory Council meeting, on the 19th September 2000. The following matters were discussed during the Executive Committee meeting.

### *EC and ITTC Memberships Approval*

The election of Prof. José A. Aláez as the EC representative for Southern Europe was confirmed. An application by the Marine Research and Development Center, Tehran to become a member of the ITTC was approved and this new member organisation will be included in the Southern Europe Area.

## *Arrangements for the 23rd ITTC in 2002*

Arrangements for the 23rd ITTC meeting in Venice in September 2002 were discussed and a new tentative plan for the conference was approved. It is as follows:

### September 8 (Sunday)

- 13:30-14:45 Advisory Council meeting
- 15:15-16:30 Executive Committee meeting
- 16:30-20:30 Registration – Reception

### September 9 (Monday)

- 09:00-09:30 Opening
- 09:30-10:15 Executive Committee Report
- 10:45-12:15 Resistance
- 13:30-14:45 Speed and Powering Trials
- 15:15-16:30 Proced. for Resist., Prop. and POW Tests
- 16:30-17:30 Group discussion

### September 10 (Tuesday)

- 09:00-10:15 Validation of Waterjet Test Procedures
- 10:45-12:15 Propulsion
- 13:30-14:45 Cavitation Induced Pressures
- 15:15-16:30 Water Quality and Cavitation
- 16:30-17:30 Group discussion

### September 11 (Wednesday)

- 08:00-20:30 Conference Tour 1

### September 12 (Thursday)

- 09:00-10:15 Waves
- 10:45-12:15 Loads and Responses
- 13:30-14:45 Stationary Floating Systems
- 15:15-16:30 Pred. of Extr. Ship Motions and Capsizing
- 16:30-17:30 Group discussion

### September 13 (Friday)

- 09:00-10:15 Quality Systems Group
- 10:45-12:15 Manoeuvring
- 13:30-14:45 Esso Osaka
- 15:15-16:30 Ice

### September 14 (Saturday)

- 09:00-10:15 Plenary Session and Closing
- 10:15-10:45 Conference Photo
- 10:45-12:15 Meetings of New EC and TCs
- 13:30-20:30 Conference Tour 2

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## ***Review of Advisory Council Membership***

The EC Secretary will send a letter to AC members in December 2000 to start the review of the Advisory Council membership. The replies should be sent to the EC Secretariat by April 10, 2001, and review information will be sent to EC members by June 15, 2001. The replies will be discussed at the meeting of EC on October 23, 2001 and a report, giving results of the EC review, will be presented at the EC meeting in March 2002.

## ***Membership of Technical Committees***

Changes. The Executive Committee approved the replacement of Dr. Young-Gi Kim, Samsung Ship Model Basin, who resigned from the Water Quality and Validation Committee, with Dr. In-Haeng Song (e-mail: sihprop@samsung.co.kr), also from SSMB.

Performance evaluation. It was decided that the chairmen of the Technical Committees should submit confidential reports to the Executive Committee on the individual contributions of the Committee members in carrying out their tasks.

Selection for Specialist Committees. A review was started of the procedure for selecting members of the Specialist Committees and a decision will be made before the next conference.

## ***ITTC Membership Application***

It had been agreed during the 22nd ITTC that a proforma should be prepared to specify what information is required when applying for membership of the ITTC and a draft was discussed and approved by the Executive Committee. A proforma was also approved for use when proposed members of Technical Committees submitted their curriculum vitae to the Executive Committee (both forms are enclosed as annexes).

## ***23rd ITTC Web Site***

A web site will be established specifically for the 23rd Conference, and it will be managed by the EC Secretary. This will be in addition to the ITTC web site, which is administered by the Secretary of the Advisory Council.

## ***Host Organisation for the 24th ITTC in 2005***

The Executive Committee invited the Central Europe Area to propose a candidate member organisation to host the 24th ITTC in 2005.

## ***Next Meeting***

The next meeting of the Executive Committee will be held in Orlando, Florida (USA), on the 23rd October 2001, in conjunction with the SNAME meeting.

## **News from the Advisory Council**

In conjunction with the ONR symposium at the Bassin d'Essais des Carènes in Val de Reuil the Advisory Council met on September 18 and 19, 2000.

## ***Progress Reports from Technical Committees***

All of the Technical Committees had provided progress reports and each one was discussed by the Council. Each Committee has been informed of the Council's comments. The following points apply to all Committees.

Most Committees seems to be on track regarding their tasks, although it is difficult at this stage to make a full assessment whether they will be able to complete their tasks.

It is important that the members of the Technical Committees have the competence and time to perform their task. The introduction of a standard form for CV for nominees to Technical Committees will hopefully improve the selection process.

The Council also proposed that the chairman of each Technical Committee should make an evaluation of the performance of the Committee members regarding their contribution to the work of the Committee.

For the future follow-up of the work of the Technical Committees the Council decided to form a group of three wise men within the Council with the following assignments:

- Follow-up and guidance of the present Technical Committees work and progress
- Suggestion of Specialist Committees for the 24th ITTC
- Suggestions of tasks for the 24th ITTC Technical Committees

The aim of these assignments is to have a better preparation of the formation of Specialist Committees and the tasks for the Technical Committees of the 24th ITTC.

The wise men shall report to the Council at the next meeting.

The following were appointed:

- William B. Morgan
- Gerhard Jensen
- Naoji Toki

The AC Secretary shall co-ordinate and support the group.

## ***ITTC Web site***

ITTC shall have one permanent web site and one web site for the next Conference. The Advisory Council Secretary is responsible for the permanent web site and the Executive Committee Secretary is responsible

for the next Conference web site. It was decided that the Executive Committee Secretary and the Advisory Council Secretary should together sort out the division of ITTC information and material between the two web sites. A link should be provided between the two web sites.

The permanent ITTC web site can be found at <http://www.ittdoc.org>.

### *Date for Next Meeting*

The next meeting of the Council will be held in October 22 and 23, 2001 in conjunction with the SNAME meeting in Orlando, Florida, USA.

## **News from the Technical Committees**

### *Resistance Committee*

Following the action item planned at the first meeting, a web site of the Resistance Committee was created (<http://www.ittc-rc.insean.it>), with the intention of supporting the development of the Committee's work and helping all members to have a fast and easy access to all the electronic material produced or collected by all Committee members.

The second Resistance Committee meeting was held on 11-13 September 2000 at MARIN, Wageningen, The Netherlands and hosted by Dr. Hoyte C. Raven. All members attended.

Tasks and responsibilities of every section were reviewed. Section leaders reported the activities already developed, while structure, tables of content and timetables were analysed by the Committee.

Co-operative tests programs have to be established for the section of Uncertainty Analysis for Towing Tank Tests, in a joint effort with the Specialist Committee for Resistance, Propulsion and Propeller Open Water Tests. Some results, recently presented at the 23rd ONR Symposium, about Uncertainty Analysis of tests performed in 3 institutes (DTMB, INSEAN, IIHR) on three different models of the USS – DDG51 are an example of this kind of activity.

In-depth discussion took place, concerning the ITTC interim Quality Manual procedure on CFD Uncertainty Analysis. The decision was made to gain additional experience through careful detailed implementation of the new procedure and thereby update the procedures in the QM and hopefully go forward with recommendation for adoption by 23rd ITTC.

Some of the Resistance Committee members had also the chance of attending the Gothenburg 2000 Workshop (G2K), held 14-16 September at Chalmers University of Technology, Gothenburg, Sweden. The pur-

pose of the Workshop was to assess the state of the art and new trends in CFD applied to the flow around modern ship hulls, focusing upon validation of RANS simulations for tanker, cargo/container, and combatant hull forms.

Detailed experimental data, together with uncertainty analysis of the measurements, were available for the comparison. Following the procedures proposed by the 22nd ITTC Resistance Committee, several participants presented numerical uncertainty assessment for their computations. Almost the whole numerical ship hydrodynamic community attended the meeting and the showed results witnessed a significant improvement toward the reliable prediction of the flow around a ship.

Next Committee meeting would be the 12-14 March 2001 at ETSIN, Madrid (Spain) while the last meeting will be in October – November 2001, at the Ship Design and Research Centre, Gdansk (Poland).

### *Propulsion Committee*

The 23rd ITTC Propulsion Committee conducted its second Committee meeting on the 23-25 October in St. John's Newfoundland, Canada. Dr. Neil Bose hosted the meeting. The Committee discussed progress on the various tasks assigned. Highlights of interest to other Committees are as follows.

Under Task 2, the Committee is to revise the cavitation Quality Manual procedures, Model Scale Cavitation Pattern Tests, ITTC Procedure 4.9-0.3-03-03.1 and Description of Cavitation Appearances, ITTC Procedure 4.9-03-03-03.2. The Committee is attempting to revise the Model Scale Cavitation Pattern Test Procedure, to become a basic, general procedure called "Model Scale Cavitation Testing", that will include cavitation pattern testing and inception testing. The Committee proposes that the two related Specialist Committees on Cavitation Induced Pressures and Water Quality and Cavitation will ultimately create specialised procedures addressing their areas, and rely on the General procedure to cover fundamental aspects of cavitation tests. This will hopefully create a consistent set of cavitation related procedures, without duplication. The Committee has passed a draft procedure called "Model Scale Cavitation Testing" on to the Specialist Committees and the Quality Systems Group.

The intent of the revision is not to broaden the content of the procedure, but establish consistency amongst the related procedures, and avoid duplication. This approach unfortunately becomes more time consuming, in that the basic or generalised procedure requires review not only by the Quality Systems Group, and the Advisory Council, but also by the related Technical Committees.

The Propulsion Committee is also supporting the eventual adoption of a new model full-scale correlation line for use in powering prediction. The Committee is considering the friction line attributed to Grigson. A long-term adoption plan is being formu-

lated through the Committee's task 4, realising the serious impact a new friction line will have on each towing tank's correlation procedures. Also, under task 4, a study of the determination of form factor has been initiated. Techniques of various towing tanks will be investigated to quantify areas for recommendation and improvement.

The Committee is also tasked to prepare a procedure related to powering prediction of podded propulsors. Aspects specific to pods related to the open water test, self-propulsion test and full-scale extrapolation will be addressed.

The Committee's review tasks include Propeller-rudder interaction, propeller hydroelastic effects, propulsor design and analysis, and scale effects on passive propulsor components.

### *Loads and Responses Committee*

The Loads and Responses Committee had its first two meetings on the 11th and 12th January 2000 at the El Pardo Model Basin in Madrid, Spain and on the 16th and 17th October 2000 in Osaka, Japan under the chairmanship of Prof. Wataru Kotera (e-mail: Kotera@riam.kyushu-u.ac.jp).

At the first meeting in Spain, Prof. Johan Journée (e-mail: J.M.J.Journee@wbmt.tudelft.nl) was elected to be secretary. Member's role for tasks with respect to reviews of the ITTC recommended procedures, benchmark data and test cases for validation and uncertainty analyses were discussed and distributed. The 22nd ITTC report will be checked for missing matters and shortcomings and all members will collect abstracts of relevant papers, starting at the end of 1998. Special attention will be paid to rarely occurring events and tanker-turret systems. Appointments were made for liaison with Specialist Committees.

At the second meeting in Japan, abstracts of papers were exchanged, discussed and task schedules on writing summaries were made. New information will be collected from the Internet too. Three first draft reports on (new) ITTC procedures were distributed and discussed: a review of the procedure for Seakeeping Experiments, a new procedure for the Validation of Seakeeping Computer Codes and a new additional procedure for Offshore Platform Model Testing. With respect to the Seakeeping Computer Codes, it was decided to restrict this extensive task provisionally to the 2-D frequency domain. None of the Committee members is a specialist on tanker-turret systems, so it was decided to treat this topic in a general way only.

The accepted schedule of the remaining two meetings of the Loads and Responses Committee is:

- 3rd meeting: September 2001, Shanghai or Wuxi, China. The draft report will be ready.
- 4th and final meeting: January 2002 Helsinki, Finland. Discussion of the final Loads and Responses Committee report.

### *Committee for Validation of Waterjet Test Procedures*

The preparations for the waterjet standardisation experiments are well underway. The Specialist Committee has convened twice since the last ITTC Conference. The first meeting was held in New Orleans on the 17th and 18th January 2000. At this meeting, a rough time frame was set for the three types of standardisation tests that are envisaged:

- self propulsion tests
- pump loop tests
- waterjet system tests

Furthermore, co-ordinators were appointed for each of these standardisation tests.

Invitations to all participating ITTC members were sent early July. Out of the 113 invitations, some 22 positive reactions were received. These reactions are summarised in the table below:

Type of test	Number of interested institutes	Aspiration level: number of institutes required
self propulsion	11	7
waterjet system	5	5
pump loop	3	5
CFD analysis	5	

The Committee's aspiration level is based on considerations on the assessment of experimental bias errors and flaws in the procedures. The table shows that the self-propulsion tests have attracted a good response. More reactions on the pump loop tests and the waterjet system tests are expected when invitations to the waterjet manufacturers are dispatched. This is scheduled for January.

The second meeting of the Waterjet Committee was held in Rome on October 16 and 17. This meeting focussed on the progress of both the ITTC preparations and the United States program on Waterjet Technology Development, co-ordinated by the Gulf Coast Region Maritime Technology Center (GCRMTC). This U.S. program has reported its willingness to make one or two ship models available to ITTC, as well as a small and a large waterjet model for the pump loop tests and the waterjet system tests. Preparations in the GCRMTC take however more time than what was originally expected. This has been acknowledged to cause a delay in the ITTC standardisation test circuit, which can consequently not be finished in time for the 23rd ITTC Conference in 2002.

### *Ice Committee*

The second meeting of the Committee was held in Helsinki on 16th September 2000 at the Masa Yards Arctic Research Center (MARC). The meeting was

held after the IceTech2000 Conference at the Krylov Shipbuilding Research Institute in St. Petersburg, Russia, 12-15 September 2000. All four members of the Committee attended the meeting. The meeting was held from 9:00 till 17:00, and the members monitored and discussed the progress of Committee tasks listed below:

1. Review developments in ice model testing and prepare an up-to-date bibliography of the relevant technical papers and reports.
2. Update the General Guidelines for Ice Model Testing, ITTC Procedure 4.9-03-03-04.1.
3. Update the General Guidelines for Ice Resistance Test in Level Ice, ITTC Procedure 4.9-03-03-04.2.1.
4. Update the Test Methods for Model Ice Properties, ITTC Procedure 4.9-03-03-04.2.1. This section is included in the Ice Resistance chapter in the initial version. But the Committee is trying to separate this section.
5. Prepare statement for shipping in iceberg-infested waters and iceberg impact tests at IMD.
6. Provide uncertainty analysis and validation for updated procedures. The Committee will try supplying information to the ice tanks out of Committee members, IMD, MARC and SRI.

The next meeting will be held in Ottawa, Canada in August 2001, in connection with POAC2001.

### ***Committee on Procedures for Resistance, Propulsion and POW Tests***

The second meeting of the Specialist Committee was held on the 6th and 7th November 2000 in Shanghai, hosted by CSSRC. All eight members of the Committee attended.

The tasks of the Committee entail updating and/or establishing recommended tank test procedures, including uncertainty analysis guidelines and example applications. The procedures will cover model manufacture, resistance, propulsion and open water tests, together with resistance tests on HSMVs. It should be noted that the Committee is concerned only with recommended procedures for model testing and the analysis of the model test data, and not with the extrapolation of model results to full scale.

Good progress is being made by the Committee, and it expects to meet its target of establishing first drafts of the proposed recommended procedures by the end of January, 2001. These draft procedures will then be sent to selected tanks representing a cross-section of the tank testing community, in order to invite comments and feedback on the proposals.

The Committee continues to liaise with the Resistance and Propulsion Committees on areas of mutual interest. It will also be liaising with these, other Committees and the Quality Systems Group regarding the

content, structure and final layouts of the recommended test procedures.

The next meeting of the Committee will be held at SSPA in Gothenburg on the 7th, 8th and 9th May 2001.

### ***Committee on Water Quality and Cavitation***

The second meeting of the Committee was held at Bassin d'Essais des Carènes, Val de Reuil, on 15 and 16 September 2000, before the 23rd ONR Symposium, and was hosted by Dr. L. Briançon-Marjollet.

All the Committee members attended the meeting except Dr. Y.G. Kim of Samsung H.I. Co. Ltd. The Chairman was reported that this company had been in the process of filling Dr. Kim's position in the Committee through the Executive Committee.

The core of the meeting agenda was the progress report of each member on the allocated tasks, discussion of the progress and the future work to be risen from the discussion.

The Committee discussed the two questionnaires one of which has been sent and preliminary results have already been evaluated while the other one is in draft form to be enhanced further. The former is to survey the techniques and procedures for controlling and adjusting the water quality. A reasonable response has been reported to this questionnaire. The latter is to survey different procedures for the propeller cavitation inception tests in different institutions and has been enhanced by the Committee to send to various targeted institutions. The discussions also included how and where to find information on full-scale data concerning important water quality parameters.

As far as the review of the new extrapolation methods for the cavitation inception data is concerned, the group has produced a preliminary report but decided to further enhance it. It has been decided to review the available methods addressing the scaling effect specific to each term in the Rayleigh-Plesset Equation. The group also discussed the rationality of Keller's extrapolator and decided to explore further in terms of the size effect, type of Venturi used, law of similitude and universal nature of his extrapolator etc.

The task of studying flow mechanism and related parameters affecting the intermittence and stability of the cavitation necessitated discussions on the definition of these terms and review of techniques to quantify these phenomena. The Committee members have been allocated specific tasks in collecting suitable evidence and data to document the effect of these parameters depending on their specific expertise in their institute as well as in open literature.

The Committee has been in touch with the Cavitation Induced Pressure Committee and the Propulsion Committee to avoid any overlapping in terms of the investigation areas concerning the cavitation type and the methods for cavitation testing, respectively.

The next meeting will be held in Pasedena on 24-25 June 2001 in conjunction with CAV 2001, the 4th International Symposium on Cavitation, and is being organised by Dr. Ceccio of Michigan University.

### ***Cavitation Induced Pressures Committee***

Since the first meeting at HSVA in Hamburg in February 2000, the Committee spent a significant amount of time to develop a Questionnaire to evaluate current practices in use by the tankery community to predict the cavitation-induced unsteady hull pressure. The final Questionnaire consists of two parts: a numerical and an experimental one.

The Questionnaire was mailed electronically in August to 102 organisations; most of them were ITTC member organisations but some were not. As of November 10, 33 organisations responded with answers, and 12 organisations sent negative responses. Some more responses are expected. The Committee is very happy with the high rate of responses. A framework for analysis of the responses is being worked out. Detailed analysis will be discussed at the next meeting at Italian Ship Model Basin (INSEAN) in Rome, Italy scheduled for 29 November to 1 December 2000.

Major focus at the second meeting will be on evaluation of the responses and on how to develop procedures based on the analysis. Other discussions will include the ITTC Quality Manual and the two procedures on cavitation appearances which should be reviewed together with the Propulsion Committee.

### ***Waves Committee***

The Committee has had its first ordinary meeting in Seattle, USA, 2-3 June 2000, with 6 of 7 members participating. Tasks have been discussed and preliminary selected and distributed, and some work is in progress during the autumn 2000. A few suggested revisions in the task description have been made and forwarded to the Advisory Council.

The report layout has also been initially discussed, and will soon be decided. A rough draft of the report is scheduled for the summer of 2001 and a final report for March 2002. A final selection and distribution is to be decided at the 2nd official meeting in Trieste, Italy (18-19 January 2001). Tentatively, further meetings are planned in Trondheim, Norway (June 2001) and in College Station, TX, USA (March 2002). Additionally, informal meetings may also be arranged in connection with conferences etc. Minutes of the 2nd meeting have been distributed to members and corresponding members.

Liaisons have been appointed in the Committee for contacts towards the Loads and Responses Committee of ITTC, the ISSC Environmental Committee, IAHR, and some other Committees and organisations. An informal, short meeting between some of the ITTC and ISSC Committee members is planned in connec-

tion with the Workshop on "Rogue Waves" in Brest, France, November 29-30, 2000.

Three external persons have accepted an invitation to become corresponding members of the Committee:

- Prof. David Kriebel, US Naval Academy, USA
- Dr. René Huijsmans, MARIN, The Netherlands
- Prof. John Chaplin, University of Southampton, United Kingdom

### ***Committee for Prediction of Extreme Ship Motion and Capsizing***

The third meeting of the Committee on the Prediction of Extreme Ship Motions and Capsizing was held in Osaka, Japan, in October.

**Committee Web Site:** a new web site has been established for the Committee. The URL address for this is <http://academic.amc.edu.au/~bwalker/STAB/>. The web site contains information on the questionnaires and the benchmark tests.

**Questionnaires:** two questionnaires have been developed, one addressing numerical prediction of extreme motions and capsizing, and one addressing model tests. Both are on the Committee web site and member organisations are encouraged to participate in these.

**Benchmark Tests:** two sets of benchmark tests have been established: one for intact ships; and one for damaged ships. Both involve two different vessels. The aim of these tests is for member organisations to test their numerical prediction methods against existing physical model test results. In this way, the numerical techniques will be validated. All the details of these benchmark tests have been put on the Committee web site. Member organisations participating in the benchmark tests are encouraged to download the information. Ideally, one ship should be complete by the end of 2000, with the other due during 2001. A number of organisations have indicated that they are getting involved with this, and so the Committee is optimistic about the value of these benchmark tests.

The next meeting of the Committee will be held in Shanghai, China in April 2001.

### **Address Corrections**

In the following some corrections are reported, which refer to addresses appeared in the June 2000 issue of *itc - news* (No. 42).

#### ***Advisory Council***

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In case addresses stated in this issue of *itc - news* or used in sending this newsletter are incorrect, please inform the editor so that corrections will be implemented.

## Catalogue of Facilities

The ITTC Catalogue of Facilities is updated in this issue of *itc - news*. One of the annexes reports the description of the following renewed facility:

### Cavitation Tunnel (2000)

Naval Science and Technological Laboratory, Vigyan Nagar, Visakhapatnam, INDIA

Organisations changing or extending their facilities, as well as those that have never provided relevant information, are kindly requested to send a description of their facilities in the standard format to the Executive Committee Secretariat.

## Member Organisations Overview

After publishing the lists of EC and TCs members (No. 41, December 1999) and the list of AC members (No. 42, June 2000), an overview of the ITTC member organisations is proposed in the present issue.

The total number of ITTC members is 114 organisations from 32 countries. The complete list is reported in the following pages, note that a “\*” mark denotes an organisation which is also member of the ITTC Advisory Council.

## ARGENTINA

**Universidad de Buenos Aires**  
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**Deadline of Next Newsletter**

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