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## Obituary

### Prof. Yasuhumi Yamanouchi



Yasuhumi Yamanouchi was born July 21, 1919 in Tsudanuma, Chiba Prefecture, in Japan. Sadly, on 28 July 2016, a week after his 97<sup>th</sup> birthday, Prof. Yamanouchi died peacefully.

Without any doubt, Japan has lost one of its leading stochastic analysts of ocean waves and the world has lost a tireless promoter of the ocean science and technology.

Concerning for the ITTC, Dr. Yamanouchi was a member of the Seakeeping Committee from 1963 to 1972, and a member of the Advisory Council from 1969 to 1972 as well. Although the establishment of the Ocean Technology Committee cost him a considerable effort, he finally chaired the Committee from 1978 to 1981.

He graduated from Department of Naval Architecture of University of Tokyo in 1943. After working in a few years at the National Railway Research Institute, he started his career at the re-organized the National Transport Research Institute, then Ministry of Transportation, until his resignation from the Director-General at the reformed Ship Research Institute in 1973, while his doctorate in naval architecture from the University of Tokyo in 1963. Dr. Yamanouchi obtained a number of awards from the domestic and overseas societies. Soon after leaving the Institute, he worked for the Mitsui Engineering and Shipbuilding Co. Ltd. as an executive director and held the Director of the Aki-shima Laboratories (Mitsui Zosen) Inc. as an additional post during later term. He devoted his services to development of shipbuilding technologies of the Mitsui Zosen and strengthened its body for engineering research. Retiring from the Mitsui Zosen in 1983, still keeping the role of advisor to the company, he came to the Graduate School of Nihon University as a professor in 1982, and devoted his last career to university education up to its age limitation. His career in universities included a visiting professor at the Research Institute for Applied

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Mechanics Kyushu University from 1983 to 1984 and NAVSEA Professor at the United States Naval Academy at Annapolis in Maryland from 1984 to 1985. He really did not retire from research at all but continued the work he loved.

Through his life, Dr. Yamanouchi's professional career was devoted to the application of probabilistic theory developed by him to design of vessels and floating structures and their safety analyses in waves, and in addition, he worked on a wide variety of topics related to ship safety issues. The experimental voyage with the Nissei-maru, cargo vessel, in the North Pacific Ocean from 1951 to 1952 would exert a favorable influence upon his life-long theme on probabilistic analysis of ocean waves and ship responses in waves. Beginning with study on statistical estimation of frequency response function, he had established a design procedure of ships in waves based on stochastic analyses of linear ship response in waves in the early 1970s. His enthusiasm for application of stochastic method to practical design of ships resulted in publication of a book in 1986, titled "On the Analysis of Random Processes for Engineers in Naval Architecture and Ocean Engineering (in Japanese)". Analyzing wind and wave data collected from sailing vessels in the North Pacific Ocean from 1960 to 1970, he published "Statistical Diagrams on the Winds and Waves on the North Pacific Ocean" in 1970, similar to N. Hogben's "Ocean Wave Statistics".

As the ship response in waves is often far from linear, Dr. Yamanouchi had extended his study into the non-linear domain of the ship response. He analyzed the physical meaning of the higher order spectrum, its relations with the character of the non-linearity of response process, and the bi-spectrum and tri-spectrum, relating to the skewness and peakedness of the response process.

He rendered great service to the naval architecture in the world. In Japan, he worked for the Society of Naval Architects of Japan (SNAJ) as a fellow, trustee and a member/chair of various committees, including the chair of Japan Towing Tank Committee from 1971 to 1975. He registered himself with SNAME in 1960 and was a life member. Many awards went to Dr. Yamanouchi for his outstanding academic achievements, such as best paper award in 1957 and 1962 from the SNAJ, and also Yoshiki Award for his long-term and distinguished contributions to

the development of shipbuilding technologies in 1976.

Besides his various activities and contributions for IMO, he was frequent addresser or attendee to the international conferences such as ONR, IUTAM, etc. He entertained a lively concern for the ocean engineering, putting forth his best endeavors to establish ECOR Japan, responsible organization to ECOR. He served as vice-chair of ECOR Japan from 1979 to 1983, and representative of Japan to the ECOR and chair of its special committee on ocean waves at the 1<sup>st</sup> General Meeting in London and 2<sup>nd</sup> one in Tokyo. He was honorable member of the ECOR.

His many honors included being appointed 10<sup>th</sup> David W. Taylor Lecturer in 1985. He delivered the lecture on the subject of "A Review of Statistical Studies of Seakeeping Qualities", on July, 1985.

At home he deeply loved his wife, Akiko and his family. The blend of intellectual and theological rigor and emphasis on practical application of Christian principles in daily practice and church life for the latest 70 years was hallmark of his personality.

Prof. Yasuhumi Yamaniuchi will be remembered as a brilliant naval architect of Japan, being missed by many.

I would like to express, on behalf of all, deep sympathy to Akiko and her family at the sad loss of Yasuhumi, but also profound gratitude for distinguished academic career with a great blessing to the maritime society.

Hiromitsu Kitagawa, PhD  
Ex-member of EC, AC and Ice Committee  
Former Director-General of Ship Research Institute

### **News from the Executive Committee**

The 28th Executive Committee held its third meeting in St. John's Newfoundland, Canada, on 28<sup>th</sup> September, 2016, hosted by the National Research Centre. In addition to the usual matters regarding the operation of ITTC, the following items were discussed:

Representing ITTC vis-à-vis third parties. ITTC News No. 64 contained the guidelines for representing ITTC, and the EC decided that these

guidelines shall be issued as a document in the ITTC Quality Systems Manual.

Circular Letter regarding reporting of load variation tests. In May 2016, EC issued a Circular Letter instructing ITTC members to report the results of load variation tests as these were required for the analysis of speed/power sea trial measurements. EC decided that issuing such Circular Letters was acceptable when an urgent action was required, but that, eventually, the requirement should be reflected in the appropriate Recommended Procedure.

The Working Group on the Future of ITTC had held two meetings since the last EC meeting and reported some ideas, which implied rather radical changes of the organisation, e.g. registration of ITTC as a legal entity in a suitable country. It was decided that, in order to give EC more freedom to act, a proposal shall be made to the next Full Conference to implement changes to the ITTC Rules giving EC the necessary mandate.

AC Membership Requirements. As the result of an application for AC membership from one of the university members of ITTC, a discussion of enforcing the requirements for AC membership or strengthening the requirements emerged. AC is becoming quite large (37 of total 97 ITTC members), and the requirements for membership (primarily commercial activities) have not always been enforced. The discussion was not concluded and will continue.

ITTC Membership Fee. The matter of ITTC membership fee was taken up again, and it was decided that a detailed plan for the ITTC activities 2017 to 2020 shall be elaborated and the associated budget established. This will show if an adjustment of the membership fee is necessary.

IMO Activities. It was decided by the EC that a continued active involvement in IMO activities is necessary in order to maintain ITTC's impact on the decisions which can influence the work of the ITTC members.

Venue for 29<sup>th</sup> Conference. The 29<sup>th</sup> Conference in 2020 will be held in Southern Europe according to the rotation schedule. Candidates for hosting have been invited, and just one was found, Ecole Centrale de Nantes in cooperation

with DGA Hydrodynamics. The venue will be Nantes.

## 28th Full Conference Organisation



Preparations for the 28<sup>th</sup> Full Conference in Wuxi, China, 17 to 23 September 2017 are proceeding according to plans. The conference website is nearing completion and a link is already in place to it via the conference logo displayed on the front page of the ITTC website.

Conference venue is the InterContinental Hotel Wuxi, and the registration fee is tentatively set at 1200 USD and 400 USD for accompanying persons. Various deadlines will appear on the website, but it may be highlighted here that the deadline for uploading of committee reports is 15 July.

## News from the Advisory Council

The Advisory Council held its second meeting in St. John's Newfoundland, Canada, on 27 and 28 September 2016. As usual, the focus of this meeting was the review of the committee progress reports and draft procedures and guidelines, which at this stage should clearly describe the contents of new procedures and outlines of revisions. A new format of progress reports had been introduced, which resulted in much more structured reporting than previously. The new reporting format will be kept in the future.

AC further discussed the subjects for Group Discussions at the next conference and a long list was created. No decision was made and it is still possible to suggest subjects. Any proposals should be sent to the ITTC Secretary with a brief description supporting the proposal.

At the 27<sup>th</sup> Conference in Copenhagen, MAERSK presented some comparisons between container vessel speed/power predictions made by different ITTC members and the

measured performance in operation. The differences were large enough to cause serious concern about the prediction methods, and MAERSK was approached with a proposal to undertake a detailed investigation aiming at explaining the causes of the differences and, if justified, revise the ITTC prediction procedure. MAERSK agreed to participate in such an investigation. In the first stage, it will include predictions made by three European model tanks, but will eventually be extended to include Korean tanks who have also tested MAERSK ships. It is the aim that the results of the investigation will be presented at the 28<sup>th</sup> Conference.

Finally, AC elected the Chairman and Vice Chairman for the next period. Gerhard Strasser was re-elected Chairman and Takuya Ohmori was re-elected Vice Chairman.

### **CFD Workshop in Ship Hydrodynamics**

Planning of the next CFD Workshop in Ship Hydrodynamics has been initiated. The objective of the workshop is the assessment of current CFD methods for ship hydrodynamics to aid code development, establish best practices and guide industry and will be the latest one of the series of workshops, i.e. Gothenburg 2010, 2000, 1990 and 1980 and Tokyo 2015, 2005 and 1994. The date and venue of the new workshop are set to December 2020 at Maritime Research Institute Netherlands (MARIN), Wageningen, Netherlands: W2020. Test cases will include captive JBC with focus on turbulence; captive/free running KCS with focus on added resistance/powering; and ONRT with focus on course keeping. A breaking wave test case is desirable but only if applied to one of current three hull forms. A full-scale test case is also under consideration if the environmental conditions and validation variables are sufficient for assessment of CFD. Contributions from ITTC member organizations of additional experimental data is welcome: please contact organizers if interested.

The Steering Committee for the CFD Workshops in Ship Hydrodynamics formed in December 2011 with three primary responsibilities. (1) Select the organizer and venue of the next workshop. (2) Define the benchmark test cases and coordinate campaigns to obtain required

experimental data. (3) Collaborate/support the local Organizing Committee in the scheduling/organization/execution of the workshop including analysis of the results, presentation at the workshop and archival publication.

The members of the Steering Committee for Tokyo 2015 were previous/most recent organizers Prof. Lars Larsson and Dr. Nobuyuki Hirata, area representatives Prof. Frederick Stern and Drs. Michel Visonneau and Jin Kim as well as the chairperson of the ITTC CFD Committee Prof. Takanori Hino. Profs. Larsson and Stern jointly chaired the Steering Committee.

At the conclusion of T2015, the Steering Committee formulated a policy for selecting the next workshop, as the grandfather clause<sup>1</sup> was used in selecting T2015. The host institute should meet the following three qualifications, with the final decision based on best balance between all three criteria. (1) Location based on rotation between Americas/Europe and Asian locations for fair representation of global constituency. (2) Internationally recognized expertise in computational ship hydrodynamics and able to contribute proactively to the Steering Committee deliberations and lead local Organizing Committee. (3) Sufficient resources/commitment for hosting/timely execution of the workshop according to Steering Committee schedule as shown in attached Table. The Steering Committee appreciated the three other institutes that volunteered to host the 2020 workshop: SJTU/MARIC/CSSRC, University Michigan and INSEAN.

The Steering Committee was reformulated with Prof. Frederick Stern, University Iowa, as chair and America representative, Prof. Takanori Hino, Yokohama National University, as secretary and Asian representative, and Dr. Serge Toxopeus, MARIN, as host and Europe representative. In addition, Dr. Michel Visonneau as Europe representative, Dr. Jin Kim, KRISO, Asian representative, and two additional new members: Prof. Decheng Wan, SJTU, as Asia representative and Dr. Joseph Gorski as America representative. Prof. Lars Larsson will serve emeritus at will. Dr. Nobuyuki Hirata will serve ex officio to aid in

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<sup>1</sup> A grandfather clause (or grandfather policy) is a provision in which an old rule continues to apply to some existing situations while a new rule will apply to all future cases.

completion of the analysis/publication of the Tokyo 2015 Workshop results. The makeup of the Steering Committee is based on previous membership, past and possible future venues and balance between Americas, Europe and Asian representation.

The test cases will be announced in late 2016 with required experiments in 2017-2019. The Workshop web site will be fully operational in 2019. A firm deadline will be enforced with no submission accepted after five months prior to the Workshop.

### Ship Hydrodynamics CFD Workshop Schedule

Deadline, time before the workshop	Action
1 month	Committee reviews sent to participants
3 months	All data collected and distributed to Committee
5 months	Firm submission deadline. No results accepted after this!
6 months	Official submission deadline
1 year	All data on web site. No change after this!
2 years	Website open with main ideas and invitation
From 5 years to 1 year	Specification of new test cases and review of progress in measurements
Every year	Announcement, direct mailing
5 years minus 6 months	Announcement, ITTC News
5 years minus 3 months	Identification/discussion interested parties and decision of new host
5 years minus 2 months	Specification of selection criteria and requirements
5 years	New steering committee formed (without local host)

### Simulation Workshop in Ship Maneuvering

Planning of the next Simulation Workshop in Ship Maneuvering has been initiated. The objective of the workshop is the assessment of current simulation methods for ship maneuvering to aid code development, establish best practices and guide industry and will be the latest of the series of workshops, i.e. SIMMAN 2008 and 2014 held at FORCE, Copenhagen Denmark. The date and venue of the new workshop are set to December 2018/19 at KRISO Korea. Test cases under consideration include KCS maneuvering in deep and shallow water and ONR Tumblehome maneuvering in deep calm water and waves. Also a low-speed maneuvering case is under consideration.

Workshop participants are encouraged to submit predictions using simulation methods which can be empirical, based on PMM/CMT, and CFD, either free running CFD or captive CFD. Also contributions with different math models are encouraged (whole ship, MMG, etc.). Focus is on fewer test cases and more submissions per test case. To assure that sufficient data will be supplied, some test cases will be mandatory for participation in harder test cases.

Additional experimental data is requested especially for captive KCS shallow water and ONRT deep water, but more tests from more facilities for all test cases is in general welcome to assess facility biases.

The Steering Committee for the Simulation Workshop in Ship Maneuvering formed in January 2016 with three primary responsibilities. (1) Select the organizer and venue of the next workshop. (2) Define the benchmark test cases and coordinate campaigns to obtain required experimental data. (3) Collaborate/support the local Organizing Committee in the scheduling/organization/execution of the workshop including analysis of the results, presentation at workshop and archival publication.

*The Steering Committee members were based on the organizers and host of the previous two workshops, host of the current workshop and regional representation. The co-chairpersons*

are Frans Quadvlieg MARIN/Europe and Frederick Stern IIHR/America. The secretary is Janne Otzen FORCE/Europe. New host is Yeon-Gyu Kim, KRISO/Asia. Two new members are Hiironori Yasukawa, Hiroshima University/Asia and Baoshan Wu, CSSRC/Asia.

The test cases will be announced in late 2016 with required experiments in 2017. The Workshop web site will be fully operational in 2017/18. A firm deadline will be enforced with no submission accepted after three months prior to the Workshop

### Simulation Workshop in Ship Maneuvering Workshop Schedule

Deadline, time before the workshop	Action
1 month	Committee reviews sent to participants
3 months	All data collected and distributed to Committee
5 months	Firm submission deadline. No results accepted after this!
6 months	Official submission deadline
1 year	All data on web site. No change after this!
2 years	Website open with main ideas and invitation
From 5 years to 1 year	Specification of new test cases and review of progress in measurements
Every year	Announcement, direct mailing
Every year	Announcement, ITTC News

### New ITTC website

The ITTC website [www.ittc.info](http://www.ittc.info) has been upgraded to a more modern appearance, and hosting and website support has moved to BMT. This upgrade should also ensure that the links work with all browsers and not just Internet Explorer.

In the process of this move, the old Catalogue of Facilities was abolished and a new catalogue

set up. The reason for this decision was that the old catalogue, established more than 20 years ago, was getting seriously outdated, and that it would be attractive to have a better overview of different types of facilities. This has been achieved by the new design, and all members have been asked to provide updated descriptions of their facilities or confirm that the old descriptions were still applicable.

All general ITTC information will continue to be freely available to all members as well as the public, but an area with restricted access is created for EC and AC members. This area will contain Minutes of meetings and other information of relevance for these two groups, only.

### Changes in ITTC membership

The Stadt Towing Tank, Norway, has been accepted as the 98<sup>th</sup> member of ITTC. The Stadt Towing Tank is a privately owned towing tank located on the West Coast of Norway near Ålesund. The facility will be described in the catalogue on the website.

Several members have changed the name of their designated representative or other data on their organisation. The ITTC website is regularly updated with the new names and data, if available.

### Changes in ITTC committees

#### Advisory Council:

Several AC members have changed their representatives since the latest updating in the ITTC News. New representatives are:

KSRC: Valerij Borusevich  
 HHI: Bon Jung Chang  
 CNR/INSEAN: Fabio di Felice  
 NSWCCD: Joseph Gorski  
 HSVA: Janou Hennig  
 Meguro: Hiro Kaneko  
 SJTU: Xuefeng Wang  
 PNU: Moon Chan Kim  
 MHI: Daisuke Matsumoto

Representatives of the new AC members are:

SSMB: Booki Kim  
 SSSRI: Guoxiang Dong  
 MARIC: Jinbao Wang

*Specialist Committee on Ice:*

Yan Huang, Tianjin University, and David Molyneux, Memorial University of Newfoundland, were accepted as new members. Rüdiger von Boch und Poland moved to TUHH, Germany, who is not ITTC member, but was accepted to continue on the committee. Mikko Suominen, Aalto University, Finland, was accepted as new member.

*Stability in Waves Committee:*

Paola Gualeni, University of Genova, took over as Chairman after Art Reed, NSWCCD. Art Reed continues as member of the committee.

*SC on Modelling of Environmental Conditions:*

David Drazen, NSWCCD, left and was replaced by Chris Kent, NSWCCD. Jule Scharnke, MARIN, joined the committee

*SC on Performance of Ships in Service:*

Sofia Werner, SSPA, returned to SSPA and joined the SC again.

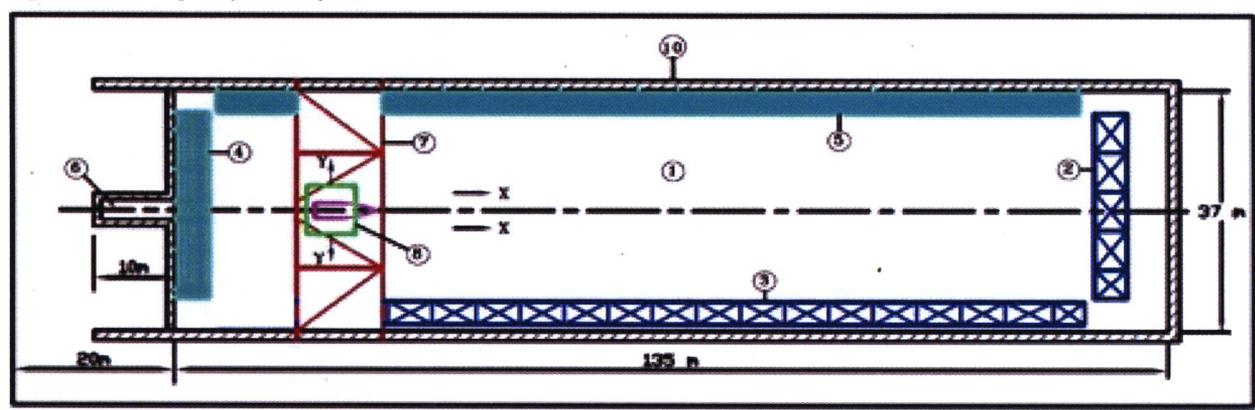
**New Model Test Facilities**

NSTL, Visakhapatnam, has inaugurated a new seakeeping and manoeuvring basin as described in the attached sheet, which is also found under the ITTC website Facilities tab.

<b>Name of organization</b> NAVAL SCIENCE & TECHNOLOGICAL LABORATORY	<b>Year of information updating</b> 2016
<b>Year established</b> 2015	<b>Year of joining the ITTC</b> 1992
<b>Address</b> VIGYAN NAGAR, NAD KOTHA ROAD, VISAKHAPATNAM, ANDHRA PRADESH, INDIA -530027	<b>Status in the ITTC</b> Member
<b>Contact details</b> (phone, fax, e-mail) Tel: +91 891 258 6011 Fax: +91 891 255 9464 Email: panigrahi.pk@nstl.drdo.in	<b>Website</b> www.drdo.gov.in
<b>Type of facility</b> HYDRODYNAMIC TESTING FACILITY	<b>Year constructed/upgraded</b> 2015
<b>Name of facility</b> SEAKEEPING & MANOEUVRING BASIN (SMB)	<b>Location</b> (if different from the above address)

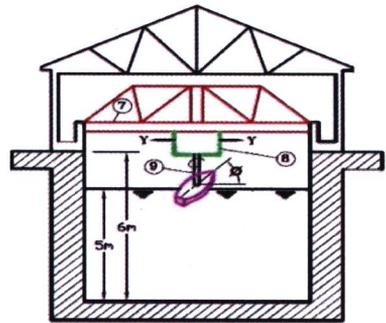
**Main characteristics** (dimensions of tank/basin/test section; for simulators: full mission, part task or desk top)  
135m (length) x 37m (width) x 5m (water depth)

**Drawings of facility** Top-view plan



1. Tank 2. Wavemaker (transverse) 3. Wavemaker (longitudinal) 4. Wave Absorber (Fixed) 5. Wave Absorber (Hoistable)  
6. Trimming Tank 7. Main carriage (X Carriage) 8. Sub Carriage (Y Carriage) 9. Rotating turn table ( $\Phi$  carriage) 10. RCC wall

Cross section view plan



**Detailed characteristics** (carriages, wave/current/wind generators, instrumentations, etc.)

- X carriage: maximum forward speed: 6m/s, reverse speed: 4m/s
- Y carriage:  $\pm 4$ m/s, Yaw carriage:  $360^\circ$
- Model length: 3 - 5m
- Wave generators: 256 hinged flap type paddles on two adjacent sides (70 paddles on the short side and 186 paddles on the long side) and beaches (fixed on short side except the center beach and hoist-able on the long side) on the opposite sides to wavemakers.
  - Regular waves: maximum wave height: 0.5m
  - Irregular waves: maximum significant wave height: 0.35m
- Instrumentation: Six component balance (X=500N, Y=2500N, Z=2500N)  
3 component rudder balance (150N Drag & Lift, 4Nm Moment)  
Two Propeller Dynamometers (200N Thrust, 6Nm Torque, 3000rpm)  
Hull slamming Pressure Probes (0.1 to 1.0Bar)  
Wave probes (Absolute & Relative)  
Optical Tracking System (for Free Sailing Tests)

**Applications** (Tests performed)

Model testing in calm water and waves

- Captive Testing
- Free Sailing Seakeeping Tests
  - Regular Waves
  - Long crested waves: oblique (head seas, following, quartering & beam seas)
  - Short crested seas
- Free Sailing Manoeuvring Tests
  - Turning Circle
  - Zig zag
  - Spiral tests
  - Williamson Turn
- Loss of speed in waves

**Published description** (Publications on this facility)

None