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REPORT OF THE EXECUTIVE COMMITTEE

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## I. GENERAL

### 1. INTRODUCTION

The origin of the International Towing Tank Conference (ITTC), although not bearing the same name, was the meeting on "Hydrodynamic Problems of Ship Propulsion" held in Hamburg in 1932. One of the consequences of this meeting was the decision to maintain, in alternate years, meetings under the name of "The International Conference of Ship Tank Superintendents". The original idea was to promote the improvement of all aspects of ship model work and to reach agreement on basic procedures and methods of presentation of results for publication. The first Conference of Tank Superintendents was held in The Hague in 1933, the second took place in London in 1935, the third in Paris in 1937 and the last, before the second world war, in 1939 in Paris. After the war the Conference were resumed, starting with the fifth Conference held in London in 1948.

To give continuity from one Conference to another the London Conference appointed the "Standing Committee", establishing that the chairman would be the representative of the country arranging the next Conference. Moreover three technical committees were created, Cavitation, Propeller and Skin Friction. It was in the next Conference celebrated in Washington in 1951 when the Standing Committee suggested that a three year interval between the Sixth and the Seventh Conference would be desirable. From then on every three

years the Conference has taken place. The committees appointed by the Sixth Conference were six including the Standing Committee. The subjects of the technical committees were "Scale effect on propeller and on self-propulsion factors", "Skin friction and turbulence stimulation", "Comparative propellers tests", "Seagoing qualities of Ships" and "Presentation of Resistance and Propulsion Data". It was in the Washington Conference when the suggestion of changing the name was given. For this reason the Scandinavian Management Committee formed to organize the seventh conference in 1954 proposed a change of the name to "International Conference on Ship Hydrodynamics" to the Standing Committee. The name was adopted and was thoroughly used during the seventh conference. However, the Conference did not accept this name, but adopted instead the name "International Towing Tank conference" for the future conferences.

It was at the eight Conference held in 1957 when Spain had the honor to hold the full Conference for the first time, now in 1990 will be the second. In the meantime between the two conferences the activities of the ITTC have increased a great amount. There were five technical committees on the 8th Conference and eleven on its nineteenth Conference. The number of attendants and countries involved also increased accordingly. The matters discussed become broader as the years passed, subjects like the application of the computer to the hydrodynamic

field or the use of new techniques and facilities in model testing have a significant role in the tasks of the ITTC.

The real situation of the shipbuilding industry has made it convenient to introduce small changes in the development of the Conference. For this reason, apart from the presentations and discussions of technical reports of the Committees, it is now allowed in the 19th ITTC to present short papers related to matters of the different committees. In the opinion of the Executive Committee as well as the Advisory Council this is a good way to enrich the results of the Conference. In this manner the objectives of the Conference which are "to stimulate progress in solving the technical problems which are of importance to towing tank superintendents, and to stimulate research in all fields where a better knowledge of the hydrodynamics of ships and marine installations is needed to improve the performance at full scale", will be better undertaken.

## 2. MEMORIALS

The Executive Committee has to report with deep regret the death of these eminent colleagues who had contributed to the aims of the ITTC as delegates of Member Organizations and in some cases Executive and Technical Committee members.

### Dr. Günter Collatz

On January 13, 1989 Dr. Günter Collatz, Vice director of HSVA, the Hamburg Ship Model Basin, passed away at the early age of 56.

Dr. Collatz was an active member of diverse committees of ITTC: Presentation Committee 1972 and 75, Resistance Committee 1978 and 81, and since 1984 Powering Performance Committee. Additionally, he was member of the board of STG, the German Society of Naval Architects. For over 26 years Dr. Collatz worked for HSVA. After completion of his studies of naval architecture at the Technische Universität, Hannover and the Institut für Schiffbau, Hamburg in 1959, he worked with Professor Weinblum under a scholarship from the German Science Foundation and received his doctorate in 1962.

He became head of the Ship Resistance and Propulsion Department at HSVA in 1965 and was highly regarded by industry and academia for his deep understanding of flow problems about ship hull forms as well as of the science of ship resistance and powering. With his radiant personality he was developed close contacts with the relevant branches of the ship building industry and has formed extensive personal connections both on a national as well as an international level.



The work of Dr. Collatz covers many facets of ship resistance and propulsion, scale effects, the influence of surface roughness, power prediction at the design stage, wake studies and other topics are treated in his important publications. Lately he has concentrated his attention on power saving schemes such as asymmetric sterns, wake acceleration nozzles and the Grim vane wheel as well as their interaction in a combined use of several such devices.

The farewell is hard. The diverse personal relations he has established in his cordial nature will however continue manifold in warm memories. With what he has produced and contributed he will remain connected to ITTC and naval architects worldwide well past his way too early passing.

Dr. Williams E. Cummins

Williams E. Cummins, 69, retired Associate technical director for ship performance at the David W. Taylor Naval Ship Research and Development Center in Bethesda, died Nov. 3 1987 at his home in Damascus, Md. He had cancer.

Dr. Cummins, an authority in ship hydrodynamics theory and ship motion theory, received the Navy's Distinguished Civilian Service Award in 1976. Other honors included the Navy's Meritorious Civilian Service Award in 1970 and the David W. Taylor Award for Outstanding Scientific Achievement in

1972. In 1974, he received the Davidson Gold Medal, which is the Society of Naval Architects and Marine Engineers' highest award for scientific achievement in ship research.

He was a pioneer in theoretical research on submarine section forces under a seaway, ship wave resistance and techniques for determining the sea-keeping characteristics of surface ships.

A native of Lawrenceburg, Ky., Dr. Cummins earned a degree in naval architecture at the Webb Institute in N.Y. He received a doctorate in mathematics at American University.

He moved to the Washington area in 1941 and went to work for what became the David W. Taylor Naval Ship Research and Development Center. During World War II, he served in the Navy and was assigned to the center.

After the war, he remained at the Center as a civilian naval architect. He became head of the Seaworthiness Branch in 1953. He later was chief of the Seaworthiness and Fluid Dynamics Division. He was promoted to associate technical director in 1964 and remained in that position until he retired in 1979.

Among the professional organizations that Dr. Cummins was a member of, are Sigma Xi, Society of Naval Architects of Japan, Association Technique et Maritime Aeronautique, and Society of

Naval Architects and Marine Engineers, and a Fellow of the Royal Institute of Naval Architects (British).

Prof. Konstantin Kokkinowrachos

He died suddenly on November 17, 1988. He was serving his second term on the ITTC Ocean Engineering Committee.

He was for many years and until his death head of the Division of Ocean Engineering of the Technical University of Aachen, Germany. Since 1983 his main position was Professor and head of the Division of Ocean Engineering at the Technical University Hamburg/Hamburg.

He was born in 1938 and grew up in Athens, Greece. In 1956 he went to Germany for an engineering education at the Technical University of Aachen, where he later became a Professor. His professional standing and reputation were outstanding, covering a wide field within structural engineering and hydrodynamics. The best proof of this was his participation in a large number of German and international professional societies and committees. As mentioned above he was a member of the ITTC Ocean Engineering Committee. Since 1973 he was also a member of various technical committees within the International Ship Structures Conference. He was President of the German Committee for Marine Sciences, he was one of the locomotives in the WEGEMT cooperation (West European

Graduate Education in Marine Technology), he was active in ECOR (Engineering Committee on Ocean Resources), he was involved in various committees for the European Community, etc. Thanks to his talents for organization and administration, and his enormous energy, he also managed the teaching and research activities of the University Institute in Hamburg and Aachen, which has made very significant contributions to the profession of ocean engineering.

Those of us who had the opportunity to work together with him on the ITTC committee, and on other occasions, learnt to know him as a hard-working person, always full of enthusiasm for the tasks to be done. These qualities, together with his professional expertise, his informal attitude, and his good humour, made it a great pleasure for us to work with him.

With the tragic death of Prof. Kokkinowrachos Germany and the world at large has lost one of the most outstanding personalities and experts in the ocean engineering and marine sciences.

Prof. Dr. techn. C.W. Prohaska

Prof. Prohaska died in January 1990 at the age of 86 years. He was appointed as professor in shipbuilding at the Technical University of Denmark in 1937, where four years later he defended his doctor's thesis on ships vibrations.



In ITTC he was chairman of the frictional resistance committee 1957-63, chairman of the sea trials analysis committee 1963-66, and a member of the executive committee 1963-69.

Professor Prohaska took the initiative, and was the driving force in the establishment of a Danish ship model basin (Hydro- and Aerodynamics Laboratory - HyA, 1959) and a centre for ship technical computations (Danish ship Research Institute - DSRI, 1960) for both of which he was the first director.

In the experimental field he initiated the building of the first Planar Motion Mechanism for surface ships, which was intensively used until replaced in 1970 by its 2nd generation successor. He introduced the use of computers by his purchase in 1962 of HyA's first digitized computer.

Prohaska's method for form factor determination became standard in the current ITTC 78 extrapolation method, but was regularly used by HyA since 1963.

After his retirement in 1973 the present Danish Maritime Institute was formed in 1975 by a merging of HyA and DSRI.

Prohaska was chairman and member of many scientific societies. His pioneer work on ships stability paved the way for his chairmanship in 1960-71 of IMCO's committee for ships stability.

He received many distinctions between which the Royal Institute of Naval Architects' Premium in 1951 and the Willian Froude Gold Medal in 1963.

#### Dr. Karl E. Schoenherr

Karl E. Schoenherr, 96, a retired naval architect with the Navy Department and a former dean of the college of engineering at the University of Notre Dame, died Feb. 8, 1990, at his home in Chevy Chase.

He was an authority on the propulsion of ships, and he was best known for his work on the frictional resistance of fluids on plane surfaces. He worked at the Navy Department from 1922 to 1945 and then became the engineering dean at Notre Dame.

In 1958, he returned to the Navy Department and headed the hydromechanics laboratory at the David A. Taylor Model Basin until he retired in 1963. In the course of his career he helped design several ships for the Navy and contributed to the development of such projects as the homing torpedo.

He received the Navy's Superior Civilian Service Award and the Davidson Award of the SNAME, of which he was a fellow. He also was a fellow of the American Association for the Advancement of Science and a member of the Society of Professional Engineers and the Blessed Sacrament Catholic Church.



Dr. Schoenherr was born in Karlsruhe, Germany. He came to this country in 1916 and settled in Boston. He graduated from the Massachusetts Institute of Technology. He earned a master's degree in physics at George Washington University and a doctorate in mechanical engineering at Johns Hopkins University.

In retirement he was a consultant to the ITTC.

#### Prof. Siegfried Schuster

On February 23, 1989 Professor Dr. Ingenieur Siegfried Schuster died at the age of 74 in Berlin. He was director of the Versuchsanstalt für Wasserbau und Schiffbau, VWS, the Berlin Model Basin, from 1957 to 1981 and has been teaching at the Technical University Berlin, TUB, since 1958. He served on the ITTC Propeller Committee for many years and from 1969 to 1972 he was President of the 13th ITTC held in Berlin and Hamburg in 1972. The rise of VWS from the ruins to its present position and its successful operation in these difficult times are due to on his visions and his activity.

#### Professor Kyoji Watanabe

Kyoji Watanabe, professor at the Department of Naval Architecture, Faculty of Engineering, the Nippon Bunri University in Ohita City and the former General Manager of the Nagasaki

Research and Development Center, Mitsubishi Heavy Industries, Ltd. died on July 4, 1989. He was a member of the ITTC Performance Committee from 1969 until 1975 and, as the representative of the Nagasaki Experimental Tank, the Nagasaki R & D Center, was a member of the ITTC Advisory Council from the Council's formation until 1978.

He was born April 5, 1921 in Nagasaki City. He graduated the master course of the Department of Naval Architecture, Faculty of Engineering, the University of Tokyo in 1946 and joined the Nagasaki Experimental Tank. He participated in the reconstruction of the facilities and the instrumentations and in the development of the experimental techniques and analysis methods of the tank, which was fully destroyed by an atomic bombing.

After the restoration of the tank, he devoted himself specially to the improvement of the experimental accuracy of the basic model tests such as resistance, propulsion and propeller open-water tests and in the development of new testing techniques and instrumentations. It must be stressed that the unstable flow phenomenon on large full tanker models, which appeared several times at the self-propulsion tests, was found out by him.

He served as the manager of the Nagasaki Experimental Tank from 1965 until 1978 and then as the general manager of the Nagasaki R & D Center until 1981. Also, he had been a member

of the Japan Towing Tank Committee for a long time and served as the chairman of the First Sub-Committee, which treated the subjects on resistance, propulsor, cavitation and performance, 1979 through 1983.

### 3. COMMITTEE MEMBERSHIP

The 19th ITTC Executive Committee appointed by the Kobe Conference consisted of the following persons:

Prof. J.A.Aláez	(Spain)
- Chairman	
I.G.A. H.Cheneau	(France)
- repr. Southern Europe	
Dr. M.E. Davies	(United Kingdom)
- repr. U.K. et al	
Mr. A.Hansen	(Norway)
- Repr. Scandinavia	
Dr. W.B.Morgan	(USA)
- Repr. North & South America	
Dr. M.W.C.Oosterveld	(The Netherlands)
- Repr. Northern Europe	
Dr. O.P.Orlov	(USSR)
- Repr. Eastern Europe	
Dr. K.Yokoo	(Japan)
- Repr. East Asia	

The Committee appointed Mr. M. Pérez Sobrino (Spain) and Prof. H. Kato (Japan) as Secretaries.

The countries belonging to each geographical area are shown in the table at the end of these proceedings.

On its first meeting the Committee decided that its members will act as liaison officers between the Executive

Committee and the Technical Committees during the 19th ITTC period as described below.

<u>Technical Committee</u>	<u>E.C. Member</u>
Resist.& Flow	Mr. M.E. Davies
Propulsor	Dr. K. Yokoo
Cavitation	Dr. W.B. Morgan
Powering Perfo.	Mr. M.P-Sobrino
High-Speed MV	Prof.J.A. Aláez
Manoeuvrability	Dr. O.P. Orlov
Seakeeping	Adm. H. Cheneau
Ocean Engineering	Dr.M.W.C. Oosterveld
Perform. in Ice	Mr. A. Hansen
Symbols & Term.	Prof. H. Kato
Validation	Mr. M.E. Davies

Following the change of duty of Admiral Cheneau and upon consultation with the Member Organizations of Southern Europe, Mr. J.C. Dern new Director of the Bassin D'Essais des Carenes, Paris, was appointed in September 1988 as area representative of Southern Europe.

Following the retirement of Dr. K. Yokoo, the Committee decided on its third meeting in Trondheim to ask Prof. S. Takewaza of Yokohama National University as the representative of East Asia upon the proposal made by the members of this geographical area.

In December 1989 after the change of job of Mr. Pérez Sobrino, Prof. Dr. José F. Núñez was appointed as a new Secretary of the Executive Committee of the 19th ITTC. This decision was brought up in the Executive Committee



meeting held in Madrid the 21st of March of 1990.

In accordance with the changes made, the liaison with the Technical Committees for the 19th ITTC will be as follows:

<u>Technical Committee</u>	<u>E.C. Member</u>
Resist. & Flow	Mr. M.E. Davies
Propulsor	Dr. Oosterveld
Cavitation	Dr. W.B. Morgan

<u>Technical Committee</u>	<u>E.C. Member</u>
Powering Perfo.	Mr. J.F. Núñez
High-Speed MV	Prof. J.A. Aláez
Manoeuvrability	Dr. O.P. Orlov
Seakeeping	Mr. J.C. Dern
Ocean Engineering	Dr. K. Takezawa
Perform. in Ice	Mr. D.C. Murdey
Symbols & Term.	Prof. H. Kato
Validation	Mr. A. Hansen

## II. REVIEW OF THE ACTIVITIES OF THE EXECUTIVE COMMITTEE

### 1. COMMITTEE MEETINGS

During the 19th period which started in October 1987, the Executive Committee met four times. Further meetings are scheduled for the Conference week. The main topics of discussion are briefly summarized below.

The first meeting was held in Kobe on October 24th immediately after the closing of the 18th ITTC. It was solely devoted in the presentation of its members and the approximate scheduling of the Executive committee meetings until the celebration of the Conference.

The second meeting was held in Hamburg on September 28th 1988. The main topic discussed was about actions to be taken in accordance with the recommendations of the Advisory Council to take a more positive role in directing the technical aims of the Conference. It

was under this topic that the Technical Committees "should be directed to maximize the proportion of their report devoted to practical applications and the state of the art should emphasize on work since the last Conference". It was also decided to limit the discussion of the contents of the TC reports, their conclusions and recommendations, and to allow the presentation of some brief relevant technical papers in other different sessions. The discussions and these short presentations will be organized by each TC. According to that, the technical sessions will be reduced to two hours in order to allow some extra sessions for the above mentioned presentations. With regards to group discussions it was agreed that the Secretariat Group will arrange the group discussions avoiding the concurrence of sessions. The Committee also discussed time schedules for the 19th Conference, and the invitation of delegates and observers.

The third meeting was held in Trondheim the 1st of September 1989. The Committee discussed the recommendations of the A.C. contained in the document "Response of the ITTC to the Needs of its Members". It was decided to require to each technical committee to provide draft recommendations for future works of the committee. These draft recommendations should be limited to five, listed in priority order. Moreover it was also decided to require to "Symbols and Terminology Group" to formulate a formal statement with regard to "Standard format for hullform data bases". The Committee also discussed the 19th Conference organizational activities including the sessions devoted to "Presentation of Related Topics on .....". With reference to the scheduled Group Discussions, it was decided to have three sessions of one hour and a half each. Regarding the invitations of delegates and observers, it was agreed to join the two categories named "Expert Delegates" and "Observers" in one sole category named "Other Delegates".

The fourth meeting was held in Madrid the 21st of March of 1990. The Committee discussed the comments of the A.C. on the draft recommendations for future work of technical committees, panels and groups. The technical and social programmes of the 19th Conference were also discussed. The lists of delegates to be invited to the Conference were reviewed.

## 2. COMMITTEE DECISIONS

### 2.1 New ITTC Member Organizations

The following nine organizations were accepted as new members of ITTC:

Australia Maritime College  
Ship Hydrodynamics Center, Australia

Istituto di Architettura Navale  
University of Trieste, Italy

Institute of Naval Architecture  
Dalian University of Technology  
Dalian 116024, China.

Harbin Shipbuilding Research Institute  
Wenmiao Jie, 11/F, Nangangqu Harbin  
Heilongjiang, China.

Towing Tank of Inha University  
Inha University  
Department of Naval Architecture and  
Ocean Engineering  
253 Yonghyun-Dong, Nam-ku, Incheon 402-  
751, Korea.

Department of Naval Architecture  
Pusan National University  
30 Jangjeon-Dong, Kumjung-ku  
Pusan, 609-735, Korea.

Research Institute for Applied  
Mechanics.

Kyushu University 87  
Kasuga, Fukuoka 816, Japan

L.H.C.M. Towing Tank  
Faculty of Applied Sciences  
University of Liege, Belgium

Escuela Técnica Superior de Ingenieros Navales  
Universidad Politécnica de Madrid  
Madrid, Spain.

## 2.2. Changes of Membership within Technical Committees.

The following changes in the original lists of Technical Committees, accepted by the 18th ITTC, were subsequently approved by the 19th ITTC Executive Committee:

### Powering Performance Committee

Mr. P. Schenzle (HSMV) was appointed in September 1989, in place of Dr. G. Collatz.

## 2.3. Delegates and Observers at the Conference.

According to the actual situation of the organization of the 19th Conference, there are no reasons to limit the number of delegates and observers.

In the third meeting of the Executive Committee it was agreed to join the two categories named "Expert Delegates" and "Observers" in one sole category named "Other Delegates". In consequence the categories of attendants to the 19th ITTC will be as follows:

- (A) - Representatives of Member Organizations (Superintendents, Members of Advisory Council).

- (B) - Members of Technical Committees

- (C) - Senior Member Delegates.

- (D) - Other Country Representative (to cover assistants coming from non-member Organizations).

- (E) - Other Delegates (to cover the assistants coming from Member Organizations).

## 3. ADDITIONAL CONSIDERATIONS

### 3.1 On future Conference of ITTC

20th ITTC - During the 19th ITTC period the Executive Committee received an invitation to hold the 20th ITTC in USA, in the University of California (Berkeley). The Committee decided to recommend that the Conference accepts the invitation from USA.

## 4. ON ORGANIZATION OF THE 19TH ITTC.

### 4.1 General Arrangements

The 18th ITTC Conference in Kobe decided at the final General Session that the 19th ITTC be held in Madrid, Spain, 1990. Later the 19th Executive Committee decided that it will be a seven day Conference from September 16 until 23, 1990. One Spanish Organizing Committee were formed in 1989.

In May 1990 the King of Spain accepted to be the Honor President of the Conference.

The progress of the organization work were announced to all Member Organizations by the ITTC Newsletters.

#### 4.2 Formal Invitations to Delegates and Observers.

Personal invitation letters were sent in May 1990 to about 330 delegates in accordance with the lists of names reviewed and approved by the Executive Committee which are reproduced in the Volume 1 of the Proceedings. The list of delegates includes 49 senior members.

#### 4.3 Reports of the Technical Committees

Guidelines for the preparation of the Committee reports and blank sheets for the manuscripts were sent to Secretaries of the Technical Committees on November 30th, 1989. The Guidelines were based on the proposal of the 17th ITTC Information Committee entitled "Guidelines for the preparation of ITTC Proceedings". This was published as appendix 10 of the Committee Report in the Volume 1 of the 17th ITTC Proceedings. It was modified partially and new Guidelines are shown as Appendix 3 of this report. The Manuscripts of the Technical Committee reports including those of Symbols and Terminology Group, were received by the organizers during the period between April 3rd and May 30th.

#### 4.4 Technical Program of the Conference

There will be two General Sessions

pertaining to the work and policy of the ITTC, ten regular Technical Sessions for each subject covered by the nine Technical Committees and Validation Panel, one Session on Symbols and Terminology, three Group Discussions and four Presentation Sessions at the Conference.

According to the suggestions made by the Executive Committee, session hours of differing length were scheduled based on the statistics of number of written discussions given at past Conferences.

It was decided that the members of the Executive Committee would act as liaison officers with the Technical Committees and as Session Chairman at the Conference. The list of Session Chairmen is presently as follows:

<u>Session on</u>	<u>Chairmen</u>
Resist. & Flow	Mr. M.E. Davies
Propulsor	Dr. Oosterveld
Cavitation	Dr. W.B. Morgan
Powering Perfo.	Mr. J.F. Núñez
High-Speed MV	Prof. J.A. Aláez
Manoeuvrability	Dr. O.P. Orlov
Seakeeping	Mr. J.C. Dern
Ocean Engineering	Dr. K. Takezawa
Perform. in Ice	Mr. D.C. Murdey
Symbols & Term.	Prof. H. Kato
Validation	Mr. A. Hansen

The technical sessions will include:

- presentation of the reports of the Technical Committees,



- presentation of written contributions to the Committee report,
- oral discussions from the floor, and
- replies by the Committees.

Written Contributions, together with the edited replies by the Committees, will be included in Volume 2 of the Proceedings. The Written Contributions should be made available before the Conference or handed to the Secretariat on the day before the Sessions concerned at the latest. They must not exceed 1000 words of length. A Summary of a Contribution to the Discussion from the floor will also be included in Volume 2, provided it is completed and handed to the Secretariat before the discussor leaves the Conference.

The Group Discussions will be made on September 20 (Thursday) and 22 (Saturday), 1990 on the following three subjects. The subjects and organizers are:

- 1 New Facilities and New Testing and Analysis Methods.  
- Dr. K. Tamura
- 2 Full Scale Measurements.  
- Dr. Faresi
- 3 Manoeuvring Simulation.  
- Dr. J.P. Hooft.

The details of the Group Discussions will be arranged in cooperation with the Group Discussion Chairmen, who may invite specialist Delegates to contribute short written introductions

to various items. An informal discussion will be stimulated. The written introductions will be included in Volume 2 together with an edited Summary of the Discussions

The Presentation Sessions will be devoted to allow the presentation of some brief technical papers related with the matters of Committee. They will include the following subjects:

- 1st Presentation Session: Resistance & Power Performance.
- 2nd Presentation Session: Propulsor and Cavitation.
- 3rd Presentation Session: Seakeeping & Ocean Engineering.
- 4th Presentation Session: High Speed Marine Vehicles and Manoeuvrability.

The people interested to present some contributions in these sessions, contact with the Chairman of the corresponding Committee prior to the Conference.

The selection of papers should be done by the Technical Committees. The extent of these Papers will be of seven normalized sheets at the utmost and the exposition time should not exceed ten minutes.

### III. REVIEW OF THE ACTIVITIES OF THE ITTC SECRETARIAT

#### 1. ITTC-NEWSLETTER

During the 19th ITTC period, six biannual Newsletters were issued and distributed. The distribution included all Member Organizations, all members of Executive and Technical Committees and Groups and a limited group of additional organizations and persons nominated by the Executive Committee. The Newsletter publication was as follows:

No. 17	January, 1988
No. 18	June, 1988
No. 19	December, 1988
No. 20	June, 1989
No. 21	December, 1989
No. 22	June, 1990

The six Newsletters included the following items:

- News from the Executive Committee
- News from the Advisory Council
- News from the ITTC Secretariat
- News from the Technical Committees
- News from the ITTC Member Organizations
- Calendar of events including conferences, symposia, and international meetings related to the aim of the ITTC
- Catalogue of Facilities updates
- List of Committee Members.

It is proposed that the Newsletter should continue to be published twice a year. In Appendix 4 the general format of the Newsletter with publication schedule for the 20th ITTC period is also proposed.

APPENDIX 1

GUIDELINES FOR THE PREPARATION OF ITTC PROCEEDINGS

1. GENERAL

1.1 Subdivision of the Proceedings

The Proceedings will consist of two volumes and the Standard Symbols List:

- Volume 1 containing the Technical Committee Reports should be published and distributed before 15th July 1990.
- The Standard Symbols List (1990 version) will be a separate document along with Vol. 1 of the Proceedings.
- Volume 2 containing Invited Papers, written contributions, replies, and final recommendations will be published after the Conference.

1.2 Contents of the Technical Committee Reports:

Each Technical Committee Report must reflect the opinion of the complete Committee, even if individual members are made responsible for compiling separate parts.

Any member of the Conference on his own behalf or on behalf of any other individual, may contribute material of possible value to the Report of a Technical Committee.

Such contributions must be sent to the Chairman of the Committee concerned, before 30th October 1989. The Technical Committee may include parts of those contributions which they consider important in their reports. These contributions will not be published separately in the Proceedings.

1.3 Structure of the Technical Committee Reports

- Table of Contents.
- General.
- Review of Research on ..... of importance to the ITTC.
- Conclusions and Recommendations.
- Appendices.

These parts should include:

General:

- Membership and Meetings.
- Recommendations of the 18th ITTC

Review of Research on .... of importance to the ITTC:

- Introduction.
- 
- 
- Conclusions.
- Acknowledgements (if any)
- References.

Conclusions and Recommendations:

- Conclusions of the Committee
- Draft Recommendations to the Conference.

- Draft Recommendations for the Future Work of the Committee.

These "Conclusions and Recommendations" should be divided into three separate parts:

- a. General technical conclusions.
- b. Recommendations to the Conference on carrying out or reporting work requiring Conference action (e.g. testing techniques, standard symbols, prediction techniques, etc.).
- c. Recommendations for future work of the Committee.

In particular the second and third parts would have to be very specific.

The complete Committee Report including illustrations should not exceed 50 pages or 15000 words.

#### 1.4 Numbering of divisions

Divisions and subdivisions of each report and appendices, if any, shall be numbered according to the international standard ISO 2145 "Numbering of divisions and subdivisions of written documents".

In addition each Report should be accompanied by a detailed Table of Contents. for the sake of uniformity all tables of contents will be retyped with appropriate change of page numbers before reproduction. Page number must not be used for reference.

#### 1.5 Invited papers

Authors may be invited to present papers within the Conference Session on selected topics related to "tankery" These papers will be included in Volume 2 of the Proceedings.

They should not exceed 15 pages including illustrations or 4500 words.

The original and one copy of invited papers must be sent to the Secretary of 19th ITTC not later than 16th September 1990.

## 2. GUIDELINES FOR PREPARATION OF TECHNICAL COMMITTEE REPORTS AND INVITED PAPERS.

### 2.1 Paper and typing

An adequate number of green-lined sheets required for typing the the reports will be mailed to the Secretaries of Technical Committees by 15th December 1989.

Manuscripts should be typed in black preferably 1 1/2 spaces on the sheets of paper supplied. If possible IBM Courier letter type (10 pitch) should be used. The text should extend up to, but not beyond, the preprinted frames. The text should be typed with two columns to a page, on one side of the sheet only. The style to be followed for headings as well as other details of the lay-out are shown on the samble manuscript.

Clean manuscript pages ready for photographic reproduction have to be provided. The pages will be photographed and printed exactly as received, reduced by 20% to the standard size A4 (210 mm x 297 mm). The bottom right-hand corner should be used for identification and preliminary pagination. The pagination must not be used for reference purpose since consecutive pagination will be inserted by the organizers. All text below the preprinted frames will be masked.

## 2.2 Equations

If possible, equations should be typed. Otherwise they should be carefully handlettered in Indian ink. Numbers of equations should be within round brackets at the right-hand margin. Refer to equations as Eqn. (1) etc. in the text.

## 2.3 Illustrations

Illustrations should be traced in Indian ink and should be inserted in the text. Photographs submitted must be black and white mat print and they should be supplied in duplicate. Refer to the illustration as Fig. 1 etc in the text.

## 2.4 References

A list of references, either numbered in the sequence of appearance or arranged in alphabetical order by author's name and year of publication,

must be provided after the text. refer to the references as Ref. 1 etc. in the text, or by author's name, year of publication, and, page numbers. Use square brackets. If such not available, avoid round ones

(Cf "Sample manuscript for invited papers".)

## 2.5 Table of contents

Each Committee Report shall include a Table of Contents, preferably within one page length, including the divisions and sub-divisions.

## 1. ITTC ORGANIZATION

<u>Document:</u>	<u>Where to obtain</u>
1.1 Rules of organization as adopted by 17th ITTC 1984	Proceedings of 17th ITTC, Volume 2 (pp. 403-405), also Proceedings of 18th ITTC, Volume 1
1.2 Composition of the Executive Committee and geographical areas	Proceedings of 17th ITTC, Volume 2 (p. 406), also Proceedings of 18th ITTC, Volume 1
1.3 Selection of ITTC Technical Committee members	Proceedings of 16th ITTC, Volume 2, Recommendations of Executive Committee (pp. 296-297)
1.4 Guidelines for preparation of ITTC-proceedings	Proceedings of 18th ITTC, Volume 1, Report of Executive Committee, Appendix 3
1.5 Standard format for Catalogue of Test Facilities	Proceedings of 15th ITTC, Volume 1, Report of Information committee
1.6 General format of ITTC-Newsletter	Proceedings of 16th ITTC, Volume 1, Report of information Committee (p.504)
1.7 Standard format for exchange of seakeeping data on computer compatible media	Proceedings of 16th ITTC, Volume 1, Report of Information Committee (pp. 495-503)
1.8 Guidelines for the application of organizational membership of the International Towing Tank Conference (ITTC)	Proceedings of 13th ITTC Extract from Rules of Organizations

## 2. PROCEEDINGS

<u>Proceedings:</u>	<u>Where to obtain:</u>
2.1 International Conference of Tank Superintendents The Haghe, 13-14 July, 1933	Wageningen: Maritime Research Institute Netherlands (Photostatic copies, price Hfl. 50,--)
2.2 Summer Meetings of the Seventy-fifth Session and International Conference on Experiment Tank Work London, 10-13 July, 1934	London: Institut of Naval Architects, 1934 Trans. INA 76 (1934) (not available)
2.3 Congrès International des Directeurs des Bassins Paris, Octobre, 1935 Mémoires présentés et résumés des discussions Ed. MM. Barrilon, Pelabon et Guntzberger	Paris: Bassin d'Essais de Carenes de Paris, 1935 (not known)
2.4 Internationale Tagung der Leiter der Schieppversuchsanstalten Berlin, 26-28 Mai, 1937 Barichte, Beiträge u. Entschliessungen Ed. H.M. Weitbrecht	Berlin: Preussische Versuchs-anstalt für Wasserbau und Schiffbau, 1937 (loose leave copies, price DM 60,00)
2.5 Fifth International conference of Ship Tank Superintendents London 14-17 september, 1948 Papers and Discussons Ed. G. Hughes	Teddington: Ship division, National Physical Laboratory, 1949 (out of print)
2.6 Sixth International Conference of Ship Tank Superintendents Washington, 10-15 September, 1951 International Committee Reports, Introductory Remarks, Discussions and Conclusions. Ed. H.E. Saunders	New York: Society of Naval Arc' and Marine Engineers, 1953 (unbound copies, price SNAME \$ 56,00,--, non SNAME members US \$ 76,00,--,)

- 2.7 Seventh International Conference on Ship Hydrodynamics Oslo, 10-20 August, 1954  
General Lectures with Discussions ed.  
  
Seventh International Conference on Ship Hydrodynamics Göteborg 20-31 August, 1954  
International Committee Reports, Discussions and Conclusions  
Ed. H.F. Nordström and H.E. Edstrand  
  
Trondheim, Skipsmodelltanken, Norges Tekniske Hogskole (Norwegian Ship Model Experiment Tank, Publ. No. 32-37, out of print)  
  
Göteborg: Statens Skeepsprovninganstalt, 1955 (SSPA publ. No. 34, price S.kr. 125,00).
- 2.8 Eighth International Towing Tank Conference  
Madrid, 15-23 September, 1957  
Proceedings  
Ed. M.L. Acevedo and L.Mazarredo  
  
El Pardo/Madrid: Canal de Experiencias Hidrodinámicas, 1959  
(Proceedings, price Pts. 5000,00)
- 2.9 Ninth International Towing Tank Conference  
Paris, 8-17 September, 1960  
Proceedings  
Ed. R. Brard and S.Bindel  
  
Paris: Bassin d'Essais des Carenes (not known)
- 2.10 Tenth International Towing Tank Conference  
Teddington, 3-12 September, 1963  
Proceedings, 2 Volumes  
Ed. G.J. Goodrich  
  
Teddington: National Physical Laboratory (Proceedings, price £ 10,00 plus £ 7.50 overseas postage)
- 2.11 Eleventh International Towing Tank Conference  
Tokyo, 10-20 October, 1966  
Ed. M.Kinoshita and K. Yokoo  
  
Tokyo: Society of Naval Architects of Japan (Proceedings, price Y 5000 plus Y 1620 seammil, Y 9140 air mail)
- 2.12 Twelfth International Towing Tank Conference  
Rome, 22-30 September, 1969  
Proceedings  
  
Ed. Istituto Nazionale per Studi ed Esperienze di Architettura Navale  
Roma: INSEAN  
(Proceedings, price It. lire 100,000,-- plus 2% tax plus postage)

- 2.13 Thirteenth International Towing Tank Conference  
 Berlin/Hamburg, 4-14 September, 1972  
 Materials for Reports, Materials of interest  
 Proceedings, 2 Volumes  
 Ed. S. Schuster and M. Schmiechen  
 Berlin: Versuchsanstalt für Wasserbau und Schiffbau, 1972/73  
 (Material for Reports, Material of Interest, price DM 60,--  
 Proceedings, price DM 120,--)
- 2.14 Fourteenth International Towing Tank conference  
 Ottawa, 2-11 September 1975  
 Proceedings, 4 Volumes  
 Ottawa: National Research Council of Canada, 1975/76 (Proceedings, price Can.\$ 140)
- 2.15 Fifteenth International Towing Tank Conference  
 The Hague, 3-10 September 1978  
 Proceedings, 2 Volumes  
 Ed. M.W.C. Oosterveld  
 Wageningen: Maritime Research Institute Netherlands, 1978/79 (Proceedings, price Volume 1, Hfl. 80,-- price Volume 2, Hfl. 40,--)
- 2.16 Sixteenth International Towing Tank Conference  
 Leningrad, 31 August - 9 September 1981  
 Proceedings, 2 Volumes  
 Ed.  
 Leningrad: Krylov Ship Research Institute (Proceedings, price Volume 1..., price Volume 2...)
- 2.17 Seventeenth International Towing Tank conference  
 Göteborg, 8-15 September 1984  
 Proceedings, 2 Volumes  
 Ed. N.H. Norrbin  
 Göteborg:SSPA Maritime Consulting AB, 1984/85 (Proceedings, price Volume 1 SEK 350.-, price Volume 2 SEK 150.-)
- 2.18 Eighteenth International Towing Tank Conference  
 Kobe, 18-24 October 1987  
 Proceedings, 2 Volumes  
 Co-Editors: Prof. T. Inui  
 Prof. H. Kato  
 Kobe: The Society Of Naval Architects of Japan

### 3. ITTC PUBLICATIONS

#### Publication:

#### Where to obtain:

3.1. International Towing Tank  
Conference, Standard Symbols, 1976

BSRA Technical Memorandum No. 500, 1976

#### Translations into:

Chinese

CSSRC - Wusih

French

Association Française de Normalisation  
(AFNOR)

German

Collatz, G., Schiff und Hafen 27 (1975)  
No. 10. International Vereinbarte  
Buchstabensymbole und Bezeichnungen auf  
dem Gebiet der Schiffshydrodynamik.

Italian

Proceedings of 14th ITTC, Vol. 4,  
Report of Presentation Committee, Ap.  
II.

Japanese

Transactions of the Society of Naval  
Architects of Japan, No. 538, April  
1974.

Spanish

Simbolos Internacionales en Arquitectu-  
ra Naval, AICN Publicación No. 7/75,  
Julio 1975, Madrid.

3.2 ITTC-Dictionary of Ship  
Hydrodynamics

RINA Maritime Technology  
Monograph No.6, 1978

#### Translations into:

Chinese

CSSRC, Wusih

Russian

KSRI, Leningrad

Translation of Overall  
Index of Titles of dictionary of  
Ship Hydrodynamics

Volume 1,	CETENA, Genova
1A French in alphabetic order	
1B German               "       "	
1C Italian               "       "	
1D Portugese           "       "	
1E Spanish             "       "	
 Volume 2,	 University of Tokyo,
Chinese	Tokyo
Japanese, Korean	
Russian	
 3.3 Catalogue of Facilities	 Secretary of ITTC Executive Committee
 3.4 List of Catalogue of Facilities updates	
 Nos. 0001 - 0024	 Proceedings of 17th ITTC, Volume 1, Report of Information Committee (pp. 63-64)
 Nos. 0025 - 0027	 Proceedings of 18th ITTC, Volume 1, Report of Executive Committee. Appendix 5
 3.5 ITTC-Newsletter	
 Nos. 1-10	 MARIN - Wageningen
 Nos. 11-16	 Nagasaki R & D Center Mitsubishi Heavy Ind. Ltd. Ed. H. Kasai
 Nos. 17-22	 Canal de Experiencias Hidrodinámicas, Ed. José F. Núñez
 4. ITTC ADDRESSES	
 <u>List:</u>	 <u>Where to obtain:</u>
 4.1 Member Organizations of ITTC	 Secretary of ITTC Executive Committee
 4.2 Member Organizations represented in advisory Council	 Secretary of ITTC Advisory Council



4.3 Executive Committee and Technical  
Committee members

Secretary of ITTC Executive Committee

4.4 Distribution of ITTC Newsletter

Secretary of ITTC Executive Committee



APPENDIX 3

LIST OF CATALOGUE OF FACILITIES UPDATES

The following list includes all contributions received during the 19th ITTC period, which have been distributed with Newsletter No.17 through No.22.

CATALOGUE OF FACILITIES

- 0028 CAVITATION TUNEL  
Shanghai Ship and Shipping Research  
Institute (SSSRI)  
Shanghai, China.
- 0029 TOWING TANK  
University of New Orleans  
School of Naval Architecture  
and Marine Engineering  
New Orleans, USA.

APPENDIX 4

GENERAL FORMAT OF THE ITTC-NEWSLETTER

CONTENTS

- List of Contents
- News from the Executive Committee
- New from the Advisory Council
- News from the Technical Committees
- News from the Member Organizations
- Calendar of events
- List of Catalogue of Facilities updates.

GENERAL NOTES

- (1) The first page should have an ITTC logotype at the top. Each issue should be numbered and dated.
- (2) The Editor's address, and telephone and telex numbers should be listed at the botton of the first page of each issue.
- (3) News from Member Organizations should include prominent personnel changes, special lectures, progress notes on the implementation of new facilities, etc.
- (4) The Newsletter should be typed in the same two-column format which is used for the Conference Proceedings and the pages should be numbered.

PROPOSED PUBLICATION SCHEDULE FOR THE 20TH ITTC NEWSLETTER

NEWSLETTER NO.	DEADLINE FOR SUBMISSION OF MATERIAL	DATE OF ISSUE
23 (20-1)	November 15, 1990	December 15, 1990
24 (20-2)	May 15, 1991	June 15, 1991
25 (20-3)	November 15, 1991	December 15, 1991
26 (20-4)	May 15, 1992	June 15, 1992
27 (20-5)	November 15, 1992	December 15, 1992
28 (20-6)	May 15, 1993	June 15, 1993