

## SESSION ON TOWING TANK SYSTEMS AND TECHNIQUES

## PRESENTATION AND INFORMATION

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Discussion of the Report and draft Recommendations of the PRESENTATION AND INFORMATION COMMITTEE

## I. DISCUSSIONS

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On behalf of the Tank-testing Technique Panel of the China Society of Naval Architecture and Marine Engineering, I have the pleasure to pay tribute to the Presentation and Information Committee for their significant efforts, especially on the publication of "Standard Symbols" intended for international standardization.

In order to show our support to the aims of this Conference, we have brought the Chinese translation of the "Revised List of Symbols" published as TM 500 by B.S.R.A. This Chinese text which Dr. Lackenby has mentioned has been distributed through the secretariat to our colleagues. Just as the viewpoint of the Committee's Report, new terms and symbols will continue to develop, we would like, in collaboration with colleagues of this field, to make efforts toward international standardization of symbols and to popula-



The main technical parameters of the tunnel are as follows:

vertical distance between axis of the horizontal parts	11 m,
distance between axis of the vertical ducts	24 m,
cross section of the test section dimensions	square, 0,8x0,8 m,
length	3,08 m,
water velocity in the test section	2-20 m/sec,
pressure in the test section	3-400 k Pa.

The tunnel is mounted from 14 parts. The test section, diffuser and some internal elements mounted inside of the tunnel are made from stainless steel, the others parts are manufactured from usual steel with zinc layer and Silver Primocon paint.

The circulation pump housed in an elbow-shaped casing in downpart of the tunnel is equipped with four bronze blades with 1,8 m diameter and max. speed 280 rev/min. The pump is driven by two DC motors mounted in tandem with max. output 900 kW by 1500 rev/min, and connected with pump through a reduction gear. Motor speed is automatically controlled to provide the required flow speed.

Measuring equipment consists of:

- upstream propeller unit
 

max. power	250 kW,
max. speed of rotation	$\pm$ 0-6000 rev/min,
max. torque	500 Nm,
max. thrust	1500 N,
- tilting propeller unit
 

max. power	75 kW,
max. speed of rotation	$\pm$ 0-5000 rev/min,
max. torque	120 Nm,
max. thrust	5000 N,

- six-component balance mounted on the upper part of the test section for measuring of forces and moments exerted on a body by the flow in which it is immersed

drag	$F_x$	$\pm$ 3000 N,
drift	$F_g$	$\pm$ 5000 N,
lift	$F_z$	$\pm$ 5000 N,
roll	$M_x$	$\pm$ 800 Nm,
pitch	$M_y$	$\pm$ 1500 Nm,
yaw	$M_z$	$\pm$ 1500 Nm,

- laser velocimeter mounted on a special carriage for measuring of flow velocity at all points accessible through the window of the test section and displayed digitally on the cabinet in the form of X, Y, Z co-ordinates and mean velocity in tested point.

The tunnel is equipped with all necessary instruments for measuring of pressure, velocity, temperature as also with Beckman analyser for measuring of dissolved oxygen and Van Slyke apparatus for measuring of dissolved gases amount.

In front of test section wake simulator consisting of three screens for simulating water speed distribution is provided.

The following tests are possible to perform in the tunnel:

1. propeller tests in uniform and non-uniform flows till to 400 mm of propeller diameter;
2. loads on rudders, fins, submerged bodies etc.

## REPLY TO THE DISCUSSION

The Committee would like to thank *Mr. Yuan* for his kind remarks and is most pleased to learn that the I.T.T.C. symbols have been translated into Chinese. The suggestion that Chinese be adopted as one of the agreed I.T.T.C. languages is most appropriate and a recommendation to this effect will be made to the Conference. It should be noted that there may be a question of copyright with regard to the translation of the Dictionary of Ship Hydrodynamica into other languages.

Dr. Lackenby will check on this matter with the R.I.N.A. but no difficulties are anticipated.

The oral questions regarding the use of the Catalogue of Facilities raised by Dr. Gisvold have already been considered at a previous meeting of the Committee. The primary purpose of the Catalogue is clearly to provide information to the member organizations for planning new or modified facilities. The Committee can control only the initial distribution, of course, and not the subsequent uses which individual institutions may choose to make of the Catalogue. This is not a new problem, however, since all previous catalogues have been published in the Conference Proceedings and no wider distribution is proposed for the new loose-leaf version. In this connection, it has been noted that the standard format proposed in the Report do not include the date on which the information was supplied. This will be added so that users of the Catalogue will know when the description of each facility was last updated.

The Committee agrees with the oral comment of *Mr. Murdey* that a standard format would have solved a great deal of effort in carrying out the comparison study on ship

motion predictions. In fact, the only reason that such formats were not proposed at the present time was the lack of stronger evidence in the survey responses that an immediate requirement existed. The experience of the Seakeeping Committee has clearly demonstrated that there is an urgent need on this field, however. This topic has consequently been reconsidered and a recommendation will be made that such formats be developed for seakeeping data. It should be pointed out that the Committee is not proposing a standard medium for data exchange but rather a standard format which could be used on several computer-compatible media such as magnetic tape, cards, etc.

*Prof. Emerson* have both strongly objected to the recommendation regarding co-ordination of questionnaires. The Committee cannot agree that co-ordination is unnecessary, however, since it is not reasonable to expect member organizations to supply the same information over and over again. Perhaps this recommendation was not worded very well because the co-ordination intended by the Committee was that of topics to be covered by proposed questionnaires rather than the details of the questionnaires themselves. This matter has been discussed further in view of these comments and it will be recommended instead that Technical Committees keep each other informed of the topics to be covered. This should provide some degree of co-ordination with minimal delays in the preparation of questionnaires.

Finally the Committee thanks *Dr. Murakami* and *Mr. Szponar* for the interesting information they have given about the new facilities at their institutes.