

Welcoming Speech

Good morning Ladies and Gentlemen. As President of INSEAN, the Italian Ship Model Basin it is privilege for me to have the opportunity to welcome you to Italy, to welcome you to Venezia, to welcome you to 23rd ITTC.

As already mentioned by Chairman Grazioli, in his preface to the 23rd ITTC Proceedings, over the last 20 years, there has been evidence of a dramatic change of the needs of the maritime and naval world, which obliged the towing tanks to up-date their working methods and their working philosophy.

This situation has been originated by the technology development and, at the same time, by a very high demand of safety that arose in every sector of civil life, involving, of course, ship owners, shipbuilders and ship users.

Therefore we had to take note of the more and more urgent demand coming from the maritime and naval world to find out the technical design solutions

- to minimize the operating cost of ships,
- to improve the life conditions on board (particularly for modern cruise ships),
- to minimize the levels of the airborne and structure borne noise (essential for naval and merchant ships)
- to maximize the safety level of ships.

In short, it can be said that the new needs of naval and of maritime world on one side and the evolution of IMO standards on the other side have imposed to manage new problems and to make tests and collect data more and more thoroughly.

The towing tanks, in order to be able to reply in a proper way to the new situation, had to prepare themselves by making not only a cultural but also a technical-economic effort and by introducing new research technologies both experimental and theoretical.

More in detail, they have amplified the survey range and, at the same time, they have adopted improved measurement systems (let's remember the great attention which is now dedicated to the new experimental techniques for non-intrusive measurements as LDV and PIV).

Moreover the towing tanks activity, in the past, nearly exclusively limited to the towing and self-propulsion tests, has been extended to the combined maneuverability and sea-keeping, to the

interaction between maneuverability/sea-keeping and the “shallow water” field, to the hydrodynamic impact etc.

I would like to point out now the importance that is acquiring, in the field of the towing tanks activities, the multidisciplinary optimization using mathematical models, as, for instance those of hydrodynamics.

I am personally convinced that if we want to give a proper solution to all the problems we have mentioned it is necessary to be in condition to dominate naval hydrodynamic and hydroacoustic,

- through the traditional tests in the towing tanks
- valorizing the feed back data from the exercise
- and to day more and more by means of the mathematical model simulation, (this approach is important to decrease design time and to drastically compress the ship model tests and related costs).

I would like to spend now some more words to try to clarify the last point, I am well aware that there is some disagreement about it.

One of the needs of the towing tanks is certainly that of making business; a possibility for making business has to be found by responding to the demand of the maritime and naval world, with the tools which the modern technology has at its disposal and consequently not only through experimental activity, but also through that one based on mathematical models.

There is no risk, in my opinion, that the introduction of the mathematical models approach can result in a gravestone for towing tank experimental activity. The two different ways to work: the experimental method and the mathematical/numerical/informatics method are absolutely complementary and must be complementary.

On the same results base, we can say that

- the use of the experimental method only would unacceptably expand the total test duration and consequently the total experimental activity costs;
- the mathematical method, if not integrated with the experimental method, would imply the great risk of modeling a virtual reality that does not reproduce the true reality.

I hope that these necessarily short and rough remarks will be useful elements for your reflection and discussion.

Again to everybody Good Work and Have a nice stay in Venezia!

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President, INSEAN