

**10<sup>th</sup> International Conference on  
Stability of Ships and  
Ocean Vehicles**



# STABILITY OF SHIPS AND OCEAN VEHICLES

**10<sup>th</sup> International Conference**

## **Proceedings**

Edited by Alexander B. DEGTYAREV



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## **INTRODUCTION**

The very successful series of international conferences on the Stability of Ships and Ocean Vehicles has been running since 1975, when Professor Chengi Kuo organized the first conference in Glasgow at the University of Strathclyde. Since then, conferences have been held in Japan (1982); Poland (1986); Italy (1990); USA (1994); Bulgaria (1997), Australia (2000), Spain, (2003) and Brazil (2006). On behalf of the National Organizing Committee, I heartily welcome participants of the 10<sup>th</sup> anniversary conference in June 2009 in St. Petersburg, Russia.

For the first time in recent history, Russia is hosting an esteemed international conference in the field of stability and safety of ships and ocean vehicles. This is a token of recognition of the contribution made by Russian researchers in this field for the last hundred years.

Traditionally, STAB conferences are places for the exchange of information on the most recent results, formulation new ideas and directions of research, as well as a place for discussions of new proposals for stability criteria and standards. This is why there are well-established sets of sessions like Rules and Criteria, Intact Stability, Damage Stability, Nonlinear Dynamics, etc. The difference between the conferences was mostly on key problems that were discussed within the frames of these sessions. This conference has a large number of papers focused on numerical and IT aspects of stability-related problems. Inevitably, as these problems became complex or diverse, use of new information technologies comes into the focus. These technologies are now considered from a new point of view: not so much as just a more powerful computing tool, but rather focusing on facilitation of the exchange of data and knowledge between researchers. There is an understanding that these technologies are needed, not because they are convenient, but because new problems cannot be solved without these new technologies. This understanding becomes a factor of progress just by itself.

Almost ninety papers were submitted for the conference, and the authors of these papers represent more than twenty countries. All the papers were peer-reviewed. I hope that the hard work of the reviewers will help the conference be a success. I would also like to acknowledge the great help from the members of the international standing committee, particularly, Dr. Vadim Belenky, Prof. Kostas Spyrou, Prof. Alberto Francescutto and Prof. Luis Peres Rojas. However, the conference is being held at a time that is not easy at all for the global economy. It makes it even more valuable that the spread of participation covers the entire world: Japan, Korea, Europe, Australia, New Zealand, and the Americas. It shows how important, as an international event, STAB has become in last thirty-four years

We would like to wish all participants a pleasant and enjoyable stay in St. Petersburg. We hope that the participant will be able not only appreciate the scientific level of papers, but also the beauty of Russian nature and the uniqueness of this time of year in St. Petersburg known as “white nights”.

Also, special thanks are due to Dr. Jan Otto de Kat, Chairman of the International Standing Committee and to the workshop organizers: Prof. Dracos Vassalos, Prof. Apostolos Papanikolaou, Prof. Alexander Bogdanov, and to the chairmen of the sessions. We extend these special thanks to the members of the National Organizing Committee.

I hope that the results of the conference will be useful for further devolvment of science and engineering practice aimed on keeping ships stable and safe at sea.

Alexander B. Degtyarev  
Chairman National Committee

## **STRUCTURE AND PROCEDURES FOR THE STAB CONFERENCES**

This series of conferences is run by an **International Standing Committee** with the following tasks and constitution.

### **Tasks:**

- (i) To be responsible for deciding the location of STAB Conferences and their frequency.
- (ii) To offer suggestions and agree the make up of the National Committee and appoint the Chair of that Committee,
- (iii) To set out the terms of reference for the National Committee, in discussion with that Committee, including the broad technical content of the event,
- (iv) To assist the National Committee with the selection of papers.
- (v) To appoint an International Advisory Board comprising eminent persons in the field to assist with any task nominated by the International Standing Committee.
- (vi) To provide support to the National Committee, by way of suggesting speakers/exhibitors
- (vii) To have a consultative role in setting of fees for the conference.

### **Constitution:**

- (viii) The International Standing Committee shall comprise about 15 internationally recognised active specialists in the field and shall elect its own Chair. Regional aspects shall be considered when selecting the members of the International Standing Committee,
- (ix) The Committee shall see that one-half of its Members are elected during each STAB Conference by all delegates to that Conference. Existing Members may stand for reelection,
- (x) The Committee shall co-opt the Chair of the National Committee for the duration of the existence of that Committee, plus one additional Member for the nation hosting the STAB event, preferably a member of the National Committee, and the Chair of the International Advisory Board,
- (xi) The Committee shall elect its own Chair with Election/re-election to take during each STAB event. The Chair may not stand for re-election more than once.

### **Composition:**

Chairman:	Dr. Jan Otto de Kat	A.P. Moller-Maersk
Members:	Dr. Vadim L Belenky	David Taylor Model Basin
	Mr. Hendrik Bruhns	Herbert Software Solutions
	Prof. Alexander B Degtyarev	St.Petersburg State University
	Prof. Alberto Francescutto	University of Trieste
	Mr. Rob Gehling	Australian Maritime Safety Agency
	Dr. Stefan Grochowalski	Polish Register of Shipping
	Prof. Yoshiho Ikeda	Osaka Prefecture University
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	Prof. Apostolos Papanikolaou	National Technical University of Athens
	Prof. Maciej Pawlowski	Technical University of Gdansk
	Prof. Luis Perez-Rojas	Escuela Tecnica Superior de Ingenieros Navales
	Prof. Kostas Spyrou	National Technical University of Athens
	Prof. Naoya Umeda	Osaka University
	Prof. Dracos Vassalos	Universities of Glasgow and Strathclyde

The **National Committee** has the following tasks and composition.

Tasks:

- (i) To establish the content of the STAB event in their country, within guidelines established by the International Standing Committee.
- (ii) To be responsible for all arrangements (location, dates, travel, conference and exhibitions (if included), proceedings, visits) and the finances,
- (iii) Select and referee abstracts and papers.

Constitution:

- (i) Work under guidelines provided by the International Standing Committee,
- (ii) The Chair of the National Committee to be nominated by the International Standing Committee at the previous STAB event.

Composition:

Chairman: Prof. A. Degtyarev  
Members: Prof. A. Bogdanov  
Prof. Yu. Nechaev  
Prof. K. Rozhdestvensky  
Prof. N. Rakhmanin  
Prof. I. Boroday  
Prof. V. Rukovchuk  
Dr. V. Mareev  
Dr. N. Gorbatova  
Ms. L. Polakh  
Mr. V. Galutin

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