

What determines the course of Dutch maritime industry?

SWZ|MARITIME THE SPECIAL AND SMALL CRAFT CONFERENCE 2010

Anticipating a sustainable future

14 April 2010 — TU Delft

The focus of this conference is on the following aspects

- Markets: opportunities and threats
- Sustainability: safety and environment
- Speed: faster or slower
- Power: alternative power systems

Five reasons to participate

- Gain insight into the impact of sustainability
- Let leading maritime specialists inspire you
- Take a moment to make progress
- Acquaint yourself with the opportunities and limitations of technology
- What are the uncertainties?

Register now to attend the conference!

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Would you like to present yourself during this conference?

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Summaries of Presentations

Parallel sessions A

The strategic choice of developing the large yacht industry in China

Ms Chen Shuangquan, Staff Member of Nanhua High-Speed Ship Engineering Co. Ltd, Wuhan, China

In European and American countries and areas, large yacht design, construction and service are quite mature already, so as the large yacht market. In the recent few years, China has just set foot in developing its large yacht industry. The large yacht industry in China is only budding. How will the large yacht industry develop and how will the development goals achieved are the focuses of this article.

Anticipating the future

Prof. J.J. Hopman, TU Delft

A lot has changed in the world of ship design since Evans published his design spiral in 1959. The development in computers and computer programs has made it possible nowadays to generate and analyse many design alternatives at high levels of detail very early in the design process. Because of the increasing complexity and number of disciplines involved in ship design today the importance of integration becomes more and more an issue. The attention paid to integration not only affects the design and engineering process but also the performance of the actual ship in service.

Paradigm change needed?

H. Valkhof, Senior Project Manager MARIN

This presentation highlights the challenges ahead is ship design from the fuel/environmental economy perspective. How will the shipping industry get rid of the black peter? What is needed to keep its role as unique facilitator of the global trade? Shipping has to face rising bunkers and tightening environmental regulations. Will the solutions be slowing down ship speed or new breakthrough technologies or the small steps? And what has to be done?

All electric power for yachts

M. Krijgsman, Managing Director of Alewijnse Marine Systems

Depending on the 'operational profile' alternative topologies for propulsion and energy can be selected. Besides diesel direct propulsion with a separate plant for auxiliary energy full diesel electric and hybrid diesel electric propulsion and energy become more common. Even zero emissions power generation becomes reality. The design process of vessels with alternative topologies is complicated and requires dialogue and co-operation between design partners from all disciplines. The presentation will lead through this process with examples from yachts practice (focus on systems design s/y Ethereal).

Best sailors move to shore

C.J.T.M. Mes, Managing Director of Imtech Marine & Offshore

In this paper, the author will explore why ship-operations will be managed more and more from shore-offices and what technology is required to enable this move. Most important drivers for this move are: although old sailors never die, they become more scared by the day. Secondly, labor costs are important cost drivers for ship owners. Thirdly, safety reasons and human failure also contribute to this future move. Automation, satellite communication and human-machine interfacing - beside international regulations and re-engineering of operator processes - will enable this move in the near future.

Improving the power system

Dr. H.T. Grimmelius, Assistant Professor Marine Engineering, TU Delft

In this session the developments in propulsion and power generation, as seen from the universities perspective, will be highlighted. The role of a university within these developments will be illustrated by referring to relevant research and development projects. A wide variety of subjects will be touched upon, and placed within the common denominator: a sustainable future. This includes the evaluation of dynamic behaviour of complex systems, the transient emissions from prime movers, and emerging technologies both in power generation and emission control.

Parallel sessions B

Sustainability: a ship owner's view

P.A.H. Kortekaas, General Manager SMIT Engineering

Ship owners are challenged by today's trends towards a sustainable future. Authorities, national and international maritime organizations impose requirements with respect to sustainability. Internationally operating ship owners have to manage and accommodate these requirements from a technical, design and vessel management perspective. A (pro-) active approach might create added value for the owner, its clients and the maritime industry, but requires a careful trade off between sustainability, cost and revenues.

The opportunities of hybrid ship power systems

T. van Beek, Director of Application Technology of Wärtsilä Ship Power

B. Kruyt, Director Business Development of Wärtsilä Ship Power

The paper is focused on the optimization of power systems in view of emissions and energy efficiency. For a tug and an inland vessel the benefits of a hybrid system will be presented. Areas on interest and areas of further investigation will be highlighted.

Fast! - But how fast?

J.L. Gelling, Product Director High Speed Craft of Damen Shipyards Gorinchem

Speed - in realistic sea states - is an extremely important characteristic for a number of ship types. It will be clear that patrol boats and naval vessels should be able to sail at high speed, although they spend approximately 85% of their time at patrol speeds of 10-15 knots. High top speeds make ships expensive - not only initial, but also during their lifetime. For this reason, new concepts are being developed which combine speed, manoeuvrability and fuel efficiency.

Development of world's first combined LNG/LEG/LPG carrier

K.A. Kerssemakers, Business Development Manager of Anthony Veder

With the first build LNG/LEG/LPG vessel "Coral Methane" Anthony Veder provides a delivery option for isolated communities and fills a gap in the supply chain. Rather than shuttle service, this ship will be used for gas distribution along the Norwegian coast. The vessel may also transport LEG and LPG when there is no sufficient LNG for a full load. Propulsion is by a dual fuel diesel electric arrangement in tandem with two Azipull thrusters. When carrying LNG, cargo boil-off will be used for gas generators, a key for operating in the Northern regions. This unique project is a first step in the new line of business which Anthony Veder is dedicated to develop.

Some options for future marine propulsion

J. Carlton, Global Head Marine Technology of Lloyd's Register

Sustainability with regard to the provision of shipboard energy is arguably one of the more significant challenges to the marine industry at present. This is compounded by the desire to reduce CO2 emissions from shipping activities. The paper examines some of the options that may be considered for ship propulsion and auxiliary power generation. Typically, these might include optimizing the efficiency of existing ship arrangements; gas fuelled engines; wind power; photovoltaic and fuel cells. Following this discussion, the paper outlines some of the research that Lloyd's Register has undertaken in recent years relating to a possible renaissance of nuclear propulsion in the merchant fleet.

Nuclear power

G.A.K. Crommelin, KTZ, Royal Netherlands Navy, rtd, Consultant

The paper will discuss a study reflecting the changes in design and exploitation of an existing standard merchantman when the existing diesel plant is replaced by a gas turbine using a well-proven and inherently safe nuclear heat source.

Location:

Delft University of Technology, Faculty 3mE • Mekelweg 2, 2628 CD Delft, The Netherlands

The Programme

09.00 Registration

Plenary session

10.00 Welcome – Prof. M. Waas, Dean of Faculty 3mE, TU Delft

10.05 Opening – C. Dirkse, Chief Editor of SWZ Maritime

10.10 Key-note speech – J.J.C.M. van Dooremalen, Chairman of Holland Shipbuilding Association

10.30 Break

Parallel sessions A

Chairman – M.J. van der Wal

Sustainability/environment

10.45 Ms Chen Shuangquan
(Staff Member of Nanhua High-Speed Ship
Engineering Co. Ltd, Wuhan, China)
*The strategic choice of developing
the large yacht industry in China*

Engineering/design

11.30 Prof. J.J. Hopman
(TU Delft)
Anticipating the future

Speed, faster or slower

12.15 H. Valkhof
(Senior Project Manager MARIN)
Paradigm change needed?

13.00 Lunch break

Power systems, prime movers

14.00 M. Krijgsman
(Managing Director of Alewijnse Marine Systems)
All electric power for yachts

14.45 C.J.T.M. Mes
(Managing Director of Imtech Marine & Offshore)
Best sailors move to shore

15.30 Dr. H.T. Grimmelius
(Assistant Professor Marine Engg., TU Delft)
Improving the power system

16.15 Break

16.30 Final plenary session - Outlook: Anticipating the future

Prof. Dr. U. Nienhuis
(Consultant)

17.15 Closing by W.P.J. Laros, Vice Chairman of Royal Netherlands Society of Marine Technologists (KNVTS), in cooperation with the President of 'William Froude', the Maritime Students Association of TU Delft.

Aperitif sponsored by KNVTS and supported by 'William Froude'

Parallel sessions B

Chairman – Prof. Dr. R.H.M. Huijsmans

10.45 P.A.H. Kortekaas
(General Manager of SMIT Engineering)
Sustainability: a ship owner's view

11.30 B. Kruyt
(Director Business Development of Wärtsilä Ship Power)
T. van Beek
(Director Application Technology of Wärtsilä Ship Power)
The opportunities of hybrid ship power systems

12.15 J.L. Gelling
(Product Director High Speed Craft of Damen Shipyards Gorinchem)
Fast! - But how fast?

14.00 K. A. Kerssemakers
(Business Development Manager of Anthony Veder)
Development of world's first combined LNG/LEG/LPG carrier

14.45 J. Carlton
(Global Head Marine Technology of Lloyd's Register)
Alternative propulsion systems

15.30 G.A.K. Crommelin
(KTZ, Royal Netherlands Navy, rtd; Consultant)
Nuclear power

P.F. van Terwisga

(Research Coördinator of Damen Shipyards Group)

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14 APRIL 2010 TU DELFT

Anticipating a sustainable future

The ship is by far the most effective and environmentally friendly tool of transportation in terms of energy per ton-mile when comparing the different modes of transport. However, this position is challenged when other, environmental, yardsticks are used.

The history of ships and shipping demonstrates the industry has been primarily driven and governed by technological changes and economies of scale. The scale and flexibility of this type of transport are unique. Congestions, even in harbours, are rather rare. New markets and technologies, globalization and changing societal conditions affect conditions and requirements. New products and facilities are required.

The purpose of the conference is to explore the changes, possibilities and opportunities of technology in relation to market requirements. *What will markets and regulatory bodies require, what can technology offer?*

Committee of Recommendation

H.A. Boer, *Chairman of the Board of Directors Royal Huisman*

K. Damen, *Chairman of the Board of Damen Shipyards Group*

J.J.C.M. van Dooremalen, *Chairman of Holland Shipbuilding Association*

C. van Duyvendijk, *Vice-Admiral Royal Netherlands Navy (rtd), Chairman of Royal Netherlands Life Saving Association*

A. Engelsman, *Board member of Wagenborg Shipping*

A. Hubregtse, *President of Marin*

J. W. Kelder, *Board member of TNO*

Dr. U. Nienhuis, *former Professor TU Delft*

B. Vree, *CEO Smit International*

M. J. van der Wal, *former Chairman of Holland Shipbuilding Association*

