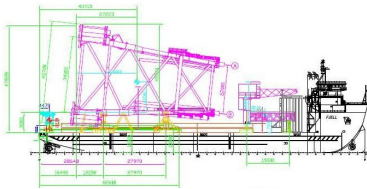


LEARN, UNLEARN & RELEARN with Mr Bos's leading global expertise

Main topics include:

Transport Engineering Towage & Shipping is about all technical aspects required to successfully and safely execute a variety of offshore transport operations. Amongst others, the main topics comprise of:

- Role of the transport engineer
- Introduction to naval engineering
- Hull strength
- Ship stability
- Maritime rules and regulations regarding safe offshore transport
- Engineering and calculation of maritime operations



Overview

Background:

Ever since the start of offshore oil and gas exploration, the need for offshore constructions and infrastructure has been increasing in number, size and complexity. Topsides, jackets, jack-up rigs, TLP's, spar buoys and FPSO's are designed for specific offshore operations and conditions. To enable these structures weighing up to 50.000 metric ton to be installed and commissioned, safe loading, transport and offloading operations are required.

The course teaches engineers, naval architects and key personnel the most important aspects of transporting these offshore giants. The course consists of rules and regulations applicable to this type of operations, the contents of a class approved transport manual, calculation methods of wet and dry-tow operations, configuration of cribbing and more.

Participants will be taught by Mr A.J. Bos MSc. MBA Eur. Ing., a respected authority in the field of offshore transport engineering. Besides his independent transport engineering services and surveys, Mr Bos is vice-president of the DNV working group Heavy transport and lift. Rather than textbooks, firsthand practical experiences of Mr Bos will be taught. He will use presentations filled with personal experience, examples and references from the field. His presentations are complemented by three textbooks regarding Naval Architecture for Non-Naval Architects, Notes for Marine Surveyors (both written by Mr Bos) and a collection of DNV rules and regulations.

Principal Course Facilitator



Mr A.J. (Ton) Bos
MSc. MBA. Eur.Ing.

Director HMC BV,
Netherlands

- Master of Science in Naval Architecture and Marine Engineering
- Master in Business Administration
- Eur. Ing.
- More than 30 years of industrial experience
- Lecturer at Delft University of Technology
- Worldwide project experience

Registration and Information

For more information or registration, please contact one of our offices:

HMC BV

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1323 VA Almere-stad
The Netherlands
E-mail : info@hmc.nl
Tel. : +31 36 54 64 775

HMC, Korea

Centum Green Tower #1908, 78, Centum
Jungang-Ro, Haeundae-Gu, Busan, R.O.
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Contact : Mr E. (Eddie) Park
E-mail : eddie@mkworld.net
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HMC, Japan

4C-06, Kobe Fashion Mart
6-9, Koyochonaka,
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Hyogo-pref. 658-0032
JAPAN
Contact : Mr T. (Toshiyuki) Shimizu
E-mail : itcshimizu@nifty.com
Tel. : + 81 78 904 8505
Mobile : + 81 90 3315 2471

Why you should attend

- The course enables engineers to gain a thorough understanding of factors influencing their structures during ocean transport
- The course allows the participant to develop understanding for transport engineers and the difficulties they face
- Participants learn about different modes of ocean transport and learn the pros and cons of all types of operations
- Non technical personnel can be taught an introduction to the difficulties of marine engineering and ocean transport to smoothen cooperation between technical and non technical divisions.

Who should attend

If you are an engineer, technician, and want to know about offshore transport engineering, or you are a non technical manager, in need of an introduction to the technical problems within your organization, you should attend the transport engineering towage & shipping course.

Primarily aimed at:

- Engineers that operate within the maritime industry
- Non technical personnel in the maritime industry
- Project managers
- Section heads and department managers

Transport Engineering Towage & Shipping Agenda per day

Day 1

The agenda for day 1:

Introduction

- HMC & Mr A.J. Bos
- Course outline
- Maritime industry
- History

Principles of Naval Architecture

- Hydrostatics
 - Stability
- Hydrodynamics
 - Ships motions
 - Propulsion
 - Manoeuvrability
 - Wave slamming
- Strength
- Vibrations
- Fatigue

Day 2

The agenda for day 2:

Transport manual

- Introduction to the transport manual
- Operations
 - Roll-on Roll-off operations
 - Float on / float off operations
 - Lift on and lift off operations
 - Skid on operations
- Sea fastening
- Ballast system
- Pump capacity plan

Towage operations

- Tug and tow
- Bollard pull calculations
- Tug speed calculations
- Tug and tow stopping distance calculation
- Tug and tow collision analysis

Day 3

The agenda for day 3:

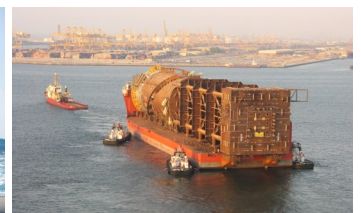
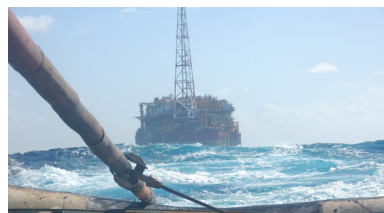
Rules and regulations

Calculation software

- Using CPC 2.0
- Marine Services-Tool
- SafeTrans
- Obelics motion analysis software

Case studies & Practical sessions

- Video demonstrations
- Learn by practice approach
- Simulated visual demonstrations of state of the art transport engineering systems.
- Case studies



TRAINER PROFILE — Mr A.J. (Ton) Bos

Mr Bos is a highly committed marine consultant, with over 30 years of experience.

He attained the titles Master of Science in Naval Architecture and Marine Engineering, Master of Business Administration and European Engineer. The title of European Engineer is an award for high level of knowledge and practical experience.

In 1978 Mr Bos started as an apprentice at the Wijsmuller Group of companies which is a company renown for salvage and towing. In 1982, he graduated as naval architect and marine engineer from the Delft University of Technology in the Netherlands.

Since 1978 Mr Bos is involved in towing, salvage and heavy transport operations. In 1986, Mr Bos established Hydrographic and Marine Consultants (HMC) as an independent engineering company in the field of offshore transport, towing, salvage and anchor handling. HMC's main services are geared towards improving the safety, quality and efficiency of maritime operations, improving economics of operations and supporting policy decisions.

He has a vast experience as warranty surveyor and has a proven track record as independent marine warranty surveyor:

- Engineering and warranty surveys for ocean towing of floating equipment and 'dry transport' of offshore and industrial plant equipment
- Pre- and post towing inspections
- Condition and suitable surveys
- On- and Off hire surveys
- Issuing of certificates of approval pertaining to the surveys and inspections

Dedicated to sharing his knowledge and experience, amongst others, Mr Bos lectures at the Delft University of Technology, teaches several maritime courses at a Nautical college.

Furthermore, Mr Bos is vice-president of the DNV working group Heavy transport and lift and president of the subcommittee Designers.

Besides Ocean transportation and design, Mr Bos's expertise lies in other marine projects and operations such as:

- Salvage
- Anchor handling
- Towing, positioning and installation of FPSO's and GBS's
- Semi-submersibles
- Jack-up rigs
- Modules
- Float over
- Inclination tests
- Ship recycling
- Model tests—tank tests TU Delft
- Spar
- Topsides jackets
- Launching—Chemical tankers
- Barges

Publications:

- The "Marine Quality Kit", a tool to monitor accelerations, velocities and motions in arbitrary locations on floating objects, A.J. Bos M.Sc. MBA Eur.Ing, Almere, Holland, 6 May 1996. Paper for the Offshore Technology Conference, OTC paper 8161.
- Cursus scheepsbouw voor niet scheepsbouwers, (Course naval architecture for non naval architects), Almere, Holland, October 2000.
- Marine Services Tool based on satellite observations, Project executed within the framework of the NIVR, Netherlands Agency for Aerospace Programmes, RP_A262, NIVR 52302AR, A267, A.J. Bos M.Sc. MBA Eur. Ing. e.a., 11 August 2004.
- "Strain Analyses and Fatigue Engineering in heavy lift transportation and towages (SafePlan)", A.J. Bos M.Sc. MBA Eur.Ing, Hydrographic and Marine Consultants BV (HMC), The Netherlands together with Capt. L.M. Leusink, Fairmount Marine BV, The Netherlands and F.J. Melger, M.Sc., Argoss, The Netherlands; the Netherlands, August 2005; Paper presented during RINA conference on Heavy Transportation, Londen, September 2005
- "Measurement campaign for validating the motion response calculations of heavy transport vessels and fatigue monitoring", A.J. Bos M.Sc. MBA Eur.Ing, Hydrographic and Marine Consultants BV (HMC), The Netherlands, January 2008; Paper presented during RINA conference on Heavy Transportation & Lift, Londen, 27- 28 February 2008
- "Detailed analyses of the tow line behaviour in single, double and triple towages in case of emergency stop and catenary", A.J. Bos M. Sc. MBA Eur. Ing. Director, Research, Development and Innovations, R. Heemskerck D Sc.Product Development HMC, Almere, the Netherlands, Proceedings of the 30th International Conference on Ocean, Offshore and Arctic Engineering OMAE30, OMAE2011 – 50327, June 19-24, 2011, Rotterdam, the Netherlands.
- Influence of ocean transport on the design of onshore and offshore constructions, modules, topsides, jackets and towing on FPSO design", A.J. Bos M. Sc. MBA Eur. Ing. And T.M. Ligterink M Sc. B.Eng., Proceedings of the 31th International Conference on Ocean, Offshore and Arctic Engineering OMAE31, OMAE2012 – 50327, July 1-6, 2012, Rio de Janeiro, Brasil.
- And many more.....

Track record

Customers:

- TPI MegaLine (Korea)
- PanOcean (Korea)
- JKC (Australia)
- CB&I (United Kingdom)
- Chevron (USA)
- DNV (Norway)
- Dockwise (Worldwide)
- Fairmount Marine (The Netherlands)
- Fairstar Heavy Transport (Norway)
- ALP (The Netherlands)
- Marin (The Netherlands)
- MODEC (Singapore)
- Rockwater (United Kingdom)
- Royal Shell (The Netherlands)
- SBM Offshore (Monaco)
- Tideway (The Netherlands)
- Total (France)

(Above list is only a subset of the complete list of customers)



Projects:

- Chevron / Rockwater (USA): Provision of marine co-ordinator and tow master for the Chevron Alba oil field development, comprising a CDTM pipeline bundle launch, tow and installation and towage of the Alba FSU from NW-Spain to the Alba field plus subsequent FSU hook-up.
- DEME (Belgium): Strength and stability calculation for J.U. Rig Halewijn
- DNV (Norway): Member of hearing committee for new rules and regulations in the field of heavy transport and lift. / Member of the working group of heavy transport and lift.
- Fairmount Marine (The Netherlands): Preparing of the Cribbingplan, docking manual for the dry docking of the Peregrine 1 on Gavea Lifter. Conducting the loading operation.
- Fairstar Heavy Transport: Transport engineering Dry-tow from Kakinada to Sharjah for Perro Negro 3. / Transport engineering including fatigue analyses of the transportation of the Halfdan B jacket, piles and pipe crossing bridge. Conducting the load out. / Transport engineering for the transport of the Perro Negro 8 from Visakhapatnam to Sharjah, including conducting the loading operation. / Installation of the MQK and FAMON for fatigue analyses during the transport of Halfdan B Jacket from Shenzhen, China to Halfdan, offshore Denmark. / Transport of Jacket and Topside modules for the Halfdan B field Works included ballast plan for 2 skidding operations onto Fjord and Fjell respectively. Transport engineering, finite element calculations, and fatigue analyses. Whole physical operation was conducted by HMC. / Dredge equipment from Jeddah to Sharjah. Whole physical operation was conducted by HMC. / Transport engineering for the transport of the Perro Negro 3 from Visakhapatnam to Jeddah Whole physical operation was conducted by HMC. / Launching of Chemical Tanker by rolling onto the semi submersible heavy transport vessel Fjell and float off. Works included the engineering for the repositioning of buoyancy casings and obtaining approval thereof from DNV. Whole physical operation was conducted by HMC. / and several other projects.....
- Heerema (The Netherlands): Ballast plan and loading manual for the transportation of 2 modules for the Tombua Landana field / SafeTrans transport simulations of the transportation topside on heavy transport vessels Fjord and Fjell from Singapore to Halfdan field offshore Denmark
- JF Moore Group: Strength and fatigue analyses of the Rig 256, a mat supported rig that is to be converted in a Mobile Production Unit, works include FE modelling in FEMAP with Nastran solver.
- Nepa (The Netherlands): Transport engineering for the transportation of 2 inland vessels on a container ship.
- Royal Shell (The Netherlands): Installation of wind turbine parks, SafeTrans participation, Towages.
- STX PanOcean: Deflection calculations for Ichthys / Stability calculations for Ichthys / Motion analysis for Ichthys / Transport analysis for Ichthys / Deflection calculations for Panama lock gate transport / Stability calculations for Panama lock gate transport / Motion analysis for Panama lock gate transport / Transport analysis for Panama lock gate transport
- Technip (France): Determination of the design parameters of barges for the transportation and float over topsides in the categories weighing upto 10000 ton, between 10000 and 15000 ton, between 15000 and 20000 ton and weighing over 20000 ton
- Total (France): Float-overs and towages of FPSO's (Dalia, Akpo)
- TPI Megaline (South Korea): SafeTrans analyses Mega Caravan / SafeTrans analyses Mega Trust and hydrodynamic model / Transport analyses for Gorgon Voyages by vessels Mega Caravan and Mega Trust / Model tests for Mega Trust for Gorgon

(Above list is only a subset of the complete list of projects)