

Advanced Rig Moving and Jacking Systems

Practical application of rig moving and jacking system handling

11th – 13th May 2016, Hilton Hotel Bandung, Indonesia

Main learning objectives and benefits:

- Dr. Walter Kuehnlein**
Managing Director of sea2ice Ltd
- Over 30 years of work and consulting experience in energy rig procedures, offshore systems, ballasting, jack up drilling
 - Partial list of clients include: Pertamina, Parker Drilling, Total E&P, BP, Shell, Keppel, Statoil etc.
 - Chairman of ATC 2016
 - Weinblum Award & Werner-von-Siemens-Award
 - Chairman of the Board of Directors German Marine Technology Association
 - Member of the Offshore and Industrial Installations Committee of DNV·GL
 - Advisor Offshore for an international magazine 'Ship & Offshore'
 - Lectureship: "Ice Engineering" at Hamburg University of Technology

- ❖ Better planning and understanding of rig moving including all involved assets
- ❖ Pulling legs:
 - ✓ Lowering the Hull and Floating the Unit
 - ✓ Jetting systems
 - ✓ Pulling Legs
 - ✓ Binding Legs
- ❖ Pulling off location:
 - ✓ Transfer of command
 - ✓ Arrival and departure locations
 - ✓ Maneuvering
 - ✓ Pre-arrival planning
- ❖ Arrival on location:
 - ✓ Pinning position
 - ✓ How much power is enough power?
 - ✓ Emergency stop
 - ✓ Currents and wind
 - ✓ Relative speed
 - ✓ GPS
 - ✓ Wave action
 - ✓ Calculation – rough estimates/horsepower
 - ✓ Current and wind effects
 - ✓ Rig walking
 - ✓ Rig sliding
- ❖ Preparation:
 - ✓ Water depth/ Bottom types/anchor types
 - ✓ Anchor handling and towing procedures
 - ✓ Chain type and length, numbering of anchor lines and anchor pattern
 - ✓ Towing gear arrangement and safe working load
 - ✓ Deployment
 - ✓ Pennant wires and buoys/mid-line buoy
 - ✓ Slipping anchors
 - ✓ Anchor winch operation (rig point of view)
 - ✓ Boat/barge co-operation
 - ✓ Deployment of pre-laid anchors
 - ✓ Winch computers/Tensioners/Regulators
- ❖ Running anchors:
 - ✓ Sequence of events
 - ✓ Passing the pendants
 - ✓ Boats to understand your winches
 - ✓ Running the anchor/Get on heading/No curved lines
 - ✓ Tension
 - ✓ Settling the anchor
 - ✓ Problems/Retrieval of broken pendants
 - ✓ Retrieving of anchors

Course description

Below is just a bird's eye view of what will be covered during the 3-day Masterclass. Case studies and discussions will focus on 3-legged rigs. For further information on what will be covered in the agenda, please check out the 'Agenda' section of this brochure.

Day 1

Module 1: Preparation Phase

Module 2: Operational Excellence in Ship Handling

Module 3: Planning and Optimization of Offshore Rig Move Operation

Day 2

Module 4: Effective Techniques in Anchoring and Mooring

Module 5: Soils and Preloading

Module 6: RPD – Rack phase difference

Day 3

Module 7: General Rig Operations

Module 8: Case Studies and Practical Session

Questions and Answer Session including Case Studies

Who should attend?

- Marine Operations
- Marine/Offshore Field Managers & Superintendents
- Marine Supervisors & Marine Engineers
- Marine Surveyors and Positioning
- Barge Superintendents & Deck Foremen
- Barge or Rig Winch Operators
- Rig mover, Tow Master and Project Specialist
- Offshore Commissioning and Hookup
- Winch Engineers & Supervisors
- AHTS Deck Leaders and Deck Crew
- And any other Professionals who are involved in Rig Moving and Jacking Systems

Important Note: Anchor Handling techniques will NOT be elaborated in details in this class.

Day 1 | 11th May 2016

Module 1: Preparation Phase

- ❖ Team and Responsibilities
- ❖ Preparation
- ❖ Location survey
- ❖ Description of rig
- ❖ Bathymetry
- ❖ Tides
- ❖ Soil conditions
- ❖ Pre-move checklist

Module 2: Operational Excellence in Ship Handling

- ❖ Propeller and rudder forces
- ❖ Controllable pitch propellers
- ❖ Bow thrusters
- ❖ Z-Drive, POD-Drives and
- ❖ Tractor tugs
- ❖ Tugs in general

Module 3: Planning and Optimization of Offshore Rig Move Operation Before move-off

- ❖ Seafastening accepted by MWS (Marine Warranty Surveyor)
- ❖ Pre-move meetings
- ❖ Move gear and towing equipment
- ❖ Equipment checks
- ❖ Communication
- ❖ Set up and bollard pull calculations
- ❖ Watertight integrity
- ❖ Record keeping and check lists
- ❖ Topographical diagrams of sea bed

General

- ❖ Sub-Sea Structures, Obstructions, Platforms and Pipelines
- ❖ Towing gear – stretcher versus wire
- ❖ Length of tow wire/ Catenary
- ❖ Wave action
- ❖ Momentum is the enemy
- ❖ Speed determination / Relative speed
- ❖ Final Pinning
- ❖ GPS
- ❖ D-GPS

Day 2 | 12th May 2016

Module 4: Effective Techniques in Anchoring and Mooring Pattern Theory and its Practical Application

- ❖ Pinning versus final positions
- ❖ Drawings of current and proposed anchor patterns showing mooring arrangements
- ❖ Orientation of anchors

Module 5: Soils and Preloading

- ❖ Timing of Tides
- ❖ Rapid penetration warning signs
- ❖ Cyclic loading
- ❖ Dehydration of soils
- ❖ Controlling penetration rates
- ❖ Soil Mechanics
- ❖ Recommendations for Storms While Elevated

Module 6: RPD – Rack phase difference

- ❖ Rack phase difference
- ❖ Management of RPD
- ❖ Significance of RPD and rig type
- ❖ Positioning gear
- ❖ Manual systems

Day 3 | 13th May 2016

Module 7: General Rig Operations

- ❖ Pin and Hole System
- ❖ Rack and Pinion
- ❖ Fixation System
- ❖ Mat-Type Drilling Units
- ❖ MOAB (Mobile Offshore Application Barge)
 - Strand System
 - Hydraulic Gripper Jacking System

Module 8: Case Studies and Practical Session

- ❖ Question and Answer Session including Case Studies
- ❖ Detailed Operating Procedures
- ❖ Master Case Studies on Rig Moving including Jackup Rigs, Semi-Submersible and Barge Rigs

List of publications from Dr. Walter

- Walter L. Kuehnlein, SEA2ICE Ltd. & Co. KG
P Philosophies for dynamic positioning in ice-covered waters
Paper OTC-20019, 2009 Offshore Technology Conference held in Houston, USA, 4–7 May 2009
- Arne Gürtner, Morten Bjerås, Walter L Kuehnlein, Peter Jochmann, and Ibrahim Konuk
NUMERICAL SIMULATION OF ICE ACTION TO A LIGHTHOUSE
Proceedings of 28th International Conference on Offshore Mechanics and Arctic Engineering, OMAE'08, May 31st – June 5th, 2009, Honolulu, Hawaii, USA, OMAE2009-80164
- Tuomo Kärnä, Yan Qu, and Walter L. Kuehnlein,
A spectral model for forces due to ice crushing
Journal of Offshore Mechanics and Arctic Engineering, Transactions of the ASME, Vol. 129, May 2007
- W.L. Kuehnlein (invited Speaker, Keynote Speech in Opening Session)
Underwater Defence Technology meets Oil & Gas
UDT 2006, December 6-8, 2006 in San Diego, USA
- W.L. Kuehnlein, Jens-Holger Hellmann, and Karl-Heinz Rupp
Model Tests – LNG Carriers in Ice.
Proceedings of 25th International Conference on Offshore Mechanics and Arctic Engineering, OMAE'06, June 4-9, 2006, Hamburg, Germany, OMAE2006-92604.
- Janou Hennig, Heike Billerbeck, Kay-Enno Brink, Daniel Testa, G.F. Clauss, and W.L. Kuehnlein
Qualitative and quantitative validation of a numerical code for the realistic simulation of various ship motion scenarios.
Proceedings of 25th International Conference on Offshore Mechanics and Arctic Engineering, OMAE'06, June 4-9, 2006, Hamburg, Germany, OMAE2006-92245.
- W.L. Kuehnlein, Jens-Holger Hellmann, and Karl-Heinz Rupp
Model tests in brash ice channels.
Proceedings of 24th International Conference on Offshore Mechanics and Arctic Engineering, OMAE'05, June 12-17, 2005, Halkidiki, Greece, OMAE2005-67327.
- W.L. Kuehnlein, Tuomo Kärnä, and Yan Qu
A new spectral method for modelling dynamic ice actions.
Proceedings of 23rd International Conference on Offshore Mechanics and Arctic Engineering, OMAE'04, June 20-25, 2004, Vancouver, Canada, OMAE2004-51360.
- W.L. Kuehnlein, Günther F. Clauss, Christian Schmittner, and Janou Hennig
Nonlinear calculations of tailored wave trains for experimental investigations of extreme structure behaviour.
Proceedings of 23rd International Conference on Offshore Mechanics and Arctic Engineering, OMAE'04, June 20-25, 2004, Vancouver, Canada, OMAE2004-51195.
- W. L. Kuehnlein, Kay-Enno Brink, and Janou Hennig
Innovative deterministic seakeeping test procedures.
Proceedings of 8th International Conference on the Stability of Ships and Ocean Vehicles, STAB 2003, September 15-19, 2003, Escuela Técnica Superior de Ingenieros Navales, Madrid, Spain, Paper No. 49.
- P. Jochmann, K.-U. Evers, and W.L. Kuehnlein
Model testing of ice barriers used for reduction of design ice loads.
Proceedings of 22nd International Conference on Offshore Mechanics and Arctic Engineering, OMAE'03, June 8-13, 2003, Cancun, Mexico, OMAE2003-37385.

About The Course Facilitator



Dr. Walter Kuehnlein
Managing Director of sea2ice Ltd

Dr. Walter L. Kuehnlein is Managing Director and founder of the consulting company sea2ice. Sea2ice Ltd. Co. KG was founded in 2008 and has its main focus on all operational and design related aspects of offshore structures and systems, caused due to environmental challenges like wind, current, waves and especially ice.

Dr. Kuehnlein is also working as Installation Manager / Coordinator installing offshore-platforms, worldwide.

Since 1997, he is involved in the first drilling project in the North Caspian Sea, where he worked as Engineering and Project Manager in the US, Russia and Kazakhstan and today as adviser. From 2001 till 2009 he was Director at the Hamburg Ship Model Basin (HSVA), responsible for Ice and Offshore.

Dr. Walter L. Kuehnlein will be Chairman of ATC 2016 (Arctic Technology Conference) in St. John's. He is also Chairman of the Board of the German Association for Marine Technology (GMT) and Symposium Coordinator for Arctic Technology of OMAE Conferences.

Dr. Kuehnlein is a member of the Offshore and Industrial Installations Committee of DNV-GL, advisor offshore for the magazine Ship & Offshore and has also a Lectureship: "Ice Engineering" at the Hamburg University of Technology.

Dr. Kuehnlein graduated in Civil & Ocean Engineering and received his Ph.D. in Ocean Engineering at the Berlin University of Technology, Germany.

Testimonial

"It is a comfort to know we have such highly dedicated professionals who stand ready to work safe and help us insure others work safe also. With your relentless commitment to safety it is obvious that you have a wide open future ahead of you. We can only hope that your experience working with EMKI has contributed in some small way to your safely culture"

Partial list of companies that have benefited from Dr. Walter's expertise

- ❖ Exxon Mobil
- ❖ Shell
- ❖ Statoil
- ❖ Total E&P
- ❖ BP
- ❖ Parker Drilling
- ❖ Agip
- ❖ Technip
- ❖ Aker Solutions
- ❖ Keppel
- ❖ Siemens
- ❖ Transocean

PROGRAMME SCHEDULE – Day 1, 2 & 3

08H30	Registration
09H00	Session 1
10H40	Refreshments & Networking Break
11H00	Session 2
12H45	Lunch
14H00	Session 3
15H30	Refreshments and Networking Break
15H50	Session 4
17H00	Course Ends

PRE-COURSE QUESTIONNAIRE:

To ensure that you gain maximum value from this course, a detailed questionnaire will be forwarded to you upon registration to establish your exact training needs and issues of concerns.

Your completed questionnaire will be analyzed by the course trainer prior to the event and addressed during the event. You will receive a comprehensive set of course documentation on the day of the training.