



**ROB HOEKSTRA**

**Compulsory Bring:**

Scientific Calculator and Ruler as this will be a Theory and Hands-On Training.  
A Geometry set will be helpful as well but not compulsory.

# ADVANCED HEAVY LIFT AND TRANSPORTATION with Offshore Lifting and Installation Techniques & Heavy Lift Shipping

*Best Practices and Standards in Management, Calculation, Application and Safety*

15th – 17th October 2018 Perth, Australia

**Biography of Rob Hoekstra**

Rob Hoekstra is the founder of SEACAMEL Maritime Engineering since 2009. SEACAMEL is a marine and heavy lifting consultancy which combines proven concepts, experience based in finding creatively new solutions in heavy lifting and transport.

Rob Hoekstra started his career with Dockwise, now part of Boskalis, world's largest heavy transportation company. He has a wide experience with other fortune companies such as Subsea 7, Mammoet Engineering, Heerema Fabrication Group Engineering, ALE Heavy Lifting, etc. Heavy lifting and transportation, maritime, offshore and insurance industries are fields that he's specialized in.

With over 25 years of industrial experience, many organizations have benefited from Rob Hoekstra, such as: salvage companies, companies involved in design, offshore installation, construction and operation of ships, barges and offshore structures, cargo owners, warranty surveyors and legal firms. He was a Lead Project engineer for 3 Russian nuclear powered submarines that had to be transported to a dismantling yard. He developed a new way to support and seafasten submarines which reduced seafastening costs by 60% and seafastening time by 3 days.

Other projects that benefited from Rob Hoekstra's involvement:

- SHELL Mars-B TLP
- Goliat FPSO (South Korea – Hammerfest, Norway)
- Vyborg
- Subsea 7
- Dockwise Transport NV
- Chevron CVX
- Murphy Kikeh Spar
- Kerr-McGee Constitution Spar
- BP Mad Dog Spar Transport
- BP Holstein Spar Transport
- Dominion Devils Tower Spar transport
- BP Horn Mountain Spar
- Exxon Diana Spar transport
- Chevron Genesis Spar transport
- General Knowledge and Introduction
- Forces, Mass and Center of Gravity
- Heavy Transport with Hydraulic Platform Trailer
- Lifting of Loads with Two or More Cranes
- Maintenance and Inspection
- Skidding, Jacking and Moving Techniques
- Set up of a Project Planning
- Preparation of a Cost Estimate
- Load-outs of Extreme Heavy Lifts
- Safety and Risk Analysis
- Heavy Lift Shipping
- Offshore Lifting and Installation Techniques
- Accidents and how to avoid them
- The Do's and Don't of Lifting
- Competency Exam

**Key Takeaways:**

- Building a lift plan
- Choosing the right crane
- Using a tail crane
- Selecting the right platform trailer or SPMT
- Estimating forces in lifting sling
- Calculating the average ground load under an SPMT or Hydraulic Platform trailer
- Avoiding accidents and improving safety
- Calculating the center of gravity properly
- Selecting the right spreader beam
- Calculating saddle loads
- Trailer stability guidelines
- Staying in control of weights

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### Workshop Overview

This course offers a platform for your Heavy Transport and Lifting Projects on land as well as offshore and at sea. Attention is dedicated to safety, accident analysis and discussions on how accidents can be avoided and dealt with.

### Who Should Attend

- Crane & transport contractors
- Freight forwarders
- HSE managers
- Heavy lift supervisors and specialists
- Offshore superintendents
- Marine warranty surveyors.
- Construction and Installation managers
- Project cargo engineers and vessel design engineers
- Naval architects
- Sales engineers
- Heavy lift vessel managers and project cargo coordinators and managers
- Project cargo companies
- Heavy lifting components manufacturers
- Representatives from offshore oil & gas and renewables
- HVL fleet owners
- Heavy lift project management personnel
- Maritime transport and logistics professionals
- Freight consultancies and technical authorities
- Freight forwarders, breakbulk shipping
- Personnel involved in lifting operations interested in enhancing their knowledge
- Companies entering the heavy lifting market
- Heavy lifting companies enlarging their portfolio with offshore operations

### Industries That Should Attend

- Shipyards
- Module Fabrication Yards
- EPCI Contractors
- Freight Forwarding
- Construction Contractors
- Crane Rental and Transport Contractors
- Civil Construction Industry
- Power Plant builders
- Renewables
- Project cargo
- Heavy lift components manufacturers
- Heavy Transport contractors
- Salvage contractors
- Project logistics Companies
- Wind Turbine Erectors
- Offshore fabrication yards
- SURF Contractors
- Insurance companies
- Consultants
- Oil Companies
- HVL fleet owners
- Breakbulk shipping

#### Customisation:

The programme will be further customised to fit your priorities through the pre-course questionnaire (PCQ).

#### Internal Training:

This programme is available as an internal training. Email us to find out more at: [alvin.yong@olygen.com](mailto:alvin.yong@olygen.com)

#### Estimated Time Schedule

|             |                       |
|-------------|-----------------------|
| 0830 – 0900 | Registration          |
| 0900 – 1030 | First Morning Half    |
| 1030 – 1045 | Morning Break         |
| 1045 – 1230 | Second Morning Half   |
| 1230 – 1330 | Lunch                 |
| 1330 – 1500 | First Afternoon Half  |
| 1500 – 1515 | Afternoon Break       |
| 1515 – 1700 | Second Afternoon Half |

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### Course Outline

PLEASE BRING!  
Scientific Calculator  
Ruler

#### 1. General Knowledge

- Different Lifting & Transport types
- General Knowledge and Introduction
- Land Cranes
- Terminology (EN13000)
- Largest Mobile Land Cranes available
- Various cap. Charts and applications of PTC-DS-140 and DS-200
- Seagoing Floating
- Various moving techniques in one project
- Conventional Trailers
- Platform Trailers
- Different Vessel Crane types
- Different Land Crane types
- Various Types of Heavy Lift Ships
- Offshore Installation Vessels
- Offshore Support Vessels
- Terms & Abbreviations
- Some definitions:  
Min. Break load, Safe Working Load, Working Load Limit, Test load, Mass and weight, lifting capacity, max. allowable ground load, safety factors, etc.

#### 2. Forces, Mass and Center of Gravity

- Newton's Three Laws of Motion
- First Law of Newton (Law of inertia)
- 2nd + 3rd law, force changes motion
- Difference between Mass (kg) and Force (N)
- Basic Mechanics Forces and Moments
- Head-Tail Method (composing of Forces)
- Composing of Forces
- Forces acting on a body
- Some formulas to calculate forces
- Example
- Answer
- Calculation of Centrifugal Forces
- Standard triangles and Pythagoras ( $a^2+b^2=c^2$ )
- Trigonometry
- Something about Forces
- No Control of Forces
- Summary of composing of forces
- Principle of moment (moment equation)
- Principle of Center of Gravity
- Calculating Combined CoG of barge with crane
- Use of Ballast water and CoG shift
- Calculating Outrigger loads of a crane
- Wind force
- Possible effect of wind
- Wind force on crane load according EN13000
- Accelerations and Decelerations (Stability)
- Calculating if something will slide
- Friction Forces when sliding
- Friction Forces (Dynamic + Static)
- Forces on vessels
- Important sling angles
- Want to know more and study yourself?
- Calculation of weights
- Estimation of Weights of Loads
- Same can be done for barges
- Essential information for Transport & lifting

#### 2.1 Environmental Conditions

- Environmental Conditions
- Wind Conditions
- Wind force (Scale of Beaufort)
- Wind pressure
- Wind gradient.
- Waves
- Waves and swell
- Significant wave
- Design spectra (stochastic) method
- Longitudinal bending moments
- Current
- Loop Currents (Eddy Currents)

- Check the weather yourself ([www.zygrib.org](http://www.zygrib.org))
- Location, heading and speed of a vessel.
- Tide, what is causing it?
- Tide Tables and Tides
- Simple method to calculate the tide
- Weather restricted operations
- Tropical storm avoidance flow chart (float-over).
- Weather restricted operations. The alpha-factor
- OPLIM Operational environmental limiting criteria.
- Water force (slamming)
- Storm at Borgholm Dolphin, North Sea Jan 10, 2015

#### 2.2 Naval Architectural and Maritime Basics

- Engineering is Not BLACK or WHITE
- Stability Stable
- Stability Unstable
- Stability Indifferent stability
- Stability of Heavy Lift Ships - Introduction
- Stability of Heavy Lift Ships - Definitions
- Stability of Heavy Lift Ships - K, B, G and M
- Why do ships stay upright?
- Stability curve
- Calculation of Metacenter of a ship
- Moment of inertia of the water plane area and BM.
- Calculation of GM Value
- Ballast water and free Surface Areas
- Stability Requirements of IMO for ships
- How can the Stability of a Ship be influenced?
- CoG of load when freely suspended in crane
- Stability example
- Advanced stability, orthogonal tipping
- Calculation GM Value and list due to ballasting.
- Calculation using GM Value
- Sea fastening of Cargo on Heavy Lift Ships
- Motion Analysis of vessel
- "20 deg 10 Barge" DNVGL-ST-N001 Marine operations and marine warranty.
- "20 deg 10 Rule", simple rule and in general conservative.
- Combine Motion Program with Finite Element Analysis

#### 3. Trailers

- Platform trailers and standard flatbed trailers
- Pros and cons of the hydraulic platform trailer
- Principle of the hydraulic platform trailer
- Capacity of Platform trailers (pull type)
- Capacity of Self Propelled Modular Transporters
- Principle of the hydraulic platform trailer
- Stability of Trailers (Hydraulic Stability)
- Stability of Trailers (Tipping lines)
- Stability of Trailers (Hydraulic)
- Example: Platform Trailer selection for 466 Tons load
- Example: Platform Trailer selection for 810 Tons load
- SPMT Animation by ALE
- Stability: 3- and 4- points hydraulic suspension
- Calculation of the tipping lines with 4 groups
- Calculation for the tipping lines with 3 groups symmetrical
- Calculation for the tipping lines with 3 groups (a-symmetrical)
- The effect of lashing the load to the transporter
- Stability: 3- and 4- points hydraulic suspension
- Critical Stability of a single SPMT used in dolly configuration with turntables
- Software for trailers
- Tipped Over Transport Combination
- Conventional Platform trailer with load tipped over
- Stability of a Conventional Hydraulic Platform trailer
- Axle loads (A-symmetrical suspension point)
- Calculation of axle loads
- Calc. of aver. ground load (This is not a scientific approach)
- Realistic ground pressure profile
- Section 2 BS 8004:1986
- Load on ground surface or steel deck
- Principle of steering (Conventional)
- Principle of steering (SPMT's)

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### Course Outline

- Heavy Duty Tractors versus required pulling force
  - Estimation of pulling force of HD Tractor
  - Calculating the required pulling force in Tons
  - Example: Choice of Trailer configuration for 520t load
  - Job site preparation
  - How many tractor units are needed?
  - Choice of Trailer configuration for a 16 m Sphere
  - The Transport Plan
  - BEST PRACTICE GUIDE "Europäische Schwertransport Automobilkran" (ESTA)
  - Recommendations
- #### 4. Lifting with Cranes
- Lifting of Loads
  - Crane capacity rating (Load moment)
  - Quick Reference capacity Chart for Hydraulic cranes
  - Different boom (crane) types
  - Upending a vessel with 2 cranes, one crane moving
  - Upending a vessel with 3 cranes
  - Upending a vessel while swinging tail crane
  - Upending a vessel using a tailing frame
  - Setting up of a Lift Plan
  - Set-up of a lift plan for the erection of a reactor
  - Set-up of a lift plan for the erection of a reactor (some details)
  - Excel Program "Boom clearance"
  - Set-up of a Lift plan
  - Video: Lifting of 320 Tons reactor
  - The Moment equation
  - The load in each crane depends on the location of CoG and the angle with the horizon
  - Location of CoG in relation to the lift points
  - The 10 Golden Rules for Lifting a load
  - Checklist for lifting (Subsea 7)
  - Mobile Crane Hand Signals
  - Radio Communication
  - Tail crane and distribution of load between tail crane and main lift crane
  - Distribution of Tail load and Main lift crane (In Excel program)
  - Lifting of a Load with 2 cranes (position of Cranes)
  - The lifting of two large columns with 3 cranes
  - The Inclino meter
  - Video: Lifting 520 Tons Column
  - Drawing the lifting plan using CAD.
  - Sling plan and forces in lifting slings
  - The CoG is always suspended straight under the hook
  - Forces in slings of unequal lengths
  - Define the sling length and force with the graphical method
  - Calculate sling forces S1 and S2 at different elevations of lift points
  - Sling forces S1 and S2 at different elevations using the Graphical method.
  - Calculate the sling length with an a-symmetrical location of CoG
  - Define the forces in each sling
  - Calculate the forces in the spreader beam
  - Calculate the forces in slings and spreader beam
  - The Stability criteria of a crane
  - Play time!
  - Spreader beam configurations
  - The Stability of a load to be lifted
  - The Stability Range
  - The Stability Moment of the load to be lifted
  - The Stability of the load to be lifted
  - The Stability of the load with 3 lift points below CoG
  - The Stability of the load to be lifted
  - Wind speed from table to actual.
  - Use of lift beams and spreaders
  - Lift beam (800 Tons) and Spreader (1000 Tons)
  - Use of lift beams and spreaders
  - Use of various Lifting beams
  - Rigging arrangement
  - Loading directions of lifting points and Checking!
  - Work factors (Safety Factor)
  - OS-H205\_2014-04 Nominal safety factor rules.
- Sling Capacities in various applications
  - Grommet Capacities in various applications
  - Applying slings to a load
  - Calculate the loads in this example
  - Lifting with more than 2 cranes
- #### 5. Maintenance and Inspection
- Inspection Criteria for Lifting Equipment
  - Maintain, Inspect, Check and Test
  - Inspection Criteria for Lifting Equipment
  - Excessive wear on Crane sheaves
  - Maintenance recommendations for Transport Equipment
  - Work factors (Safety Factors)
  - Identification and CE Marks
- #### 6. Skidding and Jacking
- Various Skidding & Moving techniques
  - Skidding Techniques
  - Example skidding system
  - Stainless Steel on P.T.F.E. Blocks (Teflon). Lubricated with backing oil
  - Self propelled skidbeam system
  - Hydra-Slide skidding systems
  - Using winches
  - Skid system for extreme heavy loads
  - Load-out of 17700 mT Vyborg deck (Korea)
  - Skidding of 830 Tons Container cranes
  - Skidding float pads of 200 Tons cap. each
  - Working Principle of Strand jacks
  - Using Strand jacks as lifting devices
  - ALE's Super Crane SK-190/SK-350 using strand jacks
  - Jacking methods
  - Jacking Towers and Gentries
  - ALE's Mega Jack System (40,000T) and Mammoet Push-Up System
  - ALE's Mega Jack System (40 - 60,000 T Cap.)
  - Alternatives moving method: Airbags
  - Airbags Procedure
  - Air pressure in bags and stability
  - Rules for loading operations for loadouts. Friction
- #### 7. Making a Project Planning
- Making a Project Planning
  - Project Execution: Front End Planning
  - Typical Project Organisation Chart: CTR's, Cost Time Recourse
  - Gantt Chart or Bar Chart Planning
  - Example: Project Planning
  - Critical path in a Planning Schedule
  - Example for a lifting operation
  - Measuring Progress.
  - Keeping track of the progress
- #### 8. Preparation of Cost Estimate
- Preparation of a Cost Estimate
  - Why a Cost estimate?
  - Essential to cost estimates
  - Make a Lift- or Transport. What is needed?
  - On basis of plans make a Planning Schedule
  - Prepare cost estimate on basis of Planning Schedule
  - Example of Cost Estimate
  - Recommendations
- #### 9. Loadouts of Extreme Heavy Lifts
- Various Ro-Ro Operations
  - Necessary information for RoRo operation
  - Categories of loadout. ISO versus DNVGL
  - Ballasting the barges
  - Ballasting when loading via the stern.
  - Barge ballasting.
  - Making use of the tidal conditions
  - Ballasting: Roll-on barge, tide restricted Cat.1
  - Ballasting: Roll-on barge, no tide restriction Cat 2
  - Ballasting: Skid-on barge, no tide restriction Cat 2

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- Roll-on to grounded barge
- Beach Landing on grounded barge
- Examples of a beach landings
- Positioning of SPMT's under the load
- Technical Data of Scheuerle SPMT's
- Technical Data of Goldhofer SPMT's
- Roll-off with a 2400 Tons HRSG Module
- Ro-Ro ramps or steel plates
- Configure right Transport Combination
- Transp. beams, Supports & Sea fastening combined
- Load-out of 12,400 Tons Module
- Load-out of a Special Structures
- Transport & Load-out of a large Modules
- Loadout of a 4500 jacket.
- Site moves of a Heavy Loads
- Load diagrams of Platform Trailers
- Moving various Heavy Loads
- Increased support area.
- Skidshoes when it is too heavy for trailers
- Weighing of the cargo to determine weight and Cog
- Load-out of the 47,830t Arkutun Dagi topside
- Load Distribution
- Redistributing the loads.
- Load concentrations for jacket transport.
- Load (re-) distribution
- The external ballast arrangement
- Barge mooring: stern to quay
- Barge elevation and tide control.
- Monitoring systems.
- Monitoring all by means of sensors and loading computer.
- Linkbeams
- Rules for loading operations for loadouts.
- Recommendations

#### 10. Safety and Risk Analysis

- Why important?
- BP Golden Rules of Safety.
- Shell 12 Life Saving Rules
- Heerema Fabrication
- House Rules for Visitors & PPE
- History of Jumbo's Safety Policy
- Part of Jumbo's QHSE POLICY STATEMENT
- What is right and what is wrong in these pictures?
- Safety Awareness Culture Ladder
- Safety Awareness Culture Ladder Explanation
- The Iceberg Theory
- How do we Record & Analyze?
- Some Definitions/Abbreviated terms
- Some Definitions
- What are our Goals?
- Safety Culture and Awareness
- How?
- What do we see?
- Use proper PPE = Personal Protective Equipment
- Reduce 20% of causes and you reduce 80% of all accidents
- Keep Welding and Cutting equipment in Good condition
- PPE and good accessible lifting points
- Accident & Incident Reporting and Analysis
- Card Systems
- Stay Focused
- Safety Requirements & Procedures
- RISKS (ISO/Guide 73:2009)
- Events - Consequence – Likelihood
- Use a Risk Matrix
- Risk Matrix; Frequency x Consequence = RISK
- Risk Register
- Useful Guide Words for the Risk Assessment (TECHNIP)
- What prevents the hazards being realised?
- What mitigates the consequences?
- A shared picture of how the hazard is managed
- The bow-tie
- Diagrammatic representation of a hazardous event (EN ISO 17776)

- Defence in Depth or Leaky False Comforters?
- Design Safety
- Guide Line Job Hazard Analysis
- Job Hazard Analysis (JHA)
- Safety Awareness Posters
- Is it all OK?
- Identification of Hazards
- Identification of Hazards
- Why, When and How a "Toolbox Meeting"
- Last Minute Risk Analysis (LMRA)
- Exercise and Communication
- Radio Communication
- Co-operation with Client is essential
- Examples of well secured Transport saddles
- Examples of badly secured Transport saddles
- Conclusion

#### 11. Heavy Lift Shipping

- Various Types of Heavy Lift Ships: Lo-Lo
- Various Types of Heavy Lift Ships: Flo-Flo
- COSCO 90,000DWT Semi-Submersible Vessel, m/v GUANG HUA KOU
- Various Types of Heavy Lift Ships: Ro-Ro
- Heavy Lift Ships, Crane Types: Lift-on / Lift-Off
- Difference between Pedestal crane and Mast crane
- Heavy Lift Mast Cranes: 900 tons on J-Type Jumbo
- Cargo Types: Petrochemical, Offshore, Floating Equipment
- Cargo Types: Pressure vessels, Modules, Gasturbines
- How to prepare a Lift-on Lift-off (Lo-Lo) Lift Plan
- Lifting cargo from the quay by ballasting and hoisting
- Lifting 3 Bullet tanks over PS on board
- Check Stability of the Load
- Examples of Stability of the Load
- Motion Analysis of vessel
- Checklist for Lashing and Securing
- Examples of Sea fastenings (Jumbo) (Lashing wires + Stoppers)
- Examples of Sea fastenings (Jumbo + SAL) (Lashing wires)
- How to lash a Harbor Crane (Lashing wires + Stoppers)
- Lashing examples SAL: 1100 Tons Shiploader
- Cribbing, seafastenings, guideposts (Boskalis/Cosco/OHT)
- Calculation of Sea fastening Forces
- Code of Safe Practice for Cargo Stowage and Securing 2011
- How to calculate the required number of lashings?
- Examples of Sea fastenings (Jumbo) (Lashing wires + Stoppers)
- Examples of Sea fastenings Calculations
- Lashing & Securing Methods
- Wire Rope Clips – Not for lifting
- Seafastening of a jacket
- Recommendations

#### 12. Offshore Lifting and Installation

- Introduction to the Offshore World: Exploration and Production
- Offshore Production Platform types (1)
- Subsea Structures
- Field Development
- Subsea Installation Techniques
- The different phases of a subsea lift from an offsh. constr. vessel
- Types of Offshore Installation Vessels
- Largest Offshore Construction Vessel in the World: „Pioneering Spirit“ (Allseas)
- Overview of the world Largest Crane Vessels
- Largest Crane Vessel in the World: SSCV "Thialf" (HMC)
- SSCV "Saipem 7000" Crane Vessel
- Mono Hull Crane Vessel "Oleg Strashnov" (Seaway Heavy Lifting)
- Comparison Mast Crane - Pedestal Crane
- Offshore wind concept
- Offshore wind
- Foundations
- Floating "foundations"
- Jack-up & Platform Supply Vessel (PSV)



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- Offshore Construction Vessel (OCV) with X-Bow
- Spud-cans and set down of a jack-up rig / vessel.
- Overview of jack-up foundation design/assessment process
- Mono Hull Crane Vessel + Pipe laying "Subsea 7 Borealis"
- Mono Hull Pipe-lay/Construction Vessel „Aegir“ (Heerema)
- Comparison 5000 t Mast Crane - Pedestal Crane
- Catamaran Crane Vessel "Svanen" (van Oord)
- Catamaran Crane Vessel "Rambiz" (Scaldis) used in Wind farm construction
- Pipe Lay Installation Methods
- Seabed Topography
- Seabed Preparations
- S-Lay Pipe laying vessel Solitaire (Allseas)
- Reel Lay Spool base (Subsea 7)
- Reel Lay Pipe lay Vessel Deep Blue (Technip)
- Global 1201 S-Lay Pipe laying vessel Global Industries (Technip)
- Largest Semi-Submersible Transport Vessel (Dockwise Vanguard)
- Float-over Technique for extremely heavy topsides
- Float Over Operation North Rankin Field (Australia)
- Step 1, stand-off
- Step 2, entry
- Step 3, entry
- Step 4, set down position
- Do not be reluctant making wooden scale models
- LMU principle.
- Jack-up Wind Turbine Installation vessels
- Installation Methods Wind Turbines
- CASE STUDY: Installation of Risers in 2700 m Deep Water in GOM
- Jumbo's new Deepwater winches
- Deepwater Capabilities
- CASE STUDY: Transport & Installation of Risers
- Sailing to Cascade Offshore location
- Unreeling of 410 t Riser (2300 m)
- Wet Hand-shake of 410 t Riser
- Video of Cascade Chinook Project
- CASE STUDY: Gina Krog Jacket installation
- CASE STUDY: Gina Krog Jacket Project location
- CASE STUDY: Gina Krog Jacket Field Lay-out
- CASE STUDY: Gina Krog Jacket Construction and loadout. Pile sleeves and leveling

#### 13. Rules and Regulations

- Applicability, all countries are different
- What type of rules do we have?
- Contracts
- Outline of standards (Norsok)
- Which rules are relevant or useful for us?
- When working with barges or vessels from safety perspective
- LOLER (Lifting Operations and Lifting Equipment Regulations 1998)
- What is a 'competent person'?
- Specific requirements applicable to floating equipment
- ISO 12480-1 Cranes safe use part 1
- Associations
- ASME; The American Society of Mechanical Engineers.
- IACS; the International
- Association of Classification Societies
- The Role of the Marine Warranty Surveyor (MWS)
- Guidelines for offshore marine operations (G-OMO)
- The International Association of Oil & Gas Producers (IOGP)
- Document hierarchy
- LSD or LRFD and WSD or ASD
- Load and Resistance Factor Design
- How to deal with the variety of regulations?

#### 14. Accidents

- Tipping of trailer with load
- The Accident
- Conclusion Accident
- Baldwins guilty of corporate manslaughter
- Juliana Bridge, Alphen aan den Rijn, August 2015

- Juliana Bridge, The lift plan step 1
- Juliana Bridge, The lift plan step 2
- Juliana Bridge, how it was executed.
- Juliana Bridge, conclusions from the Dutch Safety Board
- Some transport accidents
- Video: Trailer Tipping over
- Some transport accidents
- Collapse of Gantry Crane
- Load-out of 1000 Tons Module S'pore
- The Salvage
- Car over the side
- What went wrong?
- What went wrong here?
- A similar case, but worse!
- Mechanical failure of support girders
- Some recommendations to avoid accidents!!

**\*QUESTION AND ANSWER SESSIONS IN BETWEEN THE VARIOUS PRESENTATIONS**

**\* AS THE TRAINING IS UPDATED CONTINUOUSLY, SMALL DEVIATIONS WITH THE LIST SHOWN ABOVE MAY OCCUR**

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## Partial List of Our Clients



**PETROGAS**

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T: +65 6631 9763

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# REGISTRATION

OLYGEN PTE LTD | TEL: +65 6631 9763

Contact: Alvin Yong

EMAIL: [alvin.yong@alcest.co](mailto:alvin.yong@alcest.co)

15th - 17th October 2018 • Perth, Australia

**EARLY BIRD RATE**  
(Book and Pay before  
15th August 2018)

**REGULAR RATE**

**Advanced Heavy Lift and Transportation**

AUD 5,999 + 10% GST

AUD 7,999 + 10% GST

\*Fees include course documentation, luncheon and refreshments. Delegates are responsible for their own accommodation.

Organisation : \_\_\_\_\_  
Invoice Attention To : Mr/Ms/Mrs: \_\_\_\_\_  
Job Title : \_\_\_\_\_  
Email : \_\_\_\_\_  
Address : \_\_\_\_\_  
Telephone : \_\_\_\_\_ Fax: \_\_\_\_\_

## DELEGATES' DETAILS

|                 |                                       |                 |                                       |
|-----------------|---------------------------------------|-----------------|---------------------------------------|
| Name            | : Mr/Ms/Mrs: _____                    | Name            | : Mr/Ms/Mrs: _____                    |
| Job Title       | : _____                               | Job Title       | : _____                               |
| Direct Line     | : _____                               | Direct Line     | : _____                               |
| Email           | : _____                               | Email           | : _____                               |
| Diet Preference | : None/Vegetarian/Halal/Others: _____ | Diet Preference | : None/Vegetarian/Halal/Others: _____ |

Name : Mr/Ms/Mrs: \_\_\_\_\_  
Job Title : \_\_\_\_\_  
Direct Line : \_\_\_\_\_  
Email : \_\_\_\_\_  
Diet Preference : None/Vegetarian/Halal/Others: \_\_\_\_\_

## PAYMENT BY CREDIT CARD

VISA/MASTER - You will be sent a Payment Link to pay online

Card Type : AMEX  
Card No. : \_\_\_\_\_  
Expiry : \_\_\_\_\_ (MM/YYYY)  
Name : \_\_\_\_\_  
Signature : \_\_\_\_\_

\* 3.5% surcharge applies for credit card payment

## AUTHORISATION

Name : Mr/Ms/Mrs: \_\_\_\_\_  
Title : \_\_\_\_\_  
Signature : \_\_\_\_\_  
Date : \_\_\_\_\_

## PAYMENT BY BANK TRANSFER

### BANK TRANSFER

Olygen Pte. Ltd.  
United Overseas Bank Limited, Sydney  
Branch  
Bank Address: Level 9, 32 Martin Place,  
Sydney NSW 2000, Australia  
BSB: 922001  
AUD Account No: 113001371  
Swift Code: UOVBAU2S

## TERMS & CONDITIONS

Payment Terms: Payment is required within 7 days of invoice date. Olygen reserves the right to refuse admission IF payment is not received before the event date. Transfer: Transfer is allowed upon written notification. Cancellation: Registration carries a 50% cancellation liability, not with standing, full fee is payable when cancellation is less than two (2) weeks before the event. Cancellation has to be done in writing. If Olygen decides to cancel or postpone this event, it is not responsible for covering airfare, hotel, or other travel costs incurred by clients. The fee will not be refunded, but credited to a future event. No Show: No show does not constitute transfer or cancellation and the full fee is payable. Changes: Olygen reserves the right to change event dates, venue, speakers, or omit event features, or merge the event with another event, as it deems necessary without penalty, refunds or alternative offers. Tax: Registration fees exclude tax. For clients outside Singapore, the sum payable is as the listed fees, exclusive of tax. To this sum shall be added any other local tax or withholding tax from client's country of origin, if any. Marketing: Olygen may use your company's logo or business name or otherwise refer to your company in our website, any marketing, promotional or advertising material as a client of our services. Governing law: This Agreement shall be governed and construed in accordance with the law of Singapore and the parties submit to the exclusive jurisdiction of the Singapore Courts in Singapore. Indemnity: Should for any reason outside the control of Olygen, the event be cancelled due to an act of terrorism, extreme weather conditions or industrial action, Olygen shall endeavour to reschedule but the client hereby indemnifies and holds Olygen harmless from and against any and all costs, damages and expenses, including attorney's fees, which are incurred by the client.