

## Seminar Program in Detail

### Introduction & Terminology

- transporters
- cranes
- barges

### Dimensions & Weights

- laws of Newton
- mass vs. weight
- combined forces (vectors)
- wind & water forces
- acceleration & deceleration
- friction forces
- calculations of weight

### Center of Gravity

- what is it
- how to treat it
- how to determine it
- C.O.G. in three dimensions

### Heavy Transport (Principles)

- Difference between trailers and transporters
- Definition of hydraulic platform transporters
- principles of hydraulic platform transporters
- Equipment selection (the right tool for the right job)
- Suspension settings (what, how and why)
- The equalizing effect
- stability (structural & hydraulic)
- stability area
- stability limits
- self propelled vs. pull type (steering, propulsion)
- propulsion (truck vs. power pack)
- forces on a transport
- lashing and securing
- Combining different brands
- Combining conventional and self propelled
- The use of turn tables on long loads
- transporting long loads without turn tables
- Ground and soil forces
- Most common accidents and how to avoid them

### Heavy Transport (Execution)

- the transport plan
- surveys (points of attention and required documents)
- equipment check
- loading the load (from supports, crane or ship)
- transporting the load
- offloading the load

### Heavy Lifting

- detailed overview of cranes and crane types
- manufacturers vs. owners
- definitions
- principle of lever & principle of pulley
- capacity vs. load moment
- How to determine the size of a crane without having a chart
- Spreader bars and lift beams (design and use)
- Basic and advanced rigging (explanation and examples)
- Lifting loads in and out of the water
- Multiple crane lifts
- Wind energy and cranes
- Tailing a load
- Most common accidents and how to avoid them

### Jacking & Skidding

- Jack & pack
- principle and working of climbing jacks
- Strand jack working
- strand jack applications (vertical, horizontal, up-side-down)
- Jacking towers
- Skidding applications (wood, steel, Teflon, stainless)
- disadvantages of skidding
- hydraulic gantry working
- hydraulic gantry operations
- Moving on air (airbags, air pallets)
- Moving on rollers (Hilman, rail)

### Load-outs

- barge types and applications
- Hydrostatic particulars for barge/ship (KM, LCB, LCF)
- Archimedes law
- barge/ship movements
- tides (how & when)

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- tidal prediction
  - Tidal movements during a load-out
  - ballasting
  - Load-out onto a floating barge (tidal and non-tidal)
  - load-out onto a grounded barge
  - beach landings
  - case studies

### The anatomy of an accident

- Accident categories
- common mistakes
- case studies
- Recognizing an unwanted situation before it escalates
- Crew Resource Management (an effective way of accident reduction, source NASA)
- Safety practices

### Maintenance

- Terminology
- Maintenance, inspection, certification
- certifying bodies
- PM vs. repair
- check lists
- PM (what, where, how and when)