

Transportation & Installation of 350 Te Buoyancy Cans in the Gulf of Mexico



Overview



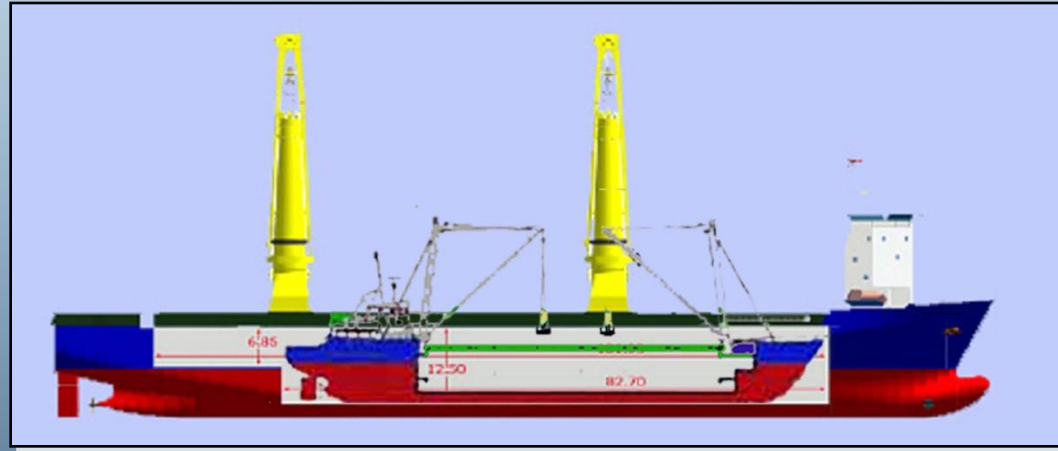
1. Jumbo Origins & Transport Business
2. J-Class Vessels
3. Jumbo's Deepwater Capabilities
4. Jumbo Offshore project: Cascade - Chinook, Gulf of Mexico, USA



Jumbo Origins & Transport Business



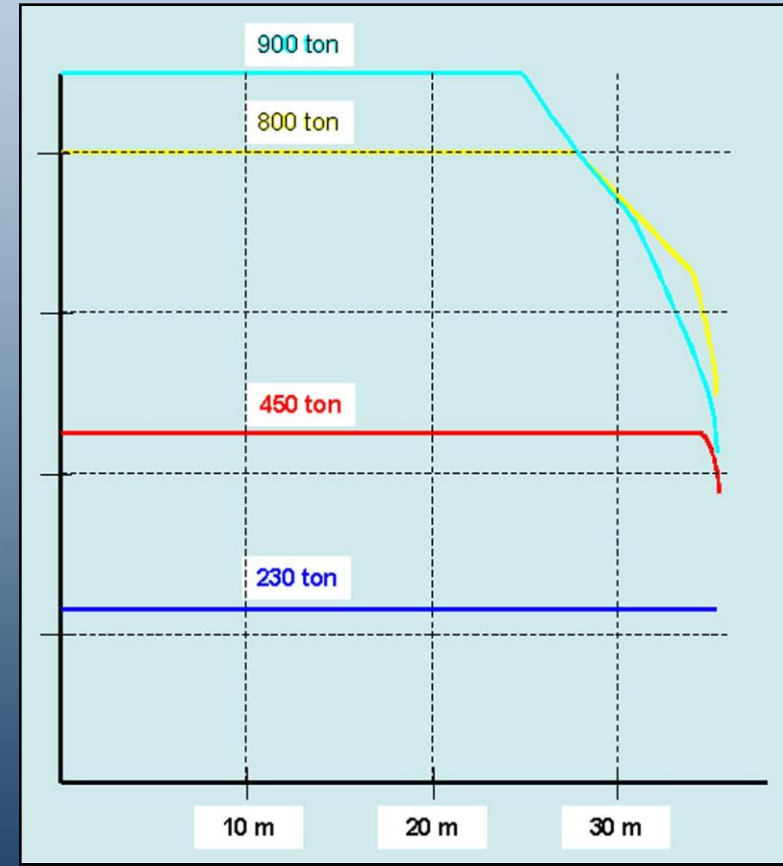
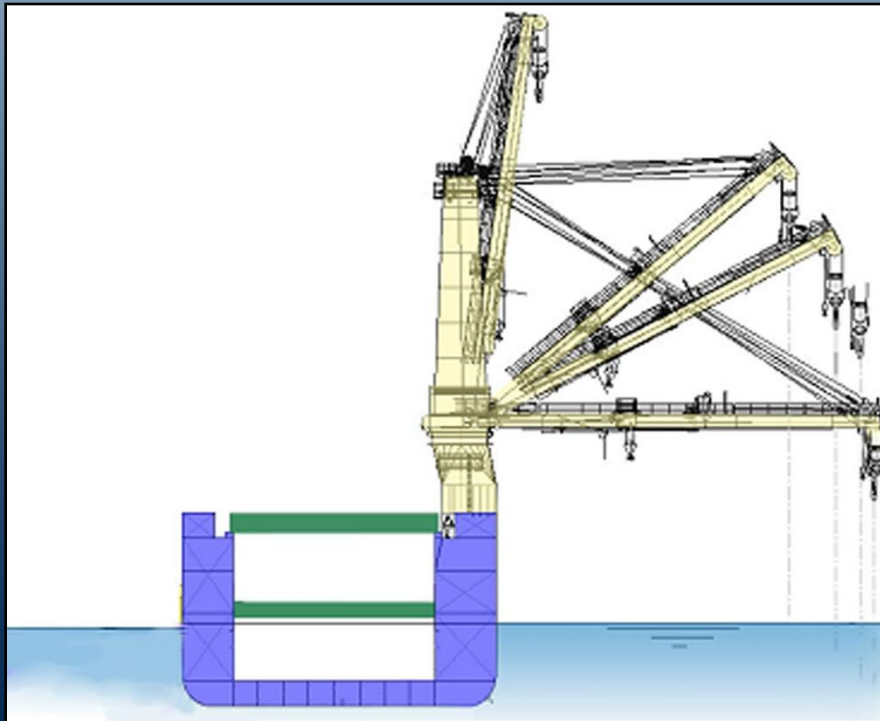
- privately owned
- 450 people worldwide
- fleet of 14 Heavy Lift Vessels
- > 40 years experience in heavy lift shipping
- In-house new building department
- Lifting capacity upto 1,800t
- New building 2,600t



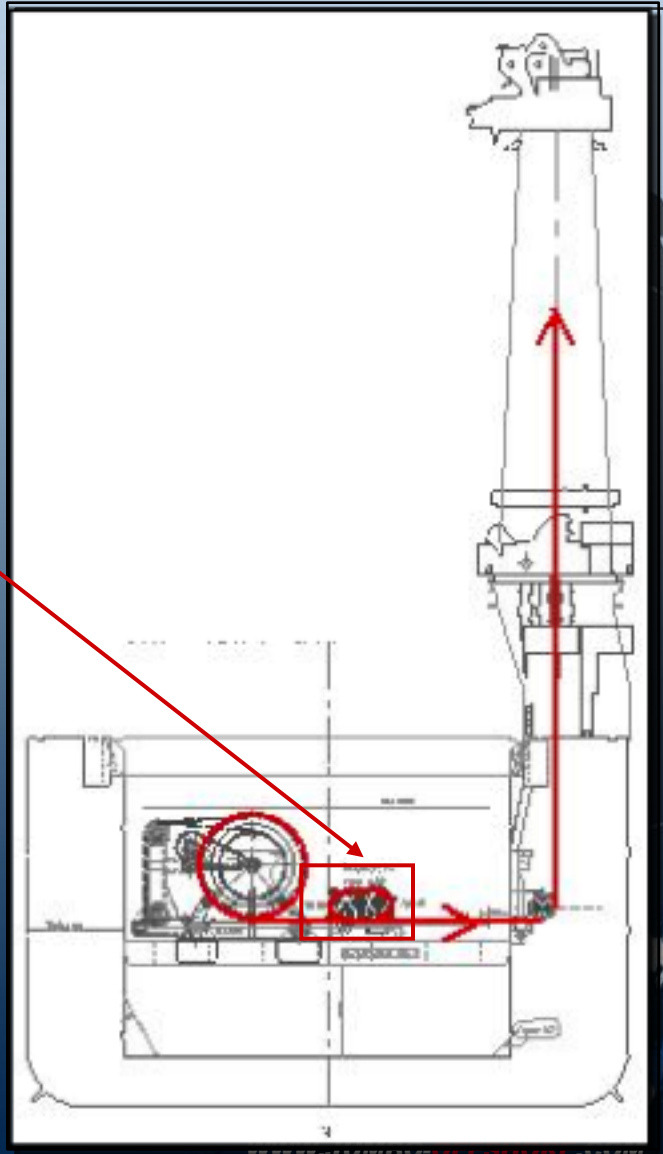
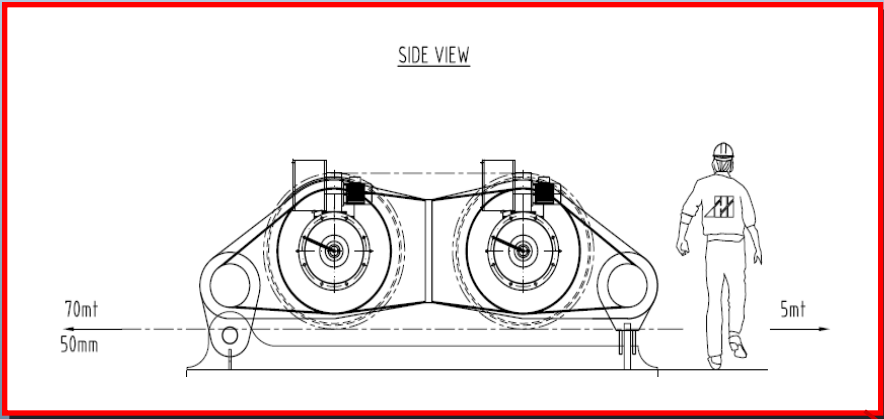
J-Class Lifting Capabilities



- Huisman Mast Cranes 900 Te at 25 m
- Dual crane configuration
- Re-reeving to various configurations



Jumbo Deepwater Winches



Deepwater Capabilities



- 1000t at 900 m Depth
 - 280 t at 2000 m Depth
 - 200 t at 3000 m Depth
-
- 1000 t at 3000 m using Jumbo's newly developed method

JUMBO OFFSHORE

DEEP WATER INSTALLATION

Jumbo Offshore installs subsea structures (templates, manifolds), moorings for FPSO's and offloading buoys (driven piles, suction piles) and smaller jackets and topsides. Jumbo Offshore has access to 14 Heavy Lift Vessels, two of which have DP2: *Jumbo Javelin* and *Fairplayer*.

These two Offshore Construction Vessels are versatile and can, for instance, be used for transport and installation of transition pieces for offshore wind farms. In addition, Jumbo has installed a patented Deepwater Deployment System (DDS), able to lift large and heavy structures from deck and install them on the seabed without the need for subsea transfer.

With a standard offshore lifting capacity of 1,000 t, Jumbo Offshore continues to strengthen its promise to:

LIFT. SHIP. INSTALL. ALL IN ONE GO.

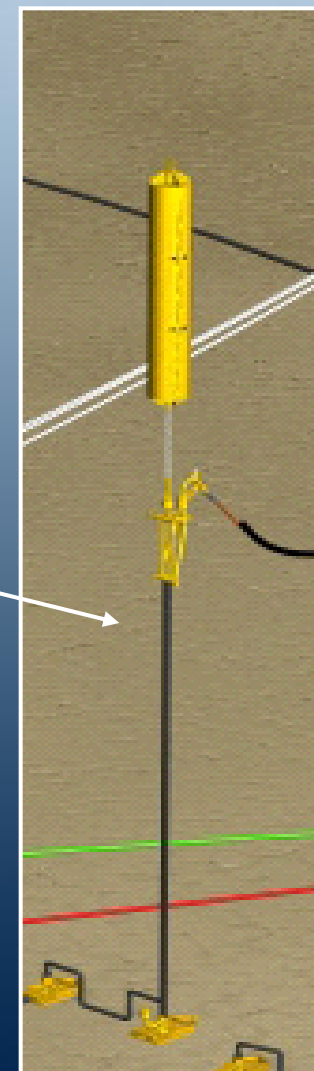
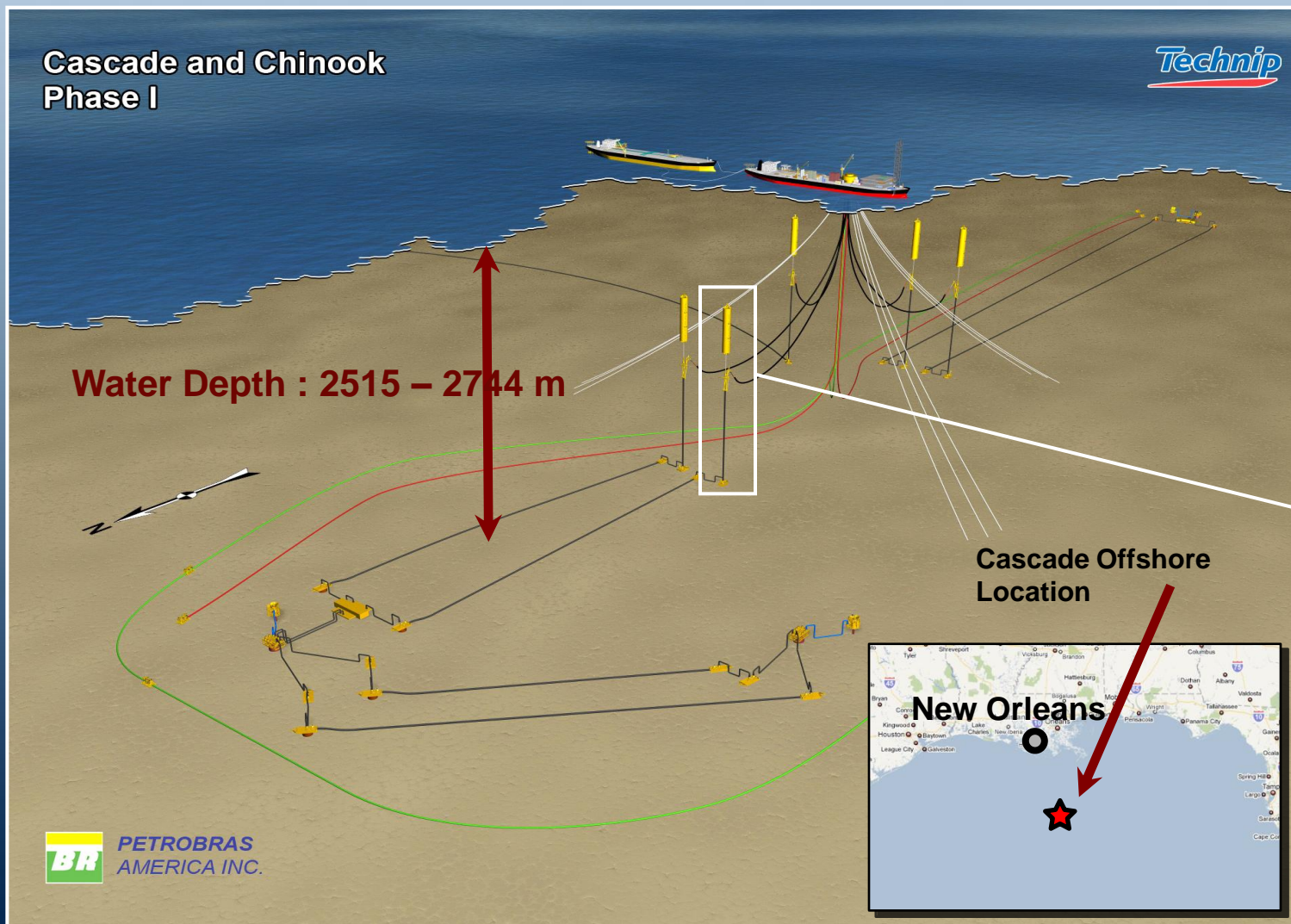
Depth (m)	Install Capacity (t)
900	1,000
1,500	660
2,000	280
3,000	200

Depth capability can be increased through the use of pennants in combination with a subsea transfer.

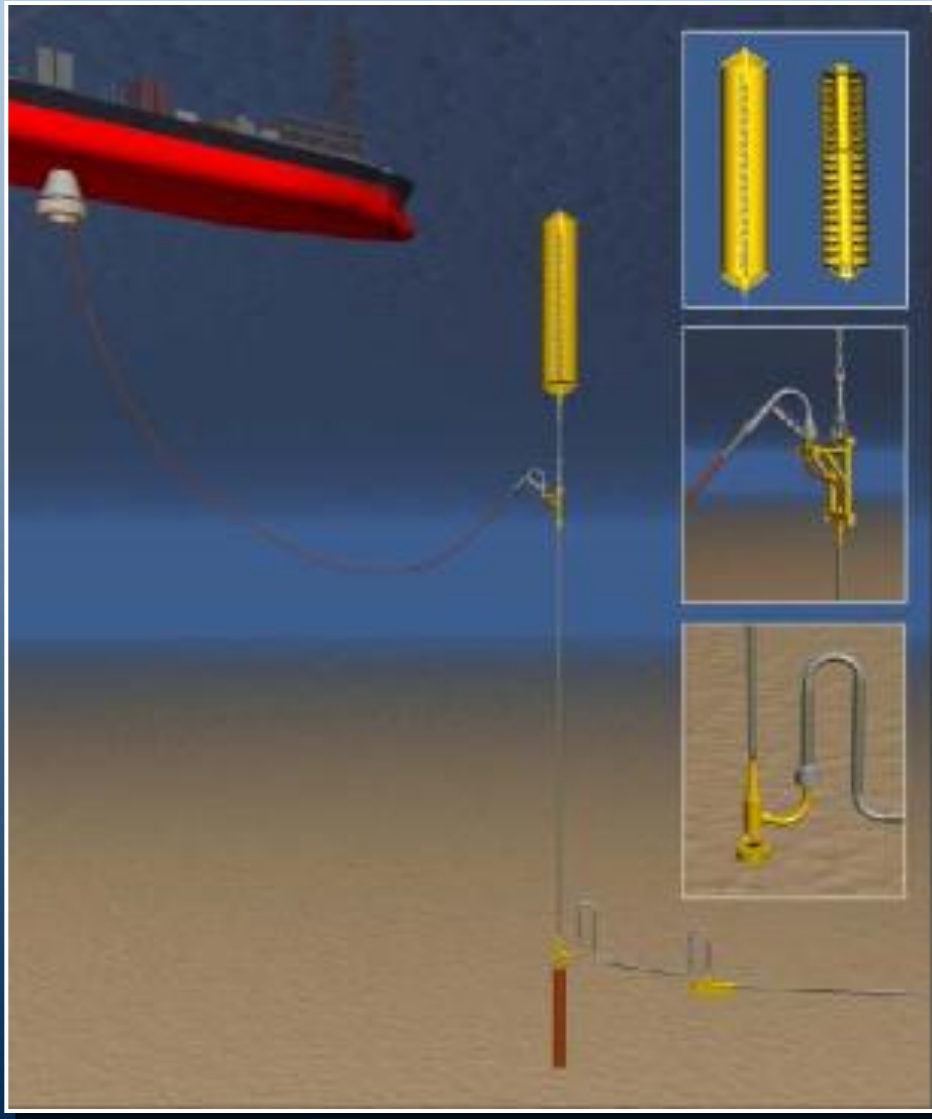
WWW.JUMBO-OFFSHORE.NL

Cascade & Chinook Project

- 300 km South of New Orleans



Cascade - Chinook Field Lay-out



Cascade & Chinook – Key Figures



1. Buoyancy Cans (5 off)

- 6.4 m diameter
- 38 m length
- 350 Te weight

2. Risers (5 off)

- 2250 m length
- 410 Te submerged weight

Water Depth : 2515 – 2744 m



Main Jumbo Activities



- **Provision of vessel related engineering:**
 - Vessel Stability
 - Motion Analysis
 - Assist with design Hang-Off Frame
 - Engineering for loading, shipment, overboarding of Buoyancy Cans
 - Subsea installation engineering with Technip
 - **Lifting Operations**
 - Overboard B-Can/Riser assembly
 - up-end B-Can
 - lower assembly to - 200 m water depth
- Pull in of Riser at - 2500 m by Technip



Mobilisation + Loading



Rotterdam (The Netherlands)

- Install Hang-Off Frame
- Re-reeve cranes to 14-fall configuration (800 Te SWL each) through Deepwater Winches
- Install and test 2 Deepwater Winches
- Install accommodation + facilities for additional crew
- Install anti twist system



Pori (Finland)

- Load 5 Buoyancy Cans (350 Te each)
- Seafasten cargo
- Sail to project location in GOM



Mobilisation Rotterdam



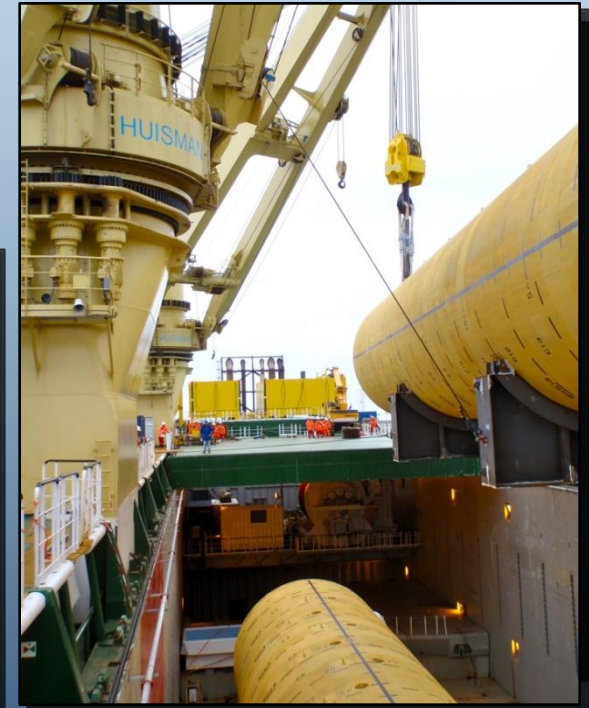
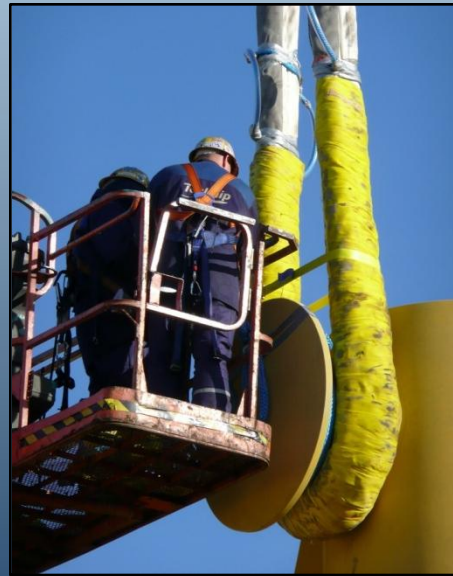
- Install & Test Deepwater Winch System
- Install & Trial fit Hang-Off Frame
- Install & Test a number of tugger winches
- Install extra accommodation



Loading Buoyancy Cans in Pori (Finland)



- Loading 5 B-Cans
- Max. 350 t, diam. 6.4 m, length 38 m
- Dyneema grommets were used for lifting
- 2 B-Cans in the lower hold + 3 on deck

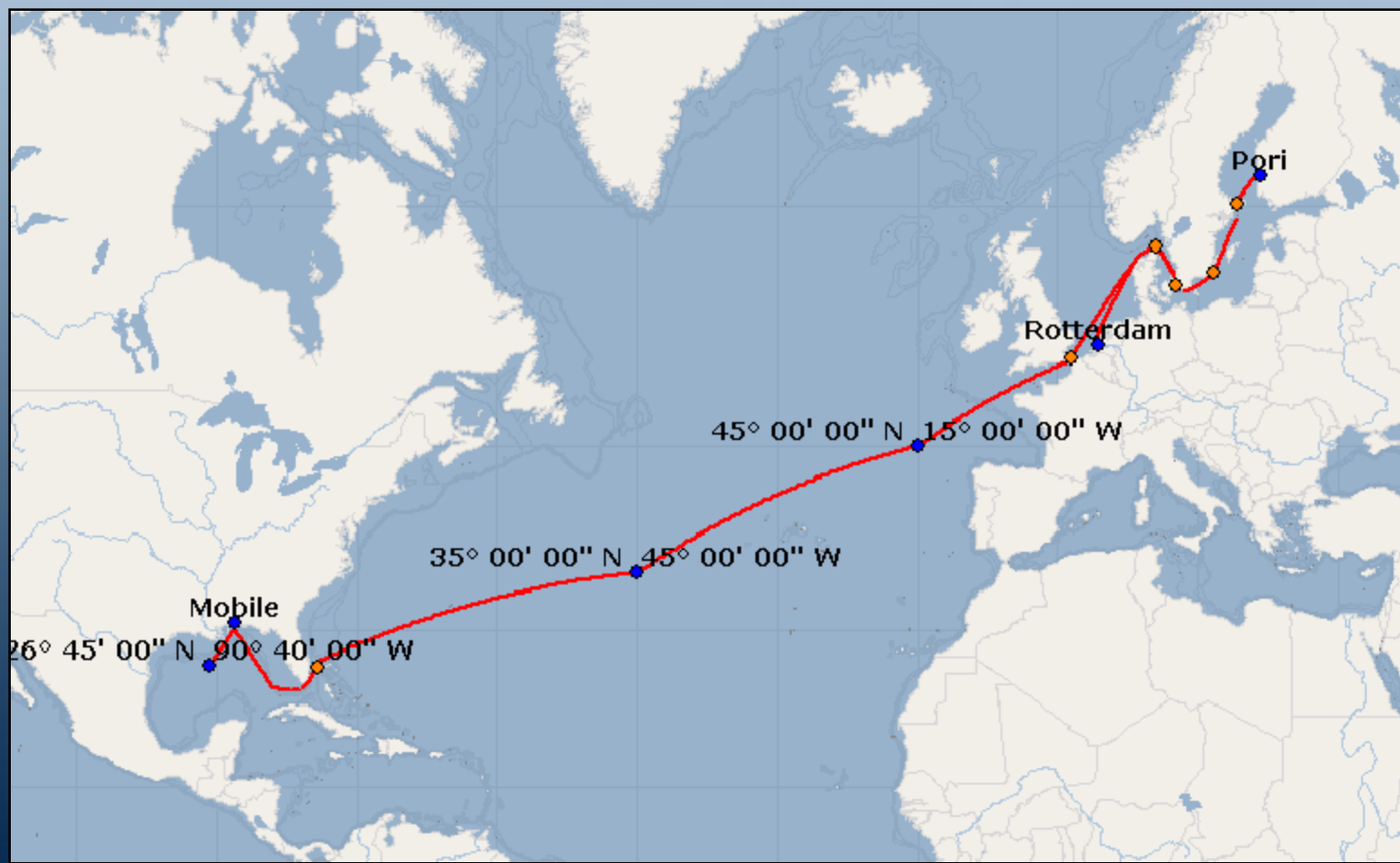


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Sailing Route (Finland – Cascade & Chinook)



Transport from Pori (Finland) to offshore location Gulf of Mexico



Sailing to Cascade & Chinook offshore location



18 days sailing time



Unreeling of 410 Te Riser (2250 m)

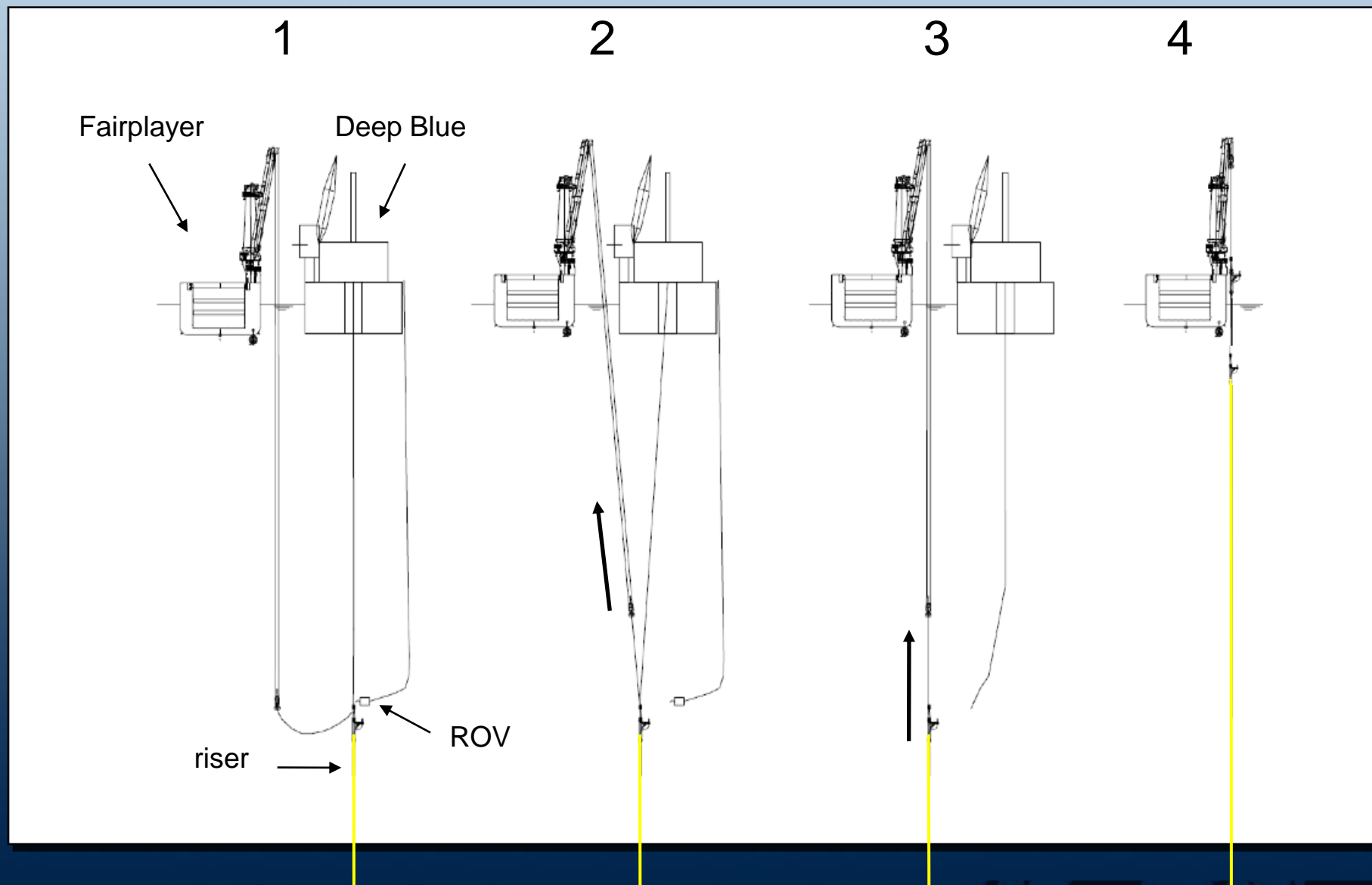


Technip *Deep Blue* – deepwater construction vessel



← 410 t riser through moonpool

Wet Handshake of 410 Te Riser



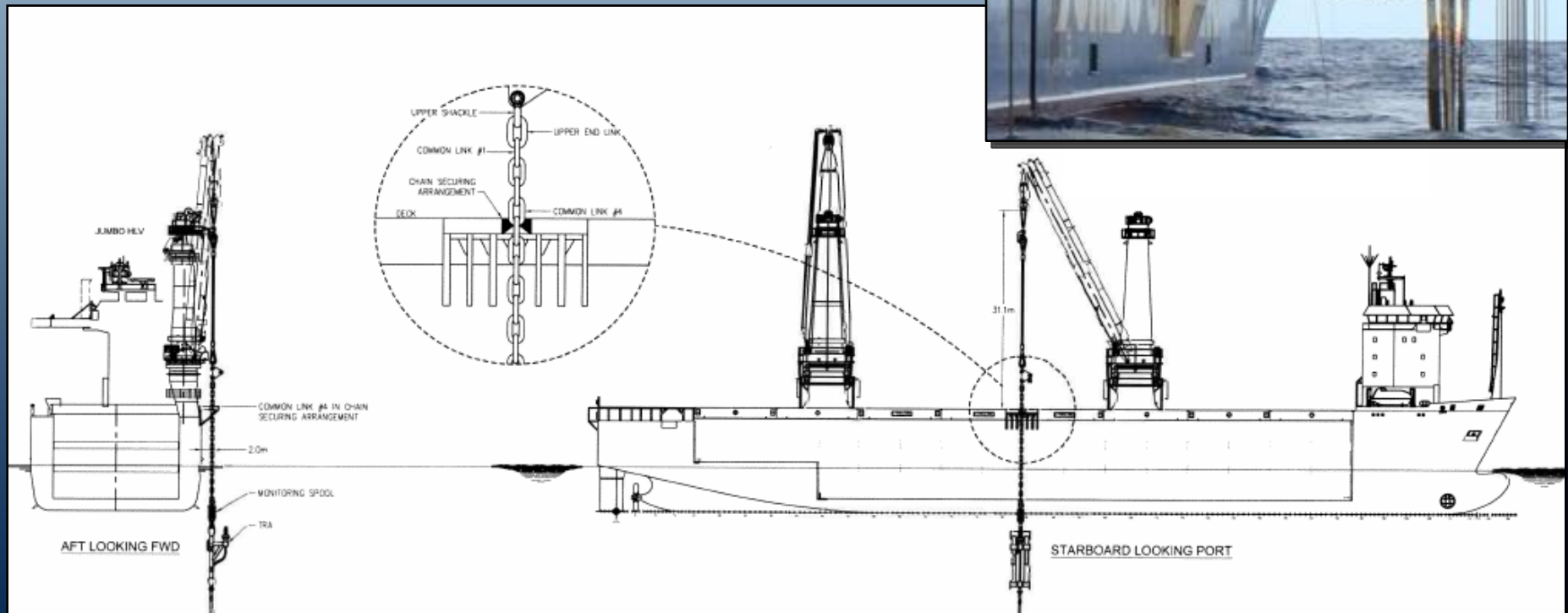
Wet Handshake of 410 Te Riser



Wet Handshake of 410 Te Riser



- Temporary hang-off the riser on a special designed frame, mounted on starboard side of the Fairplayer



Upending BC and lowering through splash zone



Lowering and Pull-Down of FSHR



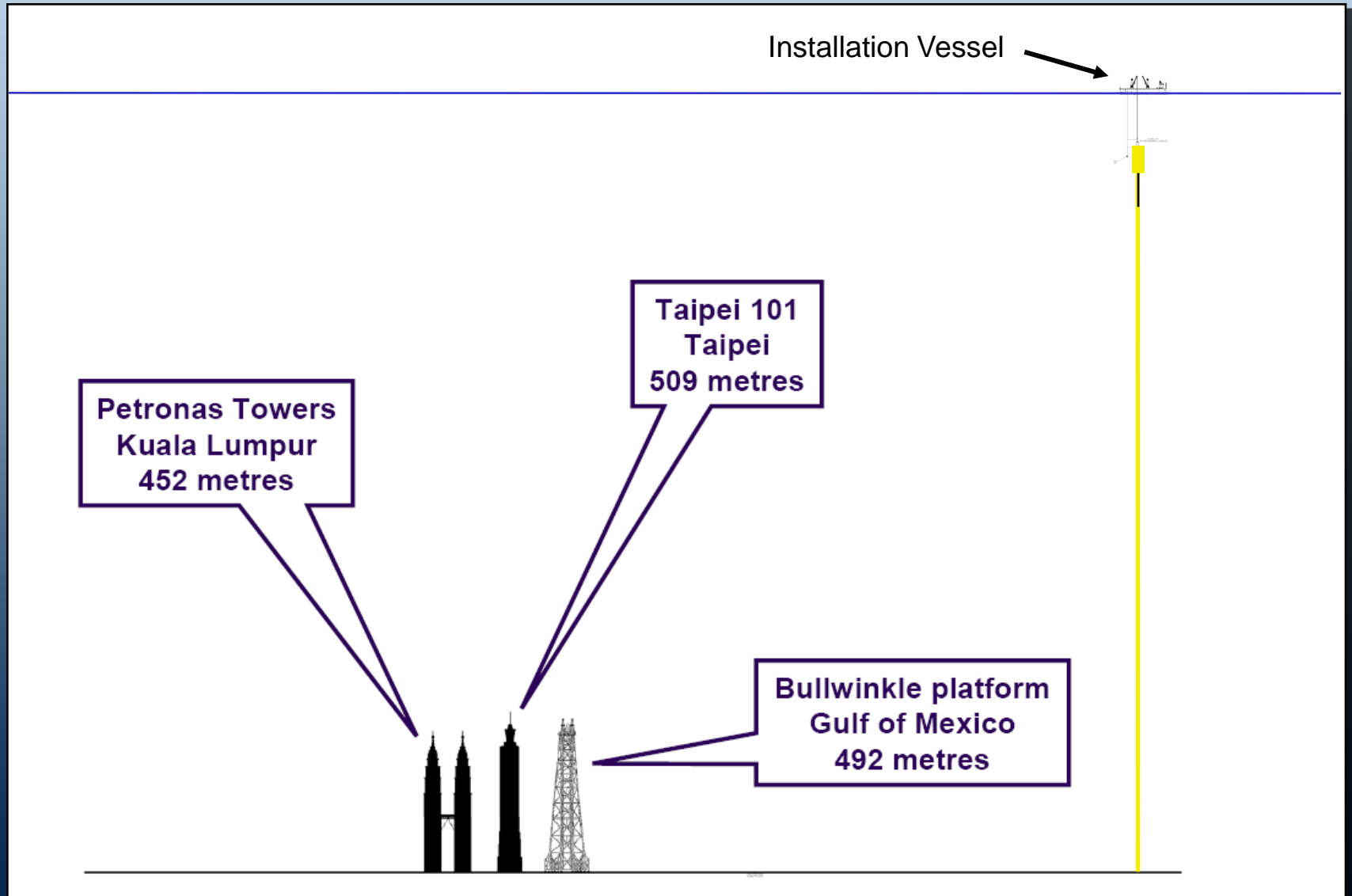
- Lowering by Jumbo's Crane – subsea operations performed by Technip's Offshore Construction Vessel *Deep Pioneer*
- Connection of Riser to seabed by Deep Pioneer
- Duration 6 - 12 hours
- Once connected, Jumbo's crane block disconnected from the B-Can by Technip ROV
- Final Pull-Down by Deep Pioneer

Cascade - Challenges



- First time use of the new Deep Water Winch system
- Working in ultra deep water (2500 meters)
- First time 760 tonnes offshore lift with a J-type vessel
- Weather conditions combined with lengthy operations
- Simultaneous Operations with other vessels in the field
- Dynamic Analyses

Cascade - Challenges



THANK YOU FOR YOUR ATTENTION

Any Questions?

