

Case Study

Oman Heavy Lift Project





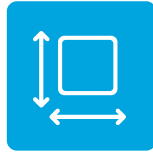
Industry
Oil and gas



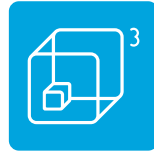
Cargo
Well fluid slug
catcher



Total Weight
254 MT



Dimensions
28.20 x 6.5 x
7.0 m



Volume
1,283 CBM



Highlights
Sophisticated
technical
engineering



Receiving the cargo on the multi-axle hydraulic trailer

Case Study: Oman Heavy Lift Project

deugro Oman, in cooperation with deugro UAE, successfully delivered a 28.20 x 6.5 x 7.0-meter well fluid slug catcher, weighing 254 metric tons, from Nizwa, Oman via the Port of Duqm, Oman, to the Port of Zayed, Abu Dhabi, UAE.

Based on its technical concept, including a sophisticated transport engineering solution and timely ocean freight options despite extremely tight timelines, deugro received the award for this project.

The cargo pick-up location was Nizwa in southeastern Oman. Therefore, from a geographical

perspective, the closest port would have been the Port of Sohar. However, to minimize costly and time-consuming route and civil works, a route survey identified the Port of Duqm as the ideal port of departure for the safe and timely transportation of the cargo.



Due to repeated changes in the readiness of the cargo, the time schedule became increasingly tight. To ensure a safe and on-time movement of the slug catcher, careful planning and preparation were paramount. These included detailed transport, stability, lashing and lifting plans, as well as a detailed route survey and regular technical meetings with the client and the transport engineers from dteq Transport Engineering Solutions (dteq). The plans and survey were consolidated into a well-prepared and detailed method statement, which was then submitted to and subsequently approved by the client.

The biggest challenge was the pre-carriage from the cargo pick-up location in the Nizwa Industrial Estate to the Port of Duqm, Oman. Due to the cargo's dimensions and weight, the identification of the best-suited route and any potential obstacles such as low bridges, narrow roads, road crossings and overhead signboards was vital to ensure safe and on-time delivery.

Once the route was assessed, dteq produced detailed engineering drawings and calculations, on deugro's behalf, to design a suitable trailer configuration based on the hydraulic and mechanical stability of the trailer—allowing for safe overland transportation. To prevent the nozzles of the slug catcher from touching the trailer bed, special packing material was required under the saddles. According to a beam analysis to determine the strength of the beam under load, a transport beam arrangement was designed and sourced.

Since the transport of the oversized and heavy lift (OSHL) cargo along the critical intersections was only possible at night, the local deugro team timely arranged for the required permits and Royal Oman Police escorts. In close cooperation with the subcontracted heavy hauler, a schedule was prepared to apply for the necessary civil works permits, transport permits and police escorts to match the arrival time of the heavy lift vessel.

i

Challenges

- High technical requirements from the shipper and the consignee
- Tight timelines due to repeated changes regarding cargo readiness

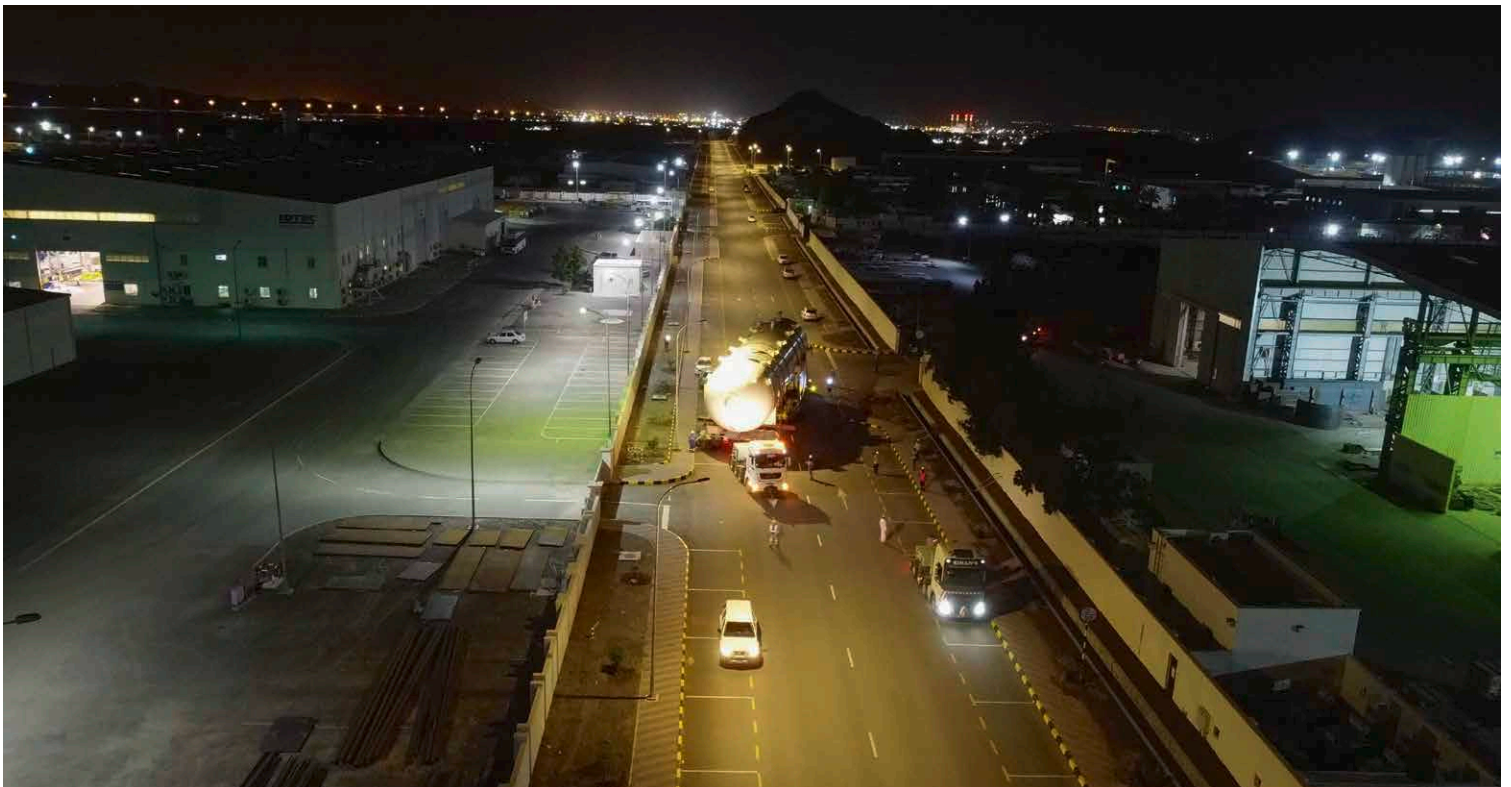


Trailer loading preparations

To ensure safe operations, a site survey was conducted in cooperation with dteq to discuss the procedures with the heavy hauler and the client. Close coordination and communication with the client, the heavy hauler, the local authorities and all partners were key for the safe and successful execution of this project. To agree on the operational procedures and the schedule, and to clarify any questions from the client, for example regarding the

transfer of the OSHL cargo from the stools to the trailer, joint meetings were conducted.

Under personal supervision of dteq, the slug catcher was received and then secured on a multi-axle hydraulic trailer according to dteq's securing arrangement. Once the trailer, prime mover and securing were inspected, the trailer started its 700-kilometer journey by night to the Port of Duqm, Oman.





En route the 700 km journey to the Port of Duqm, Oman

The smooth overland transport required minor modifications such as leveling, filling and compacting loose soil and potholes along the route, removal of poles and sign boards, installation of scaffolding and plywood to cross an interlock area, as well as major modifications such as removing road guard rails.

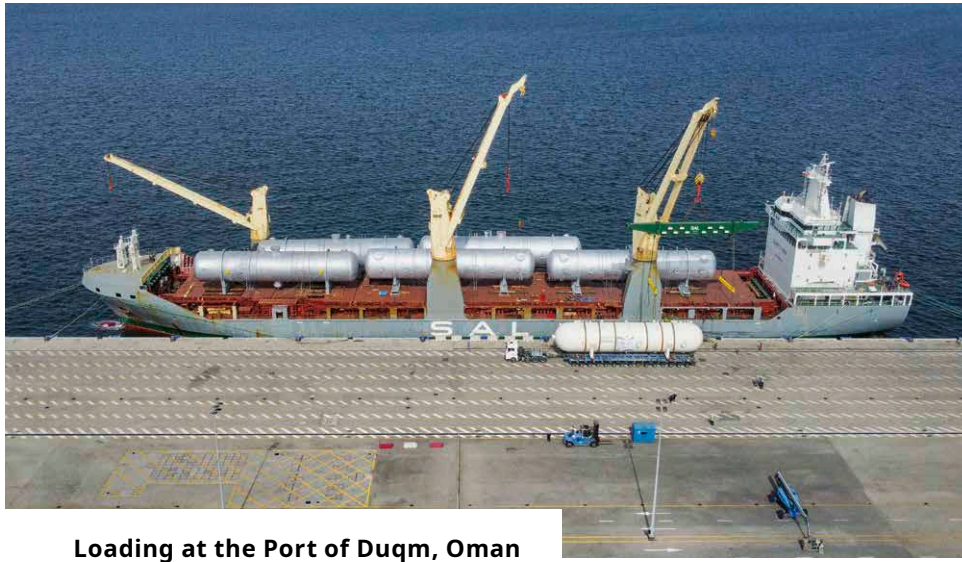
The permits required for civil works and the removal of the guard rails were arranged for by deugro and its partners before the start of the transport.

High wind speeds and sandstorms between Nizwa, Ghaba, Qarn Alam, Haima and Duqm along the route meant great caution was essential to ensure the safety of the workers and the cargo. Therefore, during the journey, deugro's team provided daily status updates for all parties involved.

» High wind speeds and sandstorms meant great caution was essential to ensure safety. «

After five days, the cargo safely arrived at the Port of Duqm—punctually meeting the arrival of the heavy lift vessel.





Loading at the Port of Duqm, Oman

Vessel loading operations

Once the lifting and rigging gear were inspected, the slug catcher was safely loaded by the vessel's own lifting gear under the personal supervision of deugro's local team.

After 14 hours and centimeter precision, the massive slug catcher was loaded, stowed and securely lashed according to the method statements prepared by dteq. The vessel set sail to the Port of Zayed, Abu Dhabi, UAE according to schedule.

More than 730 nautical miles later, it timely arrived at the port of destination, and the cargo was safely unloaded directly onto SPMTs under the personal supervision of deugro UAE—ready for on-carriage to its final destination.

Conclusion

The close cooperation and communication between deugro, the client, dteq and all partners, as well as the innovative solution design and detailed engineering, were key to a successful project delivery.



Cargo securing for the ocean voyage