

Lightweight lifting frame engineered for crane winch changeouts

LOCATION North Sea

Alternative lifting solutions can be required to implement work on the platform crane

BENEFITS

Minimised crane downtime ensured delivery of essential supplies on schedule

A cost-effective solution compared to the expense and installation time of traditional scaffolding

Lifting frame safer to install by reducing duration of personnel working at height and using existing access

Full scope of work managed and delivered by Sparrows ensuring optimal efficiency



CHALLENGE

- The client required the changeout of the boom and main hoist winches on their single platform crane
- Due to platform production and water supply requirements, the crane maximum out of service time was limited to seven days
- As a single crane platform, a lifting solution was required to assist with the winch changeout – the crane OEM proposed solution was cumbersome, timely to erect, difficult to implement and costly
- Sparrows hold the crane maintenance contract with the client in the Central and Northern North Sea, managing crane operation and maintenance and the ability to cover all scopes of work associated with the platform crane. As a specialist mechanical handling provider we created a bespoke lifting and handling solution for the winch changeouts
- It was necessary that the devised lifting solution accommodate the weight of a 2-tonne main hoist winch and 1.5-tonne boom hoist winch but also be light enough to be manually lifted and assembled by technicians on site
- Both winches were mounted in the boom structure and required to be cross hauled then lowered through another section of the boom structure to a suitable working area beneath the crane, adding additional complexity during lift planning.

SOLUTION

- After considering a variety of options, designing a bespoke aluminium frame was selected as the way forward - the requirement for lightweight properties, high strength, timely assembly and ease of operation being the principle project requirements
- Using our global design team, we designed the lifting frame with the priority being to keep the design lightweight whilst being easily erected and dismantled. The heaviest part of the frame was only 23kg
- Building the lifting frame would only take one shift to complete, compared to a four-shift building time for traditional scaffold.
- This helped keep crane downtime to a minimum
- The individual parts were fabricated to our specification before the frame was assembled and tested



- Detailed assembly and operation procedures were developed, with multiple onshore trial assemblies being conducted to ensure smooth operation and installation offshore
- Our crew mobilised to the platform and executed the winch changeouts in stages. The lifting frame was secured onto the top chords of the boom structure with the main hoist winch being initially changed out
- The lifting frame was partially removed to enable essential crane lifts, once completed the frame was re-assembled to change out the boom hoist winch
- Once the boom hoist winch was replaced, the crane was load tested and returned to full service
- The full workscope was successfully performed by Sparrows personnel (onshore and offshore) within the timescale and without incident.



1.
Frame assembled in workshop.

2.
Frame assembled on boom.

SUMMARY

Integrated solutions

- Crane and lifting services management
- Mechanical handling

Capabilities / services

- Multi-discipline engineering / design
- Rigging / lifting
- Maintenance / servicing / refurbishment
- Fluid power / hydraulics

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