



CASE STUDY

LUFFING WIRE DROPPED ROPE RECOVERY & ROPE CHANGEOUT

SITUATION

Client engaged Pressure Dynamics to conduct a luffing wire rope changeout, following previous issues arising for the work scope.

SOLUTION

Pressure Dynamics coordinated and project managed all stakeholder inputs as a single-point-of-accountability for client.

The old wire rope was recovered, and cut and bundled for efficient disposal. The new wire rope installed, luffing limits adjusted, slew bearing rocking motion test conducted, and calibration checks completed for main and auxiliary load cells.

PROBLEM

The old luffing wire rope had been dropped during a previous attempt (by a different contractor) and was lying on HV cable trays and walkways. It was necessary to recover the old luffing wire rope and complete the rope replacement.

BENEFITS

Dropped luffing wire rope recovered safely and cost- and time-efficiently. New luffing wire rope installed, with crane inspected, tested and re-commissioned safely, and cost- and time-efficiently.

Technical advisory provided regarding slew bearing rocking motion test, to achieve client requirements safely.

Prioritised and risk-categorised maintenance requirements reported.

OVERVIEW

Pressure Dynamics was engaged to conduct a luffing wire rope changeout, following previous issues arising for the work scope - the old luffing wire rope had been dropped during a previous attempt (by a different contractor) and was lying on HV cable trays and walkways.

It was necessary to recover the old luffing wire rope and complete the rope replacement, crane inspection, testing and re-commissioning of the crane.

APPROACH

The work scope was conducted in 3 phases over a 23-day period, aligned to facility access and client schedules.

PHASE 1

Pressure Dynamics mobilised its team of a *Lead Crane Technician* and 2 *Rope Access Technicians* to execute the initial phase of the work scope.

The team retrieved the new luffing wire rope back onto its supplied wooden drum and coordinated its backload onshore so that it could be respooled onto a steel drum.

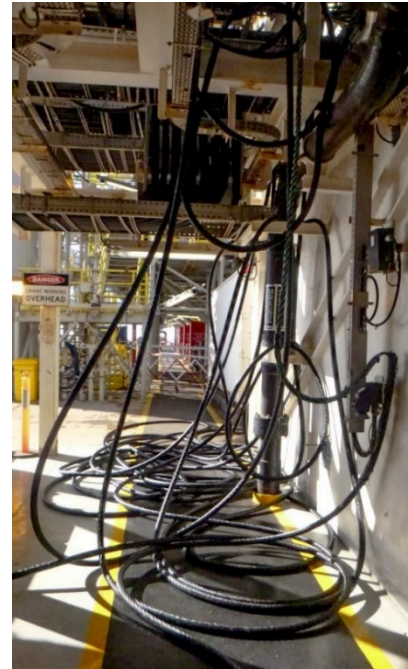
The old luffing wire rope was cut above the dropped section lying on the HV cable trays and walkway and terminated onto the empty drum on the spooling winch. A soft line was connected to the other end of the old luffing wire rope prior to retrieving it which left the soft line reeved and ready for the new luffing wire rope installation.



With the wire ropes retrieved from the crane, the team then focused on disposing the dropped section of old luffing wire rope. Approximately 200m of wire rope was cut up using a wire rope cutter and slung together ready for disposal. The walkway area was then washed down to clean off any wire rope grease and the area reopened for access.

PHASE 2

The new wire rope was received at Pressure Dynamics' Karratha facility and a close visual inspection was conducted on the entire length of rope. No areas of concern or discard criteria were identified.



The rope was then lubricated and spooled onto a suitable steel drum prior to being mobilized again to the offshore facility.

PHASE 3 – OFFSHORE EXECUTION

Pressure Dynamics mobilised its team of a *Lead Crane Technician*, *Senior Crane Technician*, 2 *Rope Access Technicians* and an *OEM Crane Technician* to complete the installation of the new luffing wire rope.

The new luffing wire rope was connected to the soft line that was reeved during the first mobilisation and spooled onto the luffing hoist. The wire rope was terminated onto the luffing hoist drum via the rope clamps which were torqued up to 250Nm. The spelter socket end was lifted up to the A-frame and terminated to complete the installation.

Once the new luffing wire rope was installed, the upper and lower luffing limits were adjusted, and the crane was inspected and function tested in accordance with client and OEM procedures. During function testing, the calibration of the main and auxiliary load cells were checked and confirmed accurate.

Upon client request, the slew bearing rocking motion test was conducted with a load of 38t on the main hook.



Performing the rocking motion test in this manner is not common testing practice – Pressure Dynamics provided technical advisory from its onshore engineering team to ensure all was conducted safely. The test was conducted in the same manner as when the crane was commissioned to ensure consistent and comparative results against the original commissioning paperwork and OEM procedure.

A crane condition inspection was conducted in accordance with OEM and client procedures.

All maintenance requirements were reported on a prioritised basis, for execution (i) within 3 months, (ii) within 6 months, and (iii) within 12 months.



RESULTS/BENEFITS

The dropped luffing wire rope was recovered safely and cost- and time-efficiently. The new luffing wire rope was installed, with crane inspected, tested and re-commissioned safely, and cost- and time-efficiently.

Technical advisory support was provided regarding slew bearing rocking motion test, to achieve client requirements safely.

The inspection report specifies all maintenance requirements on a prioritised basis - for execution (i) within 3 months, (ii) within 6 months, and (iii) within 12 months – enabling cost and resource efficient forward planning and works management.

CONCLUSION

This case study demonstrates Pressure Dynamics proficiency to wire rope changeouts as an integrated scope, including to overcome remedial works requirements.

