VESSEL PROPELLER REPAIRS

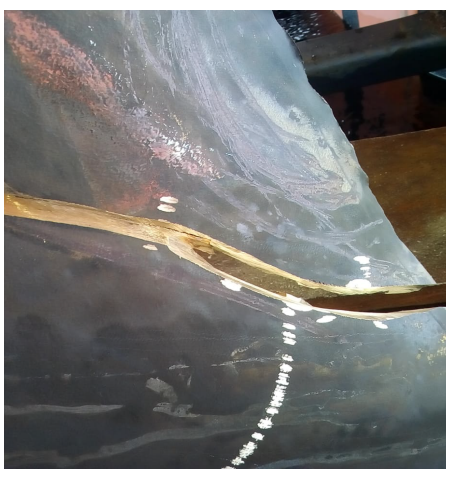
THE CLIENT

A renowned international company in the gas transportation sector entrusted Metalock Brasil with the critical task of performing repairs on one of its tankers, which was anchored in the Manaus area, Amazonas.

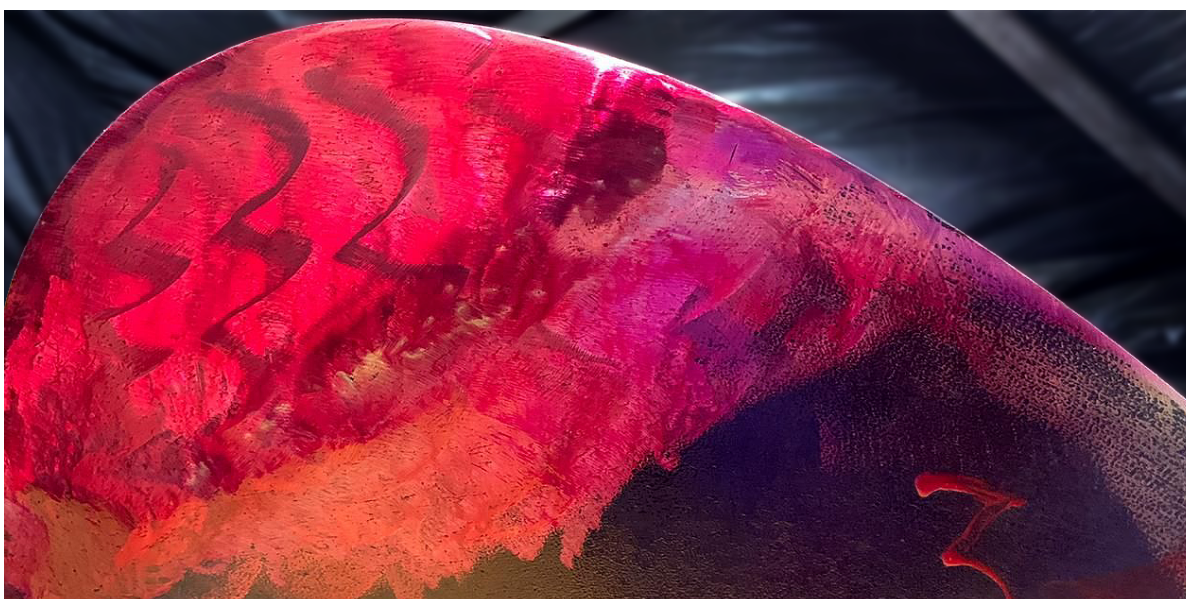
The vessel had sustained serious damage to its propeller blades, impacting its navigation efficiency.

THE SITUATION

The vessel had suffered severe damage to its propeller, with some blades bent up to 90 degrees, requiring urgent repairs. Due to the issue, the vessel was navigating at a reduced speed to the anchorage area in Manaus, where the repairs would be conducted.



The conditions for maintenance were challenging, as the service had to be carried out with the vessel afloat, and only 40% of the blades were above water. Additionally, the local Amazonian climate and the unstable river conditions contributed to the complexity of the operation.



THE SERVICE

Metalock Brasil mobilized an experienced team consisting of a welder, a fitter, and a technician to carry out the repairs.

The work involved various technical steps and collaboration with local support that provided necessary equipment and materials.

THE MAIN STEPS OF THE SERVICE WERE:

Preparation and Setup: Scaffolding was installed around the propeller to allow access to the damaged blades. This was assembled by a local workshop under Metalock's technicians' instructions.

Template Fabrication for Straightening: A template was locally manufactured to straighten the damaged blades, using heat to facilitate the process.

Blade Repairs:

· Blades #1, #2, and #4 were successfully straightened without material loss.

· Blade #3 required the most attention, as it was bent at an angle greater than 90 degrees. During the straightening process, a crack was identified, measuring 12 mm wide and 100 mm long, which required additional procedures such as drilling stop holes to prevent the crack from propagating, followed by welding.

Welding and Inspection:

· Welding was carried out using specialized equipment, such as a MIG welding machine powered by a generator, since the vessel's power supply was insufficient.

· After the welding process, a rigorous inspection was conducted, supervised by an ABS (American Bureau of Shipping) inspector.

Final Adjustments: Upon completion of the repairs, all the propeller blades were stamped by the ABS, and the vessel was restored to its normal operational position. Metalock also provided instructions for jack-up tests and participated in a short sea trial.

THE RESULTS

The service was successfully completed in seven days, despite the challenging weather and operational conditions faced on the Amazon River. All propeller blades were repaired and passed the quality tests conducted by the ABS inspector.

The vessel was able to resume operations safely without the need for dry docking, significantly reducing downtime and additional costs for the client.