CASE STUDY- TAIL SHAFT MACHINING

Background To The Tailshaft Repair
The Moscow had a failure on its 505mm Ø (400mm long) tailshaft pedestal journal. Nicol & Andrew were called in to re-machine the damaged journal in-situ, using specialised orbital equipment.

Initial Findings
The white metal bearing had failed leading to pickup and areas of deep scoring. Micrometer readings showed an undamaged area at each end of the journal. These proved suitable for use as datums for the orbital machining and polishing operation.

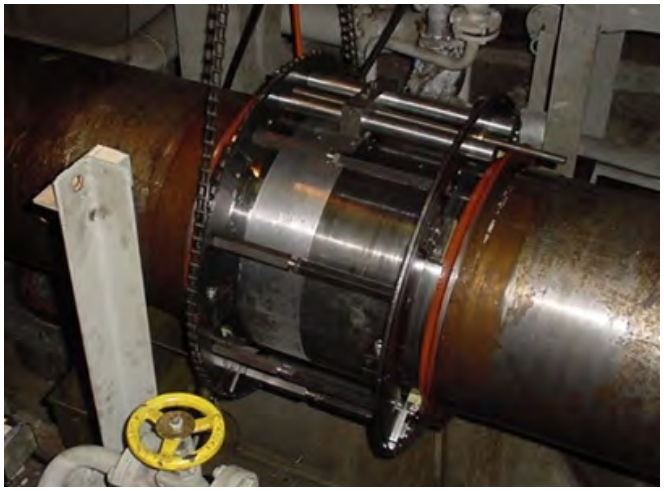
Tailshaft Repair Procedure
Carry out in-situ machining and polishing to remove all signs of damage, whilst maintaining concentricity and roundness within OEM tolerances. Obtain undersize bearings to suit the repaired journal.

Performing The Repair
We used our orbital machining head to remove the damage, referencing the undamaged concentric areas at each end of the journal. Frequent checks using clock gauges ensured that the re-machining was maintained in perfect alignment with the original centre line.
We then polished the tailshaft to the size and surface finish required for the undersize bearings.

Timescale
Due to the significant depth of damage, the in-Situ machining process took 4 days. We provided 24-hour cover to reduce the amount of time the vessel spent out of service. After fitting the new undersize bearing the shaft was run-up to full operating speed. It has suffered no further problems in service.

Damaged White Metal Bearing

Damaged 505mm Ø Tailshaft Journal



Orbital Machining Of The Journal

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