IN-SITU MACHINING AVOIDS COSTLY SHAFT REMOVALS

USNS WATSON CLASS PROPELLER SHAFT SEAL LINER MACHINING IN DRYDOCK

Goltens was contracted by Bayonne Drydock & Repair Corp. to perform an inspection and conduct in-situ machining of two propeller shafts on the USNS Watson, a large, medium speed roll on-roll off vessel belonging to Military Sealift Command, while the 33,644 DWT vessel was in drydock. Initial inspection revealed that the shaft seal had worn channels in the port and starboard shaft seal liner surfaces during operation and the journal surface needed to be restored in-place or the shafts would need to be removed for the repair (at a cost of roughly $850,000 per shaft removal).

Having done this repair on the USNS Sisler (T-AKR 311) in November 2010, and many other times on vessels around the world, Goltens immediately mobilized its tools and specialists to the shipyard to begin the repair. Complicating the repair was the very narrow width of the exposed journal surface giving Goltens roughly 90mm width to mount its tools and complete the precision work.

After making slight modifications to the tooling to fit it to purpose, Goltens began the machining to renew the surfaces with the least amount of material removal possible.

REPAIRS CONSISTED OF:

- Removed roughly .60mm from the diameter of the port propeller shaft seal liner and roughly 1.0mm from the starboard and machined both to a clean surface
- Finish polished port and starboard propeller shaft seal liners to between 0.20 and 0.25 Ra.

RESULTS:

Goltens completed the machining of the shafts within the seal manufacturer's minimum tolerances for remaining shaft seal diameter. Completing the repair in-place avoided the massive cost and time-consuming exercise of removing the shafts to machine or replace the seal liners.

CUSTOMER TESTMONIAL:

"Goltens was able to provide an alternate repair method to the shaft seal liner replacement, which is an exponentially more expensive process for the customer."

- Ray Staton, General Manger
  Bayonne Drydock & Repair Corp.

PROJECT FACTS: USNS Watson (T-AKR-310)

Ship Type:	Large, Medium-Speed Ro-Ro
Port Dia. Post-Machining:	847.99mm
Starboard Dia. Post-Machining:	847.47mm