

IN-SITU MACHINING REMOVES TAILSHAFT AND FLYWHEEL BOLTS

MAN B&W 5S60MC MAIN ENGINE

While preparing for a tailshaft removal on a 15 year old, 73,390 DWT Bulk Carrier in a Polish shipyard, the yard discovered the tailshaft and flywheel bolts were frozen in place. Using a 100 ton hydraulic jack, they had damaged 8 of 10 tailshaft bolts holes and 2 of 10 flywheel bolt holes. Goltens was asked to repair the damaged bolt holes by machining them to oversize and to remove the remaining flywheel and tailshaft bolts without damaging the bolt holes.

Goltens bored the damaged bolt holes to 1.00mm oversize and then fabricated a special bracket for the MAN B&W 5S60MC which allowed for quick alignment of boring rig over the remaining bolts and extremely accurate drilling of the bolts.

Each of the bolts was 335mm in length and 80mm in diameter. Goltens In-Situ machinists drilled each of the remaining bolts to 78mm allowing for easy removal without damaging the bolt holes.

REPAIRS CONSISTED OF:

- Manufactured a custom bracket to mount Goltens' boring/ drilling rig to the Flywheel and Tailshaft flanges
- Bored 8 tailshaft and 2 flywheel bolt holes to +01.00mm oversize at 81.00mm
- Drilled out 2 tailshaft and 8 flywheel bolts (bore hole dia. 78.00mm) to facilitate easy removal without damage to the holes.
- Performed light honing of bolt holes after removal

RESULTS:

The job was performed under extremely difficult conditions with outside temperatures as low as -22 degrees Celcius and further complications of the lack of running auxiliaries or boilers and intermittent losses of shore power.

Nonetheless, Goltens' In Situ technicians completed the job quickly and accurately, enabling the shipyard to proceed with the removal of the shaft.

PROJECT FACTS: Bulk Carrier Bolt Removal

Engine Make/Model:	MAN B&W 5S60MC
Engine Output:	11,194 HP (90 Rpm)
Bolt Length:	335.00mm
Bolt Diameter:	80.00mm
Bolts Machined:	10
Bores Machined Oversize:	10

