Benefit Case – Shaft Alignment Service

SITUATION AND CRITICAL ISSUE

New building design support

Robust design of stern-tube bearings to assure safe operation (well distributed loads and lube-oil film) for normal straight ahead running and maneuvering conditions

DNV GL SOLUTION

- Shaft alignment and Bearing load calculations.
- Hull deflection modelling (FEA)
- Shaft and Sterntube contact modelling (FEA)
- Propeller force analysis (CFD)
- Bearing lubrication / oil-film thickness analysis
- On-site verification (advice and measurements)

VALUE DELIVERED

- DNV GL working with shipyards and owners to utilise state of the art technology for propulsion designs
- DNV GL working with shipyards and owners to include operational experience in propulsion designs
- Robust designs

For more information please contact: MSE@dnvgl.com
Benefit Case – Shaft Alignment Service

SITUATION AND CRITICAL ISSUE

150k LNG Carrier – trouble shooting for damaged stern-tube bearing

Overloaded stern-tube bearings due to poor design and/or inappropriate operation, causes operational off-hire and significant repair of the ship.

The risk of loss of propulsion is evident if no corrective actions are taken.

DNV GL SOLUTION

- Assist the ship owner in identification of the root cause of the bearing failure.
- Assist repair yard in proposal of new bearing design, considering the effects of hydrodynamic propeller forces, hull deflections, shaft-line interactions with hull and bearings.
- On-site follow-up at the repair yard, to assure best quality of revised propulsion and a minimum off-hire time.
- Verification measurements.

VALUE DELIVERED

- DNV GL contributed in balancing repair costs and off-hire losses, by addressing actions that will assure the required level of reliability.
- Minimizing scope of repair to cover what is considered appropriate for a long-life operation of the ship (repair costs approx. 3.5 MUSD).
- Minimizing the nos. of days off-hire (rates at the time of off-hire 60 kUSD/day).

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