



Early detection of fault & precision in diagnosis saves **70%** of the overhaul cost and avoids revenue loss of **~USD 14,000**

INDUSTRY SEGMENT:	Marine
CUSTOMER:	The fleet operator of supply vessels in India
EQUIPMENT:	Caterpillar 3516
ARM SOLUTION:	Engine Health Diagnostics through torsional vibration FFT analytics

CHALLENGE:

- Neptunus was assigned a Top Overhaul (ToH) service for a tug boat on its port-side main engine.
- The job involved the replacement of 3 faulty fuel injectors that were supplied by the customer from their inventory.
- These spares were not as per the OEM recommended model, but the customer took the decision to use these due to the paucity of time & additional cost involved in procuring a new spare.

SOLUTION:

- After completion of the ToH as per customer's requirement, Neptunus suspected that the customer supplied injectors may affect the engine performance. Hence recommended the detailed health-check of the engine using the torsional vibration FFT analytics tool under Neptunus' Asset Reliability Management solution (ARMs).
- At 40% load during the test, the engine showed no trouble. But when the load increased to 60%, the engine started encountering fuel injection-related abnormalities. Hence Neptunus offered to the customer genuine reman parts to avoid future problems
- The starboard engine that was due for MoH shortly, was also diagnosed with ARMs at 65% load. Based on cylinder level detailed diagnosis, it was recommended that only a partial MoH on specific cylinders is required rather than the full MoH as per the running hour schedule.



BENEFITS:

- Timely risk assessment and support on procuring the genuine ReMan spares at lesser cost **saved ~USD 14,000** for the customer by avoiding the risk of de-hiring of the vessel and subsequent loss of revenue and repair cost.
- The bigger saving was realized by the customer on the starboard side engine by not doing the major overhaul when it was not needed. This **saved more than 70% of the cost** to the customer on the account of spare part replacement, manpower & time.