



Engine Health Diagnostic enables **~USD 14,000** direct savings and avoids the consequential expenses to the tune of **~USD 30,000**

INDUSTRY SEGMENT:	Marine
CUSTOMER:	The fleet operator of supply vessels in India
EQUIPMENT:	Main Engine
ARM SOLUTION:	Niigata Engine Condition Monitoring

CHALLENGE

- Neptunus was assigned a Top Overhaul (ToH) service for a tug boat on its two main engines on a twin screw vessel

SOLUTION

- Before the Top Overhaul, as a standard practice, Neptunus carried out a detailed health-check of both the engines employing our cutting edge **torsional vibration FFT analytics** tool under Neptunus' Asset Reliability Management solution (ARMs). While the starboard side engine showed healthy condition, the port side engine clearly showed poor condition of all the bearings with high mechanical stresses.
- It must be noted that all parameters on the engine were normal
- Our assessment was that high mechanical stresses coupled with a uniform deteriorated condition of all bearings was an indication of an external issue.
- Further investigations revealed **minor damages to the tips of the port side propeller** (possibly by impact of a floating log as was later confirmed by the customer team) causing the propeller to go out of balance. The out of balance propeller was the cause of bearing alerts in our system
- Based on the findings, the customer repaired the damaged propeller, our system thereafter showed bearings in healthy condition.
- No intervention was required **on the engine**.

BENEFITS

- The system pinpointed the fault at a very early stage after initiation thus optimized scope of the maintenance **reduced the vessel downtime by more than 50%**
- Savings due to preventing intervention on the engine were estimated to be **~USD 14,000**.
- Deferral of ToH based on scientific data helped **improve the cash flows of the asset**.
- The timely servicing of the faulty bearing meant avoiding a possible engine breakdown and saved the engine/Z-peller from getting damaged and going out of service causing loss of revenue. **The consequential expenses** of drydocking & repairs saved would have been **~ USD 30,000**