

Damage to engine crankshaft and connecting rod

The vessel was en route to a loading port, when the chief engineer commenced routine maintenance of no. 1 auxiliary engine, as per the maintenance programme. On opening the crankcase, a crack was found in no. 1 unit cylinder liner, from where jacket cooling water was found to be leaking into the crankcase. This liner was replaced by a spare one. Additionally, all the main bearings were found to be worn out excessively and these were also renewed from ship's spares. No. 5 unit crankpin bearing was found to be damaged and the ship's staff renewed this as well. However, no systematic investigation was made to ascertain the reasons for these serious defects. Ovality measurements for connecting rods or readings of the crankpins were not checked at this stage for any of the units, especially no. 5, the one with the severely damaged bearing.

The engine was assembled and tested but had to be stopped immediately when loud knocking sounds were heard from the crankcase. On re-inspection, the newly fitted no. 5 crankpin bearing was found to have seized and the crankpin was deeply scored. Instead of conducting a proper investigation to determine the causes for the repeated failure of this bearing, the chief engineer attempted to 'repair' the crankpin by means of emery tape and files, which only caused more damage.

At this stage, the chief engineer informed the office about the breakdown and repair work in progress. The office immediately instructed him to measure and report on the ovality of all connecting rod ends. These were all found to be beyond acceptable limits, thus all connecting rods were found unusable. As no. 5 crankpin was seriously damaged, the crankshaft was found beyond use and had to be scrapped.

As a result of the ship's staff's not observing the maker's maintenance instructions and poor engineering practice, the company incurred an unplanned expenditure of nearly US\$ 100,000.

Mariners' Alerting and Reporting Scheme

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