UNITED STATES COAST GUARD
U.S. Department of Homeland Security

MARINE SAFETY LESSONS LEARNED

Inspections and Compliance Directorate

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IT'S THE SEEMINGLY MINOR ITEMS

that *sometimes* can create a catastrophe.

This is a reminder to owner operators that sometimes it is the most seemingly minor thing such as a mechanical part or electrical component that can lead to a catastrophe. For example, a nearly 20 year old bulker was leaving port when its main engine throttle failed. In this case the vessel was able to drop anchor without incident.

The failure occurred because a small drive belt that connected the console throttle lever components to an electrical potentiometer failed. Movement of the throttle causes the potentiometer to move and creates a variable signal to other controls which manage engine speed. When the belt failed the control from the engine room console was lost. Fortunately, the vessel had a spare belt that the engineers replaced quickly. The underside of the Bosch/Rexroth throttle was encased and the belt was not visible under normal circumstances. Routine inspection of the belt did not occur.

Other examples: A contact in a small electrical relay and part of the autopilot system stuck and caused a vessel to go hard to port at 24 knots; Three of four nuts on a propeller shaft seal loosened, went unnoticed and caused flooding of the machinery space of an Offshore Supply vessel; A wire chafed and grounded out cutting power to critical combustion controls while a vessel was at the dock, but not long after transiting a narrow Caribbean harbor entrance.

The Coast Guard recognizes that identifying every single failure mode that could possibly impact a vessel's propulsion, power generation system or steering system and developing a comprehensive preventative maintenance system for such systems, equipment and components is a very complex task. Nevertheless, the Coast Guard suggests that owner operators, marine engineers and others particularly onboard or associated with older vessels, think about and identify those high risk components which if a failure or malfunction occurs will result in a casualty. (Specifically components subject to gradual wear and tear or loosening.) Once identified responsible personnel should refer to their respective manuals to determine proper maintenance requirements and take the necessary steps to prevent a future problem with the aim to reduce risk.

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