MAIB

MARINE ACCIDENT INVESTIGATION BRANCH

FISHING ACCIDENT FLYER

Engine room fire started by shrimp boiler

Burnt section of plastic air supply trunking

Shrimp boiler

A 9.9m beam trawler had just started fishing for shrimps. The diesel fuelled, shrimp boiler, which was located on the main deck, was lit to bring the water up to temperature, ready for the first haul. Once the water was boiling, the fuel supply was isolated by switching off the fuel pump. The boiler air blower, which was located in the engine room, was believed to have been left running for a short time while the remaining fuel was burnt off. No one checked to see that the flames were out.

About 10 minutes later, the skipper noticed a flickering flame on the deck, adjacent to the boiler. He rushed to the deck and, using a fire extinguisher, quickly put out the burning, plastic section of the boiler air supply trunking. Conscious that the trunking originated in the engine room, the skipper decided to enter the engine room to ascertain if the fire had spread. He found the space to be full of acrid black smoke, and quickly vacated the space, shutting the hatch behind him.

The skipper instructed his two-man crew to don their lifejackets (only two could be found because of the amount of surplus gear on board) and haul in the gear. The skipper then pulled the remote engine stop. This failed because the linkage to the fuel pump had snapped and therefore the engine continued to run, albeit at idling speed. The skipper then alerted the coastguard to his situation. The vessel was towed into port by the RNLI lifeboat, where she was met by the local Fire and Rescue Service, who quickly extinguished the still smouldering carbonaceous fire.

Whenever the boiler was lit or shut down, it was possible for unburned fuel to enter the air supply line, if the blower was switched off before the fuel was burnt off. Diesel oil was therefore able to accumulate in the air supply trunking, particularly in the corrugations of the plastic connecting pipe. The investigation determined that the boiler flame was drawn into the engine room, through ignition of the oil in the boiler air supply trunking after the boiler air blower was switched off. The air flow reversal was due to the partial vacuum created by the main engine in the engine room because the ventilation system was completely blocked by rust flakes. This resulted in a plastic section of the blower air trunking on the main deck and seating material, and a plastic oil drum in the engine room, catching fire.

Safety Issues

- The shrimp boiler was supplied second-hand, without any fitting or operating instructions or warnings. The owner, believing the boiler to be a simple piece of equipment, did not consider the importance of providing any boiler operating instructions.

- The boiler air blower and fuel pump switches were positioned adjacent to each other, within the same switch moulding. There was nothing to distinguish the two switches so it was very easy to switch off the blower first instead of the fuel pump. When this occurred, it allowed fuel to spill back into the air supply pipework, creating a fire hazard.

- Poor maintenance routines meant that the blocked air inlet pipes to the engine room were not identified, even though there were obvious signs that something was wrong. The engine ran badly when the boiler blower was switched on, the hatch was always difficult to open with the engine running, and the temporary cure of removing the air filter from the engine had only partially improved the situation. The crew had obviously dealt with the symptoms - and not the cause - of the rough running engine.

- There was an extensive amount of equipment onboard which had the potential for creating a tripping and fire hazard. In this case, it prevented the third crew member from finding his lifejacket although it was carried onboard. It is all too easy to accumulate “come in handy” equipment, but a balance needs to be struck. Unnecessary equipment should be landed ashore.

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www.maib.gov.uk

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Marine Accident Investigation Branch
Carlton House
Carlton Place
Southampton, SO15 2DZ

Telephone 023 8039 5500

Email: maib@dft.gsi.gov.uk

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