

SAFETY RECOMMENDATION No: 83/2013

Text of Safety Recommendation:

Amend the vessel's PMS with provisions for routine maintenance/cleaning operations of Waste Oil Tanks to prevent the malfunction of the level gauges due to the accumulation of oil sludge mud.

No of Safety Investigation Report:

14/2013: Death of 3rd Engineer of M/V CAPTAIN PETROS H.
(See the full Report [here.](#))

Safety Recommendation addressed to:

CAPTAIN PETROS H Managers

Date of publication:

12/07/2017

Comments-Remarks:

Casualty information



Name of vessel: CAPTAIN PETROS H

Type of vessel: Bulk Carrier

Year of built: 2009

Flag: Greek

Course of events

On 21 August 2013 the Greek flagged M/V CAPTAIN PETROS H, IMO No 9426415 arrived at Ponta Da Madeira anchorage, Brazil and by 22:15 she had dropped her anchor waiting to enter the port for loading operations.

The following day, afternoon hours, while the vessel was still at the anchorage, the 2nd Engineer transferred a quantity of 1.8 m³ of sludge from the "Bilge Separator Oil Tank" to No 2 "Waste Oil Settling Tank" by means of the sludge pump. After the completion of said transfer, it was observed that the level gauge of No 2 Waste Oil Settling Tank malfunctioned because the level indication of the tank did not alter.

On 23 August 2013 at 08:00 the crew of the engine department started a periodic inspection on the bearing of the intermediate propeller shaft. The task was completed approximately at 08.45 and the Chief Engineer assigned to the 2nd Engineer the draining of No2 Waste Oil Settling Tank in order to clean the tank from the sludge residues and repair the mechanism of the level gauge. The 2nd Engineer undertook the assignment with the assistance of the 3rd Engineer.

They opened the drain valves and when they presumed that the tank had emptied the 3rd Engineer begun to slack the nuts of the tank's manhole cover located at the mid-height of aft side of the tank. Having in mind that the tank had been emptied, the 3rd Engineer slacked all the nuts of the manhole cover except 4 nuts at the upper part of the cover which were slacked by half a turn. Then he pulled the manhole cover to open it; however when the cover detached from the cover seat hot sludges from the tank at a temperature of approximately 85°C splashed on to his body.

The Chief Mate was informed about the incident as well as the Master who notified the vessel's local agent as well as the managing company. By 1150 a helicopter approached the vessel, retrieved the casualty and transferred him to a hospital in Sao Luis where he was diagnosed with 2nd degree burns to a large part of his body. He remained hospitalized until 04 September 2013 when he passed away due to septic shock. CAPTAIN PETROS H sailed from Ponta da Madeira on 26 August 2013 for China



The Waste Oil Settling Tanks



The manhole at the aft side of No2 W.O.S. Tank

Main conclusions / identified factors

- The accumulation of oil sludge mud to the bottom of the tank caused the jamming of the level gauge float and the clogging of the drain valves.
- The Waste Oil Settling tank was not fitted with sounding pipes, and the malfunctioned level gauge was the only available means for indicating the remaining quantity in the tank.
- The two Engineers had falsely assumed that the tank was empty. They were misguided by the small downward movement of the level indicator, the movement of the wire wheel on the scale reduction device and the non-flow of oil sludge to the scupper from the drain pipe with the self-closing valve.
- The vessel's PMS did not provide guidelines for periodic routine maintenance/cleaning of the Waste oil Settling Tanks in order to remove the heavy oil residues and avoid the jamming of the level gauges.
- The 3rd Engineer did not apply the common practice for the safe opening of the manhole and didn't use the manhole's jackscrews.
- Potential hazards related to the remaining quantity in the tank and the faulty level gauge were not identified during the process of the Job Hazard Analysis.
- The remaining oil quantity was indirectly heated up to 86°C by the adjacently heated No 1 W.O.S.Tank.
- The overalls of the 3rd Engineer were the common type made of cotton fiber and did not protect his body from the splashing hot oil which caused serious burn injuries.
- Existing protective clothing do not provide full protection against steam and hot liquid. However the use of a heat/flame protective clothing complying with ISO 11612 could have provided better protection to the 3rd Engineer's body than his common cotton type overall that he was wearing at the time of the casualty.