

LP BULLETIN

Friday 11 July 2008

Bulletin 590 - 7/08 - Heating of Coal Cargoes during Loading - Worldwide

Dealing with a heated coal cargo can be problematic, especially if it is not possible to have the cargo discharged from the ship. The association would like to share with Members an interesting method recently used to solve an incident involving an entered ship.

The IMO Code of Safe Practice for Solid Bulk Cargoes includes detailed recommendations for the safe loading and carriage of coal cargo. It states that coal may heat spontaneously and that some coals may be liable to self heating which could lead to spontaneous combustion. The section 'General requirements for all coals' stresses the most important advice for the safe loading and carriage of coal:

- Prior to loading, the shipper or agent shall provide in writing to the master the characteristics of the coal, which includes whether or not the cargo is liable to self heat. The master should be satisfied that he has received such information prior to accepting the cargo, and means are to be provided for measuring the temperature of the cargo whilst being loaded.
- If, at the time of loading when the hatches are open, the temperature of the coal exceeds 55° Celsius expert advice should be obtained.



Signs of heating in a coal cargo



A coal cargo on fire

Incident

The Club's expert, Mr C Mullins of Minton Treharne & Davies Group, has recently experienced several problems relating to the loading of heated coal at offshore loading terminals. Many of the problems relate to long storage periods on shore and/or extended journey times in the barge. There have usually been difficulties in discharging rejected "hot" coal from the barge to the original loading terminal.

This bulletin focuses on an incident at an offshore loading terminal where coal at a temperature in excess of 55° C had already been loaded to the bulk carrier and white ash was observed in some areas of the stow. The terminal provided no means for the discharge of the cargo. The Master was advised to tightly seal the hatch covers, ventilators and other hold openings and the hold atmosphere was then closely monitored with suitable instruments through the sampling points.

A steady reduction in oxygen and carbon monoxide levels was witnessed, indicating that the spontaneous heating had been restricted. After four days the hatch covers were opened and the cargo trimmed level with

bulldozers to compact the stow. The rest of the cargo was then loaded into the holds, in stages to include regular compacting.

Once the ship was fully loaded, the hatch openings were tightly closed to prevent air from entering the cargo, and the hold atmosphere was monitored. The carbon monoxide and oxygen levels dropped and after seven days the oxygen content in all holds had been reduced to around 1%. With this inert atmosphere maintained, the ship was able to safely complete the voyage with cargo hold monitoring performed throughout. Thirty-five days later, on arrival at the discharge port, the coal was delivered to the receiver with no claim for damage to the cargo or ship.

It may not always be possible to follow these procedures however, with careful attention to detail and expert guidance, a heated cargo may be stabilised to a condition safe for carriage to the port of discharge and not have to be dug out from the ship's holds.

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