

Ref : DMA/AIFI/96/C 866

Date: 20/01/2018

Dear Captain  
Good Day,

Please find the attached informative document titled “ Cargo damage due to bilge system back-flow”, for your kind attention and necessary precaution measures.

You are requested to confirm receipt, discuss the contents in the next consolidated meeting on board & keep a copy in the file DA-11 .

Best Regards,

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(Note: This e-mail has been sent as BCC <blind carbon copy to : All R.O.D.-SMC Vessels, to eliminate the lengthy list that would result if this e-mail is printed)

## **Lessons Learnt: Cargo damage due to bilge system back-flow**

**Vessel Type: Bulk Carrier**

### **Incident description**

Prior to loading a full cargo of bulk minerals, the cargo holds were cleaned and tests for watertight integrity successfully carried out. In addition, the efficient operation of the cargo hold bilge pumping system and water ingress alarms was also verified. A few days after departure from the loading port, the water ingress alarm for no.2 cargo hold was activated. However, when the hold bilges were sounded by the crew, they appeared to be dry and it was therefore assumed that the ingress alarm system was defective. Daily hold bilge soundings continued to give no cause for concern. At the discharge port, wet cargo was revealed at a depth of up to 2 metres above the tank top and upon completion of discharge, it was discovered that sea water had entered the hold due to back-flow via the port side bilge well. The incident gave rise to a substantial cargo damage claim from Receivers.

### **Analysis**

Subsequent examination and testing of the cargo hold bilge system revealed that the non-return valve in the port side bilge well was not tight due to the presence of previous cargo residue and scale around the valve seat. The inspection and testing of cargo hold non-return valves was not included in pre-loading checks. It was also established that other valves in the system between the engine room fire and G.S. pumps and the bilge line had been left open by the engine room crew, allowing water to flow into the line and enter the hold by way of the defective non-return valve. Investigations also revealed that no.2 port bilge sounding pipe was blocked about 20 cm from the bottom, explaining why the well appeared dry when sounded. Had the crew compared the maximum height of the pipe with the sounding tape measurement, this defect may have been noticed prior to flooding of the hold.

### **Lessons Learnt**

- Inspection and testing of cargo hold bilge system non-return valves should preferably be included in routine pre-loading checks of the holds
- Bilge system valves and pipework require to be periodically checked and maintained as part of the planned maintenance system
- Rigorous procedures should be in place to prevent valves being left open when not in use
- Hold bilge sounding pipes should be positively proven to be unobstructed and comparisons made between the documented maximum pipe height and actual measurement at the deck datum point
- The activation of hold ingress alarms requires to be thoroughly investigated which in this case should have included checking all related systems and pumping of the bilges to observe for any discharge