THE SWEDISH CLUB CASEBOOK

7

Hatch covers

7.1 Leaking cargo hatch covers caused cargo damage

A bulk carrier had been fully loaded with grains. The vessel had side rolling cargo hatch covers. For six days, the vessel encountered heavy weather at Beaufort scale 9 which caused it to pitch and roll heavily. During the voyage the cargo hatch covers were washed over by seawater.

Hatch covers were opened

When the vessel was at anchor and waiting for an available berth all the hatch covers were opened. This was to ensure the vessel was gas free since fumigation had been carried out in all cargo holds at the loading port.

Whilst opening the cargo hatch covers it was found that cargo in a number of holds had been damaged by water. Most of the water-damaged cargo was below the middle cross joint of the hatch covers and below the aft hatch coaming's corners.

Survey results

According to the Master there had not been any ventilation to the cargo holds during the voyage. A surveyor carried out an inspection and found the following hatch cover parts to be in poor condition:

- Hatch cover panels
- Hatch coamings
- Water drain channels
- Non-return valves
- Quick cleats
- Rubber gaskets

The survey indicated that seawater had leaked through the middle cross joint drain channel and through the corner of the hatch coamings.

What can we learn?

- Before loading, completion of loading and after discharge, the crew should inspect the hatch covers to ensure they are in a weathertight condition. It is essential that cargo hatch covers are inspected and tested at regular intervals to ensure that the weathertight integrity is maintained, and that the vessel is in a cargo worthy and seaworthy condition.
- Ensure that gaskets and coamings are in good condition.
- It is important that records are kept about what maintenance and service has been completed in the PMS.
- Inspection of cargo hatches and coamings, including securing devices, is part of both the annual load line survey and safety construction survey normally carried out by the vessel's classification society. The main purpose of these inspections is to ensure that the vessel is in a seaworthy condition, and not necessarily to confirm that the vessel is in a 'cargo worthy' condition. A few tons of water in the cargo hold will not jeopardise the seaworthiness, but it might completely destroy the cargo.
- Carry out a weathertightness test at least annually and always after repairing or replacing components in the cargo hatch system. When carrying water-sensitive cargo such as grain, soyabeans, paper, etc. it is recommended that weathertightness is tested before each loaded voyage. The most effective method is to use an ultrasonic device, which can pinpoint the area which is leaking, and if the compression of the gasket is sufficient. The advantages of using this type of equipment are evident, since ultrasonic tests can be carried out during any stage of the loading without risking cargo damage. The test can also be completed in sub-zero temperatures.

7.2 Crack in the cargo hatch cover caused wet damage

A bulk carrier had a full cargo of zinc concentrate on board and was sailing from the west coast to the east coast of South America.

When the vessel passed Cape Horn it experienced heavy weather of Beaufort scale 9 with green sea covering the cargo hold covers 1, 2 and 3. This continued for four days as the vessel battled the waves. The vessel had no weather routeing.

Wet damage in hold 1

When the weather had calmed down the Master asked the Chief Officer to inspect the cargo holds. The Chief Officer found that water had entered cargo hold 1 and caused wet damage. No water had leaked into the other holds. The Chief Officer also inspected the hatch coaming and the hatch cover for hold 1, and found a crack on the hatch coaming. The drain pipes for the non-return drain valves were also full of debris and cargo.

Survey results

During discharge the surveyor found that the sounding pipes for the cargo bilges were also blocked by debris. When the vessel was alongside and the cargo hatch covers were removed, puddles could be seen in hold 1. It took several extra days to get the wet cargo off the vessel and most of the cargo was refused by the buyer.

What can we learn?

- The sounding pipes should be clear of any debris or cargo, as they are important for taking soundings before loading and during the voyage.
- It is important to be aware that zinc concentrate may liquefy if shipped with a moisture content in excess of its transportable moisture limit (TML) as per the IMSBC code. Puddles of water will obviously exceed the TML.
- It should be a PMS job to check that the drainpipes and drain valves are not clogged and that the float (ball inside) moves freely.
- Hatch covers, and coaming steel structures are heavily loaded elements. Their condition has a direct effect on the load carrying capacity and the safety of the vessel. The steel construction should always be inspected after an unusual loading case, and there should also be regular checks as per the PMS.
- When repairs are carried out, only steel approved by the classification society should be used. High tensile steel is commonly used for cargo hatches and coamings.
- The classification society should be contacted before making any structural steel repairs.
- Weather routeing should be considered as it provides the vessel with the option of avoiding heavy weather, but also ensures that vessels are provided with a new and updated ETA to the discharge port. This helps the crew on board the vessel, shoreside personnel, and cargo owners, to plan accordingly.

Glossary of common industry abbreviations

Term	Meaning
AB	Able seaman
AIS	Automatic identification system
ARPA	Automatic radar plotting aid
COLREGS	International Regulations for Preventing Collisions at Sea
COSWP	Code of Safe Working Practices for Merchant Seafarers
CPA	Closest point of approach
CSM	Cargo securing manual
ECDIS	Electronic chart display information system
ETA	Estimated time of arrival
GM	Metacentric height
GPS	Global positioning system
IHO	International Hydrographic Organization
IMDG Code	International Maritime Dangerous Goods Code
IMO	International Maritime Organization
IMSBC Code	International Maritime Solid Bulk Cargoes Code
ISM	International Safety Management Code
JRCC	Joint rescue coordination centre
MOU	Memorandum of understanding
NM	Nautical miles
OOW	Officer on watch
PA	Public address system
PMS	Planned maintenance system
SMS	Safety management system
SSAS	Ship security alert system
SSP	Ship security plan
STS	Ship-to-ship (transfer)
TML	Transportable moisture limit
UHF	Ultra high frequency (radio)
VDR	Voyage data recorder
VHF	Very high frequency (radio)
VTS	Vessel traffic serice

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