CONTENT

HATCH COVERS

1. OPERATION OF HATCH COVERS[1]

- Operation of hatch covers is not allowed without permission from duty officer or chief officer.
- Risk Assessment is conducted for opening and closing hatch covers[2]
- Ensure from duty engineer that there is sufficient power available before starting the hydraulic pumps[3]
- Duty officer or chief officer to be physically present on deck and supervise all hatch cover operation.
- Operations to be carried out after proper communication has been established between the officer and crew.
- Persons involved in opening/closing to be properly instructed/trained by chief officer.
- Crew to be positioned with walkie-talkies to observe both sides of hatch during opening/closing.
- All crew in attendance and supervising officer must stand clear of hatch covers.
- Appropriate PPE to be worn.
- In general opening hatch covers at sea or of anchorage, if vessel is rolling, must be avoided. For hold cleaning operations, open hatches for minimum possible time, and only if weather is favourable. Opening at sea must only be done with the permission of the Master (It may require altering course).
- Ensure vessel is not rolling /pitching or listed heavily when opening hatch covers.
- Only one hatch to be opened /closed at a time.
- Makers procedures for opening/closing hatches to be complied with.
- Ensure deck is well illuminated.
- Before opening or closing, officer shall take a proper round of all the sides of hatch and top of hatch cover and ensure area is kept well clear of crew / stevedores / obstructions/ dunnage /lashing wires/cargo residues/ objects like grabs etc as these could fall into hatch causing injury to crew or property damage.
- Before closing the hatch covers, ensure that cargo pile peak does not extend above the hatch coaming level and cargo level is below the upper edge of the hatch coaming. The closing of the hatch covers in haste (rainy conditions) with the cargo pile peak extending

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above the upper edge of coaming has been the cause of deformation damage to hatch covers.[4]

- All cleats, safety pins etc to be opened prior operating hatch covers and same shall be crosschecked by officer and crew involved in the operation (Ensure Cleats assembly have been painted using a distinct and contrasting color).
- Ensure correct procedure is followed for starting the power unit. In cold weather hydraulic system, will need to be started earlier to warm up.
- Ensure hydraulic system is operational with sufficient pressure and there are no leaks in the system.
- Crew not to stand on moving hatch cover. Standby crew members shall be well clear of channels.
- Crew opening/closing hatch cover must be alert and pay full attention.
- Avoid opening/closing hatch covers in a hurry.
- Check that the hatch cover wheels are moving freely.
- Ensure hatch covers are secured with locking pin /stopper arm after opening.
- When closing hatch covers ensure all debris, cargo residues etc. are fully removed from the track ways. Even small pieces of cargo trapped under the rubber packing can lead to the hatches not being weather tight. This could lead to major cargo claims.
- When closing hatch covers ensure tracks, drain channels and the drain non-return valves are absolutely clear. Blocked valves / channels can lead to major claims if water gets into the hold.
- Record of opening /closing of hatch covers shall be maintained on board.
- Any defects, unusual sounds, speed of operation encountered during operations are to be to be recorded in the Defects book and the Chief Officer /duty officer informed.[5]

2. HATCH COVER WEATHER-TIGHTNESS[6]

Weather tight means that in any sea condition water will not penetrate into the ship. (Regulation 3.12 of the International Load Line Convention 1966)[7]

“Loss of weather-tight integrity continues to be a constant factor leading to cargo damage which could result in a threat to the safety of the crew, the ship and its cargoes.[8]

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Maintaining weather-tightness of Hatch Cover is essential of oceangoing vessels for its **seaworthiness and cargo care**. Weather-tightness is kept by well-maintained seals, cleats, supports, draining system and other hatch cover components. Therefore, frequent check/test and maintenance are required as basic practice to ensure weather-tightness of **Hatch covers, Booby hatch access covers and Vent covers.**[9]

2.1. Method of Testing Weather Tightness of Hatch Cover[10]

- Hose Test
- Chalk Test
- Light Test
- Ultrasonic Test

2.2. Hose Test[11]

The most commonly used of the traditional tests is the hose or water test whereby a strong jet of pressurised water is directed at the seams and joints of the hatch covers. Hatch covers are battened down fully in the proper manner and with the surveyor stationed in the hold a survey assistant must be stationed on deck/top of the hatch covers to ensure that the water, usually supplied from the vessel's fire main is directed at a constant and sufficient pressure in the proper direction.

A powerful jet of water taken by hose from the fire main or deck service line is directed on to each part of every joint in the hatch cover in turn, and any point where leakage occurs is noted.

Ideally the hose must be held at a distance from 1 to 1.5 metre from the joint under test with a water pressure of 2 bar and nozzle size should be 12 -18mm, moving along the joint at a speed of approximate 1 metre every 2 seconds.

There are however a number of disadvantages, these include:

- Time-consuming method.
- Ensuring adequate water pressure.
- Excessive water draining from decks when vessel may be alongside wharf, pier or jetty.
- Test cannot be safely carried out when vessel is laden for fear of wet damage to the cargo.
- Two observers are required to undertake the test.

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- Test cannot be carried out if weather conditions/air temperatures are at or below 0 deg C.

2.3. Chalk Test[12]

Chalk is applied to the compression bars of the coamings and the individual panel cross seams. The hatches are then battened down fully and in the proper manner after which they are immediately re-opened and the rubber packing (joints) carefully examined. Where a clean regular chalk mark is observed on the packaging it is assumed that sufficient pressure exists between the joint and the adjacent compression bar.

If the chalk mark is found to be intermittent or less pronounced at some points than at others then it is assumed that weather-tight integrity does not exist over those areas. This dated method can only be considered as indicative of a possible problem with likely inconclusive results even after rectification of possible defects which may have been exposed by the test.

2.4. Light Test[13]

The simplest means of establishing if a defect exists and its location is by means of the light test. The hatches are battened down fully and properly for seagoing, the surveyor/observer entering the hold and viewing the underside of the covers from below. In strong sunlight defects will/should readily be visible with daylight shining through any gaps in the packaging. If the test is being undertaken during poor light conditions strong torchlight properly directed from above will serve the same purpose.

2.5. Ultrasonic Test[14]

This technique is now widely used throughout the industry to test and prove the weather-tightness of hatch covers. The equipment, when properly used, gives the exact location and the extent of leakage, is relatively easy and quick to operate and does not require the assistance of crew members once the hatch covers have been properly battened down.

When carrying out an ultrasonic test, the instructions of the manufacturer should be followed.

The basic procedure comprises placing the transmitter in the cargo hold, switching it on, properly closing and securing the hatch covers or access equipment to seaworthy requirements.

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The ultrasonic waves emitted by the transmitter within the enclosed space will leak through the smallest of apertures. Location of leaked emissions in way of hatch covers can be precisely detected from outside the hold by moving the hand-held detector along the periphery and cross seams of the covers. Evaluation of the extent of leakage can be established from a reading of the digital scale.

2.6. Hatch Cover Leakage and Repair[15]

During testing by any of the above noted methods a record of the location and extent of any leakages detected should be kept. The hatches then opened, the causes of leakages, if any, identified – the defects rectified, covers re-secured and subjected to a further test which should prove them to be fully weather-tight.

The short inserts are not to be used to make up the gaps in between the rubber packing. The minimum length of replaced packing should be one metre. Specific right-angled corner sections should be used where specified by the manufacturer. The rubber packing may be cut with slanting edges to ensure satisfactory sealing.

2.7. Frequency of Testing[16]

The weather tightness of hatch covers should be checked at least every 3 months. Depending on charterer and kind of cargo, required level for weather-tightness is different, and frequency can be more often. Some specific cargo may require testing before loading.

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