



## Chapter 17 – Hold Preparation and Cleaning

This chapter provides an overview of best practice for the carriage of all bulk cargoes. For specific information on hold preparation and cleaning for grain cargoes, see Chapter 1, and for bulk liquids, see Section 18.10.

### 17.1 Planning

The nature and extent of hold preparation and cleaning will depend on the carriage requirements for the next cargo. Specific guidance should be available from sources such as the ship's SMS and the charterer. It is important that the Master carefully reviews the voyage instructions and charterparty, consulting further if there are any discrepancies in the cleanliness requirements or if further advice is required.

In the event that the ship's holds are in a poor condition, the Master should report this to the owners as additional time and resources may be required to bring the spaces to the required standard of cleanliness.



**Figure 17.1: Crew undertaking hold preparation.**

The Master should ensure that a hold cleaning schedule is prepared and that the ship has the necessary equipment, materials and chemicals for the task. An example cleaning schedule and equipment list for a 'grain clean' operation is given in Section 1.1.3. The exact cleaning schedule will depend on the cleanliness grade required. Typically, three types of cargo cleanliness category are used in the dry bulk industry. These are:

- 'Hospital clean' is required for certain high standard cargoes. For a 'hospital clean' standard of cleanliness, there should be no rust, no loose rust, no loose paint flakes and no previous cargo residues. Ideally, all steel surfaces and fixtures, including the tank top plating within the compartment, should have good, overall paint coating. This strict cleanliness is usually only achievable by vessels that trade clean cargoes
- 'grain clean' requires the holds to be free from insects, odour, residue of previous cargo, lashing material, loose rust scale and paint flakes, etc. Prior to loading, the holds must be swept, washed down with fresh water, dried and well ventilated. This is the most common requirement. Cargoes such as grains, fertilisers and cement are normally deemed 'moderately clean to moderately dirty cargoes' and typically require the hold to be at a 'grain clean' standard of cleanliness
- dirty cargoes such as bauxite or some types of coal are unlikely to be contaminated by any small amounts of rust or paint from the steel structures within the holds, although it is very important to check the exact cleanliness requirement.

Outside of 'hospital clean' and 'grain clean' standards, additional subcategories may include the following:

- 'Normal clean' requires the holds to be swept to remove all residues of the previous cargo, washed down and dried ready to receive a similar or compatible cargo
- 'shovel clean' does not require washing but only the removal of the previous cargo by rough hand or mechanical sweeping
- 'load on top'. This is only for compatible cargoes where the new cargo can be loaded directly into the hold with existing cargo residues. It usually only occurs on those ships that are routinely trading the same cargo type and grade.

It is important to maintain good records of all hold cleaning and maintenance operations which will assist owners in the event of any cargo claims and show that the ship undertook due diligence. These records should include entries into the log and photographs as appropriate.

Maintenance of the holds should be carried out at appropriate intervals as part of the ship's planned maintenance system and on receipt of any action required following an inspection. Poorly maintained fittings, structures and surfaces within the hold can lead to contamination of the next cargo, so should be repaired. However, if fresh paint is applied it will take time to cure appropriately.

## 17.2 Hold Cleaning

In general, to avoid contamination, the following areas will need to be prepared and cleaned:

- The bottom, sides and top of the cargo hold or tank, including bulkheads and frames
- the access hatches/lids/covers of the cargo hold or tank
- other fittings such as ladder rails, brackets, pipes and stanchions.



**Figure 17.2:** The exact type of hold cleaning will be determined by the requirements of the cargo for safe carriage and to prevent taint/spoilage/damage.

The cargo will determine the type of cleaning required but these usually include at one or a combination of:

- Sweeping/brushing/dusting
- saltwater wash
- fresh water wash
- use of chemicals
- use of fumigants.

The use of chemicals and fumigants should be closely controlled and regulations for the use of pesticides must be complied with. Importantly, hazards for crew should be addressed appropriately to prevent health implications.

A permit to work should be carried out for the hold cleaning operation and the team briefed via a toolbox talk. The SDS for cargoes or chemicals should be read and understood. A risk assessment should consider:

- Atmosphere testing within the cargo hold to ensure it is safe to work in
- access arrangements. All ladders and access equipment should be in good condition and properly secured
- PPE. This should be suitable for the job, in good condition and correctly worn
- cleaning equipment, suitable for the task and properly maintained
- proper and effective lighting in the hold/tank
- the number of crew/stevedores required to complete an operation safely
- effective communications between those in the hold and those on deck/on the bridge.

### 17.3 Hold Inspection

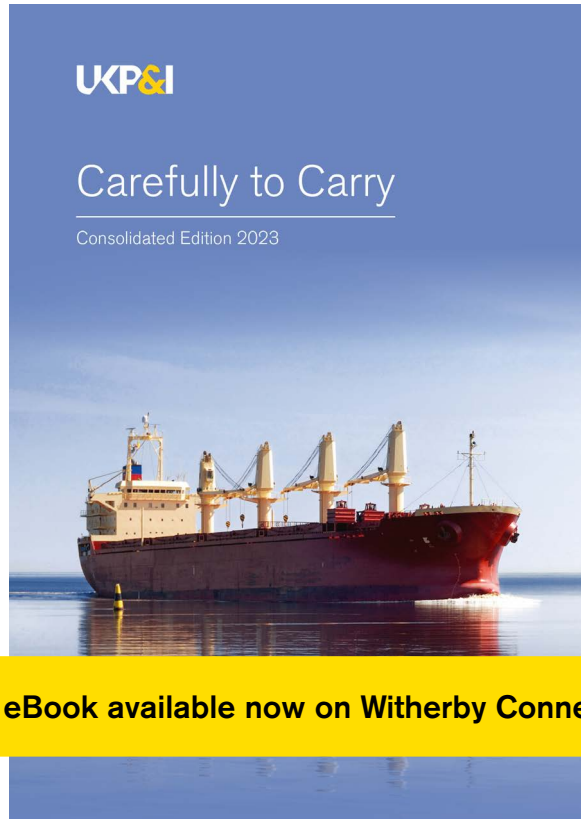
On completion of hold cleaning, time should be given for adequate drying as appropriate. Additionally, any damaged fittings or tank coatings should be repaired and time given for paint curing.

The Master or chief officer should then carry out an inspection of the hold along with the inspector. It is recommended that a small team of crew members also attend the inspection, with equipment, so that any previous cargo residues that have been missed can be cleaned immediately. During an inspection it is important to inspect all tank surfaces, including the tank top, tank top plate, and tank bottom. It is important to look for signs of previous cargo residue but also for rust or paint damage. Additionally, while at the top of the ladder access, the underside of the upper deck and hatch coaming should be inspected. Bright torches and binoculars should be available for those carrying out the inspection. Bilge wells should be dry. For agricultural cargoes, it is also important to look for evidence of insects.

Typically, but not always, the structure, shape and hold members of hold number one on bulk carriers is the more difficult to clean and therefore a close inspection is required to verify cleanliness.



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