



Loss Control Considerations for the Carriage of Breakbulk Cargoes

Breakbulk cargo is defined as goods loaded individually rather than in containers or in bulk (dry or liquid). Breakbulk cargoes can include cargo in flexible intermediate bulk containers (FIBCs), on pallets, drums, project cargo, steel coils and vehicles.

Pre-Shipment and Planning

Prior to fixing a vessel, it is advised that the vessel is vetted for suitability purposes. This ensures that the vessel is a suitable type (general cargo rather than bulk cargo) and any concerning vessel particulars, such as flag, Class, and Port State Control (PSC) inspection history can be identified before any cargo is loaded.

Thorough planning before shipment is critical to mitigating breakbulk cargo risks. Comprehensive information regarding the proposed cargo, such as dimensions, weight, centre of gravity, packaging nature and strength, lifting and lashing points, and specific lashing material requirements, must be passed on to the carrier. It is also crucial to ascertain if the cargo is fragile, suitable for deck stowage, or classified as dangerous goods requiring IMDG Code declarations.

This detailed information forms the basis for developing an appropriate stowage and lashing plan, adhering to the Code of Safe Practice for Cargo Stowage and Securing (CSS Code) and the vessel's Cargo Securing Manual (CSM). The CSM outlines the ship's specific lashing arrangements, and for any cargo not covered, the carrier should consult with their Classification Society and subsequent amendments of the CSM would be necessary. The planning phase must also determine the quantity, size, and positioning of lashing and securing equipment, considering the vessel's stability and anticipated forces, including an appreciation for any weather conditions reasonably expected to face throughout the voyage. It is essential to ensure that the vessel has sufficient and appropriately located lashing points capable of withstanding dynamic loads. If additional lashing points are fitted, they will require testing and certification, and any hot work for new fittings should ideally occur before cargo loading to minimise fire risk. Point loads and maximum loads on respective decks should also be considered, with load spreading utilised as required.

Proper dunnage, which increases friction and aids in securing cargo, is integral to the plan. This dunnage must be suitable timber, dried, and certified free from pests to avoid complications at the discharge port. A surveyor can verify the readiness of cargo holds and inspect for any issues, testing of hatch covers should ideally also be carried out, either via ultrasonic testing or a hose test.

Loading

Lifting is a critical stage of the operation with elevated risk of damage to cargo and ship. It is essential to ensure the inspection and maintenance of the cranes and lifting gear is fully up to date, the records are in order, and that the manufacturer's recommended operational practices are complied with. The limiting conditions of the lifting plan, such as wind, ship motions, slewing speed etc. must be complied with.

The type of lashings, whether chains or wires, must be appropriate for the cargo to avoid damage, meaning chains or wires should not be used for delicate items like paper rolls. Mixing different lashing types on a single item should be avoided due to varying elastic properties. The lashings must effectively prevent sliding or tipping and securely fasten cargo to the vessel and any cradles. For very heavy or unusually shaped cargo, sea fastenings may be necessary. Although various parties may be involved, the ship master ultimately bears responsibility for safe cargo handling, stowage, and securing. Appointing a competent supercargo can assist masters by providing practical guidance and communicating effectively with stevedores, though this does not relieve the master of their SOLAS obligations. Crucially, all loading and lashing must be supervised by ship's staff to ensure compliance with the approved plan and adherence to approved lashing points.

Examples of Specific Loading Requirements

- Heavy transformers and locomotives should ideally be stored midships and below the weather deck, preferably in the fore-and-aft direction. Lashings should be secured to securing points on the units that are clearly marked and suitable for acceleration forces expected on a vessel. Further information can be found in CSS Code Annex 5.
- Steel should be loaded depending on weight and tank top strength. Crucially, coils should not be loaded on top of other cargo or have cargo loaded on top of them, as this can cause significant damage and instability. Coils should be stowed on dunnage laid athwartships with their axis in the fore-and-aft direction and lashed to form an immovable block of coils. See CSS Annex 6 for more information.
- Loading and securing vehicles can be particularly challenging due to limited securing points, a small footprint, and a high centre of gravity. Their brakes should be set and wheels blocked in line with CSS Code Annex 4.
- Jumbo bulk bags (FIBCs) should be loaded with a tally being conducted. Their stowage should also include ventilation channels. FIBCs are also not suitable as a strong base and should never be over-stowed, as they can settle, causing lashings to slacken and potentially leading to stow collapse. Further information on the concerns with this are highlighted in the Marine Risk Consulting Bulletin:

[Why is a bulk carrier not fit for carriage of project cargo?](#)

During the Voyage

Regular checks and tightening of lashings are crucial to prevent cargo shifting and potential damage from lashing failure. These checks are particularly important pre and post heavy weather. It would be expected that the carrier informs cargo interests as soon as possible and that the damage is properly documented. The nature of the breakbulk loaded may also require ventilation. To manage moisture and prevent cargo damage, dewpoint temperatures, outside air temperatures, and cargo temperatures should be recorded every six hours to determine the necessity of ventilation.

Discharge

Upon arrival at the discharge port, a ship's staff should monitor discharge operations, ensuring that any damage observed is noted and signed for. If the nature and value of the cargo dictates, a marine surveyor may be appointed for a discharge condition survey of the cargo, as well as to oversee the discharge operation.

For further information, please contact your local Marine Risk Consultant.

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