CONTENTS

SPECIALIST DRY CARGO OPERATIONS

Refer to the Company's HSE MANUAL and the publication BULK CARRIER PRACTICE if provided on board[1].

Your attention is drawn to the following sections:

1. DRY BULK CARRIERS

The Company recognises the IMO publications - "International Maritime Solid Bulk Cargoes Code" (IMSBC Code)[2], "International Code for the Safe Carriage of Grain in Bulk" (GRAIN CODE), and "Code of Safe Practice for the Safe Loading and Unloading of Bulk Carriers" (BLU Code)[3]. Masters should be guided by the recommendations contained in the NI publication "Bulk Carrier Practice" where provided on board[4], as an industry standard reference.

1.1. Loading Plan

The Master and Chief Officer should ensure that a loading plan is drawn up during the pre-planning meeting on arrival in conjunction with terminal representatives and surveyors, and once agreed upon should be lodged with the relevant shore authority. The agreed loading rate should never exceed the ship's maximum ballast discharge rate. Refer company Form 2.3.2 – Bulk Cargo Loading / Unloading Sequence.[5]

1.2. Monitoring Cargo and Ballast Operations

The loading operation must be closely monitored throughout, to ensure that the co-ordination between loading and deballasting is maintained. Any deviation, especially under a high-capacity ship loader, can result in structural damage to the ship. Refer company Form 2.3.2 – Cargo Load/Discharge Monitoring.[6]

1.3. Final Discharge

Officers must ensure that as much cargo as possible is discharged before completion, i.e.. any clingage or sweepings should be removed before the final measurements are taken – excessive ROB may result in a claim against the vessel for short discharge and will certainly increase hatch-cleaning time before the next cargo.

Removal of cargo from frames etc during discharge should be encouraged where possible, to avoid the possibility of stevedores trying to dislodge it using hydraulic hammers or

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bulldozers. **The Company does not permit this practice, as the potential for structural damage is too great.**

On completion of discharge, the Chief Officer should ensure a close inspection is made of each hatch, particularly of the tank-top and lower frames, to ensure no damage has been caused by heavy grabs or bulldozers during the last stages of discharge. Dated photographs are useful in this case, to prove the existence of any previous damage or lack thereof.

2. BULK CARGO OPERATIONS

2.1. Hold Washing

Remnants of any cargo which remain on the deck or in holds following loading or unloading, including loading and unloading excess or spillage are defined as "Cargo residues".[7]

When washing out at sea, the discharge of residues is to be in compliance with Annex V of MARPOL 73/78 as amended[8], and the company Garbage Management Plan.

2.2. Hold Inspections

The prime cause of the majority of bulk carrier casualties has been determined as being the failure of the side structure due to a combination of corrosion and physical damage sustained during operations. It is evident that corrosion and cracking of the main frames and their brackets is a significant occurrence. Corrosion has in many cases, led to a significant reduction in support to the side shell which in turn results in the cracking of the side shell plating and the eventual ingress of water to the hold spaces.

The cargoes themselves, by virtue of their corrosive properties, particularly coals with a high sulphur content, can quickly diminish hold steelwork. This is exacerbated when the hold temperature reacts with the colder outer hull temperatures to cause condensation or "sweating", at the interface of the side shell and topside tanks. The condensation then gravitates to the main frame webs and the lower bracket connections to the hopper where it begins its corrosive action. The frequent carriage of high sulphur cargoes will predictably, worsen this situation.

Double-hulled bulk carriers are less likely to suffer from the above, as frames are not subject to the same exposure. However, frequent tank inspections should be carried out to ensure that the frames are not damaged through heavy grabs landing.

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The use of bulldozers and hydraulic hammers in the holds can also be very damaging to the structures since many of the vessels were not designed or built to withstand such harsh methods of cargo handling.

Research to date highlights several types of recurring defects and their location:

- General and localised corrosion of main frames.
- Grab and bulldozer damage to the main frame lower brackets.
- Cracking at main frame bracket toes.
- Cracking at the intersection of the inner bottom plating and the hopper plating.
- Grab damage to the inner bottom, hopper and stool plating.
- Cracking at fore and aft extremities of topside tank structures.
- Corrosion within topside tanks.
- Plate and panel buckling of cross deck strips and stiffening structure.
- Cracking of hatch coamings.
- Cracking at hatch corners.

3. CONTAINER SHIPS

Containers may be carried on bulk carriers under special conditions[9].

The container trade worldwide is subject to very strict scheduling, more so than any other form of shipping. Charterers often exert pressure on the Master to proceed in an unsafe manner, take shortcuts, or otherwise put his vessel into unnecessary danger in pursuit of maintaining the schedule. Obviously discretion must be exercised in this regard, and the Master should his utmost to accommodate the charterer without recklessly endangering his vessel. Should any problem or dispute arise, the Master should immediately consult his Ship[10] Manager for advice. Company policy is that the safety of the ship, her crew and cargo are of the utmost importance, and take precedence over commercial issues and any charterers wishes in this regard.

3.1. Container Cargo Operations

All cargo should be carried in accordance with the vessel's approved lashing plan and be guided by the recommendations in IMO's "Code of Safe Practices for Cargo Stowage and Securing".

Planning for vessels on liner trades is usually done ashore, and often presented to the vessel shortly before loading. This planning must be checked closely to ensure that stack weights are not exceeded, heavy containers are always stowed as low as possible, and

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also to ensure stack heights are not exceeded, so as to affect bridge watchkeepers visibility. Preplanned hazardous cargoes stowage must be checked carefully to ensure correct segregation as per the IMDG Code is maintained.

3.2. Hazardous Cargo

Whenever dangerous goods are booked the ship should be advised in advance and stowage discussed with the Master and CNO. During loading and discharging operations local port rules and Coastguard regulations must be complied with, and the cargo secured to the Master's satisfaction before sailing. A list of hazardous cargo expected to be loaded is required to be supplied to the ship on arrival and, prior to sailing, a list of hazardous cargo loaded, indicating stowage positions, is to be on board. It is the CNO's responsibility to ensure that proposed stowage positions for hazardous cargo complies fully with the requirements of the International Maritime Dangerous Goods Code (IMDG).

3.2.1. Class 1 – Explosives

The carriage of goods of the above category shall be in accordance with the instruction contained in volume 1 of the IMDG code. USCG and a number of other National Authorities require a full list of hazardous cargo ready for immediate sighting. Information on the stowage of hazardous cargo, its nature and properties and emergency measures required to be taken should the need arise is to be readily available at all times. In this regard there is to be a copy of this information on the Bridge at all times the vessel is at sea or at anchor.

3.2.2. Arms, Ammunition and Explosives

All arms and ammunition and cargo of dangerous nature must be declared when reporting on arrival. In the USA all ships must have on board a "SPECIAL LIST OF DANGEROUS GOODS" form which must be correctly completed and signed by the Master.

3.3. Bulk/Dry Cargo Vessels Designed for Containers on Deck

Where containers are lashed on deck, reasonable access must be left for crew to proceed to any part of the vessel and care must be taken to avoid blocking off pilot ladder access, fire hydrants, sounding pipes and deck valve controls. The onus of ensuring that safe access is provided to working spaces remains with the Master.

The weight of the container and spreader must not exceed the SWL of the Cargo gear onboard unless it is known that shore crane facilities equal to container + spreader weight are available at the load and discharge port.

3.4. Lashing of Containers

The Chief Officer is responsible for ensuring that all lashing is completed in accordance with the vessels lashing plan before the vessel departs for the open sea. If there is any doubt, he shall not sign the stevedores' receipt for completion of lashing until he is satisfied. On trades where the ship's crew is responsible for lashing, the pilot shall not be called until all lashing is complete. It is Company policy that all containers are to remain fully lashed until the vessel is within sheltered waters, or preferably alongside. Under no circumstances is any cargo to be unlashed while the vessel is still at sea or anchored in an open roadstead.

3.5. Carriage of Refrigerated (Reefer) Containers

The Chief Engineer is responsible for the connection, monitoring and maintenance of the machinery and carrying temperatures while the containers are on board. He is responsible for ensuring that a suitable stock of spares is kept on board and replenished as necessary from charterers stock – many charterers maintain depots in major ports and will supply maintenance teams if required. If necessary, the maintenance includes the need to call in contractors in intermediate ports if the repairs are beyond the ship's resources. The ships or charterers local agents are to be consulted should the need for outside help arise. The Fleet Manager is also to be advised should there be any possible reason to expect that the contents of a malfunctioning reefer container could deteriorate through unavoidable delays in effecting repairs.