CAUTION! LIQUEFACTION DANGERS OF IMSBC CODE 'UNLISTED' BULK CARGOES

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Excavated soil: not listed in the IMSBC Code, but potentially a Group A (may liquefy) bulk cargo.

INTRODUCTION

The latest IMSBC Code 2022 Edition, at Appendix 1, lists and provides shipping risk categories for just over 350 bulk cargoes. The Code is a 'work in progress' and newly discovered or created bulk cargoes continue to be added to the list after IMO review and assessment. Meantime, charterers and/or shippers may propose the loading of bulk cargoes which are not yet IMSBC Code listed and categorised. This Risk Bulletin provides advice to Members and their masters regarding 'unlisted bulk cargo' risks and the precautions required to avoid the sudden and deadly capsize dangers of Group A cargo liquefaction or dynamic separation.

BACKGROUND

Members are referred to MM RB No. 67 IMSBC Code: More Changes for the Good and RB No. 68 Coal Liquefaction Awareness and Testing. These RBs were designed to raise awareness of IMSBC Code 2022 Edition amendments, including updates to Appendix 1 listed bulk cargoes, both pre-existing and new.

NOTE: The IMSBC Code 2022 Edition – which incorporates amendments 06-21 as provided by IMO Res. MSC 500 (105) – is currently applicable on a voluntary basis and will become mandatory on 1 Dec 2023.

The challenge with IMSBC unlisted bulk cargoes is that it will not be known with certainty whether they are Group A cargoes which may liquefy or be subject to dynamic separation, Group B cargoes which possess a chemical hazard, or Group C cargoes which are neither Group A or B (i.e., that they are both physically and chemically stable). This makes unlisted bulk cargoes potentially dangerous,

NOTE: The IMSBC Code definitions of Group A, B and C cargoes are contained at Section 1.7, Definitions.

Members are also referred to the important liquefaction warning applicable to all bulk cargoes, whether listed or unlisted, at Appendix 3, Section 2, Cargoes which may liquefy, Sub-Section 2.1 which provides that:

"Many fine particle cargoes [even if listed as Group B or C cargoes], if possessing sufficiently high moisture content, are liable to flow. Thus, any damp or wet cargo containing a proportion of fine particles should be tested for flow characteristics prior to loading."

NOTE: The words in square brackets and text underlining have been added by MM to emphasize the potential danger presented by any type of dry bulk cargo – whether IMSBC Code listed or unlisted – if it contains fine particles and is observed to be damp or wet.

So how should unlisted cargoes be vetted by Members to ensure the safety of their ships and crews before agreeing to a shipper's and/or charterer's unlisted cargo proposal?

ASSESSMENT AND CONTROL OF UNLISTED BULK CARGOES

Assumptions based only on the physical appearance of an unlisted cargo can be misleading and very dangerous. Accordingly, the IMSBC Code, Section 1.3, Cargoes not listed in this Code, sets out the shipper's mandatory obligations. The process required is summarised below:

1. The shipper must provide the 'competent authority' (CA) at the loading port with the full details of the unlisted cargo as detailed at Section 4, Assessments of acceptability of consignments for safe shipment. This requires utilisation of CA approved sampling procedures, test methods and the presentation of test certificates.

   NOTE: The IMSBC Code at Section 1.7 defines the term 'competent authority'. However, there is no Code standard set for the technical competence required by a CA so this may vary significantly. The most recent contact details for all CAs are contained in the IMO's BC.1-Circ.74-Corr.2 (18 July 2022) which is printed in the IMSBC Code 2022 Edition.

2. The CA must assess whether the unlisted cargo is safe for shipment. If assessed as 'presenting no specific hazards for transportation', the CA will issue a certificate to the master authorising loading and carriage and will advise both the vessel's flag state and the CA at the discharge port.

   NOTE: The Code appears to provide that if an unlisted bulk cargo presents as a Group C cargo, then the CA at the loading port may make a unilateral assessment and decision to authorise loading and carriage. Members should keep the above mentioned Appendix 3, Sub-Section 2.1 warning in mind and be very cautious of any such CA decisions.

3. If the unlisted cargo presents Group A and/or B hazards, then the CA must confer with both the flag state and the CA at the unloading port to set the preliminary suitable conditions for carriage (otherwise known as a Tripartite Agreement, as reported to and registered at the IMO). It follows that if these conditions cannot be formally agreed or cannot be complied with by the shipper and the vessel, then the cargo must not be loaded.

CASE STUDY/LESSON LEARNED

A small single hold bulk carrier loaded a cargo of 1,900 m tons of soil, sourced from a landfill stockpile, for coastal voyage transport. As the vessel left port, the wind and sea conditions increased to the point where the vessel was rolling heavily. The vessel then took a pronounced list, first to port and then to starboard. The indications were that the cargo had liquefied and become fluid.

The master then attempted a turn to starboard (presumably to reduce the rolling), but the vessel then developed a large and what then became a fatal starboard list. A distress call was transmitted and the five crew members abandoned ship by donning survival suits and jumping into the sea. They were subsequently all rescued by helicopter.

The Norwegian Safety Investigation Authority (NSIA) found that the soil stockpile contained significant levels of moisture and was composed of material from several construction sites. However, there was no pre-loading inspection or test process in place to assess the stockpile's moisture content and whether the soil could liquefy or suffer dynamic separation when transported by sea.

The NSIA also found that the soil shippers and the vessel's crew appeared to be unaware of the applicable 'Regulations on the Carriage of Cargoes on Norwegian Ships and Barges' in relation to determining and providing information on the properties of soil as a bulk cargo.

COMMENT: The Norwegian Martime Authority website confirms that the Regulations referred to above incorporate the IMSBC Code and that they have been extended to apply to Norwegian vessels in both international and coastal trade.

The Code's Appendix 4, Index, provides a quick reference list of the 'listed cargoes' detailed in Appendix 1. There is no listing for Soil such that the IMSBC Code's 'unlisted cargo' vetting process described above should have complied with by the cargo shipper. Instead, the shipper, the vessel's owner and the master were evidently unaware that any such regulation existed. If they had known and the Code requirements had been followed, inclusive of conducting the Code's recommended 'can test', then the capsize and the resulting losses and liabilities would have almost certainly been avoided.

CONCLUSION AND TAKEAWAY

IMSBC Code 'unlisted cargoes' can present a serious risk to ships and their crews if they are not pre-load assessed and formally authorised by load port CAs as being safe for carriage by sea under clearly stated conditions. This is a risk problem which can be expected to continue because of the on-going identification or creation of new and therefore Code unlisted bulk minerals or products for use in industry. The solution lies in Member and master awareness and, if necessary, their notification to shippers and/or charterers of the need for careful and consistent implementation of the IMSBC Code unlisted bulk cargo vetting and certification process as described above.

Members are encouraged to review their ISM Code or NCVS SMS manuals and procedures to ensure that the risks associated with IMSBC Code 'unlisted bulk cargoes' are specifically identified. Further, that their vessels' SMS procedures incorporate a clear reference to both this Risk Bulletin and the relevant sections of the IMSBC Code. This should also include a stockpile and shipboard 'can test', as described by IMSBC Code Section 8.4 as an independent indicator of possible Group A liquefaction properties.

By way of practical analysis and advice, the efficacy of the IMSBC Code's prescribed unlisted cargo vetting process appears to be dependent upon the knowledge, availability of testing equipment, testing skills and integrity of all the parties involved, including the shipper and load port CA. In practice, these key risk control elements are not yet all available or fully functioning at all bulk cargo load ports in the world. Members and their masters should therefore always exercise a high level of enquiry and precaution if they are scheduled to load an IMSBC Code unlisted bulk cargo at any port.

Finally, if Members and their masters are ever in any doubt as to the accuracy and reliability of a shipper's unlisted bulk cargo information or the CA certification provided, then MM should be contacted immediately for advice and assistance, inclusive of making any necessary arrangements for independent cargo inspection, sampling, and testing.