Carriage of Nickel Ore: Cargo Liquefaction and Suggestions

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The Firm and Who are the Speakers

THE FIRM
WANG JING & CO. is widely recognized as the leading expert in shipping, trades and insurance practice, head office in Guangzhou, and eight branches in Tianjin, Qingdao, Shanghai, Fuzhou, Xiamen, Shenzhen, Haikou and Beijing.

THE SPEAKER – Mr. AN Shouzhi (安寿志)
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- Practice Areas: Shipping, Int’l Trades, Corporate, Ship Finance

Main Contents

- Casualties Review of Nickel Ore Carriage;
- Liquefaction Risks and Problems;
- IMSBC Code and Its Requirements;
- Suggestions.
Casualties

Capsized:

1988 “Mega Taurus” (capsized, 20 fatalities)
“Sea Prospect” (capsized, 10 fatalities)

However, By the end of 2010, within 39 days, nightmares began…

Casualties I - MV “Jian Fu Star”

27 Oct. 2010
CAPSIZED,
FATALITIES-13
RESCUED-12

MV “Jian Fu Star”, built 1983, ex-name MV “Elene”

Casualties II – MV “Nasco Diamond”

10 Nov. 2010
FOUNDERED,
22 FATALITIES,
3 RESCUED

MV “Nasco Diamond”, built 2009
Casualties III – MV “Hong Wei”

3 Dec. 2010
CAPSIZED,
FATALTIES-10,
RESCUED-12

Casualties

All three vessels:

- Loaded with the same cargo - Nickel Ore
- Loaded in the same country - Indonesia,
- Sank in broadly the same location.

The cause of the sinkings has not yet been definitively determined, but nickel ore is a cargo which may liquefy, some persons, particularly, P&I Clubs suspect it is possible that the vessels were lost as a result of cargo liquefaction.

Liquefaction Risks and Problems

From Dr. Martin Jonas “Liquefaction of unprocessed mineral ores – Iron ore fines and nickel-ore”
Liquefaction Risks and Problems

Characteristics of nickel ore

- Mines situated in remote location
- Stockpiles exposed to heavy rainfalls
- "Solar drying process" may be carried out but ineffective
- Some times delivered to ship directly from excavation
- Physical properties may vary from gravel to mud
- Test Certificates generally produced by mine’s own in-house laboratory
- Often necessary to send samples overseas for testing
- No facilities to discharge suspected cargo once on board

- Reported by West of England P & I Club

Liabilities and losses are substantial

- Crew/Dependants for loss of life and injury
- Loss of ship and cargo
- Wreck removal
- Pollution arising out of bunker leakage
- Huge demurrage/detention at loading port,
- P&I clubs take extreme caution and always intervention to ensure compliance IMSBC Code requirements,
- Additional surveys and tests required by Club;
- Cease loading and/or unload cargo and so on.

Surveyors and sampling standards

- Owners/P&I Club
  - Alleged local laboratories unreliable, preferable to Minton, Brookes Bell
  - Moisture content of cargo sample size: - 6.7 mm
- Charterers/Shippers
  - SGS, CCIC, Intertek and others
  - Moisture content of cargo sample size: -7mm, and +7mm
- Discrepancies
  - Which surveyor’s report shall be reliable and final?
  - Cargo characteristics: much smaller, much wetter, so, -6.7 mm can be represented all cargo loaded on board?

- IMSBC Code
  - Section 8.1, the recommended test procedures given in Appendix 2 provide for the laboratory determination of the cargo moisture content of the representative sample of the materials to be loaded.
  - Appendix No.2, Section 1.1.1-Scope, the flow test is generally suitable for mineral concentrates or other fine materials with a maximum grain size of 1mm, it may also be applicable to materials with a maximum grain size up to 7mm...
IMSBC Code and Its Requirements

- **Code for Safe Practice for Solid Bulk Cargoes:**
  - The old "BC Code"
  - Adopted 1965, with several revisions
  - Recommendatory
- **IMSBC Code**
  - On 4 December 2008, by Resolution MSC.268(85), the IMO adopted new regulations for the carriage of solid bulk cargoes, namely, the International Maritime Solid Bulk Cargoes Code (IMSBC Code) will supersede the existing BC Code.
  - **Mandatory** (by International Convention for the Safety of Life at Sea (SOLAS), Chapter VI)
  - Entered into force 1 January 2011

IMSBC Code and Its Requirements

- **Group A**
  - Section 1.7.5 "Cargo which may liquefy means cargo which contain a certain proportion of fine particles and a certain amount of moisture. They may liquefy if shipped with a moisture content in excess of their transportable moisture limit (TML)."
  - **Note:** Nickel ore does not have its own schedule in the Code but should be regarded as being a Group A cargo.
- **Group B**
  - Cargo which possess a chemical hazard which could give rise to a dangerous situation on a ship
- **Group C**
  - Cargo which are neither liable to liquefy (Group A) nor to possess chemical hazards (Group B)

IMSBC Code and Its Requirements

**Obligations to Shippers/Charterers, very strict**

1. **Cargo information**
   - Section 4.2.1, "The Shippers shall provide the master or his representative with appropriate information on the cargo sufficiently in advance of loading to enable the precautions which are necessary for proper stowage and safe carriage of the cargo to be put into effect."
   - The Moisture Content/FMP/TML can only be determined by laboratory analysis of cargo samples.
   - Any cargo with a moisture content in excess of the TML should not be accepted for loading (unless on specially constructed or fitted ships).
Obligations to Shippers/Charterers, very strict

II. Documentation

- A certificate/declaration certifying the moisture content of the cargo to be loaded (Section 4.2.29)
- A certificate certifying the TML of the cargo together with the FMP test result prepared by a competent laboratory (Section 4.3.1)

Master's obligations, overriding power

- The Master or his representative should monitor the loading operation from start to finish. Loading should not be commenced until the Master or the ship's representative is in possession of all requisite cargo information in writing as described above.
- The Master has an overriding authority under SOLAS not to load the cargo or to stop the loading of the cargo if he has any concerns that the condition of the cargo might affect the safety of the ship.

Charterer/Shipper's Liabilities

- Under Common Law
  - Implied duty not to ship dangerous goods without Owner’s consent.
  - Strict Liability on shipper (No need to establish knowledge/negligence of the shipper).
    - Leading case: Brass v Maitland (1856)
  - Acceptance of excluded cargo by Master does NOT amount to affirmation of contract
    - Chandrus v. Isbrandtsen-Moller Co. Inc. (1951)
Liabilities Arise from Liquefaction

Charterer/Shipper’s Liabilities

- **Hague Rules/Hague-Visby Rules Article IV Rule 6**
  “Goods of an inflammable, explosive or dangerous nature to the shipment whereof the carrier, Master or agent of the carrier has not consented with knowledge of their nature and character, may at any time before discharge be landed at any place, either by force of natural causes by the carrier without compensation and the shipper of such goods shall be liable for all damages and expenses directly or indirectly arising out of or resulting from such shipment….”

- **Strict Liability**
  - The “Giannis N.K.” (1998) per House of Lords
  - Master’s consent overrides any prohibition in the contract

While, once the cargo is accepted by Master

- Carrier is obliged to carry the goods, unless he is able to establish shipper’s default, such as:
  - False description of dangerous cargo;
  - Inadequate notice of dangerous nature; and
  - Other shippers default.

- While, from Proximate Cause principle, some times, arbitrator decides Owners to pay the loss since the proximate cause of vessel sinking is master’s non-refusal of cargo loading/sailing.

Note: Once the shipment of Nickel Ore is accepted and the vessel sailed, situation seems turn into cargo interests’ favor.

Suggestions for Charterers/Shippers:

- To know the actual condition of the whole consignment as well as the reputation of its originated mine;
- Careful attention to weather, carry out necessary additional test timely (in accordance with the IMSBC Code);
- Provide accurate cargo information and the required certificate of moisture content, TML and TML to Master or their representatives;
- Most importantly, take all possible measures to ensure the moisture content of cargo is less than the TML before loading.
Suggestions

For Owners:

- Documentation, figures can not be fully trusted;
- Carry out Can test if any uncertainty (as per s.8.4 of the Code);
  Note: can test is merely an auxiliary method and is not meant to replace or supersede laboratory testing;
- Carefully monitor moisture content of the whole consignment during loading;
- Obtain moisture content of cargo loaded from laboratory to decide the safety of voyage before sailing.

Suggestions

For both parties:

- In Charter Party, agree on and clearly ascertain a designated surveyor and the method of a final and binding survey, such as:
  Before departure, if master think moisture content is too high under reasonable opinion, both parties shall agree to jointly appoint a first-class surveyor (ideally a nominated surveyor) to sample and test of all cargoes' composite moisture content, FMP and TML, according to the sample grain size of +7mm and -7mm and IMO recommended methods.

Thank you for your kind attention!

Wang Jing & Co. is delighted to help with your cargo issues Always!

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