

LP Bulletin

Friday 16th October 2009

Bulletin 660 - 10/09 - Iron Ore Fines Loading Issues - India

The Club's earlier LP Bulletins 546 – 10/07 and 647 – 7/09 warn members of the serious risks that can be associated with the carriage of iron ore fines loaded in Indian ports. Reports of serious incidents continue and include two vessels loaded with this product that have capsized in the last two to three months. At the present time the Club is dealing with 12 current cases involving this commodity. This has increased its concern over safety when shipping iron ore from this area and has prompted this additional and strengthened warning to Members.



Iron ore fines are transported from inland mines primarily by rail in open topped wagons or, to a lesser extent, by road trucks to Indian shipping ports where it is stacked in open piles. During the past summer's monsoon these stockpiles have been exposed to periods of heavy rain. The Club's technical experts have reported that this exposure to rain is a fundamental factor that has brought the moisture content of large quantities of ore over its Transportable Moisture Limit, TML for short. Whilst the problem with wetting is expected to diminish with the ore being mined and delivered to the ports during the forthcoming dry season, it is understood that there are considerable stocks that have not yet been shipped which date back to the monsoon period.

The trade is characterised by many small to medium sized shippers who together strive to satisfy the demand that comes primarily from Chinese buyers, whose country's government has granted substantial financial incentive measures for the purchase of raw materials for its heavy industry in order to stimulate the economy. In principle, the shippers are obliged by IMO (IMSBC Code), when shipping iron ore of the type liable to liquefy and cause hazards on board ships, to provide the Master or his representative with appropriate information about the physical characteristics of the cargo sufficiently in advance of loading to enable the precautions that may be necessary to deal with any incidents involving the cargoes. This declaration involves the shippers or their nominated agents carrying out proper sampling and testing for the material's TML and moisture contents according to the procedures prescribed in the IMSBC Code. The TML and moisture content results should then be provided to the masters before any cargo is loaded. Tests should be recent and in particular those for moisture content no more than 7 days before shipment. In the event that the stockpiles are exposed to further rain between the time of this sampling/analysis and being presented for loading, then the IMSBC Code makes clear that the moisture content of the shipment should be re-assessed by further sampling and analysis to ensure it is still below the TML.

Whilst the Code renders it incumbent upon shippers to properly test and certify the material, the recent incidents of serious problems with Indian iron ore fines bear witness to a lack of proper procedures on shippers' part when testing and declaring the cargoes' physical characteristics for carriage. There are cases where vessels have loaded dangerous iron ore without the shippers even having declared the TML and moisture content of the material and thus not describing it as hazardous with a capacity to undergo liquefaction. The Club therefore reinforces its advice that Masters should exercise the utmost care when loading iron ore in India. Under no circumstances



should any Master undertake to load before being satisfied that he has received the necessary cargo information in writing from the shippers. During the loading itself, Masters should at all times be on high alert for any sign of excess wetness in cargo loaded. The Club refers to the ***can test** described in IMO's IMSBC Code. Stevedores tend to be paid per ton and once loading commences, the load rate is fast which invariably reduces a Master's scope for carrying out comprehensive checks. Where any suspicion comes to light about wet and potentially dangerous cargo the Club should be notified immediately.

Recently it has also been learnt that certain Indian Port Authorities have issued guidance to ship owners loading iron ore which the Club finds are at odds with the guidance of IMO. This guidance reportedly stems from the MMD (Shipping Master - the local authorities for Director General of Shipping India) and requires that the Owners/Master (the carrier) of vessels due to load iron ore appoint surveyors on their behalf to draw the samples on board and produce the analysis report to the authority when nearing completion of loading without which Port clearance to the vessel will not be issued. Where this applies to members, the Club must be contacted for advice before any loading is undertaken. It has been found that once a cargo is on board a vessel, it is technically considered by Indian Authorities as exported from India. In the event that it is found to be over-moist and hence liable to liquefy, the owners are faced with very substantial bureaucratic difficulties in unloading such cargo and rectifying the situation.

As a guide to masters, below is a bullet point summary of key practical considerations when loading iron ore:

- Before any loading commences Masters/Owners must ensure that they receive, in writing from the shippers, certificates that state the Transport Moisture Limit and moisture content of the cargo to be loaded. The results for moisture content should be no more than 7 days old. If certificates are not presented, no loading should take place and the Master/Owner should contact the Club or its local correspondents for advice.

- Although the shippers under the IMSBC Code are required to properly test for and declare the above physical characteristics of a cargo, recent incidents have shown that there are shippers who fail in this respect. Therefore, during loading the Master and his officers must be on high alert for any sign of excessive moisture in the cargo loaded. If a Master is in doubt or he detects over-moist cargo, he should immediately seek advice from the Club or the Club's Correspondents. The ***can test** described in the IMSBC Code is of assistance.
- In addition, the crew should remain vigilant for the presence of iron ore fines splattered onto the bulkheads, sloping lower side plating and shell plating during the course of loading. If such splatter marks are observed they should be taken very seriously as they are an indicator that the moisture content of portions of the ore already loaded/being loaded is well above the TML and in excess of the Flow Moisture Point, FMP, from which TML is calculated (TML = 90%FMP). These marks can only be produced by liquefaction of the ore as it is being dropped from the loading conveyor or grab onto the developing cargo stow in the hold.



- Recently, certain port authorities have required Masters/Owners to contract their own surveyors for sampling and testing during loading and for the results to be declared to the port upon completion. Without such survey information port clearance may not be given. Where shippers have not properly declared a material before loading this procedure is clearly at odds with the IMSBC Code, which requires a cargo's physical characteristics to be properly described before any loading starts. The Club or its local correspondent should be notified immediately.
- It should be stressed that it has proven to be extremely difficult to get shippers/port authorities to off load potentially dangerous cargo once loaded. Due care during loading is therefore of the utmost importance in order that any such difficulties is avoided. If a vessel sails with wet and potentially dangerous cargo on board, there will be risk of cargo shifting, dangerous lists or even capsize.

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***Can Test**

"A ship's master may carry out a check test for approximately determining the possibility of flow on board ship or at the dockside by the following auxiliary method:

Half fill a cylindrical can or similar container (0.5 to 1 litre capacity) with a sample of the material. Take the can in one hand and bring it down sharply to strike a hard surface such as a solid table from a height of about 0.2 m. Repeat the procedure 25 times at one or two second intervals. Examine the surface for free moisture or fluid conditions. If free moisture or a fluid condition appears, arrangements should be made to have additional laboratory tests conducted on the material before it is accepted for loading."