



## Indian ore liquefaction problems



Free water is seen lying on top of liquefied ore fines

**I**n recent months, several ships have suffered serious stability problems as a result of liquefaction of iron ore fines loaded wet at various Indian ports, including Haldia, Visakhapatnam and Mangalore. At least three of the affected bulkers developed a dangerous list on passage, and two of the ships were beached as a result.

Indian exports of iron ore have risen from 86m metric tonnes in 2002 to 165 metric tonnes in 2006, and some reports suggest that up to eighty per cent of these exports are in the form of iron ore fines. Such fines, as the name suggests, contain a large amount of small particles, and the majority of the cargo exported from India seems to be loaded from open stockpiles.

On the basis of recent experience, iron ore fines can fall into the category of a cargo which may liquefy. The 2004 edition of the Code of Safe Practice for Solid Bulk Cargoes (the BC Code) defines cargoes which may liquefy as "cargoes which contain at least some fine particles and some moisture,

usually water, although they need not be visibly wet in appearance. They may liquefy if shipped with a moisture content in excess of their transportable moisture limit."

The BC Code requires shippers of such cargoes to provide to the master, before loading begins, "a certificate on the moisture content and its transportable moisture limit". The cargo must not be carried if the moisture content exceeds the transportable moisture limit. Yet investigations show that, even with knowledge of the recent casualties, many shippers are reluctant or unable

to produce the necessary documentation. And, when pressed, some shippers seem to be offering certificates which contain unreliable information such as 'approximate' figures for moisture content and transportable moisture limit. The availability of facilities to establish accurately the flow moisture point - from which the transportable moisture limit is derived - is also extremely limited in India.

Members considering loading iron ore fines from any Indian port should insist upon the production of the appropriate certificate before loading begins, and should also treat with caution any certificate provided by shippers. Where there is reasonable doubt as to the accuracy of certificates, members must be prepared to refuse to load the cargo pending further investigation into its actual condition. Readers are reminded that news on this and other loss prevention issues is available from the Club's website, from where registration to electronic News alerts is also available.

## Maintain your wires

The Ship Inspection programme is an integral part of the Club's loss prevention activities. Recent inspection reports have highlighted a number of issues concerning the condition of steel wire ropes, whether used as mooring lines or cargo wires. The most common problem is corrosion, but wires suffering from fatigue and crushing damage have also been removed from service following inspections. Members



are reminded of the need - where appropriate - to replace steel wire ropes, particularly when the gear may have been mishandled or misused by linesmen or stevedores.

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## Timely medical advice can save lives

**A** recent incident at sea demonstrated how the co-ordinated efforts of the Club, a Club member, the P&I Correspondent, the Medical Advice Centre of the Hellenic Red Cross (Medico Athens) and the Spanish Search and Rescue authority ensured that a critically ill crew member was provided with the best available medical treatment as quickly as possible.

The co-ordinated response may well have saved the man's life.

The member reported to the Club that the master of an entered ship was deviating towards Santa Cruz De La Palma, the most easterly of the Canary Islands, having been advised by Medico Athens by telephone that a sick crew member was in need of emergency medical treatment ashore as soon as possible.

On board was a crew member who could not speak and had lost all feeling in his right hand and arm - indicating a potential stroke.

On receipt of the Club's report, the correspondent for the Canary Islands, Stier & Co, advised that the intended port of deviation, although the nearest to the vessel, had limited medical facilities, and that the closest specialist neurological facilities were at Las Palmas. The correspondent assisted in ensuring that a helicopter was scrambled from Tenerife to



evacuate the sick man to a specialist intensive care unit in Las Palmas. It transpired that the crew member had suffered a brain haemorrhage. Happily, he was fit enough to be repatriated just eight days after falling ill.

Without the concerted efforts of all concerned in arranging for the helicopter transfer to Las Palmas, the story would not have had such a satisfactory ending.

## Recent environmental developments

The International Chamber of Shipping (ICS) and the International Shipping Federation (ISF) have jointly published 'Shipping Industry Guidance on Environmental Compliance', which they describe as a framework for ensuring compliance with the Marpol convention.

The document emphasises that "senior management should demonstrate that environmental compliance is a core element of a company's business plan", and that "senior management establish an environmental auditing policy requiring universal and unannounced audits..."

A substantial proportion of such audits are recommended to be concluded while the vessel is at sea. The ICS/ISF also recommend that

the guidance be read in conjunction with their publication 'Shipping Industry Guidance on the Use of Oily Water Separators'. Both publications are available for download from [www.marisec.org](http://www.marisec.org)

In a related development, the US Coast Guard's recently published 'Environmental Crimes: Voluntary Disclosure Policy' can be found at [www.uscg.mil/foia/docs/CH-4%20APPENDIX%20v.PDF](http://www.uscg.mil/foia/docs/CH-4%20APPENDIX%20v.PDF)

While the full impact of this new policy is not yet clear, the US Chamber of Shipping has suggested that a company operating in accordance with the ICS/ISF Guidance may be able to take advantage of potential protection from criminal prosecution under the Voluntary Disclosure Policy.



## All personnel must follow enclosed space procedures

**S**topLoss 45 featured a report on a tragic accident in which a cargo inspector died from inhalation of a fumigant in a ship's hold.

From a loss prevention point of view, the incident highlighted the need to control the movement of all visitors to ships when fumigants have been used.

And the importance of such control has been underlined in another case recently seen by the Club. On this occasion, as a bulk carrier's hatches were opened for resumption of discharge of a cargo of bulk fertiliser, the ship's staff spotted a stevedore lying unconscious on the surface of the stow.

Apparently, although his employers' procedures emphasised that the stevedore should not enter a cargo hold without express permission to do so by a ship's officer, he had been eager to begin work as soon as possible. He had therefore entered the hold via an access hatch while the crew were busy opening the hatch covers, without authorisation from the ship.

The owner's investigation into the incident suggests that the atmosphere on the cargo surface was probably oxygen-deficient but may also have had relatively high levels of ammonia, which can cause breathing difficulties. The stevedore here was fortunate in that he was not only found quickly by

the crew, but also the atmosphere in the hold would have improved immediately as fresh air entered with the opening of the hatch covers.

Moreover, he was also lucky that the crew reacted appropriately and ensured that suitable medical assistance was provided promptly. This case serves as a reminder of the need to ensure that all personnel -

not just ships' staff - follow proper procedures for entry into enclosed spaces.

The extent to which the stevedoring company learned the appropriate lessons is less clear. Although the stevedore was found face-down from the hold ladder, and the medical treatment produced no evidence of concussion, its investigation reportedly concluded that he had fallen backwards as he descended the hold ladder and had been knocked unconscious by the impact.

### Double trouble with hot coal



The photograph above was taken during discharge of a cargo of coal that had self-heated on passage.

The risks associated with such cargoes are not limited to damage to the ship and cargo. The investigation into a recent fatal accident in a ship's hold confirmed

that the crew member involved had been overcome by carbon monoxide, which is given off by the coal as it heats. Personnel should not be allowed to enter the holds unless they are wearing appropriate breathing apparatus and access is critical to the safety of life and/or the ship.



## Heavy weather injuries



Heavy weather can be a significant causative factor in personal injury cases

**R**ecent personal injury cases handled by the Club have included accidents in which the ship's motion in heavy weather has been a causative factor.

The types of incidents have included injuries to crew members falling while working aloft, a hand injury when a heavy auxiliary engine part unexpectedly shifted while being removed for maintenance, and a chest injury suffered when a power tool slipped as a ship rolled.

Where a risk assessment had been carried out in respect of the accidents involving deck crew, the responsible officer had been fully

aware of the prevailing conditions but had not made sufficient allowance for the ship's motion.

Interestingly, in the cases where the task was being performed in the engine room, the entry on the risk assessment form for 'Weather and Sea Hazard' was in each case "not applicable".

While it is the case that dealing with rolling, for example, is less of an issue for someone on the bottom plates in the engine room than it is for a crew member on the monkey island, these recent cases are reminders that, when a ship rolls, the engine room moves too.

## Accident investigation

The careful investigation and accurate analysis of accidents and hazardous occurrences is of fundamental importance to the effective operation of any owner's Safety Management System. And the Club is seeing an increasing amount of training materials and courses aimed at developing the skills of those required to produce appropriate reports for the Designated Person.

Some suggestions on training materials can be obtained from the Education and Training Section within 'Links' on [www.lssso.com](http://www.lssso.com) or via [stoploss@a-bilbrough.com](mailto:stoploss@a-bilbrough.com)

Meanwhile, the UK Maritime and Coastguard Agency has produced a useful booklet entitled 'Leading for Safety'. This includes practical tips on developing an onboard safety culture such as, among other things, giving "positive feedback on what lessons have been learned through reporting of incidents and near-misses". Paper copies of 'Leading for Safety' are available from the MCA's Risk, Analysis and Prevention Branch, whose details are on [www.mca.gov.uk](http://www.mca.gov.uk). A pdf version of the guide can be downloaded directly from that site, too.

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