

Reinforcing the introductory video, he showed the liquefaction effect of an earthquake, where the ground seems solid but vibration turns it to a slurry-like consistency. Steve continued with industry concerns, especially in regions where a weak command structure ashore percolates down the supply chain and only the vigilance and fortitude of the shipmaster forms a line of defence. Solutions proposed include an informed chain of trust and custody where everyone at every level makes pertinent observations and takes responsibility for indicating risks; strategic dialogue between mining and maritime industries and training for shore-based staff.

Moin Ahmed described the regulatory processes and measures being taken to improve safety in carrying these unstable cargoes (see also *Seaways* November 2012). Reported operational problems include: cargoes being misdescribed to avoid application of IMSBC Code provisions; inaccurate moisture content; restrictive clauses in the charterparty and commercial pressure on shipmasters not to delay shipment. Certificates supplied also provide challenges. They may not be linked to the correct stockpile; be for more than one distinct source; more than seven days old or not provided at all. Moin outlined the measures being taken through the Dangerous goods, Solid cargoes and Containers (DSC) sub-committee at IMO, including the provision for competent authorities' approval of sampling and testing to be independent of the shipper. Draft guidelines for developing and approving procedures for sampling, testing and controlling moisture content have been agreed and should be finalised at the Maritime Safety Committee meeting in June 2013. The outstanding issues concerning research into the carriage of iron ore fines and methods of determining the TML should be completed by end of May 2013.

Ian Harrison continued with illustrations of the problems encountered by Intercargo members on the carriage of iron ore fines and nickel ore. The amendments to the IMSBC code should help to

improve carriage conditions regarding procedures to protect cargo from precipitation and water ingress and will allow ship's representative access to stockpiles. Ian also showed some examples of the research being carried out into iron ore fines and introduced the Intercargo guide for the safe loading of nickel ore.

After the presentations, questions and comments came thick and fast from the audience. Testing and sampling of the cargo was of great interest, particularly the question of where the samples were taken (usually some distance from the vessel) and the number of sampling points. Several in the audience pointed out that some shippers were unaware of the TML, and even sprayed the cargo piles to keep the dust down before the ship arrived.

Another solution raised during the debate was to dry the cargo before loading. This would drastically reduce the moisture content, meaning more cargo could be shipped, and everybody wins. However, some cargoes, particularly nickel ore, are seasonal and mines are 'mothballed' for some time each year. Investing in expensive drying facilities would not be economic, given the lack of infrastructure in the regions where these mines and loading facilities are located. Proper drainage and adequate covering of stockpiles would be more cost-effective methods of getting the same effect. Additionally it was pointed out that iron ore fines which are too dry may cause problems in the operation of blast furnaces. Trimming of cargo was also mooted as a solution, but would be labour and time intensive.

The discussion could have continued all night, but some proposed solutions were: get the science on the testing and sampling processes right; appoint an appropriate competent authority with the right to issue certificates and have a greater check on safety procedures for carriage. Masters must be fully supported to refuse cargo if they have any worries about cargo/documentation/context.

Capt Harry Gale FNI

LONDON BRANCH

Cargo liquefaction

A record attendance of 130 persons at the December meeting left standing room only for latecomers and showed the level of interest in liquefaction of ore cargoes.

The panel of speakers, chaired by Philip Wake, CEO of The Nautical Institute, and comprising Steve Cameron of RTI Ltd, Moin Ahmed representing the NI and Ian Harrison of Intercargo, made impressive presentations on the hazards of carrying such cargoes, and the latest developments in safety measures.

Before the presentations, a short video was shown, courtesy of Dr Nicholas Crouch. It was taken by the crew of a vessel showing the movement of cargo becoming liquefied on board. Luckily this ship and crew survived to reach port.

Steve Cameron highlighted the type of ships used in the trade – mainly bulk carriers designed for high density dry cargo with a configuration not suitable for cargoes with free surface effect ie cargoes having moisture content in excess of the transportable moisture limit (TMP).



Standing room only



The panel