Sinking of M.V. Hui Long on 20.5.2005

1. The Incident

1.1 On 18 May 2005, the Hong Kong registered ship 'Hui Long' (the Vessel) was sailing from Sungei Pakning of Indonesia to India. The vessel was loaded with 11,245 tonnes of mixed general cargoes including 5,185 tonnes of fluorspar mineral in bulk. At around 1535 ship's time (UTC+5), whilst the Vessel was 173 nautical miles from Sri Lanka, position at 5º 55.5'N 84º 20.7'E, the ship suddenly developed a list of 15 degrees to port. The list continued to be worsening and the Master abandoned the Vessel at 1602 after the port weather deck has been immersed into water at a list of 40 degrees. All 23 crew were rescued by a passing container vessel 'P&O Nedlloyd Asia'. A salvage tug was called in the following day trying to rescue the vessel without success and the Vessel finally sank on 20 May 2005.

2. Findings

2.1 The exact cause of the sinking of 'Hui Long' could not be established as the vessel had completely sunk.

2.2 After investigation the probable causes of the accident, it is believed to be the liquefaction of the fluorspar cargo inside the No.1 and No. 3 holds. The flow state of the fluorspar cargo might have developed a list to the Vessel and caused it to capsize and sink.

2.3 The Master appeared to have not followed the company's cargo safety manual for loading bulk cargo that may liquefy by accepting on board for shipment of fluorspar cargo with the moisture content higher than the stipulated 8%.

2.4 The shipper has failed to provide the Transportable Moisture Limit (TML) of the fluorspar cargo before the shipment as required by the Merchant Shipping (Safety) (Carriage of Cargoes) Regulation and the Code of Safe Practice for Solid Bulk Cargoes, 2004 (BC Code). A norm of 10% TML for bulk fluorspar was used by the shipper without documentation support of any laboratory test. As such it is possible that the fluorspar cargo at moisture content of 9.8% had exceeded the actual TML.

2.5 The amount of sample taken by the survey firm would not be sufficient for a proper determination of moisture content as far as the BC Code is

concerned.

3. Lessons

3.1 Fluorspar is a material that may liquefy if shipped at moisture content in excess of the Transportable Moisture Limit (TML). Once liquefaction occurs, the fluorspar cargo would become liable to shift in a liquid state. When the cargo is in viscous fluid state, it may flow to one side of the ship but not completely return to the other side during ship rolling at sea. The shifting of the bulk cargo can cause potentially disastrous consequence to vessel through listing and may progressively reach a dangerous heel and capsize.

3.2 It is extremely important to mariners who carry the cargo that they are provided with accurate TML and moisture content values of the cargo. Such cargoes should also be trimmed reasonable level and loaded as deeply as practicable. These measures will minimize the potential shifting of the cargo.

3.3 To prevent hazardous liquefaction occurring, the BC Code also requires the flow properties of subject cargoes to be tested (TML and moisture content) and subsequently certified by shippers prior to loading. Cargoes should not be loaded if their moisture content exceeds the TML. In particular, these types of cargoes should not be loaded if water is observed escaping from the cargo during loading.

3.4 Even when the shipper has furnished with information on the TML and moisture content of the cargo, if the master has doubts in regard to the appearance or condition of the material, a simplified in-situ testing method for providing a rough idea on the possibility of flow may be carried out by half filling a cylindrical vessel of about 1 litre capacity with a sample of the cargo and striking it against a hard surface at least 25 times. If free moisture appears on the surface of the sample, additional laboratory tests should be conducted.

M.V. ‘Hui Long’ after the initial listing