

MARINE DEPARTMENT NOTICE NO. 121/2021

(Navigational & Seamanship Safety Practices)

Explosion accident of a chemical/product carrier in Hong Kong

The Incident

A chemical/product carrier (*the vessel*) in ballast condition arrived in Hong Kong for bunkering at the anchorage. At that time, her cargo oil tanks (COTs) which were emptied of mixed aromatic (*UN1268*) in the last nearby port in the Mainland were having gas-free operation. Except during the pilotage period when *the vessel* was entering Hong Kong, the operation continued until an hour before the arrival of a bunker barge.

2. After the connection of a bunker hose to the manifold of *the vessel*, several stunning blasts of explosion in the COTs took place consecutively in the blink of an eye. The explosion had caused substantial structural damage to *the vessel*. Of the 25 crew members of *the vessel*, two were injured and three were missing. The missing crew members were subsequently found dead in the water.

3. The investigation revealed that the main contributory factors of the accident were:

- (a) failure to confirm the cargo emptiness of COTs before carrying out gas-free operation; and
- (b) failure to monitor the flammable gas level inside the COTs before commencing and throughout the gas-free operation.

4. The investigation also found out that, without giving consideration of special explosion risk control measures and without an operative inert gas system, *the vessel* failed to consider her suitability of safe carriage of *UN1268*.

Lessons Learnt

5. In order to avoid recurrence of a similar accident, it is important that the crew should:

- (a) ensure emptiness in all COTs including the cargo piping system before the gas freeing under a non-inert condition, by following the ventilation procedures as applicable in Appendix VII of

Annex II to the International Convention for the Prevention of Pollution from Ships (MARPOL); and

- (b) monitor the flammable gas level inside the COTs before and during gas-free operation.

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