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HONG KONG MERCHANT SHIPPING INFORMATION NOTE

Fire safety during oil transfer

To : Shipowners, Ship Managers, Ship Operators, Masters and Officers and Crew

Summary

In the process of transferring oil to fuel tanks on board a container ship, a fire explosion occurred in the engine room, resulting in two engineer officers sustained serious skin burns. One of the engineer officers was later certified dead in the hospital. This Information Note draws the attention of the shipowners, ship managers, ship operators, masters, officers and crew on the lessons learnt in the accident.

The Incident

1. An explosion happened onboard a container ship while she was transferring diesel fuel from diesel oil service tank to heavy oil service tank by a portable electric submersible pump at the Western Anchorage No.1 Area.
2. Two engineer officers dismantled the flanges on top of both tanks for the transfer of diesel oil. Flammable vapour was escaped from the tanks and accumulated in the engine room. They connected the submersible pump to the power source with a power extension cable reel. During the oil transfer, the power cable was incidentally unplugged and disconnected from the cable reel. The disconnection generated sparks and ignited the flammable vapour. As a result an explosion occurred and injured the two engineers there. One of them later died in the hospital.
3. Following are the contributory factors of the accident:
 - i. The engineer officers were not familiar with the fuel oil piping system which was capable to transfer fuel between the tanks.
 - ii. The engineer officers dismantled the flanges of the fuel oil tanks for fuel oil transfer that allowed flammable vapour escaped and accumulated in the engine room. No ventilation was arranged to prevent the accumulation of flammable vapour inside the engine space; and

- iii. Electrical submersible oil transfer pump and portable electric power reel were used for the oil transfer process.

Important lessons to be learnt

- 4. Following are lessons learnt from the incident:
 - i. Fuel transfer should be conducted with approved piping system.
 - ii. Adequate ventilation should be arranged and maintained to prevent the accumulation of flammable vapour throughout the oil transfer process.
 - iii. Approved type equipment such as explosion proof equipment should be used whenever flammable vapour may exist.

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