

MARINE DEPARTMENT NOTICE NO. 190/2023

(Navigational & Seamanship Safety Practices)

Fatal engine room fire explosion accident on board a Chinese Mainland-registered coastal cargo vessel

The Incident

Just upon completion of crew change, a Chinese Mainland-registered coastal cargo vessel (*the vessel*) passed through Hong Kong waters. During the time, the chief engineer arranged for a mechanic trainee to assist the second engineer in welding and repairing a leaking pipeline of a heavy fuel oil settling tank (*the settling tank*) in the engine room. At the start of the welding process, the second engineer assigned the mechanic trainee to get more electric welding rods from the accommodation area. When the mechanic trainee left the engine room, an explosion was immediately heard from the engine room. The master heard the explosion on the bridge and saw a large amount of black smoke coming out from the stern funnel and nearby vents. He immediately activated the shipboard fire alarm and mustered all crew members, but found that the second engineer was missing. A Marine Police launch and a fireboat subsequently arrived at the scene to extinguish the fire on board *the vessel*. The second engineer was rescued from the engine room by the firemen and confirmed dead on board.

2. The investigation revealed that before the welding operation, the crew of *the vessel* failed to comply with the requirements of the shipboard Safety Management System (SMS) regarding the shipboard naked fire work instructions. These included inspection of the welding work site, obtaining a hot work permit approved by the master, and carrying out cleaning, ventilating, gas freeing and explosion testing of *the settling tank* connected to the leaking pipeline. The crew of *the vessel* also failed to follow the requirements of shipboard SMS regarding the job responsibilities familiarisation training procedures for new joiners to conduct effective safety training for new replacement crew members including the second engineer.

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3. The investigation also revealed that the second engineer lacked safety awareness of naked fire work. Nor did *the vessel* comply with requirements of shipboard minimum safe manning to have a sufficient number of qualified on-duty mechanics.

Lessons Learnt

4. To avoid similar incidents in future, ship management companies, masters, officers, and crew members should:

- (a) ensure compliance of crew members with the relevant requirements of naked fire work instructions of the shipboard SMS to conduct such work;
- (b) ensure compliance of crew members with the requirements of relevant job responsibilities familiarisation training procedures to conduct effective safety training for new joiners;
- (c) enhance crew members' safety awareness of naked fire work; and
- (d) ensure compliance of vessels with the requirements of the minimum safe manning to have qualified crew members.

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