

Engine room fire - carbon dioxide system did not activate



It was in the evening with heavy weather at around Beaufort scale 7. The vessel was heading for the discharge port. Suddenly the fire alarm sounded on the bridge. The Master, who was on the bridge at the time, saw smoke coming from the funnel ventilation on the port side. He immediately set off the general alarm.

The chief engineer (CE) was in the engine control room (ECR) when the fire alarm sounded and left it to see what was happening. There was a fire around the top covers of cylinders #2/#3 of the port side main engine. He tried to put out the fire with a portable fire extinguisher, but it failed so he went back to the ECR, activated the fire alarm button and contacted the Master on the bridge.

Other members of the crew came to assist and tried to enter the engine room to put out the fire, but the flames were very high and there was a great deal of smoke, so they could not get near it. It was decided to release the CO₂ system and flood the engine room. The CE closed all the fire dampers and activated the remote quick closing valves for the fuel system. He then went into the CO₂ release station with the electrical engineer. The CE opened the cabinet door and automatically the CO₂ release alarm sounded, and the ventilation fans stopped. The CE then

started on the steps needed to perform the CO₂ release.

However, whilst going through this process they missed opening one of the valves and no CO₂ was released. As soon as the CE realised this he used the manual handle to open the CO₂ bottles. After releasing the CO₂, the CE was pleased to see that the amount of smoke coming from the engine room through the funnel ventilation was decreasing. However, the amount of smoke soon increased again. At this point the CE realised that the CO₂ system had not worked as he had hoped. It was later discovered that only seven of thirteen CO₂ bottles were released into the engine room.

The Master ordered the crew to abandon ship. Nobody was injured, and all were rescued. The vessel had to be dry docked and have extensive repairs. ■

Discussion

Go to the "File" menu and select "Save as..." to save the pdf-file on your computer.

You can place the marker below each question to write the answer directly into the file.



When discussing this case please consider that the actions taken at the time made sense for all involved. Do not only judge, but also ask why you think these actions were taken and could this happen on your vessel?

1. What were the immediate causes of this accident?

2. Is there a risk that this kind of accident could happen on our vessel?

3. How could this accident have been prevented?

4. What sections of our SMS would have been breached if any?

5. Is our SMS sufficient to prevent this kind of accident?

6. Does our SMS address these risks?

7. If procedures were breached, why do you think this was the case?

8. Do our procedures make sense to the work we actually do?

9. Have we done risk assessments on possible hot spots in the engine room?

10. How do we ensure that all the crew concerned know how to operate the CO₂ system?

11. Do we train on how to release the CO₂ system?

12. How often do we train on how to release the CO₂ system?

13. Have the crew concerned received specific training regarding the CO₂ system?

14. How often do we have fire drills in the engine room, as this is generally where fires start?

15. Are our firefighting drills effective enough to address the problems in this case?

16. What do you think was the root cause of this accident?