



The Swedish Club

MONTHLY SAFETY SCENARIO

APRIL 2022

Fire in engine room

A vessel was lying alongside loading cargo. The Chief Officer called the engine control room (ECR) to ask the duty engineer to start an extra auxiliary engine so he could begin to ballast the vessel. The oiler answered the phone in the ECR and went to look for the Third Engineer to tell him to start the second auxiliary engine.

The Third Engineer called the Chief Officer and told him that the second auxiliary engine was online and that he could start the ballast operation. Ten minutes later a huge explosion was heard in the engine room. The Third Engineer could see flames and smoke coming from the auxiliary engines.

The Third Engineer escaped from the ECR and when he was outside the engine room, he broke the glass for the fire alarm and activated it. At the same time the vessel blacked out, but 15 seconds later the emergency generator kicked in and the power came back on. All engines were stopped



The general alarm was sounded by the Master and all the crew were mustered. All fire dampers and fire doors for the engine room were closed, and the fire teams were suited up in firefighting gear and started boundary cooling the engine room and funnel.

The Master informed the VTS and the local fire brigade about the fire.

About ten minutes later the local fire brigade arrived. Both the vessel's fire team and local fire fighters tried to enter the engine room, but there was too much smoke, so they did not proceed inside.

At this point it had been 40 minutes since the explosion and the Master could confirm that all the crew were accounted for.

The Master decided to release 40 cylinders of CO₂ into the engine room. Half an hour later another 30 cylinders were released. The



crew monitored the temperature of the engine room which was coming down. About an hour after the first CO₂ was released, smoke stopped coming out of the funnel.

The following day the local fire fighters entered the engine room with full gear and confirmed that the fire had been extinguished.

In the investigation that followed it was discovered that a fuel valve had broken above the auxiliary engines and sprayed fuel oil over an exhaust pipe which caused the fire.

It is worth mentioning as per SOLAS regulations that there should be insulation on the exhaust pipe and that the valve should also be protected.

Many engine room fires are caused because of bad insulation. The cause is often linked to a previous maintenance job where the insulation has not been put back correctly, or it has been contaminated by oil.

Questions

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 vessels?

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. How do we ensure that insulation is adequate in the engine room?
10. When maintenance has been completed do we inspect that the insulation is in place and not contaminated?
11. How often do we have fire drills in the engine room, as this is generally where fires start?
12. Are our firefighting drills effective enough to address the problems in this case?
13. What do you think was the root cause of this accident?