



The Swedish Club



MONTHLY SAFETY SCENARIO

NOVEMBER 2022

Faulty propeller caused vessel to strike the quay and crane

The container vessel had finished its cargo operation and the pilot had boarded. Two tugs would assist the vessel during departure. It was a clear summer day with no strong winds or currents.

The two tugs pulled the vessel clear of the berth and the propeller pitch was then set to Stop (Zero). Both tugs were cast off. The pilot ordered dead slow ahead. However, when the Master set the propeller pitch control to dead slow ahead, the main engine stopped. The Master called the engine control room to find out why the main engine had stopped and requested the main engine be restarted.

Shortly afterwards the main engine started. However, the vessel immediately started to move astern. The Master called the engine room again and asked for the main engine to be stopped. It was discovered that the propeller pitch was now at full astern. The pilot called for the tugs to return, and the Chief Officer on the forecastle dropped the starboard anchor. The Chief Engineer was ordered to use the Emergency Stop to stop the main engine, which he did. However, the movement astern of the vessel could

not be stopped. Moments later, the starboard quarter of the vessel struck the berth and front leg of a gantry crane. The impact caused minor damage to the vessel and berth. The front leg of the gantry crane was knocked off the rail, but the crane was still standing. The crane was repaired and back in operation later the next day. However, the damage to the crane resulted in other liner vessels scheduled to call at the berth being delayed.

The container vessel needed repairs to the controllable pitch propeller (CPP) hub and temporary repairs to the shell plating before sailing.

It is relevant to note that the vessel was propelled by a CPP. The propeller turns in the same direction all the time when the vessel is sailing and only the angle/pitch of the propeller blades is changed to sail forward or go astern.

Inspections on board revealed that the CPP hub was leaking hydraulic oil and the propeller pitch control system had lost oil pressure. A feature of



some CPPs is that if the oil pressure of the pitch control system is lost, the system will automatically place the blades at full astern pitch. The rationale for this is that the main engine can be operated in both directions (right- or left-hand turning). With the blades fixed at full astern, the vessel can still be manoeuvred by starting and stopping the main engine in different directions despite the inoperable propeller pitch control.

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 vessel?
3. Why do you think the CPP failed?
4. Are our procedures effective enough to prevent this from happening?
5. Is there any kind of training that we should do that addresses these issues?
6. Are all the appropriate crew trained on how the CPP system works? This include both deck and engine officers.
7. Is the quality of the CPP oil tested? If yes, at what interval?
8. Is the planned maintenance for the CPP carried out on schedule?
9. Is there a requirement in our SMS to check the propulsion system before departure and arrival?
10. What sections of our SMS would have been breached if any?
11. Does our SMS address these risks?
12. How could we improve our SMS to address these issues?
13. What do you think was the root cause of this accident?