



Bundesstelle für Seeunfalluntersuchung

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The Federal Bureau of Maritime Casualty Investigation (BSU) hereby announces the publication of the Investigation Report 282/20 on 7 April 2022 on the grounding of the bulk carrier RUBINA on the river Weser after a steering gear failure on 27 August 2020. The report focuses on the functions of steering gear control systems, both in general and in relation to the accident at hand, the ultimate cause of which could not be fully determined. The report is available for download at

<https://www.bsu-bund.de/EN/News>.

Serious marine casualty – Grounding of the bulk carrier RUBINA after steering gear failure on the river Weser

At about 2155 on 27 August 2020, the Portugal/Madeira flagged bulk carrier RUBINA ran aground on the river Weser.

On the evening the accident took place, the RUBINA was sailing northbound on the Weser. Both steering gears were running. A helmsman was steering using the hand wheel.

At around 2155, the helmsman intended to return the rudder to midships from an angle of about 15° starboard. Initially nothing happened, despite a correct hand steering wheel position; the rudder remained at 15° starboard. After a few seconds, the steering control system automatically switched from hand wheel to tiller, accompanied by a clearly audible and visible alarm.

The ship's command directly switched the controls back to manual steering. At the same time, the rudder angle changed to hard starboard (45°) and again remained

there, still without reacting to rudder angle inputs from the hand wheel. The vessel's rate of turn, already high at that point, accelerated even further.

Despite an immediately initiated full-astern manoeuvre, the RUBINA's prow ran aground within moments. Fortuitously, this happened in a relatively "innocuous" position on the Weser.

After the salvage operations on the following day, the RUBINA was towed to a waiting pier in Brake. The ship was able to continue her voyage two days later.

The cause of the non-responsive rudder was found to be a pilot valve of steering gear pump no. 2, which had stuck in an open position for a while. It was not possible to establish conclusively what had caused the pilot valve to stick.

All investigation reports, safety recommendations as well as other BSU publications are available at

<https://www.bsu-bund.de/EN/Publications>.

Ulf Kaspera
Director