



Bundesstelle für Seeunfalluntersuchung Federal Bureau of Maritime Casualty Investigation

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The Federal Bureau of Maritime Casualty Investigation (BSU) hereby announces the publication of the Interim Investigation Report 236/20 on 6 July 2021. The report deals with the fire in the main engine scavenge air receiver on board the EBBA MAERSK on 29 July 2020. The Interim Investigation Report provides information on the subject, the course and the current state of the investigation. The report is available for download at

https://www.bsu-bund.de/EN/Publications/Publications_node.html

Serious marine casualty – Fire in the main engine scavenge air receiver on board the EBBA MAERSK

On 29 July 2020, the EBBA MAERSK was en route from Felixstowe/UK to Hamburg/Germany

The main engine of the EBBA MAERSK is a common rail engine, the injection of which is not controlled via an injection pump, but via an electronically regulated injection control unit (ICU) for each cylinder.

The vessel sails with an open-loop scrubber on high seas and has to change over to a low-sulphur fuel for voyages in ECAs. Due to the fuel quantities on board, the main engine had to be changed over to a light, low-sulphur fuel on that day (contrary to usual practice) instead of a heavy, low-sulphur fuel.

Shortly after the changeover, during the vessel's approach of the river mouth, two cylinders showed increased exhaust gas temperatures. Cylinder 10 was consequently "cut out" electronically (removed from ignition sequence and injection control).

After initially dropping as expected, the exhaust gas temperature in the "cut out" cylinder rose again after a while, even though the ICU was not in the injection control loop. It should not have been possible for fuel to be injected.

At the same time, alarms sounded for "fire in scavenge air receiver" for the forward six of the 14 cylinders, which was quickly verified by the engine crew. They informed the bridge that the engine needed to be shut down without delay. The ship anchored immediately, just east of the Traffic Separation Scheme "Elbe Approach", level to the separation zone between the traffic lanes.

The fire in the scavenge air receiver was extinguished by means of the built-in system provided for this purpose. After sufficient cooling of the engine, a detailed inspection of the scavenge air receiver was carried out. No damage to the cylinder units was detected. However, the ICUs of cylinders 10 and 5 were clogged with a tar-like substance and were both "stuck" in fully open position. Both ICUs were overhauled and then reassembled.

However, later on the river, the same phenomenon occurred. The exhaust gas temperatures of cylinder 4 rose. The ICU in question was successfully cut out mechanically with a sealing screw, in addition to cutting it out electronically. The voyage to Hamburg did not need to be interrupted and was otherwise unremarkable.

In this investigation, the BSU is primarily interested in the question as to whether the special characteristics of the relatively „young“ (and therefore barely tried and tested) heavy low-sulphur fuels could have played a role in the development of the fire. However, it is also possible that the well-known phenomenon of changeover problems from a heavy to a light fuel were part of the problem. The special characteristics of a common rail engine and the ICUs may also have played a part. The investigations in this regard are ongoing.

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

https://www.bsu-bund.de/EN/Publications/Unfallberichte/Unfallberichte_node.html

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