## **Chronology of Defect (too many characters for the recall portal comment box)**

## **Chronology:**

Mercedes-Benz AG (MBAG) initially became aware of a potential issue concerning the torqueing of the screws of the steering spindle intermediate bearing in May 2019 in the course of a single vehicle inspection prior to releasing the vehicle to the MB dealer organization. During the inspection, it was observed that while all screws on the bearing were present, they did not appear to be sufficiently torqued. MBAG repaired the vehicle by sufficiently torqueing the screws. There were no indications that the issue existed beyond an isolated case at the time. According to the initial technical assessment, there was also no indication that the installation of the screws had an impact on the operation of the vehicle.

In September 2019, MBAG became aware of an individual customer complaint, which reported hearing a clicking noise when the steering wheel was turned. The customer vehicle had approximately 7,000 miles and it was found that the screws of the intermediate bearing were loose. MBAG launched a further investigation related to the customer's report.

In October 2019, MBAG conducted a manual review of all VS30 vehicles that remained at the plant. The plant reviewed the torque levels of the screws of the intermediate bearing and ensured they were fastened according to specifications.

Simultaneously MBAG conducted various analyses as to the effect of the intermediate bearing not being tightened according to specifications.

The analysis continued into early 2020 and considered in detail the process by which any insufficiently torqued screws could loosen and the consequences if the condition did occur. The analysis included a review of the necessary forces to loosen the screws, whether one or multiple screws need to be loosened and the effects of one or more loose or detached screws on the ability to maintain steering effect and whether the operator would receive any advance warning about the condition. The analysis indicated that while the condition was progressive in nature, the time for the condition to arise to a level that it could affect vehicle operation would depend on the operator's individual driving style and frequency of extent of movement of the steering wheel.

Simultaneously in February 2020 MBAG conducted comprehensive real driving tests on its closed facilities where drivers operated a vehicle with a sufficiently torqued steering spindle bearing and one with a fully loosened bearing.

While the results of the testing indicated that all test subjects identified an issue related to the performance of the steering via the audible signals (even while the radio was on) and a non-uniform steering feeling, on February 19, 2020, MBAG determined a safety risk could not be ruled out and decided to conduct a recall.

To date MBAG is not aware of additional field complaints beyond the individual customer report from September 2019.