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DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket No. NHTSA-2012-0007; Notice 2]

Mercedes-Benz USA, LLC, and Daimler AG (DAG), Denial of Petition
for Decision of Inconsequential Noncompliance

AGENCY: National Highway Traffic Safety Administration, DOT

ACTION: Denial of Petition

SUMMARY: Mercedes-Benz USA, LLC ¹ (MBUSA) and its parent company Daimler AG (DAG) (collectively referred to as "MBUSA") have determined that certain model year 2011 and 2012 Mercedes-Benz S-Class (221 platform) passenger cars do not fully comply with Federal Motor Vehicle Safety Standard (FMVSS) No. 138, *Tire Pressure Monitoring Systems* (TPMS), specifically the requirements in paragraph S4.4. MBUSA filed a report for the nonconformance pursuant to 49 CFR Part 573, *Defect and Noncompliance Responsibility and Reports*, on September 30, 2011.

ADDRESSES: For further information on this decision please contact Mr. Maurice Hicks, Office of Vehicle Safety Compliance, the National Highway Traffic Safety Administration (NHTSA), telephone (202) 366-1708, facsimile (202) 366-5930.

¹ Mercedes-Benz USA, LLC, and Daimler AG are motor vehicle manufacturers and importers. Mercedes-Benz USA, LLC is a limited liability company organized under the laws of Delaware. Daimler AG is organized under the laws of the Federal Republic of Germany.

SUPPLEMENTARY INFORMATION:

I. MBUSA's Petition: Pursuant to 49 U.S.C. 30118(d) and 30120(h) and the rule implementing those provisions at 49 CFR Part 556, on October 28, 2011, MBUSA filed a petition for an exemption from the notification and remedy requirements of 49 U.S.C. Chapter 301 on the basis that this noncompliance is inconsequential to motor vehicle safety.

Notice of receipt of the petition was published, with a 30-day public comment period, on June 27, 2012, in the Federal Register (77 FR 38391). No comments were received. To view the petition, and all supporting documents log onto the Federal Docket Management System (FDMS) website at:

<http://www.regulations.gov/>. Then follow the online search instructions to locate docket number "NHTSA-2012-0007."

MUBUSA subsequently submitted clarifying information relevant to its Part 556 petition on May 8, 2014, which has been placed in the docket. NHTSA has considered this information in response to the petition.

II. Vehicles Involved: The affected vehicles included approximately 4,769 model years 2011 and 2012 Mercedes-Benz S-Class (221 platform) passenger cars that were produced from March 2011 through August 2011. MBUSA subsequently corrected the non-compliance in 4,510 vehicles through a service campaign; MBUSA recently reported 252 vehicles have yet to be corrected.

III. Noncompliance: In the subject Mercedes S-Class vehicles, the tire pressure monitoring system malfunction indicators required by S4.4 may not illuminate in the manner required by FMVSS 138 due to a software misprogramming that was applied to these vehicles.

IV. Rule Text: Section S4.4 of FMVSS No. 138 states specifically:

S4.4 TPMS malfunction.

- (a) The vehicle shall be equipped with a tire pressure monitoring system that includes a telltale that provides a warning to the driver not more than 20 minutes after the occurrence of a malfunction that affects the generation or transmission of control or response signals in the vehicle's tire pressure monitoring system. The vehicle's TPMS malfunction indicator shall meet the requirements of either S4.4(b) or S4.4(c).

* * * * *

- (b) Dedicated TPMS malfunction telltale. The vehicle meets the requirements of S4.4(a) when equipped with a dedicated TPMS malfunction telltale that:
- (1) Is mounted inside the occupant compartment in front of and in clear view of the driver;
 - (2) Is identified by the word "TPMS" as described under the "Tire Pressure Monitoring System Malfunction" Telltale in Table 1 of Standard No. 101 (49 CFR 571.101);
 - (3) Continues to illuminate the TPMS malfunction telltale under the conditions specified in S4.4(a) for as long as the malfunction exists, whenever the ignition locking system is in the "On" ("Run") position; and
- (c) Combination low tire pressure/TPMS malfunction telltale. The vehicle meets the requirements of S4.4(a) when equipped with a combined Low Tire Pressure/TPMS malfunction telltale that:
- (1) Meets the requirements of S4.2 and S4.3; and

- (2) Flashes for a period of at least 60 seconds but no longer than 90 seconds upon detection of any condition specified in S4.4(a) after the ignition locking system is activated to the "On" ("Run") position. After each period of prescribed flashing, the telltale must remain continuously illuminated as long as a malfunction exists and the ignition locking system is in the "On" ("Run") position. This flashing and illumination sequence must be repeated each time the ignition locking system is placed in the "On" ("Run") position until the situation causing the malfunction has been corrected. Multiple malfunctions occurring during any ignition cycle may, but are not required to, reinitiate the prescribed flashing sequence.

V. Summary of MBUSA's Analyses: MBUSA stated its belief that the subject noncompliances to paragraphs S4.4(b) and (c) are inconsequential for the following reasons:

Absence of Flashing "Malfunction" Telltale: In the subject vehicles, the TPMS malfunction indicator required by S4.4 may not illuminate in the manner required by FMVSS No. 138 due to a software programming error that occurred in a limited number of vehicles. The subject vehicles use one of the telltale symbols specified for "combination" telltales (the vehicle icon) which activate when 1, 2 or 3 wheel sensors are missing or malfunctioning. Because this particular symbol is used, the vehicle is required to comply with the "combination low pressure/TPMS malfunction" telltale requirements of FMVSS No. 138 paragraph S4.4(c)(2). Accordingly, a "combination" telltale indicator is required to flash for 60-90 seconds to notify the

driver of a system malfunction, and then to remain continuously illuminated. When indicating a low inflation pressure condition, the combination telltale indicator is required to illuminate and remain continuously illuminated upon successive restarts of the vehicle until the low pressure condition is corrected.

The subject vehicles display a steady vehicle symbol, plus the following four additional pieces of information, which directly communicate the specific nature of the system malfunction: 1) the actual tire pressure on each wheel with a sensor; 2) two blank dashes next to a wheel with faulty sensors/signals; 3) the word "Service" on the bottom of the display; and 4) a clear text message expressly stating "Wheel Sensor(s) Missing." MBUSA believes the failure of the malfunction telltale to flash in the subject vehicles has no negative impact on safety because the additional supplemental data in the subject vehicles addresses the underlying purpose of the flashing requirement, and more than compensates for the absence of an initial flashing.

In developing the TPMS regulations, MBUSA believes that NHTSA recognized that flashing of the TPMS malfunction warning should not be required for all vehicles and TPMS systems, depending on the distinctiveness and level of information contained in the malfunction indicator warning. For this same

reason, the requirements for "dedicated" malfunction telltales at FMVSS No. 138 paragraph S4.4(b) do not require any flashing of the telltale upon initial detection of a fault or malfunction. MBUSA opines the agency recognized that malfunction indicator telltales with sufficiently clear or distinct information alerting the driver to a problem with the function of their TPMS, as opposed to a low tire inflation pressure, did not need to flash in order to adequately alert the driver to a problem with the system.

MBUSA believes that the additional text messaging is much more effective at conveying important safety information than relying on owners to review the owner's manual, and understand the distinction between a steady or flashing symbol with no words.

Malfunction Involving All Four Wheel Sensors: When all four wheel sensors are missing or inoperative, the subject vehicles utilize a dedicated warning: "Tire pressure monitor inoperative." MBUSA states the warning exceeds the minimum requirement ("TPMS") and displays a clear and concise malfunction message that informs the driver clearly and precisely about what is wrong with the vehicle. However, this dedicated malfunction telltale indicator will not re-illuminate upon subsequent drive cycles or after being manually cleared from the instrument cluster. While the message is always

available when the driver manually scrolls through the TPMS menu, the message does not continue to illuminate whenever the vehicle is "on" as required by FMVSS No. 138 S4.4(b)(3).

MBUSA believes, although theoretically possible for all four wheel sensors to fail simultaneously, there is no evidence to support the occurrence in real world use. The subject vehicles have been in use for 3.5 calendar years, and MBUSA has received no complaints or concerns related to this TPMS monitoring issue from dealers or customers. Likewise, there have been no reports of accidents, injuries or incidents related to the failure of this TPMS warning to repeat. The probability of such a situation occurring is virtually impossible especially considering that all four sensors would need to fail at the same time, not just separately. A much more likely malfunction scenario would be where one (or in a very unlikely situation two) sensor signal fails in sequence, which would provide the operator with repeated warnings of the need to repair the wheel sensors upon each vehicle restart.

In fact, the only situation MBUSA believes would create the noncompliance would involve cases where owners would go to considerable effort to remove all four wheels (for example to replace the standard wheels with snow tires). In such a situation, the owner would be well aware that the wheels with

sensors had been removed, and there would be no need to continually repeat the warning at each vehicle restart.

MBUSA further states that because the subject vehicles display an initial notification of the loss of four wheel sensors that provides significantly more information than the minimum regulatory functionality of the telltale, this noncompliance has an inconsequential impact on motor vehicle safety. In comparison, a dedicated malfunction telltale simply displays the abbreviation "TPMS" in yellow with no flashing. In the subject vehicles, rather than display a simple abbreviation, which would require the use of the owner's manual to determine that the message indicated a malfunction (as opposed to a low tire pressure situation, for example), the display specifically states that the "Tire Pressure Monitor" is "inoperative," and more specifically that "No Wheel Sensors" are detected. With this enhanced level of information and clarity, it is not necessary for this particular message to repeat upon each vehicle re-start, especially given how rare this unique situation would be in actual use.

MBUSA Repair Service Campaign: Since submitting the October 2011 petition, MSUSA has reprogrammed 4,510 of the subject vehicles during normal scheduled maintenance as a part of a service campaign initiated on February 2012 (Campaign No.

2012010006). There are now 240 (or fewer) vehicles in the field with the incorrect TPMS programming.

On May 8, 2014, MBUSA submitted an update to its original petition for exemption. MBUSA argues that, while it may be theoretically possible, many factors exist that would reduce the likelihood for owners to have replacement wheels installed without TPMS wheel sensors. All replacement wheels sold by authorized Mercedes dealerships will always have TPMS sensors included (either the original ones transferred or new ones) and recognizing the cost (above \$100,000 on average) and age of these vehicles, S-Class owners will always likely choose to have their wheels and tires replaced at authorized Mercedes dealerships.

MBUSA also argues that information is provided in the Operator's Manual clearly stating that "for safety reasons, Mercedes-Benz recommends that you only use tires, wheels and accessories which have been approved by Mercedes-Benz specifically for your vehicle," and "Always have the tires changed at a qualified specialist workshop, e.g. an authorized Mercedes-Benz Center." It also states that the TPMS telltale should always be checked which would premise that there is no reason to expect that sensors would not be used. Even in the case of needing snow tires, MBUSA contends it provides sufficient information to its owners to encourage them to

purchase upgraded optional performance packages (i.e., 4-matic all-wheel drive configuration with aggressive all season radial tires) which would preclude the need for snow tires.

In summation, MBUSA stated that, for all the reasons cited, this technical noncompliance does not represent a "significant safety risk." Because the TPMS noncompliance identified above is inconsequential to motor vehicle safety MBUSA requests an exemption from the notification and remedy provisions of the Motor Vehicle Safety Act, which would serve no reasonable purpose under these circumstances.

VI. NHTSA'S Analysis of MBUSA's Arguments: MBUSA's petition identifies two noncompliances with S4.4 of the Standard:

1. Absence of telltale flashing for malfunction involving 1-3 wheel sensors
2. Malfunction involving all four wheel sensors

Regarding the malfunction telltale that does not initially flash for 60-90 seconds, MBUSA has provided the required visual telltale, a combined telltale which is the plan view of the vehicle, although one that does not flash before it remains continuously illuminated, but instead adds several additional text messages that clearly communicate a system malfunction and continue to be displayed until the malfunction has been corrected. NHTSA believes that because the subject vehicles

contain this additional information, the failure of the vehicle's malfunction telltale to initially flash has an inconsequential impact on safety.

MBUSA's second noncompliance involves the scenario where all four wheel sensors are simultaneously malfunctioning or missing. Under this scenario the subject vehicle's TPMS will initially display a separate dedicated malfunction warning, but will not automatically display the warning on subsequent ignition cycles as required by FMVSS No. 138 S4.4(b)(3). MBUSA judges the noncompliance inconsequential to motor vehicle safety on the basis that, although the situation presents a technical noncompliance with FMVSS 138 No. S4.4, there is no negative impact on safety, because the circumstances causing the non-compliance can only exist if owners deliberately decide to install replacement wheels without TPMS sensors. MBUSA asserts there is no reason to assume that replacement wheels will not have TPMS sensors given the normal experiences of S-Class owners and existing precautions. MBUSA also points out that the absence of a "significant safety risk" substantiates exemption from notification and remedy requirements as NHTSA explained in the Volkswagen's petition for inconsequential treatment of a noncompliance with the TPMS malfunction warning requirements of FMVSS No. 138 S4.4(c)(2) (76 Fed. Reg. 30240, May 24, 2010).

The intent of FMVSS No. 138 is stated in paragraph S1

Purpose and scope: This standard specifies performance requirements for TPMSs to warn drivers of significant under-inflation of tires and the resulting safety problems. A malfunction will reduce the effectiveness of the TPMS or, in some scenarios, can render it inoperative. As such, the lack of a malfunction indicator to warn the driver of a malfunction until the malfunction has been resolved is one of the critical requirements of the standard to address the safety concerns of an inoperative TPMS. MBUSA contends that there is no safety risk but fails to acknowledge that a vehicle owner in some cases may not be aware that the wheel sensors have been removed. For example, if the ignition were cycled by a second party after the sensors were removed and prior to the vehicle being returned to the owner, the owner may never see the first and only malfunction indication. The potential risk is that the vehicle can then be operated with a TPMS that appears to be functioning properly. It also is possible after long periods of time for owners to forget that the wheel sensors are missing or even for a subsequent owner to purchase one of the 252 vehicles without knowing the sensors are missing. When a low inflation pressure condition occurs, these owners would not be warned, and this condition could lead to a vehicle crash.

MBUSA also explained that replacement wheels will always have TPMS sensors included (either the original ones transferred or new ones) and that statements in the MB S-Class Operator's Manual or optional OEM tire and wheel packages can address a variety of use conditions which will discourage the use of unapproved tires and rims and encourage the use of wheel sensors. Despite these factors, NHTSA believes the possibility still remains for owners to install wheel packages not having TPMS sensors. For example, an authorized dealership may not be in close proximity to an owner or an owner may want custom wheels or upsized wheel options that are not available through MBUSA. In these instances, there would be a safety risk for these owners.

Finally, MBUSA believes that owner's manual warnings or its marketing of optional equipment are sufficient enough to prevent owners from entering into misuse situations. However, owner's manuals may be ignored or not read by vehicle owners and there is no guarantee that a manual will remain with the vehicle throughout its entire useful life. Furthermore, owners may also choose not to buy MBUSA optional tire and wheel packages for economic reasons (i.e., these packages may cost considerably more). Therefore, given these factors, NHTSA concludes MBUSA's claim that the noncompliance has no significant safety risk is unsubstantiated.

VII. NHTSA's Decision: In consideration of the foregoing, NHTSA has decided that MBUSA has not met its burden of persuasion that the FMVSS No. 138 noncompliance identified in its Part 573 Report and Petition is inconsequential to motor vehicle safety. Accordingly, MBUSA's petition is hereby denied. For the remaining vehicles not remedied, MBUSA must notify owners, purchasers and dealers pursuant to 49 U.S.C. 30118 and provide remedy in accordance with 49 U.S.C. 30120.

AUTHORITY: (49 U.S.C. 30118, 30120: delegations of authority at CFR 1.95 and 501.8)

Nancy Lummen Lewis
Associate Administrator
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