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Department of Transportation

National Highway Traffic Safety Administration

[Docket No. NHTSA-2012-0007; Notice 1]

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

AGENCY: National Highway Traffic Safety Administration, DOT

ACTION: Receipt of Petition

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

Pursuant to 49 U.S.C. 30118(d) and 30120(h) (see implementing rule at 49 CFR Part 556), MB has petitioned 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.

[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 Germany.

This notice of receipt of MB's petition is published under 49 U.S.C. 30118 and 30120 and does not represent any agency decision or other exercise of judgment concerning the merits of the petition.

Vehicles involved: Affected are approximately 4,769 model year 2011 and 2012 Mercedes-Benz S-Class (221 platform) passenger cars that were produced from March 2011 through August 2011.

NHTSA notes that the statutory provisions (49 U.S.C. 30118(d) and 30120(h)) that permit manufacturers to file petitions for a determination of inconsequentiality allow NHTSA to exempt manufacturers only from the duties found in sections 30118 and 30120, respectively, to notify owners, purchasers, and dealers of a defect or noncompliance and to remedy the defect or noncompliance. Therefore, these provisions only apply to the subject 4,769[2] Mercedes-Benz S-Class passenger cars that MB no longer controlled at the time it determined that the noncompliance existed.

Rule text: Paragraph S4.4 of FMVSS No. 138 requires in pertinent part:

> S4.4TPMS malfunction.
>
> (a) The vehicle shall be equipped with a tire pressure monitoring system that includes a telltale that provides a

[2] MB's petition, which was filed under 49 CFR Part 556, requests an agency decision to exempt MB as motor vehicle manufacturers from the notification and recall responsibilities of 49 CFR Part 573 for 4,769 of the affected motor vehicles. However, a decision on this petition cannot relieve motor vehicle distributors and dealers of the prohibitions on the sale, offer for sale, introduction or delivery for introduction into interstate commerce of the noncompliant motor vehicles under their control after MB notified them that the subject noncompliance existed.

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
(4) (i) Except as provided in paragraph (ii), each dedicated TPMS malfunction telltale must be activated as a check of lamp function either when the ignition locking system is activated to the "On" ("Run") position when the engine is not running, or when the ignition locking system is in a position between "On" ("Run") and "Start" that is designated by the manufacturer as a check position.

(ii) The dedicated TPMS malfunction telltale need not be activated when a starter interlock is in operation.

(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.

Noncompliance: MB described the noncompliances as follows:

In the subject vehicles, the tire pressure monitoring system malfunction indicator required by [paragraph] S4.4 of [FMVSS No. 138] may not illuminate in the manner required by FMVSS [No.] 138 due to a software misprogramming that occurred in a limited number of vehicles. When the system detects a malfunction (specifically, a missing or faulty wheel sensor signal in 1, 2 or 3 wheels), the malfunction indicator is activated within the required monitoring interval, but is activated continuously, rather than initially flashing for 60-90 seconds as required by [paragraph] S4.4(c)(2).

In addition, in a situation where all four wheel sensors/signals are missing, the subject programming will initially display the required warning, but will not automatically display it on subsequent restarts as required by [paragraph] S4.4(b)(3). This is because the system assumes that the owner has replaced the wheels which contain [Tire Pressure Monitoring System] TPMS sensors with wheels which do not contain sensors. In this situation, the driver will initially get a dedicated malfunction message indicating that the tire pressure

monitoring system is inoperative, and that there are "No Wheel Sensors." On subsequent restarts, this message is still accessible in the TPMS menu, but it does not automatically appear in the instrument cluster.

MB'S ANALYSIS OF THE NONCOMPLIANCES: *Absence of Flashing "Malfunction" Telltale:* 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, MB 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. The subject vehicles use one of the telltale symbols specified for "combination" telltales (the vehicle icon) when 1, 2 or 3 wheel sensors are missing or malfunctioning. Because this particular symbol is used, the vehicle is technically required to comply with the "combination low pressure/TPMS malfunction" telltale requirements of FMVSS No. 138 paragraph S4.4(c), which requires initial flashing, rather than the "dedicated TPMS malfunction" telltale

requirement, which does not require initial flashing. Accordingly, under FMVSS No. 138 paragraph S4.4(c), this "combination" malfunction indicator is required to flash for 60-90 seconds upon initial illumination to notify the driver that the vehicle symbol stands for a system malfunction, as opposed to a low inflation pressure situation. Given the clear message conveyed by the warning in the subject vehicles, even without flashing, a driver would always understand whether his vehicle had a malfunction issue on the one hand, or a low tire pressure situation on the other.

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 because 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.

The subject vehicles provide significantly more information than the minimum level required by the regulations for either dedicated or combination warnings. On the subject vehicles, additional text messages specifying the issue in clear terms appear at the same time that the required telltale appears.

Specifically, the subject vehicles display the text message "Wheel Sensor(s) Missing" to alert the driver to a malfunction, in addition to simply displaying the vehicle icon required by the regulations as the minimum notification.

This text message, which expressly states that there is a system malfunction, 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. In addition to the words expressly stating what the issue is ("Wheel Sensor(s) Missing"), the vehicle depicts an aerial view of a car with the actual tire pressure in each tire on the dashboard. In addition to the text, where a wheel sensor is missing or malfunctioning in up to 3 wheels, a blank with two dashes appears next to the faulty wheel in lieu of a numeric pressure display, and the word "Service" is illuminated in the bottom of the display. Because the TPMS system in the subject vehicles provide significantly more than the minimum level of information, it does not rely on the difference between steady illumination and flashing to provide information on the type of TPMS issue to the driver.

In summary, MB believes that the regulations require only a flashing vehicle symbol to signal a system malfunction. 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 that there is a missing wheel sensor. Because the subject vehicles contain this supplemental information, the failure to initially flash the vehicle symbol due to a programming error in a limited number of vehicles has an inconsequential impact on safety.

Malfunction Involving All Four Wheel Sensors: Where all four wheel sensors are missing or inoperative, the subject vehicles utilize a dedicated warning that 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 indicator will not re-illuminate upon subsequent drive cycles or after being manually cleared from the instrument cluster because the system assumes that the wheels have been replaced, and that continued notice of this unique situation is not needed. 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 paragraph S4.4(b)(3).

This functionality has an inconsequential impact on motor vehicle safety. In any situation where all four sensors fail

while driving, the warning will always illuminate as required. The failure to activate on subsequent drive cycles is only an issue where all four wheel sensors/signals are missing from the beginning of a given drive cycle. The only situation in which all four wheel sensors would be removed would be where an owner goes 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.

Similarly, although it is theoretically possible for all four wheel sensors to fail simultaneously, MB is not aware of any such failures in the field. The probability of such a situation occurring is virtually impossible. For example, one single sensor has a less than 100 ppm per year probability of failure. The likelihood of all four sensors failing within the same year is thus less than 0.00000001 ppm (or $1*10^{-16}$). In addition, to create the noncompliance scenario, all four sensors would need to fail at the same time, not just within the same year, thus further reducing the probability even more. 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, this functionality is identical to the warning system for four missing wheel sensor signals used in Europe and in the rest of the world, where it has been determined to provide an adequate level of warning and motor vehicle safety.

In addition, the TPMS regulations recognize that there are certain circumstances where a TPMS warning may be manually cleared or reset by the owner and removed from the instrument cluster, even though the underlying condition still remains. The situation in subject vehicles is analogous.

Finally, MB believe that as with the absence of flashing discussed above, the subject vehicles display an initial notification of the loss of four wheel sensors that provides significantly more information than the minimum regulatory requirement. Where a dedicated malfunction telltale is used, the regulations allow the vehicle, as a minimum level of compliance, to simply display 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. For each of these reasons, this technical noncompliance does not represent a "significant safety risk."

In summation, MB believes that the described noncompliance of its vehicles is inconsequential to motor vehicle safety, and that its petition, to exempt from providing recall notification of noncompliance as required by 49 U.S.C. 30118 and remedying the recall noncompliance as required by 49 U.S.C. 30120 should be granted.

COMMENTS: Interested persons are invited to submit written data, views, and arguments on this petition. Comments must refer to the docket and notice number cited at the beginning of this notice and be submitted by any of the following methods:

a. By mail addressed to: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE, Washington, DC 20590.

b. By hand delivery to U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE, Washington, DC 20590. The Docket Section is open on weekdays from 10 am to 5 pm except Federal Holidays.

c. Electronically: by logging onto the Federal Docket Management System (FDMS) website at http://www.regulations.gov/.

Follow the online instructions for submitting comments. Comments may also be faxed to 1-202-493-2251.

Comments must be written in the English language, and be no greater than 15 pages in length, although there is no limit to the length of necessary attachments to the comments. If comments are submitted in hard copy form, please ensure that two copies are provided. If you wish to receive confirmation that your comments were received, please enclose a stamped, self-addressed postcard with the comments. Note that all comments received will be posted without change to http://www.regulations.gov, including any personal information provided.

Documents submitted to a docket may be viewed by anyone at the address and times given above. The documents may also be viewed on the Internet at http://www.regulations.gov by following the online instructions for accessing the dockets. DOT's complete Privacy Act Statement is available for review in the Federal Register published on April 11, 2000, (65 FR 19477-78).

The petition, supporting materials, and all comments received before the close of business on the closing date indicated below will be filed and will be considered. All comments and supporting materials received after the closing date will also be filed and will be considered to the extent

possible. When the petition is granted or denied, notice of the decision will be published in the Federal Register pursuant to the authority indicated below.

DATES: Comment closing date: (insert date 30 days after Publication Date).

Authority: (49 U.S.C. 30118, 30120: delegations of authority at CFR 1.50 and 501.8)

Issued on: June 20, 2012

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Claude H. Harris, Director
Office of Vehicle Safety Compliance

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