

TTMA requested that if the agency retains the requirement for an external malfunction lamp on the trailer, then the location of the lamp, its color, and its intensity should be specified in Standard No. 108, *Lamps, reflective devices, and associated equipment*.

NHTSA emphasizes that it is important for the driver to see the trailer mounted malfunction lamp from his or her driving position. Therefore, the agency is issuing, simultaneously with this final rule, an NPRM that proposes a lamp location on the trailer and the dolly, but without stating any visibility requirements with reference to the tractor. The agency agrees with TTMA that it is appropriate to propose the location, color, and intensity of the trailer and dolly ABS external malfunction lamp. Specifically, the agency is proposing a location for the external ABS malfunction indicator on trailers, which is similar to the location proposed by the agency when it was considering requiring a low pressure warning lamp on trailers (55 FR 4453, February 8, 1995).

ATA and UPS petitioned the agency to only require that the ABS check lamp be visible for visual inspection during a walk-around of a vehicle.

NHTSA believes that only requiring a lamp for visual inspection during a vehicle walk-around is insufficient because current designs would require more than one person to conduct the inspection, if the trailer is powered through the stop lamp circuit. One person would have to apply the brake pedal to provide ABS power to the trailer, and another would need to be outside the vehicle to view the ABS lamp, if it is located somewhere on the trailer's chassis.

C. Activation Protocol for Malfunction Indicators

In the final rule, NHTSA decided to require the malfunction indicator lamp to activate when a problem exists and not activate when the system is functioning properly. (60 FR 13246) Under this requirement, the indicator lamp is required to provide a continuous indication until a function check of the ABS is completed. Under that format, the ABS malfunction lamp extinguishes after a function check, and before the vehicle is driven. The agency explained that this ABS malfunction lamp format, together with the requirement that the system stores malfunctions until the next key-on, is necessary to enable Federal and State inspectors to determine the operational status of an ABS without moving the vehicle. In support of its decision, the agency noted that this activation pattern

is consistent with the one for light vehicle ABS and the one adopted by the Economic Commission for Europe (ECE).

Navistar petitioned NHTSA to allow the vehicle to be in motion at low vehicle speed during an ABS system check so that the sensor check could be included before the lamp extinguishes. Navistar stated that the benefits of a sensor check outweigh the convenience for use by Federal or State inspectors.

As explained in the final rule, NHTSA believes that the requirement that the system store malfunctions until the next key-on is necessary to enable Federal and State inspectors to determine the operational status of an ABS without moving the vehicle. On March 10, 1995, the Federal Highway Administration (FHWA) published a notice of intent to initiate rulemaking addressing requirements for motor carriers to maintain the ABS on those vehicles that are subject to NHTSA's final rule. These requirements could include inspecting the vehicle to determine whether ABS is operational. Navistar's request to allow the vehicle to be in motion before the lamp extinguishes would impede FHWA's inspection process to determine the operational status of ABS. The agency therefore has decided to deny Navistar's petition to amend the malfunction lamp protocol to allow the lamp to stay lit until the vehicle is driven.

AlliedSignal and TTMA requested that the check of lamp function on the external trailer ABS malfunction lamp would only activate when power is supplied to the ABS and the vehicle is stationary. They stated that such a requirement would prevent the ABS lamp from cycling on and off whenever power is supplied or with every brake application in cases where the trailer ABS is being powered through the stop lamp circuit.

NHTSA agrees with the petitioners that such a requirement reduces potential distractions to the driver or to drivers of other vehicles caused by the lamp cycling on and off with every brake application. The agency notes that this modification retains the requirement's primary purpose, which is to indicate an ABS malfunction to the driver or to Federal and State inspection personnel. The agency has therefore decided to amend paragraph S5.2.3.3 to specify that the check of lamp function will activate the trailer ABS malfunction lamp, whenever power is supplied to the ABS and there is an absence of wheel speed (i.e., that the vehicle is stationary).

TTMA stated that the final rule does not address the operation of the ABS

malfunction lamp in the event of a total loss of electrical power. That organization requested that the agency explicitly state that neither the external trailer lamp nor the in-cab lamp is required to be activated if there is a total loss of electrical power to the trailer.

A total loss of power causes the control unit to be incapable of sending a malfunction signal to the indicator lamp, since the control unit for an electronic ABS requires electrical power for operation. NHTSA notes that no vehicle system is capable of indicating a warning or malfunction in the event of a total loss of electrical power. The agency therefore believes that there is no need to specify regulatory language about the operation of the ABS malfunction lamp in the event of a total loss of electrical power.

D. Signal Storage

In the final rule, NHTSA decided to require that the ABS indicator lamp system be capable of storing information regarding any malfunction that existed when the ignition was last turned to the "off" position or in the case of towed vehicles, when power was last received by the ABS. (60 FR 13246, 13247) The agency explained that the malfunction storage requirement is necessary to ensure that relief drivers and Federal and State inspectors are advised about any malfunctions in a vehicle's ABS without having to move the vehicle.

Rockwell WABCO, Midland-Grau, AAMA, TTMA, and ATA requested that the agency define a pre-existing malfunction as a malfunction that existed when the ignition switch was last turned to the "off" position. These petitioners argued that such a definition is necessary to clarify that malfunctions that no longer exist are to be cleared and do not need to be indicated.

After reviewing the petitions, NHTSA had decided to amend S5.3.3(b) of Standard No. 105, and S5.1.6.2 (a) and (b) and S5.2.3.2 of Standard No. 121 to clarify that a pre-existing malfunction is a malfunction that existed when the ignition switch was last turned to the "off" position. The agency never intended to require the indication of malfunctions that have been corrected but still remain in the long-term memory of the electronic control unit.

E. ABS Failed System Requirements

In the final rule, NHTSA decided to revise Standard No. 121 to prohibit any change in brake timing in the event of ABS malfunctions that affect the generation or transmission of response or control signals. The agency explained that this modification will ensure that the brake system reverts to normal