

also include all comments submitted directly in writing. The official record is the paper record maintained at the address in "ADDRESSES" at the beginning of this document.

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the Agency must determine whether the regulatory action is "significant" and therefore subject to review by the Office of Management and Budget (OMB) and the requirements of the Executive Order. Under section 3(f), the order defines a "significant regulatory action" as an action that is likely to result in a rule (1) Having an annual effect on the economy of \$100 million or more, or adversely and materially affecting a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities (also referred to as "economically significant"); (2) creating serious inconsistency or otherwise interfering with an action taken or planned by another agency; (3) materially altering the budgetary impacts of entitlement, grants, user fees, or loan programs or the rights and obligation of recipients thereof; or (4) raising novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order. Pursuant to the terms of this Executive Order, EPA has determined that this proposed rule is not "significant" and is therefore not subject to OMB review.

This action does not impose any enforceable duty, or contain any "unfunded mandates" as described in Title II of the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4), or require prior consultation as specified by Executive Order 12875 (58 FR 58093, October 28, 1993), entitled "Enhancing the Intergovernmental Partnership," or special consideration as required by Executive Order 12898 (59 FR 7629, February 29, 1994).

Pursuant to the requirements of the Regulatory Flexibility Act (Pub. L. 96-354, 94 Stat. 1164, 5 U.S.C. 601-612), the Administrator has determined that regulations establishing new tolerances or raising tolerance levels or establishing exemptions from tolerance requirements do not have a significant impact on a substantial number of small entities. A certification statement to this effect was published in the Federal Register of May 4, 1981 (46 FR 24950).

List of Subjects in 40 CFR Part 180

Environmental protection, Administrative practice and procedure, Agricultural commodities, Pesticides and pests.

Dated: June 28, 1996.

Stephen L. Johnson,

Director, Registration Division, Office of Pesticide Programs.

Therefore, it is proposed that part 180 be amended as follows:

PART 180—[AMENDED]

1. The authority citation for part 180 continues to read as follows:

Authority: 21 U.S.C. 346a and 371.

2. Section 180.364 is amended by revising the entry for grain crops (except wheat) under paragraph (a) in the table therein and adding a new paragraph (e) to read as follows:

§ 180.364 Glyphosate: tolerances for residues.

(a) * * *

Commodity	Parts per million
grain crops (except wheat and oats).	0.13
* * *	* * *

(e) A tolerance to expire (Insert date 3-years after date of publication of the final rule in the Federal Register) is established for residues of the herbicide glyphosate (N-(phosphonomethyl)glycine) resulting from the application of the isopropylamine salt of glyphosate and/or the monoammonium salt of glyphosate in or on the raw agricultural commodity oat at 20 parts per million.

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DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

49 CFR Part 393

[FHWA Docket No. MC-94-31]

RIN 2125-AD42

Parts and Accessories Necessary for Safe Operation; Antilock Brake Systems

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of proposed rulemaking; request for comments.

SUMMARY: The FHWA is proposing to amend the Federal Motor Carrier Safety Regulations (FMCSRs) to require that

air-braked truck tractors manufactured on or after March 1, 1997, and air-braked single-unit trucks, buses, trailers, and converter dollies manufactured on or after March 1, 1998, be equipped with antilock brake systems (ABSs) that meet the requirements of Federal Motor Vehicle Safety Standard (FMVSS) No. 121. The FHWA is also proposing that hydraulic braked trucks and buses manufactured on or after March 1, 1999, be equipped with ABSs that meet the requirements of FMVSS No. 105. This rulemaking is intended to ensure that the in-service brake standards of the FMCSRs are consistent with the FMVSSs and to improve the safety of operation of commercial motor vehicles (CMVs) by reducing the incidence of accidents caused by jackknifing and other losses of directional stability and control during braking. With regard to CMVs manufactured prior to the dates previously mentioned, the FHWA is not proposing that motor carriers be required to retrofit such vehicles with ABSs. However, the FHWA is requesting comments on this subject.

DATES: Comments must be received on or before September 10, 1996.

ADDRESSES: Submit written, signed comments to FHWA Docket No. MC-94-31, room 4232, HCC-10, Office of the Chief Counsel, Federal Highway Administration, 400 Seventh Street, SW., Washington, DC 20590-0001. All comments received will be available for examination at the above address from 8:30 a.m. to 3:30 p.m., e.t., Monday through Friday, except Federal holidays. Those desiring notification of receipt of comments must include a self-addressed, stamped postcard.

FOR FURTHER INFORMATION CONTACT: Mr. Larry W. Minor, Office of Motor Carrier Research and Standards, HCS-10, (202) 366-4009; or Mr. Charles E. Medalen, Office of the Chief Counsel, HCC-20, (202) 366-1354, Federal Highway Administration, 400 Seventh Street, SW., Washington, DC 20590-0001. Office hours are from 7:45 a.m. to 4:15 p.m., e.t., Monday through Friday, except Federal holidays.

SUPPLEMENTARY INFORMATION:

Background

Section 4012 of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) (Pub. L. 102-240, 105 Stat. 1914, 2157) directs the Secretary of Transportation to initiate a rulemaking concerning methods for improving the braking performance of new commercial

motor vehicles,¹ including truck tractors, trailers, and their dollies. Congress specifically directed that the rulemaking examine antilock systems, as a means of improving brake compatibility, and methods of ensuring effectiveness of brake timing.

The NHTSA Rulemaking

In response to the ISTEA, the National Highway Traffic Safety Administration (NHTSA) published a final rule amending Federal Motor Vehicle Safety Standard (FMVSS) No. 105, *Hydraulic Brake Systems*, and FMVSS No. 121, *Air Brake Systems*, to require that medium and heavy vehicles be equipped with an antilock brake system (ABS) to improve the lateral stability (i.e., traction) and steering control of these vehicles during braking (60 FR 13216, March 10, 1995). For truck tractors, the ABS requirement is supplemented by a 48.3 kilometer per hour (30-mph) braking-in-a-curve test on a low coefficient of friction surface using a full brake application. By improving lateral stability and control, these requirements will significantly reduce jackknifing and other losses of control during braking as well as the deaths and injuries caused by those control problems.

In addition, the NHTSA final rule requires all powered heavy vehicles to be equipped with an in-cab lamp to indicate ABS malfunctions. Truck tractors and other trucks equipped to tow air-braked trailers are required to be equipped with two separate in-cab lamps: One indicating malfunctions in the towing vehicle ABS and the other in the trailer ABS. The requirement for the in-cab lamp to alert the driver of malfunctions in the trailer ABS applies to trucks and truck tractors manufactured on or after March 1, 2001 (61 FR 5949, February 15, 1996). Trailers produced during an initial 11-year period (March 1, 1998 through March 1, 2009) must also be equipped with an external malfunction indicator that is visible to the driver of the towing tractor (61 FR 5949).

The amendments to FMVSS No. 105 become effective on March 1, 1999. With the exception of the in-cab indicator for trailer ABS malfunctions, the amendments to FMVSS No. 121 become effective on March 1, 1997, for truck tractors, and on March 1, 1998, for

air-braked trailers, converter dollies, single unit trucks, and buses.

FHWA Notice of Intent

On March 10, 1995, the FHWA published a notice of intent to initiate a rulemaking concerning requirements for ABSs on CMVs operating in interstate commerce (60 FR 13306). The notice of intent included an extensive discussion of the NHTSA's ABS fleet study conducted between 1988 and 1993. A copy of the study has been placed in FHWA Docket No. MC-94-31. The NHTSA tracked the maintenance performance histories of 200 truck tractors and 50 semitrailers equipped with ABSs, as well as the histories of a comparison group of 88 truck tractors and 35 semitrailers that were not equipped with ABSs, to determine the incremental maintenance costs and patterns associated with installing ABSs on these heavy vehicles.²

The authors concluded that, based upon the data collected during the fleet study, currently available ABSs are reliable, durable, and maintainable. While an ABS is not a zero-cost maintenance item, its presence on a vehicle did not substantially increase maintenance costs (less than one percent for tractors, less than two percent for trailers) or decrease vehicle operational availability.

The NHTSA data indicate that ABSs are neither difficult nor unduly expensive to maintain. The fleet test results do not indicate that the level of maintenance required to keep an ABS functional is unreasonable relative to the safety benefits that will result from the use of these systems.

The FHWA concluded that a rulemaking should be initiated to propose amending the FMCSRs to include ABS requirements and solicited comments on this decision.

Discussion of Comments

The FHWA received 11 comments in response to the March 10, 1995, notice. The commenters were: Advocates for Highway and Auto Safety (AHAS); AlliedSignal Truck Brake Systems Company (AlliedSignal); the American Trucking Associations, Inc. (ATA); Mr. G. Frank Brda, a former CMV owner-operator; Heavy Duty Brake Manufacturers Council (HDBMC); Insurance Institute for Highway Safety

(IIHS); Midland-Grau Heavy Duty Systems; National Association of Independent Insurers (NAII); Mack Trucks, Inc.; National Automobile Dealers Association (NADA); and, Rockwell WABCO Vehicle Control Systems (Rockwell).

Generally the commenters were in favor of the FHWA initiating a rulemaking to require that motor carriers maintain the ABSs. However, the ATA, NADA, and AlliedSignal expressed concern about the FHWA proceeding with a notice of proposed rulemaking. The specific concerns or issues raised by the commenters are discussed below.

Interpretation of § 396.3

The ATA and AlliedSignal believe that § 396.3, Inspection, repair, and maintenance, would adequately cover the ABS requirement and that a new provision may not be necessary. The ATA states that:

This language makes it clear that a system necessary for safety must be maintained in proper condition. It also includes the flexibility to hold that the system can be disconnected if, because of existing circumstances, doing so is the safest policy. For example, we can foresee a time when some failure in an ABS system will imperil braking. Until a cure for that problem is developed, unplugging the specific model involved may be the most prudent course.

The ATA believes NHTSA's research shows serious operational problems with ABSs and the failure warning lamp systems that were not reflected in the FHWA's March 10, 1995, notice of intent. The ATA suggests a review of the NHTSA reports "to get an understanding of both the reliability and safety limitations of ABSs which were indirectly covered by the agency and point to serious concerns about the technology." The ATA summarized its recommendation to the FHWA as follows:

ATA believes that properly administered, FMCSR 396.3(a)(1) can be used to assure that carriers provide appropriate maintenance for ABS and recommends that this be the strategy the agency follows in this matter. Given present experience and that NHTSA itself has pointed to serious operational difficulties, we believe more about its actual performance must be known before attempting to write a detailed ABS in-use regulation.

AlliedSignal shared the ATA's views on § 396.3 stating that "[t]he current FMCSR 396.3(a)(1) assures that operators maintain brake systems in good working order and therefore possibly negating the need to change FMCSR 396."

The FHWA does not agree with the ATA and AlliedSignal. Section

¹ For the purposes of section 4012, the term "commercial motor vehicle" means any self-propelled or towed vehicle used on highways to transport passengers or property if such vehicle has a gross vehicle weight rating (GVWR) of 11,794 kilograms (kg) (26,001 pounds) or more. The NHTSA's final rule on ABS applies to medium and heavy vehicles with a GVWR of 4,536 kg (10,001 pounds) or more.

² "An In-Service Evaluation of the Reliability, Maintainability, and Durability of Antilock Braking Systems (ABS) for Heavy Truck Tractors," DOT Report No. 807 846, March 1992, and "An In-Service Evaluation of the Reliability, Maintainability, and Durability of Antilock Braking Systems (ABS) for Semitrailers," DOT Report No. 808 059, October 1993.

396.3(a)(1) requires that parts and accessories be in safe and proper operating condition at all times. This includes parts and accessories specified in part 393 and any additional parts and accessories which may affect the safety of operation of the vehicle, including but not limited to, frame and frame assemblies, suspension systems, axles and attaching parts, wheels and rims, and steering systems. The FHWA has historically interpreted § 396.3(a)(1) as applying only to the parts and accessories required by part 393. Parts and accessories that are not required by part 393 are considered additional or optional equipment which is not necessary for the safe and proper operation of commercial motor vehicles. The applicability of § 396.3(a)(1) to optional equipment is limited to only those cases in which a failure or defect in the equipment creates a hazard to the motoring public or adversely affects the performance or function of any piece of equipment required by part 393.

If the FHWA does not establish a requirement for ABSs under part 393, such systems could only be considered as optional equipment under the FMCSRs. Since a failure of the ABS would not affect the foundation brake system, a CMV could meet all of the current requirements of subpart C of part 393 with an inoperative ABS. Therefore, the FHWA could not require motor carriers to systematically inspect, repair, and maintain ABSs unless part 393 is amended.

In response to the ATA's concern that motor carriers need the flexibility to disconnect ABSs if, "because of existing circumstances, doing so is the safest policy," the FHWA does not foresee the development of such problems. In the event that an ABS or vehicle manufacturer, or the NHTSA determines that there is a safety-related defect, the manufacturers are responsible for notifying purchasers of the defective equipment and remedying the problem free of charge (49 CFR part 577, Defect and Noncompliance Notification). If a manufacturer or the NHTSA indicates there is an ABS defect of the severity alluded to by the ATA, the FHWA would immediately notify all Federal officials responsible for enforcing the FMCSRs and State officials responsible for enforcing compatible State regulations to ensure that carriers are not unfairly penalized for inoperable ABSs. However, in the absence of a notification from a vehicle or ABS manufacturer or the NHTSA, the FHWA does not intend to allow motor carriers to disconnect the ABSs.

Research on ABS Operation and Failure Modes

The NADA and the ATA believe the FHWA should evaluate in-use ABS operation and failure modes prior to establishing a requirement for motor carriers to maintain the systems. The NADA indicated that "[u]ntil such an evaluation is undertaken, an ABS maintenance rule would be premature." The ATA states:

There are several problems with ABS which will impact its inspection and repair.

As NHTSA's ABS studies showed and our follow up research confirms * * * there are numerous troubles with this technology. Many of the problems involve the failure warning system. False warning signals are a daily occurrence in fleets with a large number of ABS equipped vehicles. Examples of such problems are codes for malfunctions which, when checked, didn't occur; alien codes not defined in the maintenance manual and phantom codes which come and go, typically disappearing before the vehicle gets to the shop and hopefully unrelated to a serious problem.

In addition to lamps illuminating when no failure can be found, electrical failures occur which do not cause either the warning lamp to come on or a failure code to be set, sometimes because the warning system itself has failed. Also, the warning lamp does not signal all mechanical failures and, as FMVSS 121 is now written, it is not required to do so.

The warning light system is not directly connected to each part of the ABS. Typically it is coupled to the ECU which grounds the lead when a failure is detected. The ECU makes its decision by taking input from many sources and using electronic logic to calculate whether all is well. The only thing one can say for sure when the warning light is on is that the bulb filament is intact and receiving electrical power.

Given the warning lamp limitations cited above, its use as an enforcement tool to assess whether ABS is working properly is questionable. As it is presently configured, there is no quick, accurate, easy way to do a complete functional test of the total ABS short of making a panic stop and watching for wheel lockup, something impractical for roadside inspection.

In addition to concerns about research, the ATA believes the FHWA should ensure that the availability of spare parts to keep "any vintage ABS acceptably functioning for 20 years" prior to requiring motor carriers to maintain the ABSs. The ATA states:

There is a very good possibility that in twenty years, there will be no source of repair parts for today's ABS. Certainly there is nothing available now with which to fix most of the 1970's systems. While it can be argued that the deletion of the requirement for ABS from FMVSS 121 eliminated the market, we are not convinced that this was the only major factor impacting the aftermarket spare component arena. Other

influences were an extremely small market and the need to retain antiquated processes to build outmoded parts.

The ATA further states that "[i]f FHWA/OMC plans to require that carriers keep systems in repair, then it is only fair that the agency help assure the job can be done."

The FHWA does not consider the issues raised by the ATA and NADA to be sufficient reasons to delay issuing a proposal to require carriers to maintain the ABSs required by the NHTSA. Neither the ATA nor the NADA identify specific safety-related issues that would justify postponing an in-service requirement for ABS. The NHTSA fleet study provides a clear indication of how ABSs behave in a real-world environment. Further, there is no documentation of an ABS defect or malfunction contributing to an accident as the ATA suggests may occur in the future.

The NHTSA studied the reliability, maintainability, and durability of ABSs installed in 200 truck tractors that were operated in normal revenue service by 17 fleets. All of the ABSs which were available in 1988 were included in the test and the antilock systems were installed on truck tractors produced by all of the major United States truck tractor manufacturers. During the two-year test, the ABS equipped tractors accumulated approximately 40 million miles of in-service revenue-producing operation. Maintenance activities for all 200 ABS-equipped tractors as well as 88 comparable tractors without ABSs were monitored and recorded. Each of the ABS-equipped tractors had on-board data recorders to monitor each ABS operation and keep a record of truck mileage, number of brake applications, brake pressure distribution, and acceleration during braking. To verify that these records were representative of normal non-ABS operation, 16 truck tractors out of the 88 control trucks were also equipped with on-board data recorders. All accidents involving the participating tractors were investigated, with particular attention being given to those which might have involved braking and/or ABS operation.

The NHTSA also conducted a two-year study of the performance, reliability, maintainability, and durability of ABSs installed on 50 semitrailers that were operated in normal revenue service by five fleets. All ABSs which were available in 1990 were included in the test, and the ABSs were installed on semitrailers produced by three different manufacturers. The ABS-equipped semitrailers accumulated approximately four million miles of in-service revenue-producing operation.

Maintenance activities for all 50 ABS-equipped semitrailers as well as 35 comparable semitrailers without ABS were monitored and recorded. The on-board recorders kept a record of semitrailer mileage, number of brake applications, brake pressure distribution, voltage, and deceleration during braking.

The authors of the studies concluded that, based upon the data collected during the fleet study, the 1988 ABSs used on the truck tractors, and the 1990 ABSs used on the trailers, were reliable, durable, and maintainable. The researchers acknowledge that installation-related problems were encountered during the study. The problems included adjustments, repairs, or, in some cases replacement, of wiring cables, wiring connectors, sensors, modulator valves, or other components. The researchers indicated that many of these problems were related to the experimental nature of the ABS installations on the test vehicles.

As the NHTSA indicated in its report on the truck tractor study, only one U.S. heavy truck manufacturer (Freightliner Corporation) offered ABS as a fully-engineered production option on its line of trucks. In contrast, other manufacturers had only limited experience installing small numbers of current-generation ABSs and, therefore, had not worked out many of the detailed design aspects of installing the systems. Some of the manufacturers had no experience with the systems they agreed to install for the purposes of the fleet study. Many of the ABS installations required a collaborative effort on the part of ABS suppliers, truck manufacturers, wheel and hub suppliers, and wiring harness suppliers. As a result, the quality of some of the installations was not typical of what would be expected for production-line installations.

The FHWA believes the NHTSA fleet study provides sufficient data concerning the reliability, durability, and maintainability for ABSs and that it is not necessary to conduct additional research. Although the NHTSA experienced installation-related ABS problems, there is no indication that production-line ABSs installed to meet the NHTSA requirements would have problems of the proportion experienced in the fleet study. Neither the ATA nor the NADA have identified flaws in NHTSA's research methodology or explained what additional aspects of ABS operation need to be studied.

With regard to the ATA's concerns about ABS malfunction indicators, the FHWA does not anticipate widespread problems on vehicles manufactured on

and after the effective date of the NHTSA requirements. If the ABS malfunction indicator is activated, it is a clear signal that a repair or adjustment to the system is necessary. Either the malfunction signal is correct (indicating a problem with one or more ABS components (ECU, wheel sensors, etc.)) and the ABS is not fully operational, or the malfunction indicator is faulty and the ABS is fully operational. In either case, the cause for the malfunction signal should be properly diagnosed and corrected. Establishing a requirement under the FMCSRs will ensure that motor carriers take the appropriate steps to have the problem diagnosed and corrected.

In response to the ATA's comments about the FHWA helping to assure that motor carriers can maintain the ABSs for 20 years, the agency is responsible for establishing safety regulations and does not have authority to regulate the availability of spare parts. The FHWA notes that most motor carriers do not keep CMVs for 20 years. Those that choose to keep vehicles in service for such periods must take full responsibility for ensuring, at a minimum, that the vehicles meet all safety requirements that were applicable at the time the vehicles were manufactured. Motor carriers have the option of upgrading or retrofitting the vehicles brake systems to meet subsequent safety standards. Therefore if parts are not available in 20 years to maintain the ABSs with which the vehicles were originally equipped (in accordance with the NHTSA requirements), motor carriers have the option of retiring those vehicles from service in interstate commerce, or retrofitting the vehicles with ABSs for which spare parts are available. In any case, the NHTSA's ABS requirements will create a permanent market for replacement parts.

Retrofitting

Several of the commenters discussed retrofitting of vehicles manufactured prior to the effective dates of the NHTSA requirements. Most of these commenters indicated that the FHWA should not require retrofitting. The ATA indicated that manufacturers have made ABS an integral part of vehicle design and that ABS is not a technology which can safely and effectively be retrofitted. The ATA states:

Installation of this equipment requires additional wiring and wheel sensor hardware that would be very costly and difficult or impossible to install in some existing vehicles, especially on power units.

To monitor the motion of wheels, ABS relies on some sort of device to sense their

speed. This equipment is either a part of the axle hub or is internal to the axle itself. In either case, fitting it to existing vehicles not so equipped is very difficult. Heat treated axle housings may have to be drilled and the scrap "chips" generated kept from contaminating the axle lubricant, both of which require special knowledge and equipment. Wheel end hardware may need changing and this could require special, off-vehicle, welding and machining of hub flanges and even fabrication of parts to assure existing wheels and drums can be retained.

The ATA also indicated that wiring must be properly routed to avoid electromagnetic interference with ABS signals and mandated warning lamps. The ATA emphasized that none of these activities are within the normal scope of work of either truck maintenance facilities or garages specializing in air brake systems.

The ATA concluded:

FHWA/OMC (Office of Motor Carriers) has adopted the proper strategy in not suggesting ABS retrofit and that stance should be maintained. ATA requests that FHWA/OMC confirm it discourages retrofitting because there are serious difficulties associated with such installations on a broad scale and there are technical considerations that have not been fully explored which could introduce operational and safety problems.

With regard to comments in support of a retrofitting requirement, the NAI, in its November 8, 1993, comments in response to the NHTSA's NPRM on ABS (the NAI included a copy of its 1993 comments with its response to the FHWA's notice of intent), stated:

Requiring ABS on all heavy vehicles would save among 379 and 600 lives annually, prevent between 19,825 and 34,517 injuries and save approximately \$541 million to \$650 million in property damage, a figure that does not include medical costs and lost time costs. With the immediate benefit of saving lives and avoiding injuries, we go beyond the NPRM to urge that antilock brakes be required to be retrofitted onto existing medium and heavy vehicles and that the implementation date for all vehicles be accelerated to two years after final rulemaking.

The FHWA agrees with the ATA that it would be inappropriate to propose an ABS retrofitting requirement. The FHWA believes the NHTSA research provides a strong indication of the types of technical problems that would be expected if motor carriers were required to retrofit vehicles with ABS.

As noted earlier, at the time the NHTSA conducted its research on ABS for truck tractors, only one heavy truck manufacturer offered ABS as a fully-engineered production option on its line of trucks. In contrast, most of the remaining truck tractor manufacturers had only limited experience installing

small numbers of "current-generation" ABSs and, therefore, had not worked out many of the detailed design aspects of installing the systems. The retrofitting of ABSs on truck tractors required teamwork on the part of ABS suppliers, truck manufacturers, wheel and hub suppliers, and wiring harness suppliers. Even with this team effort, some of the test vehicles were delivered to the participating motor carriers with pre-existing problems that, for one reason or another, prevented the ABS from functioning properly.

In all, 116 out of the 200 truck tractors (58 percent) experienced installation/preproduction design related problems. The researchers indicated that the relatively high percentage is indicative of the "newness" of the systems in North American applications. Table 1 summarizes the types of problems that were experienced in the truck tractor portion of the fleet study. Table 2 summarizes installation-related problems in the semitrailer portion of the fleet study.

TABLE 1.—TRUCK-TRACTOR ABS INSTALLATION/PRE-PRODUCTION DESIGN-RELATED PROBLEMS BY SYSTEM COMPONENT NEEDING WORK

ABS component	Number of trucks requiring inspections, adjustments or repairs of this component	Number of trucks requiring replacements of this component
Wiring Cables	12	23
Wiring Connectors	29	10
Sensors and Related Parts	5	10
Modulator Valves and Related Parts	13	35
ECUs	17	20
Others ¹	7	0
Total No. Of Trucks per Column	57	102
Overall No. of Trucks Involved in Installation/Pre-Production Design Related Problems	116	

¹ Others include: rewiring due to installation oversights; two miscellaneous wire resecurements; and the addition of one ground strap to adjust the ECU.

² One problem represented all of these replacements.

³ One problem involved 40 of these trucks, while another involved 10 trucks.

NOTE: Individual column numbers are not additive since specific trucks may have needed maintenance on more than one component.

TABLE 2.—SEMITRAILER ABS INSTALLATION/PRE-PRODUCTION DESIGN-RELATED PROBLEMS BY SYSTEM COMPONENT NEEDING WORK

ABS component	Number of semitrailers requiring inspections, adjustments or repairs of this component	Number of semitrailers requiring replacements of this component
Wiring Cables	0	2
Wiring Connectors	11	0
Sensors and Related Parts	23	10
Modulator Valves and Related Parts	0	0
ECUs	0	5
Others ¹	0	26
Total No. of Semitrailers per Column	14	31
Overall No. Of Semitrailers Involved in Installation/Pre-Production Design-Related Problems	31	

¹ Others include: Isolation diode installation and replacement of ECU grommets.

² Sensor adjustment resulted from incorrectly adjusted wheel bearings on new semitrailers.

NOTE: Individual column numbers are not additive since specific semitrailers may have needed maintenance on more than one component.

The NHTSA report on the truck tractor portion of the fleet study indicates the percentage of installation-related problems is similar to that observed by many of the participating fleets when they receive newly-built vehicles. However, the FHWA believes the percentage of malfunctions would be much greater if motor carriers were required to attempt retrofitting innumerable configurations of air-braked vehicles. The FHWA considers NHTSA's fleet study to be a best-case scenario for retrofitting ABS in that the vehicle and brake manufacturers (as well as wheel and hub manufacturers) worked together to complete the installations of the ABS. Even with this collaborative effort of experienced engineers, numerous problems related to the retrofitting process surfaced during the fleet study.

Although many motor carriers have excellent maintenance programs and talented engineering staff, the FHWA believes that the majority of motor carriers could not retrofit their vehicles without a substantial amount of technical assistance from vehicle and

component manufacturers. Without this technical assistance it is more likely than not that many of the retrofitted ABS installations would not be performed correctly, thereby creating the potential for a degradation of the CMV's braking performance. It is unrealistic to expect manufacturers to be able to help more than 300,000 motor carriers complete the retrofitting of several million vehicles while working on the design and installation of ABSs on newly manufactured vehicles.

Further, it is unlikely that a collaborative effort between vehicle and component manufacturers and the motor carriers would result in better installations than those experienced in the NHTSA fleet study.

The FHWA believes the cost of retrofitting a commercial motor vehicle with ABS is likely to be higher than original equipment manufacturer (OEM) installations because the vehicle will have to be removed from revenue service during the retrofitting process. This is not the case for brand new vehicles. Also, repeated adjustments or repairs of the type described in the NHTSA research reports would mean more down time for the retrofitted vehicles.

In addition, § 396.25 of the FMCSRs, Qualifications of brake inspectors, prohibits motor carriers from allowing their employees to be responsible for ensuring that brake-related inspection, repair, and maintenance tasks are performed correctly unless the employee has at least one year of training and/or experience. This requirement was issued in response to section 9110 of the Truck and Bus Safety and Regulatory Reform Act of 1988 (49 U.S.C. 31137(b)). Therefore, motor carriers that lack sufficient staff with at least one year of training and/or experience at retrofitting ABSs prior to the effective date of a retrofitting requirement would have to rely on commercial garages or similar facilities to fulfill a retrofitting requirement. Since many of these facilities would also have very little if any experience retrofitting ABSs, there is no assurance that they could do a better job than the motor carriers' employees. Therefore, most motor carriers could not allow their employees to attempt the retrofitting of ABSs, and would not have a practical means to satisfy a retrofitting requirement.

Inspection Procedures

Several of the commenters discussed roadside inspection procedures to determine if ABSs are in working order. The HDBMC recommends that the FHWA "provide for maintenance of

ABS systems by regulation and include a[n] ABS roadside inspection procedure." The HDBMC recommends that the roadside inspection procedure include a check of the ABS malfunction indicator.

Midland-Grau also recommends that vehicle inspections include checking the operational status of the ABS. Midland-Grau states:

The majority of antilock systems on the market have an initial startup check sequence along with on-board diagnostics which monitors the operational status of the ABS. The startup sequence consists of watching the malfunction indicator light on the dash to flash along with listening to the ABS modulator valve to exhaust (blow-down). This operation can be performed simply by having the driver perform the following steps:

1. Shut down the vehicle's engine by turning off the ignition switch[.];
2. Have the driver fully apply the brakes[; and,]
3. With the brakes fully applied have the driver turn on the ignition switch[.]

When the driver follows the above sequence of steps the ABS malfunction indicator lamp should flash once followed by the ABS modulator valves exhausting (blow-down). If the ABS is not operating properly then either the ABS malfunction light will remain on and/or the ABS modulator valves will not exhaust (blow-down). This quick check insures that the ABS is fully operational.

Rockwell recommends that the inspection procedure be simple and straightforward. Rockwell states that "[t]he inspections should: (1) [b]e conducted in a short amount of time, (2) [p]rovide meaningful information about the condition of the ABS[,] and (3) [u]tilize the self-diagnostic system capabilities required by rulemaking." Rockwell believes the inspection should consist of a basic bulb check of the ABS indicator lamp followed by a verification that the ABS indicator lamp deactivates at the end of the check function.

The FHWA appreciates the information provided by the brake manufacturers and will share this information with the Commercial Vehicle Safety Alliance (CVSA)—the organization of Federal, State and Provincial government agencies and representatives from private industry in the United States, Canada and Mexico dedicated to improvement of commercial vehicle safety. State agencies responsible for conducting roadside inspections are members of the CVSA. The FHWA will work with the appropriate committees within the CVSA to develop the necessary training material to help inspectors identify ABS components and determine if the ABS malfunction indicators are working

properly. However, the FHWA does not intend to include roadside inspection procedures in the FMCSRs. The establishment of inspection procedures for use by State officials is a non-regulatory function that is best left to the CVSA with assistance from the FHWA, the NHTSA, and brake manufacturers.

With regard to the responsibilities of motor carriers in maintaining the ABSs required by the NHTSA, the FHWA intends to work with industry groups and brake manufacturers to develop educational material to help motor carriers understand how the ABSs operate (including the malfunction indicators), and to identify appropriate industry sources for information concerning ABS maintenance. The FHWA does not believe that including detailed systematic, inspection, repair, and maintenance requirements in part 396 of the FMCSRs would benefit the industry. The FHWA requests comments on this issue.

Discussion of the Proposal

Creation of Section 393.55

The FHWA proposes to amend the FMCSRs by adding a new § 393.55, Antilock Brake Systems. This section would be added to subpart C of part 393, Brakes. The provisions of paragraph (a) would require that hydraulic braked trucks and buses manufactured on or after March 1, 1999, be equipped with an ABS that meets the requirements of FMVSS No. 105. Paragraph (b) would require indicator lamps on hydraulic-braked vehicles to alert the driver of ABS malfunctions. Paragraph (c) would require that each air-braked truck tractor manufactured on or after March 1, 1997, be equipped with an ABS that meets the requirements of FMVSS No. 121. Paragraph (c) would also cover air braked trucks, buses, trailers, and converter dollies manufactured on or after March 1, 1998. The requirement for ABS malfunction indicators on air braked vehicles would be covered under paragraph (d). Paragraph (e) would cover the requirement for the external indicator lamp on trailers and converter dollies manufactured between March 1, 1998, and March 1, 2009.

Applicability to Canadian and Mexican Vehicles

The FHWA is not proposing an exemption for CMVs operated in the United States by Canada- and Mexico-based motor carriers. Although the Federal governments of Canada and Mexico have not indicated whether they intend to require ABSs for CMVs

operating in their countries, the FHWA believes that it is appropriate to require ABS on foreign-based vehicles manufactured on or after the effective dates of the NHTSA requirements if those vehicles are operated within the United States. This preliminary decision is consistent with the applicability of the requirements of parts 393 and 396 of the FMCSRs and ensures that all CMVs operating in interstate or foreign commerce within the United States are required to meet the same safety standards.

Currently subpart C of part 393 cross references FMVSS No. 105 (Hydraulic Brake Systems), FMVSS No. 106 (Brake Hoses), and FMVSS No. 121 (Air Brake Systems) as well as several other CMV-related FMVSSs. The FHWA's cross references have the net effect of requiring that vehicles operated by Canada- and Mexico-based motor carriers be equipped with safety features/equipment that are compatible with the NHTSA requirements irrespective of where the vehicle was originally manufactured, or whether the vehicle was manufactured for sale or use in the United States. Commercial motor vehicles that do not meet all of the applicable requirements of part 393 cannot be operated in the United States. As such, commercial motor vehicles operated by foreign-based motor carriers are currently required by the FHWA to have, at a minimum, brake systems that comply with the applicable provisions of FMVSS Nos. 105, 106, and 121 in effect on the date of manufacture.

On September 6, 1995 (60 FR 46236), the FHWA published its final rule on automatic brake adjusters and brake adjustment indicators. The final rule requires motor carriers to maintain automatic brake adjusters on hydraulic-braked CMVs manufactured on or after October 20, 1993, and air-braked CMVs manufactured on or after October 20, 1994, the effective dates of NHTSA's requirement for automatic brake adjusters. Further, air braked vehicles that have exposed pushrods and are manufactured on or after October 20, 1994, must have brake adjustment indicators. The preamble to the final rule states:

These provisions will apply to all CMVs operated in the United States, irrespective of the country where the CMV is based.

Canadian and Mexican vehicles manufactured on or after the effective dates of the NHTSA rules will be required to conform to this regulation.

Although the FHWA does not have data on the extent to which CMVs manufactured for sale in Canada and Mexico comply with the current brake-related FMVSSs and FMCSRs, it is

unlikely that there are technical reasons that would preclude manufacturers of these vehicles from offering ABS as an option. As previously mentioned, foreign-based motor carriers are currently required to operate commercial motor vehicles that comply with all of the applicable requirements of part 393 while in the United States.

The FHWA contacted the Truck Manufacturers Association (TMA) to determine the availability of ABS on air braked vehicles sold in Canada and Mexico. The TMA's membership includes the Ford Motor Company; Freightliner; General Motors (GM); Mack Trucks, Inc. (Mack); Navistar International Transportation Corporation (Navistar); PACCAR, Inc. (Kenworth and Peterbilt); and, Volvo GM Heavy Truck Corporation (Volvo).

The TMA indicated that five of the manufactures that sell medium and heavy-duty trucks in Canada install ABS as standard equipment. Another manufacturer offers ABS as optional equipment for the Canadian market. With regard to the Mexican market, none of the TMA's members installs ABS as standard equipment. Only two of the TMA's members offer ABS as optional equipment. However, another member indicated it would make ABS available on units manufactured in Mexico in the near future.

The FHWA also contacted Dina, a Mexican manufacturer of heavy trucks, and determined that ABS is offered as optional equipment.

Based upon the information obtained from the TMA and Dina, the FHWA believes that requiring Canadian and Mexican CMVs manufactured on or after the effective dates of NHTSA's ABS requirements, is appropriate. The FHWA notes that ABS is not yet commercially available for hydraulically-braked medium and heavy vehicles in the United States, Canada or Mexico. However, given the March 1, 1999, effective date of the FMVSS No. 105 requirements for ABS, the FHWA believes these systems will be commercially available in time for motor carriers to comply with the FMCSRs.

The FHWA specifically requests comments from Canada and Mexico-based motor carriers and original equipment manufacturers that sell vehicles for the Canadian and Mexican markets.

Rulemaking Analyses and Notices

All comments received before the close of business on the comment closing date indicated above will be considered and will be available for examination in the docket room at the

above address. Comments received after the comment closing date will be filed in the docket and will be considered to the extent practicable, but the FHWA may issue a final rule at any time after the close of the comment period. In addition to late comments, the FHWA will also continue to file in the docket relevant information that becomes available after the comment closing date, and interested persons should continue to examine the docket for new material.

Executive Order 12866 (Regulatory Planning and Review) and DOT Regulatory Policies and Procedures

The FHWA has determined that this action is not a significant regulatory action within the meaning of Executive Order 12866. No serious inconsistency or interference with another agency's actions or plans is likely to result, and it is unlikely that this regulatory action will have an annual effect on the economy of \$100 million or more. The FHWA's regulation would only require maintenance of ABSs; the NHTSA final rule published on March 10, 1995, is the regulation which actually requires installation of ABSs. The data collected by NHTSA indicates that the level of maintenance required to keep an ABS functional would only increase incrementally and would not be unreasonable relative to the safety benefits that would result from the use of these systems. Therefore it is anticipated that the economic impact of this proposal would be minimal.

The preamble to NHTSA's March 10, 1995, final rule included estimates of the increased costs of operating heavy vehicles equipped with ABS. Three categories of operating costs were examined: Lifetime maintenance costs; lifetime fuel costs due to the additional weight of the ABS; and lifetime revenue loss due to payload displacement. The range of the increase in total lifetime operating costs related to equipping vehicles with ABS is from \$201.47 for single-unit trucks and buses to \$786.65 for truck tractors. The NHTSA indicated that the total estimated increase in lifetime vehicle operating costs associated with ABS for all commercial motor vehicles is \$232 million. A copy of the NHTSA's final economic assessment is included in FHWA Docket No. MC-94-31.

In addition, the FHWA has determined that this action is not a significant regulatory action under the Department of Transportation's regulatory policies and procedures because it does not concern a matter about which there is substantial public controversy, it will not have a

substantial effect on State and local governments, or initiate a substantial regulatory program or change in policy.

Regulatory Flexibility Act

In compliance with the Regulatory Flexibility Act (5 U.S.C. 601-612), the FHWA has evaluated the effects of this rule on small entities and has determined that it would not have a significant economic impact on a substantial number of small entities. The FHWA finds that this rule would not significantly increase costs for motor carriers because FHWA regulations only require maintenance of brake systems and the data collected by the NHTSA shows that the presence of an ABS on a vehicle would not substantially increase maintenance costs (less than one percent for tractors and less than two percent for trailers) or decrease vehicle operational availability.

Executive Order 12612 (Federalism Assessment)

This action has been analyzed in accordance with the principles and criteria contained in Executive Order 12612, and it has been determined that this rulemaking does not have sufficient Federalism implications to warrant the preparation of a Federalism assessment. These new safety requirements would not directly preempt any State law or regulation, and no additional costs or burdens would be imposed on the States as a result of this action. Furthermore, the State's ability to discharge traditional State governmental functions would not be affected by this rulemaking.

Executive Order 12372 (Intergovernmental Review)

Catalog of Federal Domestic Assistance Program Number 20.217, Motor Carrier Safety. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities do not apply to this program.

Paperwork Reduction Act

This action does not contain a collection of information requirement for the purposes of the Paperwork Reduction Act of 1995, 44 U.S.C. 3501-3520.

National Environmental Policy Act

The agency has analyzed this rulemaking for the purpose of the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347) and has determined that this action would not have any effect on the quality of the environment.

Regulation Identification Number

A regulation identification number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN contained in the heading of this document can be used to cross reference this action with the Unified Agenda.

List of Subjects in 49 CFR Part 393

Highway safety, Motor carriers, Motor vehicle safety.

Issued on: July 8, 1996.

Rodney E. Slater,

Federal Highway Administrator.

In consideration of the foregoing, the FHWA proposes to amend title 49, Code of Federal Regulations, subchapter B, chapter III, as follows:

PART 393—[AMENDED]

1. The authority citation for part 393 continues to read as follows:

Authority: Sec. 1041(b) of Pub. L. 102-240, 105 Stat. 1914, 1993 (1991), 49 U.S.C. 31136 and 31502; 49 CFR 1.48.

2. Section 393.5 is amended by adding the definition of *antilock brake system*, in alphabetical order, to read as follows:

* * * * *

Antilock Brake System or *ABS* means a portion of a service brake system that automatically controls the degree of rotational wheel slip during braking by:

(1) Sensing the rate of angular rotation of the wheels;

(2) Transmitting signals regarding the rate of wheel angular rotation to one or more controlling devices which interpret those signals and generate responsive controlling output signals; and

(3) Transmitting those controlling signals to one or more modulators which adjust brake actuating forces in response to those signals.

* * * * *

3. In subpart C, § 393.55 is added to read as follows:

§ 393.55 Antilock brake systems.

(a) *Hydraulic brake systems.* Each truck and bus manufactured on or after March 1, 1999, and equipped with a hydraulic brake system, shall be equipped with an antilock brake system that meets the requirements of Federal Motor Vehicle Safety Standard (FMVSS) No. 105 (49 CFR 571.105, S5.5).

(b) *ABS malfunction indicators for hydraulic braked vehicles.* Each hydraulic braked vehicle subject to the

requirements of paragraph (a) of this section shall be equipped with an ABS malfunction indicator system that meets the requirements of FMVSS No. 105 (49 CFR 571.105, S5.3).

(c) *Air brake systems.* (1) Each truck tractor manufactured on or after March 1, 1997, shall be equipped with an antilock brake system that meets the requirements of FMVSS No. 121 (49 CFR 571.121, S5.1.6.1(b)).

(2) Each air braked commercial motor vehicle other than a truck tractor, manufactured on or after March 1, 1998, shall be equipped with an antilock brake system that meets the requirements of FMVSS No. 121 (49 CFR 571.121, S5.1.6.1(a) for trucks and buses, S5.2.3 for semitrailers, converter dollies and full trailers).

(d) *ABS malfunction circuits and signals for air braked vehicles.* (1) Each truck tractor manufactured on or after March 1, 1997, and each single unit air braked vehicle manufactured on or after March 1, 1998, shall be equipped with an electrical circuit that is capable of signaling a malfunction that affects the generation or transmission of response or control signals to the vehicle's antilock brake system (49 CFR 571.121, S5.1.6.2(a)).

(2) Each truck tractor manufactured on or after March 1, 2001, and each single unit vehicle that is equipped to tow another air-braked vehicle, shall be equipped with an electrical circuit that is capable of transmitting a malfunction signal from the antilock brake system(s) on the towed vehicle(s) to the trailer ABS malfunction lamp in the cab of the towing vehicle, and shall have the means for connection of the electrical circuit to the towed vehicle. The ABS malfunction circuit and signal shall meet the requirements of FMVSS No. 121 (49 CFR 571.121, S5.1.6.2(b)).

(3) Each semitrailer, trailer converter dolly, and full trailer manufactured on or after March 1, 2001, and subject to the requirements of paragraph (b)(2) of this section, shall be equipped with an electrical circuit that is capable of signaling a malfunction in the trailer's antilock brake system, and shall have the means for connection of this ABS malfunction circuit to the towing vehicle. In addition, each trailer manufactured on or after March 1, 2001, that is designed to tow another air-brake equipped trailer shall be capable of transmitting a malfunction signal from the antilock brake system(s) of the trailer(s) it tows to the vehicle in front of the trailer. The ABS malfunction circuit and signal shall meet the requirements of FMVSS No. 121 (49 CFR 571.121, S5.2.3.2).

(e) *Exterior ABS malfunction indicator lamps for trailers.* Each trailer (including a trailer converter dolly) manufactured on or after March 1, 1998 and before March 1, 2009, shall be equipped with an ABS malfunction indicator lamp which meets the requirements of FMVSS No. 121 (49 CFR 571.121, S5.2.3.3).

[FR Doc. 96-17785 Filed 7-11-96; 8:45 am]

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National Highway Traffic Safety Administration**49 CFR Part 571**

[Docket No. 93-94; Notice 3]

RIN 2127-AE47

Federal Motor Vehicle Safety Standards; Antilock Brake Systems for Light Vehicles

AGENCY: National Highway Traffic Safety Administration (NHTSA), DOT.

ACTION: Advance notice of proposed rulemaking (ANPRM); Deferral of rulemaking.

SUMMARY: This document defers a rulemaking proceeding in which the agency is considering whether to require light vehicles (those with a gross vehicle weight rating (GVWR) equal to or less than 10,000 lbs.) to be equipped with antilock braking systems (ABS). This rulemaking proceeding was mandated by the National Highway Traffic Safety Administration Authorization Act of 1991, which directed the agency to consider the need for any additional brake performance standards for passenger cars, including antilock brake standards. The agency believes it would be inappropriate at this time to require ABS for light vehicles for the following reasons: Most studies that have analyzed the accident involvement experiences of ABS-equipped light vehicles have found mixed patterns, with a reduction in accidents in some crash modes and an increase in accidents in other crash modes; even without a Federal requirement, a significant majority of light vehicles will be voluntarily equipped with ABS; and requiring ABS on those light vehicles that will not be equipped with ABS would result in significant costs that, on balance, cannot be justified at this time.

FOR FURTHER INFORMATION CONTACT:

For non-legal issues: Mr. Robert M. Clarke, Office of Crash Avoidance, National Highway Traffic Safety Administration, 400 Seventh Street, SW., Washington, D.C. 20590 (202) 366-5278.