DEPARTMENT OF TRANSPORTATION **[4910-EX-P]**

Federal Motor Carrier Safety Administration

[Docket No. FMCSA-2018-0223]

Parts and Accessories Necessary for Safe Operation; Application for an Exemption from Groendyke Transport, Inc.

AGENCY: Federal Motor Carrier Safety Administration (FMCSA), DOT.

ACTION: Notice of final disposition.

SUMMARY: The Federal Motor Carrier Safety Administration (FMCSA) announces its decision to grant Groendyke Transport, Inc.'s (Groendyke) application for a limited 5-year exemption to allow the use of an amber brake-activated pulsating lamp on its trailers in addition to the steady-burning brake lamps required by the Federal Motor Carrier Safety Regulations (FMCSR). The FMCSRs require all exterior lamps (both required lamps and any additional lamps) to be steady-burning, except turn signal lamps, hazard warning signal lamps, school bus warning lamps, amber warning lamps or flashing warning lamps on tow trucks and commercial motor vehicles (CMV) transporting oversized loads, and warning lamps on emergency and service vehicles authorized by State or local authorities. The Agency has determined that granting the exemption to allow the use of an amber brake-activated pulsating lamp in addition to the required steady-burning brake lamps on the rear of Groendyke's trailers would likely achieve a level of safety equivalent to or greater than the level of safety provided by the regulation.

DATES: This exemption is effective **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]** and ending **[INSERT DATE FIVE YEARS FROM DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

FOR FURTHER INFORMATION CONTACT: Mr. Luke Loy, Vehicle and Roadside Operations Division, Office of Carrier, Driver, and Vehicle Safety, MC-PSV, (202) 366-0676, Federal Motor Carrier Safety Administration, 1200 New Jersey Avenue, SE., Washington, DC 20590-0001.

Docket: For access to the docket to read background documents or comments submitted to notice requesting public comments on the exemption application, go to www.regulations.gov at any time or visit Room W12-140 on the ground level of the West Building, 1200 New Jersey Avenue, SE, Washington, DC, between 9 a.m. and 5 p.m., ET, Monday through Friday, except Federal holidays. The on-line Federal document management system is available 24 hours each day, 365 days each year. The docket number is listed at the beginning of this notice.

SUPPLEMENTARY INFORMATION:

Background

FMCSA has authority under 49 U.S.C. 31136(e) and 31315 to grant exemptions from certain parts of the FMCSRs. FMCSA must publish a notice of each exemption request in the **Federal Register** (49 CFR 381.315(a)). The Agency must provide the public an opportunity to inspect the information relevant to the application, including any safety analyses that have been conducted. The Agency must also provide an opportunity for public comment on the request.

The Agency reviews safety analyses and public comments submitted, and determines whether granting the exemption would likely achieve a level of safety equivalent to, or greater than, the level that would be achieved by the current regulation (49 CFR 381.305). The decision of the Agency must be published in the **Federal**

Register (49 CFR 381.315(b)) with the reasons for denying or granting the application and, if granted, the name of the person or class of persons receiving the exemption, and the regulatory provision from which the exemption is granted. The notice must also specify the effective period and explain the terms and conditions of the exemption. The exemption may be renewed (49 CFR 381.300(b)).

Groendyke's Application for Exemption

Groendyke applied for an exemption from 49 CFR 393.25(e) to allow installation of an amber brake-activated pulsating lamp on the rear of its trailers in addition to the steady-burning brake lamps required by the FMCSRs. A copy of the application is included in the docket referenced at the beginning of this notice.

Groendyke is a carrier of flammable fuel and liquid hazardous materials. Groendyke has a fleet of approximately 900 trucks and 1,440 trailers, and employs over 1,200 individuals, including approximately 900 drivers. In its application, Groendyke states "Groendyke assessed what it could do to prevent other drivers from rear ending Groendyke trailers, and determined that increasing visibility of Groendyke trailers would be an efficient means to prevent rear ending accidents. To do this, Groendyke searched for ways to cause its braking system to capture the attention of other drivers faster and more completely."

Section 393.25(e) of the FMCSRs requires all exterior lamps (both required lamps and any additional lamps) to be steady-burning, except turn signal lamps, hazard warning signal lamps, school bus warning lamps, amber warning lamps or flashing warning lamps on tow trucks and commercial motor vehicles (CMV) transporting oversized loads, and warning lamps on emergency and service vehicles authorized by State or local

authorities. In its application, Groendyke seeks an exemption to allow installation of an amber brake-activated pulsating lamp to the rear of its trailers. The brake-activated pulsating lamp would be positioned in the upper center portion of the trailer. In support of its application, Groendyke contends that the addition of the brake-activated pulsating lamp will improve safety, and states that (1) research shows that pulsating brake lamps in addition to steady burning red brake lamps improves visibility and prevents accidents, (2) its own experience has demonstrated that pulsating brake lamps in addition to steady burning red brake lamps has decreased the frequency of rear-end accidents involving its fleet, and (3) similar exemptions exist for other classes of vehicles.

Research. Groendyke cited several studies conducted by the National Highway Traffic Safety Administration, another agency in the U.S. Department of Transportation, on the issues of rear-end crashes, distracted driving, and braking signals. Groendyke stated:

> Research indicates that there are ways to improve the attention-getting qualities of braking systems. Including a pulsating brake lamp on a lead vehicle has quantifiable effect on the drivers of following vehicles and measurably reduces rear-end collisions. Drivers are redirected and altered faster and more efficiently when a pulsating brake lamp draws their attention to the lead vehicle. As a result, rear-end collisions, can be prevented or at least reduced.

Groendyke Experience. Beginning in the second quarter of 2015, Groendyke began an amber brake-activated pulsating lamp on some of its fleet without authorization from FMCSA to compare the frequency of rear-end collisions between (1) trailers equipped with both centrally-mounted amber brake-activated pulsating lamp and the required steady-burning lamps, and (2) trailers equipped with only the steady-burning lamps required by the FMCSRs. As of July 31, 2017, Groendyke had outfitted 632 of its 1,440 trailers with an amber brake-activated pulsating lamp.

Data gathered by Groendyke between January 2015 and July 2017 show that trailers equipped with both the amber brake-activated pulsating lamp and the steady-burning brake lamps were involved in 33.7 percent fewer rear-end collisions as compared to vehicles equipped with only the steady-burning brake lamps. Groendyke also analyzed its data to determine whether the presence of the amber brake-activated pulsating lamp improved outcomes when drivers were slowing or stopping at railroad crossings.[1] Groendyke found that trailers equipped with the amber brake-activated pulsating lamp were not involved in a rear-end crash at a railroad crossing during the same time period. Groendyke stated:

> The results of the Groendyke Brake Warning Device Campaign are clear: The frequency of rear-end collisions is markedly lower when trailers are outfitted with pulsating brake lamps in addition to the steady-burning lamps required by the FMCSRs. The pulsating brake lamps draw other drivers' attention to what is happening with the vehicle in front more effectively and more quickly than steady burning lamps. In the interest of safety and productivity, Groendyke desires to implement the Groendyke Brake Warning Device Campaign on the rest of its fleet without risking violation of the FMCSRs.

Exemptions for Other Classes of Vehicles. In its application, Groendyke noted that the current requirements of 49 CFR 393.25(e) specifically exclude tow trucks and CMVs from the requirements that all exterior lamps be steady-burning. Groendyke contends that "Allowing an exemption for drivers of hazardous loads would be consistent with the intent of the regulation."

The exemption would apply only to Groendyke's trailers. If approved, Groendyke would be permitted to install an amber brake-activated pulsating lamp positioned in the upper center portion of the rear of its trailer. Groendyke stated that the

[1] As cargo tank operators hauling hazardous materials, Groendyke drivers are required to stop or slow significantly at railroad crossings (49 CFR 392.10-392.12). Groendyke notes that railroad crossings are a significant source of rear-end collisions at Groendyke and elsewhere because non-commercial drivers may not anticipate stops at railroad crossings.

additional brake lamp will not have an adverse impact on safety, and that adherence to the terms and conditions of the exemption would achieve a level of safety equivalent to or greater than the level of safety achieved without the exemption.

Comments

FMCSA published a notice of the application in the **Federal Register** on July 30, 2018, and asked for public comment (83 FR 36662). The Agency received thirty-four comments from: the Truckload Carrier Association (TCA); the National Tank Truck Carriers, Inc. (NTTC); the American Trucking Associations (ATA); and 31 individuals.

TCA, NTTC, and ATA each supported granting the application to allow the use of an amber brake-activated pulsating lamp in addition to the steady-burning brake lamps required by the FMCSRs. TCA cited Groendyke's 33.7 percent reduction in rear-end collisions when using the amber brake-activated pulsating lamp, and the fact that other types of CMVs are permitted to use flashing lights in supporting a decision to grant the exemption. TCA stated that several of its members "have used these pulsating lamps in the past, and we believe that greater flexibility on using them moving forward would provide meaningful safety improvements for the industry."

Further, TCA stated:

> Since Groendyke is not requesting to be exempted from the regulations on required steady-burning lamps, but rather is asking to be allowed to install additional equipment with pulsating lights, TCA believes it is in the best interest of the industry for FMCSA to grant Groendyke the requested flexibility. The baseline safety of the required steady-burning lamps will continue to be in place on Groendyke's trucks even if the additional pulsating brake lamps are installed.

NTTC also cited Groendyke's 33.7 percent reduction in rear-end collisions when using the amber brake-activated pulsating lamp, and stated "This easily meets the regulatory standard that the proposed exemption 'would maintain a level of safety

equivalent to, or greater than, the level achieved without an exemption.'" In addition, NTTC strongly advocates that if FMCSA decides to grant Groendyke's exemption application, that the same relief should be granted to all carriers operating cargo tank truck trailers because "there is no factor unique to Groendyke's trailers or pulsating brake lamps that cannot be replicated by other motor carriers." NTTC states that extending the exemption to all cargo tank trailers will "maximize safety for the tank truck segment and for the Nation as a whole." Finally, NTTC recommends that FMCSA grant the exemption, and then initiate a rulemaking proceeding to formally incorporate the provisions of the exemption into the FMCSRs.

ATA believes that grating the exemption will provide an opportunity to operate enhanced rear signaling (ERS) technology in a wide-range of real-world conditions to gather field data to further substantiate its benefits, and may provide NHTSA with information to assist in developing performance criteria and objective test procedures for ERS.

Specifically, ATA stated:

> FMCSA and NHTSA research have demonstrated the potential benefits of enhanced rear signaling (ERS) systems. NHTSA research on ERS found that use of brake signal configurations on passenger cars which included flashing lights were effective, reducing the crash rate by as much as 5.1%, and the results presented by Groendyke indicate even greater effectiveness for similar ERS on commercial motor vehicles (CMVs). Additionally, FMCSA research on ERS for CMVs showed no unsafe following vehicle driver reactions/behaviors in real world testing.
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> Consistent with the DOT reports and research, motor carriers like Groendyke recognize the potential of ERS for improving safe operations when compared with traditional standard brake lamps. For example, ERS can provide the following functions beyond what traditional CMV lighting and reflective devices offer: attention to CMVs stopped ahead; awareness of road side breakdowns; emergency braking; and driver confidence from both vehicles. In addition to safety benefits, ERS performance is superior to steady burning brake lamps in

> severe weather conditions, tail light glare and around infrastructure obstacles. ERS also reduces the chances of damage to both vehicles involved in a rear-end crash, which improves commercial operation uptime, CSA scores for the CMV owner, and traffic inconvenience.

Twenty-one individuals submitted comments in support of granting the exemption. These commenters believe that any technology that has been shown to reduce rear-end crashes should be allowed, and cited various benefits of the amber brake-activated pulsating lamp, including (1) enhanced awareness that the vehicle is making a stop, especially at railroad crossings, and (2) increased visibility in severe winter weather conditions.

Ten individuals submitted comments opposing the granting of the exemption. Commenters stated that use of the amber brake-activated pulsating lamp could potentially be distracting to the motoring public, and that the use of amber brake lights could be confusing as brake lights are required to be red in color.

FMCSA Decision

The FMCSA has evaluated the Groendyke exemption application, and the comments received. The Agency believes that granting the temporary exemption to allow the use of an amber brake-activated pulsating lamp positioned in the upper center portion of the trailer, in addition to the steady burning brake lamps required by the FMCSRs, will provide a level of safety that is equivalent to, or greater than, the level of safety achieved without the exemption.

Rear-end crashes generally account for approximately 30 percent of all crashes. These types of crashes often result from a failure to respond (or delays in responding) to a stopped or decelerating lead vehicle. Data between 2010 and 2016 show that large trucks

are consistently three times more likely than other vehicles to be struck in the rear in two-vehicle fatal crashes.[2,3]

Both FMCSA and NHTSA have conducted research programs regarding alternative rear signaling systems to address rear-end crashes. FMCSA has conducted research and development of an Enhanced Rear Signaling (ERS) system for CMVs.[4] The study noted that while brake lights are activated only with the service brakes, and the visual warning is only provided during conditions when the lead vehicle is decelerating using its braking system, brake lights are not activated during other conditions wherein rear-end collisions can occur (i.e., the CMV is (1) stopped along the roadway or in traffic, (2) traveling slower, or (3) decelerating using an engine retarder). Because of the limitations of the existing brake system described above, along with issues relating to visual distraction, the study examined ways for CMVs to detect rear-end crash threats and to provide drivers of following vehicles a supplemental visual warning – located on the lead vehicle, and in addition to the current brake lights – so following-vehicle drivers can quickly recognize impending collision threats.

During Phase I of this effort, researchers performed crash database analyses to determine causal factors of rear-end collisions and to identify potential countermeasures. Phase II continued through prototype development based on recommendations from Phase I. During Phase II field testing, potential benefits of using such countermeasures were realized. During Phase III, a multi-phased approach was executed to design,

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[2] U.S. Department of Transportation, National Highway Traffic Safety Administration (2012), Traffic Safety Facts – 2010 Data; Large Trucks, Report No. DOT HS 811 628, Washington, DC (June 2012)
[3] U.S. Department of Transportation, National Highway Traffic Safety Administration (2018), Traffic Safety Facts – 2016 Data; Large Trucks, Report No. DOT HS 812 497, Washington, DC (May 2018)
[4] U.S. Department of Transportation, Federal Motor Carrier Safety Administration (2014), Expanded Research and Development of an Enhanced Rear Signaling System for Commercial Motor Vehicles, Report No. FMCSA-RRT-13-009, Washington, DC (April 2014)

develop, and test multiple types of countermeasures on a controlled test track and on public highways. Phase III resulted in positive results for a rear warning prototype system comprising 12 light-emitting diode (LED) units that would flash at 5 Hz to provide a visual warning to the following-vehicle drivers indicating that, with continued closing rate and distance, a collision will occur with the lead vehicle. Finally, the prototype system was further developed and refined to include modification of the system into a unit designed for simple CMV installation, collision-warning activation refinements, and rear lighting brightness adjustments for nighttime conditions. Formal closed test track and real-world testing were then performed to determine the ERS system collision-warning activation performance.

While the efforts described above demonstrated a promising system for follow-on research, FMCSA ultimately decided not to pursue formal field operational testing of the prototype system because of concerns relating to (1) the cost to implement the ERS system as configured, and (2) fleets' willingness to invest in the technology given the cost of the system. Nonetheless, the preliminary research showed that the ERS system performed well at detecting and signaling rear-end crash threats and drawing the gaze of following-vehicle drivers to the forward roadway which if implemented, could potentially reduce the number and frequency of rear-end crashes into the rear of CMVs.

Separately, NHTSA has performed a series of research studies intended to develop and evaluate rear signaling applications designed to reduce the frequency and severity of rear-end crashes via enhancements to rear-brake lighting by redirecting drivers' visual attention to the forward roadway (for cases involving a distracted driver),

and/or increasing the saliency or meaningfulness of the brake signal (for attentive drivers).[5,6]

Initially, the study quantified the attention-getting capability and discomfort glare of a set of candidate rear brake lighting configurations, using driver judgments, as well as eye-drawing metrics. This study served to narrow the set of candidate lighting configurations to those that would most likely be carried forward for additional study on-road. Both look-up (eye drawing) data and interview data supported the hypothesis that simultaneous flashing of all rear lighting combined with increased brightness would be effective in redirecting the driver's eyes to the lead vehicle when the driver is looking away with tasks that involve visual load.

Subsequently, the study quantified the attention-getting capability of a set of candidate rear brake lighting configurations, including proposed approaches from automotive companies. This study was conducted to provide data for use in a simulation model to assess the effectiveness and safety benefits of enhanced rear brake light countermeasures. Among other things, this research demonstrated that flashing all lights simultaneously or alternately flashing is a promising signal for use in enhanced brake light applications, even at levels of brightness within the current regulated limits. Specifically, the study concluded that substantial performance gains may be realized by increasing brake lamp brightness levels under flashing configurations; however, increases beyond a certain brightness threshold will not return substantive performance gains.

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[5] U.S. Department of Transportation, National Highway Traffic Safety Administration (2009), Traffic Safety Facts – Vehicle Safety Research Notes; Assessing the Attention-Gettingness of Brake Signals: Evaluation of Optimized Candidate Enhanced Braking Signals; Report No. DOT HS 811 129, Washington, DC (May 2009)

[6] U.S. Department of Transportation, National Highway Traffic Safety Administration (2010), Traffic Safety Facts – Vehicle Safety Research Notes; Assessing the Attention-Getting Capability of Brake Signals: Evaluation of Candidate Enhanced Braking Signals and Features; Report No. DOT HS 811 330, Washington, DC (June 2010)

From the above, both FMCSA and NHTSA have conducted extensive research and development programs to examine alternative rear signaling systems to reduce the incidence of rear-end crashes. However, while these efforts concluded that improvements could be realized through rear lighting systems that flash, neither the FMCSRs nor the Federal Motor Vehicle Safety Standards (FMVSS) currently permit the use of pulsating, brake-activated lamps on the rear of CMVs.

With respect to the use of amber lights, NHTSA has conducted research on the effectiveness of rear turn signal color on the likelihood of being involved in a rear-end crash.[7] FMVSS No. 108 allows rear turn signals to be either red or amber in color. The study concluded that amber signals show a 5.3 percent effectiveness in reducing involvement in two-vehicle crashes where a lead vehicle is rear-struck in the act of turning left, turning right, merging into traffic, changing lanes, or entering/leaving a parking space. The advantage of amber rear turn signals was shown to be statistically significant.

FMCSA acknowledges the concerns of commenters that the amber brake-activated pulsating lamp may be distracting or confusing to some motorists. At the same time, however, the Agency agrees with TCA and NTTC that the 33.7 percent reduction in rear-end crashes documented by Groendyke between January 1, 2015, and July 31, 2017, for its trailers that had been equipped with the additional lights is both persuasive and compelling given the magnitude of the rear-end crash population. FMCSA believes that this real-world experience, along with the FMCSA and NHTSA research programs that demonstrated the ability of alternative rear signaling systems to reduce the frequency and

[7] U.S. Department of Transportation, National Highway Traffic Safety Administration (2009), The Effectiveness of Amber Rear Turn Signals for Reducing Rear Impacts; Report No. DOT HS 811 115, Washington, DC (April 2009)

severity of rear-end crashes, is sufficient to conclude that the implementation of an amber brake-activated pulsating lamp on the rear of Groendyke's trailers is likely to provide a level of safety that is equivalent to, or greater than, the level of safety achieved without the exemption.

Terms and Conditions for the Exemption

The Agency hereby grants the exemption for a 5-year period, beginning **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]** and ending **[INSERT DATE FIVE YEARS FROM DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**. During the temporary exemption period, Groendyke will be allowed to install an amber brake-activated pulsating lamp positioned in the upper center of the rear of the trailer in addition to the steady burning brake lamps required by the FMCSRs.

The exemption will be valid for 5 years unless rescinded earlier by FMCSA. The exemption will be rescinded if: (1) Groendyke fails to comply with the terms and conditions of the exemption; (2) the exemption has resulted in a lower level of safety than was maintained before it was granted; or (3) continuation of the exemption would not be consistent with the goals and objectives of 49 U.S.C. 31136(e) and 31315(b).

Interested parties possessing information that would demonstrate that Groendyke's use of an amber brake-activated pulsating lamp positioned in the upper center of the rear of the trailer in addition to the steady burning brake lamps required by the FMCSRs is not achieving the requisite statutory level of safety should immediately notify FMCSA. The Agency will evaluate any such information and, if safety is being compromised or if the continuation of the exemption is not consistent with 49 U.S.C.

31136(e) and 31315(b), will take immediate steps to revoke the exemption.

Preemption

In accordance with 49 U.S.C. 31313(d), as implemented by 49 CFR 381.600, during the period this exemption is in effect, no State shall enforce any law or regulation applicable to interstate commerce that conflicts with or is inconsistent with this exemption with respect to Groendyke operating under the exemption. States may, but are not required to, adopt the same exemption with respect to operations in intrastate commerce.

Issued on: April 18, 2019.

Raymond P. Martinez,

Administrator.

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