



[4910-EX-P]

DEPARTMENT OF TRANSPORTATION

Federal Motor Carrier Safety Administration

[Docket No. FMCSA-2019-0260]

Parts and Accessories Necessary for Safe Operation; Application for an Exemption from National Tank Truck Carriers 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 National Tank Truck Carriers Inc.'s (NTTC) application for a limited 5-year exemption to allow motor carriers operating tank trailers to install a red or amber brake-activated pulsating lamp in the upper center position or in an upper dual outboard position on the rear of the trailers, in addition to the steady-burning brake lamps required by the Federal Motor Carrier Safety Regulations (FMCSR). The Agency has determined that granting the exemption would likely achieve a level of safety equivalent to or greater than the level of safety provided by the regulation.

DATES: This exemption is applicable [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER] and ending October 8, 2025.

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. To be sure someone is there to help you, please call (202) 366-9317 or (202) 366-9826 before visiting Docket Operations. 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)).

NTTC's Application for Exemption

NTTC applied for an exemption from 49 CFR 393.25(e) to allow motor carriers operating tank trailers to install a red or amber brake-activated pulsating lamp in the upper center position or in an upper dual outboard position on the rear of the 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.

NTTC is an association of over 200 tank truck companies that transport more than 80 percent of the volume hauled in this narrowly-defined industry. Most NTTC members are regional, family-owned tank truck businesses that specialize in bulk transportation of hazardous products, such as petroleum products, chemicals, gases, and hazardous wastes. These companies also haul non-hazardous materials such as bulk foods and dry bulk products such as cement or plastic pellets.

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. NTTC seeks an exemption to allow motor carriers operating tank trailers to install a red or amber brake-activated pulsating lamp in the upper center position or in an upper dual outboard position on the rear of the trailers, in addition to the steady-burning brake lamps required by the FMCSRs. NTTC contends that the addition of the brake-

activated pulsating lamp will improve safety, and states that research shows that pulsating brake lamps installed in addition to required steady-burning red brake lamps improve visibility and prevent accidents. NTTC also noted that FMCSA has previously granted a similar, but not identical, temporary exemption to one of its member companies, Groendyke Transport, Inc. (Groendyke), based in part on Groendyke's real-world experience demonstrating that use of amber pulsating brake-activated warning lamps in addition to steady-burning red brake lamps had decreased the frequency of rear-end accidents involving its fleet of tank trailers (84 FR 17910; April 26, 2019).

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

Beginning in the second quarter of 2015, Groendyke began installing amber brake-activated pulsating lamps on some of its fleet without authorization from FMCSA to compare the frequency of rear-end collisions between (1) trailers equipped with both a 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.

The exemption requested by NTTC would apply to all motor carriers operating tank trailers, and would permit those motor carriers to install a red or amber brake-activated pulsating lamp in the upper center position or in an upper dual outboard position on the rear of the trailers, in addition to the steady-burning brake lamps required by the FMCSRs. NTTC states that the additional brake-activated warning lamp(s) will not have an adverse impact on safety, and that adherence to the terms and conditions of the exemption would likely achieve a level of safety equivalent to or greater than the level of safety achieved without the exemption.

Comments

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.

FMCSA published a notice of the NTTC application in the **Federal Register** on April 2, 2020, and asked for public comment (85 FR 18634). The Agency received comments from the Truckload Carrier Association (TCA), the Transportation Safety Equipment Institute (TSEI), the Virginia Department of Transportation (VDOT), the Commercial Vehicle Safety Alliance (CVSA), the American Trucking Associations (ATA), and 25 individuals.

TCA, TSEI, and ATA each supported granting the application. CVSA and VDOT supported the use of amber brake-activated pulsating warning lamps, but were opposed to the use of red brake-activated pulsating warning lamps.

TCA cited its support for Groendyke's similar application for temporary exemption, and highlighted the safety benefits of a 33.7 percent reduction in rear-end collisions when using an amber brake-activated pulsating lamp.

Further, TCA stated:

All tank carriers have a high stake in ensuring their trailers are safe since they are possibly hauling flammable fuel or liquid hazardous materials. Being involved in a rear-end collision not only could result in the loss of cargo, but also could potentially threaten the lives of the truck driver, the driver of the vehicle causing the collision, and others in the surrounding area. Since NTTC is not requesting for tank truck carriers to be exempt from the regulations on required steady-burning lamps, but rather is asking to be allowed to install additional equipment with pulsating lamps, TCA believes it is in the best interest of the industry for FMCSA to grant the requested flexibility. The baseline safety of the required steady-burning lamps will continue to be in place on these tank trailers even if the additional pulsating brake lamps are installed.

ATA believes that granting the exemption will permit tank truck carriers in addition to Groendyke to similarly reduce their rear-end crashes, in furtherance of FMCSA's primary safety mission.

Specifically, ATA stated:

FMCSA and NHTSA research have demonstrated the potential benefits of alternative rear signaling systems to reduce rear-end crashes. Rear-end crashes which amount to roughly 30% of all crashes are frequently attributed to a following vehicle's failure or delay to respond to the lead vehicle's application of brakes to decelerate.

Consistent with the DOT reports and research, motor carriers like Groendyke recognize the potential of ERS [Enhanced Rear Signaling] 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.

TSEI stated that ample research has demonstrated that the use of pulsating brake lamps increases visibility of equipment and vehicles and would maintain operational safety levels, but also implement more efficient and effective operations.

TSEI stated that by granting NTTC's application, the Agency would further its Beyond Compliance Program.

VDOT supports the intent of the proposed exemption to promote the safety of motor carriers operating tank trailers, and states that allowing commercial tank trailers to use brake-activated pulsating lamps may improve the reaction time of other motorists when the commercial vehicle is slowing down or stopping. VDOT supports developing standard equipment, and recommends that the Agency authorize the use of only amber brake-activated flashing lights, because amber lights are typically used to denote potential unsafe conditions or to denote caution. VDOT expressed concern that red brake-activated flashing lights on tanker trucks may cause confusion and may prompt unintended and/or

undesirable actions, given that flashing red lights are typically displayed by vehicles responding to emergencies.

CVSA agrees with NTTC's assessment that the collected data supports the safety benefits of amber brake-activated pulsating lamps, and supports allowing them to be installed on the rear of tank trailers. However, CVSA is opposed to the use of red brake-activated pulsating warning lamps which are typically associated with emergency vehicles. CVSA states that allowing red pulsating lamps on the rear of tank trailers may negatively impact the driving public's recognition and response to emergency vehicles. CVSA noted that many States have laws prohibiting nonemergency vehicles from having pulsating red lights. CVSA is concerned that if the exemption is granted to allow the installation and use of red pulsating lights, it would be in direct conflict with laws in several States. CVSA notes that while amber brake-activated pulsating lights have a demonstrated safety benefit, red brake-activated pulsating lamps would likely have unintended safety impacts related to emergency vehicles.

Twenty-four individuals supported, and one opposed, the exemption. Several of the commenters identified themselves as Safety Directors for motor carriers operating tank trailers, and fully supported the temporary exemption, noting that their respective carriers have experienced multiple rear-end collisions throughout years of operation. Those safety directors noted that other motorists are frequently not paying attention, and that many rear-end crashes of tanker trailers hauling hazardous material occur when stopped at railroad crossings. These individual commenters believe that any technology that has been shown to reduce rear-end crashes should be allowed, and cited various benefits of the red and 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 weather conditions.

One individual expressed concern that depending on the brightness and speed of the pulsating brake-activated warning lamps, and their positioning close to the standard brake lights and turn signals, following drivers may be (1) distracted and (2) confused regarding the ability to determine whether the vehicle is turning or not. This individual acknowledged that his experience was with low boy trailers, and not with tanker trailers as identified in subject application.

FMCSA Decision

The FMCSA has evaluated the NTTC exemption application, and the comments received. The Agency believes that granting the temporary exemption to allow motor carriers operating tank trailers to install a red or amber brake-activated pulsating lamp in the upper center position or in an upper dual outboard position on the rear of the trailers in addition to the steady-burning brake lamps required by the FMCSRs, will likely 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 collected 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}

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)

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 provided only 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 (e.g., 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, 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

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)

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 inattentive 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

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)

increasing brake lamp brightness levels under flashing configurations; however, increases beyond a certain brightness threshold will not return substantive performance gains.

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, compared to red, rear turn signals was shown to be statistically significant.

FMCSA acknowledges the concerns of VDOT, CVSA and other commenters that flashing, rotating, or pulsating red lamps are generally permitted only on emergency vehicles. FMCSA notes that Police and other State authorized emergency vehicles utilize high intensity, constantly flashing, rotating or pulsating red lamps visible from all directions on the vehicle and that continuously operate when activated. The amber or red

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)

brake-activated pulsating lamps requested by NTTC are visible only to the rear of the tanker trailer, and are similar in lamp intensity and flash rate of the vehicle's standard rear hazard warning lamps system currently allowed by the regulations. 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 severity of rear-end crashes, is sufficient to conclude that the implementation of red or amber brake-activated pulsating lamp in the upper center position or in an upper dual outboard position on the rear of the trailers, in addition to the steady-burning brake lamps required by the regulations, 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 October 8, 2025. During the temporary exemption period, motor carriers operating tank trailers will be allowed to install a red or amber brake-activated pulsating lamp in the upper center position or in an upper dual outboard position on the rear of the trailers, 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) motor carriers operating tank trailers fail 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 motor carriers operating tank trailers use of a red or amber brake-activated pulsating lamp in the upper center position or in an upper dual outboard position on the rear of the trailers, 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. States may, but are not required to, adopt the same exemption with respect to operations in intrastate commerce.

James W. Deck,
Deputy Administrator.