SB 2845

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

February 8, 2010

TESTIMONY OF THE DEPARTMENT OF TRANSPORTATION

SENATE BILL NO. 2845

COMMITTEE ON TRANSPORTATION, INTERNATIONAL & INTERGOVERNMENTAL AFFAIRS

The Department of Transportation strongly opposes this bill.

In the Federal Register dated September 26, 2008, the National Highway Traffic Safety Administration (NHTSA) denied a petition for rulemaking that would establish a new class of motor vehicles known as medium speed vehicles (MSVs), which would have a maximum speed capability of 35 mph. The petitioners contemplated that these vehicles would be subject to a set of safety standards greater than those that apply to low speed vehicles but substantially less than the full set of safety standards (that include destructive tests) that apply to other light vehicles such as passenger cars. NHTSA was of the opinion that the introduction of such a class of motor vehicles without the full complement of safety features required for other light vehicles such as passenger cars would result in significantly greater risk of deaths and serious injuries.

In addition, while NHTSA agrees with the importance of environmental issues, the agency believes that it is not appropriate to significantly increase the risk of deaths and serious injuries just to save fuel. We agree with the position of NHTSA.

This bill is not comprehensive enough to make it possible to register an uncertified medium speed electric vehicle (MSEV) in Hawaii. Section 286-2, HRS defines a vehicle identification number (VIN) as a unique series of letters and numerals assigned to a vehicle either by the vehicle manufacturer or incomplete vehicle manufacturer as required by federal law, or by the county director of finance to identify a reconstructed vehicle, special interest vehicle, or motorcycle. The only way a VIN can be assigned as required by federal law is for the manufacturer to affix it to the certification label that indicates that the vehicle conforms to all applicable federal motor vehicle safety standards (FMVSS). Hawaii's state law should not be changed to accommodate MSEVs, because the law currently helps Hawaii keep a large number of illegal and unsafe vehicles out of the state's vehicle population. For instance, since the US Department of Transportation does not require vehicles that are more than 25 years old to comply with FMVSS before being imported into the United States, there are many business people who import old uncertified vehicles that were manufactured in foreign countries and then sell them in the U.S. Although it is possible to get these uncertified vehicles into the U.S., section 286-2 prevents them from being registered in Hawaii, unless they can be classified as a

special interest vehicle, reconstructed vehicle or motorcycle. Section 286-45, HRS requires the directors of finance to record the VIN of every motor vehicle that is registered.

Even if a state passes a law that allows medium speed vehicles to be used on public roads, it is still a violation of federal law for a new car manufacturer to introduce a motor vehicle to commerce unless it is certified to comply with all applicable FMVSS as of the date of its manufacture. Any manufacturer that produces an uncertified MSEV and sells it in the U.S. will be eligible to receive severe financial penalties by NHTSA.

Proponents of MSEVs have stated that neighborhood electric vehicles (NEVs) can be modified to achieve speeds of 35 mph, suggesting that modifying the bill to allow this practice will be an immediate means of motivating more people to purchase NEVs. We would oppose a tactic like this, because it would tend to put neighborhood electric vehicle occupants in dangerous situations. Even the people who petitioned NHTSA for rulemaking to establish a new class of vehicles acknowledged that the proposed medium speed vehicles would need to have safety standards that are superior to those of low speed vehicles. Low speed vehicles are not crash tested. NHSTA made a motor vehicle class called low speed vehicles with the understanding that the vehicles would not mix with regular traffic. They are intended primarily for gated community use. Hawaii's current law already goes beyond the NHTSA intent by allowing neighborhood electric vehicles to use roads with a speed limit of 35 mph. (Regular vehicles must be crash tested at 35 mph). It is not uncommon for vehicles to travel faster than 35 mph on these roads, so there are times when the speed differential between the neighborhood electric vehicles and other traffic can be significant.

If the Legislature passes a bill that allows low speed vehicles to be modified so they can travel 35 mph and mix with other traffic on roads with speed limits of 35 or 45 mph, it will probably motivate some people who own NEVs to modify them and motivate other people to purchase and modify them and use them in an environment for which they were not designed. As the population of these vehicles increases, the potential for negative impacts on highway safety increases as well.

DEPARTMENT OF CUSTOMER SERVICES
CITY & COUNTY OF HONOLULU
DIVISION OF MOTOR VEHICLE, LICENSING AND PERMITS
ADMINISTRATION
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GAIL Y. HARAGUCHI
DIRECTOR

DENNIS A KAMIMURA
LICENSING ADMINISTRATOR

February 4, 2010

The Honorable J. Kalani English, Chair
and Committee Members
Committee on Transportation, International
and Intergovernmental Affairs
The Senate
State of Hawaii
State Capitol, Room 205
Honolulu, Hawaii 96813

Dear Chair English and Committee Members:

Subject: SB. No. 2845, Relating to Highways

The City and County of Honolulu is opposed to S.B. No. 2845 which will allow medium speed electric vehicles to be operated on roads with a posted speed limit of 45 miles per hour or less.

Since the National Highway Traffic Safety Administration (NHTSA) has denied the medium speed manufacturers' petitions to create a new class of motor vehicles known as medium speed vehicles, we do not register or title such vehicles. According to the NHTSA, "After carefully reviewing the petitions, we are denying them because the introduction of such a class of motor vehicles without full complement of safety features required for other light vehicles such as passenger cars would result in significantly greater risk of deaths and serious injuries. While NHTSA agrees with the importance of environmental issues, the agency believes that it is neither necessary nor appropriate to significantly increase the risk of deaths and serious injuries to save fuel."

I have attached the federal docket that explains the safety reasons why NHTSA denied the petition creating a medium speed vehicle class.

The City and County of Honolulu recommends that S.B. No. 2845 be held.

Sincerely,

for Gail Y. Haraguchi
Director

Attachment

durable construction and the ability to carry heavier loads at lower costs than a full-speed [vehicle] or purpose-designed LSV." While we agree that acceding to ETA's request would have this effect, it is again an effect we hope to avoid.

To begin, we note that foreign made on-road motor vehicles, that are capable of high-speed use, are not eligible to be transformed into LSVs via the adoption of a speed-limiting governor. In a June 28, 2000 letter of interpretation to Mr. Thomas E. Dahl on this issue, we stated there are no circumstances under which the addition of a speed governing device to a high-speed vehicle would make the vehicle meet the definition of an LSV. After explaining that we established the LSV class because the vehicles were too small to meet the full FMVSS requirements, we stated that a common feature of this class appeared to be that they were capable of a maximum speed of 25 mph *as designed and manufactured*. This is still our interpretation of the regulation.

Furthermore, the agency has stated several times that one concern we have regarding the LSV classification is that it could be used as a mechanism to import foreign motor vehicles without first making them conform to the FMVSSs. For example, in the 2005 final rule, we stated that "[t]he [2,500-pound] GVWR limit prevents attempts to circumvent FMVSSs for cars, trucks, and multipurpose passenger vehicles by applying the LSV classification to vehicle types that are able to meet the [full FMVSS] standards."[9] ETA's recommended 4,000-pound limit would permit the result we intended to prevent, and we view that as a reason to deny the petition.

b. Technology-Neutral Regulation

ETA's final argument is that the current GVWR limitation provides an advantage to gasoline-powered vehicles over electric vehicles. The agency is aware that, with current technology, the batteries needed to power an electric vehicle weigh substantially more than the fuel needed to power an internal combustion engine. This was considered to some extent in our original rulemaking establishing the 2,500-pound GVWR limit in 2005, and considered extensively in our 2006 rule increasing that limit to 3,000 pounds, a rule undertaken at the behest of two electric LSV manufacturers.

In the petitions that led to the 2006 rulemaking, NHTSA was presented with two differing solutions to this problem. The first, presented by Dynasty Electric Car Corporation, recommended a 2,500-pound GVWR restriction for internal combustion engine LSVs and a 2,800-pound GVWR restriction for electric LSVs. The second, recommended by GEM, requested that the GVWR limit be raised to 3,000 pounds for all LSVs, as this would accommodate electric LSVs with a cargo-carrying capacity of 1,000 pounds.

In the 2005 rule establishing the GVWR limitation, we discussed why we were not establishing different GVWR limitations for electric and gasoline-powered vehicles, despite the issue regarding the weight of the batteries. We noted that each propulsion type has its own advantages. While gasoline-powered vehicles are lighter, "the fact that electric LSVs are successful in the market indicates that any advantage of the [internal combustion] vehicle due to greater load capacity under our GVWR restriction will be overcome by other attractions of the electric vehicle to consumers."[10] ETA, perhaps inadvertently, cites several of these advantages in its petition. These include the high cost of gasoline, government mandates to reduce or eliminate petroleum-fueled vehicles from fleets, and the environmental benefits of electric vehicles. Therefore, we do not believe it is necessary to increase the regulatory complexity by setting different GVWR limitations based on propulsion method.

Finally, we believe that 3,000 pounds is a level at which electric LSVs that perform cargo-carrying work are practicable to build. In the 2006 final rule, we quoted one of the petitioners, GEM, where it stated:

> All that GEM seeks in the U.S. market is a comparable "level playing field" by allowing LSV trucks to weigh as much as 3000 pounds GVWR, which would accommodate the electric batteries and an appropriate payload for LSV trucks.

We note that GEM currently produces a cargo-carrying electric LSV with a GVWR of 3,000 pounds or less. We noted on GEM's Web site the GEM eL XD, which has a GVWR of 3,000 pounds, a payload capacity of 1,450 pounds, a top speed of 25 mph, and a range of up to 40 miles.[11] This example illustrates that the current GVWR limit permits the development of cargo-carrying, electric LSVs.

IV. Conclusion

For the reasons stated above, we are denying ETA's petition to increase the maximum allowable GVWR to 4,000 pounds for electric LSVs. Furthermore, because we are not increasing the maximum allowable GVWR, we are denying ETA's recommendation to establish brake requirements and tire weight rating requirements in FMVSS No. 500.

Issued on: September 19, 2008.

Stephen R. Kratzke,

Associate Administrator for Rulemaking.

[FR Doc. E8–22736 Filed 9–25–08; 8:45 am]

BILLING CODE 4910–59–P

[9] 70 FR 48316.

[10] 70 FR 48317.

[11] See GEM Web site, available at *http://www.gemcar.com*.

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Part 571

[Docket No. NHTSA–2008–0154]

Federal Motor Vehicle Safety Standards; Medium Speed Vehicles

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

ACTION: Denial of petition for rulemaking.

SUMMARY: This document denies petitions for rulemaking submitted by Environmental Motors, and Porteon Electric Vehicles, Inc. and Mirox Corporation. The petitioners requested that NHTSA commence rulemaking to create a new class of motor vehicles known as medium speed vehicles, which would have a maximum speed capability of 35 mph. The petitioners contemplated that these vehicles would be subject to a set of safety standards greater than those that apply to low speed vehicles but substantially less than the full set of safety standards that apply to other light vehicles such as passenger cars. The petitioners cited a number of reasons in support of their petition, the most significant of which related to potential environmental benefits. After carefully reviewing the petitions, we are denying them because the introduction of such a class of motor vehicles without the full complement of safety features required for other light vehicles such as passenger cars would result in significantly greater risk of deaths and serious injuries. While NHTSA agrees with the importance of environmental issues, the agency believes that it is neither necessary nor appropriate to significantly increase the risk of deaths and serious injuries to save fuel.

FOR FURTHER INFORMATION CONTACT: *For technical issues:* Gayle Dalrymple, Office of Crash Avoidance Standards, NVS–123. Telephone: 202–366–5559;

facsimile: 202–493–2739; e-mail *gayle.dalrymple@nhtsa.dot.gov*.

For legal issues: Mr. Ari J. Scott, NHTSA Office of the Chief Counsel, NCC–112. Telephone: (202) 366–2992; facsimile: (202) 366–3820; e-mail *ari.scott@nhtsa.dot.gov*.

Both officials can be reached by mail at the National Highway Traffic Safety Administration, 1200 New Jersey Avenue, SE., Washington, DC 20590.

SUPPLEMENTARY INFORMATION:

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I. Overview

NHTSA has received three petitions for rulemaking, from Environmental Motors, Porteon Electric Vehicles, Inc. and Mirox Corporation, requesting that the agency commence rulemaking to create a new class of motor vehicles known as medium speed vehicles MSVs. While the specific requests vary, they essentially ask the agency to conduct rulemaking to exclude smaller light vehicles that would currently be classified as passenger cars, multipurpose passenger vehicles (MPVs) or trucks from many or most of the Federal motor vehicle safety standards, if their speed capability is 35 mph or less. The vehicles would instead be subject to a set of safety standards greater than those that apply to low speed vehicles (LSVs) but substantially less than the full set of safety standards that apply to other light vehicles.

The petitioners made a variety of arguments in support of their requests, the most significant of which related to environmental benefits, including facilitating the development of electric vehicles and fuel savings. They argued that because LSVs are not permitted to have a speed capability greater than 25 mph, they cannot safely keep up with traffic in urban areas, and a need therefore exists for vehicles with a higher speed (35 mph) capability. The petitioners also noted that two States have passed laws that purport to allow medium speed electric vehicles to operate on certain public roads.

After carefully considering the petitions, we are denying them because the introduction of such a class of motor vehicles without the full complement of safety features required for other light vehicles would result in significantly greater risk of deaths and serious injuries. We address the petitioners' arguments in detail in the rest of this document, but note the following points in this overview.

The petitioners appear to view MSVs as a variant of LSVs, i.e., a special class of small motor vehicles that would not be required to meet the full complement of the Federal motor vehicle safety standards. However, the rationale for applying a limited set of safety standards to LSVs is not relevant to MSVs.

NHTSA issues different safety standards for different types of motor vehicles. The agency established the special category of motor vehicles called LSVs to accommodate the use of small golf cars and other vehicles primarily intended for use in controlled, low-speed communities, such as retirement communities. In order to qualify as an LSV under the agency's definition, a vehicle must, among other things, have a speed capability no higher than 25 mph. LSVs are subject to a limited set of safety measures in FMVSS No. 500, including requirements related to the installation of lamps, mirrors, seat belts and a windshield. However, LSV's are not subject to most of the standards to which other light vehicles such as passenger cars are required to comply, including the rigorous crashworthiness standards.

One of the principal concerns raised by the petitioners is that the 25 mph speed limitation that applies to LSVs prevents these vehicles from keeping up with traffic in urban areas. However, the 25 mph limitation reflects the fact that NHTSA designed the set of safety standards that apply to LSVs for vehicles intended to be used in controlled, low speed environments. Vehicles with a speed capability above 25 mph are more likely to be driven outside controlled, low speed environments, and the limited LSV safety requirements are not appropriate for such vehicles.

The petitioners appear to assume that the full set of safety standards applicable to other light vehicles such as passenger cars would not be appropriate for MSVs, i.e., small vehicles with a speed capability of 35 mph. However, the traffic environment in which these vehicles would likely travel, including, e.g., urban roads with a speed limit of 35 mph or 45 mph, is an environment for which the full set of the Federal motor vehicle safety standards is needed to prevent fatalities and serious injuries. MSVs would be traveling in mixed traffic at speeds in which crashes posed a risk of serious injury or fatality and in which safety features such as frontal and side air bags significantly reduced that risk. Also, a number of the crash test requirements included in our safety standards simulate crashes in this higher speed environment. We note that the petitioners did not provide analysis demonstrating why any of the Federal motor vehicle safety standards are not needed for MSVs.

NHTSA shares the concerns of the petitioners about the importance of environmental issues and saving fuel, and notes that it is currently engaged in rulemaking in which it has proposed to substantially increase average fuel economy standards for passenger cars and light trucks. We also note that a number of smaller vehicles have been introduced in recent years that are certified to comply with the full set of Federal motor vehicle safety standards. In addition, the current unprecedented cost of fuel is forcing manufacturers to improve fuel efficiency and reduce vehicle size without Federal mandates.

While we appreciate the importance of environmental issues, NHTSA does not believe that it is necessary or appropriate to significantly increase the risk of deaths and serious injuries to save fuel by introducing a new class of motor vehicles that does not provide adequate safety protection.

II. Petitions for Rulemaking

Environmental Motors

One of the petitions received by NHTSA was from Environmental Motors, an electric vehicle (EV) dealer located in Glendale, CA.[1] That company stated that the petition was being sent as part of an effort by a coalition interested in getting zero emission, energy-efficient vehicles on the road in a safe and timely manner. The coalition includes EV manufacturers and sellers (including Miles Electric Vehicles, Zenn Motor Company, e-ride Industries, Dynasty Electric Car Corp., Boshart Engineering, Free Drive EV, Inc, Clean-Tech LLC, LE Electric Automobiles, LLC, and Electrovaya, Resort Vehicles, Inc.), the City of Santa Monica, CA, the University of California, Santa Barbara, and the Sustainable Transport Club of Santa Monica, CA. All of these groups sent letters supporting Environmental

[1] This petition can be viewed at *http://www.regulations.gov*, docket #NHTSA–2006–0019.

Motors' petition, which were attached to the petition.

The petition itself requested that NHTSA establish a Medium Speed Vehicle (MSV) standard. According to the petition, the promulgated MSV standard should incorporate "the right mix of safety features," although it did not specify what it considered a right mix. In doing so, the petition requested that NHTSA consider a number of factors. These include:

- The fact that MSV legislation has been passed by several States.
- Alleged safety benefits of vehicles being able to keep up with traffic.
- That a MSV class would assist in the development of electric vehicles.
- That most MSVs would be electric, and noting the environmental benefits of electric vehicles.

Additionally, in letters of support, various supporters added additional arguments. Those included:

- The fact that full-speed electric vehicles are expensive.
- Safety disbenefits incurred by the fact that some individuals modify LSVs to increase their speed.
- As an alternative to creating a class of MSVs, NHTSA could increase the speed limitation for LSVs.

Mirox Corporation

Another petition that NHTSA received was from Mirox Corporation (Mirox).[2] Mirox's petition was more detailed than that of Environmental Motors, but also suggested that NHTSA create a class of MSVs with a maximum top speed of 35 mph.

Mirox requested that NHTSA define a MSV as a vehicle with: (1) A maximum speed of 30–35 mph, a maximum GVWR of 3,000 lbs. for cargo-carrying vehicles, or 2,500 lbs. for vehicles with passenger-carrying capacity only; (3) has three or four wheels; and (4) a limited number of equipment and bumper requirements. These requirements are more stringent than those required for LSVs, but substantially less than those required for other light vehicles such as passenger cars. Most prominently, Mirox would exclude MSVs from the requirements of FMVSS Nos. 138, 202a, and 208. The petitioner's request is explained in more detail below.

Mirox presents a variety of reasons for recommending its MSV classification. Some of these are similar to those identified by Environmental Motors, but some are unique. The following is a summary of the arguments put forth by Mirox:

- MSVs are a viable alternative to motorcycles, including enclosed, three-wheeled motorcycles, which are currently subject to a very limited array of safety standards. Mirox notes that the rate of motorcycle fatalities has been increasing, and argues that the use of MSVs could alleviate this. Mirox also argues that MSVs would provide better protection from weather and outside conditions than motorcycles, and are therefore likely to be used more often. Additionally, Mirox states that MSVs would be easier to drive than motorcycles, which would also help reduce injuries.
- MSVs are a better alternative to LSVs for use in driving in urban environments. Mirox states that due to speed limitations, LSVs are unsuited to driving in urban conditions, as they impede traffic flow and have limited acceleration potential. Mirox also argues that drivers will prefer MSVs as defined by the petitioner, as they will offer more protection from outside conditions and be equipped with a wider array of safety features than LSVs.
- Mirox expounds on the environmental and economic benefits of increased fuel economy for MSVs over passenger cars. It argues that because most MSVs will be electric, they will not consume fuel while idling, which is common in the urban environments that Mirox believes will be the primary environment for MSVs.
- Like Environmental Motors, Mirox points to the adoption of MSEV statutes in Montana and Washington, and argues that Federal regulations should be changed to sanction vehicles built in accordance to those statutes.
- Mirox cites the use of "quadricycles" in Europe, and argues that similar vehicles should be permitted in the U.S. as well. Mirox asserts that European experience, especially in France, has shown that the quadricycle class of vehicles is the safest of all vehicle classes, and that their drivers had fewer accidents than the average driver of a full-sized car.

In its petition, Mirox recommended a specific, detailed definition for MSVs. While similar in nature to that for an LSV, Mirox's definition contains more specific safety requirements. We note that, while it espoused the benefits of electric power, unlike the Montana or Washington statutes, Mirox's recommended definition would include gasoline-powered MSVs.

Specifically, Mirox's recommended definition of medium-speed vehicle is:

> A self-propelled, four-wheeled or three-wheeled motor vehicle, equipped with a roll cage or crush-proof body design, whose speed attainable in one mile is more than thirty miles per hour but not more than thirty-five miles per hour on a paved level surface. Each Medium-speed vehicle shall at a minimum be equipped with [the] following safety equipment that [conforms] to [the] existing FMVSS and current applicable SAE standard:
>
> - Headlamps as per FMVSS No. 108
> - Front and rear turn signal lamps (SAE I) (49 CFR 571.108)
> - Taillamps (SAE T), (49 CFR 571.108)
> - Stop lamps (SAE S), (49 CFR 571.108)
> - Reflex reflectors: one red on each side as far to the rear as practicable, one amber on each side as far to the front as practicable (SAE A)
> - Side marker lights, one red on each side as far to the rear as practicable, one amber on each side as far to the front as practicable (SAE P)
> - An exterior mirror mounted on the driver's side of the vehicle and either an exterior mirror mounted on the passenger's side of the vehicle or an interior mirror (49 CFR 571.111)
> - A parking brake (49 CFR 571.135)
> - A windshield of AS–1 or AS–5 composition, that conforms to the American National Standards Institute's "Safety Code for Safety Glazing Materials for Glazing Motor Vehicles Operating on Land Highway," Z–26.1–1977, January 28, 1977, as supplemented by Z26.1a, July 3, 1980 (49 CFR 571.205)
> - A VIN that conforms to the requirements of 49 CFR Part 565, Vehicle Identification Number
> - A Type 1 or Type 2 seat belt assembly conforming to FMVSS No. 209, installed at each designated seating position, and whose mounting complies with FMVSS No. 210
> - Bumper system; both front and rear that conforms to 49 CFR Part 581
> - Audible Warning Devices: Horn and Reverse Warning Beeper
> - If the vehicle is electrically powered it shall conform to FMVSS No. 305
> - A GVWR of less than 1,361 kilograms (3,000 pounds) if the vehicle is designed with substantial cargo-carrying capacity (i.e., vehicles intended for carrying goods), or 1,134 kilograms (2,500 pounds) if the vehicle is designed solely for transport of passengers.
>
> Additionally, if the Medium-speed vehicle contains any equipment that is referenced in any of the following FMVSS[s], such equipment or features shall [conform] to all the requirements of the applicable FMVSS:
>
> FMVSS Nos. 101, 102, 103, 104, 105, 106, 108, 109, 110, 111, 113, 116, 118, 124, 135, 139, 201, 202, 203, 204, 205, 206, 207, 209, 210, 212, 214, 216, 219, 225, 301, 302, 304, 305, and 401.

Porteon Electric Vehicles, Inc

The last petition received by NHTSA was from Porteon Electric Vehicles, Incorporated of Portland, Oregon.[3] This petitioner plans to market an electric car designed from the ground up rather than retrofit an imported vehicle by removing the IC engine and replacing it with an electric motor. The petitioner is concerned, "that unregulated growth

[2] This petition can be viewed at *http://www.regulations.gov*, docket #NHTSA–2008–0019.

[3] This petition can be viewed at *http://www.regulations.gov*, docket #NHTSA–2008–0019.

could create safety issues and concerns that negatively impact and cause severe damage to a new growth industry that provides real and significant solutions to our country and our planet's key issues." This petitioner envisions a Medium Speed Vehicle class that "would essentially be the same as the LSV regulations with the exception of the top speed of 35 miles per hour and additional vehicle requirement to increase the safety of margin [sic] for rollover, stopping, acceleration, and avoidance maneuvering." The petitioner lists these additional vehicle requirements as: Ability to maintain 35 mph on a level grade, ability to maintain 30 mph up an 8 percent grade, a minimum width of 55 inches, a "coil over shock" suspension, four-wheel hydraulic disc or drum brakes, and three-point automotive seat belts, in addition to the requirements that already exist for LSVs in FMVSS No. 500. The petitioner also states, "Additional testing of the vehicles should also be considered, including crush zones with a 2.5mph 'no damage' requirement. A full frontal crash should be required to meet safety standards between 17–18 mph, which is a derivative of full speed automobiles being crash tested at 35 mph." The petitioner does not state where the no damage crush zones would be on the vehicle, how they would be measured, or which safety standards would be tested at 17 or 18 miles per hour.

Porteon believes the new medium speed vehicle class is necessary because LSVs currently travel, with their top speed of 25 mph, on streets with speed limits up to 35 mph and normal traffic flow is impeded by these vehicles. MSVs, with their top speed of 35 mph, "would create a more cohesive traffic environment for mixed use vehicles."

III. Low Speed Vehicles

In 1998, NHTSA established Federal Motor Vehicle Safety Standard (FMVSS) No. 500, "Low speed vehicles," in response to growing interest in using golf cars and other similar-sized, 4-wheeled vehicles, including Neighborhood Electric Vehicles (NEVs), to make short trips for shopping, social, and recreational purposes primarily within retirement or other planned communities with golf courses. *See* 63 FR 33194. The definition of LSV established in that rulemaking was, "a 4-wheeled motor vehicle, other than a truck, whose speed attainable in 1.6 km (1 mile) is more than 32 kilometers per hour (20 miles per hour) and not more than 40 kilometers per hour (25 miles per hour) on a paved level surface.

In 2005, NHTSA published a final rule amending the definition of LSVs by removing the restriction on trucks, and instead establishing a 2,500 pound maximum GVWR. *See* 70 FR 48313. This allowed small vehicles designed for work-related applications within the intended communities, such as landscaping or delivery purposes, to be included within the definition of an LSV, without opening the category to unintended vehicles, such as street-sweepers or speed-modified passenger cars. Additionally, in 2006, in response to petitions for reconsideration from Dynasty Electric Car Corporation and Global Electric Motorcars (GEM), both manufacturers of electric LSVs, NHTSA increased the maximum GVWR for LSVs to 3,000 pounds. This was done, in part, to "level the playing field" between electric and gasoline-powered LSVs, by allowing for the additional weight in batteries required by electric vehicles. *See* 71 FR 20026.

In conceiving the concept of the LSV as a small vehicle that would not be subject to the same stringent safety criteria as other vehicles, a critical concept was that it would not ordinarily mix with other traffic. In our 1998 rule establishing the category of LSVs, NHTSA explained in the summary that the rule:

> [R]esponds to a growing public interest in using golf cars and other similar-sized, 4-wheeled vehicles to make short trips for shopping, social and recreational purposes *primarily within retirement or other planned communities with golf courses*. [emphasis added]

NHTSA's detailed analysis, as explained in the preamble of the 1998 final rule, recognized the importance of the fact that under most conditions, LSVs would not intermingle with regular automobile traffic, and the occasions where they would mix would be in controlled, low-speed environments. NHTSA stated that

> NHTSA has carefully reviewed their argument about the effects of this rulemaking. LSV safety, and thus the need for FMVSSs for LSVs, will be determined by the combination of three factors: vehicle design and performance; operator training and ability; and the operating environment. The agency believes that Standard No. 500, in combination with a limited operating environment and appropriate operator training and ability, will appropriately address the safety needs of LSV users.[4]

Additionally, in the 1998 final rule, NHTSA analyzed the Fatal Analysis Reporting System (FARS) data regarding fatalities involving golf cars. It was found that of the nine reported fatalities, eight of them involved a collision with a car or truck. This further underscored the importance of driving environment.

In the 1998 final rule, the agency studied the use of NEVs in various municipalities that permitted them to travel on public roads. In that notice, we stated that "the driving environment [of LSVs] should be appropriate to the vehicle and its characteristics. Limiting LSV use to low-speed city and suburban streets is necessary, but does not eliminate the safety risks."[5] NHTSA analyzed the State laws governing the on-road permissibility of NEVs in various States. Of the 12 States discussed, only one State (Arizona) permitted NEVs to travel on any road with a speed of 35 mph or less. The other 11 States (California, Nevada, New Mexico, Colorado, Wyoming, Illinois, Minnesota, Iowa, Florida, Georgia, and Texas) restricted NEVs to roads specifically designated by State and local governments.[6]

One portion of the analysis discussed possible reasons for the disparity of fatalities between Sun City[7] (which had four NEV fatalities) and the City of Palm Desert (which had zero). We noted that:

> The City of Palm Desert has a more controlled environment than Sun City for golf car use. The City of Palm Desert permits on-road use of golf cars in the same lanes as passenger cars and other larger motor vehicles in speed zones posted for speeds up to 25 miles per hour. In speed zones posted for speeds over 25 miles per hour, golf cars may be operated on-road only if there is a lane designated for their use and if the golf car is, in fact, operated within that lane. By contrast, NHTSA understands that Sun City, under state law, allows golf cars to operate in the same lanes as larger traffic on any road with a maximum speed of 35 miles per hour.

Based in part on this analysis, as well as our other observations, we concluded that operating environment played an important role in determining the benefits of establishing the LSV classification, as well as determining what safety standards should apply to that class. While NHTSA does not regulate the driving environment (such decisions are at the discretion of State governments), it did recommend that LSVs be licensed only for use in environments with very limited traffic. Specifically, we stated:

> NHTSA recognizes that not all operating environments may be as controlled as that of the City of Palm Desert. The agency encourages other states and municipalities to study the features of the City of Palm Desert's

[4] 63 FR 33208.

[5] 63 FR 33208.

[6] See 63 FR 33207.

[7] We note that Sun City is located in Arizona, the only State that allowed NEVs to travel on any street with a speed limit of 35 mph or less.

plan, and to adopt those features to the extent practicable.[8]

In later rulemakings, NHTSA made several adjustments to the definition of LSVs. First and foremost, the agency dropped its original restriction on "truck-like" vehicles, and replaced it with a maximum gross vehicle weight rating for LSVs.[9] This weight limit was originally 2,500 lbs., but was later increased to 3,000 lbs.[10]

IV. State Legislation on MSEVs and Relevant Federal Requirements

In the past year, two States have enacted legislation that purports to allow medium speed electric vehicles (MSEVs) to operate on certain public roads. Montana was the first State to pass such a law, on April 23, 2007. This was followed shortly thereafter by Washington State, which passed on May 15, 2007. These are the only two States that NHTSA is aware of that have passed any sort of MSV legislation.

The Montana and Washington statutes define MSEVs as electric-powered vehicles with a maximum speed of 35 mph that meet certain limited safety requirements similar to those established by NHTSA for LSVs.[11] The Montana law permits MSEVs to travel on public roads with a posted speed of up to 45 mph,[12] while the Washington law restricts them to roads with a posted speed of 35 mph or less.

NHTSA has considered the legislative history and other information relating to the aforementioned State laws. Both States were interested in expanding the use of electric vehicles in order to reduce fuel consumption, and economic and environmental benefits associated with that end. Additionally, there was a stated belief that a speed of 35 mph is needed for safety, as they would be able to keep up with traffic better. The following excerpt from the Washington State Senate report illustrates the considerations at issue:

> Staff Summary of Public Testimony: PRO: These electric vehicles are environmentally friendly and provide significant energy savings. They are not golf carts; they are cars designed for running errands in town. The current speed of 25 mph is too slow and puts people at risk. Increasing the allowed speed to 35 mph will improve safety.[13]

Under Federal law, vehicles with a speed capability above 25 mph that would be considered MSEVs under these State laws are classified as passenger cars, multipurpose passenger vehicles, or trucks. These vehicles are subject to the full range of FMVSSs that apply to these vehicles. The responsibilities of manufacturers and dealers to comply with Federal law, including not manufacturing or selling vehicles unless they comply with all applicable FMVSSs, are not limited by State laws on MSEVs.

V. Agency Response to Petitions

After carefully considering the petitions from Environmental Motors, Proteon and Mirox, we are denying them. First and foremost among this agency's considerations are safety concerns. The concept of establishing such a class of motor vehicles with limited safety features that would be likely to intermingle with larger, higher-speed vehicles in urban environments would result in significantly greater risk of deaths and serious injuries. The petitioners did not provide analysis demonstrating why any of the Federal motor vehicle safety standards are not needed for MSVs, given the traffic environment in which these vehicles would be likely to travel.

A. The Rationale for Applying a Limited Set of Safety Standards to LSVs Is Not Relevant to MSVs

As noted earlier, the petitioners appear to view MSVs as a variant of LSVs, i.e., a special class of small motor vehicles that would not be required to meet the full complement of the Federal motor vehicle safety standards. However, the rationale for applying a limited set of safety standards to LSVs is not relevant to MSVs.

NHTSA issues different safety standards for different types of motor vehicles. The agency established the special category of motor vehicles called LSVs to accommodate the use of small golf cars and other vehicles primarily intended for use in controlled, low-speed communities, such as retirement communities. In order to qualify as an LSV under the agency's definition, a vehicle must, among other things, have a speed capability no higher than 25 mph. LSVs are subject to a limited set of safety measures in FMVSS No. 500, including requirements related to the installation of lamps, mirrors, seat belts and a windshield. However, LSV's are not subject to most of the standards to which other light vehicles such as passenger cars are required to comply, including the rigorous crashworthiness standards.

One of the principal concerns raised by the petitioners is that the 25 mph speed limitation that applies to LSVs prevents these vehicles from keeping up with traffic in urban areas. They argued that because LSVs are not permitted to have a speed capability greater than 25 mph, they cannot safely keep up with traffic in urban areas, and a need therefore exists for vehicles with a higher speed (35 mph) capability.

However, the 25 mph limitation reflects the fact that NHTSA designed the set of safety standards that apply to LSVs for vehicles intended to be used in controlled, low speed environments. Vehicles with a speed capability above 25 mph are more likely to be driven outside controlled, low speed environments, and the limited LSV safety requirements are not appropriate for such vehicles.

When promulgating the original LSV rule, as stated above, at the time one of the most important factors was that LSVs were conceived as vehicles that would be used in controlled, low-speed environments, primary in retirement communities and those centered around golf courses. NHTSA surveyed the applicable State laws governing the on-road use of LSVs, and found that only one out of twelve States with LSV-use laws permitted them to travel on any public road with a speed limit of 35 mph or less. The other remaining States limited their use to specially-designated roads.[14] While NHTSA does not have the authority to prescribe the roads for which different types of vehicles are permitted, the agency suggested limiting LSVs to controlled environments. The following passage from the 1998 final rule properly summarizes NHTSA's position on this point:

> Still another reason [for the significant disparity in the number of deaths involving NEVs] may lie in the different operating environments in the two communities. The City of Palm Desert has a more controlled environment than Sun City for golf car use. The City of Palm Desert permits on-road use of golf cars in the same lanes as passenger cars and other larger motor vehicles in speed zones posted for speeds up to 25 miles per hour. In speed zones posted for speeds over 25 miles per hour, golf cars may be operated on-road only if there is a lane designated for their use and if the golf car is, in fact, operated within that lane. By contrast, NHTSA understands that Sun City, under state law, allows golf cars to operate in the same lanes as larger traffic on any road with a maximum speed of 35 miles per hour.
>
> NHTSA recognizes that not all operating environments may be as controlled as that of the City of Palm Desert. The agency encourages other states and municipalities to study the features of the City of Palm Desert's plan, and to adopt those features to the extent practicable.[15]

[8] 63 FR 33206.

[9] 70 FR 48313, August 17, 2005.

[10] 71 FR 20926, April 19, 2006.

[11] The specific definitions are at Mont. Code Ann. 61-1-101 and West's RCWA 46.04.265.

[12] Mont. Code Ann. 61-8-377.

[13] Washington State Senate Bill Report, HB 1820, March 21, 2007.

[14] 63 FR 33207.

[15] 63 FR 33208.

We recognize that since that time many States have passed laws permitting LSVs on a much wider variety of roads than originally contemplated. Today, many States permit LSVs on all public roads with posted speed limits of 35 mph or less. Some States even permit them on roads with speed limits of 45 mph.

As we have noted before, however, we continue to believe that LSV use on roads outside confined, controlled areas will be limited by the fact that occupants will not want to travel at less than 25 mph in mixed-vehicle traffic for other than very short trips, regardless of how States may or may not restrict their use. See 68 FR 68319, December 3, 2003.

We agree with the petitioners that the increased speed capability and other features in the requested MSV category would facilitate and encourage drivers to use MSVs in general driving environments. This, however, means that the rationale for applying a limited set of safety standards to LSVs is not relevant to MSVs. Instead, and as discussed further below, this is an argument for why these vehicles should be required to comply with the same safety standards as other light vehicles used in general driving environments, such as passenger cars.

B. The Traffic Environment in Which MSVs Would Likely Travel Is an Environment for Which the Full Set of the Federal Motor Vehicle Safety Standards Is Needed To Prevent Fatalities and Serious Injuries

The petitioners appear to assume that the full set of safety standards applicable to other light vehicles such as passenger cars would not be appropriate for MSVs, i.e., small vehicles with a speed capability of 35 mph. However, the traffic environment in which these vehicles would likely travel, including, e.g., urban roads with speed limits of 35 mph or 45 mph, is an environment for which the full set of the Federal motor vehicle safety standards is needed to prevent fatalities and serious injuries. We note that the energy involved in vehicle-to-vehicle collisions increases proportional to the square of the velocity of travel, and the result of a vehicle collision at 35 mph is twice as severe as the same collision at 25 mph.

MSVs would be traveling in mixed traffic at speeds in which crashes posed a risk of serious injury or fatality and in which safety features such as frontal and side air bags significantly reduced that risk. Also, a number of the crash test requirements included in our safety standards simulate crashes in this higher speed environment. We note that the petitioners did not provide analysis demonstrating why any of the Federal motor vehicle safety standards are not needed for MSVs.

As part of considering this issue, we have looked at crash information on public roads with speed limits of 35 to 45 mph. For this traffic environment, the need for the safety features required in FMVSS No. 208, air bags, are far more important than for lower speed crashes, as frontal crashes become a more prominent part of the overall crash picture.

The total number of occupants killed annually in crashes is 37,314 (2002–2006 average, Fatality Analysis Reporting System). Of these occupant fatalities, 6,319 were killed on roads with posted speed limits of 35 mph or less, and 13,493 are killed in crashes on roads with posted speed limits of 45 mph or less. The total number of occupants suffering incapacitating injury annually is 13,492. Of these, 1,798 were injured in crashes on roads with posted speed limits of 35 mph or less, and 4,261 occupants were injured in crashes on roads with posted speed limits of 45 mph or less. It is important to note that those numbers reflect vehicles that were certified to comply with the Federal motor vehicle safety standards.

We estimate that in 2005, on roads posted at 35 mph or lower, 1,921 crash victims lived because the vehicles were compliant with all FMVSSs, including 278 saved by air bags. In crashes on roads posted at 45 mph or lower, 3,163 lives were saved because the vehicles involved were compliant with all FMVSSs. Of those, 414 were saved by air bags.[16]

Given these statistics, we believe the full set of Federal motor vehicle safety standards is needed for vehicles traveling in the traffic environment in which MSVs would likely travel, including, e.g., urban roads with speed limits of 35 mph or 45 mph.

Finally, as noted above, a number of the crash test requirements included in our safety standards simulate crashes in this environment. For example, our highest speed crash test in FMVSS No. 208 (vehicle compliance is currently phasing in) simulates a 35 mph frontal crash between the tested vehicle and a vehicle like itself. Our crash test in FMVSS No. 214 that helps ensure thoracic protection simulates a crash in which the tested vehicle traveling at 15 mph is struck in the side by a light vehicle traveling at 30 mph.

[16] Using the methodology of "Lives Saved by the Federal Motor Vehicle Safety Standards and Other Vehicle Technologies, 1960–2002" DOT HS 809–833.

C. It Is Neither Necessary nor Appropriate To Significantly Increase the Risk of Deaths and Serious Injuries To Save Fuel

The petitioners and the supporters which wrote in favor of the Environmental Motors petition emphasized the potential to conserve fuel, thereby saving money at a time of high fuel prices as well as reducing emissions that can harm the environment. In the two States that passed MSEV statutes, the legislative history also shows that this legislation was conceived due to concerns about saving fuel.

NHTSA also considers fuel conservation an important goal. However, we believe that it is neither necessary nor appropriate to significantly increase the risk of deaths and serious injuries to save fuel.

Fuel conservation can be accomplished by means that are not inconsistent with the need for safety. Significant innovation is currently underway in fuel economy, gas-electric hybrid engine technology, and continued development of fully electric vehicles, such as the Chevrolet Volt, noted in the Mirox petition. NHTSA recently published a proposal to substantially increase fuel economy (CAFE) standards for passenger cars and light trucks. These standards affect nearly all light vehicles, and will have a tremendous impact on fuel savings. Furthermore, these vehicles are being designed to meet the full FMVSS requirements for passenger cars or other applicable vehicle class.

D. Other Issues

The petitioners raised a number of additional issues, which we discuss in this section.

Quadricycles

The Mirox petition compared the requested MSV classification to a type of vehicle used in Europe known as a "quadricycle." The Economic Commission for Europe (ECE) defines a quadricycle in two vehicle categories, L_6 "light quadricycle" and L_7 "quadricycle".[17]

Category L_6: A vehicle with four wheels whose unladen mass in not more than 350 kg, not including the mass of the batteries in the case of electric vehicles, whose maximum design speed is not more than 45 km/h, and whose engine cylinder capacity does not exceed 50 cm^3 for spark (positive) ignition engines, or whose maximum net power output does not exceed 4 kW in the case of other internal combustion engines, or whose

[17] TRANS/WP.29/78/Rev.1/Amend. 4, 26 April 2005.

maximum continuous rated power does not exceed 4 kW in the case of electric engines.

Category L_7: A vehicle with four wheels, other than that classified for the category L_6, whose unladen mass is not more than 400 kg (550 kg for vehicles intended for carrying goods), not including the mass of batteries in the case of electric vehicles and whose maximum continuous rated power does not exceed 15 kW.

Mirox claimed that quadricycles are an extremely safe method of transportation that is used extensively in Europe. The chief benefits of quadricycles is that they are easy to use (unlike motorcycles), easy to park, and consume far less fuel than even the smallest European passenger cars. Mirox requested that MSVs be defined in such a way that at least some European quadricycles can be legally imported as MSVs.

While the petitioner claimed that quadricycles are extremely safe, Mirox did not provide any data to support this claim or to show that introduction of these vehicles into the U.S. would be consistent with the need for safety. We note that we have earlier denied the petition of GG Quad North American to change the definition of "motorcycle" to allow quadricycles to be sold in the U.S. as motorcycles (71 FR 67843, November 24, 2006).

Aftermarket Speed Modifications of LSVs

A letter written in support of the Environmental Motors petition by Electrovaya suggested that "The new [MSV] regulations would give people a better option than illegally changing an LSV to go faster." We agree with Electrovaya that modifying an LSV to increase the speed is highly undesirable. However, we do not believe that adopting a regulation to accommodate this practice is a prudent response to the issue. Furthermore, we would point out that manufacturers, dealers, sellers, and motor vehicle repair businesses that modify the speed of an LSV are in violation of the "make inoperative" provision.

This statutory provision, 49 U.S.C. 30122, *Making safety devices and elements inoperative*, reads in part:

> A manufacturer, distributor, dealer, or motor vehicle repair business may not knowingly make inoperative any part of a device or element of design installed on or in a motor vehicle or motor vehicle equipment in compliance with an applicable motor vehicle safety standard prescribed under this chapter unless the manufacturer, distributor, dealer, or repair business reasonably believes the vehicle or equipment will not be used (except for testing or a similar purpose during maintenance or repair) when the device or element is inoperative.

If one of the above-mentioned entities increased the speed of an LSV to 25 mph or greater, that LSV would no longer comply with paragraph S5.3 of FMVSS No. 500, which specifies that the vehicle's top speed must be less than 25 mph. Therefore, the modifying entity would be subject to civil penalties as specified in 49 U.S.C. 30165.

Burgeoning Electric Vehicle Market

Porteon states in its petition, "Regardless of our [the electric cars' industry] success or failure, the U.S. will soon see an influx in electric vehicles as fuel prices, urbanization, and climate change effect [sic] transportation and state regulation. It is estimated that over 20 manufacturers are in operation or commencing production along with a new influx of imports anticipated from China and Malaysia. Our concern is that unregulated growth could create safety issues and concerns that negatively impact and cause severe damage to a new growth industry that provides real and significant solution to our country and our planet's key issues." NHTSA would like to point out that the electric vehicle market is not unregulated. Any vehicle not certified as an LSV, or that travels at speeds greater than 25 miles per hour, must meet all the FMVSSs in place for the appropriate vehicle type (passenger car, truck, bus, or MPV). The petitioner can rest assured that growth of the electric vehicle market will not occur without the vehicles meeting the existing regulatory safety requirements enforced by NHTSA. The only difference between electric vehicles and those predominately in use today is their propulsion system. An electric propulsion system will not exempt these vehicles from the requirement to meet all the Federal standards for motor vehicles.

VI. Conclusion

For the reasons discussed above, NHTSA denies the petitions for rulemaking submitted by Environmental Motors, Proteon Electric Vehicles and Mirox Corporation.

Issued on: September 19, 2008.

Stephen R. Kratzke,

Associate Administrator for Rulemaking.

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