

**DEPARTMENT OF TRANSPORTATION****National Highway Traffic Safety Administration****49 CFR Part 571**

[Docket No. NHTSA-05-22116]

RIN 2127-AJ12

**Federal Motor Vehicle Safety Standards; Low Speed Vehicles**

**AGENCY:** National Highway Traffic Safety Administration (NHTSA), Department of Transportation (DOT).

**ACTION:** Final rule.

**SUMMARY:** This final rule amends the definition of "low-speed vehicle" (LSV) in two ways. First, it eliminates the exclusion of trucks from that class of vehicles. Second, it limits the class of LSVs to those vehicles with a Gross Vehicle Weight Rating (GVWR) of less than 1,134 kilograms (2,500 pound).

**DATES:** *Effective Date:* This rule becomes effective October 3, 2005.

*Petitions:* If you wish to submit a petition for reconsideration of this rule, your petition must be received by October 3, 2005.

**ADDRESSES:** Petitions for reconsideration should refer to the docket number above and be submitted to: Administrator, Room 5220, National Highway Traffic Safety Administration, 400 Seventh Street, SW., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** The following persons at the National Highway Traffic Safety Administration, 400 Seventh Street, SW., Washington, DC 20590.

*For technical and policy issues:* Ms. Gayle Dalrymple, Office of Crash Avoidance Standards, NVS-123 (Telephone: 202-366-5559) (Fax: 202-493-2739).

*For legal issues:* Mr. Christopher Calamita, Office of the Chief Counsel (Telephone: 202-366-2992) (Fax: 202-366-3820).

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**I. Background**

On June 17, 1998, the National Highway Traffic Safety Administration

(NHTSA) published a final rule establishing a new Federal Motor Vehicle Safety Standard (FMVSS) No. 500, "Low-speed vehicles," and added a definition of "low-speed vehicle" (LSV) to 49 CFR 571.3 (63 FR 33194). This new FMVSS and vehicle class definition responded to the growing public interest in using golf cars and other similarly sized small vehicles to make short trips for shopping, social, and recreational purposes primarily within retirement or other planned, self-contained communities. These vehicles, many of which are electric-powered, offer comparatively low-cost, energy-efficient, low-emission, quiet transportation.<sup>1</sup> The current definition of LSV is "a 4-wheeled motor vehicle, other than a truck, whose speed attainable in 1.6km (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."

When we first proposed and established FMVSS No. 500, we stated that we envisioned the LSV as a small, lightweight vehicle that could not meet FMVSSs appropriate for larger and heavier vehicles.<sup>2</sup> As originally proposed in January 1997, trucks were not excluded from the definition of LSV. We proposed the "creation of a new class of vehicle \* \* \* with a definitional criterion of speed alone." However, low-speed vehicles with "work performing features" (such as a street sweeper) would have been excluded under the 1997 proposed definition. After considering the comments, we limited LSVs to vehicles other than trucks. Not excluding trucks from the LSV definition would have had the unintended result of rendering some vehicles that already met FMVSSs subject to neither those standards nor even the minimum limitations applicable to LSVs.

We have encouraged states to be very careful when contemplating the use of LSVs on public roads. A LSV does not have the occupant protection capability of other four-wheeled motor vehicles. Its lightness makes its occupants vulnerable in any collision with a non-LSV vehicle. The force involved in such a collision increases proportional to the square of the velocity of travel. For example, the result of a vehicle collision

at 35 miles per hour (mph) is twice as severe as the same collision at 25 mph.

We continue to anticipate that LSV use on roads outside confined, controlled areas will be limited by the maximum speed capability of LSVs. We expect that occupants will not want to travel at less than 25 mph in mixed-vehicle traffic for other than very short trips, regardless of the extent to which states permit LSV use.

Since the publication of the final rule in 1998, we have received two petitions regarding the exclusion of trucks from the definition of LSV. The first was a petition for reconsideration of the final rule by Solectria (seconded by Electric Transportation Coalition) asking us to reconsider the exclusion of trucks from the definition of LSV because Solectria manufactures a micro electric pickup truck. Solectria said its truck was "suitable" for many uses off the public roads, such as airports, college properties, and parks. Solectria asked that we amend the definition of LSV to exclude only trucks with a curb weight greater than 2,200 pounds.

In our response to Solectria's petition for reconsideration (65 FR 53219; Sept. 1, 2000), we reiterated the discussion from the preamble to the final rule that we believed excluding trucks from Standard 500 "ensures that such trucks must continue to meet the Federal standards that have always applied to trucks with a maximum speed of more than 20 miles per hour" and that we believed the decision to be "consistent with the rationale of this rulemaking, which is to eliminate a regulatory conflict involving passenger-carrying vehicles." We noted that FMVSSs applicable to trucks with a maximum speed between 20 and 25 mph had not inhibited the introduction of such trucks in the past. However, we also stated,

We are still considering this petition, and have not reached a decision whether to grant or to deny it. Our decision will be reflected in the notice of proposed rulemaking under consideration for establishing performance requirements for safety equipment on LSVs.

Subsequently, in January 2002, the agency received a petition regarding the LSV definition from Global Electric Motorcars (GEM), a DaimlerChrysler company. GEM asked that NHTSA change the definition of LSV, "to include 'trucks' or vehicles designed primarily for the transportation of property or special purpose equipment, so long as they meet the existing vehicle speed limitations of the definition." GEM noted that the NPRM stated "LSVs would include all motor vehicles, other than motorcycles \* \* \* whose speed

<sup>1</sup> Electric LSVs are commonly referred to as Neighborhood Electric Vehicles (NEVs). However, NEVs are not specifically defined in the Federal motor vehicle safety standards.

<sup>2</sup> See the notice of proposed rulemaking (62 FR 1077, January 8, 1997), final rule (63 FR 33194, June 17, 1998), response to petitions for reconsideration of the final rule (65 FR 53219, September 1, 2000), and letters of interpretation of the definition of LSV.

\* \* \* does not exceed 25 mph,” and that the agency had recognized, “that there is no reasonable justification for subjecting low-speed vehicles like golf carts \* \* \* to the full range of safety standards that apply to heavier, faster vehicles.”

As a result of the petitions received from GEM and Solectria, the agency decided to reconsider the LSV definition. In a notice of proposed rulemaking (NPRM) published on December 8, 2003 (68 FR 68319), we granted the petitions by GEM and Solectria, and tentatively agreed with the petitioners that the current exclusion of trucks from the LSV definition is too broad and does not fully reflect current interpretations of that definition.<sup>3</sup> In the NPRM, we proposed to drop the exclusion of trucks from the definition and otherwise revise our definition of a LSV.

## II. Summary of the Notice of Proposed Rulemaking

In the NPRM, we proposed to revise the definition of LSV by (1) eliminating the “other than truck” text from the definition, (2) limiting a LSV’s GVWR to less than 1,134 kilograms (2,500 pounds), and (3) requiring that a LSV have a rated cargo load of at least 36 kilograms (80 pounds).

The current definition of LSV is:

[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.

49 CFR 571.3(b). The agency proposed the following definition:

*Low-speed vehicle* means

- (a) a 4-wheeled motor vehicle,
- (b) 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,
- (c) whose rated cargo load is at least 36 kilograms (80 pounds), and
- (d) whose GVWR is less than 1,134 kilograms (2,500 pounds).

The proposed definition reflected our tentative determination that there is no reasonable basis to differentiate between passenger and cargo-carrying vehicles in the definition of LSVs. At the same time, the proposed definition would be more complete and would better communicate the concept that NHTSA has always expressed: LSVs are a class of vehicles for which the FMVSS for larger vehicles are inappropriate

because of the small size of the vehicles in this class.<sup>4</sup>

In tentatively deciding to remove the exclusion of trucks from the definition of LSV, we concluded that it would be necessary to replace that limitation with an alternative limitation of what could be considered a LSV. We proposed adding a maximum GVWR limitation to the LSV definition. In the NPRM, we stated that using GVWR would be an appropriate and objective way to define LSV for several reasons. First, it would prevent attempts to circumvent the FMVSSs for cars, trucks, and multipurpose passenger vehicles by seeking to apply the LSV classification to vehicle types that are able to meet the standards. Second, GVWR would provide a means to distinguish between vehicles that the agency envisions as LSVs and traditional small vehicles that are currently certified to meet all applicable FMVSSs (e.g., Toyota Echo, Ford Focus, and Chevrolet Tracker). Third, it would enable the agency to continue to exclude from the LSV definition all heavier, slow-moving trucks (e.g., street cleaners) that are able to meet all FMVSSs applicable to trucks. Under the LSV revisions as proposed in the NPRM, these heavier, slow-moving trucks would still be required to meet all of the FMVSSs applicable to trucks.

In proposing to add a GVWR limitation to the definition of LSV, we needed to determine the appropriate maximum GVWR for LSV vehicles. We proposed a GVWR of “less than 2,500 pounds.” We stated that this proposed “less than 2,500 pound” GVWR limitation for LSVs was the result of our identification of vehicles constituting a class of motor vehicles so small that they are generally unable to meet all of the FMVSSs required for passenger cars, multipurpose vehicles, and trucks. The NPRM provided a detailed comparison of vehicles less than 2,500 pounds (e.g., GEM E825 Short Bed Utility and Ford Think Neighbor) to vehicles 2,500 pounds or greater, which are capable of meeting all of the applicable FMVSSs (e.g., Toyota Echo, Ford Focus, and Chevrolet Tracker). The “less than 2,500 pound” GVWR limitation was also proposed based on existing LSVs, GVWR submitted by companies registering with NHTSA as intending to

<sup>4</sup> NHTSA has consistently stated that the main reason for excluding LSVs from compliance from other FMVSSs was that requiring such compliance was inappropriate for these small, lightweight vehicles. We noted that a separate class for LSVs was appropriate based on its low operating speed, and limited areas of use—most notably in planned environments, such as retirement communities. Further, these vehicles could not meet FMVSSs more appropriate for larger, heavier vehicles, such as the 30 m.p.h. barrier crash standards.

manufacture LSVs, and the Society of Automotive Engineers Surface Vehicle Standard J-2358.

In the NPRM, we noted that the “less than 2,500 pound” GVWR limitation would include some vehicles that are currently certified to the FMVSSs, such as the Honda Insight. Such a vehicle would, of course, not be considered a LSV unless it also met the other limitations specified in the LSV definition (e.g., a maximum attainable speed of 25 mph). We proposed the “less than 2,500 pound” GVWR limitation to accommodate electric LSVs, which are heavier than internal combustion engine models. The increased weight of electric LSVs can be attributed to their heavier electric propulsion systems and their need for battery storage. The agency did not propose a LSV definition with maximum GVWR greater than 2,500 pounds, in part, because there are currently not any performance requirements for service brakes and tires that are appropriate for these vehicles.

In addition, we proposed an additional limitation of a minimum rated cargo load (RCL) of 80 pounds. The proposed RCL minimum was intended to ensure some load carrying capacity in addition to the regulatory requirement of 150 pounds per designated seating position (as defined in 49 CFR 571.3).

We proposed the LSV definition changes because we believed they would make the definition more complete, clarify the definition as to the type of vehicle NHTSA intended to exclude from the FMVSSs for cars, trucks and multipurpose passenger vehicles under the LSV definition, and allow manufacturers of LSVs more flexibility in the design of their products without sacrificing the safety of the vehicles’ users. Further, the crash avoidance and crash protection requirements for a LSV are appropriate for that vehicle’s size and anticipated usage, regardless of whether the vehicle is designed to transport passengers or cargo.

## III. Public Comments

We received sixteen comments on the NPRM.<sup>5</sup> Comments were received from

<sup>5</sup> Comments were submitted by: (1) National Golf Car Manufacturers Association (NGCMA); (2) Electric Drive Transportation Association (EDTA); (3) Mr. Walter W. Harsch; (4) Harley Holt & Associates; (5) C.C. Chan; (6) Ms. Lauren Brooks; (7) Voltage Vehicles; (8) ZAP; (9) ZAP Latin America, S.A.; (10) Advocates for Highway and Auto Safety (Advocates); (11) Tiger Truck, L.L.C.; (12) California Manufacture of Electric Vehicle (CAMEV); (13) The Honorable Lynn Woolsey, Member of Congress; (14) Mr. Alex Campbell; (15) DaimlerChrysler (parent

<sup>3</sup> Docket No. NHTSA-03-16601.

LSV manufacturers, LSV distributors, an industry organization representing golf cart manufactures, public interest groups, individual members of the public, and a member of Congress.

A few commenters expressed concern about expanding the definition by removing the truck exclusion. However, a majority of commenters supported the removal of this exclusion, while expressing concern with and opposition to the proposed GVWR and RCL limits. Comments regarding the proposed limits generally found the limits to be too restrictive.

#### IV. The Final Rule and Response to Public Comments

##### A. The Final Rule

Today's document establishes the definition of LSV as proposed in the December 2003 NPRM, except that we are not specifying a minimum RCL. The definition of LSV is revised as follows:

*Low-speed vehicle* means a vehicle,

(a) that is 4-wheeled,

(b) 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, and

(c) whose GVWR is less than 1,134 kilograms (2,500 pounds).

This definition eliminates the exclusion of trucks from the LSV definition. A vehicle equipped with a cargo bed or other form of cargo carrying capacity may now be classified as a LSV, so long as the vehicle complies with the other provisions of the definition.

The definition established in today's document better expresses our concept of "LSV." As previously expressed, "LSV" is intended to comprise a class of vehicles for which the FMVSSs for cars, trucks, and multi-purpose vehicles are inappropriate because of the small size of these vehicles. Today's definition defines the limits of that size and permits the manufacture of LSVs designed for a more utilitarian function through the incorporation of greater cargo carrying capacity. LSVs with greater cargo carrying capacity offer a flexible and economical alternative to trucks in the appropriate environments, such as gated and retirement communities. The application of the full range of FMVSSs to which cars, trucks, and multipurpose passenger vehicles are subject, is equally inappropriate to these small, lightweight vehicles, whether they are designed to carry primarily passengers or property.

company of petitioner GEM); and (16) Donahue Gallagher Woods, L.L.P. (Donahue).

Two commenters, NGCMA and Advocates, opposed removing the truck exclusion from the definition of LSV. NGCMA asserted that NHTSA failed to consider numerous industry standards concerning LSV performance and safety (specifically standards SAE J-2358, ISO 391-6:2003, and ASME 56.8) and that the agency should consider all of the ramifications inherent in industrial truck function and performance (*e.g.*, existing truck FMVSSs, fuel and battery acid containment, brake performance criteria, reverse warning signal horns). NGCMA also argued that including trucks in the LSV classification will have the unintended anti-competitive effect of replacing currently available off-road light utility vehicles (with an operating speed of less than 20 mph) with LSV trucks, which may offer tax advantages. Finally, NGCMA argued that one vehicle, the Frazer-Nash 4XLSV NEV would be excluded from the definition of LSV because it has a GVWR of 3,304 lbs.<sup>6</sup>

We have carefully considered NGCMA's comments. We note that we have considered industry standards related to LSVs and specifically mentioned SAE J-2358 in the NPRM. Further, because of the limited speed and intended environment of operation, we have determined that the full range of standards applicable to trucks is not applicable to "truck-like" LSVs, *i.e.*, those designed with greater cargo carrying capacity.

Removal of the truck exclusion from the definition of LSV will permit vehicles with a maximum speed between 20 and 25 mph that are manufactured primarily to transport property to be manufactured as motor vehicles. These vehicles will also be manufactured primarily for use on public roads. The vehicles discussed by NGCMA that have maximum speed capabilities below 20 mph are off-road vehicles, *i.e.*, vehicles not manufactured for use on public roads. The off-road vehicles and the "truck-like" LSVs are manufactured for two different operating environments. Therefore, we do not anticipate that these vehicles will be in direct competition in the marketplace. We have also considered the economic impacts as required under the Regulatory Flexibility Act, discussed in greater detail below.

We also note that the Frazer-Nash 4XLSV mentioned in NGCMA's comments is equipped with a cargo bed. While the vehicle would not be

<sup>6</sup>The Frazer-Nash was mentioned in a comparison table in the NPRM. We understand NGCMA's comment to argue that the Frazer-Nash would have been considered a LSV under our old definition, but not our new definition.

considered a LSV under the new definition because it exceeds the "less than 2,500 pound" GVWR limitation, it would also not have been considered an LSV under the previous definition because of the cargo bed.

Advocates generally opposed removing the truck exception. Advocates stated that this rule making will expose many people to unnecessary risks of injuries and death because their use of LSVs that fail to conform to basic Federal safety standards for occupant protection. Advocates argued that this rule will expand the types and variety of LSVs thereby guaranteeing that even more LSVs will operate on public roads without benefit of major advances in federally regulated safety equipment and occupant crashworthiness. Advocates also argued that LSV trucks operating with speeds as high as 25 mph will result in more severe crashes, all other things being equal, because of the increased mass of these larger LSVs when they collide, especially with roadside fixed objects.

Advocates did not provide an estimate of the increase in LSVs operated on public roads (and occupants exposed) that will result from this final rule. Although we are including vehicles with greater cargo carrying capacity in the definition of LSV, we are also limiting the definition through establishing a maximum GVWR. The limitations on GVWR limitation in combination with the existing maximum speed limit of 25 mph will generally act to restrict the use of these vehicles to the appropriate environments. Given these limitations, we do not expect that operators of these vehicles will drive them in mixed-vehicle traffic for other than very short trips.

Advocates also argued that the rule would result in more severe crashes because of the 25 mph speed limitation and increased LSV mass. We did not propose to change the speed limitation in this rulemaking. As to mass, the GVWR limitation will prevent larger, heavier trucks from being classified as LSVs. Instead, truck LSVs will be similar to current LSVs.

##### 1. 2,500 Pound GVWR

Limiting LSVs to a GVWR of "less than 2,500 pounds" is consistent with the safety and practicability concerns that originally gave rise to the LSV class. When we created this vehicle class, we did so in response to the growing use of LSVs on roads in planned environments, such as retirement and gated communities. To strike an appropriate balance between competing

considerations such as safety, practicability and mobility, we sought then and continue to seek now to define the LSV class narrowly in recognition of the LSV's low operating speed and its limited use on roads in planned communities.

By removing the truck exclusion we recognize that the LSV requirements are applicable to some vehicles designed for more work-related operation. Manufacturers and the public are provided the advantages of LSVs that may be designed primarily to carry cargo. By limiting the GVWR, vehicles for which the LSV requirements are not appropriate are excluded from the LSV definition, *i.e.*, vehicles designed for use outside of planned communities or that could be designed to meet the FMVSS requirements for cars, trucks, and multi-purpose vehicles.

The GVWR limit prevents attempts to circumvent FMVSSs for cars, trucks, and multi-purpose passenger vehicles by applying the LSV classification to vehicle types that are able to meet the standards. Defining a LSV as having a maximum GVWR of less than 2,500 pounds also provides an objective means for delineating between the vehicles for which the LSV requirements are appropriate and those vehicles that can be designed to meet the full set of FMVSSs. This approach will also ensure that heavier, slow moving trucks (*i.e.*, street sweepers) continue to be excluded from the LSV definition.

A variety of commenters, *i.e.*, DaimlerChrysler, ZAP, ZAP Latin America, Voltage Vehicles, C.C. Chan, Donahue, Ms. Lauren Brooks, EDTA, Harley Holt, Mr. Alex Campbell, CAMEV, and Representative Lynn Woolsey, expressed concern with or objected to setting the GVWR limit at 2,500 pounds. Concern was raised specifically with regard to the limits impact on the utility of electrically powered LSVs, the impact on the LSV industry, and on LSVs designed to accommodate individuals with disabilities.

ZAP Latin America, ZAP, C.C. Chan, and EDTA commented that limiting the GVWR to less than 2,500 would limit the range of an electrically powered LSV (arguing that the GVWR limit would result in reducing the number or size of the batteries in these vehicles) and limit the ability of manufacturers to equip these vehicles with amenities. ZAP and CAMEV requested that NHTSA consider a higher GVWR limit. ZAP and C.C. Chan argued that a higher GVWR limitation would allow for market demands for increased range (resulting in heavier vehicles due to battery

weight) and solid doors, windows, heating and air conditioning, and advanced hybrid systems.

CAMEV argued that the "less than 2,500 pound" GVWR limitation, as proposed, would cut the driving range of an electric powered vehicle from 35 miles to 22 miles, as a result of having to reduce the weight for battery capacity from 800 pounds to 625 pounds. This decreased range, it argued, would have the effect of limiting applications of LSVs.

Donahue, Mr. Alex Campbell, Representative Lynn Woolsey, C.C. Chan, and Harley Holt argued that the "less than 2,500 pound" GVWR provision of the LSV definition would significantly impact or materially harm the LSV industry. Concern was raised regarding the impact of the proposed rule existing companies, particularly, ZAP, Voltage Vehicles of Windsor California, and RAP of Windsor California, as well as on the most widely accepted existing LSVs.

As stated above, we are adopting the 2,500 pound GVWR limit in the definition of LSV to provide the appropriate balance between the intended function of these vehicles and safety. Again, the LSV class was established to recognize vehicles manufactured for operation in limited, and typically closed environments. The LSV class is not intended to include vehicles manufactured for operation in mixed traffic. A maximum GVWR of less than 2,500 pounds will enable LSV manufacturers to design a LSV with sufficient range and amenities, suitable for operating in these communities.

Given that vehicles fully compliant with FMVSS exist under 2,500 lbs and that the LSV class was created for vehicles that were too small to meet the FMVSS, there is no reason for vehicles over 2,500 lbs not be fully FMVSS compliant, and thus a great deal safer than a 2,500 lb GVWR LSV.

As noted in the 1998 final rule, the operation of LSVs in an environment with heavier, faster moving vehicles raises obvious safety concerns. Because LSVs are much lighter than conventional vehicles and are not subject to the same Federal motor vehicle safety standards, they are less crashworthy than conventional vehicles. Thus, LSV drivers, especially those unused to the limited acceleration capabilities of LSVs, and passengers will be exposed to a greater risk of injury or death when operating an LSV on roadways with a posted speed limit of 35 mph, or when attempting to cross a roadway with a posted speed limit greater than 35 mph.

We believe that, as LSVs become equipped with additional amenities, such as air conditioning, solid doors, and batteries for extended range, they lose the basic characteristics of a special vehicle designed for transportation within a planned, limited environment. Instead, these vehicles take-on the profile of a small, traditional passenger car vehicle, and in some cases, may be marketed as a small passenger car or as a substitute for a small passenger car. Even with a 25 mph speed limitation, we are concerned that LSVs that have characteristics and attributes of traditional passenger cars will be more likely to be used outside of planned communities and instead, more regularly mix with traffic. We currently require small vehicles, such as the Honda Insight, to be fully compliant with all FMVSSs. We do not believe that it is in the interests of safety to make an exception from our normal FMVSS standards for such vehicles. Moreover, there is no reason why vehicle with a GVWR greater than 2,500 pounds cannot be designed to comply with all the safety standards applicable to traditional passenger cars.

While the EDTA agreed that the GVWR provided an appropriate method for restricting the size of LSVs, it commented that the 2,500 pound limit is overly restrictive and would reduce the flexibility to develop new products in the future with different propulsion configurations or additional features. EDTA stated that the proposed GVWR does not take into consideration the increased weight associated with additional features necessary to comply with revised safety requirements or performance standards.

DaimlerChrysler noted that its vehicles are powered by an electric propulsion system, which adds 300 pounds to a comparably equipped internal combustion engine LSV. As such, DaimlerChrysler recommended a two-tiered GVWR maximum for the definition of a LSV: a 2,500-pound GVWR limitation for internal combustion LSVs, and a 2,800-pound limitation GVWR for electric powered LSVs. DaimlerChrysler argued that this would allow it to present customers with a choice between internal combustion and electric propulsion systems for vehicles carrying the same payload. ZAP Latin America was also concerned that the GVWR limitation would diminish its ability to compete with internal combustion automobiles (since internal combustion automobiles are likely to have a greater range than electric LSVs).

The LSV definition does not specify a propulsion system. A LSV may be

powered by an electrical motor, an internal combustion (IC) engine, or some other type of propulsion system. Each propulsion type has its own advantages. The advantage of the lighter weight of IC propulsion is an advantage that already exists. However, DaimlerChrysler noted that the majority of LSVs are electric. Mr. Walter Harsch commented that it is not the "norm" for "working" vehicles to be electric, but he anticipates the trend to move toward electric vehicles.

The fact that electric LSVs are successful in the market indicates that any advantage of the IC vehicle due to greater load capacity under our GVWR restriction will be overcome by other attractions of the electric vehicle to consumers. Therefore, it does not appear that this final rule creates a new disadvantage for electric vehicles. While IC vehicles are able to carry more weight, since they do not need batteries, this advantage seems to be countered by consumers' preference for electric-powered vehicles.

Further, we considered the amount of weight necessary for battery reserve in electric vehicles when we proposed our "less than 2,500 pound" GVWR limitation. The intent of the LSV definition is to recognize a class of vehicles for which the full range of safety standards applicable to cars, trucks, and multipurpose passenger vehicles is not appropriate because of the LSVs' small size and limited use. We found that the lightest fully FMVSS compliant vehicle is about 2100 pounds GVWR. By setting the LSV maximum GVWR at 2500 pounds we have allowed 400 lbs for batteries for electric propulsion.

ZAP Latin America, Ms. Lauren Brooks, and C.C. Chan argued that a safety-based approach should include heavier LSVs in the definition because heavier LSVs are safer or because LSVs are made heavier for safety purposes. For example, ZAP Latin America commented that it makes a heavier LSV for safety purposes. Lauren Brooks and C.C. Chan stated that lighter vehicles have a much higher risk of a fatal crash (citing DOT HS 662 Vehicle Weight, Fatality and Crash Compatibility of Model Year 1991–99 Passenger Cars and Light Trucks). C.C. Chan commented that passengers would be safer behind a solid door rather than being in open air, and that the current weight would limit the ability for these vehicles to have solid doors and windows, making them less safe.

In a crash with a traditional, heavier vehicle, a LSV would be at a disadvantage. This is why we believe that the use of LSVs should be restricted

to planned communities. The commenters cited our study on Vehicle Weight, Fatality and Crash Compatibility of Model Year 1991–99 Passenger Cars and Light Trucks. This study involved vehicles that fully comply with all of our FMVSSs for passenger cars and trucks. The study did not involve LSVs.

As we stated above, heavier vehicles (*i.e.*, vehicles over 2,500 pounds GVWR) that take on the profile of a small car, and contain solid doors, air conditioning systems, and batteries for extended range, are more likely to be used on roads outside of neighborhoods and planned communities. We do not believe that it is appropriate to encourage such use. These heavier vehicles can instead be designed to meet the full set of FMVSSs. Therefore, we believe that the "less than 2,500 pound" GVWR restriction helps to ensure that the vehicles will be limited in the geographic scope of their use, as NHTSA originally intended, thereby reducing the risk to occupants from mixing with other vehicles.

We believe that "less than 2,500 pounds" GVWR is adequate for a LSV that operates in planned communities. We also believe that increasing the maximum GVWR for a LSV would be inconsistent with the interests of safety, as discussed above. Finally, we believe that as a vehicle becomes heavier and increasingly resembles a small vehicle, by having features such as doors, it is more likely that the vehicle will be mixed with heavier vehicles, and can and should meet the full range of FMVSSs.

Voltage Vehicles and Donahue both commented that limiting the weight of the LSV would limit the ability of manufacturers to offer LSVs to accommodate people with disabilities. Voltage Vehicles stated that it has been working to develop a wheelchair accessible version of the ZAP World Car. Voltage Vehicles stated that its current modifications would add as much as 200 to 350 pounds to the GVWR of the vehicle, which already has a GVWR of approximately 3,000 pounds.

We note that the vehicles described by Voltage Vehicles would exceed the GVWR limit established in this final rule prior to the modifications for accommodating people with disabilities. We also note that existing LSV can be modified to accommodate individuals with disabilities while maintaining a GVWR below 2,500 pounds. Braun Corporation modifies the GEM LSV with a turning seat and a hoist for a wheelchair or scooter. The GEM eL, which is a LSV that is accessible to

occupants with mobility impairments, has a GVWR of 2,300 pounds. It could easily accommodate a heavy power wheelchair and still have capacity for the occupant, another passenger, and special equipment.

The agency also received a comment from Mr. Walter Harsch requesting that LSVs be limited according to "curb weight" as opposed to GVWR. However, curb weight describes only the weight of the vehicle and not its capacity. GVWR is a description of the maximum possible weight of the fully loaded vehicle. GVWR is more pertinent to safety.

The agency has determined that a GVWR limit of 2,500 pounds in conjunction with the 25 mph speed limitation, provides a more appropriate definition for a LSV. We believe that GVWR is necessary to limit this class of vehicle to vehicles that are used in planned communities and cannot be designed to meet the full set of FMVSSs. Also, we stated in the original final rule and the NPRM to this rulemaking, we did not intend for heavier, slow-moving vehicles (*e.g.*, street sweepers), or vehicles that can be designed to meet the full set of FMVSSs, to be included in the LSV class.

## 2. The 80-Pound RCL Limitation

The agency is not adopting the minimum RCL requirement as proposed. The proposed minimum RCL was intended to address safety concerns regarding the overloading of vehicles. In its comments DaimlerChrysler agreed with our proposal. Although the proposed RCL limit was a minimum, ZAP argued that LSVs are used for many purposes, some of which are for cargo loads that may exceed 80 pounds. Harley Holt commented that the selection of an 80-pound minimum rated cargo load simply because it is the estimated weight of two golf bags is inappropriate when applied to LSVs that would be sold and used to transport property. Harley Holt suggested that there be no minimum value specified for rated cargo load.

We have carefully considered the comments on our proposed 80-pound RCL limitation, and have decided not to include the limitation in the final rule. We note that it is important for safety, for all classes of vehicles, that vehicles not be driven in an overloaded condition. However, we believe that the "less than 2,500 pound" GVWR limitation in addition to the other limiting attributes of the definition negate the need to specify a RCL to accomplish this goal.

### B. Miscellaneous Comments

In the NPRM, we requested comments on several additional issues. In response to our inquiry of whether GVWR is the most appropriate method for restricting the size of LSVs, DaimlerChrysler commented that it agreed with the method but also suggested a minimum height limitation to aid the conspicuity of LSV vehicles. We have reviewed DaimlerChrysler's comments and note that we have recently addressed the LSV conspicuity issue. For further details, please see our original final rule (63 FR 33194, June 17, 1998) and our recent termination of rulemaking (70 FR 7222, Feb. 11, 2005) where we determined that there is an absence of data showing a conspicuity-related safety problem with current LSV designs.

ZAP and C.C. Chan commented that NHTSA should consider broadening the LSV definition to include 3-wheeled vehicles. ZAP noted that many low speed vehicles in Europe have 3 wheels. However, the 4-wheel limitation distinguishes a LSV from a "motor cycle" or a "motor-driven cycle" as defined in 49 CFR § 571.3. Motorcycles and motor-driven cycles are separately regulated. Our proposal to change the LSV definition does not change the relationship in how we regulate LSVs and motorcycles or motor-driven cycles. Any such change is beyond the scope of this rulemaking and would require us to do further analysis and provide for public comment on such a change.

Several commenters, *i.e.*, Mr. Alex Campbell, Representative Lynn Woolsey, and EDTA, commented that the government should be working to reduce the restrictions for zero-emission forms of transportation, and promote the use of technologies that provide environmental benefits.

As we stated in the June 1998 final rule, we believe that the creation of the LSV class would help, not hurt, communities reach environmental goals. We believe that the promulgation of FMVSS No. 500 was a pragmatic, flexible and necessary approach to regulating the safety of LSVs. The adoption of the GVWR limitation is necessary to balance the utility of the LSV with safety concerns. Eliminating the truck exclusion further increases the flexibility of the LSV class and may provide additional environmental benefits by permitting the manufacture of a vehicle that could be operated in lieu of a truck in the appropriate operating environments.

### V. Rulemaking Analyses and Notices

Executive Order 12866 and DOT Regulatory Policies and Procedures

Executive Order 12866, "Regulatory Planning and Review" (58 FR 51735, October 4, 1993), provides for making determinations whether a regulatory action is "significant" and therefore subject to Office of Management and Budget (OMB) review and to the requirements of the Executive Order. The Order defines a "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

This rulemaking document was not reviewed under Executive Order 12866, "Regulatory Planning and Review." The agency is aware of only one LSV (the imported ZAP Worldcar) currently produced that will no longer be classified as a LSV under the final rule. This impact will not result in an annual effect on the economy of \$100 million or more.

As discussed below in Regulatory Flexibility Act analysis, the manufacturer of this vehicle has two options: (1) To redesign the vehicle to comply with the full set of FMVSSs, or (2) to reduce the weight and GVWR of the vehicle so that it meets LSV class limitations.

This final rule will permit current LSV manufacturers to produce LSVs for more work oriented functions. In the petitions for rulemaking received by the agency and the comments on this rulemaking, manufacturers stated that the definition adopted today will allow them to expand production to meet a consumer need.

#### Regulatory Flexibility Act

Pursuant to the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the

rule on small entities (*i.e.*, small businesses, small organizations, and small governmental jurisdictions). No regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant economic impact on a substantial number of small entities. SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a significant economic impact on a substantial number of small entities.

I certify that the proposed amendment will not have a significant economic impact on a substantial number of small entities.

The following is the agency's statement providing the factual basis for the certification (5 U.S.C. 605(b)). The final rule directly affects motor vehicle manufacturers, specifically, manufacturers of LSVs. North American Industry Classification System Codes (NAISC) code number 336111, Automobile Manufacturing, prescribes a small business size standard of 1,000 or fewer employees. NAISC code number 336211, Motor Vehicle Body Manufacturing, prescribes a small business size standard of 1,000 or fewer employees.

The establishment of the new category of motor vehicles, low-speed vehicles, under FMVSS No. 500, in 1998, provided small business with the opportunity to expand into a new market. This final rule will further permit the manufacture of LSVs to meet additional needs, but it will also limit the market for LSVs to those under 2,500 pounds GVWR. The previous definition of LSV did not limit the GVWR of motor vehicles that could be defined as a LSV.

In 2003, over 30 manufacturers had registered with NHTSA as intending to manufacture LSVs. One-third of these manufacturers listed the intended GVWR range as including vehicles over 2,500 pounds. However, to our knowledge at this time, there is only one U.S. manufacturer (California Manufacture of Electric Vehicles (CAMEV)) with actual plans to produce a LSV with a GVWR over 2,500 pounds. CAMEV has 1,000 or fewer employees.

CAMEV has not yet manufactured a vehicle and is in the development stage. CAMEV stated that the GVWR limit of "less than 2,500 pounds" is not the appropriate method of restricting the size of LSVs and that the proposed GVWR would not provide enough weight allowance for the electric propulsion system, and would limit the vehicle's applications. CAMEV stated that it is designing an electric vehicle

“model Q” that has a GVWR of approximately 3,200 pounds. CAMEV recommended a 3,200-pound GVWR limitation.

As explained above, the agency has determined that “less than 2,500 pounds” is an appropriate limit for LSVs and has taken into consideration the weight of electric propulsion systems. If CAMEV wants to keep the current vehicle design of over 2,500 pounds GVWR, then it must make the vehicle fully compliant with all applicable FMVSSs for a vehicle over 2,500 pounds GVWR.

The cost implications of these choices are difficult to estimate. Reducing the GVWR of the vehicle may be a difficult task once a vehicle is in production. Manufacturers seeking to reduce weight of LSVs can utilize mechanical innovations, advanced material technologies, and design concepts to achieve this goal while maintaining vehicle performance. Unconventional design features and aerodynamics, along with lightweight materials reduce weight throughout the vehicle and lower drag coefficient, thus requiring less power. The development of higher efficiency propulsion systems and advanced energy storage, underway through government and industry initiatives, will accelerate the production of LSVs meeting FMVSS requirements, lower cost, and provide options in the design of the LSV package.

However, weight reduction of a vehicle still in development could be accomplished with the above listed technologies without a significant economic impact to the manufacturer. Incorporating the above listed technologies would maintain the functional design of the vehicle and possibly provide benefits in fuel economy or battery life.

Designing the vehicle to comply with applicable FMVSSs is another alternative. NHTSA estimates that the FMVSSs added an average of \$858 (in 2003 dollars) and 125 pounds to the average passenger car in model year 2001, from 1968 cost and weight. While the cost to redesign an LSV to comply with the FMVSSs applicable to a passenger car would likely be greater than this average, we believe that the additional cost and weight attributed to specific safety technologies associated with FMVSSs would not be burdensome for a manufacturer to attain, particularly given that LSVs already must have brakes, lights, safety belts and other basic features.

The agency also received comment from a business, ZAP, that imports LSV above the GVWR limit adopted in this

final rule. ZAP stated that it has marketed over 85,000 electric vehicles since 1994, and currently imports completed vehicles made in China. ZAP did not specify how many of these vehicles were classified as LSVs or how many of these vehicles were LSVs with a GVWR greater than the limit adopted in today’s final rule.

ZAP stated that its new 2004 ZAP Worldcar vehicle would no longer be classified as a LSV, since its GVWR is 3,007 pounds. However, this final rule does not prevent ZAP from continuing to sell LSVs that meet the regulatory definition. The imported vehicles could either be redesigned or certified to all FMVSSs applicable to passenger cars, as explained for CAMEV. Further, ZAP already advertises a motor vehicle with a GVWR below 2,500 pounds that is not a LSV, *i.e.*, the SMART car.

#### *Paperwork Reduction Act*

NHTSA has analyzed this final rule under the Paperwork Reduction Act of 1995 (Pub. L. 104–13) and determined that it will not impose any new information collection requirements as that term is defined by the Office of Management and Budget (OMB) in 5 CFR part 1320.

#### *The National Environmental Policy Act*

NHTSA has also analyzed this final rule under the National Environmental Policy Act and determined that it will have no significant impact on the human environment. LSV usage is very small in comparison to that of motor vehicles as a whole; therefore, any change to the LSV segment does not have a significant environmental effect.

#### *The Unfunded Mandates Reform Act*

The Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4) requires agencies to prepare a written assessment of the costs, benefits and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local or tribal governments, in the aggregate, or by the private sector, of more than \$100 million annually. This final rule does not result in annual expenditures exceeding the \$100 million threshold.

#### *Executive Order 13132 (Federalism)*

Executive Order 13132 on “Federalism” requires us to develop an accountable process to ensure meaningful and timely input by State and local officials in the development of “regulatory policies that have federalism implications.” The Executive Order defines this phrase to include regulations “that have substantial direct effects on the States, on the relationship

between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.”

The agency has analyzed this rule in accordance with the principles and criteria set forth in Executive Order 13132 and has determined that it will not have sufficient federalism implications to warrant consultation with State and local officials or the preparation of a federalism summary impact statement.

In the 1998 final rule, which established the LSV definition, the agency noted that:

Under the preemption provisions of 49 U.S.C. 30103(b)(1), with respect to those areas of a motor vehicle’s safety performance regulated by the Federal government, any state and local safety standards addressing those areas must be identical. Thus, the state or local standard, if any, for vehicles classified as LSVs must be identical to Standard No. 500 in those areas covered by that standard. For example, since Standard No. 500 addresses the subject of the type of lights which must be provided, state and local governments may not require additional types of lights. Further, since the agency has not specified performance requirements for any of the required lights, state and local governments may not do so either.

63 FR at 33215. In a 1998 NPRM we revised this discussion by stating that:

[W]e have re-examined our statements about preemption in the preamble of the final rule. In those statements, we explained that, in view of our conscious decision not to adopt any performance requirements for most of the types of equipment required by Standard No. 500, the states were preempted from doing so. \* \* \* As a result of re-examining our views, we have concluded that we should not assert \* \* \* preemption in this particular situation. Accordingly, we agree that the states may adopt and apply their own performance requirements for required LSV lighting equipment, mirrors, and parking brakes until we have established performance requirements for those items of equipment. However, the states remain precluded from adopting additional equipment requirements in areas covered by Standard No. 500.

65 FR 53219, 53220; September 1, 2000.

We are unaware of any existing state laws that would be preempted by today’s final rule. We recognize that California’s definition of “low-speed vehicle” establishes a maximum “unladen weight of 1,800 pounds” (Cal. Vehicle Code section 385.5).<sup>7</sup> Unlike GVWR, the unladen weight is the weight of the vehicle without occupants

<sup>7</sup> We also note that Hawaii has incorporated a maximum “unladen weight” in its definition of NEV, which is limited to electrically powered motor vehicles (HRS § 286–2).

or cargo. (See, Cal. Vehicle Code Section 289). Today's final rule does not specify a maximum unladen weight for LSVs. Therefore, consistent with our past pronouncements regarding LSVs and preemption of State law, the addition of a maximum GVWR in today's final rule does not preempt California's definition of LSV.

This rule will not have substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132.

*Executive Order 12988 (Civil Justice Reform)*

Executive Order 12988 requires that agencies review proposed regulations and legislation and adhere to the following general requirements: (1) The agency's proposed legislation and regulations shall be reviewed by the agency to eliminate drafting errors and ambiguity; (2) the agency's proposed legislation and regulations shall be written to minimize litigation; and (3) the agency's proposed legislation and regulations shall provide a clear legal standard for affected conduct rather than a general standard, and shall promote simplification and burden reduction.

When promulgating a regulation, Executive Order 12988, specifically requires that the agency must make every reasonable effort to ensure that the regulation, as appropriate: (1) Specifies in clear language the preemptive effect, (2) specifies in clear language the effect on existing Federal law or regulation, including all provisions repealed, circumscribed, displaced, impaired, or modified, (3) provides a clear legal standard for affected conduct rather than a general standard, while promoting simplification and burden reduction, (4) specifies in clear language the retroactive effect, (5) specifies whether administrative proceedings are to be required before parties may file suit in court, (6) explicitly or implicitly defines key terms, and (7) addresses other important issues affecting clarity and general draftsmanship of regulations.

NHTSA has reviewed this final rule according to the general requirements and the specific requirements for regulations set forth in Executive Order 12988. This final rule revises the definition of the term "low-speed vehicle (LSV)" in 49 CFR Part 571. This change does not preempt any existing State law and does not have a retroactive effect. A petition for

reconsideration or other administrative proceeding is not required before parties may file suit in court. However, this change does change a "key term" within the meaning of Executive Order 12988. The agency has made every effort to ensure that this key term has been explicitly defined.

*Regulation Identifier Number (RIN)*

The Department of Transportation assigns a regulation identifier number (RIN) to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. You may use the RIN contained in the heading at the beginning of this document to find this action in the Unified Agenda.

*Data Quality Guidelines*

After reviewing the provisions of the final rule, pursuant to OMB's Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies ("Guidelines") issued by the Office of Management and Budget (OMB) (67 FR 8452, Feb. 22, 2002) and published in final form by the Department of Transportation on October 1, 2002 (67 FR 61719), NHTSA has determined that nothing in this rulemaking action would result in "information dissemination" to the public, as that term is defined in the Guidelines.

*Executive Order 13045*

Executive Order 13045 (62 FR 19885, April 23, 1997) applies to any rule that: (1) Is determined to be "economically significant" as defined under Executive Order 12866, and (2) concerns an environmental, health or safety risk that NHTSA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, we must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by us. As noted earlier, this rule is not economically significant, nor does it concern a safety risk with a disproportionate effect on children.

*National Technology Transfer and Advancement Act*

Section 12(d) of the National Technology Transfer and Advancement Act (NTTAA) requires NHTSA to evaluate and use existing voluntary consensus standards in its regulatory activities unless doing so would be

inconsistent with applicable law (e.g., the statutory provisions regarding NHTSA's vehicle safety authority) or otherwise impractical. In meeting that available and potentially applicable voluntary consensus standard, we are required by the Act to provide Congress, through OMB, with an explanation of the reasons for not using such standards. The agency specifically considered SAE J-2358 in the development of this final rule.

*Privacy Act*

Anyone is able to search the electronic form of all submissions received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (Volume 65, Number 70; Pages 19477-78) or you may visit <http://dms.dot.gov>.

**List of Subjects in 49 CFR Part 571**

Imports, Motor vehicle safety, Motor vehicles, Low-speed vehicles.

■ For reasons set forth in the preamble, NHTSA amends 49 CFR part 571 to read as follows:

**PART 571—FEDERAL MOTOR VEHICLE SAFETY STANDARDS**

■ 1. The authority citation for part 571 continues to read as follows:

**Authority:** 49 U.S.C. 322, 30111, 30166 and 30177; delegation of authority at 49 CFR 1.50.

**Subpart A—General**

■ 2. Section 571.3(b) is amended by revising the term "low-speed vehicle" to read as follows:

**§ 571.3 Definitions.**

\* \* \* \* \*

(b) *Other definitions.* \* \* \*

*Low-speed vehicle (LSV)* means a motor vehicle,

- (1) that is 4-wheeled,
- (2) 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, and
- (3) whose GVWR is less than 1,134 kilograms (2,500 pounds).

\* \* \* \* \*

Issued: August 11, 2005.  
**Ronald L. Medford,**  
*Senior Associate Administrator for Vehicle Safety.*  
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