(A) Acquire the product using—

(1) Competitive procedures; or

(2) The fair opportunity procedures in FAR 16.505, if placing an order under a multiple award task or delivery order contract;

(B) Include FPI in the solicitation process and consider a timely offer from FPI for award in accordance with the requirements and evaluation factors in the solicitation, including solicitations issued using small business set-aside procedures; and

(C) When using a multiple award schedule issued under the procedures of FAR subpart 8.4—

(1) Establish and communicate to FPI the requirements and evaluation factors that will be used as the basis for selecting a source, so that an offer from FPI can be evaluated on the same basis as the schedule holder; and

(2) Consider a timely offer from FPI.

208.606 Exceptions.

For DoD, FPI clearances also are not required when the contracting officer makes a determination that the FPI product is not comparable to products available from the private sector that best meet the Government's needs in terms of price, quality, and time of delivery, and the procedures at 208.602(a)(iv) are used.

4. Sections 208.670 and 208.671 are added to read as follows:

208.670 Performance as a subcontractor.

Do not require a contractor, or subcontractor at any tier, to use FPI as a subcontractor for performance of a contract by any means, including means such as—

(a) A solicitation provision requiring a potential contractor to offer to make use of FPI products or services;

(b) A contract specification requiring the contractor to use specific products or services (or classes of products or services) offered by FPI; or

(c) Any contract modification directing the use of FPI products or services.

208.671 Protection of classified and sensitive information.

Do not enter into any contract with FPI that allows an inmate worker access to any—

(a) Classified data;

(b) Geographic data regarding the location of—

(1) Surface and subsurface infrastructure providing communications or water or electrical power distribution;

(2) Pipelines for the distribution of natural gas, bulk petroleum products, or other commodities; or

(3) Other utilities; or

(c) Personal or financial information about any individual private citizen, including information relating to such person's real property however described, without the prior consent of the individual.

PART 219—SMALL BUSINESS PROGRAMS

5. Section 219.502–70 is added to read as follows:

219.502–70 Inclusion of Federal Prison Industries, Inc.

When using competitive procedures in accordance with 208.602(a)(iv), include Federal Prison Industries, Inc. (FPI), in the solicitation process and consider a timely offer from FPI.

6. Section 219.508 is added to read as follows:

219.508 Solicitation provisions and contract clauses.

(c) Use the clause at FAR 52.219–6, Notice of Total Small Business Set-Aside, with 252.219–70XX, Alternate A, when the procedures of 208.602(a)(iv) apply to the acquisition.

(d) Use the clause at FAR 52.219–7, Notice of Partial Small Business Set-Aside, with 252.219–70YY, Alternate A, when the procedures of 208.602(a)(iv) apply to the acquisition.

PART 252—SOLICITATION PROVISIONS AND CONTRACT CLAUSES

7. Sections 252.219–70XX and 252.219–70YY are added to read as follows:

252.219–70XX Alternate A.

Alternate A (XXX 2003)

As prescribed in 219.508(c), substitute the following paragraph (b) for paragraph (b) of the clause at FAR 52.219–6:

(b) *General.* (1) Offers are solicited only from small business concerns and Federal Prison Industries, Inc. (FPI). Offers received from concerns that are not small business concerns or FPI shall be considered nonresponsive and will be rejected.

(2) Any award resulting from this solicitation will be made to either a small business concern or FPI.

252.219–70YY Alternate A.

Alternate A (XXX 2003)

As prescribed in 219.508(d), add the following paragraph (d) to the clause at FAR 52.219–7:

(d) Notwithstanding paragraph (b) of this clause, offers will be solicited and considered from Federal Prison Industries, Inc., for both the set-aside and non-set-aside portion of this requirement.

[FR Doc. 03–12190 Filed 5–14–03; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Part 571

[DOT Docket No. NHTSA–03–14907]

RIN 2127–AI43

Federal Motor Vehicle Safety Standards; Transmission Shift Lever Sequence, Starter Interlock, and Transmission Braking Effect

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

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This document proposes to amend the starter interlock requirements of Federal Motor Vehicle Safety Standard No. 102 to permit a vehicle's engine to stop and restart automatically after the driver has initially started the vehicle. The amendment would facilitate the development of propulsion systems, such as hybrid/electric systems, that conserve energy and reduce emissions by stopping the engine (internal combustion engine) when it is not needed. To prevent inadvertent vehicle motion in reverse gear that may result from a driver shifting error, the proposed amendment would allow a propulsion system to start and stop automatically in reverse gear only if the system exhibits, at least, a minimum ''creep force'' when the engine is stopped.

DATES: You should submit your comments early enough to ensure that Docket Management receives them not later than July 14, 2003.

ADDRESSES: You should mention the docket number of this document in your comments and submit your comments in writing to: Docket Management, Room PL–401, 400 Seventh Street, SW., Washington, DC 20590.

You may call the Docket at 202–366–9324. You may visit the Docket from 10 a.m. to 5 p.m., Monday through Friday.

FOR FURTHER INFORMATION CONTACT: For non-legal issues, you may call Mr. William Evans, Office of Crash Avoidance Standards at (202) 366–2272. His FAX number is (202) 493–2739.

For legal issues, you may call Ms. Dorothy Nakama, Office of the Chief

Counsel at (202) 366–2992. Her FAX number is (202) 366–3820.

You may send mail to both of these officials at National Highway Traffic Safety Administration, 400 Seventh St., SW., Washington, DC 20590.

SUPPLEMENTARY INFORMATION:

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I. Executive Summary

The starter interlock requirement of Federal Motor Vehicle Safety Standard (FMVSS) No. 102 (presently at S3.1.3) states ''the engine starter shall be inoperative when the transmission shift lever is in a forward or reverse drive position.'' The purpose of this requirement is to prevent injuries and death from the unexpected motion of a vehicle when the driver starts the vehicle with the transmission inadvertently in a forward or reverse gear. Two recently introduced vehicles, the Toyota Prius and the Honda Insight, are powered by hybrid/electric systems (the Toyota Hybrid System (THS) and Honda's Idle-stop Technology (IST)) that permit their gasoline engines to stop and restart automatically while the transmission shift lever is in a drive position.

Each manufacturer requested us to interpret S3.1.3 as it applied to these new vehicles. In interpretation letters to Toyota (November 1, 1999) and Honda (January 17, 2001), we concluded that S3.1.3 would not prohibit either system. In each case we based our interpretations on a finding that the system met S3.1.3's underlying purpose of ensuring that the vehicle will not lurch forward or backward during driver activation of the engine starter because driver activation of the engine starter is inoperative when the transmission shift lever is in a drive position. We also noted that these new systems were more complex than those on vehicles that existed when S3.1.3 was first adopted, and that we planned to conduct rulemaking to update the requirements of FMVSS No. 102. Pending completion of the rulemaking, we stated that we would interpret S3.1.3 as requiring that *driver activation* of the engine starter must be inoperative when the transmission shift lever is in a forward or reverse drive position.

This notice proposes to amend S3.1.3 to accommodate these new technologies, while preserving the safety purpose of the standard. With respect to vehicles with automatic transmissions, the agency proposes that, after activation of the vehicle's propulsion system by the driver, the engine may stop and restart automatically when the transmission shift lever is in any forward drive gear.

We also propose to permit the engine to start and stop automatically when the transmission shift lever is in Reverse, but only if the vehicle's propulsion system provides, at least, a minimum creep force in Reverse when the engine is stopped, the accelerator is released and the propulsion system is activated. In vehicles whose engines automatically start and stop in Reverse, creep force is a force that must be overcome by driver braking even when the engine is not running. Creep force is significant relative to rearward motion in that it serves to warn drivers of impending rearward motion before the driver fully releases the brake (as does an internal combustion engine (ICE) automatic transmission only vehicle with the engine running).

In ICE automatic transmission only vehicles, creep force is the motive force applied to the vehicle by the idling engine and automatic transmission whenever the transmission shift lever is in a drive position. Creep force occurs in the direction indicated by the automatic transmission shift lever position and provides enough force to cause motion of a vehicle loaded to its Gross Vehicle Weight Rating (GVWR) on a level, paved surface before the service brake pedal is completely released. Although not required by the Federal Motor Vehicle Safety Standards, creep force exists on virtually all vehicles powered by ICE engines and equipped with automatic transmissions.

To measure creep force, we propose a test procedure that will be applicable to any vehicle whose propulsion system provides for automatic stopping and restarting when the transmission is in Reverse.

II. What Is the Safety Need for This Rulemaking?

This rulemaking addresses the starter interlock requirement in S3.1.3 of FMVSS No. 102, which currently states that the engine starter shall be inoperative when the transmission shift lever is in a forward or reverse drive position. The requirement was adopted as part of the original standard in 1968 for the purpose of preventing injuries and death from the unexpected surging of a vehicle forward or rearward in cases where the driver starts the vehicle while its transmission is inadvertently in a forward or reverse drive gear.

The development of the Toyota Hybrid System (THS) used on the Prius introduced a low emission, fuel saving propulsion system that, by design, allows the engine to stop and restart automatically while the transmission shift lever remains in a drive position. The design of the THS satisfies the concern addressed in S3.1.3, that the driver not be able to activate the engine starter when the transmission shift lever is in a forward or reverse drive position; however, the THS design is not in compliance with S3.1.3's literal meaning. Until the development of the THS, it was not necessary for S3.1.3 to differentiate between driver activation and automatic activation of the engine starter as the driver always activated the starter.

In response to a request by Toyota regarding the Prius, NHTSA issued an interpretation letter of November 1, 1999, in which we ruled that S3.1.3 applied to the driver's activation of the engine starter when the transmission shift lever is in a forward or reverse drive position, not to automatic activation of the engine starter. The THS raised no other FMVSS No. 102 issues. From a driver's perspective, the THS/Prius operates like an ICE automatic transmission only vehicle. The engine stopping and restarting mode is in effect in both forward and reverse drive gears, and regardless of whether the gasoline engine or the electric motor is powering

the vehicle, the propulsion system provides a creep force that must be opposed by the vehicle brake in order to keep the vehicle stopped when the propulsion system is on, the accelerator is released and the transmission is in gear. Creep force alerts the driver to the vehicle's direction of travel while the driver is in the process of releasing the brake pedal and minimizes the chance that the driver will be surprised due to shifting errors when he depresses the accelerator pedal. Creep force is a characteristic inherent to ICE automatic transmission only vehicles.

Later, Honda introduced the IST on the Insight equipped with a continuously variable transmission (CVT) and requested an interpretation similar to the one that NHTSA provided to Toyota. IST is another hybrid/electric low emission, fuel saving system, which allows the gasoline engine to stop and restart automatically while the transmission shift lever is in a drive position. IST also satisfies FMVSS No. 102, S3.1.3's concern about driver shifting errors during driver activation of the engine starter because it renders driver activation of the engine starter inoperative when the transmission shift lever is in a forward or reverse drive position. However, it is not in agreement with the literal meaning of S3.1.3. IST is similar to Toyota's THS relative to starter interlock, but there are significant differences in other areas of operation. IST does not provide creep force when the engine is stopped, and it is employed only in the forward drive gears. From a driver's perspective, IST does not operate quite like an ICE automatic transmission only vehicle. IST does not shut the engine off in Reverse and therefore creep force is retained in Reverse by means of the idling gasoline engine and automatic transmission. In an interpretation of January 17, 2001, we ruled that IST would be permitted under S3.1.2, citing the Toyota interpretation, but because the Insight does not act like an ICE automatic transmission only vehicle, we stated that the Honda situation raised new issues that would necessitate further rulemaking.

This notice proposes that an exception be added to FMVSS No. 102 to accommodate these new hybrid/electric technologies while preserving the safety purpose of the standard. It proposes that for automatic transmission equipped vehicles, after the driver activates the vehicle's propulsion system, the engine may stop and restart automatically while the transmission shift lever is in any forward drive gear. It also proposes that if the vehicle's propulsion system provides a creep force in Reverse (when the engine is stopped, the accelerator is released, and the propulsion system is on) that has a ratio to gross vehicle weight rating (GVWR) of at least .015, the engine may stop and restart automatically when the transmission shift lever is in Reverse. This amendment permits new technologies that allow the engine to stop and restart automatically with the transmission shift lever in gear, but minimizes the possibility that the vehicle will move in a direction unexpected to the driver upon restart. Automatic engine restarting would be permitted only in forward drive gears so that drivers learn to associate restarting with forward motion. However, automatic engine restarting is allowed for vehicles that provide a rearward creep force in Reverse that must be overcome by driver braking even when the engine is not running. Because such vehicles warn their drivers of impending rearward motion before the driver fully releases the brake (as does an ICE automatic transmission only vehicle with the engine running), restarting in Reverse would also be permitted.

III. How Different Hybrid/Electric Systems Work

So that the reader fully understands the safety need to conduct this rulemaking, and what NHTSA seeks to accomplish in amending FMVSS No. 102, the following describes how the Toyota Prius and the Honda Insight operate. NHTSA considers these two vehicles as examples of the type of electronic control systems that we can expect more of in the future, and that we propose to amend FMVSS No. 102 to accommodate. NHTSA continues to ensure that FMVSS No. 102 meets the need for safety. Significant differences between the Toyota and the Honda approaches are explained, and the consequences of these differences for this rulemaking are discussed.

A. How the Toyota Hybrid System Works—the Prius

As explained further, from the driver's perspective, the THS operates like an ICE automatic transmission only vehicle. The THS, which is currently in use on the Prius, uses both an electric motor and a gasoline engine to provide motive power. The electric motor is the primary source of motive power and is also used to start the engine. The engine is used to provide supplemental motive power and to charge the batteries. Before the driver may start or turn on the vehicle, the transmission shift lever must be in Park. After the vehicle is started or turned on by the driver, the gasoline engine may or may not start. If the engine is within the range of normal operating temperature and battery power is sufficient, the engine will not start, but the electric motor is immediately available to provide motive power and creep force. If battery power is low or the engine is not within normal operating temperature, the gasoline engine will start in order to warm up the engine and/or charge the batteries (to power the electric motor), then it will shut off. During normal vehicle operation, the engine automatically stops when the Engine Control Unit (ECU) determines that the vehicle does not need the engine to provide additional power (motive power and/or electrical power). Also, the engine automatically restarts when the ECU determines that the vehicle needs extra power (motive power and/or electrical power). When the engine is required, it may start when the transmission and the transmission shift lever are in drive positions.

The THS functions in all forward and reverse drive gears. The THS also provides creep force in all forward and reverse drive gears regardless of whether the engine or electric motor is powering the vehicle at the time. Normally, when the batteries are charged, the engine is within normal temperature range and the accelerator is depressed, the vehicle will begin to accelerate by means of power from the electric motor and will move in the direction both selected by the automatic transmission shift lever and, as previously indicated, by creep force. As the demand for acceleration increases beyond the capability of the electric motor and/or as the vehicle batteries require recharging, the same electric motor will start the vehicle engine (while the automatic transmission/transmission shift lever remain in drive positions), to provide additional motive and/or electrical power. When stopping, the electric motor aids in recharging the batteries through regenerative braking.

B. How Idle-Stop Technology Works—the Honda Insight

Idle-stop technology (IST) is currently used on the Insight and more recently on the Civic hybrid electric vehicle (system is identical to the Insight), but in the future it may be used on other Honda and Acura models that are not hybrids. Both hybrid vehicles are powered by a low-horsepower gasoline engine assisted by an electric motor. When the driver manually engages the starter to start the vehicle's engine, the transmission shift lever must be in Park or Neutral. During vehicle operation, the engine is always running except during

certain circumstances while the vehicle is stopped. Under normal conditions after the vehicle has been driven with the transmission in a forward drive position at a speed greater than or equal to 15 kph (9.32 mph), when the driver stops the vehicle by depressing the service brake pedal, the gasoline engine will stop and the transmission will automatically shift to Neutral even though the transmission shift lever remains in Drive. When the driver removes his foot from the service brake pedal, hydraulic brake pressure is maintained, the starter automatically engages the vehicle engine and the engine starts up. After the engine starts, the transmission automatically shifts internally from Neutral back to Drive, hydraulic brake fluid pressure is automatically released, and the vehicle may start to move slowly forward due to creep force from the idling engine and automatic transmission. When the accelerator is depressed, the vehicle moves in the direction directed by the transmission shift lever position.

Since IST does not provide creep force when the service brake is applied, there is no indication of the direction of vehicle movement until after the driver's foot has been completely removed from the service brake pedal. After release of the service brake pedal, the service brakes remain fully engaged until the engine is restarted and the transmission automatically shifts into a forward drive position. This automatic chain of events occurs very rapidly after the service brake pedal is released, however, the sequence may or may not be completed by the time the driver depresses the accelerator.

As IST is not in effect in Reverse, the engine does not shut off when the transmission is in Reverse. Therefore, the propulsion system provides creep force as a result of the idling engine and the automatic transmission. In forward gears, when the accelerator is depressed, the engine or the engine assisted by the electric motor accelerates the vehicle. The electric motor is used to assist the gasoline engine when extra motive power is required, and to restart the engine after idle-stop.

The Honda system receives input from numerous sensors throughout the vehicle. The ECU will not allow the engine to stop when the vehicle comes to a stop and the transmission lever is in Reverse, Low or S mode (another low gear); immediately after the engine starts; when the air conditioning is in ''Auto Switch'' mode; when the engine water temperature, the transmission oil temperature, ambient temperature or energy in the battery are low; when electrical load is high; and during sudden (panic) braking. Also, when the engine is stopped and the transmission shift lever is shifted from Drive to Reverse, Low, or Park, the engine restarts immediately while the service brake pedal is depressed.

IV. Previous Related Rulemaking Action—ZEMCO Petition

In 1979, ZEMCO Inc. asked for an interpretation of S3.1.3 in FMVSS No. 102. ZEMCO wanted to market an add-on fuel savings device that conflicted with S3.1.3. The ZEMCO system could be installed on all vehicles as original or after-market equipment and would automatically control the shutdown and restarting of the vehicle engine in order to conserve fuel at times when the vehicle would be otherwise stopped with the engine running at idle speed. The ZEMCO system did not exhibit creep force when the engine was stopped and was employed in both the forward and reverse gears.

As a result of ZEMCO's request for an interpretation and subsequent petition for rulemaking, NHTSA commenced rulemaking to amend S3.1.3. As part of the rulemaking process, NHTSA tested the operational safety of the ZEMCO system. Several safety concerns surfaced during testing such as the delay in engine restarting, the lack of an automatic shut-off feature for the system when the driver parks the vehicle and leaves without specifically turning off the fuel savings system, the effects on other vehicle functions, vehicle stalling on restart and the avoidance of engine shutdown under certain conditions. These safety concerns resulted in the agency publishing a notice of termination of rulemaking in the **Federal Register** of March 27, 1984 (49 FR 11692). In the termination notice, NHTSA also encouraged further research and development in the area of fuel economy devices.

V. Notice of Proposed Rulemaking

The following describes NHTSA's rulemaking proposal to amend FMVSS No. 102 and the four major issues addressed in the rulemaking: first, the significance of reverse drive and the park position; second, the importance of creep force; third, the level of creep force to be specified; and fourth, the safety need for fail-safe provisions for automatic engine stopping and restarting while the transmission and/or transmission shift lever are in gear.

A. Reed Interpretation Letter, the Significance of Reverse Drive and the Park Position

In 1991, Mr. Brett Reed of Morse Controls, Inc. submitted a request for an interpretation of FMVSS No. 102 as it applies to electronic transmission shift controls. Mr. Reed specifically asked about controls that operate automatic transmissions used in heavy trucks and recreational vehicles (RVs) and on solenoid operated power shift transmissions used in various on and off highway vehicles. In his letter, Mr. Reed cited S3.1.3, which requires that the engine starter be inoperative when the transmission shift lever is in a forward or reverse drive position. The main question posed was if the intent of the standard was to render the starter engine inoperative when the transmission shift lever is in a forward or reverse drive position or when the transmission was in a forward or reverse drive gear. Mr. Reed noted that when FMVSS No. 102 was written, transmission levers communicated with transmissions via mechanical linkages and therefore the transmission shift lever always matched the gear position of the transmission.

With the introduction of electronic shift systems and fully electronic controlled transmissions, communication between the transmission shift lever and the transmission is rarely performed by direct mechanical means. This raises the possibility that the transmission shift lever position may not match the gear currently engaged by the transmission in situations where the transmission control circuitry overrides the shift lever selection in the interest of safety, transmission protection or other criteria related to performance and specific applications. The concern was that some systems automatically shift to Neutral within the transmission when the engine is started, however, the transmission shift lever remains in some other position. In these cases, the transmission shift lever position does not coincide with the status of the transmission. Mr. Reed sought an interpretation stating that the intention of S3.1.3 was that the engine starter shall be inoperative when the transmission is in a forward or reverse drive position.

NHTSA's response of September 16, 1991 essentially stated that the transmission shift lever position and the gear position of the transmission must always agree. Since this interpretation in 1991, electronically controlled transmissions have become more prevalent. Today, electronically controlled transmissions are not only on large trucks and recreational vehicles, but are also appearing in the passenger car fleet. In addition, vehicle electronic control systems and control algorithms have become more sophisticated, which

allow for more safeguards and fail-safe systems. These systems are capable, on a limited basis, of overriding the driver's input or lack of input to achieve optimal vehicle performance and safety.

The Honda Insight with the continuously variable transmission, which employs idle-stop technology (IST) and which NHTSA permitted in an interpretation letter of January 17, 2001, highlights the decreasing relevance of the shift lever position in certain situations. IST allows the engine to stop, the transmission to briefly shift to Neutral while the engine is automatically restarting, then allows the transmission to shift back to Drive while the transmission shift lever remains in a drive position. During this procedure, however, service brake pressure is maintained even after the driver has released the service brake pedal. This scenario was not disputed in the Honda interpretation even though it was in conflict with the 1991 interpretation letter to Mr. Reed.

NHTSA intends that the Honda interpretation supersede the Reed interpretation to the extent that, from now on, for all vehicles, when the transmission shift lever is in a forward drive position, the transmission gear may be in another forward drive position or Neutral. When the transmission shift lever is in Reverse, the transmission gear must be in reverse gear. Additionally, when the driver has selected the transmission shift lever ''Park'' position, the transmission must always be in the Park position. This restriction is necessary to ensure that the vehicle does not start moving when the driver does not expect the vehicle to move, and cause the driver to panic. We are proposing an additional provision for vehicles with systems that allow the engine to start and stop automatically after driver activation of the engine starter which states that when the transmission shift lever is in Park, the engine automatic start/stop system shall not take the transmission out of Park.

B. Safety Importance of Creep Force in Cueing the Driver—Creep Force in Reverse

In ICE automatic transmission only vehicles, creep force is the motive force applied to the vehicle by the idling engine and automatic transmission whenever the transmission shift lever is in a drive position. Creep force occurs in the direction indicated by the automatic transmission shift lever position and provides enough force to cause motion of a vehicle loaded to its Gross Vehicle Weight Rating (GVWR) on a level, paved surface before the service brake pedal is completely released. Although not required by the Federal Motor Vehicle Safety Standards, creep force exists on virtually all vehicles powered by ICEs and equipped with automatic transmissions.

When the current wording of FMVSS No. 102 was adopted in 1968, vehicles were equipped mostly with ICEs and mechanical/hydraulic automatic transmissions, which have always provided creep force. Today, drivers can rely on creep force to avoid crashes that would result from shifting errors. When a driver places the automatic transmission shift lever in a drive position and reduces service brake pressure slowly by easing up on the service brake pedal, the vehicle begins to move slowly in the direction that has been selected by the transmission shift lever. This creep force in the correct direction cues the driver that when the accelerator is depressed, the vehicle will move in the anticipated direction.

It is important for creep force to initiate motion of the vehicle before the driver's foot leaves the service brake pedal and before the service brakes are completely disengaged. Then, if a shifting error has occurred, the driver's foot is still on the brake pedal and the error can be safely and quickly corrected. For example, if there is no creep force associated with an automatic transmission equipped vehicle and the driver thought he had selected Drive but instead had selected Reverse, when he removes his foot from the brake and depresses the accelerator, the vehicle would unexpectedly move rearward instead of forward. The unexpected movement of the vehicle rearward may cause the driver to further depress the accelerator. By the time the driver realizes his mistake and applies the brake again, the vehicle may have moved rearward a considerable distance and possibly struck a pedestrian or an object, causing injury and/or property damage.

From years of driving ICE-powered automatic transmission vehicles, drivers are familiar with cues in the direction of travel indicated by creep force. Since it is not inherent in hybrid vehicles, it is NHTSA's view that there is a safety need to at least design creep force into the vehicles when in Reverse. Toyota designed the Prius in such a way that allows the electric motor to provide creep force so that it would function like an ICE automatic transmission only vehicle. For vehicles like the Prius that provide creep force in Reverse when the engine is stopped, the changes proposed in FMVSS No. 102 would allow the engine to stop and restart automatically when the transmission shift lever is in Reverse as well as in forward gears. The opportunity for shifting errors is always present. Drivers experience creep force constantly as a cue, which assures them of what gear they are in. An engine that is stopping and restarting automatically may add to driver confusion, especially when there is an absence of creep force. This proposed amendment has the effect of assuring rearward creep force in all automatic transmission vehicles with engine stop/start systems, either by requiring that the engine remain running in Reverse for vehicles like the hybrid electric Insight/Civic or by virtue of the design of the electric propulsion system for vehicles like the Prius. When there is no creep force or when there is creep force in the forward direction, the driver will know the vehicle is in a forward drive gear, in Neutral, or Park.

In examining the propulsion systems of the Honda Insight and Civic hybrid electric vehicle with IST and the Toyota Prius with the THS, it was noted that the Honda Insight/Civic hybrid electric vehicle did not provide creep force in the forward direction, as there was no possibility of vehicle motion until the service brake pedal was fully released. The Honda system provides creep force in Reverse because IST does not function in Reverse and the engine remains running, allowing the engine/automatic transmission to provide creep force by means of the ICE and automatic transmission. For the Toyota Prius, the engine stops in either the forward or reverse gears, however, when the gasoline engine is off, creep force is provided by the electric motor.

C. The Level of Creep Force Specified

In order to investigate the level of creep force that drivers are used to, and the level of creep force to require of any vehicle that allows the engine to automatically start and stop in Reverse, NHTSA measured the creep force produced by thirteen vehicles, including passenger cars, multipurpose passenger vehicles, and light trucks, that were selected on the basis of their availability. Measurements were made with the vehicle engines running at idle and the vehicle automatic transmissions in Drive, the lowest ratio forward gear (Low) and Reverse.

A record of the vehicles tested and creep forces measured are in Table 1. The creep force must be high enough to be noticeable to the driver. A heavier vehicle requires greater creep force to produce an obvious cue to the driver. The force data in Table 1 represents the amount of creep force that each vehicle's propulsion system produced. The creep force of some of these vehicles may be in excess of what is necessary to be minimally noticeable to

the driver. Since the motion cue to the driver depends mainly on creep force and vehicle weight, NHTSA believes it is appropriate to examine the ratio of creep force (forward and reverse) to vehicle weight (in Table 1, curb weight was used) of the vehicles tested. The results ranged from a minimum value of 0.02 for test number one (rearward creep force) to a maximum value of 0.17 for test number eleven (forward creep force). Since the creep force was obvious to the driver for all of these vehicles, NHTSA selected the lowest creep force to vehicle curb weight ratio, which was .02. Later, for the purpose of consistency, we decided to convert the lowest creep force/curb weight ratio to its corresponding creep force/GVWR ratio, which is .015. For vehicles that allow the engine to stop and start automatically while the transmission shift lever is in Reverse, the reverse creep force designed into a vehicle's propulsion system must be, at minimum, 1.5 percent of the vehicle's Gross Vehicle Weight Rating (GVWR) when the vehicle's engine is stopped, the propulsion system is on, the accelerator is released, the vehicle is loaded to its GVWR and the vehicle is on a level, paved surface.

The agency invites input from industry and the public relative to what this minimum ratio of creep force to vehicle GVWR should be. The agency also requests comments on the test for creep force in S5 of the proposed regulatory text.

TABLE 1

Test No.	Date	Vehicle							Creep force (lbs.)		
		Vehicle type	Year	Make	Model	VIN	Engine size (L)	Curb weight (lbs)	Drive	Low	Rev.
1	10/19/01	Truck	2000	Chevrolet	1500 Pickup, Full size, 4X4, ½ ton.	1GCEK19T0YE******	5.3	[1] 4374	150	155	95
2	10/24/01	Passenger Car.	1992	Chevrolet	Camaro Sport Coupe, 2DR, Hatchback/liftback.	1G1FP2385NL******	5.7	3103	400	400	270
3	10/31/01	MPV (Van-Wagon).	1998	Mazda	MPV, Wagon, (4X4), JEE, HYD/Class D.	JM3LV5239W0******	3	4120	265	260	255
4	11/2/01	Passenger Car.	1997	Honda	Civic EX 2DR, Coupe/4A.	1HGEJ824XVL******	1.6	2518	265	255	200
5	11/3/01	Passenger Car.	1990	Toyota	Corolla, Deluxe, 4DR.	2T1AE94AXLC******	1.6	2394	270	270	225
6	11/4/01	Passenger Car.	1993	Saturn	SW2, 4DR, Wagon.	1G8ZK8579PZ******	1.9	2506	265	265	265
7	11/4/01	Passenger Car.	1998	Subaru	Forester, Wagon, L.	JF1SF6351WH******	2.5	2795	295	295	295
8	11/4/01	MPV	1999	Jeep	Grand Cherokee, 4X4, Laredo, 4DR.	1J4GW58S6XC******	4	3932	350	350	240
9	11/4/01	MPV	1999	Jeep	Grand Cherokee, 4X4, Laredo, 4DR.	1J4GW58S7XC******	4	3932	490	490	290
10	11/4/01	MPV	2000	Chevrolet	S10/Blazer, 4X4, ½ ton.	1GNDT13W7Y2******	4.3	5350	175	175	125
11	11/4/01	Truck	1996	Dodge	Dakota, Pickup, Sport.	1B7GL26X5TS******	3.9	3124	520	520	285
12	11/4/01	Passenger Car.	1988	Ford	Mustang, GT, 2DR, Sedan, Hatchback.	1FABP42E5JF******	5	3173	200	200	155
13	11/6/01	Passenger Car.	2002	Toyota	Prius	JT2BK18U820******	1.5	2765	165	167	165

[1] (GVWR = 6400 lbs.).

D. The Safety Need for Fail-Safe Provisions for Automatic Engine Stopping and Restarting While the Transmission and/or Transmission Shift Lever Are in Gear

With any automatic system that is critical to the safe operation of a motor vehicle, there is concern about what happens during a failure mode. For systems that allow the engine to stop and restart while the transmission and/or transmission shift lever remain in a drive position, it is important that the automatic starting of the engine does not cause the vehicle to unexpectedly surge forward or rearward both during normal operation and during failure modes. It is also important that when the vehicle is stopped, the engine stops automatically, the driver releases the brake pedal and depresses the accelerator to move the vehicle, that the engine restarts and is prepared to move the vehicle in a reasonable amount of time.

From the driver's perspective, the Prius behaves like an ICE automatic transmission only vehicle. The potential for the automatic restarting of the engine to confuse the driver and cause unexpected surging of the vehicle due to driver shifting errors is not an issue with the THS on the Prius. The Prius is an electric vehicle with a gasoline engine that assists when the batteries need charging or when additional motive power is required during acceleration and the electric motor provides creep force in both the forward and rearward directions regardless of whether the gasoline engine is running.

The Honda Insight does not have creep force in Drive when the idle-stop system operates. Any slow, forward motion of the vehicle that occurs is developed by the idling engine and automatic transmission after it starts. This takes place after the driver has released the brake pedal. One of the sensors that the Honda system receives input from is the brake switch, which indicates whether the brake is depressed or released. If the brake switch should fail open and the brake is depressed without the idle-stop sensing it, the idle-stop would cease to function. If the failure took place while the idle-stop function was operating, the engine would start and run at idle speed. This would not be an unsafe condition because the driver's foot is on the brake. The running engine would initiate slow, forward motion of the vehicle but a small amount of additional force on the already depressed brake pedal would hold the vehicle stationary. If the brake switch failed closed while the idle-stop system was operating and then the brake was released, the system would not sense the brake release and the engine would not restart. If the failure occurred while the vehicle was being driven, it would fail to restart during the next cycle. This failure mode would be no different than any of the many other failures that could cause an ICE only motor vehicle to stall in traffic. Thus, the current designs of the Prius and Insight do not introduce any failure mode safety issues over those that presently exist in ICE automatic transmission only vehicles.

It is anticipated that idle-stop technology will eventually be applied to ICE only vehicles (non-hybrid electric). We expect that these new designs will be very similar to the system used on the Insight/Civic hybrid electric vehicle. Systems that may permit unexpected, sudden surging of the vehicle when the ICE automatically restarts would not meet the need for safety. Even when the vehicle is stopped and the accelerator is fully depressed during automatic engine starting, such systems should contain safeguards that prevent sudden, unexpected surging of the vehicle. NHTSA requests comments on specifying a maximum throttle position regardless of the driver's input, for example, when the vehicle is stopped and the engine is about to automatically restart, if the driver's throttle input is greater than one-fourth of the maximum throttle, the throttle would automatically be limited to one-fourth of the maximum throttle during automatic engine restart.

The issue of timely restarting during normal operation is again of no concern to vehicles like the Prius. The electric motor of the Prius produces creep force and is also available to drive the vehicle when the engine is not running or if it would be slow to start. On the Insight/Civic hybrid electric vehicle, when the brake is depressed, the gasoline engine will stop when the vehicle speed is below 5 miles per hour. While the vehicle is stopped and the brake is depressed, the transmission automatically shifts into Neutral. When the brake is released, brake fluid pressure is maintained, the engine starts in Neutral then automatically shifts to Drive, and the vehicle moves slowly forward. This sequence occurs very rapidly.

In normal situations, the propulsion system is available to move the vehicle by the time the driver's foot moves from the brake to the accelerator. As earlier discussed, in March of 1984, NHTSA terminated rulemaking on ZEMCO's crude but similar system. Among the numerous safety concerns which led the agency to terminate rulemaking was the ZEMCO system's excessive delay in engine restarting. It is important that the time required for the engine to restart not become excessive as the vehicle ages and the system wears for designs where the propulsion system is disabled while the vehicle is stopped and the propulsion system must be re-enabled before the vehicle can move.

NHTSA requests comments on requiring a control that would allow the operator to lock out or turn off the idle-stop system in the event that restarting time becomes excessive or a malfunction occurs. NHTSA seeks input on what would be a reasonable maximum allowable time for the propulsion system to be available to move the vehicle after the brake pedal is released.

VI. Leadtime

We propose that if made final, the changes apply to passenger cars, multipurpose passenger vehicles, trucks and buses manufactured on or after the first September 1st that occurs two or more years after the publication of the final rule. Public comment is sought on this proposed lead time. We believe that two years is sufficient lead time for industry since we do not believe that compliance with this proposed rule would involve any new technology, or performance specifications that manufacturers cannot meet with existing design, tooling, or manufacturing capabilities. We further believe that conducting the proposed test procedures would not involve any new technologies or procedures that manufacturers would find difficult to conduct. Since this rulemaking would not make any substantive changes in the scope of FMVSS No. 102, manufacturers of passenger cars, multipurpose passenger vehicles, trucks or buses that are available for sale at the time this notice of proposed rulemaking is issued would not need to make any changes in vehicle manufacturing processes or procedures to ensure that their vehicles meet the amended FMVSS No. 102.

VII. Regulatory Analyses and Notices

A. 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.

We have considered the impact of this rulemaking action under Executive Order 12866 and the Department of Transportation's regulatory policies and procedures. This rulemaking document was not reviewed by the Office of Management and Budget under E.O. 12866, ''Regulatory Planning and Review.'' The rulemaking action is also not considered to be significant under the Department's Regulatory Policies and Procedures (44 FR 11034; February 26, 1979).

The purpose of the proposed revision of FMVSS No. 102, *Transmission shift lever sequence, starter interlock, and transmission braking effect*, is to keep pace with existing technology, by permitting the propulsion system of a vehicle to stop and restart automatically while the automatic transmission shift lever is in any forward drive gear. We also propose to allow the propulsion system to stop and restart automatically when the automatic transmission shift lever is in Reverse, provided that the propulsion system exhibits, at least, a minimum creep force in Reverse when the vehicle is stopped, the accelerator released and the propulsion system is activated. These proposed requirements were developed with the agency working in concert with the motor vehicle industry while resolving interpretation issues associated with the present standard. Therefore, there are no new costs involved with the proposed revisions, and a regulatory evaluation has not been prepared.

B. Executive Order 13132 (Federalism)

Executive Order 13132 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.'' ''Policies that have federalism implications'' is defined in the Executive Order 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.'' Under Executive Order 13132, we may not issue a regulation with Federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or unless we consult with State and local governments, or unless we consult with State and local officials early in the process of developing the proposed regulation. We also may not issue a regulation with Federalism implications and that preempts State law unless we consult with State and local officials early in the process of developing the proposed regulation.

This proposed rule would not 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, as specified in Executive Order 13132. The reason is that this proposed rule, if made final, would apply to motor vehicle manufacturers, and not to the States or local governments. Thus, the requirements of Section 6 of the Executive Order do not apply to this proposed rule.

C. Executive Order 13045 (Economically Significant Rules Disproportionately Affecting Children)

Executive Order 13045 (62 FR 19885, April 23, 1997) applies to any rule that: (1) Is determined to be ''economically significant'' as defined under E.O. 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.

This proposed rule is not subject to the Executive Order because it is not economically significant as defined in E.O. 12866 and does not involve decisions based on environmental, health or safety risks that disproportionately affect children.

D. Executive Order 12778 (Civil Justice Reform)

Pursuant to Executive Order 12778, ''Civil Justice Reform,'' we have considered whether this proposed rule would have any retroactive effect. We conclude that it would not have such an effect. Under 49 U.S.C. 30103, whenever a Federal motor vehicle safety standard is in effect, a State may not adopt or maintain a safety standard applicable to the same aspect of performance which is not identical to the Federal standard, except to the extent that the state requirement imposes a higher level of performance and applies only to vehicles procured for the State's use. 49 U.S.C. 30161 sets forth a procedure for judicial review of final rules establishing, amending or revoking Federal motor vehicle safety standards. That section does not require submission of a petition for reconsideration or other administrative proceedings before parties may file suit in court.

E. 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). However, no regulatory flexibility analysis is required if the head of an agency certifies the rule would 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 would not have a significant economic impact on a substantial number of small entities.

The Head of the Agency has considered the effects of this rulemaking action under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) and certifies that this proposal would not have a significant economic impact on a substantial number of small entities. The statement of the factual basis for the certification is that since this rulemaking would not make any substantive changes in the scope of FMVSS No. 102, small manufacturers of passenger cars, multipurpose passenger vehicles, trucks or buses would not need to make any changes in vehicle manufacturing processes or procedures

to ensure that their vehicles meet an amended FMVSS No. 102. Accordingly, the agency believes that this proposal would not affect the costs of motor vehicle manufacturers considered to be small business entities.

F. National Environmental Policy Act

We have analyzed this proposal for the purposes of the National Environmental Policy Act and determined that it would not have any significant impact on the quality of the human environment.

G. Paperwork Reduction Act

NHTSA has determined that, if made final, this proposed rule would not impose any ''collection of information'' burdens on the public, within the meaning of the Paperwork Reduction Act of 1995 (PRA). This rulemaking action would not impose any filing or recordkeeping requirements on any manufacturer or any other party. For this reason, we discuss neither electronic filing and recordkeeping nor do we discuss a fully electronic reporting option by October 2003.

H. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104–113, section 12(d) (15 U.S.C. 272) directs us to use voluntary consensus standards in our regulatory activities unless doing so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.*, materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies, such as the Society of Automotive Engineers (SAE). The NTTAA directs us to provide Congress, through OMB, explanations when we decide not to use available and applicable voluntary consensus standards.

After conducting a search of available sources (including data from International Organization of Standards or other standards bodies), we have determined that there are not any available and applicable voluntary consensus standards that we can use in this notice of proposed rulemaking. We have searched the SAE's Recommended Practices for standards applicable to creep force. We have found no SAE Standard that provides guidance on creep force. We have therefore developed our own proposal.

I. Unfunded Mandates Reform Act of 1995

Section 202 of the Unfunded Mandates Reform Act of 1995 (UMRA) requires Federal 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 in any one year (adjusted for inflation with base year of 1995). Before promulgating a NHTSA rule for which a written statement is needed, section 205 of the UMRA generally requires us to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows us to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if we publish with the final rule an explanation why that alternative was not adopted.

This proposal would not result in costs of $100 million or more to either State, local, or tribal governments, in the aggregate, or to the private sector. Thus, this proposal is not subject to the requirements of sections 202 and 205 of the UMRA.

J. Data Quality Guidelines

After reviewing the provisions of this NPRM 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 issued by the Department of Transportation (DOT) in final form on October 1, 2002 (67 FR 61719), NHTSA has determined that if made final, nothing in this rule would result in ''information dissemination'' to the public, as that term is defined in the Guidelines.

If a determination were made that public distribution of data resulting from this rule constituted information dissemination and was, therefore, subject to the OMB/DOT Guidelines, then the agency would review the information prior to dissemination to ascertain its utility, objectivity, and integrity (collectively, ''quality''). Under the Guidelines, any ''affected person'' who believed that the information ultimately disseminated by NHTSA was of insufficient quality could file a complaint with the agency. The agency would review the disputed information, make an initial determination of whether it agreed with the complainant, and notify the complainant of its initial determination. Once notified of the initial determination, the affected person could file an appeal with the agency.

K. Plain Language

Executive Order 12866 requires each agency to write all rules in plain language. Application of the principles of plain language includes consideration of the following questions:

—Have we organized the material to suit the public's needs?
—Are the requirements in the rule clearly stated?
—Does the rule contain technical language or jargon that is not clear?
—Would a different format (grouping and order of sections, use of headings, paragraphing) make the rule easier to understand?
—Would more (but shorter) sections be better?
—Could we improve clarity by adding tables, lists, or diagrams?
—What else could we do to make this rulemaking easier to understand?

If you have any responses to these questions, please include them in your comments on this NPRM.

L. 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.

Comments

How Do I Prepare and Submit Comments?

Your comments must be written and in English. To ensure that your comments are correctly filed in the Docket, please include the docket number of this document in your comments.

Your comments must not be more than 15 pages long. (49 CFR 553.21). We established this limit to encourage you to write your primary comments in a concise fashion. However, you may attach necessary additional documents to your comments. There is no limit on the length of the attachments.

Please submit two copies of your comments, including the attachments,

to Docket Management at the address given above under **ADDRESSES**.

You may also submit your comments to the docket electronically by logging onto the Dockets Management System Web site at *http://dms.dot.gov.* Click on ''Help & Information'' or ''Help/Info'' to obtain instructions for filing the document electronically.

How Can I Be Sure That My Comments Were Received?

If you wish Docket Management to notify you upon its receipt of your comments, enclose a self-addressed, stamped postcard in the envelope containing your comments. Upon receiving your comments, Docket Management will return the postcard by mail.

How Do I Submit Confidential Business Information?

If you wish to submit any information under a claim of confidentiality, you should submit three copies of your complete submission, including the information you claim to be confidential business information, to the Chief Counsel, NHTSA, at the address given above under **FOR FURTHER INFORMATION CONTACT**. In addition, you should submit two copies, from which you have deleted the claimed confidential business information, to Docket Management at the address given above under **ADDRESSES**. When you send a comment containing information claimed to be confidential business information, you should include a cover letter setting forth the information specified in our confidential business information regulation. (49 CFR Part 512.)

Will the Agency Consider Late Comments?

We will consider all comments that Docket Management receives before the close of business on the comment closing date indicated above under **DATES**. To the extent possible, we will also consider comments that Docket Management receives after that date. If Docket Management receives a comment too late for us to consider it in developing a final rule (assuming that one is issued), we will consider that comment as an informal suggestion for future rulemaking action.

How Can I Read the Comments Submitted by Other People?

You may read the comments received by Docket Management at the address given above under **ADDRESSES**. The hours of the Docket are indicated above in the same location.

You may also see the comments on the Internet. To read the comments on the Internet, take the following steps:

1. Go to the Docket Management System (DMS) Web page of the Department of Transportation (*http://dms.dot.gov/*).

2. On that page, click on ''search.''

3. On the next page (*http://dms.dot.gov/search/*), type in the four-digit docket number shown at the beginning of this document. Example: If the docket number were ''NHTSA–1998–1234,'' you would type ''1234.'' After typing the docket number, click on ''search.''

4. On the next page, which contains docket summary information for the docket you selected, click on the desired comments. You may download the comments. Although the comments are imaged documents, instead of word processing documents, the ''pdf'' versions of the documents are word searchable.

Please note that even after the comment closing date, we will continue to file relevant information in the Docket as it becomes available. Further, some people may submit late comments. Accordingly, we recommend that you periodically check the Docket for new material.

How Does the Federal Privacy Act Apply to My Public Comments?

Anyone is able to search the electronic form of all comments 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, Rubber and rubber products, Tires.

In consideration of the foregoing, it is proposed that the Federal Motor Vehicle Safety Standards (49 CFR Part 571), be amended as set forth below.

PART 571—FEDERAL MOTOR VEHICLE SAFETY STANDARDS

1. The authority citation for part 571 would continue to read as follows:

Authority: 49 U.S.C. 322, 30111, 30115, 30117, and 30166; delegation of authority at 49 CFR 1.50.

2. Section 571.102 would be revised to read as follows:

§ 571.102 Standard No. 102; Transmission shift lever sequence, starter interlock, and transmission braking effect.

S1. *Purpose and scope.* This standard specifies the requirements for the transmission shift lever sequence, a starter interlock, and for a braking effect of automatic transmissions, to reduce the likelihood of shifting errors, starter engagement by the driver when the transmission is in any drive position, and to provide supplemental braking at speeds below 40 kilometers per hour (25 miles per hour).

S2. *Application.* This standard applies to passenger cars, multi-purpose passenger vehicles, trucks, and buses.

S3. *Definitions.*

Creep force means a motive force applied exclusively by the electric motor of a vehicle that is propelled by both an electrical motor and a combustion engine while the combustion engine is stopped, the accelerator is released, the transmission shift lever is in a drive gear, and the vehicle is turned on.

S4. *Requirements.*

S4.1 *Automatic transmissions.*

S4.1.1 *Location of transmission shift lever positions on passenger cars.* A neutral position shall be located between forward drive and reverse drive positions. If a steering-column-mounted transmission shift lever is used, movement from neutral position to forward drive position shall be clockwise. If the transmission shift lever sequence includes a park position, it shall be located at the end, adjacent to the reverse drive position.

S4.1.2 *Transmission braking effect.* In vehicles having more than one forward transmission gear ratio, one forward drive position shall provide a greater degree of engine braking than the highest speed transmission ratio at vehicle speeds below 40 kilometers per hour (25 miles per hour).

S4.1.3 *Starter interlock.* The engine starter shall be inoperative when the transmission shift lever is in a forward or reverse drive position, except that after the driver has activated the vehicle's propulsion system:

S4.1.3.1 The engine may stop and restart automatically when the transmission shift lever is in any forward drive gear; and

S4.1.3.2 The engine may stop and restart automatically when the transmission shift lever is in reverse gear if the vehicle's propulsion system, when tested under S5, provides a creep force that is measurable before the brake pedal is fully released and, when measured with the brake pedal fully released, has a ratio to the vehicle gross

vehicle weight rating of at least .015, with the engine stopped.

S4.1.3.3 If the transmission shift lever is in Park, automatically stopping or restarting the engine shall not take the transmission out of Park.

S4.1.4 *Identification of shift lever positions.*

S4.1.4.1 Except as specified in S4.1.4.3, if the transmission shift lever sequence includes a park position, identification of shift lever positions, including the positions in relation to each other and the position selected, shall be displayed in view of the driver whenever any of the following conditions exist:

(a) the ignition is in a position where the transmission can be shifted; or

(b) the transmission is not in park.

S4.1.4.2 Except as specified in S4.1.4.3, if the transmission shift lever sequence does not include a park position, identification of shift lever positions, including the positions in relation to each other and the position selected, shall be displayed in view of the driver whenever the ignition is in a position in which the engine is capable of operation.

S4.1.4.3 Such information need not be displayed when the ignition is in a position that is used only to start the vehicle.

S4.1.4.4 All of the information required to be displayed by S4.1.4.1 or S4.1.4.2 shall be displayed in view of the driver in a single location. At the option of the manufacturer, redundant displays providing some or all of the information may be provided.

S4.2 *Manual transmissions.* Identification of the shift lever pattern of manual transmissions, except three forward speed manual transmissions having the standard ''H'' pattern, shall be displayed in view of the driver at all times when a driver is present in the driver's seating position.

S5. *Test Conditions and Procedures.* A vehicle with an automatic transmission that operates according to S4.1.3.2 shall be tested under the following conditions and procedures.

S5.1 *Test for Creep Force.*

S5.1.1 The ambient temperature of the test environment must be between 0 and 40 degrees Celsius (32 to 104 degrees Fahrenheit).

S5.1.2 All parameters and adjustments of the vehicle are set to factory specifications as delivered to the customer. This includes such parameters as brake adjustments, engine adjustments, and wheel bearing lubrication. Initial tire inflation pressures shall be in accordance with 49 CFR section 571.110, S4.3(c) for maximum loaded vehicle weight. The initial battery charge shall be in accordance with manufacturer's specifications, or if the manufacturer has no specifications, at a state of charge of not less than 95 percent.

S5.1.3 All accessory systems, except those that prevent creep force from being measured with the engine stopped, shall be turned on to their maximum setting.

S5.1.4 Load the vehicle under test to its gross vehicle weight rating in such a way as not to exceed any axle's gross axle weight rating when measured at the tire-ground interface and place it on a level paved surface.

S5.1.5 Attach one end of a tether such as a chain or cable to the front of the vehicle chassis at a point on the vehicle's longitudinal centerline and attach the other end to a structure that will remain stationary during the test. In series with the tether and between the vehicle and the stationary structure, place a force measurement device such as a load cell that will measure tension force at a minimum frequency of 10 HZ and to an accuracy within ± 2 percent of the actual reading in the range of 0 to 4450 N (0 to 1000 lb).

S5.1.5.1 The tether and the force measurement device must be in a horizontal orientation, parallel to the longitudinal axis of the vehicle during measurements.

S5.1.6 With the transmission shift lever in the Neutral or Park position and the parking brake applied, place the ignition switch to the Start position then release it to the Run position. Allow the vehicle to remain in this state for 15 minutes (whether the engine is running or not) before the measurements are recorded. Depress and hold the vehicle's service brake pedal to prevent vehicle motion, release the parking brake and place the transmission shift lever in the Reverse position.

S5.1.7 With the internal combustion engine stopped, slowly release the vehicle service brake pedal until the measurement device begins to register a force.

S5.1.8 Fully release the vehicle service brake pedal. Record the force indicated by the force measurement device.

Issued on: May 9, 2003.

Stephen R. Kratzke,

Associate Administrator for Rulemaking.

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