DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Part 571

[Docket No. NHTSA-2008-0157]

RIN 2127-AK15

Federal Motor Vehicle Safety Standards; Motorcycle Helmets

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

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: NHTSA is proposing to amend several aspects of Federal Motor Vehicle Safety Standard (FMVSS) No. 218, Motorcycle Helmets. Some of the amendments would help realize the full potential of compliant helmets by aiding state and local law enforcement officials in enforcing state helmet use laws, thereby increasing the percentage of motorcycle riders wearing helmets compliant with FMVSS No. 218. The amendments would do this by adopting additional requirements and revising existing requirements to reduce misleading labeling of novelty helmets that creates the impression that uncertified, noncompliant helmets have been properly certified as compliant.

The other amendments would aid NHTSA in enforcing the standard by specifying a quasi-static load application rate for the helmet retention system; revising the impact attenuation test by specifying test velocity and tolerance limits and removing the drop height requirement; providing tolerances for the helmet conditioning specifications; revising requirements related to size labeling and location of the DOT symbol; correcting

figures 7 and 8 in the Standard; and updating the reference in S7.1.9 to SAE recommended practice J211.

DATES: You should submit your comments early enough to ensure that Docket Management receives them not later than **[INSERT DATE 60 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: You may submit comments to the docket number identified in the heading of this document by any of the following methods:

- Federal eRulemaking Portal: Go to http://www.regulations.gov. Follow the online instructions for submitting comments.
- Mail: Docket Management Facility: U.S. Department of Transportation, 1200 New Jersey Avenue S.E., West Building Ground Floor, Room W12-140, Washington, D.C. 20590-0001.
- Hand Delivery or Courier: 1200 New Jersey Avenue S.E., West Building Ground Floor, Room W12-140, between 9 a.m. and 5 p.m. ET, Monday through Friday, except Federal holidays.
- Fax: 202-493-2251.

Instructions: For detailed instructions on submitting comments and additional information on the rulemaking process, see the Public Participation heading of the Supplementary Information section of this document. Note that all comments received will be posted without change to http://www.regulations.gov, including any personal information provided. Please see the Privacy Act heading below.

Privacy Act: 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 (65 FR 19477-78) or you may visit http://DocketInfo.dot.gov .

Docket: For access to the docket to read background documents or comments received, go to http://www.regulations.gov. or the street address listed above. Follow the online instructions for accessing the dockets.

FOR FURTHER INFORMATION CONTACT:

For technical issues, you may contact Mr. Sean Doyle, Office of Rulemaking (Email: sean.doyle@dot.gov) (Telephone: 202-493-0188) (Fax: 202-493-2739).

For legal issues, you may contact Mr. Ari Scott, Office of Chief Counsel (Email: ari.scott@dot.gov) (Telephone: 202-366-2992) (Fax: 202-366-3820).

You may send mail to these officials at National Highway Traffic Safety Administration, 1200 New Jersey Avenue SE, Washington, DC 20590.

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I. Background

A. Overview of Motorcycle Safety Problem

There is a pressing need for improvements in motorcycle safety. After falling steadily during the late 1980's and early 1990's, and leveling off in the mid-1990's, motorcycle rider fatalities and the related fatality rate have increased every year since 1997.[1] Fatalities increased 127 percent between 1997 and 2006 (from 2,116 deaths in 1997 to 4,810 deaths in 2006).[2] In 2006, motorcycle rider fatalities exceeded the number of pedestrian fatalities for the first time since NHTSA began collecting fatal motor vehicle crash data in 1975, and now account for 11 percent of all annual motor vehicle fatalities.[3]

A number of explanations have been offered for the steady increase in the last 10 years, including increases in motorcycle sales, increases in the percentage of older riders, and increases in engine size. However, the increase in the number of deaths resulting from motorcycle crashes has been disproportionately fast compared to the increases in the number of motorcycles on the road and the distance they are driven. Motorcycles make up about 2.4 percent of all registered vehicles and 0.3 percent of all vehicle miles traveled (VMT), but account for 11 percent of all traffic crash fatalities in 2006, compared to 5.0 percent in 1997. This represents a significant increase as a proportion of the annual loss of life in traffic crashes. In recent years, fatality rates for motorcycle riders have increased faster than the increase in motorcycle exposure (VMT on motorcycles as well

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[1] National Center for Statistics & Analysis, National Highway Traffic Safety Administration, Traffic Safety Facts: 2006 Traffic Safety Annual Assessment-A Preview, at 1 (DOT HS 810 791). Washington, DC (July 2007), available at http://www-nrd.nhtsa.dot.gov/Pubs/810791.PDF and in the docket.
National Center for Statistics & Analysis, National Highway Traffic Safety Administration, Traffic Safety Facts 2005 Data: Motorcycles, at 1 (DOT HS 810 620). Washington, DC (2005), available at http://www-nrd.nhtsa.dot.gov/Pubs/810620.PDF and in the docket.

[2] Ibid.

[3] DOT HS 810 791, at 1.

as the number of registered motorcycles). The number of fatalities per 100 million VMT on motorcycles has more than doubled, increasing from 21 in 1997 to 42.5 in 2005. Similarly, the number of fatalities per 100,000 registered motorcycles increased from 55 in 1997 to 73.5 in 2005. Compared with a passenger car occupant, a motorcycle rider is 37 times more likely to die in a crash, based on vehicle miles traveled.

The National Transportation Safety Board (NTSB) recently made similar assessment of the motorcycle safety problem. The assessment came in a Safety Alert, "Alarming Rise in Motorcycle Deaths," issued by NTSB in September 2007:[4]

- Deaths from motorcycle crashes have more than doubled in the past 10 years – from 2,116 in 1997 to 4,810 in 2006—an alarming trend. Another 88,000 people were injured in motorcycle crashes in 2006.
- The yearly number of motorcycle deaths is more than double the annual total number of people killed in all aviation, rail, marine and pipeline accidents combined.
- Head injuries are a leading cause of death in motorcycle crashes.

B. Benefits of Motorcycle Helmets and Motorcycle Helmet Use Laws

Among the measures available for improving motorcycle safety, none is more effective than use of motorcycle helmets. The steadily increasing toll of motorcyclist fatalities would have been lower had all motorcyclists been wearing motorcycle helmets that meet the performance requirements issued by this agency. In potentially fatal crashes, helmets have an overall effectiveness of 37 percent in preventing fatalities.[5] According to the data for 2006, helmets saved an estimated 1,658 lives in that year. If

[4] Available at http://www.ntsb.gov/alerts/SA_012.pdf.
[5] DOT HS 810 620, at 6.

there had been 100 percent helmet use among motorcycle riders, an additional 752 lives could have been saved that year.[6]

Again, in its September 2007 Safety Alert, the NTSB came to similar conclusions:

- DOT-compliant helmets are extremely effective. They can prevent injury and death from motorcycle crashes.
- If you are in a crash without a helmet, you are three times more likely to have brain injuries.
- Wearing a helmet reduces the overall risk of dying in a crash by 37%.
- In addition to preventing fatalities, helmets reduce the need for ambulance service, hospitalization, intensive care, rehabilitation, and long-term care.
- Wearing a helmet does *not* increase the risk of other types of injury.

The value of helmet use can be demonstrated in other ways. Data from the agency's Fatality Analysis Reporting System (FARS) for the period 1995-2004 also show the importance of motorcycle helmets. Even though the percentage of riders who use motorcycle helmets is larger than the percentage of riders who do not, non-users suffer more fatal head injuries. From 2000 to 2002, an average of 35 percent of helmeted riders who died suffered a head injury, while an average of 51 percent of the non-users who died suffered a head injury.[7]

Unfortunately, a significant percentage of motorcyclists either wear noncompliant helmets or do not wear any helmet at all. In 2006, 20 States and the District of Columbia required all motorcyclists to wear helmets. In those 21 jurisdictions, FMVSS No. 218-compliant helmets were used by 68 percent of motorcyclists; non-compliant helmets were used by 15 percent of motorcyclists; and no helmets were used by an estimated 17

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[6] Ibid.
[7] National Center for Statistics & Analysis, National Highway Traffic Safety Administration, Technical Report: Crash Stats, Bodily Injury Locations in Fatally Injured Motorcycle Riders, DOT HS 810 856, October 2007.

percent of motorcyclists. Comparatively, in the 30 States with partial or no helmet use laws, only 37 percent of motorcyclists used FMVSS No. 218-compliant helmets; 13 percent used non-compliant helmets; and 50 percent did not use a helmet at all.[8] These data are presented below in tabular form:

Motorcyclists	States with a Helmet Use Law	States without a Helmet Use Law
Percentage using FMVSS No. 218 compliant helmets	68	37
Percentage using non-compliant helmets	15	13
Percentage not using any helmet	17	50

This data shows that a considerable number of motorcyclists both in states with and without helmet use laws are wearing non-compliant helmets. As discussed below, such helmets do not provide adequate protection.

The noncompliant helmets are commonly called "novelty" helmets. They are not properly constructed for highway use, and typically lack the strength, energy absorption capability, and size necessary to protect their users. They do not meet the safety requirements of FMVSS No. 218 and are not certified as such. In fact, recent compliance test data on novelty helmets showed that they failed all of the FMVSS No. 218

[8] National Center for Statistics & Analysis, National Highway Traffic Safety Administration, Traffic Safety Facts Research Note: Motorcycle Helmet Use in 2007 – Overall Results (September 2007) (DOT HS 810 840). Washington, DC, available at http://www-nrd.nhtsa.dot.gov/Pubs/810840.PDF and in the docket.

performance requirements.[9] Manufacturers of these helmets frequently include disclaimers that contend the helmets are not intended for protecting the persons who wear them from injury. These manufacturers claim that they are not intended for highway use. Nonetheless, as the above table shows, a significant proportion of motorcyclists use novelty helmets on the highway.

NHTSA is making efforts to gather more specific data in this area. Among other efforts to generate the information necessary to improve highway safety, the 3rd Edition of the Model Minimum Uniform Crash Criteria (MMUCC) Guideline, which aims to provide a data set for describing crashes of motor vehicles, has been revised to characterize if motorcyclists involved in crashes were wearing 218-compliant helmets, other helmets, or no helmets.

C. Provisions of FMVSS No. 218 Addressed in this Rulemaking

The purpose of FMVSS No. 218 is to reduce deaths and injuries to motorcyclists and other motor vehicle users resulting from head impacts. To do so, the standard establishes minimum performance requirements for helmets. These requirements include three performance tests: (1) an impact attenuation test; (2) a penetration test; and (3) a retention system test; as well as various labeling requirements.

The impact attenuation test is designed to ensure that helmets retain structural integrity and attenuate impact energy during a variety of crash scenarios. The test measures acceleration imparted to an instrumented test headform on which a complete

[9] National Highway Traffic Safety Administration. Traffic Safety Facts Research Note: Summary of Novelty Helmet Performance Testing (DOT HS 810 752). Washington, D.C.: Office of Behavioral Safety Research, National Highway Traffic Safety Administration (Apr. 2007). Available at: http://www.nhtsa.gov/portal/nhtsa_static_file_downloader.jsp?file=/staticfiles/DOT/NHTSA/Traffic%20Injury%20Control/Studies%20&%20Reports/Associated%20Files/Novelty_Helmets_TSF.pdf.

helmet is mounted. The helmet/headform combination is dropped in a guided free fall upon either a fixed hemispherical anvil or a fixed flat anvil.

The penetration test simulates a head impact with a piercing object. This test is conducted by dropping a penetration test striker in guided free fall, with its axis aligned vertically, onto the outer surface of the complete helmet when mounted on a headform.

The retention system test is a test designed to help ensure the helmet remains securely fastened to the rider's head. It is conducted by applying a tensile load to the retention assembly.

For each test, the helmet is conditioned in one of four different ways prior to testing. These include: (1) an ambient condition; (2) a low temperature condition; (3) a high temperature condition; and (4) a water immersion condition.

Labeling requirements are also set forth in Standard No. 218. These require that the manufacturer label each helmet permanently and legibly with the manufacturer's name or identification, precise model designation, size, month and year of manufacture, and instructions to the purchaser. The manufacturer must permanently label each helmet with the "DOT" symbol, which constitutes the manufacturer's certification that the helmet conforms to the applicable FMVSSs. Standard No. 218 also sets forth the requirements and acceptable locations of these labels.

D. Current Enforceability Issues

This notice addresses several issues relating to the enforceability of state mandatory helmet laws and FMVSS No. 218. The first issue relates to the difficulties that States have had in establishing that some motorcyclists are using helmets that have not been certified to the Federal Standard. A second issue relates to the inability of some

helmet manufacturers to locate the certification label as required by the standard due to the presence of edge rolls on helmets. Third, there have been issues relating to determinations of noncompliance in the agency's own testing of helmets under the guidelines in FMVSS No. 218.

1. State Motorcycle Helmet Use Laws

The first issue concerns the use of "novelty" helmets by motorcyclists operating on the highway. In order to reap the benefits of compliant helmets, better enforcement against the use of novelty helmets by motorcyclists is needed. Novelty motorcycle helmets are not certified by their manufacturers as compliant with FMVSS No. 218 and offer the wearer no protection against injury.[10] Some motorcyclists wearing novelty helmets have been affixing "DOT" symbol stickers to their helmets to create the appearance of properly certified, compliant helmets. These stickers closely resemble the "DOT" certification symbol required by FMVSS No. 218 and can be purchased from stores selling novelty helmets or from online retailers.

The ability of novelty helmet users to affix inexpensive, easy-to-obtain labels resembling legitimate certification labels has complicated the efforts of state and local law enforcement personnel to enforce requirements for the use of properly certified helmets. They make it difficult for law enforcement officials in states with helmet use laws to determine whether or not a rider is wearing a helmet certified to FMVSS No. 218. The stickers make it difficult to prove whether or not a motorcycle wearer is deliberately flouting mandatory helmet use laws by wearing a novelty helmet with a misleading

[10] Recent compliance test data on novelty helmets showed that they failed all of the FMVSS No. 218 performance requirements. (Compliance test results can be found at http://www-odi.nhtsa.dot.gov/tis/index.cfm). In fact, in all tests performed by the Office of Vehicle Safety Compliance (OVSC), novelty helmets were found to be inadequate in offering their users even minimal protection during a crash.

"DOT" label that improperly suggests the helmet is certified.[11] The use of these labels provides the wearer with a plausible basis for the assertion that he or she believes that the helmet he or she is using has been certified to the Federal standard. Further, sellers of these labels, which currently merely contain the letters "DOT," attempt to avoid any responsibility for their sale and use by asserting that the labels are not counterfeit certification labels, but merely labels bearing letters that stand for "Doing Our Thing."[12] As a result, application of these stickers to non-compliant helmets enables motorcyclists to avoid arrest and penalties in situations where state and local helmet laws require the use of a certified DOT-compliant motorcycle helmet.

In addition to this problem, improper use of the "DOT" symbol on non-complying helmets places motorcycle helmet manufacturers that design, test, and certify their helmets to FMVSS No. 218 requirements at a financial disadvantage, as novelty helmets do not undergo the same manufacturing or testing procedures to ensure their effectiveness in a crash, and thus can be marketed to unwary buyers as inexpensive alternatives to properly-certified helmets.

2. FMVSS No. 218

NHTSA has had several types of problems with enforcing FMVSS No. 218. One of them involves the requirement regarding the location of the certification labels. During FY 2000-2003, NHTSA has found that 14 percent of the motorcycle helmets

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[11] For example, California law provides that when a motorcycle helmet has a DOT sticker, a state law enforcement officer can cite a motorcyclist for wearing a non-compliant helmet only if the helmet has been shown not to comply with the Federal standard and the motorcyclist has been shown to have actual awareness of this non-compliance. Easyriders Freedom F.I.G.H.T. v. Hannigan, 92 F.3d 1486, 1499 (9th Cir. 1996). If a California law enforcement officer cites a motorcyclist based only upon his subjective belief that a helmet does not comply, without regard to the motorcyclist's actual knowledge of whether or not the helmet is compliant, the citation is invalid. Id. at 1499-1500.

[12] For an example of a "DOT" label being sold as a "Doing our Thing" sticker, see http://www.choppersstickers.com/DOT-Sticker-pr-130.html.

tested for compliance did not comply with the labeling requirements of S5.6(e) of the standard because the "DOT" symbol on these helmets was slightly above the required location. Paragraph S5.6(e) mandates that the horizontal centerline of the certification label be located between 1-1/8 inches and 1-3/8 inches from the lower edge of the helmet. This is partly because the helmet manufacturers have been concerned that making design changes to the helmet so that the "DOT" symbol could be placed in the required location would affect the helmet's performance. In instances in which the manufacturer demonstrated that it placed the symbol as close to the required location as possible, NHTSA chose not to take action against the manufacturer.

The other main issue concerns the enforceability of determinations of noncompliance with the performance requirements in FMVSS No. 218. During fiscal year (FY) 2002 and 2003 compliance testing, the agency discovered ambiguities in the language of the impact attenuation test and the retention test when testing helmets manufactured by NexL Sports Products (NexL). NHTSA compliance testing found that NexL's helmets failed to meet the performance requirements of FMVSS No. 218 on helmet impact attenuation, penetration, and retention.

In its response to the agency's finding of noncompliance, NexL claimed that the agency's impact attenuation tests were invalid because the agency violated S7.1.4 of the standard by testing the helmets at velocities lower than the minimum required 19.7 ft/s (6 m/s). NHTSA found that the helmets did not comply with the impact attenuation requirements of FMVSS No. 218 during agency testing, which is typically conducted at speeds somewhat less than 19.7 ft/s. Because the impact attenuation test, as written,

requires a minimum impact speed of 19.7 ft/s, the agency determined that this language could be ambiguous.

With regard to the retention test, NexL stated that it tested its helmets at the required static load condition, and that its testing did not result in any displacement failures. In its investigation, NHTSA found that NexL was able to achieve passing results by adjusting the load application rate of the test equipment until a passing displacement result (less than one inch, or 2.54 cm, of displacement) was achieved. In other words, by applying the required tensile load to the helmet at one rate, NexL was able to achieve a passing result, while in a similar test where the load was applied at a different rate, NHTSA results showed a noncompliance. Because the rate of application of the static load was ambiguous in the standard, NHTSA decided not to undertake an enforcement action.

In order for NHTSA to be better able to take enforcement actions in these types of situations, both performance tests (impact attenuation and retention system) need to be revised to make them less ambiguous. Specifically, for the impact attenuation test, a velocity range needs to be specified; and with regard to the retention test, a rate of load application must be specified. It is believed that these changes will provide clearer guidance to manufacturers conducting tests specified in FMVSS No. 218, as well as enable NHTSA to better undertake enforcement actions when a noncompliance is discovered.

II. The Proposed Rule[13]

[13] On August 27, 2007, the ASTM International subcommittee on headgear and helmets petitioned NHTSA to make various updates to FMVSS No. 218. Certain recommended actions in the ASTM petition are addressed in this notice, and the agency will evaluate the merits of the other recommendations at a later time.

A. Summary of Key Proposed Changes

1. Labeling Proposal to Reduce Misleading Labeling of Novelty Helmets

We are proposing three requirements for helmet certification labeling: 1) the application of a "DOT" symbol water decal to the helmet beneath clear coating; 2) lettering on that decal indicating the manufacturer's name and/or brand name and the helmet model designation in the space above the "DOT" symbol; and 3) the word "certified" in a horizontally centered position beneath the "DOT" symbol on that decal.

2. Size Labeling and Location of the "DOT" Certification Label

The agency is proposing that the required label on helmets be positioned such that the horizontal centerline of the DOT symbol is located between one and three inches (2.5-7.6 cm) from the lower edge of the helmet. In addition, the agency is proposing that helmets be labeled with a "discrete size," which will correspond to the appropriate test headform.

3. Retention Test

The agency is specifying a load application rate for the retention test. In addition, in light of this requirement, we are reclassifying the retention test as a quasi-static test, instead of a static test.

4. Impact Attenuation Test

NHTSA is proposing to specify test velocity and tolerance limits for the impact attenuation test. Specifically, we are proposing that the test velocity be specified any speed between 15.7 ft/s to and including 18.4 ft/s (from 4.8 m/s to and including 5.6 m/s) for the impact on the hemispherical anvil, and any speed from 18.4 ft/s to and including

21.0 ft/s (from 5.6 m/s to and including 6.4 m/s) for the impact on the flat anvil. In addition, we are proposing to remove the drop height requirement from the impact attenuation test.

5. Helmet Conditioning Tolerances

NHTSA is proposing to set tolerances for the helmet conditioning procedures. For the ambient condition, the range is any temperature from 61˚F to and including 79˚F (from 16˚C to and including 26˚C) and any relative humidity from 30 to and including 70 percent. For the low temperature condition, the range is any temperature from 5˚F to and including 23˚F (from -15˚C to and including -5˚C). For the high temperature condition, the range is any temperature from 113˚F to and including 131˚F (from 45˚C to and including 55˚C). For the water immersion test, the range for the water temperature is from 68˚F to and including 86˚F (from 20˚C to and including 30˚C). In addition, NHTSA is proposing that the 12 hour duration be classified as a minimum duration.

B. Proposals to Aid Enforcement of State Motorcycle Helmet Use Laws

The proposed rule would establish additional requirements for certification labels that would entail processes that are inexpensive for the helmet manufacturer, but would be more difficult and expensive for those who may be producing false "certification" labels. The new requirements would also help consumers and law enforcement personnel distinguish between certified and uncertified helmets, facilitating the enforcement of state and local helmet laws. The proposed additional requirements would make it difficult for stores selling misleading "DOT" labels to claim that they did not intend to sell labels indicating certification, but were merely selling "Doing Our Thing" stickers.[14] It is

[14] Many merchants who sell "DOT" stickers for novelty motorcycle helmets state that the stickers are not intended to be counterfeit certification labels, and that DOT stands for "Doing Our Thing." However, the

difficult to establish a plausible reason such a sticker would include manufacturing information or the word "certified." It would then be clear that any store selling a sticker with the proposed labeling requirements would be selling labels intended to deceive law enforcement officials about whether a helmet is certified. The above enforcement benefits can be obtained without imposing an undue burden upon motorcycle helmet manufacturers. Most important, the additional labeling requirements should result in a safety benefit through the increased use of proper head protection for motorcycle riders.

NHTSA is proposing the use of a water decal for the "DOT" symbol which would be affixed to the motorcycle helmet before the shell's clear coating is applied. Additionally, the label would be required to bear lettering indicating the manufacturer's name or brand name and the helmet model designation in the space above the "DOT" symbol, as well as the word "certified" in a horizontally centered position beneath the "DOT" symbol. These additional requirements would make production of labels that create the misleading impression that a helmet is properly certified more difficult and expensive, which would both deter the production and sale of such labels and help law enforcement officers enforce state helmet use laws.

1. Current Requirements for Certification Labeling

The current labeling standard imposes limited requirements regarding certification labeling. Aside from the size, location, and contrasting color, the configuration of the symbol is not specified. Motorcycle helmet manufacturers are required to affix the certifying "DOT" symbol to the outer surface of the helmet. The color of the symbol's lettering must contrast with the background. The "DOT" letters must be at least 3/8 inch

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agency is not aware that the labels are significantly used for any purpose other than application to novelty helmets. *See*, http://www.choppersticker.com/DOT-Sticker-pr-130.html.

(1 cm) high, centered laterally with the horizontal centerline of the symbol located a minimum of 1 1/8 inches (2.9 cm) and a maximum of 1 3/8 inches (3.5 cm) from the bottom edge of the posterior portion of the helmet.

2. Proposed Upgrades to the Certification Labeling Requirements

NHTSA proposes several additional requirements for the certification labeling of motorcycle helmets. These requirements include: 1) the application of a "DOT" symbol water decal to the helmet beneath the clear coating; 2) the manufacturer's name or brand name and the helmet model designation in the space above the "DOT" symbol; and 3) the word "certified" in a horizontally centered position beneath the "DOT" symbol. These proposals are further described in the following sections. The appendix also provides illustrations of the current label, as well as labels that would comply with the proposed requirements.

The agency's proposals regarding the issue of misleading labels on novelty helmets are based on substantial analysis of the needs of law enforcement personnel and the concerns of manufacturers. In 2005, NHTSA's Office of Traffic Injury Control (TIC) and Office of Vehicle Safety Compliance (OVSC) conducted an informal telephone survey of seven law enforcement offices,[15] a law enforcement organization,[16] and five motorcycle helmet manufacturers[17] to discuss the problem of misleading "DOT" symbols. Respondents were asked their opinion on various approaches to the problem, the advantages and disadvantages of suggested approaches, and on other changes in the

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[15] The seven law enforcement offices surveyed were Pittsburgh Bureau of Police; Louisiana State Police; Pennsylvania Department of Transportation; Canadian Officers; Riverside, California Police Department; Nebraska State Police; and the Maryland Department of Transportation.

[16] The law enforcement organization surveyed was the American Association of Motor Vehicle Administrators, Law Enforcement Committee.

[17] The five manufacturers surveyed were AFX North America, Inc.; Shoei Safety Helmet Corp.; Zamp & Associates LLC; Wombat Trading Company, Inc.; and Soaring Helmets Corp., Inc.

requirements that could help identify noncompliant helmets. Additionally, NHTSA published a Motorcycle Safety Program Plan on July 3, 2006.[18] This plan discussed – among other topics – proposed initiatives to amend FMVSS No. 218 to address the problem of misleading labeling.

a. Application of a "DOT" Symbol Water Decal

In lieu of the current typical practice of applying a simple certification sticker with adhesive to the outer surface of a helmet, NHTSA proposes requiring the application of a "DOT" symbol water decal to the helmet and then the application of a layer of clear coating over the decal and the entire outer surface of the helmet. Clear coating is usually the final step in motorcycle helmet production. The agency believes that all current FMVSS No. 218-compliant helmets have clear coating. Clear coating over the "DOT" symbol would result in a smooth surface that is visually and tactilely different from a sticker applied to the surface after the clear coating process is completed.

Requiring a water decal under clear coating would help make the production of misleading "DOT" symbols substantially more difficult. The agency believes that the fabrication of water decals for application under clear coating can only be done by a limited number of printing vendors who require a set-up charge that is usually over $1,000 for even the most simplistic design. Affixing the water decal would also require a hydration and dehydration (wetting and drying) process, while affixing a counterfeit "DOT" symbol currently requires merely the attachment of a sticker using some type of adhesive. The process would not be burdensome for manufacturers because they use this same process to add designs to the helmet. NHTSA believes that incorporating this

[18] Available at: www.nhtsa.dot.gov/people/injury/pedbimot/motorcycle/MotorcycleSafety.pdf

approach would cost manufacturers between one and two cents per helmet, but invites comment on the issue.

NHTSA acknowledges that there are some disadvantages to the use of a water decal. While production of misleading "DOT" symbols would become more expensive, it would not necessarily become cost prohibitive. Currently, the required "DOT" symbol can be locally fabricated in sheets of 50 stickers for the price of about one dollar. If many label manufacturers grouped together to amortize the set-up charges for water decals, they might reach a similar cost acceptable threshold.

Another potential disadvantage is that clear coating does not adhere to leather shells. However, NHTSA is not aware of any leather-shell motorcycle helmet on the market that has been certified as complying with FMVSS No. 218. If a manufacturer develops and produces a leather-shell helmet that meets the performance requirements of FMVSS No. 218, we would consider amending the standard to provide a more appropriate alternative labeling method for leather-shell helmets, such as molding or embossing. The agency specifically invites comment on this issue.

b. Addition of Lettering Indicating the Manufacturer and the Helmet Model Designation

As noted above, Standard No. 218 requires that the manufacturer label each helmet permanently and legibly with the manufacturer's name or identification, precise model designation, size, month, and year of manufacture. The manufacturer must also permanently label each helmet with the "DOT" symbol, which constitutes the manufacturer's certification that the helmet conforms to the applicable FMVSSs.

NHTSA proposes to require that some of this information be placed on the label bearing the "DOT" symbol since it would make counterfeiting of the certification label more difficult and helmet use law enforcement easier. Manufacturers would be required to include the manufacturer's name and/or brand name and the helmet model designation on the label above the "DOT" symbol. FMVSS No. 218 paragraph S5.6.1 already provides that "[e]ach helmet shall be labeled permanently and legibly, in a manner such that the label(s) can be read easily without removing padding or other permanent part, with the following: (a) manufacturer's name or identification; (b) precise model designation; (c) size; and (d) month and year of manufacture." While S5.6.1 requires a label with this information, this label is often placed on the inside of the helmet. The proposed certification labeling requirement would then let state law enforcement officials see this information on the outside of the helmet, without having to first ask a motorcyclist to remove a helmet. With the exception of the addition of the word "certified" to the certification label, no additional information is being added to the helmet as a whole.

Requiring the inclusion of the helmet manufacturer's name and/or brand name and precise model designation on the certification label would force counterfeiters either to fabricate manufacturer names or to use existing trademarks, thereby infringing upon them. The manufacturer whose trademark has been infringed could take action against the counterfeiter under trademark law. Should the counterfeiter use a false manufacturer name and/or brand, law enforcement officials familiar with motorcycle helmets may be able to identify these counterfeit labels. NHTSA believes that adding this information to

the certification label would cost manufacturers approximately one cent per helmet, but invites comment on the issue.

As for disadvantages, the agency recognizes that counterfeiting is still possible under this approach. Also, depending on the length of the name, it may be more difficult for some manufacturers to apply their name above the "DOT" symbol.[19] The agency specifically requests public comment regarding a requirement to place the manufacturer name and/or brand name and model designation on the label and regarding the location in which that information should be placed on the label. NHTSA is particularly interested in obtaining views as to whether placing the proposed information on the label would best serve the purpose of reducing counterfeit labels and the false or misleading certifications of helmets.

c. Addition of the Word "Certified" Under the "DOT" Symbol

NHTSA also proposes requiring the word "certified" in a horizontally centered position under the "DOT" symbol. The advantage to this approach is that it would clearly distinguish certified helmets from uncertified helmets bearing a label that merely bears the letters "DOT." It also enhances the possibility of taking legal action against responsible parties under the Vehicle Safety Act, 49 U.S.C. § 30115 or other applicable Federal or state laws. If the word "certified" were included on a label, those persons either producing, selling, or applying such misleading labels could not plausibly claim that "DOT" meant "Doing Our Thing" and not "Department of Transportation." Their intent to mislead would be undeniable.

[19] A survey of over 45 different helmet brand names and over 100 different models provided a range in length of 3-10 characters for brand name (including spaces) and 2-12 characters for model name (including spaces).

d. Letters/Numbers

The NPRM proposes a minimum height for the lettering and numbering of .09 inch (.24 cm), but no limit on the choice of font.[20] To be consistent with the rest of the standard, NHTSA proposes using English and metric units for the height requirement rather than a minimum point font.[21] Nine hundredths of an inch (.24 cm) is the minimum height NHTSA currently requires for lettering on motor vehicle certification labels.[22] The agency is unaware of any need to change this size and believes it provides legibility for a law enforcement officer who has stopped a motorcycle rider and wishes to determine whether the rider is using a helmet certified to FMVSS No. 218.

While the requirement to place some of the information on the certification label would make it necessary to use a larger label, NHTSA believes that this would increase the cost of compliance only slightly. Currently, the only requirement for the certification label is that the "DOT" symbol be placed on it. Since the symbol has a required minimum size of 3/8 inch (1 cm), that requirement effectively defines the minimum size of current labels. However, an examination of several certification labels[23] showed that they were somewhat larger due to the area around the lettering. Under the new requirements, some information currently placed on another label will be required to be placed on certification label, thereby increasing the size of the latter label. Depending on the length of the manufacturer's name (and/or brand name) and model, the labels could

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[20] In determining what would be a reasonable font size and type to require for the lettering, NHTSA looked at several other NHTSA regulations that required some form of labeling. The majority of the regulations specified a font size but not a font type. Similarly, NHTSA believes it is preferable to specify the required size of the lettering, while permitting manufacturers to use the font type of their choosing.

[21] 3/32 of an inch is approximately 10 point font.

[22] 49 CFR § 567.4(k)(4).

[23] The helmets examined included a Skid Lid helmet (5/8 inch high certification label); Rodia helmet (5/8 inch high certification label); ACC helmet (7/8 inch high certification label); and a JIX model 200 helmet (5/8 inch high certification label).

become substantially larger than their current size. However, we do not expect the increased size of the label to contribute substantially to the cost or difficulty of adding the water decal. Additionally, as we noted above, the manufacturer's name and model designation are already required to be marked on the helmet in an unspecified location under S5.6.1 of the standard. Thus, the cost of using a larger certification label should be offset by the opportunity to reduce the size of the separate label on which the information was previously placed.

3. Alternatives Considered

The agency considered a variety of other alternatives when developing the proposals to upgrade the certification labeling requirements.[24] While we have not chosen to include these alternatives in the proposed regulatory text, we solicit public comment on whether any of them should be included in the final rule.

a. Sewing the "DOT" Symbol to the Chinstrap

NHTSA also considered requiring manufacturers to sew the "DOT" symbol into the motorcycle helmet chinstrap. Manufacturers that endorsed this approach in their responses to the survey suggested sewing a "DOT" symbol into the chinstrap every two to three inches. This task could be easily performed in the original helmet production. The sewn-in symbol would also be difficult for counterfeiters to falsify in the field

[24] We note that NHTSA explored the possibility of requiring the use of the DOT official seal instead of, or in addition to, the currently-used "DOT" symbol on the certification label. (The DOT seal contains the DOT logo of a triskelion figure representing land, air, and sea transportation and with the words "Department of Transportation" and "United States of America" surrounding the logo.) However, in researching this possibility, NHTSA determined that DOT Order 1000.14A gives authorization for its use only to DOT officials. While this authority may be re-delegated, the re-delegation must "be limited to the minimum number consistent with essential requirements, to avoid misuse of the seal and to minimize procurement requirements for impression dies of the seal." Further, the DOT seal cannot be used "[i]n any manner which implies Departmental endorsement of commercial products." Requiring every motorcycle helmet manufacturer to use the official DOT seal would not be consistent with these limitations. Therefore, NHTSA cannot require motorcycle helmet manufacturers to use the official DOT seal on the certification label.

because it would require removing the chinstrap from the helmet and then replacing it either by a stitching and/or riveting method. NHTSA has no indication that all motorcycle helmet chinstraps are riveted. However, several manufacturers indicated that they believe that riveting is the only method used to secure the chinstrap assembly to the helmet shell, regardless of whether or not the helmet complies with FMVSS No. 218.

Law enforcement officers, however, stated that they would have difficulty seeing a "DOT" symbol sewn into a motorcycle helmet chinstrap (if, for example, the "DOT" symbol were on the inside of strap or near the wearer's chin). Further, the sewn "DOT" symbol could make the chinstrap stiffer in the area of the stitching. Those areas might be more likely to slip under load if one of them were engaging the double D-rings.[25] Because of these possible problems, NHTSA tentatively concluded not to pursue this approach.

b. Molding or Embossing the "DOT" Symbol into the Helmet

Another approach NHTSA considered was requiring manufacturers to mold a permanent "DOT" symbol into the motorcycle helmet shell during the manufacturing process. This would enhance compliance and enforcement actions against counterfeiters because a novelty helmet, in order to comply, the "DOT" symbol would have to be molded into the novelty helmet at the time of manufacture.

Several drawbacks, however, persuaded NHTSA to decide tentatively against the molding or embossing approach. First, NHTSA believes that this method might be too much of an economic burden for manufacturers. Second, NHTSA was concerned

[25] A double D-ring is two 'D'-shaped steel rings used as a fastener (instead of a buckle) to secure a motorcycle helmet on a rider's head with chinstrap webbing material.

because the manufacturers said that sharp radii, which would exist at the interface between the molded surface of the shell and the raised or recessed letters of the "DOT" symbol, would cause production problems in the molding and finishing processes, leading to higher manufacturing costs. According to the manufacturers, the molding or embossing process would cause some helmets to be malformed, and raise scrappage rates from about one percent to about five percent for plastic constructed helmets, and from about one percent to fifteen percent for fiberglass constructed helmets. Problems would likely range from purely aesthetic malformations to significant structural issues. Accordingly, NHTSA tentatively concluded that molding or embossing would not be a cost effective approach to prevent counterfeiting.

c. Using a Hologram "DOT" Symbol

Using a hologram "DOT" symbol would make counterfeiting more difficult, and it would also permit each manufacturer to select its own design. A hologram would, however, be much more expensive than water decals or the "DOT" stickers currently being used. Based on its understanding of the market, NHTSA estimates that "DOT" holograms would cost manufacturers about seventy cents or more per helmet. NHTSA tentatively concluded that this approach could impose too much of an economic burden upon manufacturers, especially considering the fact that other effective methods to reduce counterfeiting are available that impose a lower burden on manufacturers.

C. Size Labeling and Location of the "DOT" Certification Label

1. Location of the Certification Label

The section of the current standard dealing with the placement of the certification label, S5.6.1(e), states that the label must be placed on the outer surface of the helmet,

centered laterally with the horizontal centerline of the symbol, and located a minimum of 1 1/8 inches (2.9 cm) and a maximum of 1 3/8 inches (3.5 cm) from the bottom edge of the posterior portion of the helmet. NHTSA has found however, based on past investigations, that a substantial portion of helmets tested failed to comply with the requirements of S5.6.1(e).[26] The agency's review found that many of the non-compliant helmets have edge rolls,[27] and that the manufacturers of these helmets had placed the DOT symbol above the edge roll at a point that allowed complete label-to-shell contact. Further, the agency found that the helmets met all other labeling requirements.

NHTSA recognizes that, for these helmets, placing the label in the location required by the current standard (on the edge roll rather than on the flat surface above the edge roll) may make the "DOT" symbol non-permanent. In the past, NHTSA's policy in cases in which the label is placed in a location not permitted by S5.6.1, in order to avoid the edge roll and achieve complete label-to-shell contact, has been merely to tell the manufacturer to correct the problem in future production. However, in this rulemaking, NHTSA is proposing to adjust the standard to allow the placement of the label in a slightly wider range of locations. NHTSA believes that this will continue to require that manufacturers place the label in a location visible to law enforcement personnel, yet ensure that the label is permanently attached to the helmet.

Based upon the intent of the standard and the agency's analysis, NHTSA is proposing to increase the maximum distance from the edge of the helmet to the horizontal centerline of the label from 1-3/8 inches (3.5 cm) to 3 inches (7.6 cm), and lower the

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[26] NHTSA data indicate that from FY 2000-2003, 14 percent of helmets tested failed to comply with this portion of the standard.

[27] An edge roll is comprised of a strip of material on the lower edge of the helmet with one edge portion attached to the helmet liner on the inner surface of the helmet, and the other edge portion attached to the outer surface of the helmet.

minimum distance from 1-1/8 inches (2.6 cm) to 1 inch (2.5 cm). In arriving at these values, NHTSA recognized that the intent in specifying the location of the "DOT" symbol in the standard was to ensure visibility of the label to law enforcement personnel, as well as making sure that the symbol is permanent. Therefore, NHTSA undertook an analysis to determine whether or not the maximum and minimum distances could be adjusted to allow additional flexibility with this portion of the standard without detriment to law enforcement efforts.

In order to determine the maximum and minimum distances from the edge of the helmet that a label could be placed and still remain visible, the agency analyzed a "worst case" helmet design. This design is a low profile helmet, where the rear area of the helmet has a minimal flat surface area to apply a label. The agency found that at distances above three inches (7.6 cm) from the edge of the worst case helmet, the visibility of the symbol began to be reduced due to the curvature of the helmet. Similarly, the agency found that the "DOT" symbol could be lowered to a minimum of one inch (2.5 cm) from the edge and still be visible to law enforcement personnel, whereas distances below one inch resulted in obscured visibility. Based on these examinations, the agency tentatively determined that allowing a minimum distance of one inch and a maximum of three inches from the bottom edge of the helmet will provide motorcycle helmet manufacturers with the flexibility to place the "DOT" symbol at a location that ensures complete label-to-shell contact on the back of the motorcycle helmet, while keeping the symbol in a location to facilitate law enforcement.

2. Helmet Size Labeling Requirement

NHTSA is also proposing to amend FMVSS No. 218 S5.6.1(c) to read "Discrete size or discrete size range" instead of "Size." The reason for this is to eliminate enforcement problems that arise when helmets are labeled only with a generic size specification (*e.g.*, Small, Medium, or Large). Enforceability problems can arise because while S6.1 specifies which headform is used to test helmets with a particular "designated discrete size or size range,"[28] a helmet's generic size may not correspond to the same size ranges that the agency uses to determine which headform to use for testing. To ensure that this issue does not cause problems in the future, the agency is proposing to require the label to specify the "discrete size" of the helmet. The agency is further proposing to define "discrete size" as meaning "a numerical value that corresponds to the diameter of an equivalent (+/- .25 inch or +/- .64 cm) circle." These minor revisions should result in little to no added cost to the manufacturers since a size label is already required by the standard. Further, these revisions would not preclude manufacturers from continuing also to include generic size labels on their helmets if they wish to do so.

D. Retention System Quasi-Static Load Application Rate

The FMVSS No. 218 retention system test is designed to help ensure a motorcyclist's helmet stays on his or her head in the event of a crash. The test currently specifies that a static tensile load be applied to the retention assembly of a complete helmet that is mounted on a stationary test headform. The performance requirements associated with the test specify that when the retention assembly is loaded, the retention system must withstand a 300-pound (136.1 kg) test load without separation, and the adjustable portion shall not move more than one inch (2.54 cm).

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[28] Helmets with a designated discreet size not exceeding 6-3/4 (European size: 54) are tested on a small headform, those with a size above 6-3/4, but do not exceed 7-1/2 (European size: 60) are tested on a medium headform, and those with a size exceeding 7-1/2 are tested on a large headform. See S6.1.1.

When the standard was adopted from ANSI Z90.1, only the static load itself was specified, and not the application rate used to reach that static load. The lack of a load application rate has caused some problems regarding the enforcement of FMVSS No. 218. Specifically, a discrepancy was found when testing one manufacturer's motorcycle helmets. While NHTSA found only a 50 percent compliance rate for the helmets, the manufacturer found a 100 percent compliance rate.[29] This discrepancy was caused because the agency and the manufacturer had used substantially different load application rates to achieve the load specified by the standard.

NHTSA believes there are several good reasons for specifying a load application rate for the retention test in S7.3. First, NHTSA believes that specifying the rate would help helmet manufacturers self-certify their helmets with a greater degree of certainty. Second, providing a load application rate would prevent manufacturers from using a significantly different rate from NHTSA's compliance laboratories, and thus attaining different results than those attained by the agency. This, in turn, would help to alleviate problems of enforcement of the standard.

NHTSA is proposing to specify a load application rate of 0.4 to 1.2 in/min (1 to 3 cm/min). This rate has been in the agency's compliance test procedures since 2003. The agency believes that this load application rate is reasonable and consistent with what NHTSA and the majority of manufacturers have been using. The formal incorporation of the load application rate into S7.3 should resolve any enforcement ambiguity.

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[29] When NHTSA tested the helmets using the load application rate specified in the compliance laboratory's test procedure (TP-218-04), which specifies a load application rate between 0.4 and 1.2 in/min (1 and 3 cm/min), it found about 50 percent non-compliance results (HS#636466). On the other hand, the manufacturer reported 100 percent compliance for the same helmets. Further examination revealed that the manufacturer's laboratory used a lesser load application rate of the testing equipment. Because no load application rate is currently specified in FMVSS No. 218, there is an ambiguity concerning the proper testing procedure.

Additionally, because the test being performed is no longer a purely static load test, but instead a quasi-static load test, NHTSA is proposing to revise S7.3 accordingly.

E. Impact Attenuation Test Upgrades

The impact attenuation test is designed to ensure that a motorcycle helmet is capable of absorbing sufficient energy upon impact with a fixed hard object. Under S5.1, *Impact attenuation*, the peak acceleration of the test headform is required not to exceed 400g, accelerations above 200g not to exceed a cumulative duration of 2.0 milliseconds, and accelerations above 150g not to exceed a cumulative duration of 4.0 milliseconds.

The current impact attenuation test is specified in S7.1, *Impact attenuation test*. In this test, the helmet is first fitted on a test headform. The helmet/headform assembly is then dropped in a guided free fall onto two types of anvils. The first part of the test specifies two "identical" impacts onto a flat steel anvil, and the second part of the test requires two identical impacts onto a hemispherical steel anvil. The performance requirement is that the headform acceleration profile must be less than the specified accelerations given in S5.1.

1. The Impact Sites

a. Problems with "Identical Impacts"

One of the proposals of this NPRM is to clarify what is meant by "identical" impacts. The wording of the impact attenuation test was adopted from ANSI Z90.1, including the area on the helmet where the impact test can be conducted. The standard specifies that the impacts must occur at any area above a certain test line (described in S6.2.3),[30] and separated by a defined distance. The agency also adopted the text from ANSI Z90.1 that stated that the two successive impacts must be "identical impacts at

[30] *See*, ANSI Z90.1, S9.3.1.

each site."[31] One reason that the test described in FMVSS No. 218 is unclear is that while ANSI Z90.1 defined "identical impacts" as impacts centered not more than ¼ inch (0.6 cm) apart, FMVSS No. 218 does not define "identical impacts," nor did the standard incorporate the ANSI Z90.1 definition by reference.

Because of the lack of a definition for "identical impacts," there is no clear definition of the term as applied to NHTSA's impact attenuation test. There are two reasonable interpretations of this term. The first is that "identical impacts" means two successive impacts on the exact same spot of the test helmet, or separated by not more than a reasonable tolerance (such as the ANSI Z90.1 tolerance of ¼ inch). The second is that "identical impacts" has a broader meaning, implying the exact same test conditions (i.e., velocity, location, and conditioning of the helmet) for the successive impacts, regardless of whether the helmet/headform assembly actually impacted the fixed anvil at or near the same location on the helmet on the subsequent drop.

b. NHTSA Proposal

In order to remove this ambiguity, as well as to provide a clear method of enforcement, NHTSA is proposing to delete the term "identical impacts" from the standard and instead specify the location of the impacts on the helmet. NHTSA believes that the best approach is to specify that successive impacts on the same helmet should be in the same location on the helmet within a reasonable tolerance. This approach adopts the same basic approach as the ANSI Z90.1 meaning of "identical impacts," and clears up any ambiguity about the use of the term "identical." With regard to the allowable tolerance, we have tentatively concluded that the best approach is to specify that a

[31] *Id.*

reasonable tolerance would be no less than 1.9 cm (3/4 inch). The rationale for choosing this tolerance is described below.

c. Rationale for a 1.9 cm (3/4 inch) Tolerance

NHTSA tentatively believes that given the requirements of FMVSS No. 218, a greater tolerance for variation in impact locations is necessary than that provided by the ANSI Z90.1 standard. Specifically, because of the large variety of helmet sizes that must fit onto the three headforms specified in FMVSS No. 218, the 1.9 cm (3/4 inch) tolerance is necessary to ensure that the majority of helmets can meet the requirements of the standard.

To establish a reasonable tolerance for the impact attenuation test drops, NHTSA evaluated compliance testing that had been conducted under FMVSS No. 218 by the Office of Vehicle Safety Compliance (OVSC). NHTSA compared the distances between successive impacts with the 0.6 cm (1/4 inch) tolerance specified in ANSI Z90.1 and the 1.0 cm (2/5 inch) tolerance specified by the Snell Memorial Foundation (Snell) under its own helmet testing guidelines.[32] In its analysis, NHTSA found that only a small number of successive impact tests were able to meet the ¼ inch tolerance and only slightly more were able to meet the 2/5 inch tolerance set forth by these standards bodies. On the other hand, using a tolerance of ¾ inch, NHTSA found that only 5-10 percent of compliance test impacts would fall outside this tolerance.[33]

The reason for allowing a greater tolerance for variation in impact location in the FMVSS No. 218 test (as opposed to the tolerances permitted by ANSI Z90.1 or the Snell guidelines) is because of the limited number of different size headforms available for

[32] The Snell Memorial Foundation is a private, non-profit organization that sets voluntary standards for motorcycle helmets.
[33] See Appendix A, Table 4: "Distance between Successive Impacts."

compliance testing and the design of certain helmets. FMVSS No. 218 specifies three acceptable headforms for use in compliance testing (small size A, medium size C, large size D). However, because of the large variety of helmet sizes available on the market that must be tested using these headforms, some helmets (especially very large helmets) do not fit as "snugly" on the specified headform as others. While every effort is made to secure the helmet on the specified headform, there are times when there is enough movement of the helmet on the headform to result in two successive impacts' being up to ¾ inch apart. This is most commonly seen in helmets whose size is at the upper limits of a particular headform. In addition, the design of some helmets, namely partial helmet designs, tends not to be designed to fit a headform as closely as full helmets, and therefore also have a tendency to shift during testing.

Conversely, the ANSI Z90.1 standard and the Snell guidelines do not suffer from the same variations in testing as those of FMVSS No. 218. While ANSI specifies only one headform, it stipulates that it does not allow for proper testing of all protective headgear, a function that FMVSS No. 218 must perform. On the other hand, the Snell guidelines specify five different headforms that can be combined with the helmet to create the helmet/headform assembly, making it much more likely that a more appropriately-sized headform will be available to prevent the helmet from moving as much.[34] Therefore, because of the differences between the ANSI and Snell guidelines, and the conditions of FMVSS No. 218, there are ample reasons to choose a slightly greater tolerance for variation in the Federal standard.

2. Impact Attenuation Test Speed

[34] See http://www.smf.org/standards/2005/m2005/m2005_final.html.

In addition to revising the location of the impacts, NHTSA also believes there is a need to update the impact velocity for the attenuation test. This is because NHTSA believes the current regulation could be interpreted to mean that a helmet could be certified to any speed above the minimum impact velocity specified in FMVSS No. 218. In the agency's view, this is inconsistent with the intent of the standard, which is to mandate testing of the helmets at velocities approximating those listed in FMVSS No. 218. Thus, NHTSA is proposing to replace the minimum impact velocity with a range of acceptable velocities. Further, because the regulation specifies both an impact velocity and a drop height, there is both a redundancy and the possibility of additional ambiguity in the standard.[35] Therefore, the agency is also proposing to eliminate the drop height requirements.

a. Current Impact Attenuation Test Procedures

Currently, the helmet/headform assembly is tested by dropping it onto both a hemispherical and flat anvil, and then measuring the acceleration imparted to the headform at the time of impact. Section S7.1.4(a) specifies that the helmet/headform assembly must impact the hemispherical anvil with a minimum speed of 17.1 ft/s (5.2 m/s), while S7.1.4(b) specifies that the assembly must impact the flat anvil with a minimum speed of 19.7 ft/s (6.0 m/s). Additionally, both S7.1.4(a) and (b) specify minimum drop heights from which the assembly is dropped onto the respective anvils.

It has been NHTSA's practice, when conducting compliance testing, to test helmets at a speed slightly below the minimum speeds specified in S7.1.4. A lower impact speed generally favors the manufacturer, as the impact forces imparted to the

[35] Velocity is related to drop height according to the relationship $V=\sqrt{2gh}$, where V is the velocity, h is the drop height, and g is the gravitational force. Thus, specifying the velocity implicitly defines a drop height.

helmet are slightly lower. This has been done to ensure that, given the speed variations inherent in testing, NHTSA does not find a helmet not compliant due to inadvertently testing it at a higher velocity than the minimum specified in the standard. However, there have been problems with this approach. When testing the helmet of one manufacturer, NexL, NHTSA found that the helmet did not pass the impact attenuation test at speeds below the minimum specified impact velocity. NexL claimed that because the type of foam they use in their helmet liner, high-density polyethylene cross-linked foam, is designed to crush only during high-speed impacts, the helmet would have passed the test at speeds at or above the minimum speeds specified in the test procedure. NexL also claimed that the test procedure used by NHTSA violated the standard as written, and that helmets could only be tested at the minimum impact speed specified or higher.

b. Concerns Regarding Current Test Procedures

NHTSA believes that FMVSS No. 218, as written, could be interpreted to suggest that manufacturers are required to certify, and NHTSA can test, that the helmet complies with the impact attenuation requirements when tested at *any* velocity above the minimums set forth in the standard. This interpretation would permit the agency to test virtually any helmet to failure by testing at velocities considerably higher than the specified minimums.

The intent of the impact attenuation test in FMVSS No. 218 is to ensure that helmets retain structural integrity and attenuate impact energy during a variety of crash scenarios. The two scenarios tested by the requirements in S7.1.4 are represented by testing helmets at velocities near 19.7 ft/s (6.0 m/s) for the flat anvil test configuration and 17.1 ft/s (5.2 m/s) for the hemispherical anvil test configuration. These scenarios

would not be represented by a test where the velocity at impact was considerably higher, or lower, than specified by the standard.

In addition, the impact attenuation standard was adopted from ANSI Z90.1, and NHTSA did not intend for its test to be markedly different from the ANSI test. The ANSI standard specifies a specific height from which the assembly should be dropped. The agency translated this height requirement into the aforementioned impact velocities. Since the intent of the standard was to adopt a similar test to that of ANSI Z90.1, and since ANSI Z90.1 specified drop heights that would result in a specified velocity in a guided free fall drop, it is the intent of the agency's standard to perform the impact attenuation close to the converted ANSI speeds for the respective tests, and not at undefined impact speeds above these respective values.

In order to bring the language of FMVSS No. 218 into conformity with the intent of the standard, NHTSA proposes to replace the minimum impact velocity requirements with a range of acceptable values. These values would specify both minimum and maximum impact velocities. Using this system would provide more certain test procedures, as well as alleviate enforcement problems that have arisen in the past. NHTSA proposes to set the tolerance for the impact attenuation velocity at +/- 1.2 ft/s (.4 m/s) from the nominal values of either 19.7 ft/s (6.0 m/s) or 17.1 ft/s (5.2 m/s) depending on the anvil test. The rationale for this tolerance range is set forth below.

c. Rationale for Impact Attenuation Speed Tolerance Level

In its compliance testing, NHTSA has consistently tested slightly below the velocities specified in S7.1.4. The tolerances are set forth in the test procedure (TP-218-

06) used to conduct compliance testing, and are established as -1.6 ft/s (0.5 m/s) and +0 for the flat anvil test, and -1.4 ft/s (0.4 m/s) and +0 for the hemispherical anvil. This velocity tolerance translates to test velocities ranging between 18.1 – 19.7 ft/s (4.8 – 5.2 m/s) for the flat anvil test and 15.7 – 17.1 ft/s (4.8 – 5.2 m/s) for the hemispherical one.[36] However, NHTSA has found that with this range of tolerances, a number of tests fell outside the range of velocities specified in the test procedure. Therefore, the agency believes that a larger velocity tolerance must be allowed in order to account for the uncertainties in the test procedure.

In order to arrive at the narrowest tolerance practicable, NHTSA took into account several factors that contribute to variability in the test results. These factors are inherent to the current procedure used for FMVSS No. 218 compliance testing, using the industry standard flag and light emitting diode (LED) technology, which measures how fast a flag travels through an LED apparatus. First is the inherent variability found when calibrating the equipment for the impact velocity measurement; second is the variation in velocity due to test system uncertainty (i.e., friction effects, bearing effects, etc.); and the third is variation due to test setup (i.e., helmet factors, impact locations, and helmet condition). The +/- 1.2 ft/s (.4 m/s) tolerance proposed by NHTSA takes into account the total amount of variation produced by these factors.

The error attributed to the calibration of the impact equipment is comprised of rotational speed and distance measurement error. Calibration is performed using a wheel, which spins at a known rate per minute (rpm) and a known distance from the central axis for the flag that trips the velocity trap. Thus, rotational speed depends on how accurately

[36] In using these ranges, NHTSA's labs aim for a flat anvil nominal velocity of 5.8 m/s and a hemispherical anvil velocity of 5.0 m/s. This creates functional tolerances of +/- .8 ft/s for the flat anvil test, and +/- .7 ft/s for the hemispherical anvil test.

the rpm can be controlled and measured, and the distance depends on the accuracy with which the distance from the central axis to the flag can be measured using a Vernier Caliper. NHTSA has found that the error associated with the calibration of the equipment is approximately +/- 0.64 ft/s (0.19 m/s). Investigations into other labs involved in impact attenuation testing found that alternative calibration methods had similar margins of error.

The remaining error, +/- 0.56 ft/s (0.17 m/s), is attributable to a combination of the uncertainty associated with the test system and test setup. The variability associated with the test set up stems from friction resulting from use of the monorail and bearing system (which facilitates guided free fall) used in the test equipment. The variability associated with the test setup can be attributed to variations in how the helmet is placed on the assembly, as well as small variations in the condition of the helmet, headform, and test equipment. While there was no way to separate the variation resulting from the test equipment and that resulting from the test setup, NHTSA was able to undertake a statistical analysis in order to arrive at the figure of +/- 0.56 ft/s as the total variability arising from these factors.

NHTSA determined the degree of variation by examining data from 496 compliance test drops (using both the flat anvil and hemispherical anvil test),[37] and calculating the variations in velocity among those drops. The combined test equipment/test setup error is quantified by determining the velocity range for the 512 test drops. Prior to performing the statistical analysis, the agency set a benchmark that a reasonable velocity range would be one that allows for 95 percent of the 512 test drops to

[37] The tests were analyzed using the Statistical Package for Social Sciences (SPSS) computer program. See www.spss.com for more information.

fall within the specified tolerance. The results of the study then indicated that 95 percent of all the test drops achieved an impact velocity within 0.56 ft/s of the mean velocity of all 512 drops. Therefore, it was determined that the variations in setup, friction, positioning, and all other non-calibration errors amounted to 0.56 ft/s of variation.[38]

Adding the calibration error of +/- 0.64 ft/s (0.19 m/s) and the test equipment/test setup error of +/- 0.56 ft/s (0.17 m/s) results in a total of +/- 1.20 ft/s (0.36 m/s). Given the measurement ability of the instrument and to avoid creating additional enforceability issues, the agency proposes rounding the tolerance to one significant digit, resulting in a tolerance of +/- 1.2 ft/s (0.4 m/s) for the impact attenuation tests of FMVSS No. 218.

Finally, NHTSA is providing the impact velocity and the associated tolerances as a velocity range, rather than as a target with a +/- value. This format provides the agency with the legal ability to perform the impact attenuation test at any velocity between and including the upper and lower bounds of the velocity range. In addition, it is proposed to delete the drop height requirements, since they have no influence on the effectiveness of the test and only introduce ambiguity.

d. Alternative Test Methods Examined

To determine if the tolerance could be reduced further, NHTSA investigated alternative velocity measurement technology. First, the agency investigated other velocity measuring technologies that could potentially be used to reduce the tolerance, such as laser recorded velocity, break wire technology (which determines velocity by measuring the time required for a dropped helmet to break through two wires that are a known distance apart), and high speed video analysis. However, these technologies were

[38] See Appendix A Tables 5-8, Figures 1 & 2 and corresponding discussion, which is available in the docket.

found to be either technically undesirable or cost prohibitive. Laser recording was technically undesirable because this technology requires placing a hole in the center of the impact anvil, which would change the anvil surface and create variability in the impact measurement. Break wire technology, on the other hand, frequently results in deflection of the wire before breakage, which can result in even more variability in the test results. Finally, video analysis was found to be cost-prohibitive, as it significantly increased the cost of performing an FMVSS No. 218 test.

F. Tolerances for Helmet Conditioning Specifications

In keeping with the theme of providing more clearly defined, enforceable testing procedures for FMVSS No. 218, NHTSA is proposing to provide temperature tolerances and clearer time measurements for the helmet conditioning procedures in the standard. Currently, S6.4.1 describes four conditions to which a helmet must be exposed for a 12-hour period of time before being subjected to the testing sequences described in S7 of the regulation. The regulation specifies temperatures, relative humidity, and the time period to which the helmet must be exposed. However, the current absence of tolerances on these specified conditions can result in unrealistic conditioning requirements for both NHTSA and helmet manufacturers' certification testing. In addition, enforcement problems could arise following an otherwise proper test if an inexact temperature or humidity condition were inadvertently used.

NHTSA is proposing to add reasonable tolerances for temperature and relative humidity conditioning, as well as to specify twelve hours as a minimum time to condition the helmet prior to testing. This will enable NHTSA to undertake legally enforceable testing of helmets at the conditions specified within the tolerances. Specifically, NHTSA

is proposing to set the tolerances for temperature at +/- 5˚C (9˚F) and the tolerance for relative humidity fluctuation of +/- 20 percent. In addition, NHTSA is proposing to clarify the twelve hour period for the time specified in S6.4.1 as a minimum time requirement. As discussed in relation to the velocity tolerances discussed above, NHTSA is proposing to provide a range for temperature and humidity, rather than a +/- value, because it provides the agency with a legally enforceable ability to condition the helmet at any temperature between and including the two temperatures specified.

NHTSA believes that the tolerance ranges it is proposing are reasonable and practicable. A review of eight compliance test reports from fiscal year 2006 showed a maximum temperature range of +/- 5˚C (9˚F) and relative humidity fluctuation between 36 and 66 percent. The agency considered the FMVSS No. 218 historical data, other agency regulations that provide tolerances, as well as industry standards such as the ANSI conditioning requirements and the ECE[39] regulations.[40] In addition, we considered the available test equipment for temperature conditioning, and received input from the FMVSS No. 218 test labs as to what are achievable tolerances. NHTSA believes that the recommended tolerances will not have any effect on the performance of the helmet or result in any adverse safety or cost impact.

G. Correction of Figures 7 and 8

NHTSA has discovered that Figures 7 and 8 in FMVSS No. 218 were inadvertently switched at some unknown time in the past. To correct this error, NHTSA

[39] The United Nations Economic Commission for Europe (ECE) is the United Nations uniform provisions concerning the approval of protective helmets and of their visors for drivers and passengers of motorcycles and mopeds.
[40] See ANSI Z90.1 and ECE Conditioning Requirements, in the docket.

is proposing to keep the titles the same for each Figure, and to switch the diagrams so the diagrams for the medium and large headforms properly correspond to the figure titles.

H. Update SAE Reference to J211

FMVSS No. 218 S7.1.9 currently specifies that "the acceleration data channel complies with SAE Recommended Practice J211 JUN 80, Instrumentation for Impact Tests, requirements for channel class 1,000." SAE Recommended Practice J211 has been revised several times since June of 1980 and the agency proposed to update the cited practice to SAE Recommended Practice J211, Revised March 1995, "Instrumentation for Impact Test – Part 1 – Electronic Instrumentation." This version is consistent with the current requirements for the regulation's filter needs, and it is also consistent with other recently updated standards and regulations.

III. Effective Date

NHTSA is proposing a lead time of two years from the publication of the final rule for manufacturers to comply with the revisions. The proposed changes to the standard are maintenance revisions, and manufacturers should not have to purchase new test equipment or make any structural changes to their helmets to ensure compliance with the revised tests or updated SAE recommended practice J211. The only changes manufacturers will have to make are changes to their current "DOT" label to comply with the proposed labeling revisions, although this should not require the purchase of new equipment either. Therefore, the agency believes that a lead time of two years to be sufficient time to comply with the updated regulations.

IV. Benefits/Costs

To calculate the benefits and costs of this proposed rulemaking, the agency has prepared a Preliminary Regulatory Evaluation (PRE). The results of the PRE indicate that the proposed rule would be cost-effective. Part of the goal of this rule is to decrease the on-road use of "novelty" helmets, and have those riders use FMVSS No. 218-certified helmets (certified helmets) instead. Depending on the degree of effectiveness that the rule has, the costs and benefits can vary substantially. The benefits and costs of the proposal depend on how many motorcycle riders will change from using non-compliant helmets (novelty helmets) to certified helmets. Behavior change among motorcycle riders as a result of the proposal is difficult to predict. However, the agency believes that 5 to 10 percent of the novelty helmet users in states that have a Universal Helmet Law (Law States) would make a switch,[41] and that this is a modest and achievable projection. Therefore, the analysis estimates benefits and costs of the proposal for the 5 and 10 percent projections (i.e., the 5- and 10-percent scenarios). In addition, the analysis also estimates the maximum potential benefit of the proposal which corresponds to the scenario that all novelty helmet users in Law States would become certified helmet users (the 100-percent scenario). Cost-effectiveness and net benefits of the proposal were also estimated based on these three scenarios.

This rulemaking imposes two sources of potential costs. The costs include: (a) the incremental cost to manufacturers for implementing the recommended labeling requirements and (b) the incremental cost to novelty helmet users in Law States who would eventually switch to use a certified helmet. The increased labeling costs, borne by manufacturers, are estimated to be two cents per helmet. For a total estimate of 5.2 million certified helmets manufactured per year, the cost translates to $0.1 million.

[41] This estimate is based upon effectiveness of similar rules. Comments on this estimate are sought.

The incremental cost per replaced novelty helmet, borne by users who switch from novelty helmets to certified helmets, is estimated to be $45.00. Annually, an estimated 31,961, 63,922, and 639,220 novelty helmets sold in Law States would be replaced by 218-complant helmets respectively for the 5-, 10-, and 100-percent scenarios. The corresponding total cost to switched novelty helmet users would be $1.4, $2.9, and $28.8 million, respectively. Therefore, the net cost of the proposal would be:

- $1.5 million for the 5-perent scenario (= $0.1 + $1.4 million)
- $3.0 million for the 10-percent scenario (= $0.1 + $2.9 million)
- $28.9 million for the 100-percent scenario (= $0.1 + $28.8 million).

The benefits of the proposal depend upon how many motorcycle riders in Law States will change from using non-compliant helmets (novelty helmets) to certified helmets. These actions would result in a safety benefit in providing proper head protection to motorcycle riders, as compliance tests of "novelty" helmets showed that they failed to meet all of the FMVSS No. 218 performance requirements. On the other hand, certified helmets are extremely effective at saving lives. One NCSA report concludes that the effectiveness of these helmets has improved from 29 percent in 1989 to the present rate of 37 percent.[42] The report calculates that this higher effectiveness of motorcycle helmets has saved 7,808 lives from 1993 through 2002; that is, 2,378 more saved lives than was previously calculated.[43] In 2006 alone, NHTSA estimates that helmets saved 1,658 lives.

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[42] DOT HS 809 715, March 2004.

[43] National Highway Traffic Safety Administration. (2005). *Traffic safety facts 2004: Motorcycles (DOT HS 809 908)*. Washington, DC: National Center for Statistics & Analyses, National Highway Traffic Safety Administration.

If five percent of the novelty helmet users in Law States make a switch (i.e., the 5-percent scenario), the proposal would save 17-32 lives annually. Under the 10-percent scenario, the proposal would save 35-65 lives annually. The proposal would potentially save a maximum of 346-649 lives if all Law State novelty helmet users switched to certified helmets. Due to the relatively small sample of non-fatal head injuries to fatal head injuries, the impact of the proposal on non-fatal head injuries would be negligible. In terms of cost effectiveness, the proposal is highly cost-effective. This proposal is expected to save 17-649 lives annually at a cost of $0.05 to $0.10 million per equivalent life saved at a three percent discount rate, and $0.06 to $0.12 million at a seven percent discount rate.

V. Public Participation

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.

Comments may also be submitted to the docket electronically by logging onto the Docket Management System website at http://www.regulations.gov. Follow the online instructions for submitting comments.

Please note that pursuant to the Data Quality Act, in order for substantive data to be relied upon and used by the agency, it must meet the information quality standards set forth in the OMB and DOT Data Quality Act guidelines. Accordingly, we encourage you to consult the guidelines in preparing your comments. OMB's guidelines may be accessed at http://www.whitehouse.gov/omb/fedreg/reproducible.html. DOT's guidelines may be accessed at http://dms.dot.gov.

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 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, go to http://www.regulations.gov. Follow the online instructions for accessing the dockets.

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.

VI. Rulemaking Analyses and Notices

A. Executive Order 12866 and DOT Regulatory Policies and Procedures

This rulemaking action would amend Federal Motor Vehicle Safety Standard No. 218 to improve enforceability and help reduce the use of novelty helmets. It was not reviewed by the Office of Management and Budget under E.O. 12866. The agency has considered the impact of this action under the Department of Transportation's regulatory

policies and procedures (44 FR 11034; February 26, 1979), and has determined that it is not "significant" under them.

NHTSA has prepared a preliminary regulatory evaluation for this action that discusses its potential costs, benefits and other impacts. A copy of the evaluation has been placed in the docket for this rulemaking action. The evaluation suggests several issues that could result in potential costs to consumers or industry. First, this action proposes labeling requirements that will cause helmet manufacturers minimal costs and will not interfere with existing designs. The agency estimates that the cost of the labeling requirement would not exceed $0.02 per helmet. Second, this action proposes adding tolerances to the compliance tests of FMVSS No. 218 that would make it easier to undertake enforcement actions, but the agency does not believe that it would require significant expenses or changes in helmet manufacture or testing procedures. Third, and finally, the agency believes that this proposed rule would cause a substantial number of people who currently own or plan to purchase novelty helmets to purchase FMVSS No. 218-compliant helmets instead. As compliant helmets are frequently more expensive than novelty helmets, this could result in a cost to those consumers who make the switch of approximately $45 per helmet. Further information about the benefits and costs of this rulemaking action may be found above in Section IV of this preamble.

B. 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 proposed rulemaking 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). The Small Business Administration's regulations at 13 CFR Part 121 define a small business, in part, as a business entity "which operates primarily within the United States." (13 CFR 121.105(a)). 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.

NHTSA has considered the effects of this proposed rule under the Regulatory Flexibility Act. This rule imposes minimal cost burdens on helmet manufacturers, on the order of 1-2 cents per helmet. While it is possible that the costs of designing an improved label are fixed at about $1,000 (and therefore may cost more on a per-helmet basis for small manufacturers), the costs are still minimal compared to the overall cost of a compliant motorcycle helmet. I certify that this proposed rule would not have a significant economic impact on a substantial number of small entities**.**

C. Executive Order 13132 (Federalism)

NHTSA has examined today's NPRM pursuant to Executive Order 13132 (64 FR 43255, August 10, 1999) and concluded that no additional consultation with States, local governments or their representatives is mandated beyond the rulemaking process. The agency has concluded that the rule does not have federalism implications because the rule does 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."

Further, no consultation is needed to discuss the preemptive effect of today's proposed rule. NHTSA rules can have preemptive effect in at least two ways. First, the National Traffic and Motor Vehicle Safety Act contains an express preemptive provision: "When a motor vehicle safety standard is in effect under this chapter, a State or a political subdivision of a State may prescribe or continue in effect a standard applicable to the same aspect of performance of a motor vehicle or motor vehicle equipment only if the standard is identical to the standard prescribed under this chapter." 49 U.S.C. 30103(b)(1).

In addition to the express preemption noted above, the Supreme Court has also recognized that State requirements imposed on motor vehicle manufacturers, including sanctions imposed by State tort law, can stand as an obstacle to the accomplishment and execution of a NHTSA safety standard. When such a conflict is discerned, the Supremacy Clause of the Constitution makes their State requirements unenforceable. See Geier v. American Honda Motor Co., 529 U.S. 861 (2000). NHTSA has not outlined such potential State requirements in today's rulemaking, however, in part because such conflicts can arise in varied contexts, but it is conceivable that such a conflict may become clear through subsequent experience with today's proposed rule. NHTSA may opine on such conflicts in the future, if warranted. See id. at 883-86.

D. Executive Order 12988 (Civil Justice Reform)

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.

Pursuant to this Order, NHTSA notes as follows. The preemptive effect of this rule is discussed above. NHTSA notes further that there is no requirement that individuals submit a petition for reconsideration or pursue other administrative proceeding before they may file suit in court.

E. National Technology Transfer and Advancement Act

Under the National Technology Transfer and Advancement Act of 1995 (NTTAA) (Public Law 104-113), "all Federal agencies and departments shall use technical standards that are developed or adopted by voluntary consensus standards bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments." 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.

FMVSS No. 218 is largely based on American National Standards Institute (ANSI) Z90.1-1971, "Specifications for Protective Headgear for Vehicular Users," and incorporates the Society of Automotive Engineers (SAE) Recommended Practice J211 MAR 95, "Instrumentation for Impact Test – Part 1 – Electronic Instrumentation," both of which are voluntary consensus standards. We do not know of any other voluntary consensus standards addressing this matter.

F. Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995 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 (adjusted for inflation with base year of 1995). This final rule would not result in expenditures by State, local or tribal governments, in the aggregate, or by the private sector in excess of $100 million annually.

G. National Environmental Policy Act

NHTSA has analyzed this rulemaking action for the purposes of the National Environmental Policy Act. The agency has determined that implementation of this action would not have any significant impact on the quality of the human environment.

H. Paperwork Reduction Act

Under the Paperwork Reduction Act of 1995 (PRA), a person is not required to respond to a collection of information by a Federal agency unless the collection displays a valid OMB control number. This proposal does not contain any new reporting requirements or requests for information.

I. 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 isn't 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 the rule easier to understand?

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

J. 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.

Appendix to Preamble

Figure A1 – Current labeling requirement (not to scale)

Figure A2 – Illustrations that would comply with proposed labeling requirement (not to scale)

List of Subjects in 49 CFR Part 571

Imports, Motor vehicle safety, Motor vehicles, Rubber and rubber products, and Tires.

In consideration of the foregoing, we propose to amend 49 CFR part 571 to read as follows:

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, 20111, 30115, 30166 and 30177; delegation of authority at 49 CFR 1.50.

2. § 571.218 is amended by adding paragraph S5.6.2, and three definitions in alphabetical order in paragraph S4, as well as revising paragraphs S5.6.1, S6.4.1, S7.1.2, S7.1.4, S7.1.9, S7.3.1, and S7.3.2, to read as follows:

§571.218 Standard No. 218; Motorcycle Helmets.

* * * * *

S4 * * *

Clear coating means the clear (non-pigmented), permanent coating applied by the manufacturer as the uppermost layer of coating covering the entire outer surface of a helmet's shell.

Discrete size means a numerical value that corresponds to the diameter of an equivalent (+/- .25 inch or +/- .64 cm) circle.

* * * * *

Impact site means the location where the helmet contacts the center of the anvil.

* * * * *

S5.6.1 Each helmet shall be labeled permanently and legibly, in a manner such that the label(s) can be read easily without removing padding or any other permanent part, with the following:

(a) Manufacturer's name.

(b) Discrete size.

(c) Month and year of manufacture. This may be spelled out (for example, June 1988), or expressed in numerals (for example, 6/88).

(d) Instructions to the purchaser as follows:

(1) "Shell and liner constructed of" (identify type(s) of materials).

(2) "Helmet can be seriously damaged by some common substances without damage being visible to the user. Apply only the following:" (Recommended cleaning agents, paints, adhesives, etc., as appropriate).

(3) "Make no modifications. Fasten helmet securely. If helmet experiences a severe blow, return it to the manufacturer for inspection, or destroy it and replace it."

(4) Any additional relevant safety information should be applied at the time of purchase by means of an attached tag, brochure, or other suitable means.

S5.6.2 Certification. Each helmet shall be labeled permanently and legibly with a label, constituting the manufacturer's certification the helmet conforms to the applicable Federal motor vehicle safety standards, that is separate from the label(s) used to comply with S5.6.1, and complies with paragraphs (a) through (d) of this section.

(a) Content, format, and appearance. The label shall have the following content, format, and appearance:

(1) The symbol “DOT”, horizontally centered on the label, in letters at least .38 inch (1.0 cm) high.

(2) The word “CERTIFIED,” horizontally centered beneath the symbol DOT, in letters at least .09 inches (.23 cm) high.

(3) The manufacturer’s name and/or brand, horizontally centered above the symbol DOT, in letters and/or numerals at least .09 inch (.23 cm) high.

(4) The precise model designation, horizontally centered above the symbol DOT, in letters and/or numerals at least .09 inch (.23 cm) high.

(5) All symbols, letters and numerals shall be in a color that contrasts with the background of the label.

(b) Other information. No information, other than the information specified in subparagraph (a), shall appear on the label.

(c) Location. The label shall appear on the outer surface of the helmet and be placed so that it is centered laterally with the horizontal centerline of the DOT symbol located a minimum of 1 inch (2.5 cm) and a maximum of 3 inches (7.6 cm) from the bottom edge of the posterior portion of the helmet.

(d) Clear coating. Clear coating shall cover the label, including all of the required content, and the outer surface of the helmet.

* * * * *

S6.4.1 Immediately before conducting the testing sequence specified in S7, condition each test helmet in accordance with any one of the following procedures:

(a) *Ambient conditions*. Expose to any temperature from 61˚F to and including 79˚F (from 16˚C to and including 26˚C) and any relative humidity from 30 to and including 70 percent for a minimum of 12 hours.

(b) *Low temperature*. Expose to any temperature from 5˚F to and including 23˚F (from -15˚C to and including -5˚C) for a minimum of 12 hours.

(c) *High temperature*. Expose to any temperature from 113˚F to and including 131˚F (from 45˚C to and including 55˚C) for a minimum of 12 hours.

(d) *Water immersion*. Immerse in water at any temperature from 61˚F to and including 79˚F (from 16˚C to and including 26˚C) for a minimum of 12 hours.

* * * * *

S7.1.2 Each helmet is impacted at four sites with two successive impacts at each site. For each site, the location where the helmet contacts the center of the anvil on the second impact shall not be greater than .075 inch (1.9 cm) from the location where the helmet contacts the center of the anvil on the first impact. Two of these sites are impacted upon a flat steel anvil and two upon a hemispherical steel anvil as specified in S7.1.10 and S7.1.11. The impact sites are at any point on the area above the test line described in paragraph S6.2.3, and separated by a distance not less than one-sixth of the maximum circumference of the helmet in the test area.

* * * * *

S7.1.4(a) The guided free fall drop height for the helmet and test headform combination onto the hemispherical anvil shall be such that the impact speed is any speed from 15.7 ft/s to and including 18.4 ft/s (from 4.8 m/s to and including 5.6 m/s).

(b) The guided free fall drop height for the helmet and test headform combination onto the flat anvil shall be such that the impact speed is any speed from 18.4 ft/s to and including 21.0 ft/s (from 5.6 m/s to and including 6.4 m/s).

* * * * *

S7.1.9 The acceleration transducer is mounted at the center or gravity of the test headform with the sensitive axis aligned to within 5˚ of vertical when the test headform assembly is in the data impact position. The acceleration data channel complies with the SAE recommended practice J211 MAR 95, “Instrumentation for Impact Test – Part 1 – Electronic Instrumentation.”

* * * * *

S7.3.1 The retention system test is conducted by applying a quasi-static tensile load at any rate from 0.4 to and including 1.2 inch/min (from 1.0 to and including 3.0 cm/min) to the retention assembly of a complete helmet, which is mounted, as described in S6.3, on a stationary test headform as shown in Figure 4, and by measuring the movement of the adjustable portion of the retention system test device under tension.

S7.3.2 The retention system test device consists of both an adjustable loading mechanism by which a quasi-static tensile load is applied at any rate from 0.4 to and including 1.2 inch/min (from 1.0 to and including 3.0 cm/min) to the helmet retention assembly and a means for holding the test headform and helmet stationary. The retention assembly is fasted around two freely moving rollers, both of which have a 0.5 inch (1.3 cm) diameter and a 3-inch (7.6 cm) center-to-center separation, and which are mounted on the adjustable portion of the tensile loading device (Figure 4). The helmet is fixed on the test headform as necessary to ensure that it does not move during the application of the test loads to retention assembly.

* * * * *

Issued:

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Stephen R. Kratzke
Associate Administrator
for Rulemaking