

# Proposed Changes to FMVSS 218 Motorcycle Helmets

**2011 Lifesavers Conference**  
**Motorcycle Rider and Helmet Laws**  
**Presented by:**  
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**Chief, Safety Countermeasures Division**  
**NHTSA**

Notes:  
 To obtain metric measurements in centimeters, multiply each figure by 2.54.




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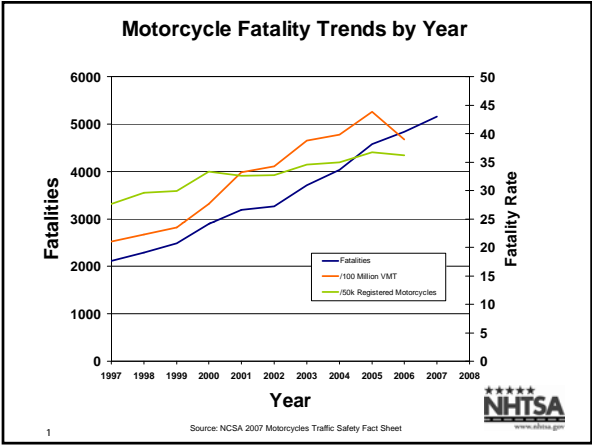
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## Novelty Helmets

- **Not compliant with FMVSS No. 218**
- **Lack qualities to protect users**
- **Manufacturers often claim not intended for:**
  - ❑ Highway use
  - ❑ Injury prevention
- **2007 OVSC testing → all failed performance requirements\***

Compliant helmets

|---- Novelty helmets ----|

\*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/portals/nhtsa\\_statsic\\_file\\_downloader.jsp?file=/statsfiles/DOT/NHTSA/Traffic%20Injur%20Cont%20Studies%20%20Reports/Associated%20Files/Novelty\\_Helmets\\_TSF.pdf](http://www.nhtsa.gov/portals/nhtsa_statsic_file_downloader.jsp?file=/statsfiles/DOT/NHTSA/Traffic%20Injur%20Cont%20Studies%20%20Reports/Associated%20Files/Novelty_Helmets_TSF.pdf)




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*Statistics on helmet use, etc.*

- **2009 Statistics**
    - ❑ Motorcycle fatalities - 4,462
    - ❑ Lives saved by helmets - 1,483
  - **Helmet use**
    - ❑ Overall effectiveness of 37% in preventing fatalities
    - ❑ Helmeted riders → 35% who died had head injury
    - ❑ Non-users → 51% who died had head injury
  - **Helmets required in 20 States + D.C.**
    - ❑ 76% usage of 218 compliant helmets
    - ❑ 22% usage of novelty helmets
    - ❑ 2% non-use
  - **30 States with partial or no helmet use laws**
    - ❑ 40% usage of 218 compliant helmets
    - ❑ 8% usage of novelty helmets
    - ❑ 52% non-use
- ➔ **Significant novelty helmet usage**



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*Objectives of the Proposed Regulation*

- **Assist law enforcement's ability to detect novelty helmets & enforce helmet use laws**
  - ❑ NHTSA inquiry on misleading "DOT" labeling problems
    - Individuals apply own DOT labels to novelty helmets
    - DOT - "Doing Our Thing!"
- **Make amendments to aid NHTSA in enforcing the standard.**
  - ❑ Impact attenuation tests: specifying impact velocity and tolerances
  - ❑ Retention system test: specifying quasi-static load application rate
  - ❑ Helmet Conditioning: specify temperature tolerance
  - ❑ Impact Site: Define "identical impact site"
  - ❑ Location of Certification Label



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*Current vs. Proposed "DOT" Certification Label*

- **Current requirement**
  - ❑ "DOT" symbol on helmet outer surface
    - 3/8 inch high @ rear centerline
- **Proposed upgrades**
  - ❑ Clear coating over decal
  - ❑ Manufacturer's name and model above "DOT" symbol
  - ❑ Word "certified" beneath "DOT" symbol
  - ❑ Inner label must be within 3 inches of bottom of helmet and include the discreet size.



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*Current "DOT" Certification Label*



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*Proposed Label Design Examples*



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*Current Test Procedures in Standard*

- **Impact attenuation comprises two "identical impacts" from a minimum drop height**
  - ❑ 5.2 m/s from 54.5 inches for hemispherical anvil
  - ❑ 6.0 m/s from 72 inches for flat anvil
- **Helmet conditioning:**
  - ❑ Ambient condition: 70°F with 50% relative humidity for 12 hours
  - ❑ Low temperature condition: 14°F for 12 hours
  - ❑ High temperature condition: 122°F for 12 hours
  - ❑ Water immersed condition: 77°F for 12 hours
- **Retention System Test: Static test with no specified rate of loading**



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### Proposed Modifications to Test Procedures

- **Impact attenuation test velocity: 5.2 ±0.4 m/s for hemispherical anvil and 6.0 ±0.4 m/s for flat anvil**
  - ❑ Remove drop height requirement
- **Retention system test defined as 'quasi-static' and a load application rate specified as 0.4 to 1.2 in/min**
- **Helmet conditioning tolerances with minimum duration of 12 hours**
  - ❑ Ambient condition: 61-79° F with 30-70% relative humidity
  - ❑ Low temperature condition: 5-23° F
  - ❑ High temperature condition: 113-131° F
  - ❑ Water immersed condition: 68-86° F
- **"Identical Impact Site" defined as to within 3/4 inch**



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### Public Comments

- **165 comments to the docket.**
  - ❑ 10 Industry comments. The remaining 155 comments were mostly from motorcyclists and interested consumers.
- **Current Status of Rulemaking Action**
  - ❑ NHTSA is reviewing and responding to the comments



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### Costs and Benefits

- **Costs:**
  - ❑ Manufacturing - 2¢ per helmet
  - ❑ User to upgrade from novelty helmet - \$45 per helmet
- **Benefits depend upon novelty use conversion**

Total Mfg Costs*	User Cost/Benefit				
	Change in Novelty Helmet Use	Novelty Helmets per Year**	Total Cost	Total Benefits** (Fatal)	Cost/ELS
\$0.1M	5%	31,961	\$1.5M	17 – 32	\$0.05 – 0.10M†
	10%	63,922	\$3.0M	35 – 65	\$0.06 – 0.12M‡
	100%	639,220	\$28.9M	346 – 649	

\* 5.2M motorcycle helmets/year  
† 3 percent discount

\*\* Based upon Universal Law States  
‡ 7 percent discount



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