

Proposal of the Informal Working Group on Head Restraints GTR Phase2

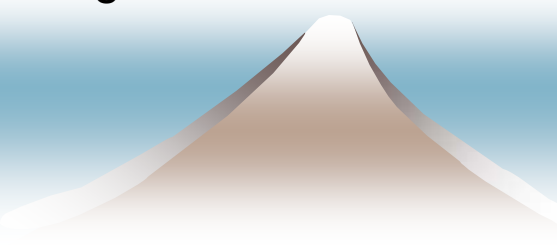
JAPAN



1. Proposal of a new Informal Working Group

We propose “the new IWG on Head Restraints GTR phase 2” to discuss appropriate methods for testing and evaluating whiplash injury.

2. Background

- The 143rd WP29(Nov. 2007) determined that the following issues should be discussed as phase 2. (WP29-143-23-Rev.1)
 - (1) The question of moving towards a head restraints height of 850 mm.
 - (2) The appropriate dynamic test (test procedure, injury criteria and associated corridors for the BioRID II dummy).
 - Regarding assessment, the insurance industry groups such as IIWPG (IIHS and Thatcham) have already started dynamic tests. EuroNCAP plans to introduce dynamic tests from late 2008, and JNCAP also plans to introduce from 2009. However, the testing and evaluating methods vary among them.
 - EEVC WG12 and 20 have been investigating them.
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3. Subjects of Review and Tasks

(1) Head Restraints Height

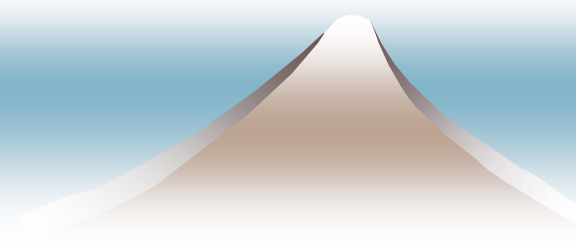
(1-1) Effective height : How to define the effective height ?

(1-2) Height Requirement

(2) Dynamic Test

(2-1) Test conditions: Test conditions that reflect the realities of accidents on the market

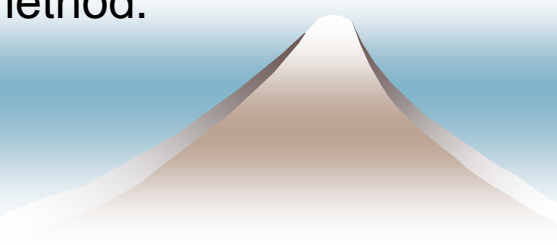
- Tests with actual vehicles or on sleds; the number and conditions of sled pulses.



(2-2) Mechanism : Theories on the mechanism of whiplash injury vary.
We do not know yet which one is the best.

- It is necessary to clarify the mechanism by analyzing accidents and performing volunteer tests and simulations with human body FE models.

(2-3) Evaluation dummies : We need dummies that reflect the above mechanism with a high fidelity to the human body and a high degree of perfection as a measuring instrument

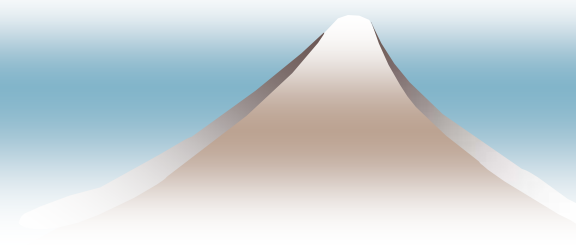
- BioRID II is promising with its high fidelity to the human body, but still needs improvements in testing methods, structure, etc., because it has a problem in reproducibility.
 - It is necessary to reduce the variation of results in initial sitting position of the dummy by improving the sitting method.
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(2-4) Evaluation indicators : Indicators of human body injury that reflect the above mechanism

- According to what we have found so far, it is necessary to measure the relative movements between the upper and lower parts of the neck and the forces applied to each of these parts.

(2-5) Reference values: Should be based on the results of injury risk analysis and feasibility study.

(3) Effect Evaluation : Evaluation of effects on reduction of injury and cost-effectiveness



4. Schedule

Subjects of review	Schedule			
	'08	'09	'10	'11
(1) Head Restraints Height				
(1-1) Effective height				
How to define the effective height ?	→			
(1-2) Height Requirement				
(2) Dynamic Test				
(2-1) Test conditions				
Tests with actual vehicle or on sleds; the type and conditions of sled pulses	→			
(2-2) Mechanism				
Analysis of data on accidents on the market; Volunteer tests; FEM Simulations	→			
(2-3) Evaluation dummies				
Improvements in the structure of the dummy; assaying method; sitting method	→			
(2-4) Evaluation indicators				
Reflection of injury mechanism; Evaluation with injury values		→		
(2-5) Reference values				
Appropriate values based on injury risks feasibility studies		→		
(3) Effect evaluation				
Effect on the reduction of injury in accidents on the market; Cost effectiveness		→		

Thank You

