

National Highway Traffic Safety Administration  
U.S. Department of Transportation

## **Federal Motor Vehicle Safety Standard No. 202, Head Restraints Summary of Jan. 4, 2001 Notice of Proposed Rulemaking**

Reference: <http://dms.dot.gov>, NHTSA Docket No. NHTSA-2000-8570

### **Dimensional Requirements**

- Front and Rear Outboard Seats.
- Height:
  - Front - Must achieve > 800 mm.
  - Front and Rear - No adjustment < 750 mm. Consistent with ECE 17/25.
- Backset < 50 mm.
- Min. Width: Unchanged - Consistent with ECE for bucket seats and exceeds ECE for bench seats.
- Max. Gap: Consistent with ECE - 60 mm in HR. 25 mm between lowered adjustable HR and seat. Limit consistent with ECE, but measurement method is not.

### **Energy Absorption**

- Head form strike at 24.2 km/h peak deceleration of 80g. Consistent with ECE; however FMVSS No. 202 proposes a linear impactor.

### **Strength and Lock Requirements**

- Test height and backset locks at multiple adjustment positions.
- 102 mm deflection limit unchanged, but test procedure harmonized with ECE.
- 890 N force requirement altered such that seat back failure no longer acceptable.

### **Dynamic Compliance Option** - No similar requirement for ECE.

- Limit head-torso rotation < 12 degrees for a 50th male dummy in the front and rear, and < 20 degrees for a 95th male in the front.
- More realistic acceleration corridor.

## Summary

### The Proposal

This Preliminary Economic Assessment accompanies a proposal to require front seat head restraints in passenger cars, pickups, vans, and utility vehicles to be capable of achieving a height where the top of the head restraint is least 800 mm (31.5 inches) above the H-point (which represents the normally seated 50<sup>th</sup> male hip point). The proposal would also add a lower limit on height; all required head restraints may not be less than 750 mm (29.5 inches) from the H-point. The proposal would require rear outboard head restraints. The proposal also would require that the distance between the back of the head form representing the position of a 50<sup>th</sup> percentile head, in a normally seated position, and the head restraint (defined as backset) be no farther than 50 mm (2 inches) in any adjustment position.

### Benefits

The benefits of increasing the height of head restraints are estimated to be:

9,575 whiplash injuries reduced in the front seat

4,672 whiplash injuries reduced in the rear seat

14,247 total whiplash injuries reduced

The agency does not have data to support an estimate of the benefits of the backset requirements.

### Costs (\$1998)

Average costs per vehicle are estimated to be:

\$4.21 in front seats

\$3.61 in rear seats for vehicles with rear head restraints

\$12.34 in rear seats for vehicles with no rear head restraints

\$10.32 per average vehicle

Total cost per year is estimated to be \$160.5 million (\$65.5 million for the front seat and \$95.0 million for the rear seat).

### Cost effectiveness

Based on the benefits from increasing head restraint height, and an estimate cost of \$6,485 per whiplash injury, the cost per equivalent life saved is:

\$3.0 million in front seats

\$9.0 million in rear seats

\$5.0 million total