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DaimlerChrysler Corporation

December 7, 2000

Rebecca MacPherson
Office of the Chief Counsel, NCC-20
National Highway Traffic Safety Administration
400 Seventh St., S.W.
Washington, D.C. 20590

Dear Ms. MacPherson:

Attached are copies of the slides that DaimlerChrysler presented yesterday, December 6, 2000, at the agency's Technical Workshop, held at VRTC in East Liberty, OH, regarding out-of-position test procedures for FMVSS 208. If there are any questions regarding the issues that were presented, please contact me at (248) 576-7303.

Sincerely,

William R. Edwards

William R. Edwards,
Senior Manager, Vehicle Safety & Regulatory Affairs

cc: Aloke K. Prasad (via: Electronic Mail)
Docket Management (via: Electronic Filing)

DaimlerChrysler Corporation
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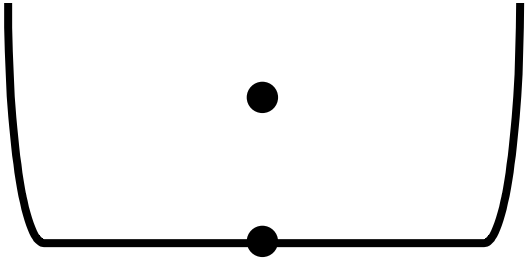
6 Year Old Positioning Issues Position 1 and Position 2

- In S24.4.1.2 - S24.4.1.3, Planes D and C are both defined relative to the "geometric center of the right front air bag tear seam."
  - If the tear seam is "U" shaped, is the geometric center located on or above the seam?



  - If the center of the "module" is above the tear seam, should the tear seam be used to determine the position of Plane C? (example - PT airbag door)

6 Year Old Positioning Issues
Position 1 - Chest on IP

- Position 1: S24.4.2.4 states; “With the dummy's thorax instrument cavity rear face 6 degrees forward of the vertical and point 1 in plane C move the dummy forward until Point 1 contacts the instrument panel.”
  - In some cases Point 1 will not contact the instrument panel if the 6 degree angle requirement is maintained.
  - In this situation should the 6 degree angle be maintained or should point 1 be placed in contact with the instrument panel?
- A similar situation exists for the 3-year-old dummy (Section S22.4.2.4).

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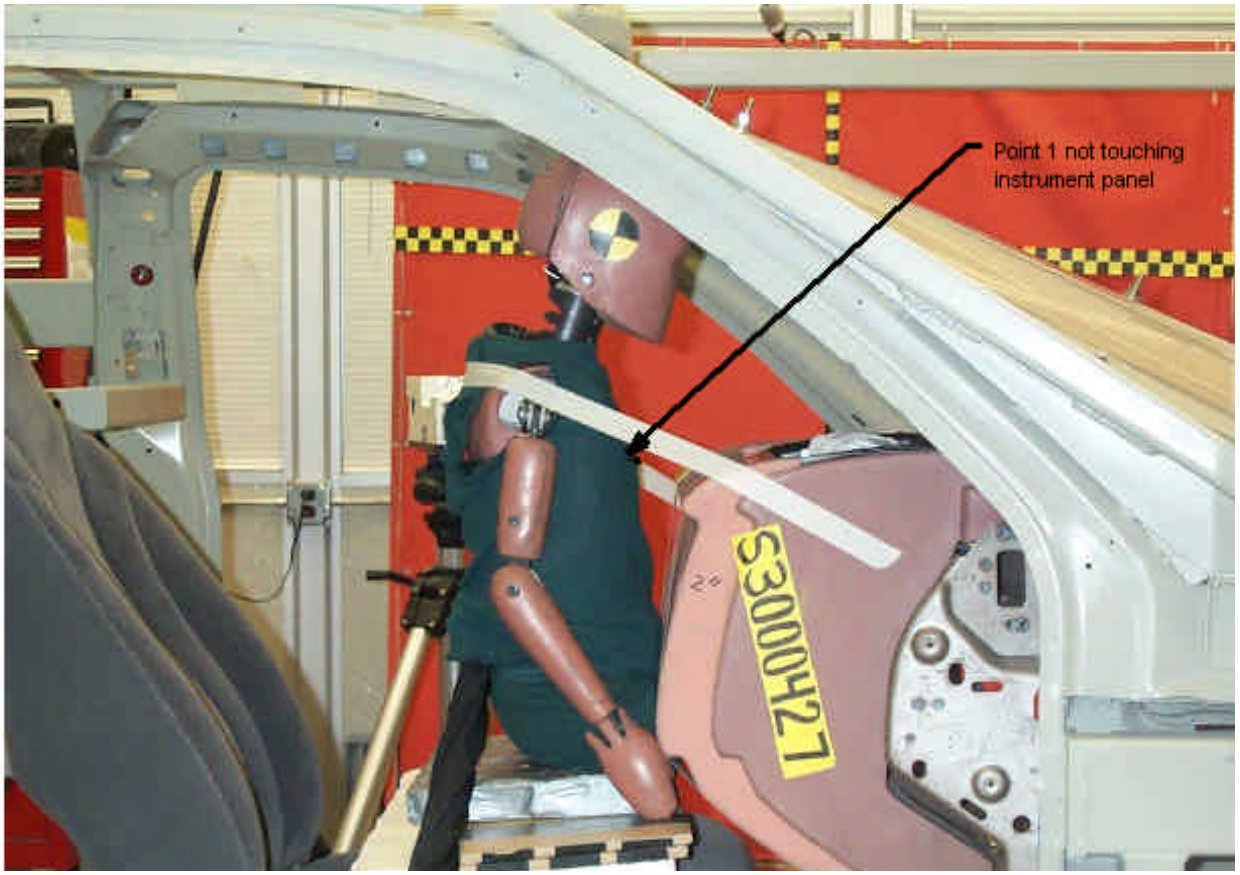
6 Year Old Positioning Issues
Position 1 - Chest on IP



6 Year Old Positioning Issues
Position 2 - Head on IP

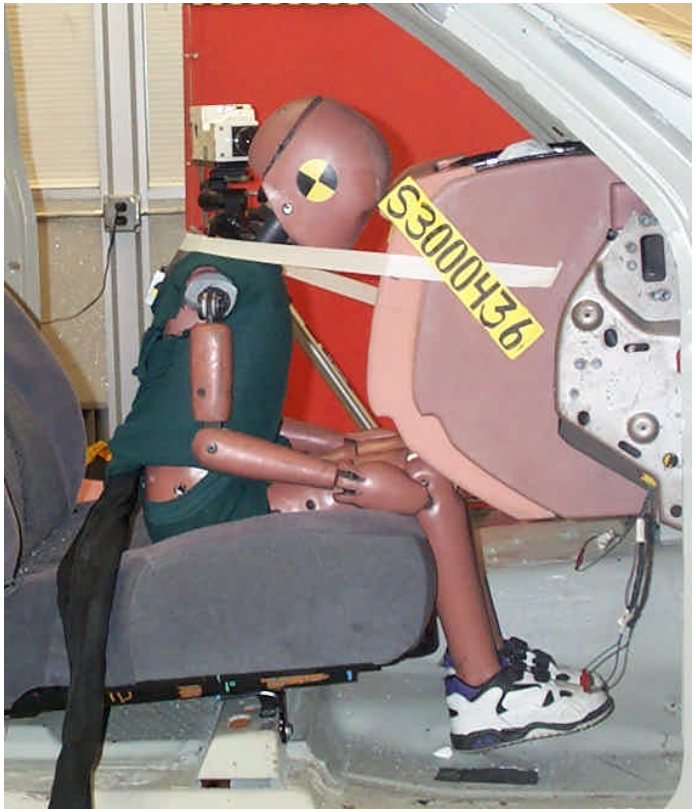
- Issue #1: In vehicles with a high H-point, the dummy's feet do not rest on the floor. In such a vehicle, if no contact is made prior to moving the seat to the full forward position, the dummy is moved forward on the seat up to 7.5" (S24.4.3.4).
  - This step results in the knee and hip joints "relaxing" out of the 90 degree angle unless they are held in that position. The initial contact between the knees of the dummy and the instrument panel is at a lower and more forward position than if the 90 degree initial angles are maintained.
  - Question: should these angles be maintained, or allowed to rotate out of position as the dummy is moved forward in the vehicle? (Demo in vehicle.)

6 Year Old Positioning Issues
Position 2 - Head on IP

- Issue #2: S24.4.3.3 states; "Move the seat forward while maintaining the thorax instrument cavity rear face orientation until any part of the dummy contacts the vehicle's instrument panel."
  - If the knees of the dummy contact the instrument panel first, should the torso then be moved forward until the head or torso also contacts the instrument panel or should the torso be kept in the upright position away from the instrument panel?
  - Or, if sections S24.4.3.4 - S24.2.2.4.5 do not apply, do the subsequent two subsections still apply?
  - In short, should contact with the instrument panel be forced if the knees make contact before the chest or head of the dummy?

6 Year Old Positioning Issues
Position 2 - Head on IP

- To make contact with the IP, the back angle is increased.



5th Percentile Adult Female Rigid Barrier Test Setup

- Issue #1: Is it necessary to adjust the seat track position if the distance between the knee of the dummy and instrument panel increases due subsequent positioning of the lower leg?
  - Background: The first step in positioning the seat is to adjust the track position until the distance between knee and instrument panel is 5 mm. After this procedure the lower leg is adjusted. This can create a larger distance between knee and instrument panel.

5th Percentile Adult Female Rigid Barrier Test Setup

- Issue #2: Some vehicles have a longitudinally adjustable seat cushion. Therefore, the seat can be moved in the most forward position in two ways:
  - The “normal” way, using the seat track adjuster for the entire seat.
  - By using of the longitudinal seat cushion adjuster.
- Which adjuster should be used first to determine the “forward most position” of the seat. Which should be used to create the 5 mm clearance between the knee and instrument panel?