Head Restraint Height Measurement
H-point vs. R-point

2nd Head Restraint Informal Working Group Meeting
April 11-13, 2005
H-Point vs. R-point

- New FMVSS No. 202 defines height as the distance from the H-point measured parallel to the torso reference line defined by the SAE J826 manikin.
  - Torso angle set to 25 degrees.
  - Previously the reference point was the SgRP (seating reference point defined in SAE J1100).
- ECE 17 uses the R-point, which is equivalent to the SgRP.
  - R-point must be within ± 25 mm of H-point with torso angle within 5 deg. of design angle.
H-Point vs. R-point

• Using R-point (SgRP)
  • SgRP defined with the seat in the rearmost “normal” design driving or riding position.
    – Defined at a time when the only seat adjustment was seat back angle.
  • SgRP location in space referenced from fiduciary marks provide by manufacturer.

• Using J826 manikin (H-point)
  • Adjust seat for worse case height.
  • Measure seat as it exists.
    – Takes into consideration upholstery characteristics.
    – Takes into consideration manufacturing variability.
Height Measurement Variability

- Using J826 manikin
  - Seat setup
  - Positioning of J826 manikin

- Using R-point
  - Seat setup
  - Locating point is space from fiduciary references
  - Making the measurement
Conclusions

- Using the J826 manikin and H-point is preferred over the R-point for the following reasons:
  - Allows measurement of the seat in its worst-case configuration.
  - Allows measurement of the seat as it exists.