Update: Recent Australian Pole Side Impact Tests with WorldSID 50th

Thomas Belcher
Mark Terrell
Summary of Tests

- 6 full-scale vehicle to pole side impact tests
- 1 current generation large Australian passenger sedan
- 1 previous generation large Australian passenger sedan
- Head/thorax combination side airbags
- 32 km/h impact speed
- Perpendicular / 100mm Offset Perpendicular / 75º Oblique
- WorldSID seating procedure draft 5.2
- WorldSID 50th Ribeye struck side passenger
- WorldSID 50th IRTRACC non-struck side driver
Summary of Ribeye Response

• Peak thorax and abdomen rib deflections predominantly lateral in both oblique pole tests
  – Theoretical IRTRACC deflections and peak Y-axis displacement were very similar.

• Very little z-axis movement of the ribs

• Some forward x-axis movement of ribs recorded with perpendicular pole impact
  – Theoretical IRTRACC deflections were generally less than the peak Y-axis displacement.
Some general observations

• Data loss observed at high deflections (as predicted)
  – Always for shoulder
  – Once on Thorax 1 for centre LED
  – Some other instances late in impact
  – More frequent for front and rear LED

• Durability generally good – some minor damage

• Seating procedure was straightforward
Example Ribeye Response

Thorax Rib 3
Example Ribeye Response

Thorax Rib 3
Durability

- Ribeye controller sensor cable connector damage. No internal damage to controller processor board. Field repair successfully performed by test facility.
- Interaction of non-struck side rib damping material with the ribeye controller.
Durability (cont)