



# CRS Test Results under UN R80 Frontal Impact Test

## JASIC



# Background

- No CRS test data under UN R80 dynamic test conditions.
- Two UN R80 dynamic tests were conducted with seatbelt fixed CRSs under bellow conditions.
  - 1) 2-point seat belts seat
  - 2) 3-point seat belts seat
- Dummy: Hybrid III 3YO



# Test Condition

UN R80 test condition



Tested CRS



3pt Seatbelt Seat belt fixed CRS,  
Usable both FF and RF

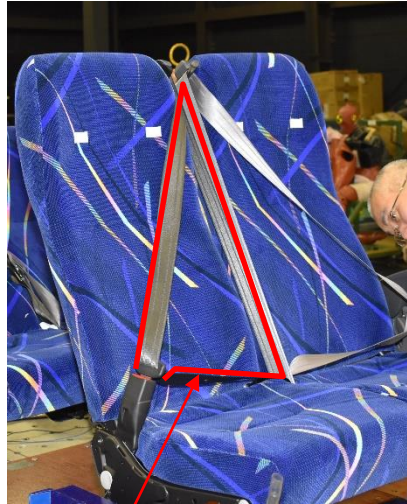


UN R44-approved

# CRS Set Condition

- The tests were conducted in two ways, one with the CRS fixed with the 3-point seat belt and the other with the 2-point seat belt.

3-point seat belt



Belt route



2-point seat belt



Belt route: **not the correct route!** (Because CRS was fixed by only 3pt seatbelt type)

# Test Video

3-point seat belt



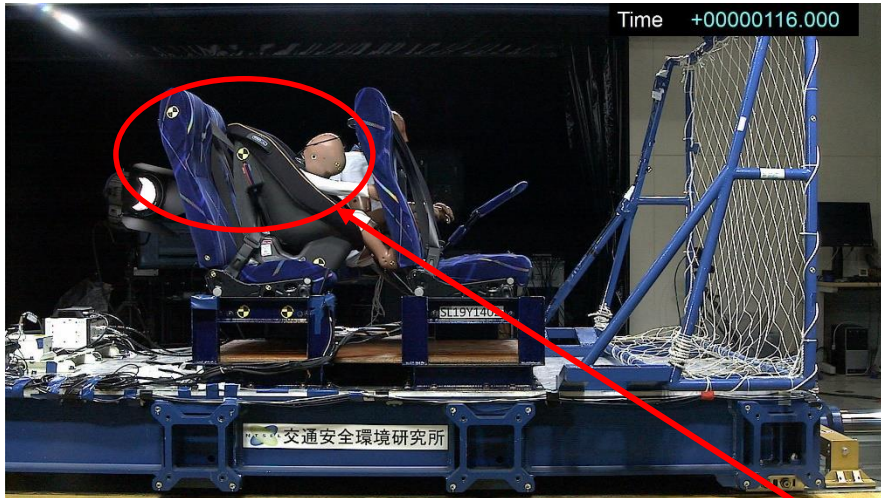
2-point seat belt



- CRS fixed with 3-point seat belt: the dummy's head did not contact the back of the front seat.
- CRS fixed with 2-point seat belt: the CRS rotated and moved forward more than CRS fixed with 3-point seat belt, and the dummy's head contacted the back of the front seat.

# Test Condition

## 3-point seat belt



## 2-point seat belt



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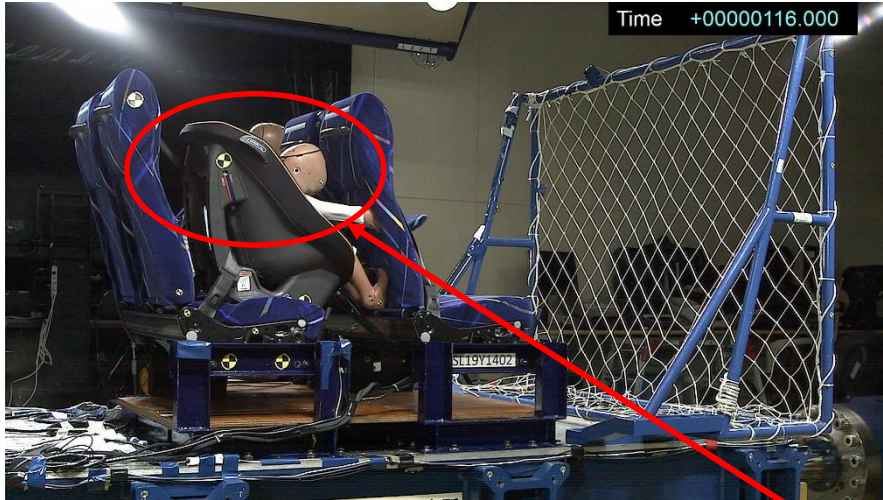


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# Post-Test Status

3-point seat belt



2-point seat belt



No contact with the head



Contact with the head

# (Ref.) Injury Measures



	3pt seatbelt	2pt seatbelt	NHTSA IARV
HIC15	89	185	570
Head max. Acc.(3ms) (G)	33	46	–
Chest max. Acc.(3ms) (G)	24	20	55
Chest Def. (mm)	4	4	34

- ✓ For both the head and the chest, the injury measures were small enough.

# Conclusion

- CRS fixed with a 3-point seat belt: CRS's forward moving distance was small and the dummy's head did not contact the back of the front seat.
- CRS fixed with 2-point seat belt: CRS rotated and moved forward more than CRS fixed with 3-point seat belt, and the dummy's head contacted the back of the front seat. However, the HIC15 was enough low. The forward moving distance of the CRS's cushion part was small due to the lap belt restraint.