

Informal document GRSP-55-43  
(55th GRSP, 19-23 May 2014  
agenda item 16 & 21)

# ECE Regulation N°94 & N°13X

Status report IWG FI  
55th session of GRSP 19-23 May 2014

# ECE R94 amendments

- Documents
  - ECE/TRANS/WP.29/GRSP/2014/6
  - Informal GRSP-55-21 (Supersedes 2014/6)
- Technical changes
  - Thorax compression criterion 42 mm (50<sup>th</sup>%)
- General issues
  - Duplicated requirement for airbag label with ECE R16
  - Cross references with ECE R14 & R16

# Transitional provisions

- Paragraph 11.9., amend to read:

~~“11.9. Approvals of the vehicles to the 01 series of amendments to this Regulation which are not affected by the 02 series of amendments shall remain valid and Contracting Parties applying the Regulation shall continue to accept them. Contracting Parties applying the Regulation shall continue to accept approvals to the 01 series of amendments to this Regulation, for the vehicles which are not affected by the 02 series of amendments.”~~

- Insert new paragraphs 11.11. to 11.15, to read:

**11.11.** As from the official date of entry into force of the 03 series of amendments, no Contracting Party applying this Regulation shall refuse to grant UN approval under this Regulation as amended by the 03 series of amendments.

**11.12.** As from 1 September [2018], Contracting Parties applying this Regulation shall grant UN approvals only to those types of vehicle which comply with the requirements of this Regulation as amended by the 03 series of amendments.

**11.13** Contracting Parties applying this UN Regulation shall not refuse to grant extensions of UN approvals for existing types which have been granted according to the preceding series of amendments to this UN Regulation.

**11.14.** Contracting Parties applying the Regulation shall continue to accept approvals to the 01 series of amendments to the Regulation, granted before 23 June 2013 or 2014, as foreseen in paragraph 11.5 above.

**11.15.** Contracting Parties applying the Regulation shall continue to accept approvals to the 02 series of amendments to the Regulation, granted before 1 September [2018].”

# New ECE R13X

- Documents
  - ECE/TRANS/WP.29/GRSP/2014/10
  - Informal GRSP-55-20-**Rev1** (Amendment of 2014/10)
- General issues
  - Duplicated requirement for airbag label with ECE R16
  - Cross references with ECE R14 & R16
- Technical issue
  - **Thorax compression criterion**

# Thorax compression criterion

- Two tendencies in the group
  - Focus on protection of small older female on passenger position (Worst case configuration)
  - Take care of older occupants (including small female) without impairing protection of other sizes and ages occupants. (Improved average case configuration)
- Two proposals for Thorax compression criterion for the 5<sup>th</sup>% female dummy

## Pros Thcc 34 mm (NTSEL contribution)

- Japan supports the proposal to specify 34 mm as the chest deflection value for H-III 5th Female in the passenger seat.

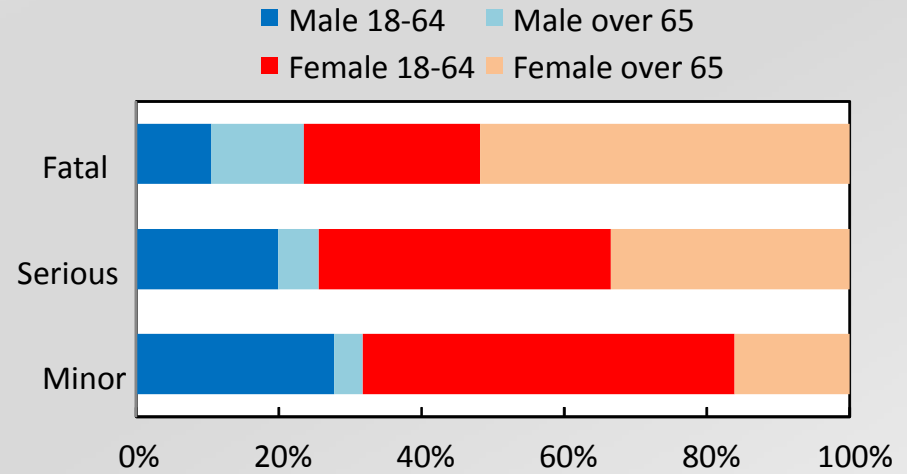
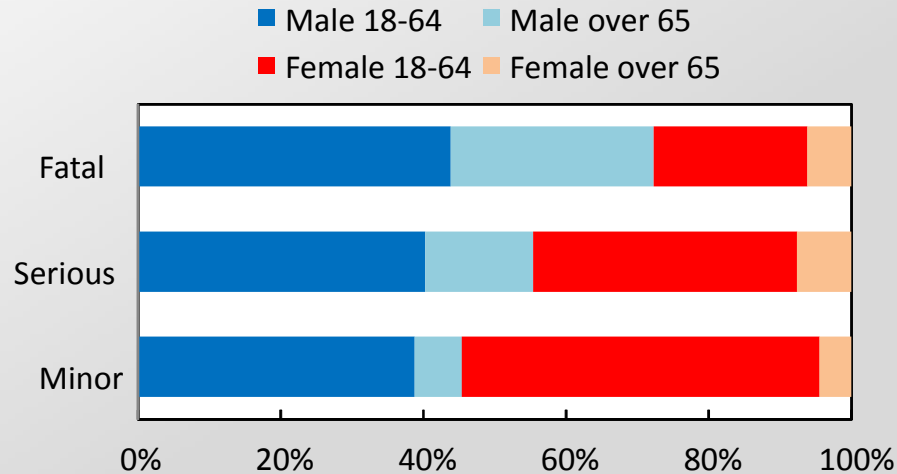
### **Justifications:**

- The purpose of developing this new regulation is to mitigate injuries of elderly occupants.
- Japanese accident data show that it is extremely important to reduce fatal and serious-injuries on the chest, for elderly female occupants in the front passenger seat.
- The target age should be the same; 65yo for male and female.
- BASt and US-NCAP test data indicate that a chest deflection of 34 mm is within the achievable range.

# (Ref.) Japanese Accident Data

Driver

Passenger

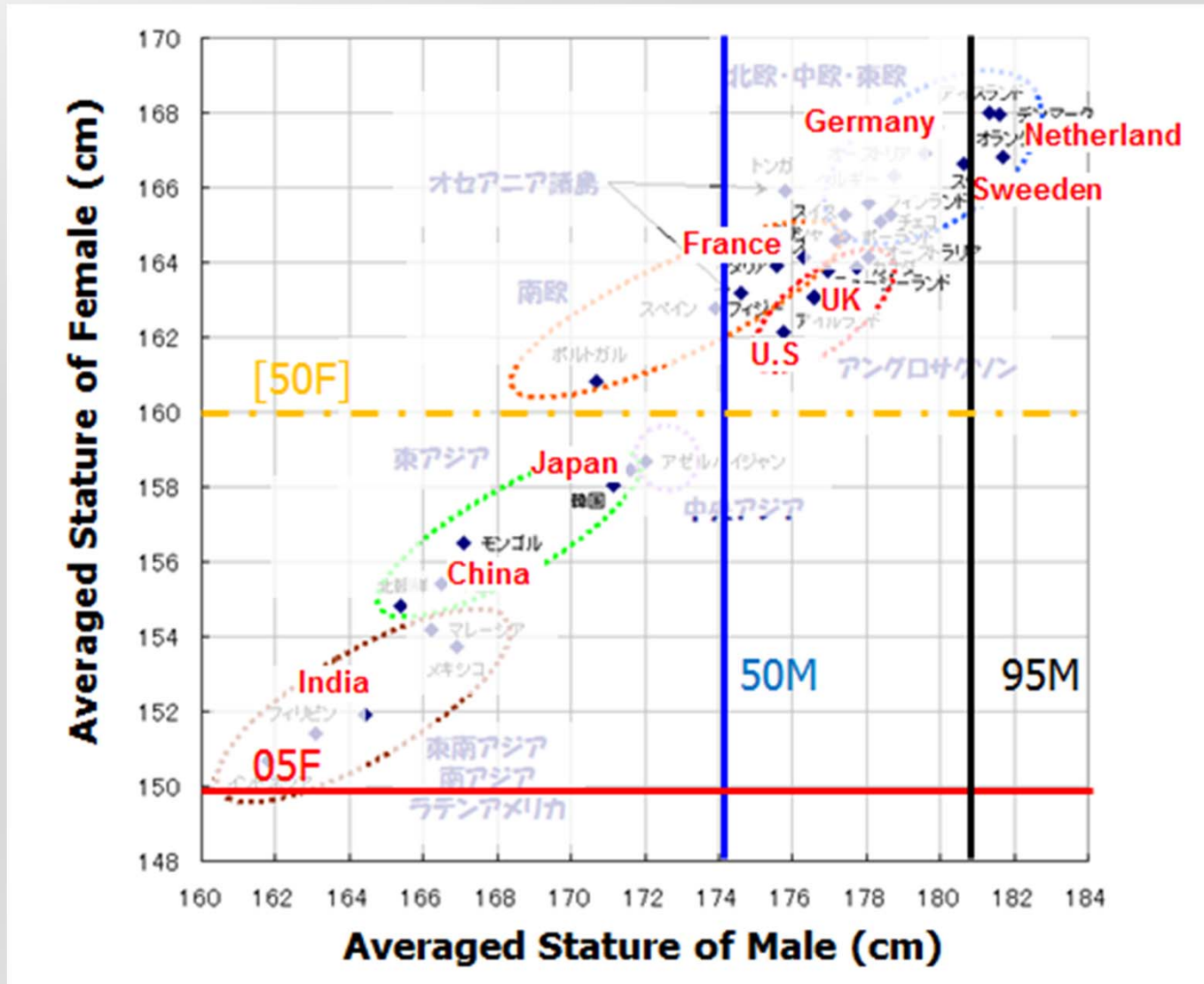


\* Fatal : within 24 hours after the crash

\* Serious : visiting a hospital for at least a month

- 76% of the fatalities in the passenger seat were females.
- 52% of the fatalities in the passenger seat were females over 65 years old.
- It is very important to prevent elderly female passengers from fatal and serious-injury accidents.

# Averaged Stature of the World, compared with H-III ATD





# Dummy behaviour

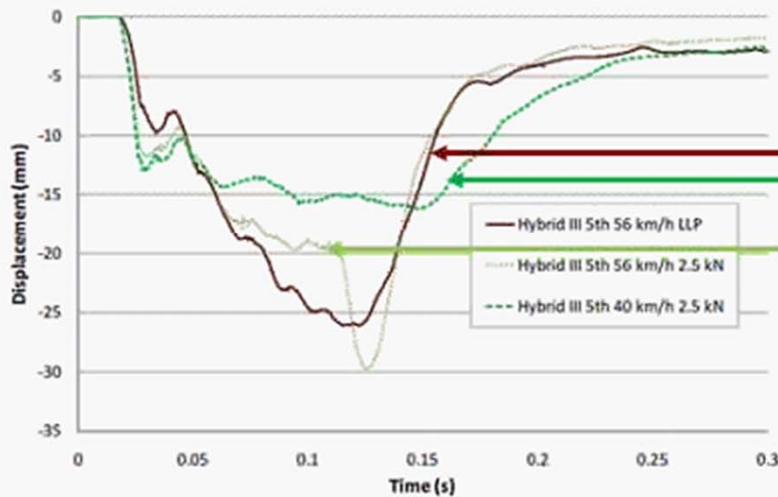


Figure 5-11: Hybrid III 5<sup>th</sup> percentile female chest deflections

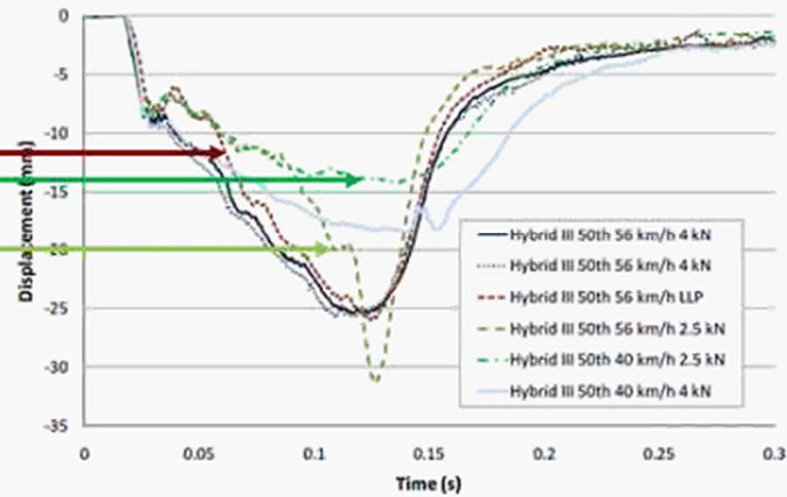


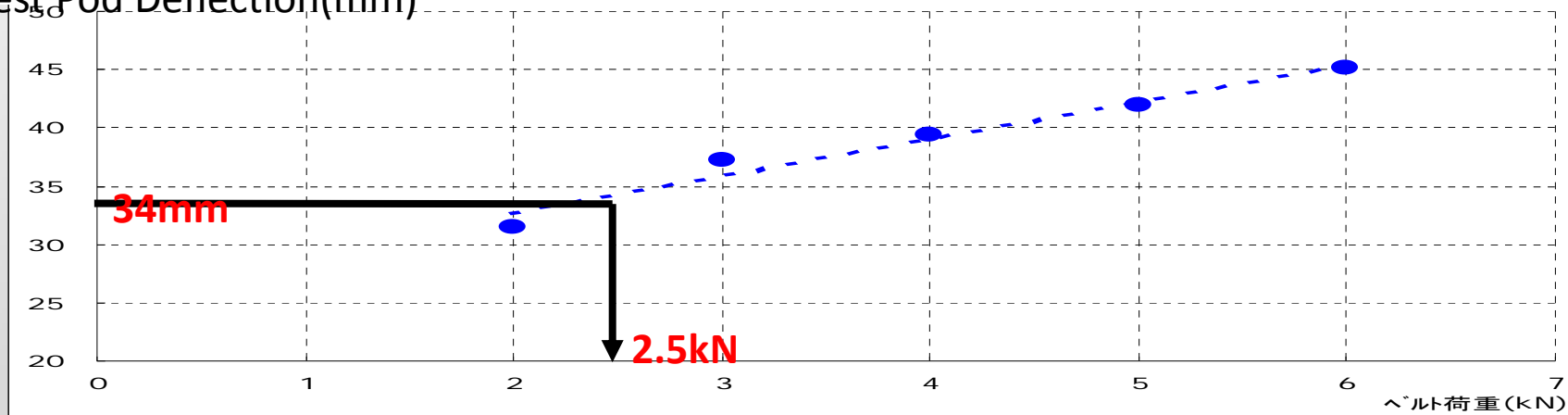
Figure 5-7: Hybrid III 50<sup>th</sup> percentile male chest deflections

HIII 50th chest deflection in an offset test compared to HIII 5th chest deflection in an offset test:  
Shape and timing are similar.

# Cons Thcc 34 mm (JAMA contribution)

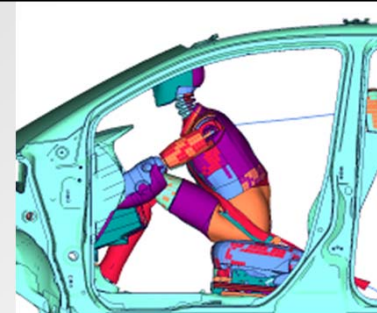
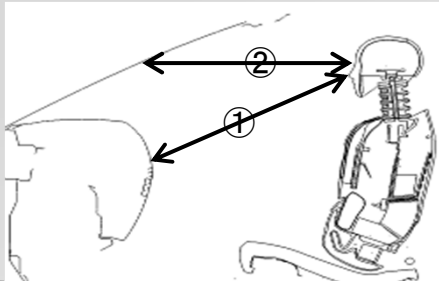
Result;

Chest Pod Deflection(mm)



Chest Deflection – Belt Load

◆ **Secondary impact** for 50<sup>th</sup> Male occurred in small car compartment if FL Load value was lower than 3kN



Movement of 95M



# Conclusion / Decision of GRSP

- Focus on protection of small older female on passenger position (Worst case configuration)
  - **$T_{hcc} \leq 34 \text{ mm}$**
- Take care of older occupants (including small female) without impairing protection of other sizes and ages occupants. (Improved average case configuration)
  - **$T_{hcc} \leq 42 \text{ mm}$**