

La voix des Consommateurs
à travers le monde

The global voice
for consumers

La voz global para la defensa
de los consumidores



In cooperation with the ANEC Traffic Safety
Working Group

Improving ECE R44 from a consumer perspective

May 2007
Ronald Vroman
and Helena Menezes

Presentation by



Consumers International
The Global Voice for Consumers



ANEC
The European consumer voice in standardisation



UN-ECE Regulation 44



**UNIFORM PROVISIONS CONCERNING THE APPROVAL OF RESTRAINING
DEVICES FOR CHILD OCCUPANTS OF POWER-DRIVEN VEHICLES
("CHILD RESTRAINT SYSTEM")**



UNITED NATIONS

- Major revision desirable
- For the time being:
 - Concerns in some areas need to be addressed

Two Concerns



- Requirements need improvement in some areas
- System as a whole not very accessible to consumers

Requirements need improvement in some areas



- **Short term:**
 - Permanence and visibility of labels
 - CRS shell size and legroom for Group 0+
 - Replacing a CRS after an accident
- **Medium term:**
 - Overlap between Group 0+ and Group I should be reduced
 - Upper mass limit of Group III should be extended

Requirements need improvement in some areas



- Longer term:
Major revision including
 - Upgrade of the dynamic tests
 - Deceleration pulse more state of the art
 - Better dummy bio fidelity: Q series
 - Introduce Side Impact Test Procedure
 - Improve accessibility of the system for consumers

Requirements need improvement in some areas



- **Short term:**
 - Permanence and visibility of labels
 - CRS shell size and legroom for Group 0+
 - Replacing a CRS after an accident

Permanence and visibility of labels

- Important labels often not durably fixed
- Leading to increased risk of incorrect use
- Discussed in Sept 2002 GRSP
- Positive acceptance
- Proposal will follow



Permanence and visibility of labels

- Padding may obscure airbag warning labeling



Permanence and visibility of labels

- Padding NOT obscuring airbag warning labeling



CRS shell size and legroom for Group 0+



Group 0+ CRS is supposed to accommodate children up to 13kg, but:

- for many children
 - insufficient legroom
 - back of the seat not high enough
 - harness insert slots were too low
- Result: CRS too small, forced switch to FWF
- Discussed in Sept 2002 GRSP
- Positive acceptance
- Anthropometrical data currently being collected
- Proposal will follow

Replacing a CRS after an accident



14.3.7. it shall be recommended that the device should be changed when it has been subject to violent stresses in an accident



Not strong enough, an accident can result in damage to the CRS integrity and energy absorbing structures that is not visible to a naked eye.

Proposal:

“the device should be replaced when it has been involved in an accident or sustained an impact”

Requirements need improvement in some areas



Medium term:

- Overlap between Group 0+ and Group I should be reduced
 -
- Upper mass limit of Group III should be extended

Overlap between Group 0+ and Group I should be reduced



- Purpose of Group 0+ for children to travel rearward facing longer
- Accident data suggest RWF offers best protection for young children
 -
- RWF desirable until children are at least 18 months old
- Undermined by big overlap Group 0+ and Group I
- Market says: FWF transport from 9kg onward
- Change lower limit in group 1 (11 kg), re-define Group I: 11-18 kg
- Supporting evidence currently being collected
- Proposal May 2008 session

Upper mass limit of Group III should be extended



- EU Directive requires children up to 1.50m (1.35m) to use a CRS
- More and more children exceed 36kg before they are 1.35 tall
- Children under 12 years and 1.50m (1.35m) weighting more than 36kg not covered by ECE R44, although small stature and immature skeleton require adequate belt positioning
- Non integral Group III could provide adequate protection: extend upper weight limit
- No adequate dummy available
- Seeking solution

Requirements need improvement in some areas



Longer term:

Major revision including

- Upgrade of the dynamic tests
 - Deceleration pulse more state of the art
 - Better dummy bio fidelity: Q series
- Introduce Side Impact Test Procedure
- System as a whole not very accessible for consumers

Upgrade of the dynamic tests



- **Deceleration pulse more state of the art**
 - Currently corridor, peak 20-28g
 - Increased stiffness of modern car bodies generate higher impact forces
 - Higher pulse, earlier peak more realistic
- **Better dummy bio fidelity**
 - P dummies rudimentary
 - Improved bio fidelity and injury assessment by adopting modern dummy family

Introduce Side Impact Test Procedure

- Side impact 2nd most important in terms of injuries
- No side impact test in procedure in ECE-44
- Discussion going on for years
- Should be incorporated



System as a whole not very accessible for consumers



Message to Consumer:

- CRS must be ECE 44 approved
- Child must fit within weight range(s) of CRS
- CRS must be suitable for use in your car(s)
- Level of protection depending on correct use

CRS must be ECE 44 approved



Presentation ambiguous, for consumers, not easy to understand




CRS must be ECE 44 approved



Information difficult to understand



EasyFix
ECE R44-04
SEMI-UNIVERSAL
3-point safety belt
0 - 13 kg
E4
04443522
Nr. 00001445


ISOFIX class E
SEMI-UNIVERSAL
Isofix
0 - 13 kg
E4
04443522

8
712933 256837
ESF11001
4305
Dorel Netherlands
GB 0112

CabrioFix
ECE R44-04
UNIVERSAL
0 - 13 kg
E4
04443517

Child must fit within *weight* range(s) of CRS



| | |
|-----------|------------|
| Group 0 | < 10 kg |
| Group 0+ | < 13 kg |
| Group I | 9 – 18 kg |
| Group II | 15 – 25 kg |
| Group III | 22 - 36 kg |

- Weight is not the most natural parameter, anthropometrical data (length) may vary enormously within weight ranges
(a baby can be 9 kg at 6 months)

CRS must be suitable for use in your car(s)



Parameters to consider:

- Universal / semi universal / vehicle specific seats
- Seat belt mounted
 - check belt length
- ISOFIX mounted
 - Check presence of ISOFIX anchorage points
 - 3rd point: support leg or top tether?
 - Check car is in list

Possible Configurations for Approval Groups



POSSIBLE CONFIGURATIONS FOR APPROVAL GROUPS / CATEGORIES TABLE

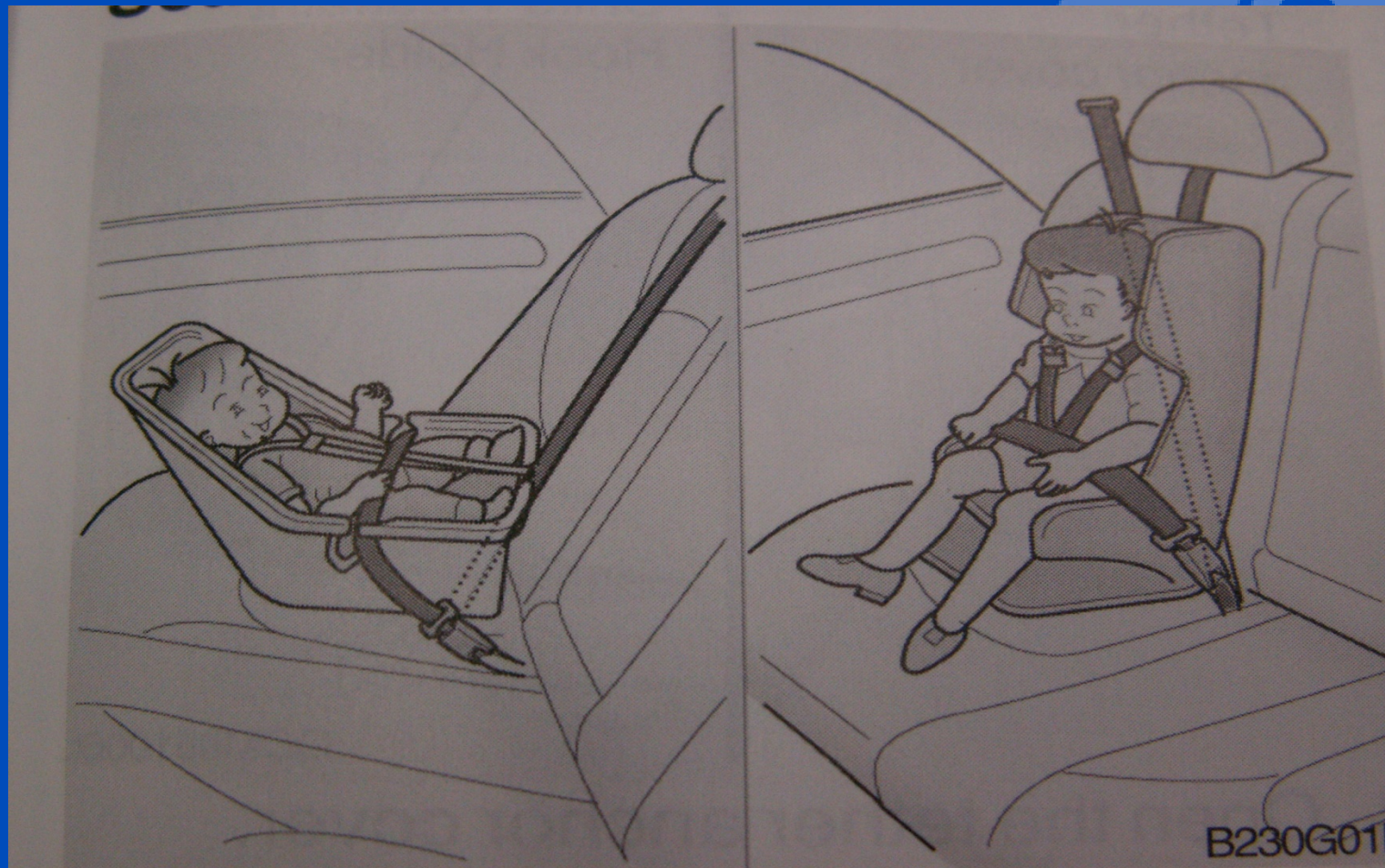
| Group \ Category | | Universal (1) | | Semi-universal (2) | | Restricted | | Specific Vehicle | |
|------------------|-------------------------------|---------------|------------|--------------------|------------|------------|------------|------------------|------------|
| | | CRS | ISOFIX CRS | CRS | ISOFIX CRS | CRS | ISOFIX CRS | CRS | ISOFIX CRS |
| 0 | Carry-cot | A | NA | A | A | A | NA | A | A |
| | Rearward facing | A | NA | A | A | A | NA | A | A |
| 0+ | Rearward facing | A | NA | A | A | A | NA | A | A |
| I | Rearward facing | A | NA | A | A | A | NA | A | A |
| | Forward facing (integral) | A | A | A | A | A | NA | A | A |
| | Forward facing (non integral) | A | NA | A | A | A | NA | A | A |
| II | Forward facing (integral) | A | NA | A | NA | A | NA | A | A |
| | Forward facing (non integral) | A | NA | A | NA | A | NA | A | A |
| III | Forward facing (integral) | A | NA | A | NA | A | NA | A | A |
| | Forward facing (non integral) | A | NA | A | NA | A | NA | A | A |

Level of protection depending on correct use



- Installing and adjusting CRS often complicated
- Study instructions, danger of 'misuse'
- Variations in presentation of belt routing indications

Study instructions, danger of 'misuse'



Summarising



- Buyers and consumers (lay men) need to decide on many parameters
 -
- Complex messages, information must be correct
- Using CRS not as straightforward as one might expect
- Start thinking on a more consumer friendly system

The Big Challenge:

- ECE R44 – 05: the big step forward in both level of protection and ease of use

At upcoming GRSP sessions we propose to bring to the table:



- **Improved wording**
 - Permanence and visibility of labels
 - Replacing a CRS after an accident
- **Measures to optimise use and protection over the weight ranges**
 - CRS shell size and leg, back and shoulder room for Group 0+
 - Overlap between Group 0+ and Group I should be reduced
 - Upper mass limit of Group III should be extended

Thank you for your attention



We would now like to hear
your thoughts on our
proposals....





■